RESOURCES AND SKILLS REQUIRED BY IPT STUDENTS TOWARDS DIGITALIZATION

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The thesis is submitted in partial fulfillment of the requirements for the award of Bachelor of Technology Management and Technopreneurship

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DECLARATION

I declare that this thesis entitled "RESOURCES AND SKILLS REQUIRED BY IPT STUDENTS TOWARDS DIGITALIZATION" is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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APPROVAL

I hereby declare that I have checked this report entitled “RESOURCES AND SKILLS REQUIRED BY IPT STUDENTS TOWARDS DIGITALIZATION” and in my opinion, this thesis it complies the partial fulfillment for awarding the award of the degree of Bachelor of Technopreneurship with Honors.

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DEDICATIONS

I dedicate this final year project to my unwavering support system—my family, especially my mom and my father, Pn Hairani binti Talib and En Mohamad bin Mohd Shah whose encouragement and understanding have been the driving force behind my academic journey. Their sacrifices and belief in my abilities have fueled my determination to reach this milestone. I extend my deepest gratitude to my dedicated supervisor, Dr Azah binti Abdul Aziz and also commited panel, Dr Atirah binti Sufian whose guidance has been invaluable throughout this challenging yet rewarding project. This endeavor is also dedicated to my friends, whose camaraderie and shared moments have made this academic chapter truly memorable. Lastly, this work is a tribute to the pursuit of knowledge and the endless possibilities it unlocks for a brighter future.

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ABSTRACT

This final-year project report focuses on the resources and skills needed by IPT students to adapt the changes in digitalization era. The research emphasises the value of digital skills and resources for helping IPT students acquire digital literacy. It is also mentions how the digital gap among B40 students at Institut Pengajian Tinggi in Malaysia might limit their access to digital resources and their capacity to acquire digital skills. The research places a strong emphasis on the necessity for undergraduate students to acquire digital literacy abilities, as well as digital citizenship skills including online welfare, online learning, and online safety. The research explores the use of technology to assist higher education institution make the most of all the resources they have to support lecturers and students as part of Malaysia's continuous process of digitalizing its educational system. The research also emphasises the significance of determining students' levels of digital proficiency and their preparation for the digitization of education. Using the Theory Planned behaviour (TPB), researcher come out with the independent variables that can influences the dependent variable. With a total of 384 respondents, researcher had analyzed the data that had been collected through a questionnaire survey using SPSS, Reliability Analysis, Pearson Correlation Analysis and Multiple Regression Analysis. As for the outcome, the data analysis that comes out stated researcher's hypothesis about the independent variables and dependent variable are accepted three out of four. Overall, the research makes the case that IPT students in Malaysia need more digitalization resources and skills if they want to succeed in the digital world.

Keyword : Digitalization, Resources and Skills, Digital Effect, IPT

ABSTRAK

Laporan projek akhir tahun ini memberi tumpuan kepada sumber dan kemahiran yang diperlukan oleh pelajar IPT untuk menyesuaikan perubahan dalam era digitalisasi. Penyelidikan ini menekankan nilai kemahiran dan sumber digital untuk membantu pelajar IPT memperoleh celik digital. Ia juga menyebut bagaimana jurang digital dalam kalangan pelajar B40 di Institut Pengajian Tinggi di Malaysia mungkin mengehadkan akses mereka kepada sumber digital dan keupayaan mereka untuk memperoleh kemahiran digital. Penyelidikan ini memberi penekanan yang kuat terhadap keperluan pelajar sarjana muda untuk memperoleh kebolehan celik digital, serta kemahiran kewarganegaraan digital termasuk kebajikan dalam talian, pembelajaran dalam talian, dan keselamatan dalam talian. Penyelidikan ini meneroka penggunaan teknologi untuk membantu institusi pengajian tinggi memanfaatkan sepenuhnya semua sumber yang mereka ada untuk menyokong pensyarah dan pelajar sebagai sebahagian daripada proses pendigitalan sistem pendidikan Malaysia yang berterusan. Penyelidikan ini juga menekankan kepentingan menentukan tahap penguasaan digital pelajar dan persediaan mereka untuk pendigitalan pendidikan. Menggunakan Teori Tingkah Laku Yang Dirancang (TPB), penyelidik keluar dengan pembolehubah bebas yang boleh mempengaruhi pembolehubah bergantung. Dengan sejumlah 384 responden, penyelidik telah menganalisis data yang telah dikumpulkan melalui kaji selidik menggunakan SPSS, Analisis Kebolehpercayaan, Analisis Korelasi Pearson dan Analisis Regresi Pelbagai. Bagi hasilnya, analisis data yang keluar menyatakan hipotesis penyelidik mengenai pembolehubah bebas dan pembolehubah bergantung diterima tiga daripada empat. Secara keseluruhannya, kajian ini membuktikan bahawa pelajar IPT di Malaysia memerlukan lebih banyak sumber dan kemahiran digitalisasi jika mereka mahu berjaya dalam dunia digital.

Kata Kunci : Digitalisasi, Sumber dan Kemahiran, Kesan Digital, IPT

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HEI	-	HIGHER EDUCATION INSTITUTION	17
(*IPT*)		(*INSTITUT PENGAJIAN TINGGI*)	
TPB	-	Theory of Planned Behavior	32
H0, H1, H2,	-	Hypothesis 0, 1, 2, 3, 4	34 -
H3, H4			35
SPSS	-	Statistical Package for the Social Sciences	45
SPM	-	*Sijili Pelajaran Malaysia*	54
STPM	-	*Sijil Tinggi Pengajian Malaysia*	54
DV	-	Dependent Variable	69
IV1,2,3,4	-	Independent Variable 1, 2, 3, 4	72

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

1.1 Introduction

In Chapter 1, researcher will briefly explain about the research. This chapter will begin with the Background of the Study, the fundamental root of this research. This page will tell the reader the definition context of the research and also what is the key point of this study in short, so that reader will get where this study journey go. Problem statement will be the next topic discussed in this study intended to show what will be the problem that needs to be addressed and narrow it down so that it can be investigated methodically. In the next pages, researcher will address the Research Questions and Research Objectives to create a roadmap for action and point out and concentrate on the research gaps. For the next pages, the study will show the Scope of the Study that this research cover and also the Significance of the Study, Theorically and Practically. Before this chapter ended, researcher will explain about the Operational Definitions and Organization of Research.

1.2 Background of Study

Engineering developments during the first and second industrial revolutions accelerated humanity's transition from a craft-based to an industrialised society (Tekinerdogan, 2021). Tekinerdogan (2021) also stated that the invention of the computer in the mid-twentieth century triggered the third industrial revolution, often known as the digital revolution, which began the digitalization of society, in which records were digitised and

communication became digital. Digitalization has become an integral component of education, and students must have the resources and skills necessary to adapt to this new reality (Kraus et al., 2021). According to a study on “Digital Literacy and Digital Skills in University Study”, assessing students' preparation for digitalization of education and their existing levels of digital abilities is important (Galina, 2020).

The potential and applications of digital can be inconceivable as technology develops and advances. Despite the fact that the internet has undergone a revolution in recent decades, many students are still unaware of the magnificence of digital technologies (Azuonwu, 2022). This can be a problem for them if the future they desire necessitates mastery of digitalization knowledge and abilities. Students engage more deeply with content when they employ strong content-creation tools, which helps them better grasp information and convey their knowledge in visually and digitally captivating ways (Adobe, 2017).

Despite all of the benefits above, students face some challenges in developing skills for digitalization like resist to change from traditional learning methods to digital learning (Vishal Dani, 2023). Other than that, students and educational institutes, both lack of infrastructure required for digital learning (Vishal Dani, 2023).

1.3 Problem Statement

According to Dell Technologies (2022), through a survey, Generation Z was born into a world where the internet already existed, and they spend the majority of their time on gadgets. However, younger generations are becoming increasingly sceptical of the digital abilities they gain in school.

The problem arising from this study is that the IPT students are lack of digitalization’s resources and skills (Vishal Dani, 2023). Teachers and students require significant and required resources to properly use digital

technology (Liisa Ilomäki and Minna Lakkala, 2018). Some instructors struggle to give students with the necessary abilities for success in a digital environment (Digital Marketing Institute, 2023).

Digital learning necessitates solid time management skills, which some students may lack (CIPCourses, 2019). Some universities may lack the infrastructure required to give students with access to digital resources such as e-books, online courses, and educational apps (Iqbal, Tariq and Ahmad, 2021).

Therefore, this research is conducted to identify and recognize the challenges and problems of students' adaption about digitalization.

1.4 The Research Question

The purpose of this study is to understand and recognize the resources and skills required by IPT students towards digitalization. Therefore, the research questions are answered in this study are:

1. What are the resources and skills required by IPT students towards digitalization.
2. What are the effects of digital resources and skills towards IPT students' adaption of digitalization.
3. What is the most significant resources and skills for IPT students to adapt the digitalization

1.5 The Research Objective

The purpose of the paper is to recognize the resources and skills required by IPT students towards digitalization. The objectives of this study are shown in the below:

1. To investigate the resources and skills required by IPT students towards digitalization.
2. To analyse the effect of digital resources and skills towards IPT students' adaption of digitalization.
3. To determine the most significant resources and skills for IPT students to adapt the digitalization

1.6 The Scope of The Study

Globally, particularly in Malaysia, the digitalization phenomena is on the rise (Abrosimova, G.A., 2020). IPT students should have access to computers and the internet in order to be good digital learners, however there is still a digital gap (Florence and Kui Xie, 2022). Despite the fact that today's students ar econsidered digital natives, they lack the digital literacy abilities required to be competent and productive members of the digital society (Erwin K. and Mohammed S., 2022). Developing digital skills enables digital learners to manage a broad array of fast changing information, which is essential for both learning and working in a changing digital world (Cathy L. Green, 2020). To flourish in a digital environment, the OECD (Organisation for Economic Cooperation and Development) suggests that students develop strong literacy, numeracy, problem-solving, autonomy, coordination, and collaboration abilities (OECD, 2016).

Based on these findings, IPT students in Malaysia require access to technology, digital literacy training, and resources to enable digitalization. They must also have competences for dealing with digital information and possess characteristics of effective digital learners, such as self-motivation, a desire for active forms of learning, and the ability to learn and how to learn (Cathy L. Green, 2020). Malaysian IPT institutions should aim to provide these tools and abilities to their students in order to assure their success in the digital era.

1.7 Significance of Study

The significance of this study lies in its potential to address a critical gap in current knowledge and contribute valuable insights to the exusting literature. By exploring the resources and skills that IPT students required, this research aims to shed light on the recognize and understand the resources and skills needed, which has significant implications for student digitalization adaptation. Moreover, the findings of this study may have practical applications, offering actionable recommendations for IPT students. Ultimately, the significance of this research extends beyond academic curiosity, as it has the potential to positively impact students digital abilities, providing a foundation for future research and informed decision-making.

1.7.1 Theoretical Significant

The theoretical significance of the study about resources and skills required by IPT students towards digitalization in Malaysia can be understood by considering the following points:

1. Every aspect of our life, including education, has been affected by the irreversible and essential phenomena known as "digitalization of education." (Abrosimova, G.A., 2020)
2. Building digital skills is essential for learning and working in a developing digital environment because it enables learners to manage a broad array of information that is changing quickly. (Cathy L. Green, 2020)
3. The systematic review of the literature on digital transformation in higher education institutions emphasises the significance of equipping students with digital competence in the technology and communication fields, as well as improving the digitization of administrative processes and providing unrestricted, round-the-clock access to all information and services via multiple platforms or digital curriculum. (Castro Benavides LM et al , 2020)

1.7.2 Practical Significant

The practical significance of the study about resources and skills required by IPT students towards digitalization in Malaysia can be understood by considering the following points:

1. The study can help IPT institutions in Malaysia identify the resources and skills required by their students towards digitalization and provide solutions to overcome the challenges faced by students in adapting to digitalization. (Abrosimova, G.A., 2020)
2. The study can contribute to the development of a comprehensive digitalization strategy in IPT institutions in Malaysia that includes training, resources, and support for students and instructors to ensure their success in the digital age. (Castro Benavides LM et al , 2020)
3. The study can help IPT institutions in Malaysia improve their digital technology infrastructure, provide digital support, and consider students' digital access before they engage in digital learning. (Florence and Kui Xie, 2022)

1.8 Operational Definitions

The Operational Definitions chapter serves as a crucial guide to deciphering the key terms and concepts utilized throughout this research endeavor. In order to maintain clarity and precision, operational definitions are established for each variable, ensuring a common understanding among researchers and readers. This chapter delineates the specific criteria and measures employed to quantify and interpret the variables under investigation. By explicitly defining the operational terms, this research not only establishes a solid foundation for consistency in data collection and analysis but also facilitates a more comprehensive comprehension of the study's findings. Clear operational definitions are instrumental in maintaining the rigor and reliability essential to the integrity of this research undertaking.

1.8.1 Digital Learning Resources

Digital learning resources are digital educational tools that are used to support teaching and learning in a digital setting. These resources can consist of a wide range of digitally structured elements, such as graphics, photographs, audio and video, simulations, animations, and pre-programmed learning modules (Alexandrea Dillon, 2023). Digital learning materials can be utilised to complement primary course content or to make up the class content in both traditional and online learning environments. E-textbooks, applications, software, programmes, websites, YouTube, Khan Academy, MOOCs, podcasts, Quizlet, and online workbooks are all examples of digital learning materials (Diaz, 2021). The word "learning object" can also refer to a collection of digital learning resources. In the digital age, digital learning resources are critical for students to study and acquire new abilities.

