IBRAHIM L BANGURA INVESTIGATINGM THE EFFECT OF ADAPASS DURING COVID 19 PANDEMIC NEU 2022

NEAR EAST UNIVERSITY

INSTITUTE OF GRADUATE STUDIES

DEPARTMENT OF COMPUTER INFORMATION SYSTEMS

INVESTIGATING THE EFFECTIVENESS OF ADAPASS DURING THE COVID-19 PANDEMIC

Ibrahim Lamin BANGURA

MASTER THESIS

Nicosia

August, 2022

NEAR EAST UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
DEPARTMENT OF COMPUTER INFORMATION SYSTEMS

INVESTIGATING THE EFFECTIVENESS OF ADAPASS DURING THE COVID-19 PANDEMIC

IBRAHIM LAMIN BANGURA

SUPERVISOR
Prof. Dr. Nadire CAVUS

MASTER THESIS

Nicosia
August, 2022

APPROVAL

Thesis defense was held online. The Jury members declared their acceptance verbally, which is recorded.

Examining Committee	Name-Surname
Head of the Committee:	Assoc. Prof. Dr. Nuriye SANCAR
Committee Member*:	Assist. Prof. Dr. Selin ÜZELALTINBULAT
Supervisor:	Prof. Dr. Nadire CAVUS

Approved by the Head of the Department

28/08/2022

Prof. Dr. Nadire CAVUS
Head of Department

Approved by the Institute of Graduate Studies

…../…../2022

Prof. Dr. Kemal Hüsnü Can BAŞER
Head of the Institute

DECLARATION

I hereby declare that I was the one who carried out this research. Throughout the entire process, there was no evidence of unethical behavior. During the process of gathering the essential information, academic and ethical criteria were observed. During the study and writing of the thesis, I provided references to all the information gathered by this study, and there was no infringement of copyright.

.

15/08/2022

Ibrahim Lamin BANGURA

ACKNOWLEDGEMTS

My deepest gratitude goes to Prof. Dr. Nadire Çavuş, for her constant encouragement and guidance. She has walked me through all the stages of the writing of my thesis. Without her consistent and illuminating instructions, this thesis could not have reached its present form. Also, I want to thank all the Jury members for their valuable comments.

This thesis is dedicated to my beloved family with unlimited thanks and heartfelt love, for they have believed in me and have sustained me throughout my life. A special feeling of gratitude to my step Dad Mr. John S Sesay who is now a late man. He was indeed my inspiration and the man who led me into the treasures of knowledge, and all I learnt from him contributed to my everyday life. And to my parents who support me in everything all the time. I would like to thank my mother for her unlimited and unconditional love, and to my father who taught me how to be a real man before everything, and taught me in the hard way that knowledge must be learned for its own sake.

I would like to thank my sisters and brothers for their encouragement and constant love they gave me. Eventually, to that long list of friends who have supported me all over the way from the early stage of my study until the last word of this thesis, thank you all for all the love and help you gave me, I couldn’t be here without your existence in my life, this thesis would not have been possible.

ABSTRACT

Investigating the Effectiveness of ADAPASS During the Covid-19 Pandemic

Ibrahim Lamin BANGURA
Master, Department of Computer Information Systems
Prof. Dr. Nadire Cavus

July, 2022, 71 pages

COVID-19, the seventh human coronavirus, was found in Wuhan, Hubei Province, China, amid a recent pneumonia outbreak. The virus has expanded over the globe. Patients with COVID-19 infection might have minor to serious symptoms, while a considerable section of the population is asymptomatic carriers. ADAPASS is a system developed by the Turkish Republic of Northern Cyprus (TRNC) in the Northern Cyprus government to distinguish persons who have received the COVID-19 full dose immunization from those who have not. The COVID-19 ADAPASS simply means that users are receiving two doses of vaccination. The ADAPASS may be used to represent the vaccination card in the Northern Cyprus, so person doesn't have to move his/her vaccine card everywhere. In order to counteract and reduce the spread of the COVID-19, several restrictions have been placed in place in Northern Cyprus. Without the ADAPASS, the person won't be able to access numerous establishments, including the supermarket, several workplaces, and some key locations, unless his/her have a valid antigen or PCR test. There has been no research done on this topic, hence the purpose of this study is to investigate the effectiveness of the ADAPASS system. This study employed a descriptive survey research design technique. A descriptive survey design is used to collect data at a certain period in time among university students within the TRNC. The instrument for data collection in this study was researcher's developed questionnaire. The results showed that ADAPASS system is relevant during the COVID-19 pandemic, however, the effectiveness has some challenges for users. This study will be so important and beneficial to people living in TRNC that don't have much

idea on the use and important of ADAPASS and developer will know what improvement needs to be made also it can be a source for other researchers.

Keywords: COVID-19 pandemic, ADAPASS, vaccine passport, vaccine certificate, Cyprus

ÖZET

Covid-19 Pandemi Döneminde ADAPASS'ın Etkinliğinin Araştırılması

Ibrahim Lamin BANGURA
Yüksek Lisans, Bilgisayar Enformatik Anabilim Dalı
Prof. Dr. Nadire Cavus

Temmuz, 2022, 71 sayfa

COVID-19 son zamanlarda bir pnömoni salgını olarak Çin'in Hubei Eyaleti, Wuhan'da başladı ve tüm dünyaya yayıldı. COVID-19, enfeksiyonu olan hastalarda ciddi semptomlar gösterirken popülasyonun önemli bir bölümünde ise asemptomatik belirtiler şeklinde görülmektedir. ADAPASS, Kuzey Kıbrıs Türk Cumhuriyeti (KKTC) hükümeti tarafından COVID-19 tam doz aşısı olan kişileri tesbit etmek için geliştirilmiş bir sistemdir. ADAPASS sisteminde kayıtlı olan kullanıcıların iki doz aşılı olduğu anlamına gelmektedir. ADAPASS, Kuzey Kıbrıs'ta aşı kartını temsil etmek için kullanılanılır, böylece kişi aşı kartını her yere taşımak zorunda kalmaz. COVID-19'un yayılmasını önlemek ve azaltmak için Kuzey Kıbrıs'ta çeşitli kısıtlamalar getirilmiştir. ADAPASS olmadan kişi, geçerli bir Antijen veya PCR testi olmadıkça iş yerlerine, kurum ve kuruluşlara giremez. ADAPASS'ın kullanımına ya da etkinliğine yönelik herhangi bir çalışmaya rastlanmadığından bu çalışmanın amacı ADAPASS sisteminin etkinliğini araştırmaktır. Bu çalışmada, tanımlayıcı bir tarama araştırma tasarım tekniği kullanılmıştır. KKTC'deki üniversite öğrencileri arasında belirli bir zaman diliminde veri toplamak için betimsel bir anket tasarımı kullanılmıştır. Bu çalışmada veri toplama aracı, araştırmacı tarafından geliştirilen ankettir. Sonuçlar, ADAPASS sisteminin COVID-19 salgını sırasında kullanımının gerekli olduğunu ancak etkinliğinin artırılması için kullanıcıların kullanımını zorlaştıran kısımlarının olduğundan kullanım zorlukları olduğunu ortaya koymuştuır. Bu çalışma, KKTC'de yaşayan, ADAPASS'ın kullanımı ve önemi hakkında fazla fikri olmayan kişiler için çok önemli ve faydalı olmacaktır. Aynı zamanda, sistem geliştiriciler için de hangi

iyileştirmelerin yapılması gerektiği hussularında kaynak olabilecek bulduları ortaya koyduğundan alanyaına katkı koyacağı düşünülmektedir.

Keywords: COVID-19 Pandemic, ADAPASS, Vaccine passport, Vaccine certificate, Kıbrıs

TABLE OF CONTENTS

CHAPTER 3

CHAPTER 4

CHAPTER 5

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

NEU: Near East University

EMU: Eastern Mediterranean University

GAU: Girne American University

CIU: Cyprus International University

TRNC: Turkish Republic of Northern Cyprus

PCT: Polymerase Chain Reaction

UK: United Kingdom

UN: United Nation

EU: European Union

EVC: Electronic Verification Code

IHR: International Health Regulations

WHO: World Health Organization

SARDS: Systemic Autoimmune Rheumatic Diseases

CHAPTER 1

INTRODUCTION

This chapter gives detail about the background of the study, discusses the problem, the study's goal, the significance of the research, the research's limitations, and an overview of the thesis was explained.

1.1 Background

ADAPASS is a system created by the TRNC Government in order to differentiate those that have taking the COVID-19 full does vaccination and those that have not taken it. With having the COVID-19 ADAPASS simple signifies that full dose vaccine have been taken. In the TRNC, the ADAPASS represented the vaccination card, so moving with people's vaccine card will not be necessary. The COVID-19 was spreading in Northern Cyprus, and many restrictions were put in place in order to combat and minimize the spread. Without the ADAPASS, people were not able to enter many places like the supermarket, some offices, and some important places unless in some case an antigen test valid for 24 hours or pcr test which valids for 72 hours was shown. In order to get the ADAPASS, two dose of vaccination should have been completed, then an access to the ADAPASS website to fill out necessary information is granted. In other for someone to be registered, the website www.ADAPASS.gov.ct.tr was made available. Passengers that are coming from other countries will complete the Northern Cyprus passenger section of the ADAPASS application and fill their necessary information and also upload their PCR and the certificate to show that they have been vaccinated (Deguma, 2021).

A post from Infonorthcyprus (2022) shows that PCR/antigen test are part of the ADAPASS system, test result will be issued 30 minutes after the test had been done in order to update people's status. Some users cannot successfully register on the ADAPASS application, sometimes it's due to some errors in data, but in order to solve this, there were places that were made available to help people. Places like, Near East University Hospital in Nicosia, Dr. Suat Gunsel University of kyrenia hospital, Near East University hospital in Güzelyurt Dispensary and Near East University Yenibogazici. The planning to link the ADAPASS system with the Northern Cyprus system had been in progress, this will makes it easier to access vaccination status safely especially when traveling to EU countries.

There where form to fill online in order to get the ADAPASS, which requires person's personal information, so tracking people was an easy process. Having the ADAPASS means having taken people's two dose, but it does not mean total safety from COVID-19, so all the necessary precautions were still observed to prevent against COVID-19. ADAPASS have a bar code which can be easily scanned to access someone's information. It can be printed out as a hard copy which will make it small and easy to carry around either in wallets or pockets. The ADAPASS also have a code which is different from the bar code, which can be used to apply for PCR/antigen test.

Whitelaw et al. (2020) pointed out that COVID-19, is an infectious illness caused by the novel severe acute respiratory syndrome. A case fatality is more likely with strong infectivity. A mortality rate of more than 1%, and no effective antiviral medication. The vaccination, the cornerstone of pandemic preparedness Isolation and mitigation have been implemented nonetheless, despite countries rely on well-established public health concepts. There have been varied degrees of success across the world. COVID-19 vaccine distribution is divided into two steps: Delivering available doses to jurisdictions based on their populace or other metrics, and then distributing vaccinations to particular populations within jurisdictions. Distribution frameworks attempt to take into account a wide range of criteria. Typically, they focus on a risk-based strategy with the goal of lowering mortality and limiting infectious transmission (Schmidt et al., 2021).

Sotis et al. (2021) deliberated that COVID-19 have been widely debated in the academic literature due to their great potential effect. With one significant exception, all current investigations have been solely qualitative or observation. Latest COVID-19 studies have found that behavioral interventions can have a considerable influence on people's perceptions of the pandemic and encourage individuals to engage in preventative and pro-social actions. Experimental studies have been shown in the literature to provide valuable information to politicians and businesses.

