

ACCEPTANCE AND READINESS MODEL OF CLOUD COMPUTING
SERVICES FOR THE MALAYSIAN PUBLIC SECTORS PERSONNEL

MOHD TALMIZIE BIN AMRON

UNIVERSITI TEKNOLOGI MALAYSIA

ACCEPTANCE AND READINESS MODEL OF CLOUD COMPUTING
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MOHD TALMIZIE BIN AMRON

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DEDICATION

اَلْحَمْدُ لِلّٰهِ

This thesis is dedicated to

My loving family

My wife, Suhaily Maizan Abdul Manaf

And children, Afa Muhammad Isyraf, Afeef Muhammad Rifat and Awna Syumayla.

With love and respect to

My mother, Rohani Ibrahim,

Father, Amron Abu Zahid,

And mother-in-law, Sulong Embong.

For their endless encouragement, support, and sacrifice, and for which I owe them my all.

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ABSTRACT

Cloud computing enables data and applications to be accessed and shared online. Many organisations, including those in the public sector, have taken the initiative to create an innovative technological environment by using the benefits offered by cloud computing. The Malaysian government has accentuated cloud-based services and cloud computing to provide excellent service delivery for the masses. However, reports on the effectiveness of government cloud services, MyGovUC, show that it is unsatisfactory despite the government's encouragement and investment. Many agencies and employees are slow to accept and use cloud computing on a wider scale. Besides, most past studies solely focused on one perspective: acceptance theory, rather than technology readiness which is equally important in measuring user's technology acceptance. Therefore, this study investigates both the acceptance and readiness factors influencing cloud computing acceptance and readiness among Malaysian public sector personnel. The research was initiated to identify the problem and knowledge gaps by reviewing the existing literature and conducting a preliminary study among IT officers of several agencies. Subsequently, the matrix analysis was conducted during the modelling process. This study employed the Unified Theory of Acceptance and Use of Technology (UTAUT) to extend the Technology Readiness Index (TRI 2.0) model and other factors in developing a comprehensive acceptance model that relates readiness factors with acceptance factors. The model is named Cloud Computing Acceptance and Readiness Model (CCAR). The main study involved 351 respondents using a survey instrument that consisted of 15 constructs and 70 items. The research used SPSS and SmartPLS applications to perform descriptive and inferential analysis. Several tests were also conducted to understand the differences between groups. PLS-SEM analysis findings showed that performance expectancy, compatibility, security, mobility, IT knowledge, and social influence had significant effects. However, effort expectancy, top management support, and awareness had non-significant effects. On the other hand, optimism and innovativeness had a significant relationship with performance expectancy and effort expectancy. Discomfort displayed a non-significant relationship between performance expectancy and effort expectancy. Whereas insecurity indicated a significant relationship with performance expectancy but a non-significant relationship with effort expectancy. The CCAR model produced a moderate predictive power (R^2) in the variance explained in behavioural intention (63%) and actual use (35%). Hence, the model has predictive relevance and is reliable with the $Q^2 = 0.291$. Moreover, the TRI 2.0 score is 3.38, which means that it is moderate ready to embrace cloud computing. The theoretical contribution of this study is that both factors of UTAUT and TRI 2.0 will ensure extensive assessment of acceptance and readiness of cloud computing users. Practically, the CCAR model can be used by IT administrators in the public sector to measure the level of readiness and acceptance regularly to improve the cloud computing usage among public services personnel.

ABSTRAK

Pengkomputeran awan membolehkan data dan aplikasi dicapai serta dikongsi secara dalam talian. Banyak organisasi, termasuk sektor awam, telah mengambil inisiatif untuk mewujudkan persekitaran teknologi yang inovatif melalui kelebihan yang ditawarkan oleh pengkomputeran awan. Kerajaan Malaysia telah memperkasakan penggunaan perkhidmatan berasaskan pengkomputeran awan bagi menyediakan perkhidmatan yang lebih baik untuk rakyat. Namun, laporan keberkesanan perkhidmatan awam kerajaan, MyGovUC, telah menunjukkan hasil yang tidak memuaskan, meskipun kerajaan telah memberikan banyak galakan dan pelaburan yang besar. Banyak agensi dan kakitangan yang masih perlahan untuk menerima dan menggunakan teknologi ini secara lebih meluas. Selain itu, banyak kajian lampau dalam penerimaan teknologi hanya focus kepada teori penerimaan sahaja, meskipun kesediaan teknologi juga sama penting dalam menentukan penerimaan teknologi baharu dikalangan pengguna. Oleh itu, kajian ini bertujuan mengkaji faktor-faktor penerimaan dan kesediaan yang mempengaruhi penerimaan pengkomputeran awam dalam sektor awam Malaysia. Kajian ini dimulakan dengan mengenalpasti masalah dan jurang ilmu melalui analisis kajian lampau. Selain itu, temubual dengan pegawai IT daripada beberapa agensi turut dilakukan. Seterusnya, analisis matrik dilakukan untuk mengenalpasti faktor-faktor bagi membangunkan model kajian. Kajian ini menggunakan teori *Unified Theory of Acceptance and Use of Technology (UTAUT)* dengan tambahan model *Technology Readiness Index (TRI 2.0)*, serta faktor-faktor lain dalam membangunkan sebuah model yang komprehensif yang menyatukan faktor kesediaan dengan faktor penerimaan teknologi. Model ini dipanggil *Cloud Computing Acceptance and Readiness (CCAR)*. Kaji selidik utama melibatkan 351 responden menggunakan instrumen yang mengandungi 15 *constructs* dan 70 soalan. Aplikasi SPSS dan SmartPLS digunakan untuk analisis *descriptive* dan *inferential*. Hasil analisis PLS-SEM menunjukkan *performance expectancy*, *compatibility*, *security*, *mobility*, *IT knowledge*, dan *social influence* mempunyai kesan signifikan. Walau bagaimanapun *effort expectancy*, *top management support*, dan *awareness* tidak signifikan. Disamping itu, *optimism* dan *innovativeness* mempunyai hubungan signifikan dengan *performance expectancy* dan *effort expectancy*. *Discomfort* didapati tidak signifikan dengan *performance expectancy* dan *effort expectancy*. Manakala, *insecurity* menunjukkan signifikan dengan *performance expectancy* tetapi tidak signifikan dengan *effort expectancy*. Model CCAR menghasilkan *predictive power (R²)* yang sederhana dalam varians kepada *behavioural intention* (63%) dan *actual use* (35%), serta mempunyai *predictive relevance* dan kebolehpercayaan, $Q^2=0.291$. Tambahan pula, skor TRI 2.0 ialah 3.38, yang bermakna sederhana bersedia untuk menerima pengkomputeran awan. Sumbangan teoritikal kajian ini adalah faktor UTAUT dan TRI 2.0 akan dapat menilai penerimaan dan kesediaan pengguna pengkomputeran awan secara meluas. Secara praktikalnya, model CCAR boleh digunakan oleh pentadbir IT di sektor awam untuk menilai kesediaan dan penerimaan untuk meningkatkan penggunaan pengkomputeran awam dikalangan kakitangan sektor awam secara berkala.

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LIST OF ABBREVIATIONS

AVE	-	Average Variance Extracted
CB-SEM	-	Covariance-based-Structural Equation Modelling
CCAR	-	Cloud Computing Acceptance and Readiness
CVI	-	Content Validity Index
CVR	-	Content Validity Ratio
EFA	-	Exploratory Factor Analysis
HOT-Fit	-	Human, Organization, and Technology–Fit Theory
HTMT	-	The heterotrait-monotrait ratio of correlations
ICT	-	Information and Communication Technology
IT	-	Information Technology
MAMPU	-	Malaysian Administrative Modernisation and Management Planning Unit
MYGOVUC	-	Malaysia Government Unified Communication
PDSA	-	Public Sector Data Centre (<i>Pusat Data Sektor Awam</i>)
PLS-SEM	-	Partial Least Squares-Structural Equation Modelling
SEM	-	Structured Equation Modelling
SPSS	-	Statistical Package for the Social Sciences
TAM	-	Technology Acceptance Model
TOE	-	Technology-Organisation-Environment
TPB	-	Theory of Planned Behaviour
TRA	-	Theory of Reasoned Action
TRI	-	Technology Readiness Index
TTF	-	Task-Technology Fit
UTAUT	-	Unified Theory of Acceptance and Use of Technology
VIF	-	Variance Inflation Factor

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CHAPTER 1

INTRODUCTION

1.1 Overview

A man who routinely works with a computer every day, typically stores work material, personal documents, and other information on the local storage or hard drive. This information can only be accessed when the user is in front of the computer in which these files are stored. Alternatively, the user can also keep their work files on a Universal Serial Bus (USB) storage drive that allows files to be opened on any computer or device that can access the file. From a more significant point of view, organisations or companies will typically store their data and information in the data centre, whether self-owned or rented by the hosting provider. When an organisation owns a data centre, it needs to facilitate access to data, information sharing, and data security itself.

Today, the Internet is not only used for searching, uploading, and sharing information but also beyond that, for example, in data analysis and forensics, the Internet of Things (IoT), education and self-improvement, and as a platform for trade and commerce. The technical capabilities and speed of Internet networks are no longer restricted to a single computer; there is now a broad global connection that enables information to be shared with more people. Stored data and information can be accessed online with high accessibility and more flexible storage space. This allows more information to be shared and accessed by more users. Present-day computing capabilities are not only limited to data and information sharing; more users can now access the applications, software, infrastructures, and computing platforms themselves.

Cloud computing is a new platform for computer technology innovation that enables computer resources such as hardware, software, space, and more to be shared.

In cloud computing, the term *cloud* is used as a metaphor for the Internet, and the phrase cloud computing means “a type of Internet-based computing”, where various services, such as servers, storage, and applications, are delivered to an organisation’s computer and devices over the Internet (Mell & Grance, 2011). Cloud providers are usually private companies with their virtual infrastructure, where several virtual machines are hosted to offer services to their clients (Salleh & Hussin, 2017). This cloud computing technology enables users to use applications and software, access storage, and deploy computing facilities online without installing them on their workstations. Users can share cloud-based resources with this cloud computing platform that offers other benefits such as cost savings on deployment and storage, streamlined application usage, and shared information control.