1.8.2 Access to Information and Resources

Access to information and resources refers to the availability of educational materials and tools that support teaching and learning in a digital environment (NCES, 2017). These resources can be accessed both inside and outside the classroom and can include a wide variety of digitally formatted materials, such as interactive learning resources, digital learning content, software, simulations, online databases, primary source documents, and online and computer-based assessments. Digital learning resources are used for education in many ways and implemented in different forms. In traditional classrooms, digital learning resources are used as supplements to the primary course content, while in virtual learning, the digital resources actually make up what is the “content” of the class (Alexandrea Dillon, 2023).

1.8.3 Technical and Digital Skills

Techniques are the methods and procedures utilised to complete a specific activity or goal. Techniques can refer to the methods used to incorporate digital technologies into many parts of a company or educational setting in the context of digitalization (Rachinger et al., 2018). Digital skills are the abilities and knowledge required to properly use digital technologies. Individuals must have digital skills in order to flourish in the digital age, which can involve a wide range of competences (Rachinger et al., 2018).

1.8.4 Critical Thinking

Critical thinking is a cognitive process that entails analysing, evaluating, and synthesising information in order to create an opinion or choice (Ryan, 2022). It is a metacognitive talent in which one thinks about thinking and is conscious of one's own biases and assumptions. Individuals must develop critical thinking skills in order to make informed judgements and solve challenges successfully (Ryan, 2022). Overall, critical thinking is a valuable ability to cultivate in order to manage the complicated and fast changing environment of the digital age. Individuals who acquire critical thinking abilities can make more informed judgements, solve issues more effectively, and adapt to new challenges and possibilities.

1.8.5 Digitalization Adaption Among Students

The ability of students to effectively employ digital technologies to promote their learning and development is referred to as digitalization adaptation (Arisoy, 2022). It entails using digital tools and systems into many elements of education such as teaching, learning, and assessment. Students' digitalization adaption is critical for ensuring that they have the skills and resources needed to prosper in the digital age (Ovington, 2022). It include developing digital literacy abilities, such as the capacity to

successfully find, analyse, and use digital information, as well as digital communication, problem-solving, and security skills. Students' ability to adapt to everchanging technical advancements and use digital technologies to solve issues and generate new opportunities is also part of digitalization adaption (DíazGarcía et al., 2022).

1.9 Organization of Research

A brief introduction, background information, and the research problem are presented in Chapter One. Following that, it provides an overview of the study's goals, significance, and scope before presenting its organisational structure. The literature review with a focus on prior research is found in Chapter 2. It addresses the explanation of knowledge of reources and skills required by ipt student to adapt digitalization. The research's framework is explained in this chapter also, along with the hypothesis. In Chapter 3, it describes the research methodology and explains why the techniques employed in this study were appropriate.

1.10 Conclusion

As a conclusion, students must possess digital literacy abilities because of the digitization of education. High levels of self-motivation, a preference for active learning methods, and the capacity to learn how to learn are characteristics of successful digital learners. Digital tools help students acquire skills like problem-solving and structuring their thoughts, which are necessary for professional success. But limited resources in higher education institutions make it difficult to employ digital technology for teaching and learning.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter, researcher intended to explain further about the project research to the audience and reader. Researcher will illustrate the literature review on the keyword; Independent Variable (IV) and Dependet Variable (DV). After that, explain about the Theories used in the research. This will show the support evidence of the Research Conceptual Framework that researcher come out in the next page. At the end of this chapter, researcher will explain the Hypothesis from the previous Conceptual Framework.

2.2 Literature Review

The Literature Review chapter serves as a comprehensive exploration of existing scholarly works, providing the theoretical framework and contextual backdrop for the current research. This review critically examines relevant studies, theories, and empirical evidence within the chosen field, offering insights into the evolution of thought and identifying gaps in knowledge. By synthesizing and analyzing a breadth of literature, this chapter aims to establish the research's conceptual foundation, highlight key debates, and underscore the significance of the current study. Through this thorough examination, the literature review contributes to the scholarly dialogue, guiding the reader toward a nuanced understanding of the subject matter and positioning the research within the broader academic discourse.

2.2.1 Digitalization

Digitalization is the process of converting analogue data to digital data utilising digitalization and new technologies to create new digital ecosystems, automated processes, and improved efficiency in information processing, storage, and processing (Francesco, 2023). It is the process of converting analogue processes to digital ones (Kihara, 2022). Digitization, on the other hand, is the process of turning analogue data to digital data (Anthony, 2008). Francesco (2023) stated that digitalization extends digitization by using digital data and making it useable for a variety of applications.

2.2.2 Digitalization Resources

Digital resources can be referred as materials that may be viewed and utilised electronically. They contain a wide range of digital objects such as books, magazines, audio recordings, video recordings, and other electronic documents (Katie, 2023). Digital resources can be utilised for research, reference and education. They are available in online libraries and databases, digital platforms such as Cambridge GO and Cambridge Elevate (cambridge.org) digital archives, databases, online journals, streaming media services, virtual museums, and other places.

Digitalization entails improving digital literacy and digital skills in order to successfully utilise these resources (Abrosimova, G.A., 2020). Software, digital photos, digital video, video games, web pages and websites, social media, digital data and databases, digital audio such as MP3, electronic papers, and electronic books are examples of digital media (wikipedia).

2.2.3 Digitalization Skills

Digital skills can be referred as the capacity to locate, assess, utilise, share, and create material using digital devices such as computers and smartphones. These skills are vital for success in education and job as technology becomes more central to our lives and our reliance on the internet and digital communications grows, according to Digitalskills. Digital skills can refer to a variety of talents to access and handle information through digital devices, communication apps, and networks (Digital Marketing Institute, 2023). Digital literacy is an important component of digital skills, which include the ability to utilise technology safely, effectively, and ethically (Lcom Team, 2022). Operating, advertising, and communicating online are examples of digital abilities, as include data analysis and processing, looking for information on the internet, utilising office software, and engaging properly with people.

2.2.4 Digital Learning Resources (applications, software, programs, websites)

"Any instructional practise that effectively uses technology to strengthen a student's learning experience and encompasses a wide spectrum of tools and practises" is defined as a "digital learning resource" (Office of Educational Technology, 2021). Digital learning resources have a big impact on education and can be used to raise student achievement, facilitate curriculum development, and increase student engagement (Alexandrea Dillon, 2023). According to Office of Educational Technology (2021), to effectively use digital tools and resources, students should develop modern technical and digital skills. The classroom environment can be enhanced and the teaching-learning process can be made more engaging by using digital learning resources. They also provide students with improved access to education, better assignments, self-paced learning, more enjoyable learning, and vast information resources (Haleem et al., 2022). Students can access a variety of academic and research materials, including e-books, articles, and journals, through digital libraries or online databases. Students now have

instant access to a wealth of resources and information thanks to technology, which enables them to explore a variety of topics, carry out research, and access educational materials that may not be included in traditional textbooks (Haleem et al., 2022).

2.2.5 Access to Information and Resources

Technology is now a necessary component of education and can improve student learning in a variety of ways. Furthermore, technology gives students access to, and the ability to organise and analyse massive amounts of data, preparing them for tasks in the future (Grand Canyon University, 2023). Technology can boost student engagement, raise educational standards, and assist students in developing the technical skills required for jobs of the future in the 21st century (School of Education, 2020). It's critical to remember that technology is a tool, not an end in itself, in education. The potential of educational technology lies in how educators use it and how it is implemented to best meet the needs of their students (Haleem et al., 2022). Additionally, according to Grand Canyon University (2023) before implementing any new technology in the classroom, educators and IT staff must work together to thoroughly review the privacy and safety standards of that technology. With the access to these technology students now can have immediate access to a wealth of resources and information. Students can use the internet and digital tools to research a range of topics, do research, and access instructional information that may not be available in traditional textbooks (Haleem et al., 2022).

2.2.6 Technical and Digital Skills

The digital age has brought about tremendous changes in education, and it is critical to adapt to these developments in order to ensure that students are prepared for the future. Students should not only master current technological and digital abilities, but also important human qualities such as

active learning, critical thinking, communication, and problem-solving (El Maadawi, 2019). When instructors publish lectures, podcasts, and debates, students must be able to learn from a variety of content formats (text, audio, video). They must also learn to interact with their instructor, peers, and information in a digital setting (Florence and Kui Xie, 2022). Students should learn current technical and digital abilities in order to properly use digital tools and resources (El Maadawi, 2019).

2.2.7 Critical Thinking

Students must have critical thinking skills in order to adapt to digitalization. Students should master not only current technological and digital abilities, but also important human qualities such as active learning, critical thinking, communication, and problem-solving (El Maadawi, 2019). Zeinab (2019) stated in her research, to evaluate the authenticity of internet sources and identify bias and misinformation, critical thinking skills are required. Incorporating technology into education offers students with an exciting learning experience and can aid in the development of critical thinking abilities (Haleem et al., 2022). Technology-based projects can encourage students to think and interact while also teaching them the technology skills they will need to succeed in the modern workforce (Taha Ahmed Khan, 2019). As a result, critical thinking abilities are required for students to adapt to digitalization, and technology can be employed to improve teaching and learning while also assisting students in succeeding.

2.2.8 Effect of Digital

Youth in Malaysia are more likely to be viewed as employable when they possess digital abilities (Kee, D.M.H. et al, 2023). Students in Malaysia have favourable opinions of e-learning, and demand for digital learning platforms and technologies is rising (Bujang, S.D.A et al, 2020). The success of undergraduate students in the digital age depends on their acquisition of

digital literacy skills (Shariman, et al, 2012). High levels of self-motivation, a preference for active learning methods, and the capacity to learn how to learn are characteristics of successful digital learners. For undergraduate students in Malaysia, it's crucial to have the right digital citizenship abilities, such as those related to online learning, safety, and welfare (Mahadir, N.B., et al, 2021).

2.2.9 Digital Relationship

The success of undergraduate students in the digital age depends on their acquisition of digital literacy skills. The ability of Malaysian students to access and utilise digital material for academic purposes was examined in a research on digital literacy. For Malaysian undergraduate students, having strong digital citizenship skills—including understanding about and attitudes towards the practical application of digital technology—is crucial. A preliminary research evaluated the digital citizenship abilities of Malaysian undergraduate students (Mahadir, N.B., et al, 2021). It's critical to evaluate students' digital skill levels and preparation for the digitization of education. University students need to increase their digital literacy and abilities, according to a research that examined students' levels of existing digital proficiency and their preparation for the digitization of education (Abrosimova, G.A., 2020).

2.2.10 Increasing Digitalization

In Malaysian higher education institutions, there is a digital gap among B40 students (students from poorer socioeconomic origins). Their capacity to access digital resources and improve their digital literacy may be hampered by this disparity (Devisakti A, Muftahu M, Xiaoling H., 2023). It's critical to evaluate students' digital skill levels and preparation for the digitization of education. University students need to increase their digital literacy and abilities, according to a research that examined students' levels

of existing digital proficiency and their preparation for the digitization of education (Alhubaishy A, Aljuhani A., 2021). For students to succeed in the digital age, lecturers and higher education institutions should give them access to digital resources and help them build digital literacy abilities.

2.3 Summary of the Literature Review

Overall, the research suggests that digitalization adaption among among IPT students in Malaysia is crucial for their success in the digital age. Developing technical and digital skills and critical thinking skills in general is necessary for effectively using digital resources. Addressing the digital divide among students from lower socioeconomic backgrounds is also crucial for ensuring that all students have equal access to digital resources and the opportunity to develop digital skills. Higher education institutions in Malaysia should provide students with access to the latest technology and tools, develop digital literacy skills, and improve their digital technology infrastructure to ensure the success of their students.

2.4 Theories

The Theory Chapter serves as the intellectual framework upon which this research is built, providing a systematic exploration of relevant theoretical perspectives that underpin the study. Grounded in established concepts and models, this chapter elucidates the theoretical foundation guiding the research questions and hypotheses.