1.2 Problem Statement

Ghasemifard et al. (2015), and Sadiq, Cavus and Ibrahim (2021) pointed out that the design of a human computer interface must include a usability test. It involves methodically gathering information on interface usability, evaluating it, and making improvements to it. Designers may improve the usability of an interface by testing it and making changes. Planning and attention to details are necessary for conducting a sufficient usability test.

Typically, software usability testing procedures include recruitment, developing questions, and choosing a representative sample. Result may be use to improve the system. The ADAPASS is widely use in North Cyprus. Restrictions were put in place for people without the ADAPASS. People without the ADAPASS were require to take PCR/Antigen test. There has not been any research done on this study, so this study is to investigate about the effectiveness of the ADAPASS. Ghasemifard et al. (2015) and Cavus (2020) stated that in technology every system will have pros and cons. This study will help the government to take some necessary action. Either to remove the ADAPASS system or to identify some necessary errors and take the necessary action to solve them, as the main task of this research is to know the effectiveness of the ADAPASS, how important it is and to know if there are any improvement that should be done for better user interaction.

1.3 The Aim of the Study

The main aim of this study is to investigate the effectiveness of the ADAPASS, how important it is and to know if there are any improvement that should be done for better interaction. To achieve the aim of this study, the answer was searched for the following research questions.

1. What do people/user think about ADAPASS?
    a. Are there any difference by gender?
    b. Is there a difference according to age?
    c. Is there a difference according to education level?
2. Does ADAPASS satisfy people?
3. How can ADAPASS be improved?

1.4 Importance of the Study

This research will be beneficial to the people concern as the study will help the government to take some necessary action. Either to remove the ADAPASS system or to identify some necessary errors and take the necessary action to solve it.

- ***Researchers****:* Those interested in doing a new study in this field will find this study useful since it will give information relevant to their study. There has not been any study on the specific ADAPASS system. So other researcher will find the study very important in order to help them complete their own studies.

- ***Developers*:** The developers will have an insight of the program, if it is user friendly, or if any addition or correction that's need to be done. There are different errors a system will have those programmers may not detect until the program is out and they try to get feedback from the end users.
- ***Users*:** Users complains will be easily heard, and appropriate action can be taking. Users can experience many difficulties in using a system, but most times, they don't know where to report.by participating on this research will make there complains heard.

1.5 Limitations of the Study

Limitations that have been noted in this study are listed below:

- The study was carried out within a short-stipulated time at the period of Spring semester of the 2021-2022. But, also recommendation for a longer period of study in the future is encouraged.
- This study only focuses on universities in the Northern Cyprus (Near East University, Cyprus International University, University of Lefke, American Girne University and Kyrenia University.
- The study only focuses on active students that are enrolled to the above universities.

1.6 Overview of the Thesis

The study was grouped into six unique independent chapters, the following explained in details regarding each chapter as follows:

Chapter One is an opening chapter that presents the research to readers and includes the key components of the complete study in detail, such as the goal, questions, problem statement, importance, and lastly, a study summary of the remaining chapters. It also specifies who would be interested in and benefit from this research project.

Chapter Two elucidates the topic at hand in greater depth. This chapter is the study's backbone and is essential for comprehending the study's ideas.

Chapter Three is designed as a medium to help the government or the body responsible for the development of ADAPASS to improve the system. The chapter explains the theoretical framework of the topic under research.

Chapter Four includes a full description of the research study model, the participants and how they were chosen, the instruments used to gather data, the adopted methodologies for data analysis and research scheduling.

Chapter Five reveals the results found. Results are then discussed with respect to the fundamental objectives of the research.

Chapter Six presents a synopsis of the full study with a focus on the findings and future research suggestions the researcher discusses findings made during the research and how some of the study's weaknesses may be addressed in future research.

CHAPTER 2
LITERATURE REVIEW

This chapter explains the theoretical construct of this research. The chapter explains ADAPASS and COVID-19. Also, this chapter explains the related research that have been done by other researchers that have the similar ideas.

2.1 Theoretical Framework

2.1.1 COVID-19

Ciotti et al. (2020) claimed that acute respiratory distress syndrome (SARDS) is a severe form of acute respiratory distress. In January 2020, coronavirus, the seventh human coronavirus, was found in Wuhan, Hubei Province, China, amid a recent pneumonia outbreak. The virus has expanded over the globe. Patients with COVID-19 infection might have minor to serious symptoms, while a considerable section of the population is asymptomatic carriers. Fever, cough, and shortness of breath are the most widely mentioned symptoms. Taiwan launched health screenings for aircraft passengers from Wuhan as soon as China announced the epidemic, combining data from immigration records with its centralized, real-time national health insurance database. Health-care establishments were able to examine patients' travel history and designate people for COVID-19 testing and tracking as a result of this connection (Whitelaw et al., 2020).

Padhan and Prabheesh (2020) explained that on March 11, 2020, the World Health Organization (WHO) proclaimed COVID-19 a worldwide epidemic. Because of the following factors, COVID-19 is regarded a "once-in-a-century pathogen". First, the COVID-19 has a 1% mortality rate, which is significantly higher than that of regular influenza, as it may kill both healthy and old persons. When compared to the 1857 influenza pandemic (0.6 percent) and the 1918 Spanish flu, this fatality risk is low (2 %). However, because to the lack of pharmacological breakthroughs, the COVID-19's real death rate remains unknown. Secondly, the disease's exponential rate of spread suggests that COVID-19 will be far more severe than any previous pandemic.

The COVID-19 epidemic has shook the world and put a stop to work and personal activities. Aside from the loss of human lives and the suffering endured by humanity, the epidemic has wreaked havoc on other economic sectors, notably the travel industry (Mithani et al., 2021). Haque et al (2021) stated that to reduce the danger of transmission, special

measures were implemented, including COVID-19 testing before departure and upon arrival, as well as voluntary quarantine. COVID-19 has been contained by measures such as lockdown, quarantining, and physical separation across the world. Measures such as immunization certificates are being introduced across the world now that vaccines are accessible and reintegration into society is begun.

COVID-19 has had a significant influence on athletic participation at all levels, with several large-scale events being postponed or canceled. Mass meetings during athletic events have also been banned, such gatherings are a recognized source of infectious disease transmission, with the potential for worldwide dissemination upon return to one's native country (McLarnon & Heron, 2021).

a) Location of Ministry of Health affiliated vaccination centers

The vaccination centers in the Northern Cyprus were given below:

- Nicosia Dr.Burhan Nalbantoglu State Hospital pediatrics Polyclinic: Between 14:00 and 18:00.
- Famagusta State Hospital Pediatrics Vaccination Unit Between 09:00 – 14:00.
- Kyrenia Akcicek Hospital pediatrics Vaccination Unit. Between 09:00- 14:00.
- Cengiz Topel Hospital Pediatrics Vaccination Unit. Between 9:00-14:00.

Post from Infonorthcyprus (2022) showed that Booster doses for the 12-18 age group (3 months after the first dose) are being given at vaccination centers affiliated with the minister, and people can get their vaccination at the centers where they were vaccinated previously.

Figure 2.1

ADAPASS – Vaccine and PCR Criteria for entry to Venues (www.infonorthcyprus.com/vaccination)

Category I Vaccinated – no tests Unvaccinated – PCR < 72 hours /Antigen <48hours	**Category II** Vaccinated – no tests Unvaccinated – Entry not allowed	
Supermarkets / Markets / Retail Stores	Hotels	Casinos
Banks	Swimming Pools	Bar / Clubs
Government Offices	Youth camps	Indoor fitness salons / gyms
Outdoor team sports venues	Boxing / wrestling training	Indoor team sports venues
	Congresses / Courts	Night Clubs
	Betting Offices	Stadiums
	Offices / General Assembly Meetings	Dance / parades / Ceremonies
	Barbers / Hairdressers / Beauty Salons	Concerts / Theatre / Cinema / Exhibitions
	Places of worship	Weddings (with food – cocktails)
Note: Adapass is mandatory for people aged 12 years or above	Internet cafes	Restaurants / Meyhanes / Patisseries / Cafes – Inside Areas
	Shopping Centres	Coffee Houses – Inside Areas

Those who have not received a booster vaccine within the specified time period (3 months for Sinovac and Johnson, and 6 months for Astra Zeneca, Moderna, and Pfizer) will then be considered unvaccinated, and their ADAPASS will be invalidated.

Figure 2.2

Vaccination Scheme (age 18 and above) (www.infonorthcyprus.com/vaccination)

1st DOSE	2nd DOSE	3rd DOSE	4th DOSE	5th DOSE
SINOVAC	SINOVAC (1 month after 1st dose)	BIONTECH (3 months after 2nd dose)	BIONTECH (1-3 months after 3rd dose)	BIONTECH (3 months after 4th dose * people aged 65 and over & health workers)
SINOVAC	SINOVAC (1 month after 1st dose)	SINOVAC (3 months after 2nd dose)	BIONTECH (3 months after 3rd dose) **SINOVAC if no mRNA vaccine or if the patient does not want it	BIONTECH (3 months after 4th dose * people aged 65 and over & health workers)
BIONTECH	BIONTECH (1 month after 1st dose)	BIONTECH (3-6 months later)	BIONTECH (3 months after 4th dose* people aged 65 and over)	
MODERNA	MODERNA	MODERNA/BIONTECH (3-6 months later)	BIONTECH (3 months after 4th dose* people aged 65 and over)	
JOHNSON & JOHNSON	BIONTECH (3 months later)	BIONTECH (1-3 months later)	BIONTECH (3 months after 4th dose* people aged 65 and over)	
ASTRAZENECA	ASTRAZENECA (1 month later)	BIONTECH (3-6 months later)	BIONTECH (3 months after 4th dose* people aged 65 and over)	

Those who have had COVID-19 while being completely vaccinated should begin vaccination three months after being negative.

Figure 2.3

Vaccination Scheme for people who had Covid -19 even when fully vaccinated (www.infonorthcyprus.com/vaccination)

Vaccination BEFORE becoming ill	3rd Dose	4th Dose	5th Dose
2 Doses SINOVAC	BIONTECH (3 months after becoming negative)	BIONTECH (3 months after 3rd dose)	
2 Doses BIONTECH	BIONTECH (3 months after becoming negative)		
1 Dose JOHNSON & JOHNSON	BIONTECH (3 months after becoming negative)	BIONTECH (3 months after 3rd dose)	
2 Doses MODERNA	BIONTECH (3 months after becoming negative)		---
ASTRAZENECA	BIONTECH (3 months after becoming negative)		
SINOVAC	SINOVAC (3 months after becoming negative)	SINOVAC (4 months after becoming negative)	SINOVAC 7 months after becoming negative)

Individuals who have COVID-19 before finishing the immunization program or who have never been immunized should begin vaccination one month after being negative.