Users have the option to acquire services according to the suitability and data to be stored from among a variety of cloud storage services available on the Internet. The cloud storage service provides the user with the convenience to save files and documents, update information, share, or even use the cloud as their security box. Many cloud storage providers offer various types of cloud hosting packages for organisations or companies, which are tailored to their business needs. There are three main models of services offered by cloud computing: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS); the organisation may choose any service or customise it to suit their needs (Mell & Grance, 2011).

The Software Alliance is a global software and research company based in Washington, DC. It published the 2018 Global Cloud Computing Scorecard that ranks the cloud computing readiness of 24 countries that account for 80% of the world’s IT markets. A scorecard explores the legal and regulatory framework of these countries around the world, highlighting 72 issues pertinent to assessing cloud computing readiness. The full score is 100, which shows the highest score of a country’s cloud computing readiness. Figure 1.1 shows the top 10 countries’ cloud computing climates according to national rankings, based on factors such as protection of data privacy, security, cybercrime, intellectual property rights, industry standards, free trade promotion, IT readiness, and broadband deployment.

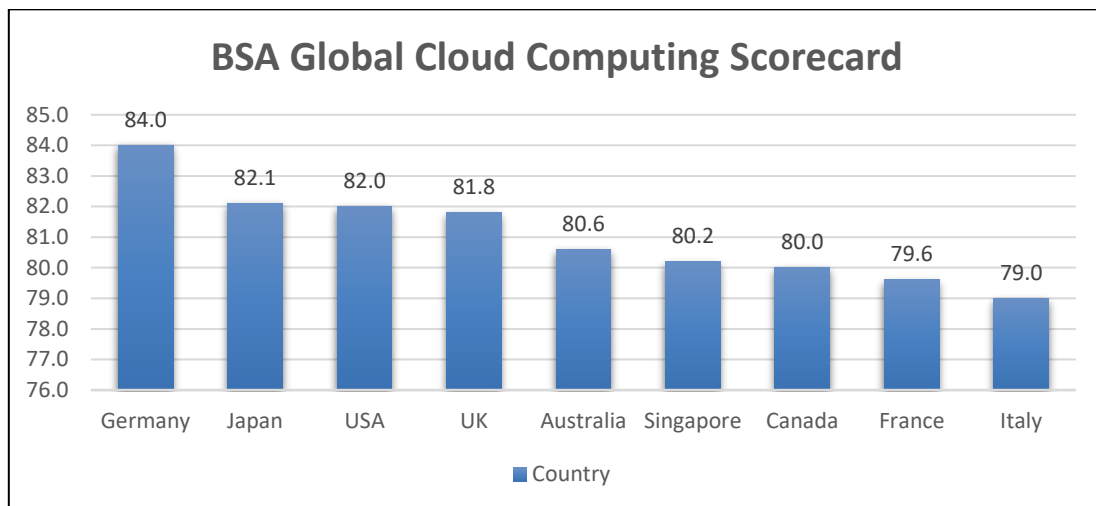


Figure 1.1 Top 10 countries' cloud computing climates (The Software Alliance, 2018)

According to the above scorecard report, Germany, Japan, the United States of America (USA), the United Kingdom (UK), and Australia are amongst the top five countries in the world in terms of readiness for cloud computing technology. The report also lists Malaysia's at the 14th position with the best achievements in terms of IT readiness, broadband, and deployment segments. The scorecard states that the ICT Development Index (IDI) for Malaysia is 6.22, below the average value of 6.58 of all the countries analysed in the report. The report also reveals that the number of Internet users in Malaysia is 71% compared to the total population. This value is higher than the average value of 67% for all countries analysed. This situation reflects the high level of users' acceptance and use of the Internet in Malaysia.

From the cloud computing providers' points of view, the latest 2020 State of the Cloud Report published by a company based in the USA, Flexera (2020), reveals the increasing use of cloud computing worldwide. The report lists seven of the world's leading cloud service providers, stating that the Amazon Web Services (AWS) have the highest acceptance rate, with 76% of respondents currently using their service. Microsoft Azure and Google Cloud rank second and third with 63% and 35% of users already using their services. Figure 1.2 shows the increase in users compared to service providers for the last two years, 2019 and 2020. This significant increase suggests that

cloud computing is gaining momentum, and this situation is in line with the increasing demand for new computing platforms.

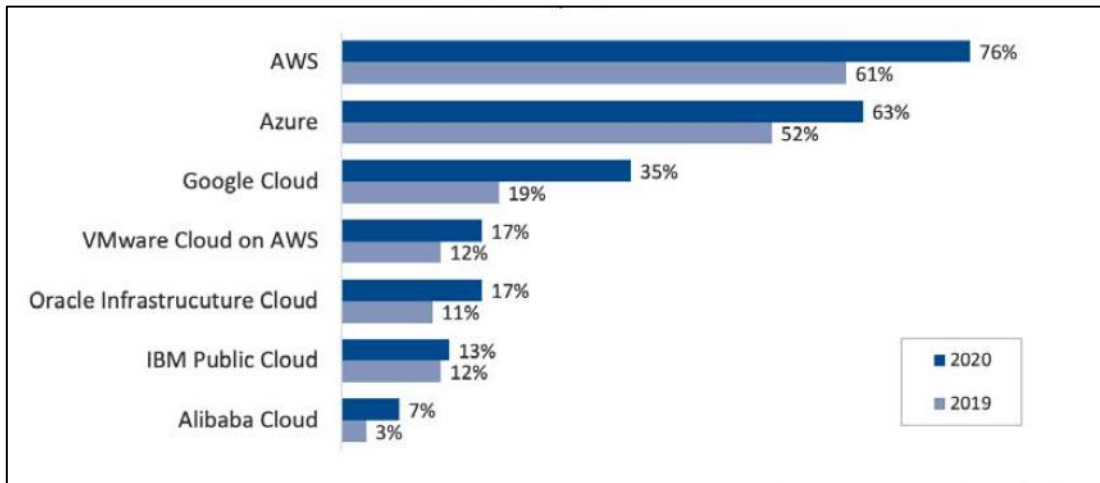


Figure 1.2 Users' adoption of cloud computing among cloud providers in 2019 and 2020 (Flexera, 2020)

Referring to the development of Malaysia's readiness revealed in the 2018 Global Cloud Computing Scorecard, the demand for cloud computing has also increased in various sectors, especially the public sector. Therefore, the Malaysian government also has the impetus to implement its national cloud computing that uses local infrastructure service providers (GITN Sdn. Bhd.) and its own data centre as a cloud farm for all government organisations. Among the initiatives are the Public Services Portal (myGovernment), e-Kehakiman, myMesyuarat, InfoSolat, e-Filing, e-Local Government (e-PBT), and e-Consent. It shows that the government is serious about increasing the use of ICT in providing services to the people. This initiative is to support the Malaysia ICT Strategic Plan 2016–2020 in which some of the main objectives are to increase the capacity of shared resources and centralised data, strengthen the Public Sector Data Centre (PDSA), and enhance government cloud services (MAMPU, 2016c).

The implementation of cloud computing technology greatly helps an organisation's operations, such as data storage, information sharing, and customer services. Ranking reports and readiness scorecards in implementing cloud computing

show that this technology has great potential in helping organisations and users, as well as increasing the number of users using cloud computing among leading cloud providers. Therefore, the public sector does not miss the opportunity to utilise this technology in providing services to the people.

1.2 Background of the Research

This section discusses the research background and provides an overview of cloud computing and the public sector, the implementation of cloud computing in the Malaysian public sector, and the cloud computing readiness in Malaysia. Cloud computing has become a preferred option for many organisations; it forces any decision made to avoid harming the company, particularly in curbing the current economic situation. In the past, the physical data centre was a necessity for the information technology sector. Nevertheless, the traditional data centre can now be ignored because cloud computing technology provides better data storage, computing features, and other add-on services at a lower price and is very economical. A well-adopted cloud provides organisations with many benefits such as normal and omnipresent access to data and applications, improving cost-effectiveness and building competitive advantage (Hamid & Yusof, 2015).

Cloud computing offers many benefits across industries such as the business, education, and healthcare sectors. Small and Medium Enterprises (SMEs) (Hassan, 2017; Priyadarshinee et al., 2016; Saedi & Iahad, 2013), the education sector (Abolfazli et al., 2015; Ali et al., 2018; Rahimah et al., 2018), the healthcare sector (Alharbi et al., 2017c; Griebel et al., 2015; Ratnam & Dominic, 2014), the banking sector (Arora & Sandhu, 2018; Rahi & Abd. Ghani, 2018), and the government sector (Jasmin & Hasan, 2018; Sallehudin et al., 2018) are among the industries that have experienced the advantages of this technology. Realising the benefits of cloud computing, many initiatives such as promoting the SME sector, cloud-based application subscription grants, and cloud-based educational applications have been developed to ensure that cloud computing implementation is not stunted due to possible barriers.

There are many challenges and issues in the adoption of cloud computing, such as the lack of IT knowledge (Abu-Shanab & Estatiya, 2017; Al-Sharafi et al., 2017; Wahsh & Dhillon, 2015a), poor IT infrastructure (Badie et al., 2014; Rashed & Alotaibi, 2016), and unresolved security issues (Badie et al., 2014; Kusnandar & Surendro, 2013; Oredo et al., 2017). Statista.com (2017) reports that the integration with existing architecture, data loss and privacy risks, legal and regulatory compliance issues, governance over cloud solutions, and making the business return in investment are among the top five obstacles that enterprises face worldwide for cloud computing adoption (Holst, 2017). Although the statistics point to several barriers, it cannot be denied that cloud-based services can eliminate the up-front costs of hardware and software (Al-Badi et al., 2018). As such, it helps the organisation to focus more on business operations.