2.4.1 Theory of Planned behaviour

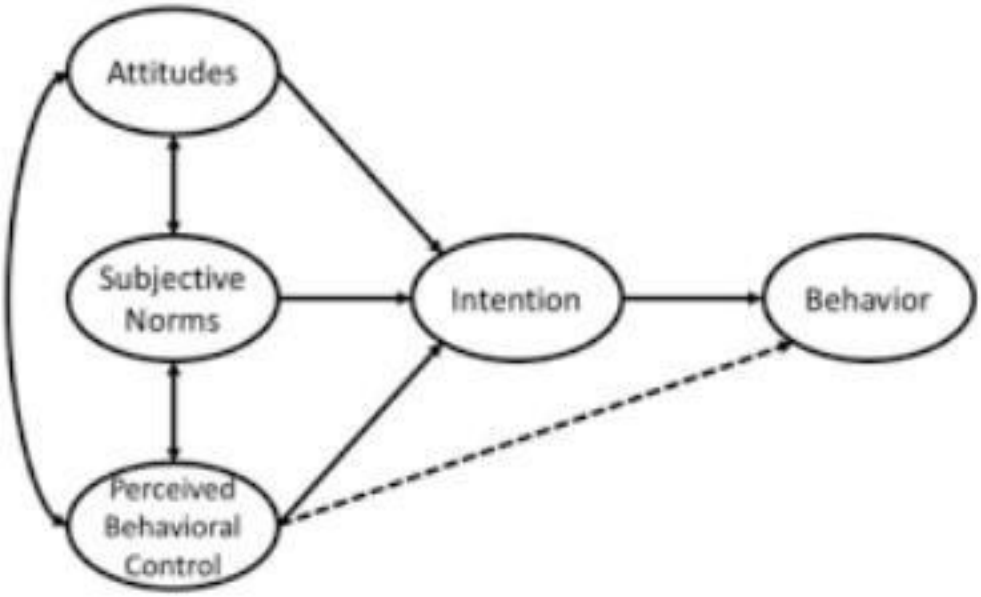

Figure 2.4.1 : TPB Model

The Theory of Planned Behaviour (TPB) is connected to student digitalization adaption. TPB is a cognitive theory that posits that an individual's intention to engage in a particular behaviour might predict that individual's decision to engage in that behaviour (Brookes, 2021).

Here are some examples of how TPB might be used to help students adjust to digitalization:

1. Attitude : Students' attitudes towards digitalization can influence their willingness to use digital technologies. Students that have positive attitudes towards digitalization are more likely to use digital tools. (BazarganHejazi et al., 2016)

2. Subjective Norms : Students' subjective norms, such as peer, lecturer, and parent influence, can influence their intention to adopt digital devices. Positive subjective norms can boost students' willingness to use digital technologies. (Choi and Suh, 2022)

3. **Perceived behavioural control :** Students' perceived behavioural control, such as their confidence in utilising digital technologies, can influence their willingness to accept digital technology. Students who have a high level of perceived behavioural control are more likely to use digital technology. (M. Ellis and J. Helaire, 2022)

2.5 Conceptual Framework

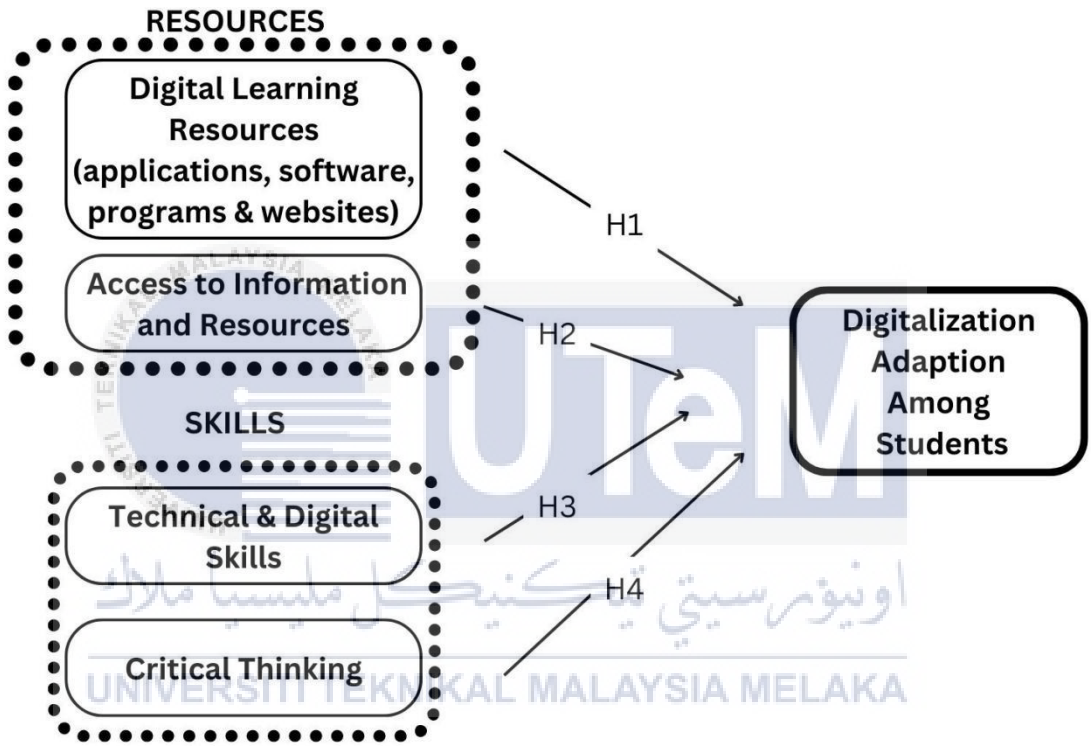

Figure 2.5 : Conceptual Framework

2.6 Hypothesis Development

Based on the factors which are derived from theoretical framework, the following hypothesis were suggested

Hypothesis 1 : Digital Learning Resources

According to Alexandrea Dillon (2023), the classroom has gotten more technology based as society in its entirety has become increasingly technological dependent. Digital learning resources (DLRs) are digital materials that aid both learners and instructors in their education process. The majority of digital learning tools are accessed via an internet connection. Technology in the classroom is becoming more common as numerous educational institution transition to a one-to-one technology model, in which each student is given a tablet or laptop upon enrollment

H0 : There is no positive and no significant relationship between Digital Learning Resources and Digitalization Adaption Among Students

H1 : There is positive and significant relationship between Digital Learning Resources and Digitalization Adaption Among Students

Hypothesis 2 : Access to Information and Resources

According to Grand Canyon University (2023), technologies in classes may increase student engagement. Students gain because technology is more easily absorbed into the curriculum. Many lecturers utilise interactive software and programmes as learning tools that allow students to reply digitally to questions and lectures. Furthermore, interactive learning makes education more enjoyable and engaging as students earn badges and progress through skills.

H0 : There is no positive and no significant relationship between Access to Information and Resources and Digitalization Adaption Among Students

H2 : There is positive and significant relationship between Access to Information and Resources and Digitalization Adaption Among Students

Hypothesis 3 : Technical and Digital Skills

Higher education must be reconsidered. Students must not only master current technical and digital abilities, but also critical human skills such as active learning and various ways for becoming agile learners. With correctly

target audience-oriented or personalised teaching and learning approaches, technology-enhanced learning may deliver inexpensive, engaging, and individualised learning.

H0 : There is no positive and no significant relationship between Technical and Digital Skills and Digitalization Adaption Among Students

H3 : There is positive and significant relationship between Technical and Digital Skills and Digitalization Adaption Among Students

Hypothesis 4 : Critical Thinking

Digital educational tools and technology, according to Haleem et al., (2022), engage students and promote critical thinking abilities, that serve as essential of learning analytic reasoning. The paper emphasises the significance of digital learning tools in boosting the learning experiences of learners and critical thinking abilities.

H0 : There is no positive and no significant relationship between Critical Thinking and Digitalization Adaption Among Student

H4 : There is positive and significant relationship between Critical Thinking and Digitalization Adaption Among Student

2.7 Conclusion

Theoretically speaking, it is recommended that the research study concentrate on the digital learning, digital citizenship, and variables influencing digital literacy and abilities among Malaysian IPT students. The framework places a strong emphasis on the need for undergraduate students to acquire digital literacy abilities, especially those related to online learning, safety, and citizenship. The research show the importance of the variables influencing digital literacy and proficiency among IPT students in Malaysia, such as the influence of school infrastructure on teaching and learning, the impact of digital literacy on student achievement, and the degree to which students are prepared for the digitalization of education

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, researcher will conduct and explain the method that will be used for the research to tackle down the research problems. Using an Onion Model as a guide to facilitate reader to better understand about the research deeper. The purpose of the Onion Model is provides a conceptual framework for research and diagnostics focused at uncovering tacit knowledge that can benefit individual and organisational growth. In this chapter also, researcher will draft a questionnaires to be used in the chapter, to get the data from sample.

3.2 Onion Model

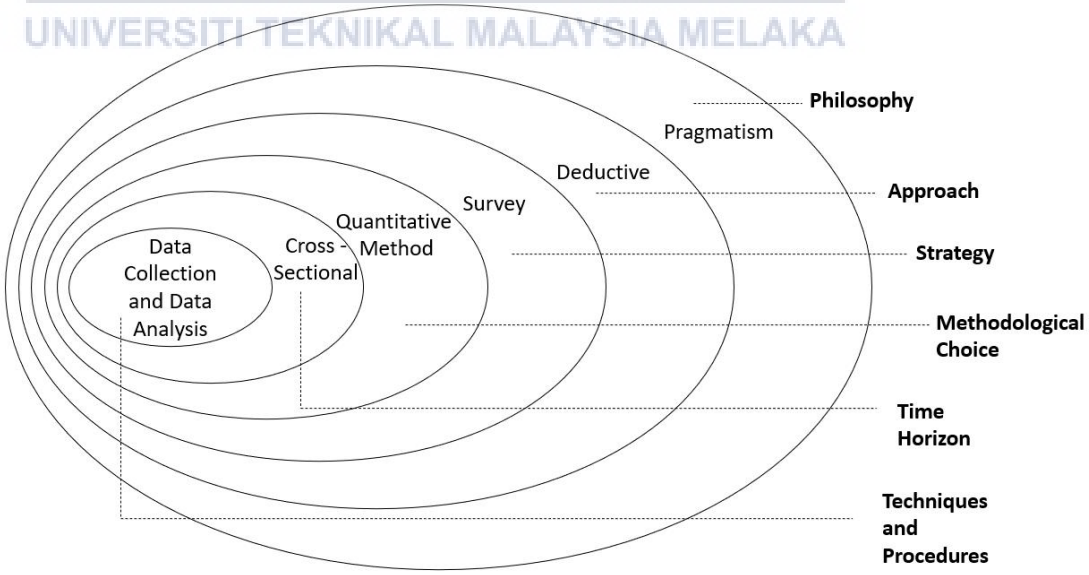

Figure 3.2 : Onion Model

Saunders et al. created the research onion in 2007 to outline the steps a researcher must take to create a successful methodology. Just as I previously stated, you must give justifications and explanations for each level of your methodological choices in order to give your research the most credibility possible. The research methods tree is essentially expanded by the research onion (Stainton, 2019)

3.2.1 Research Philosophy - Pragmatism

The set of assumptions about the nature of the reality under investigation is referred to as research philosophy. In general, ontology and epistemology are examined (Stainton, 2019).

Digital literacy is the collection of abilities needed to efficiently access digital information, from a pragmatic point of view (Julien, Heidi, 2019). Through the appropriate use of digital technology, students in higher education acquire new skills necessary for success in the twenty-first century (Alenezi M., 2023). Digital literacy is one of the prerequisite skills for any higher education level and is a crucial component of effective professionalisation (Vodă AI, 2022). The group that has most influenced or motivated them to consider making their move to a digital transformation is students at higher education institutions (Alenezi M., 2023).

Graduate students in higher education believe that institutions will work on projects related to the growth of competences needed by the digital economy by providing both new and cutting-edge digital capabilities and worldwide IT experience (Alenezi M., 2023). English language competency, the accessibility of materials, and students' level of digital literacy are only a few of the variables that affect students' capacity.

3.2.2 Research Approach - Deductive

This refers to the researcher's methodology, which can be broadly categorised as either inductive or deductive. The deductive method begins modestly and grows. It begins with a specific hypothesis or set of hypotheses that have been developed in light of data or patterns that the researcher has noticed. The next step is to put this theory to the test and build a bigger theory around it. The opposite is true of the inductive method. It begins with a broad theory and later zeroes in on the finer, more intricate details. The phrase "move from the specific to the general" is sometimes used to describe this (Stainton, 2019).

IPT students must have certain tools and abilities to excel in the digital world. Deductively speaking, IPT students need the following resources: access to computers, the internet, and digital technology and tools; international IT expertise; new and cutting-edge digital capabilities; and access to information and digital literacy instruction offered by academic libraries. In order for students to advance their digital literacy, they also require access to online coding classes. IPT students, on the other hand, must master a variety of abilities to excel in the digital age, including digital literacy abilities like analytical thinking, the development of multimedia content, problem-solving, and information extraction (Abrosimova, G.A., 2020)

Additionally, they must learn problem-solving techniques, technical and professional abilities, including ICT expertise, as well as community building, time management, self-regulation, engagement, and help-seeking tactics (Cathy L. Green, 2020). In order to fulfil the demands of the Fourth Industrial Revolution, students also need to strengthen their cognitive, social, interpersonal, and technical abilities. In order for IPT students to flourish in the digital age, they must have access to the required tools and acquire a certain set of abilities (Florence and Kui Xie, 2022).

3.2.3 Research Strategy - Survey

The survey research strategy employed in this study adopts an Onion Model to comprehensively explore the multifaceted aspects of resources and skills required by IPT (Information Processing Technology) students in the context of digitalization. Inspired by the Onion Model proposed by Saunders et al. (2009), this research employs a layered approach to peel back the complexities of the research topic. The outer layers of the onion involve the administration of a structured survey, distributed to a representative sample of IPT students, aimed at capturing quantitative data on resource availability and skills proficiency.

The subsequent inner layers involve follow-up interviews with a subset of participants, allowing for a deeper exploration of their experiences and perceptions. This multilayered approach aligns with the study's goal of obtaining a holistic understanding of the challenges and opportunities associated with digitalization in IPT education. The application of the Onion Model facilitates a structured and systematic investigation, ensuring a comprehensive analysis of the diverse dimensions inherent in the research topic.