Figure 2.4

Vaccination Scheme for people who have had COVID-19 before completing vaccination (www.infonorthcyprus.com/vaccination)

1st Dose *1 month after* the date of becoming negative	2nd Dose *2 months after* the date of becoming negative	3rd Dose *5 months after* the date of becoming negative
BIONTECH (RECOMMENDED)	BIONTECH (RECOMMENDED)	---
SINOVAC	SINOVAC	SINOVAC
ASTRAZENECA	ASTRAZENECA	---
MODERNA	MODERNA	---

Figure 2.5

Vaccination centers at Girne (www.infonorthcyprus.com/vaccination)

Girne	Sinovac	Biontech	Johnson & Johnson (Janssen)
Girne Akçiçek Hospital	✓	✓	
Dr Suat Günsel University Hospital	✓	✓	
Çamlıbel Health Centre	✓	✓	
Dikmen Health Clinic	✓		
Esentepe Health Centre	✓		
Girne American University	✓		✓
Lapta Health Centre	✓	✓	
Özel Girne Hospital	✓		

Figure 2.6

Vaccination center at Lefkosa (www.infonorthcyprus.com/vaccination)

Lefkoşa	Sinovac	Biontech	Johnson & Johnson (Janssen)
Dr Burhan Nalbantoğlu State Hospital	✓	✓	
Near East University Hospital	✓	✓	
Cyprus Life Hospital	✓		
Değirmenlik Health Centre	✓		
Elit Hospital	✓		
Etik Hospital	✓		
Kolan Lefkoşa Hospital	✓		
Miracle Hospital	✓		
Trendyolu Polyclinic	✓	✓	

Figure 2.7

Vaccination Centers at Iskele, Lefke & Guzelyurt (www.infonorthcyprus.com/vaccination)

Iskele	Sinovac	Biontech	Johnson & Johnson (Janssen)
Iskele Health Centre	✓	✓	
Dipkarpaz Health Centre	✓		
Mehmetçik Health Centre	✓		
Yeni Erenköy Health Centre	✓	✓	
Lefke			
Cengiz Topel Hospital	✓	✓	
Lefke Europe University	✓		
Güzelyurt			
Güzelyurt Health Centre	✓		
Near East University Güzelyurt Dispensary	✓	✓	
Cyprus Health & Social Science University	✓		

2.1.2 ADAPASS

The recent developments in the field of technology have affected all sectors to improve their life quality (Elammari & Cavus, 2019). ADAPASS is a web-based tool that tracks and controls the progress of the COVID-19 battle, as well as the status of people's tests and vaccinations. The Turkish Republic of Northern Cyprus (TRNC) Health Ministry issued the warning for individuals planning to enter the country through air, sea, or land. To receive a QR code, passengers should fill out a form on the ADAPASS.gov.ct.tr website. Those who do not input their information on the internet and do not obtain the code will be denied entry. To receive the code, citizens of the TRNC, Turkey, the United Kingdom, and the European Union must enter information from their respective nations' health pass cards on the website. Citizens from other countries must include their valid vaccination cards and/or PCR test results in the space provided on the form, as well as present original documents that would be checked upon entry into the country. It is a pass that is used to enter most public places like schools, hospitals, and super market etc.

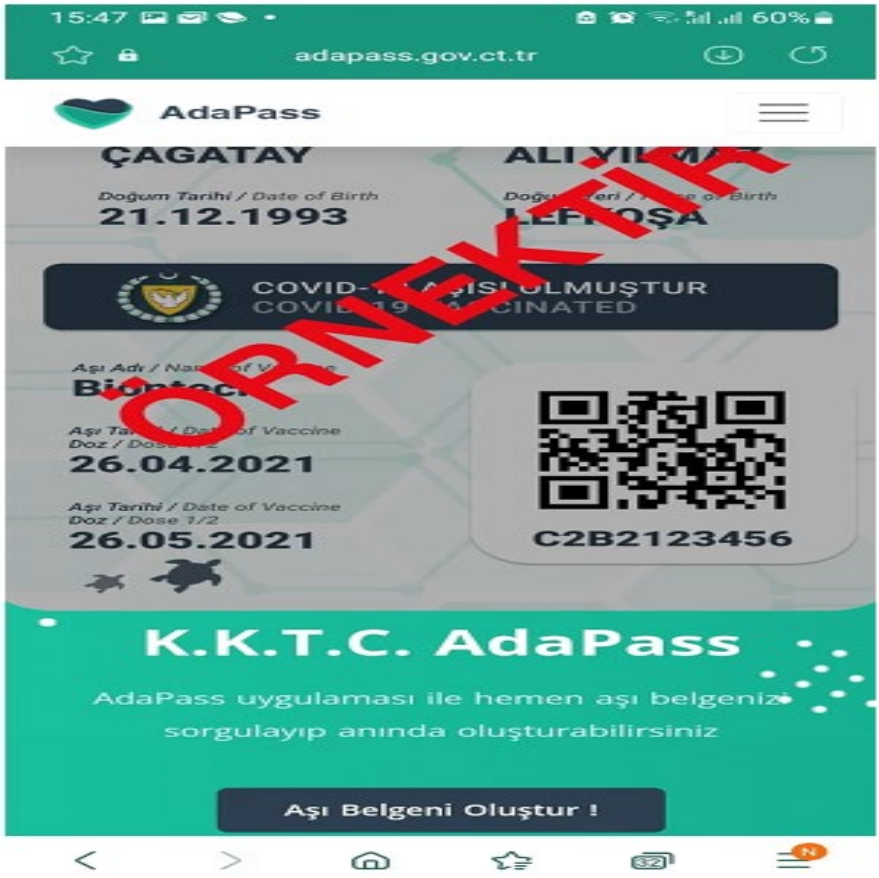
Technological developments make it possible to reach new information and data (Mbombo & Cavus, 2021). For this reason, there was an online system that is available for people. Online systems make human lives easier (Cavus, 2008). Because most people spend most of their time on the Internet (Bicen & Cavus, 2010). People's vaccination status can be downloaded. The ADAPASS can be used to show any organization that asked for it. The ADAPASS system is a system that is also connected or linked with the Turkish and the republic of Cyprus system, So it will be used in the future as a secured way to prove people's vaccination status, especially when travelling to the EU and the UK. The ADAPASS have a QR code which make it easy to scan to retrieve people's status digitally.

In order to get the ADAPASS,

- Go to www.saglik.gov.ct.tr
- Scroll to ADAPASS application.
- Click the Application and the following screen can be shown (Figure 3.8).

Figure 2.8

ADAPASS application (www.infonorthcyprus.com/vaccination)



"Belgeni Olustur" button should be click to create people's vaccine certificate and then the user will see the following screen.

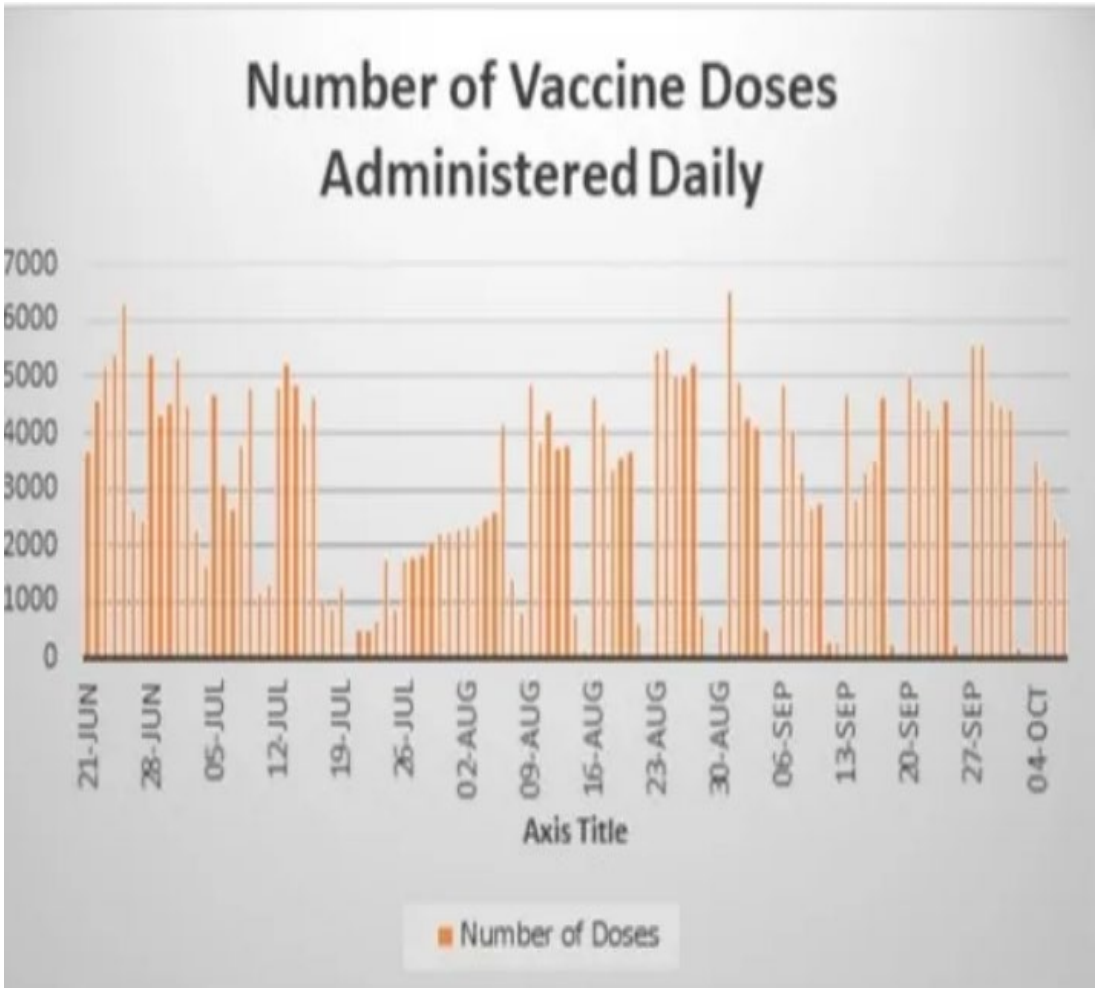
Figure 2.9

ADAPASS certificate form (www.infonorthcyprus.com/vaccination)

Below is the number of vaccine doses administered daily:

Figure 2.10

Number of vaccine dose administered daily (www.infonorthcyprus.com/vaccination)



The interface refers to the design/looks of the ADAPASS. Below it can seen the design of the ADAPASS interface.

Figure 2.11

ADAPASS Interface (www.infonorthcyprus.com/vaccination)

- **Who should use the QR code?**

All individual residing in TRNC, or entering the TRNC must obtain an ADAPASS code if vaccinated. The code is a digital printout of the vaccine people that was taken in TRNC. For Ins and Out to business, with ADAPASS code it will be declare that people are vaccinated.

2.2 Related Research

2.2.1 Research on COVID-19 passport

Sotis et al. (2021) explained that source from the World Travel and Tourism Council, the travel and tourism industry would lose 3.8 trillion dollars by 2020. Furthermore, according to a new assessment from the UN's Air Transportation Agency, COVID-19 caused a drop. There was a 60% drop in air travel, resulting in losses of approximately 370 billion dollars. For the airline industry Existing vaccinations, on the other hand, have been shown to be safe and effective.

Pavli and Maltezou (2021) highlighted that one of the world's most important economic sectors is tourism. Tourism is one of the most heavily impacted industries by the COVID-19 epidemic, which had a global effect on the economies, lives, public services, and possibilities. the fourth quarter of 2020 In February 2021, 32% of locations throughout the world enacted total border closures, while another 34% imposed partial border closures. The introduction of COVID-19 vaccinations provides promise for alleviating the pandemic's enormous health, social, and economic costs. Walkowiak et al. (2021) state that To exclude fully vaccinated persons from some of the remainder of the population, COVID-19 vaccination passports for the purpose of travel, as well as important window openings to encourage the safe resumption of foreign travel, have been adopted.

Josef et al. (2021) explained that COVID-19 passport, whether electronic or physical, required an alternative, it adds to the list of conceivable bases for exclusion and discrimination: Excluding people in the cause of a false sense of control is one of the worst things people can do. Knowing this, every vaccine evaluation should be conducted with caution. there is just too much at stake in terms of rights loss. Mark et al. (2021) state that when a new dividing line between communities is formed for any reason, there is a lot at risk. whatsoever, no matter how “natural” or “essential” it is. Given the ramifications, any new legal border will have a societal “world-making” influence. Evaluation is a necessary first step in evaluating any legal political action capable of establishing such a border, such as

vaccination passport. The assurance of these identifications is that their bearers would be able to return to 'regular' life in a timely manner – subject to the act of vaccination that such a document would validate. According to the British Illustrious Society, its goal is to "assist in the restoration to pre-COVID-19 workouts and allow travel without jeopardizing individual or public wellbeing.