Many countries have initiated programmes aimed at promoting the use of cloud computing at both government and public levels. The cloud computing programme of the USA, formally known as the Federal Cloud Computing Initiative, is a proposal to transform the IT infrastructure of the US Federal Government into web-based IT services (Interior, 2017). Launched during President Obama's administration in September 2009, the initiative seeks to recognise standard services and solutions among government agencies and develop a business model for cloud computing to support them. The Kingdom of Saudi Arabia has also launched a government cloud computing initiative that provides government agencies with fast, efficient, reliable, and safe services concerning infrastructure, platform, and software resources, all as a service package (CITC, 2017).

The Malaysian government has also empowered cloud computing technology by introducing the Malaysian Government Cloud to centrally operate cloud hosting services for government agencies (MAMPU, 2017a). The Malaysian Government Cloud is a cloud hosting service that provides agencies with a variety of virtual resources such as network, server, storage, and operating systems, to accommodate applications that are developed as cloud-enabled applications. The government's effort to intensify the use of cloud technology-based services is an initiative to improve the effectiveness and quality of services provided for the people. The public sector is given

particular emphasis by the government to ensure excellent services are provided in all government agencies.

The public sector is an agency owned and operated by the government, and this sector works to provide services to its people (Pathirane & Blades, 1982). In comparison with the private sector, public sector organisations are not profit-seeking. However, public service revenue is generally raised by various methods, including taxes, fees, and financial transfers from other levels of government. Different governments around the world may use their sources of funding for any particular civil service. The public sector, as identified by Sikhungo et al. (2011), consists of governments and all publicly operated or publicly funded departments, corporations, and other organisations delivering public programmes, goods, or services. On the other hand, Pathirane and Blades (1982) described the term *public sector* as synonymous with government.

There are at least three types of organisations in the public sector, namely, core government, agencies, and public enterprises. Core government organisations include all government departments, ministries, or divisions that are integral parts of the system and are accountable to and report directly to the central authority. The agencies consist of public organisations that are part of the government and deliver public programmes, goods, or services but exist as separate organisations in their own right and operate with a partial degree of operational independence (Sikhungo et al., 2011). Public enterprises are organisations that provide public programmes, goods, or services but operate independently of the government and have their sources of income, in addition to direct government funding. They can also compete in private markets and yield profits. In most cases, the government is the major shareholder, and these corporations partly comply with the laws and regulations regulating the central government.

1.2.1 Malaysian Government Cloud Computing Initiatives

The Malaysian Government Cloud is one of the public sector ICT Strategies and Programmes of the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU). Under the third Strategic Thrust, “Optimise Shared Services and Strengthen Cyber Security”, the objective is to increase the sharing of ICT resources through a centralised and structured initiative by strengthening the Public Sector Data Centre (PDSA) and strengthening government cloud services (MAMPU, 2016c).

This study is closely linked to the government’s focus on increasing the use of ICT resources centrally by strengthening the use of PDSA and expanding the implementation of government cloud services. This study will explicitly address the priority areas for the acceptance of cloud computing by public sector personnel in its implementation. Figure 1.3 exhibits the Malaysia Public Sector ICT Strategies and Programmes as published by MAMPU.

Referring to the third Strategic Thrust, “Optimise Shared Services and Strengthen Cyber Security”, there are three strategies emphasised, that is, (S1) Strengthen public sector ICT infrastructure, (S2) Strengthen digital communication capability, and (S3) Strengthen public sector cybersecurity. This study focuses on the first strategy with two primary programmes, namely, (P1) strengthen PDSA and (P2) enhance government cloud services. Besides, this study also looks at the improvement efforts that can be recommended to increase the acceptance of cloud computing among the public sector’s personnel.

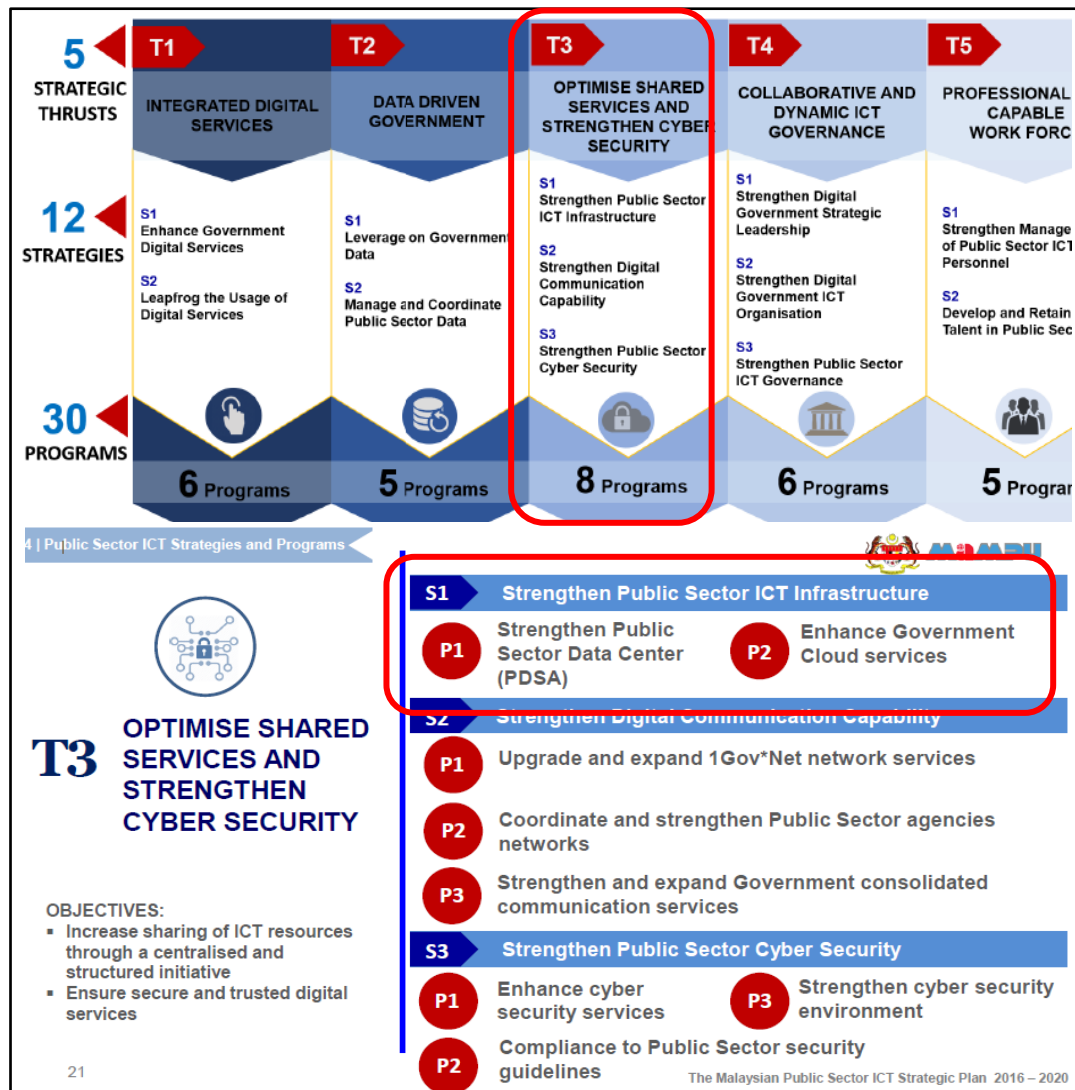


Figure 1.3 Public Sector ICT Strategies and Programmes (MAMPU, 2016c)

The Malaysian Government Cloud was launched officially in 2013. The implementation of ICT initiatives under MAMPU aims to assist the civil services to deliver a more effective, efficient, transparent, and value-for-money service to people in a ubiquitous environment. The objective of the Malaysian Government Cloud is to manage cloud services for government agencies centrally. In the early stages of its implementation, the Malaysian Government Cloud was based on the Infrastructure as a Service (IaaS) model, and the service was continuously expanded from time to time. The IaaS model allowed users to use the cloud server provided for various uses such as data storage, system and application operations, and virtual machine resources. The

key highlights attained by MAMPU during the start-up year include the involvement of 37 government agencies in the cloud initiative.

The Malaysian Government Portal (MAMPU, 2017a) revealed that through this initiative, the government has been able to reduce its ICT operational cost by 20% and increase the focus on the core business for the technical personnel of its agencies. The first 20 agencies on board under the Malaysian PDSA lowered ICT procurement costs by RM four million, electricity consumption by RM 275,852.00, and maintenance costs by RM 2.26 million annually. MAMPU has succeeded in reducing the duration of procurement and acquisition of ICT processes from up to six months to just 30 minutes through the government cloud initiative (Zahri, 2013). The government has also been successful in protecting its ICT assets and minimising the impact of threats on those assets.

To further enhance the existing cloud computing initiatives, the Malaysia Government Unified Communication and Collaboration (MyGovUC) was launched in 2015. MyGovUC offers communication channels such as email, video calls, teleconference, and short messaging services through a common platform used by all agencies via a cloud-based service under the government cloud initiative. MAMPU manages MyGovUC as the agency responsible for the management, operations, and facilities. The goals of the project are (a) management and operational cost savings, (b) consolidation and integration of communication channels, and (c) collaboration with other public sector agencies (MAMPU, 2016b). Figure 1.4 shows the services provided by MyGovUC and its benefits.