3.2.4 Methodological Choice - Quantitative Method

The mono method, mixed method, and multi-method are the options listed in the research onion. The mono-method calls for using just one type of research methodology. The use of two or more research methods was required for the subsequent mixed-methods approach, which typically refers to the application of both qualitative and quantitative methodologies. A larger variety of methods are used in the multi-method approach (Stainton, 2019).

Refer back to the Research Questions and Research Objectives, researcher is using a quantitave approach to answer them. Quantitative

method was chosen in order to complete this research project report because of the anwers and data themselves can be obtained from the sample. Researcher intended to do a surveys, questionnaire and observations to get the data from the sample (Fleetwood, D., 2023). All the Independent Variables (IV) and Dependent Variables (DV) will be asked throughout the surveys, questionnaire and observations. It is to determine and examine whether the IV and DV can be proven or else (Fleetwood, D., 2023).

3.2.5 Time Horizon - Cross-sectional

The project's intended completion period is referred to as the Time Horizon. Cross-sectional and longitudinal time horizons are the two categories of time horizons identified by the research onion. When a predetermined period of time is set aside for data collection, that is when the cross-sectional time horizon occurs. The repeated gathering of data over a long period of time is referred to as a longitudinal time horizon (Stainton, 2019).

The resources and abilities needed by IPT students to embrace digitalization can be examined over a cross-sectional. Researchers can track the impact and link them to factors that might explain why the causess occur by using cross-sectional research designs, which follow the same sample at a specific time (Sacred Heart University Library, 2020). Using cross-sectional research designs, it is possible to identify patterns of change and determine the strength and direction of causal relationships USC Libraries,2018). As a result, a cross-sectional time horizon can be used to examine how the resources and skills needed by IPT students to adapt digitalization.

The study can also chart the evolution of problem-solving abilities, technical and professional skills, including ICT-specific skills. The study's findings can be statistically analysed to determine the most crucial tools and abilities IPT students will need as they progress towards digitalization. The creation of curricula and digital learning programmes that are adapted to the

evolving needs of IPT students can be guided by the information provided here.

3.2.6 Techniques and Procedures

Techniques and procedures make up the research onion's final layer. In this section, the researcher should clearly state how and why the research is being conducted. This can be a reference to either primary data (information gathered directly for the research project) or secondary data (information gathered by someone else and later published) (Stainton, 2019).

3.2.7 Data Collection

The Data Collection Chapter serves as a pivotal component of this final year project, outlining the systematic approach employed to gather relevant information in line with the research objectives. The data collection process adhered to ethical considerations, ensuring participant confidentiality and informed consent. Additionally, rigorous measures were implemented to enhance data reliability and validity.

3.2.7.1 Primary data

Primary data is information gathered straight by a researcher through an initial source for the purpose of doing research. It is unprocessed information which has not been analysed or understood by anybody. The researcher generates primary data by conducting surveys, interviews, experiments, and so forth. (Glen, 2022)

3.2.7.2 Secondary Data

Secondary data is information which has already been acquired for another reason but may be utilised for an upcoming study effort. It is used information that may be obtained from a variety of resources include the the web, libraries, and databases. Secondary data can be obtained from a third party, such as the researcher who gathered data for a specific study and made it accessible for use by another researcher. (Formplus Blog, 2020)

3.2.7.3 Sampling Design

The technique of identifying an appropriately representative set, or sample, among a larger group of people for research purposes is referred to as sampling design. The sample design is an important phase in research since it influences the precision and dependability of the data. Clarifying the kind of universe, selecting on the unit of sampling, selecting the sampling technique, defining the sample's size, and carrying out the sampling plan are all phases in sample design. (MBA, 2012)

3.2.7.4 Location of Reseacrh

As the goal and scope of this study required researchers to obtain input from IPT students, this research was conducted at universities in Malaysia. The data will be gathered by the researcher using surveys, questionnaires, or interviews.

3.2.7.5 Sample Size

After calculating the Krejcie and Morgan table, the researcher will need to collect comments and data from 384 respondents. The figures

(168831) are found in the Malaysian Youth Data Bank System (data of 2021).

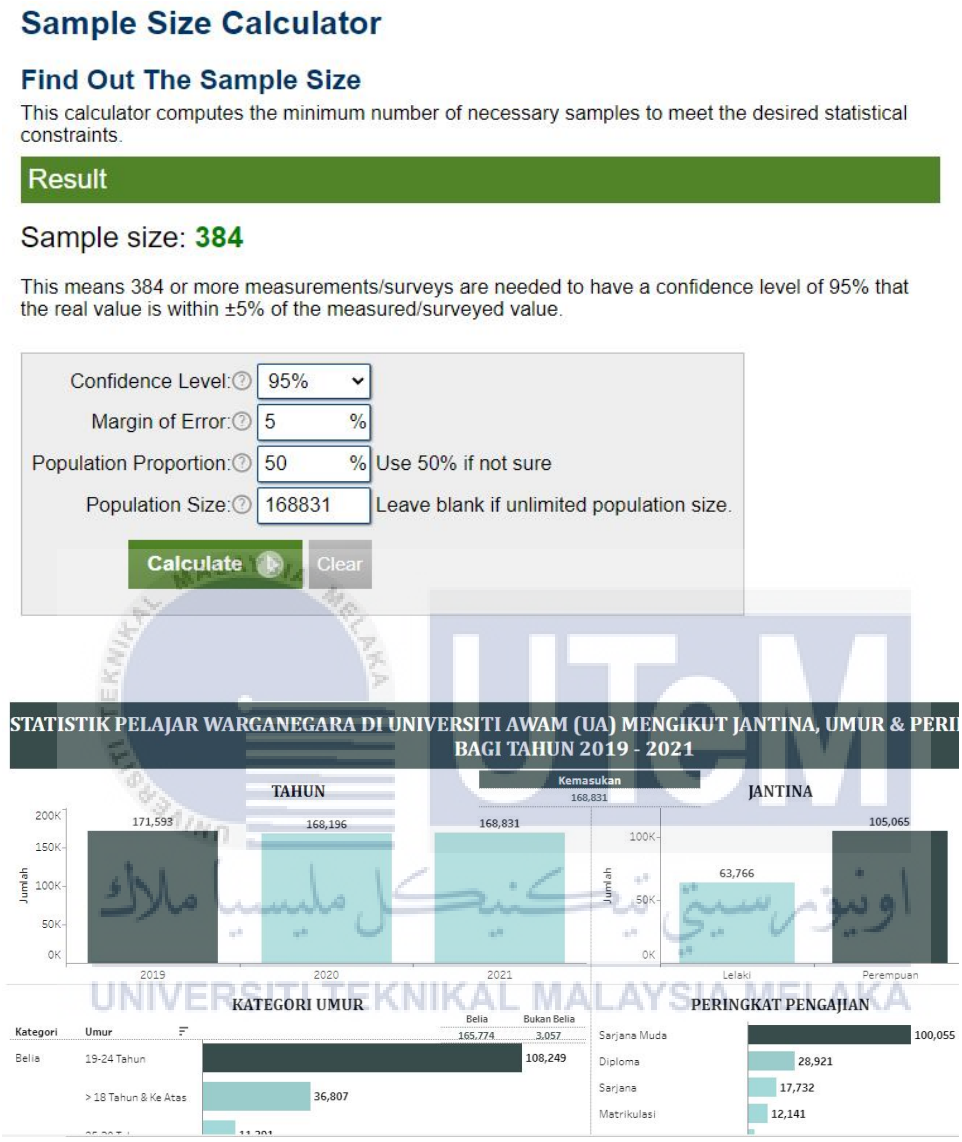

Figure 3.2.7.5 : Sample Size

3.2.7.6 Non Probability Sampling

Non-probability sampling is a sampling approach in which samples are chosen based on subjective judgement rather than random selection. It is a less strict strategy that mainly relies on the researchers' experience. Non-probability sampling is employed when the population's parameters are

unknown or cannot be identified individually. Simple sampling, sampling by quota, selection by oneself (volunteer) sampling, snow ball sampling, and purposeful (judgmental) sampling are all examples of non-probability sampling. (Fleetwood, 2018)

3.2.7.7 Purposive Sampling

Purposive sampling is a non-probability sampling approach in which samples are chosen based on specific features or attributes related to the study subject. Purposive sampling involves the researcher "on purpose" selecting subjects based on their knowledge and judgement. Purposive sampling is also known as selective, judgemental, or subjective sampling. (Frost, 2022)

3.2.8 Data Analysis

The Data Analysis Chapter serves as the analytical core of this final year project, where the collected information undergoes rigorous examination to derive meaningful insights and draw conclusions. This chapter unfolds the intricacies of the analytical methodologies employed, guiding the reader through the systematic process of transforming raw data into valuable knowledge.

3.2.8.1 Descriptive Analysis

Descriptive analysis, often known as descriptive data analysis, is a statistical approach for summarising and describing the key characteristics of a dataset. It refers to the process of organising, summarising, and presenting information in an understandable manner. Descriptive analysis is utilised to

generate a clear and simple overview of the data so that patterns, trends, and correlations may be identified. (Simplilearn, 2021)

3.2.8.2 Statistical Package for the Social Sciences (SPSS)

SPSS (Statistical Package for the Social Sciences) is a statistical data analysis software tool. It was created in 1968 by SPSS Inc. and was later purchased by IBM in 2009. SPSS is widely used in research across healthcare, marketing, and education. It offers analysis of data for description and bivariate statistics, numerical result forecasts, and group identification predictions. Data translation, charting, and direct marketing are all features of the programme. (Techtarget Contributor, 2018)

3.2.8.3 Correlation Analysis

Correlation analysis is a statistical approach for calculating the correlation of two variables by measuring the strength of their linear relationship. It is used to determine whether or not there is a link between any two variables/datasets and the strength of that association. Correlation analysis is a multivariate study that determines the strength of connection and the direction of the link between two variables. The correlation coefficient, which can vary from -1 to 1, is a statistical indicator of the magnitude of the linear connection between two variables. A correlation coefficient of -1 denotes a complete negative, or inverse, correlation, in which values in one series rise while those in the other fall, and vice versa. A coefficient of one indicates that there is a complete positive correlation, or a clear link. Correlation analysis is used for identifying the relationship, patterns, noteworthy relationships, and patterns amongst two variables or datasets using quantitative data acquired through research methods such as surveys and live polls. Even in the insights sector, correlation analysis is routinely misinterpreted and overused. (The BMJ, 2019)

Correlation Coefficient Value, (r)	Direction and Linear Strength of Correlation
-1	Perfectly Negative
-0.8	Strongly Negative
-0.5	Moderately Negative
-0.2	Weakly Negative
0	No Association
0.2	Weakly Positive
0.5	Moderately Positive
0.8	Strongly Positive
1	Perfectly Positive

Table 3.2.8.3 : Correlation Table

3.2.8.4 Reliability

Reliability Cronbach's Alpha is a statistical approach for determining the internal reliability or consistency of a group of survey questions. Lee Cronbach invented it in 1951, and it is referred to as Cronbach's Alpha coefficient. Cronbach's Alpha is a method of evaluating reliability that compares the proportion of shared variation, or covariance analysis, among the items that comprise a tool to the amount of total variance. It is a measure of the strength of the link between items in a scale or test and is used to investigate the accuracy of multiple-question Likert scale surveys. (Collins, 2007)

Cronbach Alpha Coefficient	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionnable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Table 3.2.8.4 : Cronbach Alpha Coefficient

3.3 Constructs Measurements

Constructs	Original Measurement Items	Sources of Measurement	Measurement Items Adopted and Adapted for this Study
Digital Learning Resources	- Digital learning resources are used for education in many ways and implemented in different forms. - The goal of the digital resources is to support students' education.	Diaz, A. (2021)	- Digital learning tools are used and implemented in a variety of ways in education. -The purpose of the digital tools is to help students with their education.
Access information and resources	- Technology provides students with instant access to a vast amount of information and resources	(Sutherland, 2019)	- Technology gives students rapid access to a wealth of information and resources.
Technical and Digital Skills	- As part of their university courses, students earned technical skills for future professions. - Workers will need to adjust as machines become more capable.	(El Maadawi, 2019).	- Students gained technical skills for future jobs as part of their university education. - Workers will need to adapt as machines improve in capability.
Critical Thinking	- Levels of societal growth include independent thinking and the ability to access knowledge critically.	(Meirbekov et al., 2022)	Independent thinking and the ability to access knowledge critically are examples of societal growth levels.

Table 3.3 : Construct Measurement

3.4 Draft Questionnaires

Category	Question
Personal Information	Name
	Sex/Gender
	Age
	Which University
Digital Learning Resources	Opinion of what resources needed
	Listing down the resources and skills
Access to information and resources	Opinion of how students can gain the resources
	Listing the goods from accessing the digital resources
	Does this method work?
Technical and Digital Skills	Opinion of the skills, is it important?
	Listing other skills
Critical Thinking	Opinion of how this skill helps student adapt the digitalizatin
	Listing on how this skills helps

Table 3.4 : Draft Questionnaire

3.5 Conclusion

This chapter has discussed the research methodology used to achieve the research objectives by responding to the research questions. Using the Onion Model to frame out the sampling data approach and help researcher create a better organised methodology. This chapter also included the draft of questionnaire to be asked to the sampling.