Dye and Mills (2021) explain that the fair use of vaccination passports raises a number of difficulties. Documents, according to popular belief, must prevent prejudice and inequality. In an ideal world, a passport would be exclusive solely in terms of its principal function, which is to safeguard people's health and wellbeing of others with whom they came into contact. Pavil & Maltezou (2021) state that National discourse and permission will be used to make some decisions regarding how passports will be used, depending on social and ethical values. Domestic and international law will determine the rest. Some firms have already declared measures such as "no jab, no employment. Employee personal free choice vs a company's obligation and preference for the care of all employees may be questioned in court in such circumstances.

2.2.2 Research on COVID-19 certificate

Drury et al. (2021) highlighted that health certification might provide several advantages, including easier and safer access to foreign travel, music, theater, and sports events, as well as pubs, cafes, hotels, and gyms. Allowing individuals to come back to work, socialize, and take care of their responsibilities has numerous social, emotional, and economic advantages. Foreign travel is the major area where certification (for antigen testing) has been in use. the EU has established a 'digital green certificate' plan that would allow persons who have been vaccinated, have recently had a negative antigen test, or have recovered from COVID-19 to travel freely and without quarantine. The International Air Transport Association is also working on a health technology pass to handle and validate the secure transmission of required testing or immunization information across authorities, airlines, labs, and other entities.

By creating the vaccination card inexpensive and mobile, it ought to be available to everybody. It should be divided into three pieces, each of which corresponds to a different aspect of the core dataset: header, data items for each vaccination event, and metadata. The term of protection offered by the particular vaccine should coincide to the expiration date of the issued COVID-19 vaccination passport (Sharun et al., 2021).

Mithani et al. (2022) claimed that COVID-19 vaccinations were licensed for use for the first time in December 2020. 4 Social and travel restrictions are beginning to loosen as vaccination rates rise throughout the world. Under the Foreign Health Regulations, there are now overseas travel restrictions in place for the Yellow Fever vaccination, and it is probable that equivalent criteria for COVID-19 vaccines will be introduced. Beyond simplifying foreign travel, digital proof of vaccination is being examined as a means to help people continue working and the economy reopen.

Mills and Ruttenauer (2022) stated that younger individuals and men had lower levels of COVID-19 vaccination uptake, which is typically linked to lethargy or a lack of views of COVID-19 danger, while a few minority ethnic populations have poorer uptake due to a lack of faith in authorities in order. If certification might be an extra strategy to enhance vaccination uptake for persons with vaccine apathy or hesitation, conversely, whether certification could lower uptake owing to ethical, trust, and privacy issues, is a pertinent subject.

Choudhary et al. (2021) pointed out that it is critical to weigh the benefits and drawbacks of a vaccination certificate. Apart from reducing the danger of COVID-19 infections, these certifications will aid in the revival of the country's economy by reducing the number of national/state-level curfews and lockdowns. The greatest worry, though, some counterfeiting organizations may produce forged vaccination certifications. To counter this disadvantage, government organizations could offer digitalized immunization certifications. Finally, the immunization certification should be made mandatory for all kinds of transportation across the country, including rail, bus, private automobiles, airplanes, and waterways. This method would aid in the mitigation of future COVID-19 waves while also lowering the number of cases in the current wave.

2.2.3 Research on COVID-19 monitoring system

Oxford University published an article to talk about honesty in COVID-19. Truth is defined as the attribute of being genuine and devoid of deception, which is critical in human relationships. During COVID-19 epidemic, this attribute is critical for maintaining public health. It's vital, throughout this epidemic, to be honest, stay at home and wear a mask, to practice social distance, said Robert Feldman. However, I believe there are a number of subtle influences that encourage people to be less than completely honest. In the midst of the epidemic, people are fabricating and forging COVID-19 test certificates.

With the exception of posing a threat to the good of the environment, false vaccine inoculations in the country may result in a high prevalence of vaccine apprehension, which is now a source of worry in a number of countries (Choudhary et al., 2021).

According to Spisak and MncNulty (2021), tests and certifications of vaccination status are clear solutions to our problems that are, unsurprisingly, recommended in medical journals. Failure to obtain a certification might become a source of embarrassment. This might lead to attempts to falsify credentials or the establishment of a category of unapproved workers who are paid less and have fewer benefits. Inequalities and structural difficulties in society are exacerbated in such circumstances. For example, a freshly infected migrant worker in South Australia told contact tracers that he had gone to a pizza business to pick up some food when he was actually a staff. The deception led authorities to believe the strain was extremely infectious, resulting in a mandatory lockdown of 1.7 million people.

Marhold and Fell (2021) stated that EVC is a smartphone app that links to a centralized database. Healthcare practitioners update the system with a people's vaccination status. The app creates a token or QR ('response') code indicating the vaccination status based on that data, which can subsequently be checked by authorized persons. Suggested EVCs in certain countries take advantage of available government vaccine-record-digitization achievements, whilst databases in many others are created by commercial actors. EVCs may additionally contain a facility for storing verified PCR and/or antigen test findings until immunization becomes generally available for large demographic groups.

2.2.4 Research on Covid -19 travel issues

In order for international travelers to be implemented in ASEAN in accordance with IHR rules, vaccinations must be authorized by WHO, of sufficient quality, and widely available for the protection of all people from illness transmitted across international boundaries. The COVID-19 epidemic has raised severe concerns among governments about how to proceed. Authorities must engage their people before adopting such rules, which must be done in a multi-sectoral framework (Corpuz, 2021).

Humphreys, (2021) claims that World Health Organization states on study that Dr. Integrity Mchechesi, Harare-based co-founder of Vaxiglobal, a Zimbabwean health-tech start-up focused on digital information solutions for health systems, reveals that the certificates were established in the late 1960s as a strategy to restrict the transmission of yellow fever. The certificates, which carry the World Health Organization’s (WHO)

International Certificate of Vaccination or Prophylaxis, are necessary for Zimbabweans going into neighboring nations such as Mozambique or the United Republic of Tanzania, whether for commercial or private purposes.

According to the COVID-19, the card may enable the government to loosen limitations, permitting vaccinated individuals to fly, attend concerts and sporting activities, work, and eat out, among other things. Many governments throughout the globe, particularly those in Asia, Europe, and the Middle East, are planning to issue similar certificates to persons who have been vaccinated, allowing it to move without having to follow COVID-19 related travel rules. The necessity for vaccination passports in the EU area was identified by tourism-dependent southern nations (Haque et al. 2021).

2.2.5 The Gap in the Literature

From all the related research that have been gone through, it was noticed that there was a gap. The researchers highlighted so many important things about COVID-19 and COVID-19 pass. But there was no research on the user interaction with the system, how users feel about the system, what are the pros and cons of the system, how important is the system. Choudhary et al, (2021) stated that it is critical to weigh the benefits and drawbacks of a vaccination certificate. Apart from reducing the danger of COVID-19 infections. But it is still vital to know how users think about the system and what needs to be improved on to meet user's needs.

CHAPTER 3
RESEARCH METHODOLOGY

The research methodology such as research design, types of data and data collection instruments; the population of the study; sample size; sample and sampling procedures and data analysis were explained in detail in this chapter.

3.1 Research Design

A descriptive survey research design technique was used in this study. A descriptive survey design was used to collect data from a population at a certain period in time among university students within the Turkish Republic of North Cyprus. specified demographic, with a properly selected sample possessing qualities and characteristics of interest. The research design was a rough outline of how the approach to the research questions should be. This project will cover what the data is meant for, what is expected to obtain and analyze the data, and any ethical problems proposed to be address. It should also demonstrate that all aspects of the study design have been considered.

3.2 Participants

Population of this study comprises of all the students in six (6) universities in Turkish Republic of North Cyprus, which include; Near East University, Cyprus international university, Lefke university, Girne American university, University of Kyrenia, and Eastern Mediterranean University. According to universities database, the total numbers of registered students in fall semester 2021-2022 in these six universities are 95000 in TRNC.

3.2.1 Sample size and sampling procedures

It is the number of individuals or observations included in a study. To estimate the sample size, the formulae for probability population were used. The formulae are estimated as:

$$No= Z2\ (p)\ (1-p)\ /E2$$

Where:

Z Scores =1.96, population proportion P =0.5, Q=0.5, E margin of error = 0.05

Population size N = 95,000.

E margin of error = 0.05

No of sample size = 384

According to the study it was recruits that 95000 was the total number of registered students in the six universities chosen from 2021-2022 academic with the total number of students gotten from Near East University = 25000, Cyprus international university =18000, Lefke university =12000, Girne American university = 18000, University of Kyrenia= 4000, and Eastern Mediterranean University= 18000., using universal method to calculate the specific number of sample size, out of 95000 students was recruits to be the total number of 384.16 students in total to be used as the sample size in the study. With this result the number of the sample size to be use in this study will be 384 students from the six universities. According to the study, it has been recruits that three hundred and eighty four (384) registered students will be included in the study. Data obtained will be entered in to and analysis using SPSS Statistical software package

Every member of a population has an equal chance of being selected at random for sampling. All research participants were chosen using a simple sampling procedure. For research purposes, a researcher may choose at random a subset of the complete population. Someone will be picked at a one-in-a-million probability. The data is then collected with as much random selection as feasible (Alvi, 2016).

3.2.2 Demographic information of participants

Table 3.1 shows the descriptive statistics demographic characteristics of the participants in the study. Out of 385 participants in the study; 196 are male which represents 50.9%; while 189 are female participants and they represent 49.1%, the results show that we have more male participants than female. Furthermore, it also shows the ages of the participants, of this, twenty seven (27) of the participants are within the age of 17-21 years and they represent 7.0%. Those within age 22-25 are 293 and they represent 76.1% of the total participants. Those within the age 26 and above are 65 and they represent 16.9 %. From the result from the analysis, it was shown that Near East University have 66 participants and represent 17.1%, Cyprus International University with 53 participants and have 13.8%, Girne American University have 96 participants which is the highest and they have 24.9%, Eastern Mediterranean University also have 87 participants with 22.6% Kyrenia University with 33 and represent 8.65% and European University of Lefke with 50 participants and represent

13.0%. The results also show the analysis of the participants from different department: Computer Information Systems had 26 participants and represent 6.8%, Business Administration had 9 participants with 2.3%, Computer Engineering have 299 and represent 77.7% and it is the highest. Management Information System have 15 participants and represent 3.9%, there are 12 participants from Economic with 3.1%, and there are 9 participants from International Relation and European Studies and represent 2.3%, the 3 participants from Banking and Finance and Public Administration and represent 0.8%. The analysis also show result for participant from different Faculty. There were 3 participant from Engineering department and represent 0.8%, 112 participants from Nursing and represent 29.1% with is the highest, there were 53 participant from Economics and Administrative Science and represent 13.8%, 97 from Civil and Environmental Engineering and represent 25.2 %, 5 from Law and represent 1.3%, 21 participant from Education with 5.5%, 45 from Health Science and represent 11.7%, 6 participant from Pharmacy and Tourism and represent 1.6%, 4 participants from Medicine and represent 1.1% and 33 Participant from other faculties and represent 8.6%. The educational levels of the participants also show that two groups of the participants were with graduate students and they represent 21.8% of the total participants (n=84). Out of these, three hundred and one (n=301) are undergraduate students and they represent 78.2%, and the results show that they have the highest. The result also show the analysis from the nationality of the participant. 87 participant were from Sierra Leone and they represent 22.6% of the total participant which is the highest,50 participant from Liberia and they represent 13.0%,59 participant from Cameroon and they represent 15.3%,27 participant from Congo and they represent 7.0%, 21 participant from Uganda and they represent 5.5%,29 participant were from Kenya and they represent 7.5%,32 participant were from South Africa and they represent 8.3%,40 participant were from Cyprus and they represent 10.4%, 29 participant were from Turkey and they represent 7.5% and 11 participant are from other countries and they represent 2.9%.