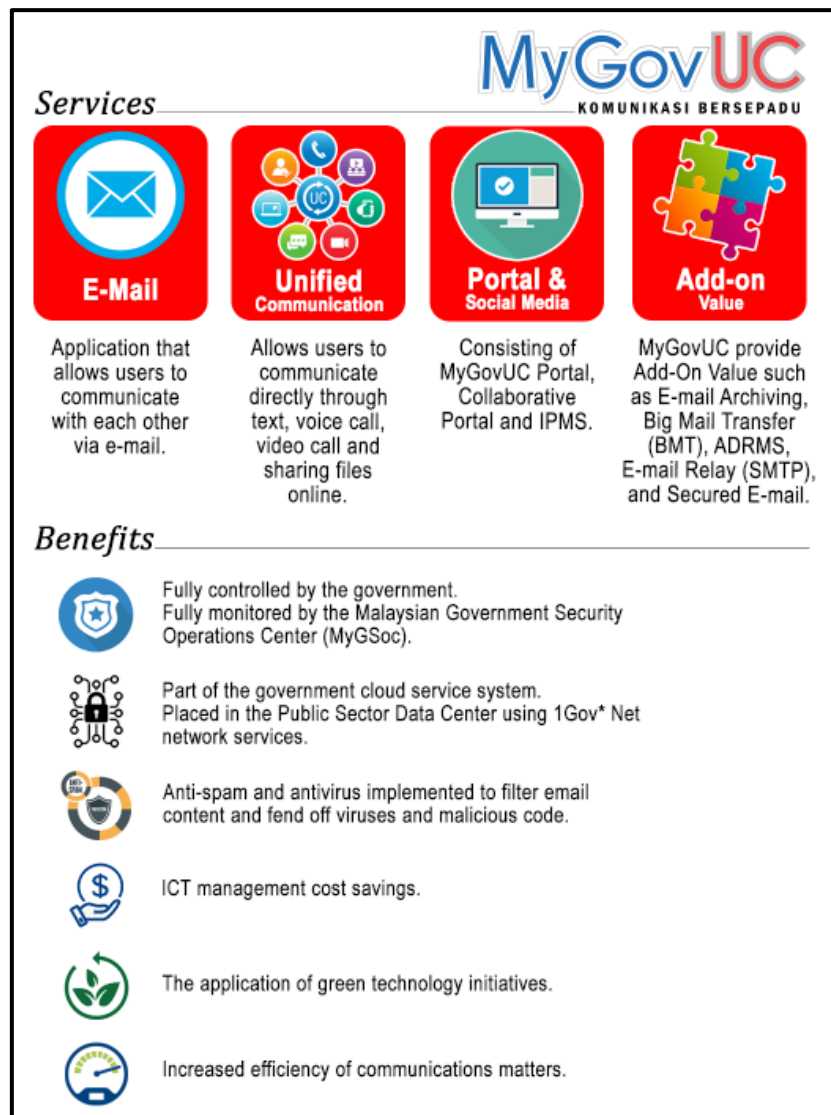


Figure 1.4 Summary services and benefits of MyGovUC

MyGovUC provides services such as email, unified communication, portal, and social media. In addition to these primary services, the project also provides additional add-on value services such as email archiving, big mail transfer, email relay, Skype for Business, and active directory right management services. The advantage of using MyGovUC as a platform for communication between agencies is the government entirely regulates it. This service facility uses a government network service, which is known as MyGov*Net, to be monitored by the Malaysian Government Security Operations Centre (MyGSoc). Similar to other government applications, MyGovUC is also housed in the PDSA, which is the government's main cloud server farm. The facility is closely monitored by anti-spam and anti-virus

applications to filter email content and fend off viruses and malicious codes (MAMPU, 2016a).

1.2.2 Malaysia Cloud Computing Readiness

The Asia Cloud Computing Association (ACCA) publishes a report annually named “Cloud Readiness Index (CRI)”, which reports 14 economies across the Asia-Pacific (APAC) region, across 10 parameters to show how prepared they are to adopt cloud computing. The CRI tests the degree to which economies are prepared to adopt and implement cloud computing technologies. It is a composite index composed of 10 parameters grouped in four readiness segments: (a) cloud infrastructure, (b) cloud security, (c) cloud regulation, and (d) cloud governance (ACCA, 2018). The cloud infrastructure segment comprises of three parameters: international connectivity, broadband quality, and the power grid; green policy; and sustainability. Meanwhile, the cloud security segment comprises of two parameters: data centre risk and cybersecurity. The cloud regulation segment comprises of three parameters: privacy, government regulatory environment, and intellectual property protection. Finally, the cloud government segment comprises of two parameters: business sophistication and freedom of information.

According to the report, Malaysia is ranked eighth in the fifth iteration of the ACCA flagship survey. Table 1.1 presents the 2018 CRI for the APAC economies. Malaysia’s highest achievement is obtained through cybersecurity parameters with a score of 8.9 out of 10, while the lowest score is 2.5 out of 10 through international connectivity parameters.

Table 1.1 Cloud Readiness Index 2018 (ACCA, 2018)

Rank		Criteria of Assessment										Total CRI Score	Rank Change
		1	2	3	4	5	6	7	8	9	10		
1	Singapore	7.0	9.5	6.0	4.6	9.3	9.0	9.0	8.5	8.5	4.9	76.6	+1
2	Hong Kong	9.3	7.7	4.4	5.3	8.1	9.0	6.7	8.4	8.3	7.1	74.1	-1
3	New Zealand	3.9	5.7	7.2	4.8	7.2	8.5	7.7	8.9	8.7	8.6	71.1	-

4	Japan	3.5	6.5	5.3	4.4	7.9	9.0	7.7	8.3	7.6	7.1	67.1	+1
5	Taiwan	6.5	6.5	4.5	4.2	8.1	7.0	7.1	7.4	8.0	7.6	66.9	+1
6	Australia	3.5	5.2	4.1	4.3	8.2	9.0	7.1	8.3	8.0	8.4	66.3	-2
7	South Korea	2.8	7.4	4.1	4.3	7.8	8.5	8.0	6.3	8.4	7.2	64.8	-
8	Malaysia	2.5	5.5	4.0	4.1	8.9	7.5	7.9	7.6	7.8	5.3	61.0	-
9	Philippines	2.5	4.8	4.5	3.9	5.9	8.5	5.7	5.9	5.9	5.9	53.6	-
10	Thailand	2.7	6.9	2.2	3.8	6.8	4.5	5.4	5.0	7.7	5.5	50.6	-
11	Indonesia	1.7	5.5	2.9	3.8	4.2	6.5	5.6	6.4	6.7	6.0	49.4	-
12	India	1.1	4.7	1.5	3.4	6.8	6.0	5.9	6.3	6.1	5.7	47.4	-
13	China	1.0	4.9	1.6	3.7	6.2	4.0	6.6	6.4	6.5	2.2	43.1	-
14	Vietnam	3.6	5.3	2.1	3.9	2.5	3.5	5.7	5.1	6.8	2.6	41.0	-

Criteria of Assessments:

1- International Connectivity

2- Broadband Quality

3- Power Grid, Green Policy and Sustainability

4- Data Centre Risk

5- Cybersecurity

6- Privacy

7- Government Regulatory Environment

8- Intellectual Property Protection

9- Business Sophistication

10- Freedom of Information

Referring to the CRI 2018 report, Malaysia has performed extremely well in the cybersecurity parameter and has made modest progress in the regulatory climate of its government. The study also stressed that Malaysia has introduced the “Cloud First” strategy, led by the Malaysia Digital Economy Corporation (MDEC), which is intended to promote public and private sector cloud adoption. However, the report noted that Malaysia has been declining or is stagnant in most other parameters, such as lower scores in cloud infrastructure and the government segment.

There are a few recommendations given by the CRI 2018, including that Malaysia should concentrate on improving its physical cloud infrastructure. In particular, broadband speed is intended to effectively fulfil the targets of its proposed “Cloud First” policy and Malaysia should also demonstrate the importance of cloud technology by improving the regulatory environment in a way that truly benefits businesses and government agencies. Table 1.2 presents the scores and rankings for each section and parameter of Malaysia.

Table 1.2 Malaysia scores and rankings (ACCA, 2018)

MALAYSIA	Criteria of Assessment										Total Cloud Infrastructure	Total Cloud Security	Total Cloud Regulation	Total Cloud Governance	TOTAL ALL
	1	2	3	4	5	6	7	8	9	10					
Score	2.5	5.5	4.0	4.1	8.9	7.5	7.9	7.6	7.8	5.3	11.9	13.0	22.9	13.2	61.0
Rank	10	8	9	8	2	8	3	6	7	11	8	3	6	9	8

Criteria of Assessments:

1- International Connectivity

2- Broadband Quality

3- Power Grid, Green Policy and Sustainability

4- Data Centre Risk

5- Cybersecurity

6- Privacy

7- Government Regulatory Environment

8- Intellectual Property Protection

9- Business Sophistication

10- Freedom of Information

As discussed earlier, Malaysia was ranked 14th in the 2018 Global Cloud Computing Scorecard report. The report reveals that Malaysia has a moderate level of broadband penetration, due to low scores for assessment of data aspects of privacy, security, promotion of free trade, and intellectual property rights. However, Malaysia recorded a high score in terms of IT readiness and the broadband deployment aspect. In 2015, the government committed to new broadband targets, whereby in 2020, 100% of households in capital cities and high-impact development areas would have access to 100 Mbps speeds and 50% of households in suburban and rural areas would have access to 20 Mbps speeds. Malaysia also has special provisions in place for law enforcement access to encrypted data, which can serve as the guideline for the use of specific security technology in some instances.

Furthermore, the 2018 Global Cloud Computing Scorecard report claims that Malaysia is in the right position to adopt and use cloud computing technology. The government's willingness to take measures proves that it is serious in ensuring that ICT strategies and programmes are implemented. Proper cybersecurity controls, legal enforcement of ICT, industry and business support, and intellectual property protection are well underway and are seen as catalysts for Malaysia's readiness to embrace cloud computing technology. However, the low penetration rate of broadband networks and international connectivity, especially in rural areas, has slowed the pace of readiness. This is evident from the percentage of fixed broadband subscriptions being at only 10% of the population and 14% of Internet users, which is below the

average of 21% and 29% of all countries surveyed, respectively. In general, Malaysia is prepared to accept cloud computing based on the efforts it has made and the excellent standing of Malaysia in those researches.