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1 Introduction

In this chapter, the researcher will run a statistical test to determine whether the findings of the survey are having a significant relationship between Independent Variables and Dependent Variables as mentioned in the Chapter 3. Researcher has distributed a questionnaire through google form to the targeted respondents which are university students as many as 384 respondents. Before proceeding with the data testing, researcher will conduct a pilot test beforehand to see whether the questionnaire is accurate and valid or not. This data statistical analyzing is runs using the Statistical Package for Social Science (SPSS) version 27.

4.2 Pilot Test

A pilot test was conducted to examine and determine the validity of the questionnaire whether the respondent get a grasp and understood the questions or otherwise. The pilot test result will be determined if it is reliable or not by runs it with SPSS and the data will be referred to Cronbach's Alpha to determine whether it is decisive.

The purpose of this pilot test is to examine and eliminate respondents' misunderstanding about how to answer the survey and this might cause in inaccuracy of research findings. Researcher has selected 30 respondents out of 384 total respondents to test the reliability of the

questionnaire. It has been verified that all of the items in the table below are valid and reliable.

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.973	.974	35

Table 4.2 : Reliability Test for 30 Respondents

(Source : Data Analysis of SPSS)

To know whether the result is reliable or not, the Cronbach's Alpha is more than 0.7. It is shown in the table above, the finding for this pilot test of Cronbach's Alpha is 0.973 which is exceeding the 0.7, minimum figure to conclude if the questionnaire is decisive. Therefore, the questionnaire can still be distributed to get the target respondents.

4.3 Descriptive Analysis

Descriptive analysis, considered a preliminary examination, involves gathering data through the use of a questionnaire. This study elucidates the presentation of data and the functioning of sample data. Utilizing tables,

diagrams, and summaries, the descriptive analysis technique is employed to showcase, depict, and elucidate a collection of data.

The first component, Section A, has demographic questions about the respondents. Followed by Section B, a independent variable that focuses on 'Skills and Resources Needed To Adapt Digitalization'. Furthermore, Section C as the last section, which was an dependent variable that consists of the 'Digitalization Adaption Among Students'.

4.3.1 Respondents Demographic Profile

Respondent's personal background which includes gender, age, education level, type and name of university and what type of digital content do you use the most. Frequency for all questions in the score value to be obtained on the group demographics indicates a demographic analysis of the data.

4.3.2 Gender

1. Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	202	52.6	52.6	52.6
	Female	182	47.4	47.4	100.0
	Total	384	100.0	100.0	

Table 4.3.2 : Gender of Respondents

(Source : Data Analysis of SPSS)

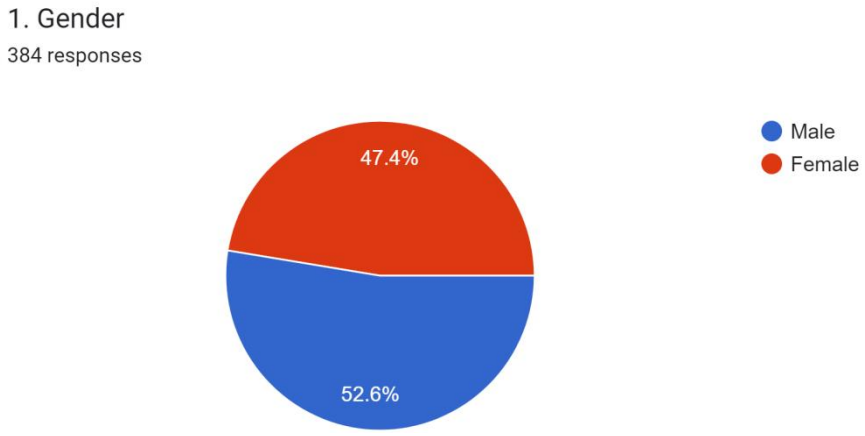

Figure 4.3.2 : Gender of Respondents

(Source : Google Form Summary)

According to table 4.2 which shows about the gender of respondent, researcher can conclude that rom the total of 384 respondents, there are 202 male respondents represent as 52.6% while female respondents are 182 in total (47.4%).

4.3.3 Age

2. Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-22 years old	171	44.5	44.5	44.5
	23-27 years old	154	40.1	40.1	84.6
	28-32 years old	41	10.7	10.7	95.3
	33 and above	18	4.7	4.7	100.0
	Total	384	100.0	100.0	

Table 4.3.3 : Age of Respondents

(Source : Data Analysis of SPSS)

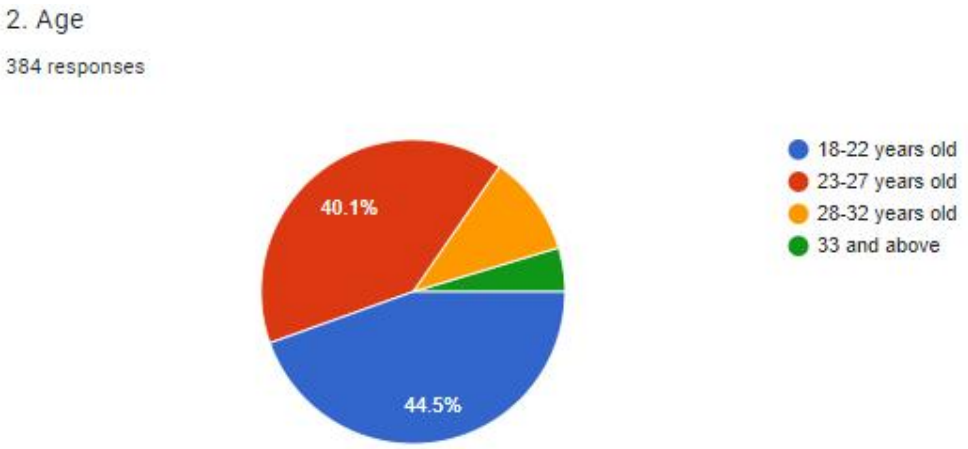

Figure 4.3.3 : Age of Respondents

(Source : Google Form Summary)

According to table 4.3 which shows about the age of respondent, researcher can conclude that from the total of 384 respondents, there are 171 respondent that aged from 18-22 years old with a percentage of 44.5% which is the dominating age group. Followed by the age group of 23-27 years old with 154 respondents (40.1%). For the age group of 28-32 years old, the respondents that participate are as many as 41 respondent with percentage of 10.7%. The least group of age that showed in the table is the 33 and above which represent with 4.7%, 18 respondents.

4.3.4 Education Level

3. EducationLevel

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SPM	1	.3	.3	.3
	STPM	4	1.0	1.0	1.3
	Diploma	58	15.1	15.1	16.4
	Bachelor Degree	267	69.5	69.5	85.9
	Master	54	14.1	14.1	100.0
	Total	384	100.0	100.0	

Table 4.3.4 : Education Level of Respondents

(Source : Data Analysis of SPSS)

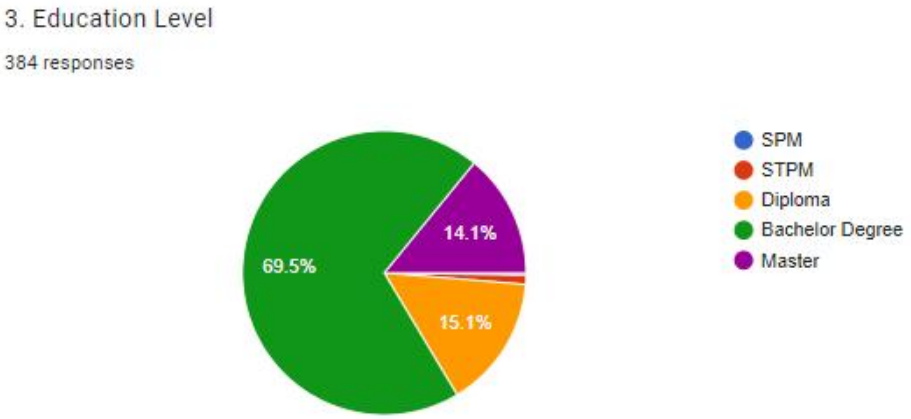

Figure 4.3.4 : Education Level of Respondents

(Source : Google Form Summary)

According to table 4.4 which shows about the education level of respondent, researcher can conclude that from the total of 384 respondents, the dominating group is 267 respondents which are from Bachelor Degree with the percentage of 69.5%. Followed by the 58 respondents which are from Diploma group (15.1%). Respondents from Master with the frequencies of 54 represent with the 14.1%. Out of 384 respondents, there are 1 respondents from SPM and 4 respondents from STPM with a percentage of 0.3% and 1.0% respectively.

4.3.5 Type of University

4. TypeofUniversity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Public University	328	85.4	85.4	85.4
	Private University	56	14.6	14.6	100.0
	Total	384	100.0	100.0	

Table 4.3.5 : Respondents' Type of University

(Source : Data Analysis of SPSS)

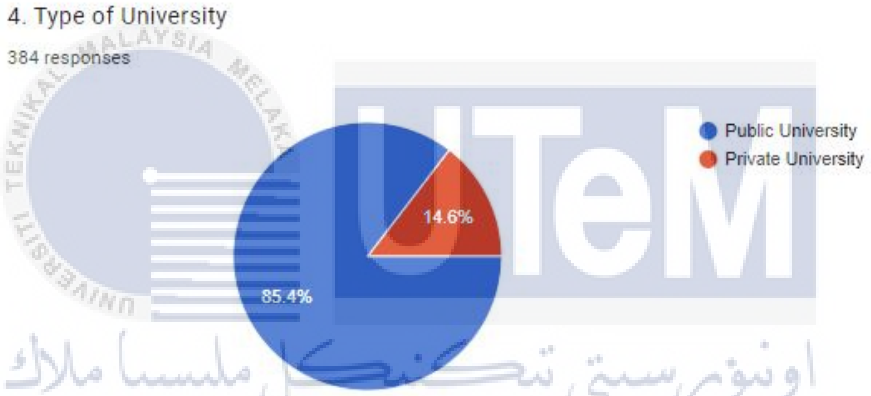

Figure 4.3.5 : Respondents' Type of University

(Source : Google Form Summary)

According to table 4.5 which shows about the respondents' type of university, researcher can conclude that from the total of 384 respondents, there are 328 respondents from public university and 56 respondents from private university with the percentage of 85.4% and 14.6% respectively.

4.3.6 Name of University

5. NameofUniversity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	UTeM	95	24.7	24.7	24.7
	UiTm	26	6.8	6.8	31.5
	UTM	1	.3	.3	31.8
	UKM	54	14.1	14.1	45.8
	UM	23	6.0	6.0	51.8
	UPM	13	3.4	3.4	55.2
	USM	20	5.2	5.2	60.4
	UIAM	32	8.3	8.3	68.8
	USIM	40	10.4	10.4	79.2
	UMK	1	.3	.3	79.4
	UUM	18	4.7	4.7	84.1
	MMU	20	5.2	5.2	89.3
	UniRazak	21	5.5	5.5	94.8
	UniKL	14	3.6	3.6	98.4
	Other	6	1.6	1.6	100.0
	Total	384	100.0	100.0	

Table 4.3.6 : Respondents' Name of University

(Source : Data Analysis of SPSS)

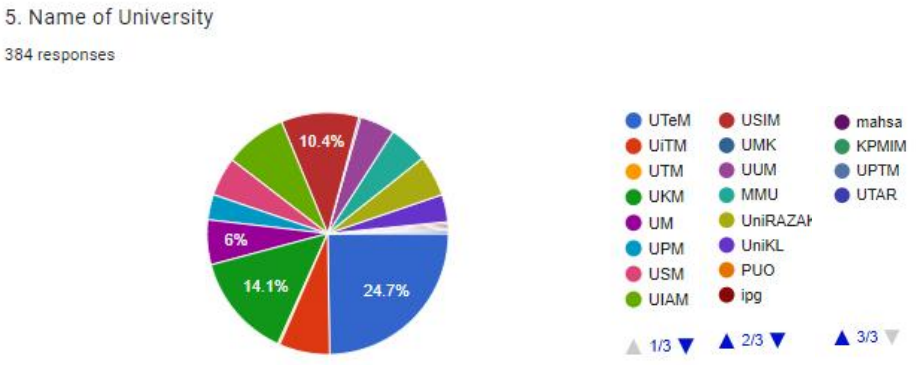

Figure 4.3.6 :Respondents' Name of University

(Source : Google Form Summary)

According to table 4.6 which shows about the respondents' name of university, researcher can conclude that from the total of 384 respondents, the dominating university that participate in the questionnaire is from UTeM with the total of 95 respondent (24.7%). Followed by UKM with 54 respondent and USIM with 40 respondent, with the percentage of 14.1% and 10.4% respectively. UIAM with the respondents of 32 (8.3%). Next are UiTM with 26 respondents (6.8%), UM with 23 respondents (6.0%) and UniRazak with 21 respondents (5.5%). USM and MMU shared the same amount of respondents which are 20 at the percentage of 5.2% each. After that are, UUM with the respondents of 18 (4.7%), UniKL with the respondents of 14 (3.6%), UPM with the respondents of 13 (3.4%) and Other with the respondents of 6 (1.6%). Lastly, UTM and UMK with each having only 1 respondents at the percentage of 0.3% each.