Table 3.1

Demographic information of research participants (n = 385)

	Frequency	Percent	Valid Percent	Cumulative Percent
GENDER				
Male	196	50.9	50.9	50.9
Female	189	49.1	49.1	100.0
AGE GROUPS				
17-21	27	7.0	7.0	7.0
22-25	293	76.1	76.1	83.1
26+	65	16.9	16.9	100.0
UNIVERSITY				
Near East	66	17.1	17.1	17.1
Cyprus International	53	13.8	13.8	30.9
Girne American	96	24.9	24.9	55.8
Eastern Mediterranean	87	22.6	22.6	78.4
Kyrenia	33	8.6	8.6	87.0
European University of Lefke	50	13.0	13.0	100.0
DEPARTMENT				
Computer Information Systems	26	6.8	6.8	6.8
Business Administration	9	2.3	2.3	9.1
Computer Engineering	299	77.7	77.7	86.8
Management Information System	15	3.9	3.9	90.6
Economics	12	3.1	3.1	93.8
International Relations	9	2.3	2.3	96.1
European Union Studies	9	2.3	2.3	98.4
Banking and Finance	3	8	8	99.2
Public Administration	3	8	8	100.0

Table 3.1 continued…

FACULTY	3	.8	.8	.8
Engineering	112	29.1	29.2	29.9
Nursing	53	13.8	13.8	43.8
Economic& Administrative Science	97	25.2	25.3	69.0
Civil & Environmental Engineering	5	1.3	1.3	70.3
Law	21	5.5	5.5	75.8
Education	45	11.7	11.7	87.5
Health Science	6	1.6	1.6	89.1
Pharmacy	6	1.6	1.6	90.6
Tourism	4	1.1	.1.1	91.4
Medicine	33	8.6	8.6	100.0
Other				
EDUCATION LEVEL				
Undergraduate	301	78.2	78.2	78.2
Graduate	84	21.8	21.8	100.0
NATIONALITY				
Sierra Leonean				
Liberian	87	22.6	22.6	22.6
Cameroon	50	13.0	13.0	35.6
Congolese	59	15.3	15.3	50.9
Ugandan	27	7.0	7.0	57.9
Kenya	21	5.5	5.5	63.4
South African	29	7.5	7.5	70.9
Cypriot	32	8.3	8.3	79.2
Turkish	40	10.4	10.4	89.6
Other	29	7.5	7.5	97.1
	11	2.9	2.9	100.0

3.3 Types of Data and Data Collection Instruments

Primary data was the type of information acquired for this project. Researchers can collect primary data in a variety of ways, including surveys and interviews, questionnaires, and experiments. Primary data is often obtained directly from the source of the data and is regarded as the most essential sort of data in research (Hewson & Laurent, 2012).

The research instrument used is a close-ended questionnaire, and questions would be designed to cover the research aims of the study. The instrument for data collection in this study will be researcher's developed questionnaire. The questionnaire will seek demographic and social factors information of the student's effectiveness in using the ADAPASS during the COVID-19 pandemic. Questionnaire also contains questions on student satisfaction in usage of ADAPASS, difficulties faced by students to access ADAPASS.

The ADAPASS system was created by the north Cyprus government. This study examined the effectiveness of ADAPASS during the COVID-19 pandemic and the use among TRNC university students using the descriptive survey research technique. A Descriptive Survey Design was used for gathering data from a population at a certain period of time among university students in TRNC's identified population, with a carefully selected sample having traits and characteristics of interest. The questionnaire was divided in to four (4) sections, with the first (1) section that was used to get the demographic information for the participant and the 3 sections were ranked on a 5 Likert scale.

Section I: Demographic Information: Amid from the data collected from participants for the study and the nature of the participant which was decided to be university student. The data collected from the student was divided in groups. This section explains the demographic information of participants, like the age, nationality, university, department and level of study.

Section II: User's Opinions on the ADAPASS: The research tried to investigate on the user's opinions. The section mainly focusses on the user friendliness of the ADAPASS system and to detect errors faced by the users. The questions required "strongly agree" to "strongly disagree" answer. The section focuses on questions like, "*It was easy using ADAPASS", "In general I found ADAPASS very useful", "I can enter major places with ADAPASS", "I like the design of ADAPASS", "I use ADAPASS every day", "It was easy logging into ADAPASS system", "I did not encounter any trouble while applying for antigen and COVID-19 test on the ministry of health website", "I can logging into ADAPASS system very fast", "I found ADAPASS relevant", "I did not encounter any error using the ADAPASS code", "My first registration process was easy", "I can book my appointment in one minute", "I can book my*

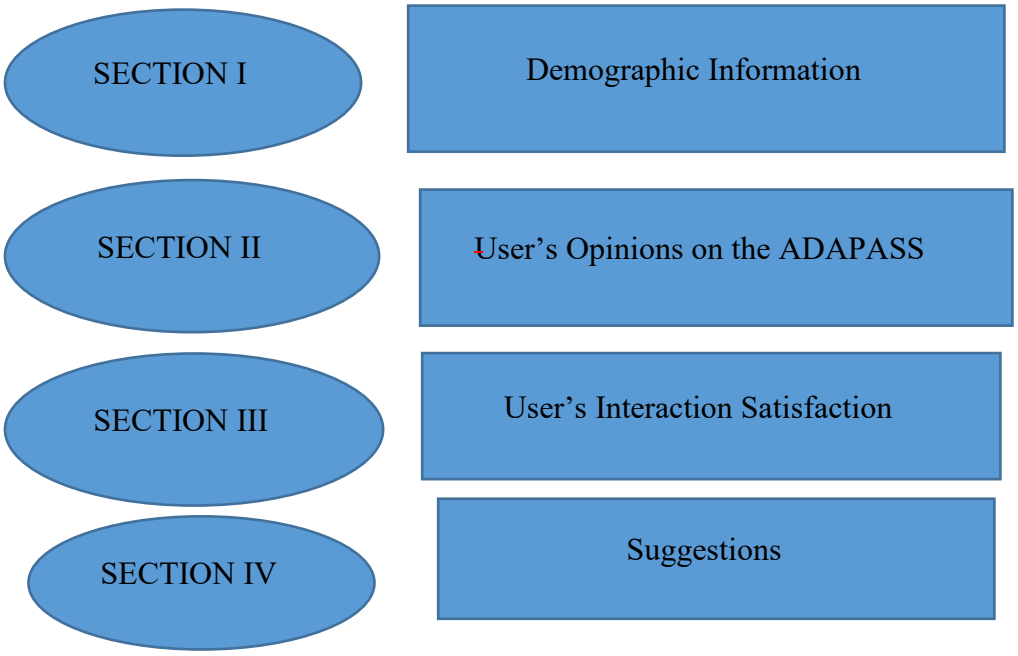
appointment myself", "I did my first registration myself", "It is easy to book appointment". To help the researcher to obtain the primary object of this study, the above research questions are examined.

Section III: User's Interaction Satisfaction: The research tries to investigate on the user's interaction satisfaction but in different way. The section mainly focuses on the users' perceptions on the ADAPASS system usage satisfaction with a rating process. It required answers like "very satisfied" to "very unsatisfied". The section focuses on questions like, "*How would you rate your overall experience using ADAPASS?", "How satisfied are you with the registration process?", "How satisfied are you with the appointment booking process?", "Rate the design of the ADAPASS", "How do you find your need of the ADAPASS, rate the quality of the ADAPASS".* The above research questions are examined in order to obtain the primary objective of the study.

Section IV: Suggestions: The researcher tried to get suggestions from the users. Suggestions that will make the ADAPASS system user friendly. On this section, the opinions of the users are observed. This section focused on questions like,"*Did you encounter any problem in using the ADAPASS code?" "If yes stare the problem, what need to be improved on the ADAPASS system?", "What should be changed in order to live up to your expectation?".* The above research questions are examined in order to obtain the primary objective of the study.

Figure 3.1

The illustration of the questionnaire structure



3.3.1 Reliability

To assess the reliability of the questionnaire, a Cronbach alpha was analyzed in SPSS and the outcome of the results showed that the questionnaire was reliable as the result was recorded with a total Cronbach alpha of .631. Robinson et al. (2013) stated that Cronbach alpha value should be minimum of 0.6 to be considered satisfactory. From the results, it is clearly seen that the questionnaire can be uses for scientific purposes.

Table 3.2

Questionnaire reliability test

Cronbach's Alpha	N of Items
.631	13

3.4 Data Analysis Methods

In order to show, describe or summarized the data collected from participant in a meaningful way, the descriptive statistical, the *t*-test and the one-way Welch's ANOVA methods were used to analyze the data. For the post hoc test, Games-Howell test was performed since the variances were not statistically equal. Descriptive survey was design to collect data from student in Northern Cyprus in a certain period of time. The goal was to present participant, responses to survey items. Descriptive statistic involves, percentages, frequencies, ranges, mean and standard deviation for continuous data. These are used for the descriptive data analysis.

3.5 Research Procedure

The Table 3.3 shows the stages of this thesis as well as the duration it took for each phase to be completed. The procedures were carried out step by step as it is below:

1. A literature was done to fully understand what has been done on the same or similar topic before.
2. A thesis proposal was submitted to the computer science Department for review.
3. Feedback was given by the supervisor as the researcher proceeds.
4. Ethical committee conducted a review on the ethics of the research.

5. The researcher distributed the questionnaire to different universities.
6. The data were inputted it to SPSS ready to be analyze.
7. Data was analyzed using the most appropriate data analysis method and results were given.
8. The supervisor was informed of each phase and corrections and feedback was obtained and worked towards.
9. The final version of the thesis was presented to the Jury board for further feedbacks and corrections were taken into consideration until the final thesis was approved.

3.6 Research Schedule

The Table 3.3 is a representation of the schedule for the research. This is in order to have more understanding about how the whole thesis was schedule. It clearly describes the task and shows the duration of each task.

Table 3.3

The thesis research schedule

PROCEDURE	DURATION (WEEKS)
Literature review (Until thesis defence)	10
Writing thesis proposal	5
Prepare the questionnaire and testing	1
Analyzing sample data and feedback	1
Final questionnaire and distribution to students	3
Data collection, entering data into SPSS and data analysis	4
Writing all chapters	3
Thesis submission for review	1
Correction of thesis	1
Jury and final correction	1
TOTAL	30

CHAPTER 4
RESULTS AND DISCUSSION

This chapter explains the results of the research which is directed to the research question and the main aim of this research.

4.1 Users' opinions on ADAPASS

The results given below are based on users' perceptions obtained from the questionnaire. A descriptive analysis is carried out and the results are shown in Table 4.1.