1.3 Problem Background

Over the last 10 years, cloud computing has been a key component of the world's innovative computing industry, giving organisations a new opportunity to explore a new platform of computing technology. Acceptance and implementation of cloud computing at various stages of use have been the subject of several studies (Alqarni & Barnawi, 2019; Inmor & Suwannahong, 2017; Stieninger et al., 2018). Research studies have been focusing on the issues of acceptance and implementation of cloud-based applications across various sectors and fields.

Cloud computing provides organisations and users with numerous benefits, such as cost savings, flexibility, backup and recovery of data, scalability, mobility, and business continuity. However, some challenges need to be addressed when implementing cloud computing at the organisational level. The study by Abdollahzadehgan et al. (2013) revealed that the biggest challenges for business organisations such as SMEs are the lack of financial resources and IT knowledge. Tehrani (2013) also agreed that a business's failure in adopting this technology is due to resource limitations. Furthermore, the lack of training and management affects the transition plan for cloud-based technology. Hassan (2017) and Alqarni and Barnawi (2019) concluded that knowledge and IT resources such as Internet capability, local data storage, security and privacy, and prior skills are important factors of readiness to adopt the technology in organisations. Besides, Polyviou and Pouloudi (2015) highlighted that environmental factors such as bureaucracy, political and legal issues, and customer readiness to use cloud-based services also affect organisations. Nikolopoulos and Likothanassis (2017) argued that organisational environmental factors, such as social influence and facilitating conditions, influence the success of cloud computing in an organisation. Implementing cloud computing in an organisation seems to be doable, but there are many challenges and issues that management and

decision-makers must face. Therefore, its success depends on how each obstacle and each challenge is addressed and managed.

The implementation of cloud computing in the public sector gives a slightly different view since the essence of the sector is to serve the people. Adoption of cloud-based applications such as e-government, mobile government, or digital government is an effort to ensure that the implementation of government policies is accessible and economical. In turn, the benefits of such initiatives will help people to receive excellent service from the government. As in every other organisation-level implementation, the adoption of cloud computing in the public sector is also a challenge. The United Nations (2003) stated that about 60–80% of e-government initiative projects fail due to inaccurate funding and planning issues. Mohammed and Ibrahim (2013) added that the problem becomes more acute when human and technology resources fail to be managed properly. This will cause the benefits of such initiatives to not reach the people (Heeks, 2006).

Furthermore, Sallehudin (2017) explained that the inability of public sector agencies to interact with the same technology will slow down the implementation process and, at the same time, create interoperability issues. Al-Ruithe et al. (2018) unveiled four critical obstacles to the adoption of cloud computing in digital transformation programmes in Saudi Arabia, namely, security, privacy, loss of governance, and lack of knowledge. Indeed, issues of security, privacy, and trust are a major challenge for the public sector as there is a lot of government information that has to be kept secure and too much sensitive data to be protected since these factors influence the implementation of cloud computing in the public sector (Abu-Shanab & Estatiya, 2017; Jasmin & Hasan, 2018; Jones et al., 2019).

The implementation of cloud computing in the Malaysian public sector entered a new phase when the government introduced initiatives to empower the use of government data centres and cloud-based sharing applications. Government cloud-based projects such as the digital school textbooks, 1BestariNet, and the SME cloud computing adoption programme are among the government's initiatives to provide space for increased cloud use among Malaysians. However, challenges such as data

control and security, as well as the lack of domain-specific technologies, will slow down the cloud adoption rate (Abolfazli et al., 2015). Earlier, a study by Moghaddam et al. (2013) found that consumer's distrust of access control and user authentication processes was the reason for the decline of cloud-based applications in Malaysia. Further, a study by Sallehudin et al. (2015) on government cloud-based applications in Malaysia identified that organisations are influenced by factors such as relative advantage, compatibility, and IT knowledge.

Security issues continue to haunt the implementation of cloud computing in the public sector in Malaysia. Raisian and Yahaya (2015) revealed that security elements such as data security, virtual machine security, application security, and privacy remain a concern among respondents in Malaysia. Besides, factors such as awareness, regulatory compliance, reliability challenges, and institutional culture have also contributed to the implementation of cloud computing in the Malaysian public sector (Hamzah et al., 2017). The above analysis shows that many obstacles and issues are affecting the public sector in Malaysia to strengthen the usage of cloud-based applications.

Therefore, a preliminary study was conducted to provide an overview of cloud computing implementation among public sector agencies. An interview session was held with two senior MAMPU officers who were directly involved in the implementation of the Malaysia Government Cloud initiative project. From the interview, it was concluded that the government is seriously seeking to enhance resource sharing through cloud technology as it optimises government expenditure on the provision of ICT facilities. According to them, more than 100 agencies are subscribing to government-provided facilities through PDSA. This helps agencies to efficiently handle their data without needing to rent an external data centre, deploy cloud facilities, share information resources, and communicate with other agencies. In addition, the implementation of government cloud-based services by all ministries and agencies has been gazzeted by Malaysian Government Circular on Integrated Communications Services Management (MAMPU, 2017b).

However, the preliminary findings reveal that there are agencies that have been granted this cloud-based service but do not use it. Besides, some agencies only use the services provided during the initial implementation period, and then, it is left unattended. This happens due to several factors such as the change of officers, preferences to use own server as a primary data centre, the inability of the existing infrastructure, as well as the minimal usage of the application in the cloud.

Furthermore, to get more insight into the implementation of the government cloud project, 15 agencies were contacted by telephone to obtain more information about their use of the government cloud. The findings of the interview discovered that many agencies still use their own data centre as their primary storage facilities and have yet to subscribe to the government cloud. Many agencies have stored web files and no other applications that should be a priority while using the government cloud. Besides, some agencies do not use this cloud facility, even though access to the government data centre has been granted. The survey also noticed that there are agencies that use the cloud facilities just as a backup server. This situation is detrimental because other agencies may require more space. A summary of findings from the 15 agencies is presented in Table 1.3.

Table 1.3 Preliminary study of 15 agencies

No	Agencies	Web	Public App	Internal App	Extranet App	Backup
1	Bahagian Istiadat dan Urusan Persidangan Antarabangsa	○	○	◆		
2	Biro Tatanegara	◆	◆	◆		○
3	Jabatan Kimia	○	○	○		
4	Institut Pentadbiran Awam Negara	◆	○	◆		
5	Unit Perancang Ekonomi	◆	○	◆		
6	Jabatan Wakaf, Zakat dan Haji	○		◆		
7	Suruhanjaya Pelantikan Kehakiman	◆	○	◆		
8	Agensi Angkasa Negara	○	○	○		
9	Jabatan Penerbangan Awam	◆	○	◆		
10	Majlis Amanah Rakyat	◆	◆		○	
11	Perpustakaan Negara Malaysia	○	○	○		◆
12	Jabatan Agama Islam Wilayah Persekutuan	○	○	○		
13	Jabatan Keselamatan Jalan Raya	○		◆		
14	Jabatan Kemajuan Masyarakat	○		◆		
15	Pusat Infrastruktur Data Geospasial Negara	◆	○	◆		

Notes:

○ = Use government cloud ◆ = Use other cloud/data centre

Web: Official web portal of the agency.

Public application: Applications that are accessible to the public for purposes of sharing information or reviewing application statuses such as e-Solat, 1MalaysiaMap, and OPAC.

Internal application: Applications only used by agency staff and limited to internal use only.

External application: Agency internal applications that are also accessible to third parties with permission and through personal networks.

To support this findings, the MyGovUC impact assessment report (*Laporan Kajian Impak Keberkesanan MyGovUC*) by MAMPU (2018) shows that the usage percentage of the services provided in government cloud projects is unsatisfactory. Out of the six communications and collaboration services available, 75% of users use email services compared to other services such as Skype for Business, big mail transfers, and collaboration portals (MAMPU, 2018). Figure 1.5 shows the imbalance in the use of government cloud-based services.

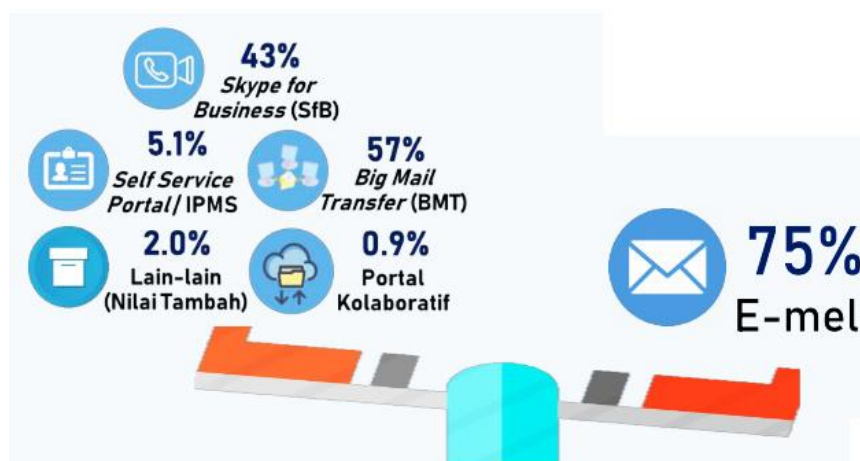


Figure 1.5 Percentage of use of services provided (MAMPU, 2018)

Moreover, the report discovered that almost 90% of users only used basic email functions, such as email delivery and attachment of files. Besides that, the level of knowledge and skills of users is low and not efficient to other services, as only 48% of users responded with adequate skills for the services provided. The findings also conclude that existing network infrastructure is less supportive of collaborative and online conference activities, which are a factor for the services used the least, such as

Skype for Business, application sharing, and big mail transfers. Finally, the report also revealed that the reasons for some of the services not being used optimally are due to the lack of exposure and culture within their organisation.