4.3.7 What type of digital content do you use the most?

6. Whattypeofdigitalcontentdoyouusethemost

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Application	107	27.9	27.9	27.9
	Ebook	46	12.0	12.0	39.8
	Infographic	21	5.5	5.5	45.3
	Software	69	18.0	18.0	63.3
	Video	76	19.8	19.8	83.1
	Website	65	16.9	16.9	100.0
	Total	384	100.0	100.0	

Table 4.3.7 : Type of Digital Content Respondents Use the Most

(Source : Data Analysis of SPSS)

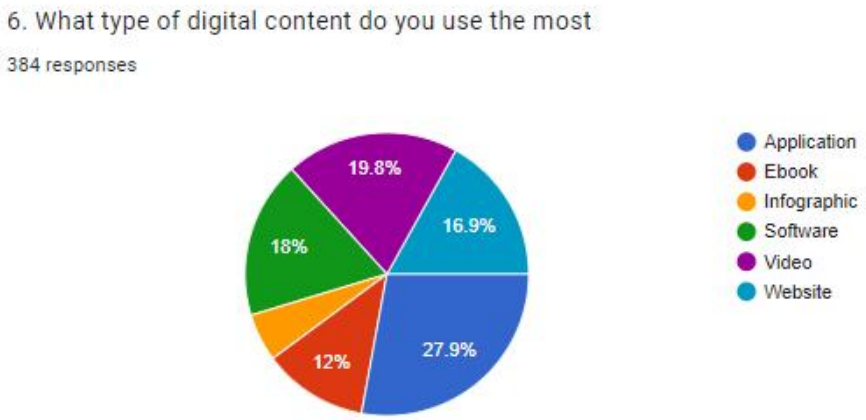

Figure 4.3.7 : Type of Digital Content Respondents Use the Most

(Source : Google Form Summary)

According to table 4.7 which shows about the type of digital content respondents use the most, researcher can conclude that from the total of 384 respondents, there are 107 respondent at the percentage of 27.9% use Application as digital content. Followed by Video with 76 respondent with the percentage of 19.8%. Software and Website each are having 69 (18%) and 65 (16.9%) respectively . Ebook with 46 respondent at the percentage of 12%. Lastly is Infographic with 21 frequencies and percentage of 5.5%.

4.4 Mean Score Analysis

Table 5. Interpretation of the mean score.

Mean Score	Interpretation
1.00–1.80	Very low
1.81–2.60	Low
2.61–3.20	Medium
3.21–4.20	High
4.21–5.00	Very high

Table 4.4 : Interpretation of mean score analysis

Source: [Azlin Norhaini Mansor et al, 2021]

As an outcome, every variable data, such as digitalization adaption among students, will be shown as a dependent variable. The independent variables for the study were digital learning resources(applications, software, programs and websites), access to information and resources, technical and digital skills and critical thinking. This variable data will be shown using the minimum, maximum, mean, and standard deviation. The researcher used a five-point Likert Scale to assess the 35 items derived from the questionnaire. The mean and score values are interpreted above.

4.4.1 Dependent Variable : Digitalization Adaption Among Students

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
I find that by digitalization adoption can help me develop useful skills (critcal thinking, technical and digital skills) .	384	1	5	4.54	.576
I am sure that if I adopt digitalization, it will be a benefits for me in my studies and/or future.	384	2	5	4.54	.549
I believe by adopting digitalization, it will help me in finding and securing job in the future because todays digital things are essential.	384	2	5	4.34	.530
I find that digital tools can help me stay agile, allowing me to innovate new techniques and skills about digital.	384	2	5	4.48	.564
I believe that by adopting digitalization, it will help me to stay motivate by making the learning process more enjoyable due to new technologies features	384	2	5	4.44	.556
I could improve my communication skills by sharing ideas with others coursemate by using digital knowledge I know.	384	2	5	4.40	.561
I am sure by digital adoption, it can enhance my learning experience and provide me in-depth knowledge by using resources like e-books, online libraries and educational videos.	384	2	5	4.43	.630
Valid N (listwise)	384				

Table 4.4.1 : Digitalization Adaption Among Students

(Source : Data Analysis of SPSS)

Based on the responses of 384 of university students, the dependent variable of digitalization adaption among students was shown in the Table 4.9 above. With a mean of 4.54 and standard deviation of 0.576, respondents agree that "*I find that by digitalization adoption can help me develop useful skills (critcal thinking, technical and digital skills)*". With a mean of 4.54 and standard deviation of 0.549, respondents agree that "*I am sure that if I adopt digitalization, it will be a benefits for me in my studies and/or future*". With a mean of 4.34 and standard deviation of 0.530, respondents agree that "*I believe by adopting digitalization, it will help me in finding and securing job in the future because todays digital things are essential*". With a mean of 4.48 and standard deviation of 0.554, respondents agree that "*I find that digital tools can help me stay agile, allowing me to innovate new techniques and skills about digital*". With a mean of 4.44 and standard deviation of 0.556, respondents agree that "*I believe that by adopting digitalization, it will help me to stay motivate by making the learning process more enjoyable due to new technologies features*". With a mean of 4.40 and standard deviation of 0.561, respondents agree that "*I could improve my communication skills by sharing ideas with others coursemate by using digital knowledge I know*". Lastly, with a mean of 4.43 and standard deviation of 0.630, respondents agree that "*I am sure by digital adoption, it can enhance my learning experience and provide me in-depth knowledge by using resources like e-books, online libraries and educational videos*".

4.4.2.0 Independent Variable : Digital Learning Resources (applications, software, programs and websites)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
I believe that using digital tools and technologies (Adobe, Filmora etc.) in my IPT studies is a good idea.	384	1	5	4.46	.563
I find that (Adobe, Excel, Scopus etc.) these resources can improve my digital ability and knowledge.	384	1	5	4.64	.537
I believe that digitalization can improve the quality of my IPT education (Emerald, Scopus, ScienceDirect etc.) .	384	2	5	4.56	.547
I need to learn about digital tools and technologies to gain knowledge and experience (Photoshop etc.)	384	1	5	4.46	.539
If I want to gain a knowledge about digital learning, I have to know where to learn it from (Adobe, Excel etc.) .	384	1	5	4.58	.572
I think that digitalization is necessary for the future of IPT and also for students.	384	1	5	4.51	.550
I believe that resources of digitalization (applications, software, programs and website) can facilitate my adoption of digital.	384	1	5	4.65	.559
Valid N (listwise)	384				

Table 4.4.2.0 : Digital Learning Resources (applications, software, programs and websites)

(Source : Data Analysis of SPSS)

Based on the responses of 384 of university students, the independent variable of digital learning resources (applications, software, programs and website) was shown in the Table 4.10 above. With a mean of 4.46 and standard deviation of 0.563, respondents agree that "*I believe that using digital tools and technologies (Adobe, Filmora etc.) in my IPT studies is a good idea*". With a mean of 4.64 and standard deviation of 0.537,

respondents agree that "*I find that (Adobe, Excel, Scopus etc.) these resources can improve my digital ability and knowledge*". with a mean of 4.56 and standard deviation of 0.547, respondents agree that "*I believe that digitalization can improve the quality of my IPT education (Emerald, Scopus, ScienceDirect etc.)*". With a mean of 4.46 and standard deviation of 0.539, respondents agree that "*I need to learn about digital tools and technologies to gain knowledge and experience (Photoshop etc.)*". With a mean of 4.58 and standard deviation of 0.572, respondents agree that "*If I want to gain a knowledge about digital learning, I have to know where to learn it from (Adobe, Excel etc.)*". With a mean of 4.51 and standard deviation of 0.550, respondents agree that "*I think that digitalization is necessary for the future of IPT and also for students*". Lastly, with a mean of 4.65 and standard deviation of 0.559, respondents agree that "*I believe that resources of digitalization (applications, software, programs and website) can facilitate my adoption of digital".*

4.4.2.1 Independent Variable : Access to Information and Resources

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
I find that an access to information and resources about digital is necessary (websites, machines etc.) .	384	2	5	4.34	.559
I am able to adopt digitalization easily with the access (internet speed, AI etc.) I get to the information and resources of digital.	384	1	5	4.46	.572
It is easy for me to learn and adopt digitalization for my studies and/or future if I have the access (online libraries and databases) to digital's information and resources.	384	1	5	4.46	.594

I can adopting digitalization by using access that I can get from other sources (videos, images, books etc.) .	384	1	5	4.47	.564
I find that I can increase my digital knowledge with the access available like Facebook, Youtube, CNN etc.	384	2	5	4.65	.534
I need to have a proper access to information and resources of digital so that I can easier adopting it	384	2	5	4.56	.561
I am sure that the information and resources that I access can help me adopting digitalization in IPT studies and/or future.	384	2	5	4.38	.561
Valid N (listwise)	384				

Table 4.4.2.1 : Access to Information and Resources

(Source : Data Analysis of SPSS)

Based on the responses of 384 of university students, the independent variable of access to information and resources was shown in the Table 4.11 above. With a mean of 4.34 and standard deviation of 0.559, respondents agree that "*I find that an access to information and resources about digital is necessary (websites, machines etc.)*". WIth a mean of 4.46 and standard deviation of 0.572, respondent agree that "*I am able to adopt digitalization easily with the access (internet speed, AI etc.) I get to the information and resources of digital*". With a mean of 4.46 and standard deviation of 0.594, respondents agree that "*It is easy for me to learn and adopt digitalization for my studies and/or future if I have the access (online libraries and databases) to digital's information and resources*". With a mean of 4.47 and standard deviation of 0.564, respondent agree that "*I can adopting digitalization by using access that I can get from other sources (videos, images, books etc.)*". With a mean of 4.65 and standard deviation of 0.534, respondents agree that "*I find that I can increase my digital knowledge with the access available like Facebook, Youtube, CNN etc*". With a mean of 4.56 and standard deviation of 0.561, respondents agree that "*I need to have a*

proper access to information and resources of digital so that I can easier adopting it". Lastly, with a mean of 4.38 and standard deviation of 0.561, respondents agree that "*I am sure that the information and resources that I access can help me adopting digitalization in IPT studies and/or future*".

4.4.2.2 Independent Variable : Technical and Digital Skills

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Other than resources of digital, I believe that skills of digital also a crucial part of digital adoption.	384	2	5	4.55	.548
I feel confident in my ability to use digital tools and technologies for my studies and/or future (editing, programming etc.) .	384	1	5	4.66	.587
I think that technical skills (management, researching, writing etc.) are essential for adopting digitalization.	384	2	5	4.44	.561
I find that technical skill in digitalization will help me understand digital more deeply along with the practical.	384	2	5	4.45	.576
I am able to adopt digitalization with technical and digital skills I gained (management, editing etc.) .	384	2	5	4.41	.580
I believe that the skills will help me improving my work process and also efficiency of work operations.	384	2	5	4.32	.518
I am sure that technical and digital skills that I adopt is giving me benefits.	384	2	5	4.52	.559
Valid N (listwise)	384				

Table 4.4.2.2 : Technical and Digital Skills

(Source : Data Analysis of SPSS)

Based on the responses of 384 of university students, the independent variable of technical and digital skills was shown in the Table 4.12 above. With a mean of 4.55 and standard deviation of 0.548, respondents agree that "*Other than resources of digital, I believe that skills of digital also a crucial part of digital adoption*". With a mean of 4.66 and standard deviation of 0.587, respondents agree that "*I feel confident in my ability to use digital tools and technologies for my studies and/or future (editing, programming etc.)*". With a mean of 4.44 and standard deviation of 0.561, respondents agree that "*I think that technical skills (management, researching, writing etc.) are essential for adopting digitalization.*". With a mean of 4.45 and standard deviation of 0.576, respondents agree that "*I find that technical skill in digitalization will help me understand digital more deeply along with the practical*". With a mean of 4.41 and standard deviation of 0.580, respondents agree that "*I am able to adopt digitalization with technical and digital skills I gained (management, editing etc.)*". With a mean of 4.32 and standard deviation of 0.518, respondents agree that "*I believe that the skills will help me improving my work process and also efficiency of work operations*". Lastly, with a mean of 4.52 and standard deviation of 0.599, respondents agree that "*I am sure that technical and digital skills that I adopt is giving me benefit*".

4.4.2.3 Independent Variable : Critical Thinking

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Developing critical thinking skill is essential for adopting digitalization for me.	384	2	5	4.36	.536
I find that for learning and adopting digitalization, I need to have a critical thinking skills.	384	2	5	4.38	.561
I believe that digitalization can be hard to adopt so that critical thinking can help me to adopt it easier.	384	1	5	4.59	.593

I believe that critical thinking skills can help me develop problem-solving abilitiy about new technologies to solve problems and improve work process	384	1	5	4.62	.578
I find that digitalization requires me to think critically about how to use technologies effectively.	384	2	5	4.49	.591
I am sure that critical thinking involes generating new approaches and ideas about digitalization to innovate and develop new products and services.	384	2	5	4.47	.573
I find that critical thinking skills can help me communicating ideas and information effectively to others about new technologies and digitalization.	384	2	5	4.53	.568
Valid N (listwise)	384				

Table 4.4.2.3 : Critical Thinking

Based on the responses of 384 of university students, the independent variable of critical thinking was shown in the Table 4.13 above.With a mean of 4.36 and standard deviation of 0.536, respondents agree that "*Developing critical thinking skill is essential for adopting digitalization for me*". With a mean of 4.38 and standard deviation of 0.561, respondents agree that "*I find that for learning and adopting digitalization, I need to have a critical thinking skills*". With a mean of 4.59 and standard deviation of 0.593, respondents agree that "*I believe that digitalization can be hard to adopt so that critical thinking can help me to adopt it easier*". With a mean of 4.62 and standard deviation of 0.578, respondents agree that "*I believe that critical thinking skills can help me develop problem-solving abilitiy about new technologies to solve problems and improve work process*". With a mean of 4.49 and standard deviation of 0.591, respondents agree that "*I find that digitalization requires me to think critically about how to use technologies effectively*". With a mean of 4.47 and standard deviation of 0.573, respondents agree "*I am sure that critical thinking involes generating*

new approaches and ideas about digitalization to innovate and develop new products and services". Lastly, with a mean of 4.53 and standard deviation of 0.568, respondents agree that "*I find that critical thinking skills can help me communicating ideas and information effectively to others about new technologies and digitalization*".