Table 4.1

User's opinion on ADAPASS

No.	Items	Mean	Std. Deviation
1.	It was easy to get ADAPASS.	2.48	.750
2.	In general, I found ADAPASS very useful.	2.02	.522
3.	I can enter major places by showing my ADAPASS.	2.56	.818
4.	I like the design of the ADAPASS.	1.98	.441
5.	I use ADAPASS every day.	3.23	.958
6.	It was easy logging into the ADAPASS system.	2.74	.784
7.	I did not encounter any trouble while applying for Antigen and COVID-19 test on the Ministry of Health website.	2.81	.780
8.	I can logging in to the ADAPASS system very fast.	2.60	.678
9.	I found ADAPASS relevant.	2.02	.505
10.	I did not encounter any error in using the ADAPASS code.	2.70	.701
11.	My first registration process was easy.	2.52	.696
12.	I can book my appointment in one minute.	2.76	.719
13.	I can book my appointment myself.	2.01	.402
14.	I did my first registration myself.	2.19	.620
15.	It is easy to book appointment.	2.86	.755

According to Table 4.1 which shows the users' opinions on ADAPASS during the pandemic among university students. The highest mean on the opinions of students on ADAPASS is found on items 5*, "I use ADAPASS every day* (M= 3.23)". This mean most of the participant are being neutral on this. Which came as a surprise. This shows that many of the students don't think that they actually need to use ADAPASS system every day. The second highest mean of the students' opinions on ADAPASS were found in item 15, "*It is easy to book appointment (M=2.86)".* This mean most of the participant are being neutral on this also. Which also show that many of the students have little or no understanding about the appointment booking process of ADAPASS system. The third highest mean of the students' opinions about ADAPASS were found on item 7, *"I did not encounter any problem while applying for Antigen and COVID-19 test on the Ministry of Health website (M=2.81)".* This also show that most of the participant are being neutral on this. Which means the students have little understanding about the appointment booking process.

On the other hand, the lowest mean of the students' opinions on ADAPASS were found on item 4, "*I like the design of the ADAPASS (M=1.98)".* This mean that some student totally not pleased. They have problems with the design of the ADAPASS. And they don't appreciate it. The second lowest mean of the students' opinions about ADAPASS were found in item 13, "*I can book my appointment myself* (M=2.01)'', which mean that most students always ask for help in-order to book appointment on ADAPASS. The third lowest mean of the students' opinions on ADAPASS were found on item 2*," In general, I found ADAPASS very useful (M=2.02)".* This mean that most of students don't find ADAPASS to be useful during the COVID-19. Which came as a surprise. Similar result which the mean (M=2.03, SD=.95) for website usability was also found in a study conducted by Holtz et al. (2018). According to this result from Table 4.1, it clearly shows that the opinions of most of the students is almost satisfactory. That signifies that the students satisfy with the ADAPASS system to some extent.

4.1.1 Difference by gender

In order to find out whether or not there was any important statistically difference between user's perceptions by gender, independent sample *t*-test was carried out and the results are shown in Table 4.2.

Table 4.2

Differences between genders

Gender	N	Mean	Std. Deviation	*t*	p
Female	189	2.89	.315	-5.235	0.000
Male	196	2.66	.505		

Table 4.2 shows independent sample *t*-test results for the users' opinions on ADAPASS during the COVID-19 outbreak. Out of the 385 participants, the mean of the female students' users' opinions on ADAPASS during the COVID-19 were (M=2.89, SD= .315) as compared to (M=2.66, SD= .505) for male, which shows that there is statistically significant difference between gender opinions on ADAPASS (p = 0.000). Similar result was also found in a study conducted by Broos (2005) and (Cavus & Bicen, 2009) who found statistical difference between genders in terms of new technology.

4.1.2 Difference according to age

In order to find out whether or not there was any important statistically difference between user's perceptions by age, Welch's ANOVA test was carried out and the results are shown in Table 4.3.

Table 4.3

Differences between ages

Age Group	N	Mean	Std. Deviation	Welch's F	df1	df2	p	Significant Difference
17-21	27	2.14	.211					-Between 17-21and 22-25
22-25	293	2.59	.344	56.730	2	67.448	0.000	
26+	65	2.21	.560					-Between 22-25 and 26+

Table 4.3 shows the Welch's ANOVA test for the users' opinions on ADAPASS during the COVID-19 outbreak. Out of the 385 participants, students within the age 17-21 are 27 (M= 2.14, SD =.211). Those within age 22-25 years are 293 (M=2.59, SD=.344), and those within 26 years and above are 65 (M=2.21, SD=.560). Similar result was also found in a study conducted by (Broos, 2005). The findings for this study showed that the age differences show there was a statistically significant difference between participants of age17-21 and 22-25 and also between ages 22-25 and 26 and above, Welch's F(2, 67.448)=56.730, p=0.000. In contrast, Tabrizi and Cavus (2015) didn't find a statistically significant difference between age groups' opinions about smartphone usage status in their study.

4.1.3 Difference according to education level

In order to find out whether or not there was any important statistically difference between user's perceptions by education level, independent sample *t*-test was carried out and the results are shown in Table 4.4.

Table 4.4

Differences between education level

Education Level	N	Mean	Std. Deviation	*t*	p
Undergraduate	301	2.59	.327	6.446	0.000
Graduate	84	2.19	.543		

Table 4.4 shows the *t*-test analysis for the user's opinions on ADAPASS during the COVID-19 outbreak. Out of the 385 participants, 84 of them are graduate (M=2.19, SD= .543), and those that were undergraduates are 301 (M= 2.59, SD= .327). The result shows that there was statistical difference in educational level, *t* (6.446), p=0.000. Similar result was also found in a study conducted by Broos (2005).

4.2 ADAPASS Satisfaction

To understand whether user satisfy to use ADAPASS or not, the following analysis were done.

4.2.1 Overall experience using ADAPASS

Table 4.5 shows the descriptive statistics of the overall experience using the ADAPASS. Out of the 385 participants three (3) of them feel very satisfied with ADAPASS and they represent 0.8% of them. Those who feel satisfied with the process of using ADAPASS are 188 and they represent 48.8%. Out of this, those who feel unsure are 170 and they represent 44.2%. Out of this, those who feel unsatisfied with the experience of using ADAPASS were three (3) and they represent 0.8%. And those who feel very unsatisfied are 20 and they represent 5.5%. Therefore, those who have satisfied experience have the highest percentage.

Table 4.5

The users' overall experience using ADAPASS

	Satisfaction Level	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	3	.8	.8	.8
	Satisfied	188	48.8	48.8	49.6
	Unsure	170	44.2	44.2	93.8
	Unsatisfied	3	.8	.8	94.5
	Very unsatisfied	20	5.5	5.5	100.0
	Total	384	100.0	100.0	

According to Table 4.5 which show the descriptive statistics of the users' overall experience using ADAPASS. Out of 384 participants, 188 feel satisfied with the process of using ADAPASS and they represent 48.8%. While those who feel unsure with the system are 170 which represents 44.2 %. Similar result was found in a study conducted by Calawen,

(2022) in order to show user system usability satisfaction. From the findings, the result shows that 48.8% are with the highest, which represent users that are satisfied with the process of using the ADAPASS. But 170 users were unsure which is also high. This shows that very high percentage of the participants did not have a pleasant experience with the ADAPASS. Thou quite a good number were satisfied.

4.2.2 Registration process

Table 4.6 shows the users satisfaction with the registration process. Out of 385 participants, 304 were satisfied with the registration process, and they represent 79.0%. Those who were very satisfied with the registration process are 60 users and they represent 15.5%. While those who were unsatisfied with the registration process are 21, and they represent 5.5%. Therefore the descriptive statistics analysis show that the participants where quite satisfied with the registration process.

Table 4.6

Rate the registration process

	Frequency	Percent	Valid Percent	Cumulative Percent
Very satisfied	60	15.5	15.5	15.5
Satisfied	304	79.0	79.0	94.5
Unsure	0	0	0	94.5
Unsatisfied	21	5.5	5.5	100.0
Very unsatisfied	0	0	0	0
Total	385	100	100	

According to Table 4.6, it shows the satisfaction rate of the registration process. Out of the 385 participants, 304 satisfied with the registration process, which represents 79%. While those who feel very satisfied with registration process are 60 and represent 15.5 %. The result shows that those who are satisfied with the registration process have the highest percentage, which mean the participant illustrate some amount of satisfaction for the registration process.

4.2.3 Appointment Booking Process

Table 4.7 show the users' opinions on appointment booking process. Out of 385 participants, 115 were very satisfied with the appointment booking process, and they represent 29.9%. Those who were satisfied with the booking process are 231 and they represent 60.0%. Those who are unsure are15 and represents 3.9%, while those that are unsatisfied are 24 and represent 6.2%. Therefore, the descriptive statistics analysis show that the participants where quite satisfied with the registration process.

Table 4.7

Users' appointment booking process

	Frequency	Percent	Valid Percent	Cumulative Percent
Very satisfied	115	29.9	29.9	29.9
Satisfied	231	60.0	60.0	89.9
Unsure	15	3.9	3.9	93.8
Unsatisfied	24	6.2	6.2	100.0
Very unsatisfied	0	0	0	0
Total	385	100	100	

According to Table 4.7, show the users' opinions on appointment booking process. Out of the 385 participants, 115 feel very satisfied and they represents 29.9%, while 231 satisfied with the appointment booking process with 60%. Therefore, the result shows that those with highest percentage are those who are satisfied with the registration process, which in general means most participant were satisfied with the appointment booking process of ADAPASS.

4.2.4 Quality of the ADAPASS

Table 4.8 shows the users' opinions on the quality of ADAPASS. Out of 385 participants, 131 were very satisfied with the quality of the ADAPASS, and they represent 34.0%. Those who were satisfied with the ADAPASS quality are 219 and they represent

56.9%. Those who were unsure are 3 and represents 8%, while those that are unsatisfied are 29 and represent 7.5% and those that were very unsatisfied with the quality of the ADAPASS were 3 and the represent 8%. Therefore, the descriptive statistics analysis show that the participants where quite satisfied with the quality of the ADAPASS. Similar result was also found in a study done by Holtz et al. (2018).

Table 4.8

The users' opinions on quality of ADAPASS

	Frequency	Percent	Valid Percent	Cumulative Percent
Very satisfied	131	34.0	34.0	34.0
Satisfied	219	56.9	56.9	90.9
Unsure	3	.8	.8	91.7
Unsatisfied	29	7.5	7.5	99.2
Very unsatisfied	3	.8	.8	100.0
Total	385	100.0	100.0	

According to Table 4.8**,** the users' opinions on the quality of ADAPASS show that out of the 385 participants, 131 were very satisfied with the quality of the ADAPASS and represents 34.0%. And also 219 participants feel just satisfied with the quality of the ADAPASS which represents 56.9%. Therefore, the result shows that there is high satisfaction rate for the quality of ADAPASS.

4.2.5 Design of the ADAPASS

Table 4.9 shows the users' opinions on the design of ADAPASS. Out of 385 participants, 146 show that the design of ADAPASS was very good, and they represent 37.9%. Those who said the design was just good were 204 and represents 53.0%. Those who were unsure and claim that it was fairly good were 29 and represents 7.5%, while those that said the design was poor were 6 and represent 1.6%. Similar result was also found in a study done by Holtz et al. (2018) Therefore, the descriptive statistics analysis show that the participants where quite satisfied with the design of the ADAPASS.

Table 4.9

ADAPASS design

	Frequency	Percent	Valid Percent	Cumulative Percent
Very Good	146	37.9	37.9	37.9
Good	204	53.0	53.0	90.9
Fair	29	7.5	7.5	98.4
Poor	6	1.6	1.6	100.0
Very poor	0	0	0	0
Total	385	100.0	100.0	

According to Table 4.9, it shows the result of the ADAPASS design. Out of 385 participants 146 says the design is very good which represents 37.9%, while those with the opinion that the design is good are 204 and they represents 53% which is the highest. Similar result was also found in a study done by Holtz et al. (2018). Therefore, according to this result, there is high satisfaction rate for the design of ADAPASS.