Besides, one of the critical issues and deficiencies in the implementation of cloud computing in the Malaysian public sector is due to user weaknesses such as lack of IT knowledge and skills and lack of awareness and culture of new technologies. Therefore, the study of user acceptance and readiness is important to assess the factors that influence users to embrace this cloud technology in Malaysian public sectors. Organisations can introduce various programmes and initiatives to achieve their mission, but at the end of the day, the users are the ones who will use it. Thus, users' insights and concerns towards technology need to be considered so that a more user-friendly approach can help the cloud-based services project to be successful. So far, very few studies focus on the user's analysis of cloud computing acceptance and readiness, particularly in the public sector. According to Ashtari and Eydgahi (2017), computer and internet self-efficacy, computer anxiety, and ease of use are factors that influence users using cloud computing. Khairuddin and Harun (2018) discovered that security factors, service quality, compatibility, and usefulness play an essential role in influencing the adoption of cloud-based applications in the Malaysia National Registration Department (JPN). The study also suggested that other factors such as compatibility and readiness need to be in place to increase the impact of cloud computing acceptance in the Malaysian public sector. This indicates the need for a more comprehensive study to be conducted to assess the readiness and acceptance of this technology among public sector personnel.

Therefore, it can be summarised that the current developments in cloud computing have brought new phenomena to the use of data centres and the sharing of online resources. The technology revolution has helped many organisations transition from the physical to the virtual world, especially in the field of computing. However, despite the advantages of cloud computing technology, there are many issues and challenges that organisations and users need to address, especially in terms of security, trust, compatibility, cost, and other external factors that influence their readiness and acceptance. In the public sector, users need to be prepared to accept changes in the

way they work to ensure effective implementation of government cloud projects, which will contribute more to the excellent service given to the people. Recent studies have shown the concerns expressed by users, which can hamper cloud computing initiatives.

Thus, this study concerns the importance of assessing the readiness of the user before they can accept and use cloud computing technology. Besides, it is important to study the extent to which users' technological readiness can help them to use the technology well and take advantage of it. Hence, it is important to examine the factors that make them feel comfortable, ready, and accept this technology to resolve the underlying issues. This study will enhance research to assess the factors that influence individual readiness and acceptance of the government cloud service in the Malaysian public sectors. In turn, it has the best impact on the implementation of cloud computing in the public sector to provide the best service to the people.

1.4 Problem Statement

Most past studies on acceptance of cloud computing technology solely focused on one perspective which is the acceptance theory. Nevertheless, the low acceptance of cloud computing technology can also be due to low user technology readiness. Technology readiness is a situation that indicates the level of users readiness to adopt and use new technology. Thus, technology acceptance can be enhanced by assessing the level of technology readiness of individuals or organisations. Moreover, technology readiness has been proven to be one factor that can affect the acceptance of the technology. Therefore, the lack of past studies on the impact of readiness towards acceptance was filled in this study as one comprehensive model which integrated both acceptance and readiness theories.

The research on technology readiness and acceptance of individual users are understudies, due to most of the previous studies focus on the organisational level. The failure of an individual as a user of a system or technology will have a detrimental effect on the organization. The difficulty and inability of users to master the technology

will negatively impact the quality and efficiency of services. Although technology is used to improve services' capabilities and efficiency, if the users are not skilled and still not ready to use the technology, it is a massive loss to the organization. Therefore, there is a need for studies that focus on individual acceptance and readiness of cloud computing technology.

The Malaysian government has introduced initiatives to enhance the use of cloud-based facilities to improve services and, at the same time, minimise government expenditure. Implementation of cloud-based projects, such as MyGovUC, to unify all government communications mediums such as email, video conferencing, and large file transfers between agencies is a good move. However, a preliminary study showed significant weaknesses such as unsatisfactory and inefficient application usage, indicates a poor acceptance of the service. Also, weaknesses in existing infrastructure such as network capabilities that do not support high bandwidth usage further affect its usage rate. Moreover, the lack of awareness and promoting MyGovUC services within the organisation further inhibited the use of the applications offered. Therefore, the constraints in the implementation and use of MyGovUC services among Malaysian public sector employees need to be studied more intensively by emphasising the factors of acceptance and readiness of technology among users.

1.5 Research Questions

To achieve the research aim, three research questions were formulated, as follows:

RQ1: What are the potential determinants that influence cloud computing acceptance and technology readiness for the Malaysian public sector personnel?

RQ2: Which model can be used to explain the determinants that influence the cloud computing acceptance and readiness for the Malaysian public sector personnel?

RQ3: What are the significant factors of cloud computing acceptance and readiness at the individual level in the Malaysian public sector personnel?

1.6 Research Objectives

To answer the formulated research questions, three research objectives were constructed. These research objectives were defined to achieve the overall aim of this research, which is to develop, validate, and evaluate a new model of factors that influence cloud computing acceptance for the Malaysian public sector. The following research objectives of the study.

RO1: To identify the potential determinants that influence the cloud computing acceptance and technology readiness for the Malaysian public sector personnel.

RO2: To propose a cloud computing acceptance and readiness model for the Malaysian public sector personnel.

RO3: To evaluate the proposed cloud computing acceptance and readiness model for the Malaysian public sector personnel through a survey with government agencies.

1.7 Research Scope

The scope of this research is limited to three central perspectives: level of analysis, type of cloud-based services, and respondents. Research on IT adoption is mostly categorised at three primary adoption levels: individual, organisational, and team levels (Mohamed, 2018). The individual level of analysis focuses on the choices, perceptions, and personalities of individuals towards a situation or study. In order to ensure initiatives and goals to provide the best services to the people through the implementation and use of modern technology, the government needs to assess the

readiness and acceptance of public sector personnel towards technology used by agencies. The difficulty and unwillingness of public sector staff to use the technology provided will affect the agency's operation and, in turn, have a negative impact on the quality of government services to the public. Therefore, it is important to conduct a study that focuses on individual analysis instead of organisational level analysis. The personalities in this study include Chief Information Officers (CIO), managers, officers, and staffs of the various departments in the Malaysian public sector organisations. The respondents of this study are public sector personnel in the Malaysia who use MyGovUC service applications provided at the agency where they work.

Next, the scope of this study focuses on cloud-based applications used in the public sector in Malaysia. According to Sallehudin (2017), the top four applications in the use of cloud computing in Malaysia are email, file sharing, file storage, and online collaboration and conferencing. At the federal government level, the standardized use of cloud-based services is MyGovUC as a communication channel between government agencies. The above four applications are in line with the core application provided by MyGovUC. This situation will facilitate this study's data collection because respondents will only refer to one leading core service provided by the government, namely MyGovUC, to use applications such as email, file sharing and storage, and online collaboration and conference. Thus, this study will focus on these four cloud-based applications. Table 1.4 shows the research perspectives and scope of this research.

Table 1.4 Scope of the research

Perspective	Type	Scope of this research
<i>Level of analysis</i>	<ul style="list-style-type: none"> i. Individual ii. Organisation iii. Team 	Individual
<i>Type of cloud-based services</i>	<ul style="list-style-type: none"> i. Data Centre ii. File Storage iii. File Sharing iv. Antivirus and Anti-Spam 	<ul style="list-style-type: none"> i. File Sharing ii. File Storage iii. Email

Perspective	Type	Scope of this research
	v. Data Recovery Centre vi. Email vii. Cloud-Based Desktop viii. Web Hosting ix. Office Productivity x. Online Collaboration or Conferencing xi. Virtual Machine xii. Testing and Development	iv. Online Collaboration and Conferencing
<i>Respondents</i>	Agencies	MyGovUC's users

1.8 Significance of the Study

Cloud computing technology has now brought the IT world to a higher level in storage management, online sharing resources, and the computing platform itself. This has a very significant impact on many areas such as education, the public sector, healthcare, business, and others. This study contributes to the body of knowledge in the extension of UTAUT with the TRI theory and provides a more in-depth assessment of the users' acceptance and readiness for using cloud computing technology in daily tasks. Furthermore, this study addresses and identifies the factors that influence the acceptance of cloud-based services in the Malaysian public sector.

The main practical contribution of this study is the Cloud Computing Acceptance and Readiness (CCAR) model that can be used to evaluate the acceptance of cloud computing among public sector personnel, especially in Malaysia. This will be a starting point for those involved in ensuring that the cloud-based services in the public sector are optimised. Also, the recommendations will help service providers, organisations, and users to be more prepared and further use the facilities provided.

This study has a significant impact on individuals and organisations. As individuals who use systems and technologies in work matters, users need to know how to use a system or technology adopted by the organisation. The readiness of users to use new technologies is very important. When users have a comfortable and confident feeling to use new technology, they will be more open and easy to accept and use it. Users of systems and technology in an organisation are staff who are the backbone of an organisation. Therefore, employees need to be given attention so that they can be prepared and accept the new technologies introduced in the organisation. When employees are comfortable, confident, and skilled in using technology, it will positively impact the organisation's quality of services and operations. Employees will feel the new technology helps them to do their jobs better and more efficiently. At the same time, it will improve the services of the organisation as a whole and worth the investment that has been made to adapt new technologies in the organisation.

1.9 Structure of the Thesis

This thesis is structured into five chapters. The first chapter provides an overview of and introduction to this thesis. First, the chapter sets out the research background, including the summary of cloud computing, the Malaysian public sector, and the cloud computing acceptance scenario by the Malaysian public sector agencies. Second, it introduces the problem background and identifies the research problem. Third, it highlights the research questions and research objectives. Fourth, it outlines the scope and significance of the research. Finally, the chapter describes the structure of the thesis content.

Chapter 2 reviews the literature and highlights the knowledge gaps in existing research to justify the uniqueness of this research. The chapter starts with a discussion of the key concepts of cloud computing, models of cloud computing, and issues in cloud computing. Subsequently, the chapter reviews the related theories of IT acceptance and technology readiness. Further, it analyses the literature review that has been conducted to identify related works within the cloud computing research area and IT acceptance in the public sector context. The chapter also explores the knowledge

gap in previous studies to justify the rationale of the current research and proposes a research model for cloud computing acceptance and readiness for the Malaysian public sectors. A conceptual framework is established at the end of the chapter by discussing the theoretical review.

Chapter 3 discusses the research methodology adopted for the overall research process with a view of fulfilling the research objectives and producing the expected outcomes. It begins with an explanation of the research design of the study and the description of research methods in the field of study. The rationale for selecting a quantitative research approach is then justified. It is followed by an explanation of every phase of the research activities, including the investigation, review of literature, model proposal, data collection and data analyses, and discussion and research report. While Chapter 4 will explain the details of development of the proposed model and the hypotheses of the research.