4.5 Reliability Analysis

When it came to questionnaire consistency, observation, and testing, the reliability test was similar to any other technique of measurement. There should be no bias in the analysis, which may lead respondents to pick any of the possible responses. Cronbach's Alpha may be used to determine the reliability of a test instrument. The indicator for reliability are as follow :

Cronbach Alpha Coefficient	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionnable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Table 4.5 : Cronbach's Alpha Coefficient

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	384	100.0
	Excluded[a]	0	.0
	Total	384	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.938	.938	35

Table 4.5.1 : Reliability Test for 384 Respondents

(Source : Data Analysis of SPSS)

According to the data in the table above, the alpha value of the questionnaire is 0.938. The amount of alpha value that is acceptable is 0.70 and above. As a result, given the Cronbach's Alpha was more than 0.90, it is possible to assume that all items in the questionnaire had very good reliability. Furthermore, verifying the validity and reliability of a questionnaire's results is a proof that the information included in the questionnaire is valid and reliable.

4.6 Pearson Correlation Analysis

Pearson correlation analysis is a statistical method used to measure the linear correlation between two sets of data. It is represented by the Pearson correlation coefficient (PCC), which is a normalized measurement of the covariance between two variables, always having a value between -1

and 1. A PCC of 1 indicates a perfect positive correlation, while a PCC of -1 indicates a perfect negative correlation. A PCC of 0 indicates no correlation between the two variables. The indicator for correlation are as follows :

Strength of Correlation	Range of Absolute Correlation Coefficient, (*r*)
Very Strong	0.8 - 1
Strong	0.6 - 0.79
Moderate	0.4 - 0.59
Weak	0.2 - 0.39
Very Weak	0 - 0.19

Table 4.6 : Strength of Correlation Coefficient

4.6.1 Correlation Between Independent Variable and Dependent Variable

Correlations

		DV	IV 1	IV 2	IV 3	IV 4
DV	Pearson Correlation	1	.535**	.644**	.237**	.246**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001
	N	384	384	384	384	384
IV 1	Pearson Correlation	.535**	1	.459**	.389**	.428**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001
	N	384	384	384	384	384
IV 2	Pearson Correlation	.644**	.459**	1	.355**	.429**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001
	N	384	384	384	384	384
IV 3	Pearson Correlation	.237**	.389**	.355**	1	.679**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001
	N	384	384	384	384	384
IV 4	Pearson Correlation	.246**	.428**	.429**	.679**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	
	N	384	384	384	384	384

**. Correlation is significant at the 0.01 level (2-tailed).

DV: Digitalization Adaption Among Students, IV1: Digital Learning Resources, IV2: Access To Information and Resources , IV3: Technical and Digital Skills , IV4: Critical Thinking

Table 4.6.1 : Pearson Correlation Coefficient Analysis

(Source : Data Analysis of SPSS)

First and foremost, Table 4.17 displayed the results of the correlation between independent variables such as digital learning resources, access to information and resources, technical and digital skills and critical thinking, and dependent variable which is digitalization adaption among students. In accordance with the results, it can be concluded that all of the independent variables are positively correlated with the dependent variable. Furthermore, findings from the research revealed that the correlation between access to information and resources and digitalization adaption among students had a strong positive correlation with $r = 0.644$, $N = 384$, $p<0.01$. Next, the correlation between digital learning resources and digitalization adaption among students had a moderate positive correlation with $r = 0.535$, $N = 384$, $p<0.01$. Then, the correlation between critical thinking and digitalization adaption among students had a moderate positive correlation with $r = 0.246$, $N = 384$, $p<0.01$. Lastly, the correlation between technical and digital skills and digitalization adaption among students had a moderate positive correlation with $r = 0.237$, $N = 384$, $p<0.01$.

4.7 Multiple Regression

Multiple regression analysis is a method for estimating a value based on two or more independent and dependent variables. Using multiple regression analysis, the researchers investigated the relationship between the independent variables which are digital learning resources, access to information and resources, technical and digital skills and critical thinking, and dependent variable which is digitalization adaption among students. As a result, the results of the multiple regression analysis are shown in the table below.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.708[a]	.501	.495	.409	.501	94.977	4	379	<.001

Table 4.7 : Regression Model

(Source : Data Analysis of SPSS)

Results of the model summary of multiple regression analysis generated by the SPSS programme were shown in the Table 4.18. According to the table, the multiple correlation coefficient (R) was 0.708, showing that there was a correlation between the independent and dependent variables in the research. The R square value was 0.501, suggesting that only 50.1% of the variation in digital learning resources, access to information and resources, technical and digital skills and critical thinking could be explained by the variable in digitalization adaption among students. Furthermore, when utilising regression prediction variables, the adjusted R square values of perfect positive 0.495 explained around 49.5% of the variance in digitalization adaption among students, according to the results.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	63.700	4	15.925	94.977	<.001[b]
	Residual	63.548	379	.168		
	Total	127.247	383			

Table 4.7.1 : Anova

(Source : Data Analysis of SPSS)

According to Table 4.19, the F-test result from this multiple regression analysis is 94.977, and the level of significance is 0.001 for this analysis. The p value of 0.001 was less than the maximum of 0.05 ($p<0.05$), indicating a significant variance. Because of this, a variety of regression models used to predict the resources and skills required by IPT students

towards digitalization. As a result, variables like digital learning resources, access to information and resources, technical and digital skills and critical thinking had a significant effect on digitalization adaption among students.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.788	.228		3.464	<.001	.341	1.236
	IV 1	.352	.044	.342	7.944	<.001	.265	.439
	IV 2	.588	.046	.544	12.736	<.001	.497	.678
	IV 3	.004	.049	.004	.074	.941	-.093	.100
	IV 4	-.136	.052	-.137	-2.623	.009	-.238	-.034

a. Dependent Variable: I find that by digitalization adoption can help me develop useful skills (critcal thinking, technical and digital skills

Table 4.7.2 : Coefficients

(Source : Data Analysis of SPSS)

According to Table 4.20, the beta value for IV 1 (digital learning resources) was 0.342, the beta value for IV 2 (access to information and resources) is 0.544, the beta value for IV 3 (technical and digital skills) was 0.004, and the beta value for IV 4 (critical thinking was -0.137). IV 2 had the highest beta, whereas IV 4 had the lowest beta, according to this statistic. The researcher noticed in the table that there were one independent variables with a negative sign, which suggests the presence of a variable that has an inverse relation with the digitalization adaption among students, according to the researcher. The value of the constant is 0.788. Thus, the researcher formed the following equation: Y = A + B*x*1 + B*x*2.

Where:

Y = Dependent Variable
A = Constant form coefficients table
x = Beta, B value
Bxl = digital learning resources
Bx2 = access to information and resources
Bx3 = technical and digital skills
Bx4 = critical thinking

Digitalization Adaption Among Students : 0.788 + 0.352 (digital learning resources) + 0.588 (access to information and resources) + 0.004 (technical and digital skills - 0.136 (critical thinking)

According to the mentioned linear equation, there is a positive correlation between all of the variables, which are digital learning resources, access to information and resources, technical and digital skills, and critical thinking, and digitalization adaption among students. However, one independent variables had significant values more than 0.05 and three variable had a value less than 0.05. According to table 4.20, digital learning resources had a significant value of 0.001, access of information and resources had significant value of 0.001, technical and digital skills had significant value of 0.941, and critical thinking had significant value of 0.009. This suggested that digital learning resources, access to information and resources, technical and digital skills, and critical thinking had a significant relationship with digitalization adaption among students.

4.8 Hypothesis Testing

Hypothesis 1 : Digital Learning Resources

H0 : There is no positive and no significant relationship between Digital Learning Resources and Digitalization Adaption Among Students

H1 : There is positive and significant relationship between Digital Learning Resources and Digitalization Adaption Among Students

Reject H0 if p is lower than 0.05,

Based on Table 4.20, the relevant value of digital learning resources was 0.001, which was below p-value of 0.05. H1 is thus accepted, digital learning resources has major impact in digitalization adaption among students.

Hypothesis 2 : Access to Information and Resources

H0 : There is no positive and no significant relationship between Access to

Information and Resources and Digitalization Adaption Among Students

H2 : There is positive and significant relationship between Access to Information and Resources and Digitalization Adaption Among Students

Reject H0 if p is lower than 0.05,

Based on Table 4.20, the relevant value of access to information and resources was 0.001, which was below p-value of 0.05. H2 is thus accepted, access to information and resources has major impact in digitalization adaption among students.

Hypothesis 3 : Technical and Digital Skills

H0 : There is no positive and no significant relationship between Technical and Digital Skills and Digitalization Adaption Among Students

H3 : There is positive and significant relationship between Technical and Digital Skills and Digitalization Adaption Among Students

Reject H0 if p is lower than 0.05,

Based on Table 4.20, the relevant value of technical and digital skills was 0.941, which was above p-value of 0.05. H3 is thus rejected, technical and digital skills has low impact in digitalization adaption among students.

Hypothesis 4 : Critical Thinking

H0 : There is no positive and no significant relationship between Critical Thinking and Digitalization Adaption Among Student

H4 : There is positive and significant relationship between Critical Thinking and Digitalization Adaption Among Student

Reject H0 if p is lower than 0.05,

Based on Table 4.20, the relevant value of critical thinking was 0.009, which was below p-value of 0.05. H4 is thus rejected, critical thinking has major impact in digitalization adaption among students.

Hypothesis	Result
Hypothesis 1	Accepted
Hypothesis 2	Accepted
Hypothesis 3	Rejected
Hypothesis 4	Accepted

Table 4.8 : Hypothesis Results

4.9 Conclusion

This chapter covered the results of a study. There are four sorts of tests that have been analysed in this section which was descriptive analysis, reliability analysis, Pearson correlation and multiple regression tests. SPSS version 27 was used to analyse the whole dataset. Using SPSS data, the researchers made a correlation between the independent and dependent variables and evaluated the validity of the hypothesis made in Chapter 2. In addition, the conclusion and suggestions were covered in Chapter 5.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The conclusions of these research will be summarised in Chapter 5 based on the analysis of data in Chapter 4 about the digitalization adaption among students. In this chapter, the researcher determined whether the research questions comply with the research objectives. This chapter also will decide whether to accept or reject the hypotheses in the research. Next, the researcher outlined the limitations of the study and presented them in the study, and last, researcher discussed significant implications and make recommendations based on findings.

5.2 Discussion on Research

This research main goal is to achieve its three objective which was developed in the beginning of this research guided with the research questions. In this part, researcher will unravel and answer whether the research achieve success or not. The objectives are as follows:

5.2.1 Research Objective 1 : To investigate the resources and skills required by IPT students towards digitalization.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
IV 1	384	1	5	4.65	.559
IV 2	384	2	5	4.65	.534
IV 3	384	1	5	4.66	.587
IV 4	384	1	5	4.62	.578
Valid N (listwise)	384				

Table 5.2.1 : Descriptive Statistics of Independent Variables

Based on the Table 5.1, it shows a high value of mean for the variables which are digital learning resources, access to information and resources, technical and digital skills, and critical thinking with very high mean values of 4.65, 4.65, 4.66 and 4.62 respectively. This value means that IPT students agreed that the variables gives an effect towards the adaption of digitalization.

5.2.2 Research Objective 2 : To analyse the effect of digital resources and skills towards IPT students' adaption of digitalization.

From the conceptual framework, it was stated that the independent variables; digital learning resources, access to information and resources, technical and digital skills, and critical thinking, would have an influence towards the dependent variablewhich is digitalization adaption among students. According to the result shown in Chapter 4, the least mean value for Digital Learning Resources is 4.46 and the highest is 4.65. After that is Access to Information and Resources, the highest mean value is 4.65 and the lowest is 4.34. Other than that, the highest mean score is 4.66 and the lowest score is 4.32 for the third independent variable which is Technical and Digital Skills. Lastly, the highest mean score for Critical Thinking is 4.62 and the least is 4.36. Overall, all of the mean score for the independent

variables are fall under very high score of mean. Researcher can conclude that every question of the survey gives an impact towards digitalization adaption for IPT students.