4.2.6 Opinions on need of the ADAPASS

Table 4.10 shows the users' opinions on the need of ADAPASS. Out of 385 participants, 75 claim that the ADAPASS was very useful and they represent 19.5%. Those that said the ADAPASS was just useful were 37 and represents 9.6%. Those who were unsure are 267 and represents 69.7%, while those that said the ADAPASS was almost useful were 6 and represent 1.6%. Therefore, from the result the analysis shows that the participants where quite unsure about the need of the ADAPASS.

Table 4.10

The users' opinions on need of the ADAPASS

	Frequency	Percent	Valid Percent	Cumulative Percent
Very Useful	75	19.5	19.5	19.5
Useful	37	9.6	9.6	29.1
Unsure	267	69.4	69.4	98.4
Almost Useful	6	1.6	1.6	100.0
Not Useful	0	0	0	0
Total	385	100.0	100.0	

According to Table 4.10, shows the users' opinions on need of the ADAPASS. Out of the 385 participants, 75 of the students claim that ADAPASS is very useful and they represent 19.5%, while those who feel unsure of the usefulness of the ADAPASS system during the pandemic are 267 and they represent 69.4 %, which is the highest. Therefore, the result shows that participants were not sure about how much the ADAPASS is needed during the COVID-19.

4.3 Suggestions

4.3.1 Encountered problems

The general goal of this research is to know the significant of ADAPASS during the COVID-19. There were 385 participants on this study. We asked some few questions in the survey to find out the problems encountered by the student on using the ADAPASS. From the result, the participants highlighted different problems that were encountered with the ADAPASS. Below is a list of the problems encountered using the ADAPASS:

- A problem was noticed while booking appointment for Antigen/PCR appointment on the ADAPASS system. The ADAPASS number needs to be copied and paste on the

system, which was time wasting and made the system difficult to use especially while booking appointment.

- Some participants claim there is possibility for two users to use the same ADAPASS, in order to enter places which are restricted to people without ADAPASS. This is seen as a cheat into the system which can be prevented.
- Participants also claim that the ADAPASS was printed on A4 paper and laminated which is not durable and may lead to continuous printing of the ADAPASS.
- Most participants also claims that they don't know how to use the ADAPASS system.

4.3.2 Need to improve on the ADAPASS system

After a thorough analysis from the response received from participants, and with the main aim of the study, which is to know the significant of using the ADAPASS. We asked some few questions in the survey to find out the suggestions of students to improve the ADAPASS system. The participants suggested several ways in which the ADAPASS can be improved. These ways are listed below.

- A problem was noticed while booking for Antigen/PCR appointment on the ADAPASS system. The ADAPASS number needs to be copied and paste on the system. 75.5% of users' opinions were to modify the system in a way users can just input the ADAPASS number into the system.
- 2.1% of the participants suggested that each ADAPASS should have the picture of the owner so that two users won't be able to use one ADAPASS. Which actually makes sense and can improve on effectiveness.
- 2.6% of the participant also suggested that because ADAPASS is printed in A4 paper and it's been laminated by users to be mobile, it will not be durable. This can be improved to biometric card system which can last longer.
- 7.8% of the participants also suggest that more awareness should be created in order to teach users how to get ADAPASS and use the system to apply for tests.
- 1.3% of users suggest that improvement should be done to make the ADAPASS more accessible while 0.8% of users suggested that the system should be more user friendly and 8.3% of users were not really sure about what they wanted to be improved.

4.3.3 Changes to live up to users' expectations

There were problems that were mentioned by the participants. The participants suggested several ways in which the ADAPASS can be improved in order to live up to their expectations. These ways are listed below:

- The ADAPASS number needs to be copied and paste on the system. This should be modified so that users can just input the ADAPASS number into the system. This might bring about ease of use.
- ADAPASS should have the picture of the owner so that two users will not be able to use the same ADAPASS to enter places which have been restricted to people without ADAPASS.
- It was suggested that the ADAPASS be improved to a biometric card system which can last longer in order to meet up to user's expectations
- More awareness should be created in order to teach users how to get ADAPASS and use the system to apply for PCR/Antigen tests.

CHAPTER 6
CONCLUSION AND RECOMMENDATIONS

This chapter summarize the study and give the conclusion and recommendations of the research.

6.1 Conclusion

After conducing this research, it was concluded that ADAPASS is relevant during the COVID-19 pandemic, however, the effectiveness has some challenges. The result showed some challenges which can be improved on. Evaluation has been conducted among 385 students in Northern Cyprus and the results showed that:

- Not everyone was completely satisfied with the ADAPASS, although the majority were satisfied with the system.
- Majority of the participants found ADAPASS to be relevant.
- In the aspect of improvement, thou most people appreciated the ADAPASS system. But they claimed that there were some improvements that are needed to be done.
- There were problems in typing the code while registering for test on the system. The system only allows user to copy and paste the code.
- There was problem with durability of the ADAPASS card.
- Not everyone knows how to use the ADAPASS system.

6.2 Recommendations

Below is a list of recommendations that will aid positively to improve the ADAPASS system within the Northern Cyprus:

- There should be a way or a platform created to teach people how to use the ADAPASS system, may be through Television station, Radio or face to face teaching (workshop).

- ADAPASS users should have their photo on it, so two people cannot use the same ADAPASS.
- The ADAPASS should be printed in biometric card for durability.
- The code under the QR code that is used to identify users, should be allowed to be typed in not just to copy and paste.

References

Bicen, H., & Cavus, N. (2010). The most preferred social network sites by students. *Procedia Social and Behavioral Sciences, 2*(2010), 5864-5869. https://doi.org/10.1016/j.sbspro.2010.03.958

Holtz, E.B., Katharine, M. M., Amy, K. N., Shelia, R.C., Denise, D. H., Julie, K. D., & Michael, A.W. (2018). Using user-feedback to develop a website: MyT1DHope, for parent of children with T1D. *Health Communication, 35*(3), 281-288. doi:10.1080/10410236.2018.1560579

Calawen, S.D. (2022). Dark pattern: effect on overall user experience and site revisitation. *Technology University Dublin*, 101. doi:10.21427/BRW3-HZ03

Cavus, N. (2008). NMOBTEC-ENVEDU: M-learning system for environmental education. *Paper presented at the 11. Bilişim Teknolojileri Işığında Eğitim Kongresi (BTIE'11)*, Türkiye Bilişim Derneği, 19-21 Nov 2008, Ankara, Turkey.

Cavus, N., & Bicen, H. (2009). A study to find out the preferred free e-mail services used by university students. Procedia Social and Behavioral Sciences, 1(2009) 419-425.

Cavus, N. (2020). Evaluation of MobLrN m-learning system: Participants' attitudes and opinions. *World Journal on Educational Technology: Current Issues, 12*(3), 150-164. https://doi.org/10.18844/wjet.v12i3.4978

Choudhary, O. P., Singh, I., & Rodriguez, T.M. (2021). Fake Covid-19 vaccines: Scams hampering the vaccination drive in India and Possibly other countries. *Human Vaccines and Immunotherapeutics, 17*(11), 4117-4118. doi:10.1080/21645515.2021.1960770

Ciotti, M., Ciccozzi, M., Terrinoni, A., Jiang, W., Wang, C., & Bernardini, S. (2020). The Covid-19 pandemic. *Critical Reviews in Clinical Laboratory Science*, 365-388. doi:10.1080/10408363.2020.1783198

Corpuz, G.C.J. (2021). Covid-19 vaccination certificate (CVC) for ASEAN: the way forward. *Journal of Public Health*, 0. doi:10.1093/pubmed/fdab202

Deguma, M., & Deguma, J. (2021). The possible threat of faking Covid-19 diagnostic tests and vaccination certifications: a call to an immediate action. *Journal of Public Health, 43*(2), e340-e341. doi:10.1093/pubmed/fdab054

Drury, J., Mao, G., John, A., Kamal, A., Rubin, G., Stott, C., Vandrevala, T., & Marteau, T. (2021). Behvioural responses to Covid-19 health certificattion: a rapid review. *BMC Public Health, 21*(1). doi:10.1186/s12889-021-11166-0

Dye, C., & Mills, M. (2021). Covid-19 Vaccination passport. *Science, 371*(6535), 0. doi:10.1126/science.abi5245

Elammari, H.A.B., & Cavus, N. (2019). Investigating the factors affecting students' smartphone purchasing behaviors in the context of mobile learning. *International Journal of Emerging Technologies in Learning, 14*(22), 111-121, https://doi.org/10.3991/ijet.v14i22.11748

Mark, J., Hall, M., & Studdert, D. (2021). "Vaccine Passport" Certification policy and Ethical. *New England Journal of Medcine, , e32*(11), 385. doi:10.1056/nejmp2104289

Haque, A., Naqvi, B., Islam, A., & Hyrynsalmi, S. (2021). Towards a gdpr-compliant blockchain-based covid vaccination passport. *Applied Science, 11*(13), 0. doi:10.3390/app11136132

ADAPASS and Covid-19 vacination. (2022). Retrieved June 8, 2022 from https://www.infonorthcyprus.com/vaccination

Marhold, K., & Fell, J. (2021). Electronic Vaccination Certificates: avoiding a repeat of the contact- tracing 'format wars'. *Nature Medcine, 27*(5), 738-739. doi:10.1038/s41591-021-01286-w

Mbombo, A.B., & Cavus, N. (2021). Smart university: A university in the technological age. TEM Journal, 10(1), 13-17, DOI: 10.18421/TEM101-02

McLarnon, M., & Heron, N. (2021). The COVID-19 athlete passport: A tool for managing athlete COVID-19 status surrounding the Tokyo 2020 Olympic games. *Physician and Sportsmedicine, 49*(4), 367-370. doi:10.1080/00913847.2021.1885964

Mills, M., & Rüttenauer, T. (2022). The effect of mandatory COVID-19 certificates on vaccine uptake: synthetic-control modelling of six countries. *The Lancet Public Health, 7*(1), e52-e22. doi:10.1016/S2468-2667(21)00273-5

Mithani, S., Bota, A., Zhu, D., & Wilson, K. (2022). A scoping review of glabal vaccine certificate solution for Covid 19. *Human Vaccines and Immunotherapeutics, 18*(1), 1-12. doi:10.1080/21645515.2021.1969849

Ghasemifard, N., Shamsi, M., Kenar, R.R.A., & Ahmadi, V. (2015). A new view at usability test method of interfaces for human computer interaction. *Double Blind Peer Reviewed International Research Journal, 15*(1), 0975-4350.

Padhan, R., & Prabheesh, K. (2021). The economics of covid 19 pandemic: A survey. *Economic Analysis and Policy, 70*, 220-237. doi:10.1016/j.eap.2021.02.012

Padhan, R., & Prabheesh, K. (2021). The economics of COVID-19 pandemic: A survey. *Economic Analysis and Policy, 70*, 220-237. doi:10.1016/j.eap.2021.02.012

Pavli, A., & Maltezou, H. (2021). Covid-19 Vaccine passport for safe resumption of travel. *Journal of Travel Medcine, 28*(4), 0. doi:10.1093/jtm/taab079

Sadiq, R. B., Cavus, N. & Ibrahim, D. (2021). Mobile application based on CCI standards to help children learn English as a foreign language. *Interactive Learning Environments, 29*(3), 442-457. https://doi.org/10.1080/10494820.2019.1579239

Schmidt, H., Weintraub, R., Williams, M., Miller, K., Buttenheim, A., Sadecki, E., Wu, H., Doiphode, A.,Nagpal, N., Gostin, L., & Shen, A. (2021). Equitable allocation of Covid-19 vaccines in the United State. *Nature Medicine, 27*(7), 1298-1307. doi:10.1038/s41591-021-01379-6

Sharun, K., Tiwari, R., Dhama, K., Rabaan, A., & Alhumaid, S. (2021). Covid-19 vaccination passport prospects scientific feasibility and ethical concearns. *Human Vaccine and Immunotherapeutics*, *17*(11), 4108-4111. doi:10.1080/21645515.2021.1953350

Sharun, K., Tiwari, R., Dhama, K., Rabaan, A., & Alhumaid, S. (2021). Covid-19 vaccination passport prospects, scientific feasibility, and ethical concern. *Human Vaccine and Immunotherapeutics, 17*(11), 4108-4111. doi:10.1080/21645515.2021.1953350

Sotis, C., Allena, M., Reyes, R., & Romano, A. (2021). Covid-19 vaccine passport and international traveling: The combined effect of two nudges on American support for the pass. *Internationa Journal Of Environment Research and Public Health, 18*(16), 0. https://doi.org/10.3390/ijerph18168800

Spisak, B., & McNulty, E. (2021). Cincern regarding Covid-19 vaccine certificate. *Politics and Life Sciences*, 1-3. doi:10.1017/pls.2020.29

Tabrizi, S.S, & Cavus, N. (2015). A Study to determine of students' smartphone usage status: A case study in Near East University. *The International Journal of Human, Community & Technology, 1*(2), 9-17.