Chapter 5 presents the analyses and findings of the study. Data collection and data examination features such as the response rates, non-response bias, common method bias, and normality test are described. The descriptive statistics for the demographic are then presented in the first phase analysis, followed by the differences between group analyses, as explained in the next section. Next, the measurement model analysis is provided. Moreover, the structural model analysis using structural equation modelling (SEM), which includes the evaluation of the collinearity assessment, part coefficient, coefficient of determinant, effect size, and predictive relevance, is explained. The final research model is presented at the end of this chapter.

Chapter 6 discusses the result of the data analysis based on the research hypothesis and the technology readiness index score for the Malaysia public sector personnel. Next, the recommendations for the better acceptance of cloud computing are suggested. The theoretical and practical contributions of this research are presented. Finally, the achievement of research objectives is discussed at the end of the chapter.

Finally, Chapter 7 concludes the thesis. It highlights the conclusions to this thesis and provides an overview of the research. Furthermore, it recaps the final model of the research and the uniqueness of the model. Also, this chapter highlights the limitations that of this study and makes some recommendations for further works. The chapter ends with the concluding remarks.

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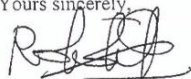



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APPENDICES

Appendix A UTM Letter of Permission to Conduct Research

 UTM UNIVERSITI TEKNOLOGI MALAYSIA	Advanced Informatics School (AIS)	Level 5, Menara Razak Universiti Teknologi Malaysia Jalan Semarak 54100 Kuala Lumpur, Malaysia
Tel: +(6)03-21805192 Fax: +(6)03-21805370 http://www.ais.utm.my Email: enquiry_ais@ic.utm.my		
OUR REF:	UTM.K.38/13.11/1/4 Jld. 19 (71)	10 July 2017
Dr. Suhazimah binti Dzazali Timbalan Ketua Pengarah ICT Unit Pemodenan Tadbiran dan Perancangan Pengurusan Malaysia, Aras 6, Blok B2, Kompleks Jabatan Perdana Menteri, Pusat Pentadbiran Kerajaan Persekutuan, 62502 Putrajaya,		
Dear Madam,		
<u>PERMISSION TO CONDUCT RESEARCH & SURVEY</u>		
STUDENT NAME : MOHD TALMIZIE BIN AMRON MATRIC NO. : PAN163018 RESEARCH TITLE : SUCCESS MODEL FOR IMPLEMENTATION OF CLOUD COMPUTING IN PUBLIC SERVICES		
With reference to the above matter.		
I am pleased to inform you that Mr. Mohd Talmizie Bin Amron is a full time student of Advanced Informatics School (UTM AIS), Universiti Teknologi Malaysia Kuala Lumpur.		
2. For your information, he needs your permission to do research and collect data from you for research purposes. This research is important and required among students enrolled in the PhD (Research) at UTM AIS.		
3. Should you have any enquiries please do not hesitate to call the undersigned or directly contact our office at 03-2180 5217.		
Your cooperation is very much appreciated. Thank you.		
Yours sincerely,		
	<i>En. Fadzly Mohd. & mel persetujuan - bila mula & akhir</i> <i>3/8/2017</i>	<i>012-3229593</i> <i>PA, Mohd Nyle ke POBA.</i> <i>B Swen.</i> <i>Jean</i> <i>3/8/17.</i>
DR. ROSLINA IBRAHIM Supervisor Advanced Informatics School (UTM AIS) Universiti Teknologi Malaysia, Kuala Lumpur Jalan Sultan Yahya Petra 54100 Kuala Lumpur ☎ 03-2203 1356 ✉ iroslina.kl@utm.my		
TERIMA PEJABAT TKP (ICT)	  	

Appendix B Interview questions with MAMPU officers

Interview Session with MAMPU Officers

Implementation of Cloud Computing by Malaysian Government Agencies

Objectives of the Interview Session

1. Get a clear picture of the cloud computing implementation in the public sectors in Malaysia.
2. Obtain information on government agencies that have implemented or are in the implementation phase of cloud computing.
3. Getting information to the extent to which effectiveness and impact positively obtained by agencies of government has implemented the computing cloud.


Officer's Profiles

1. Name:
2. Position :
3. Highest Academic Level :
4. Duration of Current Position :

Interview Questions

1. What is the Malaysia government's policy on cloud computing?
2. What are the programs or initiatives undertaken by MAMPU / government to strengthen the use of cloud computing?
3. To what extent is the implementation and use of cloud computing in agencies that use government clouds?
4. Are there any problems in the implementation of cloud computing in government agencies?
5. What are the ongoing programmes to increase the use of cloud computing among government agencies?
6. What are the procedures for agencies using government clouds?
7. What are the benefits derived from government cloud implementation?

Appendix C Invitation Email for Instrument Translation Services

Mohd Talmizie Amron <talmizie@gmail.com>

Perkhidmatan translate BI-BM


7 messages

Mohd Talmizie Amron <talmizie@gmail.com> Tue, Jun 11, 2019 at 1:45 PM
To: irni.yusof@gmail.com

Salam, merujuk kepada perbualan saya dengan cik Irni melalui Whatsapp semalam, saya sertakan dahulu items survey yang hendak ditranslate kan.

terima kasih.

--
Best Regards,
MOHD TALMIZIE AMRON
+6012-348 8047

 **For Translation Purposes.docx**
16K

Irni Yusof <irni.yusof@gmail.com> Tue, Jun 11, 2019 at 2:26 PM
To: Mohd Talmizie Amron <talmizie@gmail.com>

Salam En Talmizie,

Terima kasih kerana berminat menggunakan perkhidmatan terjemahan yang disediakan. Sebut harga seperti berikut, sila maklumkan jika bersetuju dengan mana-mana tempoh yang ditawarkan.


Item No.	Service Description	Page Number/ Word Count	Price Per Word (RM)	Total Amount (RM)
1	Translation of survey instrument - IT (English - Malay)	599		
	- Urgent (turnaround of 2 days)		0.23	137.75
	- Standard (turnaround of 5 days)		0.18	107.80

Terms and conditions:

1. Payment is to be made in full amount upon delivery of the completed document.
2. All payments are to be made payable to the following account:
 - a. Account name: IRNI YUSMIZA MOHD YUSOF
 - b. Account no.: 7601618453
 - c. Bank name: CIMB Islamic Bank Berhad
 - d. Swift code: CTBBMYKL
 - e. Bank Address: Menara Promet Kuala Lumpur 50520
 - f. PayPal: irni.yusof@gmail.com

Regards,

Irni Yusof
Certified Translator
FB Page: [PU - Irni Yusof](#)
Web Page: <https://www.guru.com/freelancers/irni-yusof>



Appendix D Invitation Email for Face Validity Test

Survey Instrument - Face Validity Test

Mohd Talmizie Amron <mtalmizie2@graduate.utm.my>
to shasriman@kkmm.gov.my, talmizie@gmail.com, Talmizie ▾
Wed, Jul 3, 2019, 11:32 AM ☆ ↶ ⋮

Salam En Shasriman

Merujuk kepada perbualan telefon sebentar tadi, sy sertakan dokumen untuk pihak en nilai bagi tujuan yang telah dinyatakan tadi.

Disertakan 2 versi dokumen iaitu file format Doc dan Pdf untuk en pilih mengikut keselesaan.

Dapat kiranya dokumen tersebut dikembalikan seberapa segera yang mungkin. Sebarang persoalan boleh hubungi saya.

Sekian, terima kasih..

Mohd Talmizie Amron
UTM PhD Candidate
012-3488047

Sent from [Mail](#) for Windows 10

Mohd Talmizie Amron <mtalmizie2@graduate.utm.my>
to shasriman@kkmm.gov.my, Talmizie ▾
Wed, Jul 3, 2019, 11:34 AM ☆ ↶ ⋮

Dokumen dilampirkan.

Sent from [Mail](#) for Windows 10

⋮

2 Attachments ⬇ ⬇

Appendix E Face Validity Test Booklet



RESEARCH ON ACCEPTANCE OF CLOUD COMPUTING APPLICATION SERVICES IN THE MALAYSIAN PUBLIC SECTORS

FACE VALIDITY TEST

Introduction

As part of my doctoral study, you are kindly invited to validate the proposed determinants of cloud computing acceptance by the Malaysian public sector. Cloud computing is the delivery of computing services (servers, storage, databases, networking, software, analytics, intelligence and more) over the Internet to offer faster innovation, flexible resources, and economies of scale. The Malaysian government has created a cloud-based platform named "MyGovUC" as a Unified Communication and Collaboration services that are centrally managed at MAMPU. The service combines channels of communication via e-mail, video, audio conferencing, and instant messaging.

Objectives

From the literature review conducted, the following items are the influencing determinants of cloud computing acceptance adoption by the Malaysian public sector. The determinants are categorized into two main dimensions which are technological, and psychological. This survey will ask your opinion:

1. To tick (✓) score as indication of the level of your understanding with the statement for each item.
2. To suggest or comment for each construct in terms of the measures and words that are difficult to comprehend and long sentences.

The success of this survey greatly depends on your participation. Your cooperation is highly appreciated as it is beneficial to both academia and industry

Thank You.