5.2.3 Research Objective 3 : To determine the relationship between resources and skills for IPT students to adapt the digitalization

According to Chapter 4, in Table 4.17, it shows about the strength of the relation between independent variables and dependent variable. From the table, researcher found that there are different levels of relation between these variables. For the higher relation between variable is access to information and resources with r=0.644, which shows a stong positive relationship to the digitalization adaption for students. The second highest relation for independent variable with dependent variable is digital learning resources which shows a positive moderate relationship, with r=0.535. The other two independet variables shows a positive weak relationship towards the dependent variable. Critical thinking and technical and digital skills with relation of r=0.246 and r=0.237 respectively.

5.3 Implications of The Research

Undoubtedly, this research will have implications for adaption of digitalization in both theory and practice. The following subsections will explain deeper into potential implications, elucidating how they contribute theoretically and practically to the industry. These contributions have the potential to spark a revolution in related fields.

5.3.1 Theoretical Implication

Theoretically, all the independent variables suggested in the Chapter 1 would give an impact to the dependet variable, which is in this study is to

determine the resources and skills that IPT students needed to adapt digitalization. Using the Theory of Planned behaviour (TPB), there are three factors that would determine the implication of behaviour for the research (IPT students' digital adaption) which are attitudes, subjective norms and perceived behavioural control.

As what has been done with the questionnaire, the respondents themselves which are the IPT students, agree that the independent variables have an effects for their digital adaption. For the result and data gathered in the Chapter 4, it would support the statement above.

5.3.2 Practical Implication

It was believed that to learn and adapt the digital knowledge and skills, it would need the decent resources and what type of skills you need. From the research that has been done by the researcher, it would connect the dot from the research problems to the research objectives. By proving the relationship between independent variables can influence the dependent variable to the facts and figures, the research has come to an end, which concluded that digital learning resources, access to information and resources, technical and digital skills, and critical thinking have a significant relationship and influences towards the digitalization adaption among students.

Researcher will say that by practice all of the variables above either in studies or for knowlegde, sooner or later, the applications of the practices will gives an impact towards the digitalization adaption among students.

5.4 Limitations of The Research

During the completion of the research, researcher has encounter with some obstacles. These barriers have an impact towards the completion

directly and indirectly. Some of the obstacles is the distribution of survey questionnaire that did not reach the target audience. This is because the scope of the research covering all universities' student around Malaysia. Not just that, since the total respondent needed are 384 using Krejcie and Morgan calculation, it was not as easy task. Fortunately, researcher able to complete the research within the time given.

5.5 Recommendations for Future Research

Researcher hopes that in the future research, other researchers can come out with a detail and specific study for investigate, analyse and determine the resources and skills that required for students in higher education. For example, what areas do students use digitization. Some may use it for business, some follow engineering, some use digital for editing and marketing and many other fields that use digital things.

Other than that, future researcher can delve deeper into the foundation of the research itself, digitalization. Researcher can also study about the challenges faced by the student to adapt digitalization. In addition, the effects of the use of digitalization that can benefit students.

5.6 Conclusions

In summary, the primary emphasis of this research was on examining the resources and skills essential for IPT students. The findings indicate the fulfillment of all research objectives through SPSS analysis. This section not only covered hypothesis testing and study objectives but also extended its discussion to conclude the results previously analyzed in Chapter 4. Additionally, the chapter delved into the implications of the research, shedding light on its contributions to future studies. Lastly, it delineated the study's constraints and offered recommendations for researchers intending to explore topics akin to this one in future research endeavors.

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APPENDIX A

Resources and Skills Required by IPT Students Towards Digitalization

Dear Respected Respondent,

I am Ahmad Faris Bin Mohamad, a student at Universiti Teknikal Malaysia Melaka (UTeM), Bachelor of Technopreneurship With Honours from the Faculty of Technology Management and Technopreneurship. I am currently engaged on my final year project as part of my degree requirements. The purpose of this study is to determine the Resources and Skills Required by IPT Students Towards Digitalization.

The survey would take approximately 3-5 minutes and divided into 3 parts to complete and I would be glad if you can partake in this survey. Kindly be advised that all of the data obtained is utilised only for academic purposes, and we will guarantee that all of the information is kept secret. Thank you for your cooperation.

I want to express my gratitude for both of your time and your assistance in completing this survey. Please do not hesitate to contact me at B062010361@student.utem.edu.my or my supervisor, Dr. Nor Azah Binti Abdul Aziz, at azahaziz@utem.edu.my if you have any queries about this survey.

Section A: Demographic Information

This section is related to your demographic information. Please (/) only one relevant answer and the information will be kept confidential.

1. Gender

Male	
Female	

2. Age

18-22 years old	
23-27 years old	
28-32 years old	
33 and above	

3. Education Level

SPM	
STPM	
Diploma	
Bachelor Degree	
Master	

4. Type of University

Public University	
Private University	

5. Name of University

UTeM	
UiTM	
UTM	
UKM	
UM	
UPM	
USM	
UIAM	
USIM	
UMK	
UUM	
MMU	
UniRAZAK	
UniKL	
Other:	

6. What Type of Digital Content do You Use The Most

Application	
Ebook	
Infographic	
Software	
Video	
Website	

Section B: Resources and Skills Required by IPT Students Towards Digitalization - Independent Variable

Please indicate the level of agree or disagree by circle the answer from 1 (strongly disagree) to 5 (strongly agree).

1 = Strongly disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly agree

1. Digital Learning Resources (applications, software, programs and websites)

No	Statement	1	2	3	4	5
1	I believe that using digital tools and technologies (Adobe, Filmora etc.) in my					

	IPT studies is a good idea.					
2	I believe that using digital tools and technologies (Adobe, Filmora etc.) in my IPT studies is a good idea.					
3	I believe that digitalization can improve the quality of my IPT education (Emerald, Scopus, ScienceDirect etc.) .					
4	I need to learn about digital tools and technologies to gain knowledge and experience (Photoshop etc.)					
5	If I want to gain a knowledge about digital learning, I have to know where to learn it from (Adobe, Excel etc.) .					
6	I think that digitalization is necessary for the future of IPT and also for students.					
7	I believe that resources of digitalization (applications, software, programs and website) can facilitate my adoption of digital.					

2. Access to Information and Resources :

No	Statement	1	2	3	4	5
1	I find that an access to information and resources about digital is necessary (websites, machines etc.) .					

2	I am able to adopt digitalization easily with the access (internet speed, AI etc.) I get to the information and resources of digital.					
3	It is easy for me to learn and adopt digitalization for my studies and/or future if I have the access (online libraries and databases) to digital's information and resources.					
4	I can adopting digitalization by using access that I can get from other sources (videos, images, books etc.) .					
5	I find that I can increase my digital knowledge with the access available like Facebook, Youtube, CNN etc.					
6	I need to have a proper access to information and resources of digital so that I can easier adopting it					
7	I am sure that the information and resources that I access can help me adopting digitalization in IPT studies and/or future.					

3. Technical and Digital Skills :

No	Statement	1	2	3	4	5
1	Other than resources of digital, I believe that skills of digital also a crucial part					

	of digital adoption.					
2	I feel confident in my ability to use digital tools and technologies for my studies and/or future (editing, programming etc.) .					
3	I think that technical skills (management, researching, writing etc.) are essential for adopting digitalization.					
4	I find that technical skill in digitalization will help me understand digital more deeply along with the practical.					
5	I am able to adopt digitalization with technical and digital skills I gained (management, editing etc.) .					
6	I believe that the skills will help me improving my work process and also efficiency of work operations.					
7	I am sure that technical and digital skills that I adopt is giving me benefits.					

4. Critical Thinking :

No	Statement	1	2	3	4	5
1	Developing critical thinking skill is essential for adopting digitalization for me.					

2	I find that for learning and adopting digitalization, I need to have a critical thinking skills.					
3	I believe that digitalization can be hard to adopt so that critical thinking can help me to adopt it easier.					
4	I believe that critical thinking skills can help me develop problem-solving abilitiy about new technologies to solve problems and improve work process.					
5	I find that digitalization requires me to think critically about how to use technologies effectively.					
6	I am sure that critical thinking involes generating new approaches and ideas about digitalization to innovate and develop new products and services.					
7	I find that critical thinking skills can help me communicating ideas and information effectively to others about new technologies and digitalization.					

Section C: Resources and Skills Required by IPT Students Towards Digitalization - Dependent Variable

Please indicate the level of agree or disagree by circle the answer from 1 (strongly disagree) to 5 (strongly agree).

1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

Digitalization Adoption Among Students

No	Statement	1	2	3	4	5
1	I find that by digitalization adoption can help me develop useful skills (critcal thinking, technical and digital skills) .					
2	I am sure that if I adopt digitalization, it will be a benefits for me in my studies and/or future.					
3	I believe by adopting digitalization, it will help me in finding and securing job in the future because todays digital things are essential.					
4	I find that digital tools can help me stay agile, allowing me to innovate new techniques and skills about digital.					
5	I believe that by adopting digitalization, it will help me to stay motivate by making the learning process more enjoyable due to new					

	technologies features					
6	I could improve my communication skills by sharing ideas with others coursemate by using digital knowledge I know.					
7	I am sure by digital adoption, it can enhance my learning experience and provide me in-depth knowledge by using resources like e-books, online libraries and educational videos.					

APPENDIX B

Gantt Chart 1 (FYP 1)

Activity	Weeks															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Choose the suitable title																
Research objective,research question																
Theories and concepts used																
Literature review																
Independent and Dependent Variable																
Summary literature review																
Introduction chapter 3																
Method been used																
Draft questionaires																

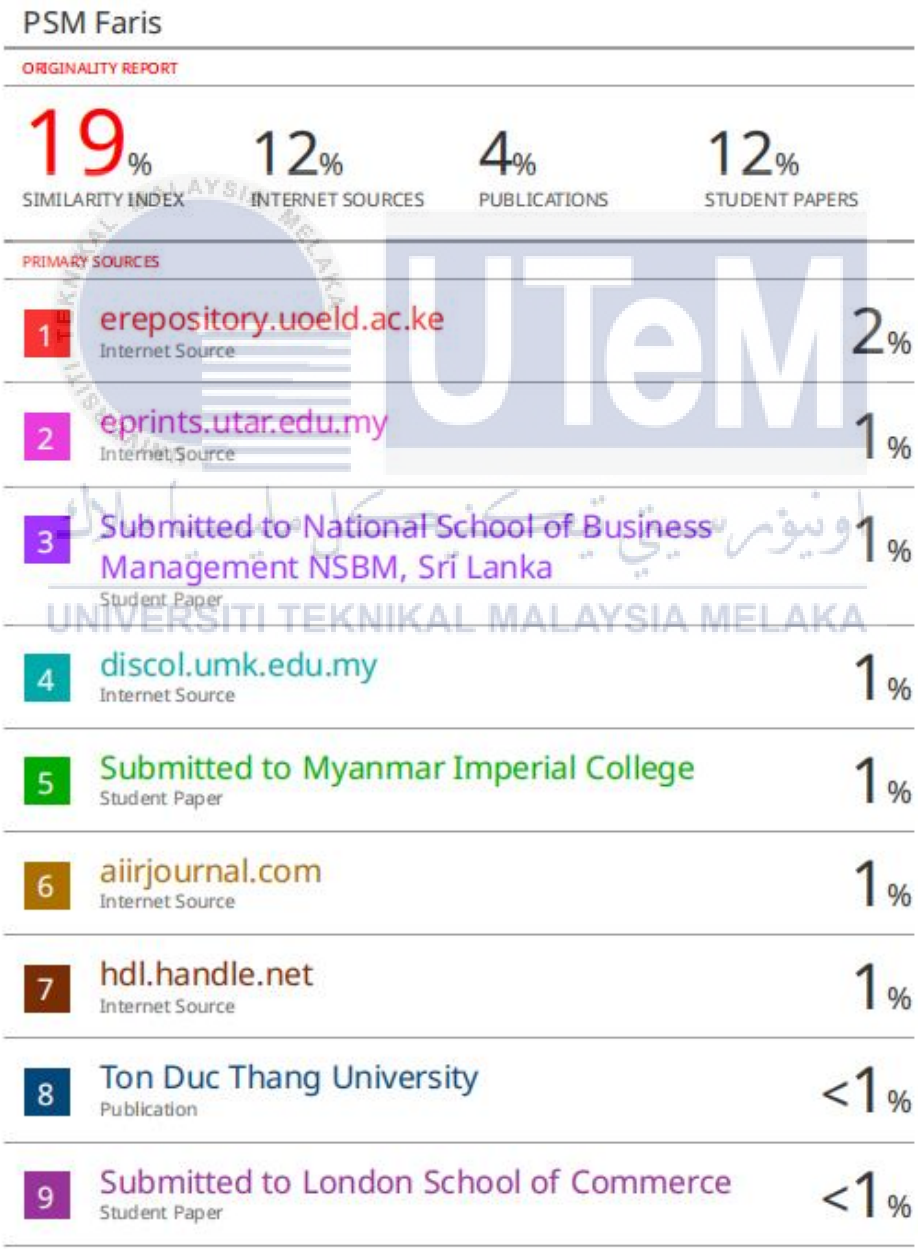
APPENDIX C

Gantt Chart 2 (FYP 2)

Activity	Weeks															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
FYP 2 Briefing																
Questionnaires Developing																
Distributing Questionnaires																
Data Collection																
Data Analysis																
Report Writing of Chapter 4																
Report Writing of Chapter 5																
Presentation																

APPENDIX D

Turnitin Report



PSM Faris

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