Walkowiak, M., Walkowiak, J., & Walkowaik, D. (2021). Covid-19 passport as a factor determining the success of national vaccination campaigns: Does it work? the case of Lithuania vs Poland. *Vaccines, 9*(12), 0. doi:10.3390/vaccines9121498

Whitelaw, S., Mamas, M., Topol, E., & Van S. H. (2020). Applications of digital technology in Covid-19 pandemic planning and response. *The Lancet Digital Health, 2*(8), 435-440. doi:10.1016/S2589-7500(20)30142-4

Humphreys, G. (2021). Opening up with Covid -19 passes. *Bulletin of the World Health Organization, 99*(8), 546-547. doi:10.2471/BLT.21.020821

APPENDICES

APPRENDIX A

THE SCIENTIFIC RESEARCH ETHICAL COMMITTEE APPROVAL LETTER

13.04.2022

Dear İbrahim Lamin Bangura

Your application titled **"The Effectiveness of ADAPASS"** with the application number NEU/AS/2022/153 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of theScientificResearchEthicsCommittee

Direnc Kanol

Note: If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.

APPENDIX B

THE QUESTIONNAIRE

INVESTIGATING THE EFFECTIVENESS OF ADAPASS DURING THE COVID-19 PANDEMIC

Dear Participant,

You are asked to participate in a research study that we are carrying out in order to understand the effectiveness of the ADAPASS in TRNC. The data collected through this study will be used to know how well is the ADAPASS system effective and what needs to be improved on the system. If you agree to participate, a link will be sent to you in which you will be required to answer the question on the questionnaire. By signing below, you have agreed to participate in this study.

Please note that your participation in this study is voluntary and whether you agree to be a part or not will have no negative academic Impact. Your identity will not be revealed in any case to third parties. The data collected during this study will be used for academic research purpose only and may be presented at national/international academic meetings/publication. You may quit participation in this study at any time by contacting us. If you want out of the study, your data will be deleted from our database and will not be included in the study. In case you have any Question or concern, please contact us by using the information below.

IBRAHIM LAMIN BANGURA (Master Student)

Prof.Dr. Nadire CAVUS (Thesis supervisor)

SECTION A

DEMOGRAPHIC INFORMATION

Gender:……..

Age:……..

Location:…….

Student Level:…….

University…….

Nationality…….

Department……

Faculty…….

SECTION B

Please complete the following questionnaire with specific regards to the above enquiry, by placing X in the appropriate box.

Strongly agree(1)	**Agree(2)**	**Neutral(3)**	**Disagree(4)**	**Strongly disagree(5)**

No.	**Items**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
1.	It was easy to get ADAPASS.					
2.	In general, I found ADAPASS very useful.					
3.	I can enter major places by showing my ADAPASS.					
4.	I like the design of the ADAPASS.					
5.	I use ADAPASS every day.					
6.	It was easy logging into the ADAPASS system.					
7.	I did not encounter any trouble while applying for Antigen and Covid 19 test on the Ministry of Health website.					
8.	I can logging in to the ADAPASS system very fast.					
9.	I found ADAPASS relevant.					
10.	I did not encounter any error in using the ADAPASS code.					
11.	My first registration process was easy.					

12.	I can book my appointment in one minute.					
13.	I can book my appointment myself.					
14.	I did my first registration myself.					
15.	It is easy to book appointment.					

SECTION C

Please complete the following questionnaire with specific regards to the above inquiry, by placing X in the appropriate box.

Very satisfied (1)	**Satisfied (2)**	**Unsure (3)**	**Unsatisfied (4)**	**Very unsatisfied (5)**

	(1)	**(2)**	**(3)**	**(4)**	**(5)**
How would you rate your overall experience using ADAPASS?					
How satisfied are you with the registration process?					
How satisfied are you with the appointment booking process?					
How would you rate the quality of the ADAPASS?					

Rate the design of the ADAPASS.	• **Very Good** • **Good** • **Fair** • **Poor** • **Very Poor**
How do you find your need of the ADAPASS?	• **Very Useful** • **Useful** • **Unsure** • **Almost Useful** • **Not Useful**

SECTION D: Suggestions

Did you encounter any problem in using the ADAPASS code? If yes, state the problem, please.	
What needs to be improved on the ADAPASS system?	
What should be change in order to live up to your expectation?	

APPENDIX C

SIMILARITY REPORT

MASTER THESIS - ADAPASS

by Ibrahim_lamin Bangura

Submission date: 29-Jul-2022 05:46PM (UTC+0300)
Submission ID: 1876576671
File name: LAMIN-CONTROL.docx (1.85M)
Word count: 11582
Character count: 62911

NEAR EAST UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
DEPARTMENT OF COMPUTER INFORMATION SYSTEMS

INVESTIGATING THE EFFECTIVENESS OF ADAPASS DURING THE COVID-19 PANDEMIC

IBRAHIM LAMIN BANGURA

SUPERVISOR
Prof. Dr. Nadire CAVUS

MASTER THESIS

Nicosia
July,2022

MASTER THESIS - ADAPASS

ORIGINALITY REPORT

11%	7%	4%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	mail.mjltm.org Internet Source	1%
2	Submitted to Nelson Mandela Metropolitan University Student Paper	1%
3	www.ncbi.nlm.nih.gov Internet Source	1%
4	Submitted to University of Essex Student Paper	1%
5	sro.sussex.ac.uk Internet Source	1%
6	Submitted to Palm Beach State College Student Paper	<1%
7	www.medwinpublishers.com Internet Source	<1%
8	www.iowacconline.org Internet Source	<1%
9	Submitted to Cyprus International University Student Paper	<1%

10	Submitted to Yakın Doğu Üniversitesi Student Paper	<1 %
11	Submitted to Bedford College Student Paper	<1 %
12	Michael McLarnon, Neil Heron. "The COVID-19 athlete passport: a tool for managing athlete COVID-19 status surrounding the Tokyo 2020 Olympic games", The Physician and Sportsmedicine, 2021 Publication	<1 %
13	www.nature.com Internet Source	<1 %
14	Submitted to University of the Southern Caribbean Student Paper	<1 %
15	1library.net Internet Source	<1 %
16	acikbilim.yok.gov.tr Internet Source	<1 %
17	Submitted to University of West London Student Paper	<1 %
18	Chiara Sotis, Miriam Allena, Renny Reyes, Alessandro Romano. "COVID-19 Vaccine Passport and International Traveling: The Combined Effect of Two Nudges on Americans' Support for the Pass",	<1 %

	International Journal of Environmental Research and Public Health, 2021 Publication	
19	Submitted to Aspen University Student Paper	<1 %
20	Submitted to Asia Pacific Instutute of Information Technology Student Paper	<1 %
21	Submitted to University of KwaZulu-Natal Student Paper	<1 %
22	repository.up.ac.za Internet Source	<1 %
23	jer.iub.edu.pk Internet Source	<1 %
24	enemsmicrosystresearchspot.blogspot.com Internet Source	<1 %
25	Jeff Clyde G Corpuz. "COVID-19 vaccination certificate (CVC) for ASEAN: the way forward?", Journal of Public Health, 2021 Publication	<1 %
26	Melinda C Mills, Tobias Rüttenauer. "The effect of mandatory COVID-19 certificates on vaccine uptake: synthetic-control modelling of six countries", The Lancet Public Health, 2021 Publication	<1 %
27	assets.researchsquare.com	

	Internet Source	<1%
28	ir-library.ku.ac.ke Internet Source	<1%
29	tnsroindia.org.in Internet Source	<1%
30	Submitted to Boston University Student Paper	<1%
31	Submitted to National Institute of Business Management Sri Lanka Student Paper	<1%
32	neu.edu.tr Internet Source	<1%
33	Ana G. D. Correa, Laisa C. C. De Biase, Erich P. Lotto, Roseli D. Lopes. "Development and Usability Evaluation of an Configurable Educational Game for the Visually Impaired", 2018 IEEE Games, Entertainment, Media Conference (GEM), 2018 Publication	<1%
34	Submitted to European University of Lefke Student Paper	<1%
35	ulspace.ul.ac.za Internet Source	<1%

36	Ivan Efreaim A Gozum, Alicia D V Carreon, Marian M Manansala. "Emphasizing truthfulness in COVID-19 test declarations", Journal of Public Health, 2021 Publication	<1 %
37	Ali Asghar Yousefi Azarfam. "A Comparative Study of the Iranian and Malaysian English Learners' Communication Anxiety, Communicative Competence, Willingness to Communicate (WTC), and International Posture", Research Square Platform LLC, 2022 Publication	<1 %
38	Christopher Dye, Melinda C. Mills. "COVID-19 vaccination passports", Science, 2021 Publication	<1 %
39	dspace.brunel.ac.uk Internet Source	<1 %
40	erepository.mkuit.ac.rw Internet Source	<1 %
41	scholar.sun.ac.za:443 Internet Source	<1 %
42	Khan Sharun, Ruchi Tiwari, Kuldeep Dhama, Ali A. Rabaan, Saad Alhumaid. "COVID-19 vaccination passport: prospects, scientific feasibility, and ethical concerns", Human Vaccines & Immunotherapeutics, 2021 Publication	<1 %

43	Sera Whitelaw, Mamas A Mamas, Eric Topol, Harriette G C Van Spall. "Applications of digital technology in COVID-19 pandemic planning and response", The Lancet Digital Health, 2020 Publication	<1 %
44	Submitted to The Robert Gordon University Student Paper	<1 %
45	docplayer.net Internet Source	<1 %
46	etd.aau.edu.et Internet Source	<1 %
47	s3.amazonaws.com Internet Source	<1 %
48	www.coursehero.com Internet Source	<1 %
49	www.itspoa.com Internet Source	<1 %
50	www.studyabroad.pk Internet Source	<1 %
51	WWW.mdpi.com Internet Source	<1 %
52	academic.oup.com Internet Source	<1 %
	aseestant.ceon.rs	

53	Internet Source	<1%
54	link.springer.com Internet Source	<1%
55	pub.norden.org Internet Source	<1%
56	Keith L. Kline, Virginia H. Dale, Erin Rose. "Resilience Lessons From the Southeast United States Woody Pellet Supply Chain Response to the COVID-19 Pandemic†", Frontiers in Forests and Global Change, 2021 Publication	<1%
57	Klaus Marhold, Jan Fell. "Electronic vaccination certificates: avoiding a repeat of the contact-tracing ‘format wars’", Nature Medicine, 2021 Publication	<1%

Exclude quotes	On	Exclude matches	< 5 words
Exclude bibliography	On		