Mohd Talmizie Bin Amron, PAN163018
Razak Faculty of Technology and Informatics
Universiti Teknologi Malaysia, Malaysia
Supervisor: Dr. Roslina Ibrahim
Co-Supervisor: PM Dr. Suriyati Chuprat & Ts. Dr. Nur Azaliah Abu Bakar

Face Validity Form

Reviewer's Name : _____

Affiliation/From : _____

Date : _____

RESEARCH DEFINITION

Term	Description	References
MAMPU	MAMPU - <i>Malaysian Administrative Modernisation and Management Planning Unit</i> . A central agency for the modernization and transformation of Malaysian Public Service Administration under the Prime Minister Office.	MAMPU's web site
MyGovUC	MyGovUC - <i>Malaysia Government Unified Communication and Collaboration</i> . Manage by MAMPU. The service offered combines channels of communication via e-mail, video, audio conferencing, and instant messaging. MyGovUC provides services such as e-mail, unified communication (UC), and portal and social media. In addition to these major services, the project also provides additional "add-on value" services such as e-mail archiving, big mail transfer, e-mail relay, skype for business and active directory right management services (ADRMS).	(MAMPU, 2016)
Cloud computing acceptance by Malaysia public sector	The willingness of Malaysian public sector to participate in cloud computing services and application provided by MAMPU.	(Rogers, 1983)
Technological Dimension	The viewpoint in assessing individual response to the cloud computing technology.	(Alharbi et al., 2016; Sallehudin et al., 2015b)
Psychological Dimension	The characteristic of the cloud computing which relevant to the individual acceptance.	(Sallehudin et al., 2015a; Simões et al., 2018)

Please read each item and rate it for its relevance in representing the factor.
Please tick (✓) score as indication of the level of your understanding with the statement.

Construct: **OPTIMISM [OPT]**

Definition: The extent to which positive vision and the belief in cloud computing technology can improve individual quality and work performance.

Adapted from: (Parasuraman & Colby, 2014; Rojas-Méndez et al., 2017)

No	Items/Questions	Do not understand	Got it	Very Understand
OPT-1	Cloud computing contributes to a better quality of work. <i>Pengkomputeran awan menyumbang kepada kualiti kerja yang lebih baik.</i>			
OPT-2	Cloud computing gives people more control over their daily work. <i>Pengkomputeran awan membolehkan lebih kawalan terhadap kerja seharian.</i>			
OPT-3	Cloud computing gives me more freedom of mobility. <i>Pengkomputeran awan memberi lebih kebebasan mobiliti.</i>			
OPT-4	Cloud computing makes me more productive in my work. <i>Pengkomputeran awan menjadikan kerja lebih produktif.</i>			
OPT-5	Cloud computing is much more convenient to use. <i>Pengkomputeran awan memberi lebih selesa digunakan.</i>			
OPT-6	I prefer to use cloud computing technology in my work. <i>Saya lebih gemar menggunakan teknologi pengkomputeran awan dalam kerja saya.</i>			
Comments/Suggestions:				


Construct: **INNOVATIVENESS [INN]**

Definition: The extent to which the individual nature wants to explore new things and fresh ideas will highlight the individual as a champion in mastering changes to the organization.

Adapted from: (Parasuraman & Colby, 2014; Pradhan et al., 2018)

No	Items/Questions	Do not understand	Got it	Very Understand
INN-1	Other people come to me for advice on cloud computing services. <i>Orang lain mendapatkan nasihat saya tentang perkhidmatan pengkomputeran awan.</i>			
INN-2	I am among the first in my circle of friends to use cloud computing services when it was implemented. <i>Saya antara yang terawal dalam kalangan kawan-kawan yang menggunakan perkhidmatan pengkomputeran awan apabila ia dilaksanakan.</i>			
INN-3	I can usually figure out new features and cloud computing services without the help from others. <i>Saya biasanya dapat mengetahui ciri-ciri baru dan perkhidmatan pengkomputeran awan tanpa bantuan daripada orang lain.</i>			
INN-4	I keep up with the latest technological on cloud computing in my areas of interest. <i>Saya sentiasa mengikuti perkembangan teknologi terkini mengenai pengkomputeran awan sebagai bidang yang saya minati.</i>			
INN-5	I find that I have fewer problems compared to other people in using cloud computing services. <i>Saya dapati saya menghadapi masalah yang kurang berbanding orang lain yang menggunakan perkhidmatan pengkomputeran awan.</i>			
Comments/Suggestions:				

Appendix F Invitation Email for Expert Content Validity Test

 **Mohd Talmizie Amron** <mtalmizie2@graduate.utm.my>
to ramayah@usm.my, ramayah@gmail.com, Talmizie, talmizie@gmail.com

Wed, Jul 17, 2019, 2:23 PM ☆ ↶ ⋮


Dear Prof T. **Ramayah**

My name is Mohd Talmizie Amron, a Ph.D. candidate from Universiti Teknologi Malaysia (UTM) Kuala Lumpur under the supervision of Dr. Roslina Ibrahim. I attended the SEM AMOS course delivered by Prof at ILD UiTM Bandar Enstek last month. I would like to invite you for the expert review on my research instruments regarding the acceptance of cloud computing by Malaysian public sectors.

Therefore, if you agree, you may reply to this email for me to send the relevant documents for review. I'm looking forward to hearing from you soon. Your kind consideration is highly appreciated.

Thank you very much.

...

 **Ramayah A/L Thurasamy** <ramayah@usm.my>
to me, ramayah@gmail.com, Talmizie, talmizie@gmail.com

Thu, Jul 18, 2019, 9:49 PM ☆ ↶ ⋮

Ok.

Regards,

T. **Ramayah**

<http://www.ramayah.com>

From: Mohd Talmizie Amron <mtalmizie2@graduate.utm.my>
Sent: Wednesday, July 17, 2019 2:23:32 PM
To: Ramayah A/L Thurasamy <ramayah@usm.my>; ramayah@gmail.com <ramayah@gmail.com>
Cc: Talmizie <mtalmizie2@live.utm.my>; talmizie@gmail.com <talmizie@gmail.com>
Subject: Invitation for expert review on research instruments

Appendix G UTM Letter of Appointment as a Content Validity Expert



Universiti Teknologi Malaysia
Jalan Sultan Yahya Petra
54100 Kuala Lumpur, Malaysia
Tel: 03-2615 4100

Ruj.Kami: UTM.K56.01.03/13.11/1/4 Jld. 10 (34)

Tarikh : September 2019

YBhg. Prof. T. Ramayah
School of Management
Universiti Sains Malaysia
11800 Minden
Penang

YBhg. Prof.,

PELANTIKAN SEBAGAI PANEL PAKAR KESAHIHAN ALAT UKURAN KAJIAN

Dengan segala hormatnya perkara di atas dirujuk.

2. Sukacita dimaklumkan bahawa saya ingin melantik YBhg. Prof. sebagai pakar penilai kepada kandungan soalan temuduga yang telah dibangunkan untuk tujuan kajian pelajar seperti butiran di bawah:

NAMA PELAJAR : MOHD TALMIZIE BIN AMRON
NO. K.P : 840704035159
NO. MATRIK : PAN163018
PROGRAM : DOKTOR FALSAFAH
FAKULTI : FAKULTI TEKNOLOGI DAN INFORMATIK RAZAK
TAJUK KAJIAN : "ACCEPTANCE OF CLOUD COMPUTING IN MALAYSIAN PUBLIC SECTORS"

3. Komen dan pandangan YBhg. Prof. amatlah diharapkan bagi meningkatkan lagi kualiti penyelidikan pelajar ini.

4. Bersama ini disertakan Borang Penilaian Pakar untuk tindakan YBhg. Prof. selanjutnya. Mohon kerjasama YBhg. Prof. untuk melengkapkan borang penilaian tersebut dalam tempoh dua minggu dari tarikh penerimaan surat ini.

5. Kesudian dan kerjasama YBhg. Prof. menerima pelantikan dan membuat penilaian berkaitan amatlah dihargai dan didahului dengan ucapan terima kasih.

Sekian.

"Berkhidmat untuk Negara"

Saya yang menjalankan amanah,

(DR. ROSLINA BINTI IBRAHIM)
Penyelia Utama
Fakulti Teknologi dan Informatik Razak
UTM Kuala Lumpur
☎ 03-22031356
✉ iroslina.kl@utm.my

Appendix H Expert Content Validity Test Booklet



RESEARCH ON ACCEPTANCE OF CLOUD COMPUTING APPLICATION SERVICES IN THE MALAYSIAN PUBLIC SECTORS

EXPERT CONTENT VALIDITY TEST

Introduction

As part of my doctoral study, you are kindly invited to validate the proposed determinants of cloud computing acceptance by the Malaysian public sector. Cloud computing is the delivery of computing services (servers, storage, databases, networking, software, analytics, intelligence and more) over the Internet to offer faster innovation, flexible resources, and economies of scale. The Malaysian government has created a cloud-based platform named "MyGovUC" as a Unified Communication and Collaboration services that are centrally managed at MAMPU. The service combines channels of communication via e-mail, video, audio conferencing, and instant messaging.

Objectives

From the literature review conducted, the following items are the influencing determinants of cloud computing acceptance adoption by the Malaysian public sector. The determinants are categorized into two main dimensions which are technological, and psychological. This survey will ask your opinion:

1. To rate the criteria of each measurement item by rating from 1-3 based on the criteria for measuring content validity (adapted from Yaghmaie, 2003¹ and Lawshe, 1975^{2 3}).
2. To suggest for each construct in terms of the measures, words that are difficult to comprehend, duplicate meanings, vocabulary, and long sentences. The actual survey will involve respondents from public sector agencies in Malaysia.

The success of this survey greatly depends on your participation. Your cooperation is highly appreciated as it is beneficial to both academia and industry

Thank You.

Mohd Talmizie Bin Amron, PAN163018
Razak Faculty of Technology and Informatics
Universiti Teknologi Malaysia, Malaysia
Supervisor: Dr. Roslina Ibrahim
Co-Supervisor: Dr. Suriyati Chuprat & Dr Nur Azaliah Abu Bakar

¹ Yaghmaie, F. (2003). Content Validity and its Estimation. *Journal of Medical Education*, 3(1), 25–27.
<https://doi.org/10.22037/JME.V3I1.870>

² Lawshe, C. . (1975). A Quantitative Approach To Content Validity. *Personnel Psychology*, 28(4), 563–575.
<https://doi.org/10.1111/j.1744-6570.1975.tb01393.x>

³ Taherdoost, H. (2016). Validity and Reliability of the Research Instrument; How to Test the Validation of a Questionnaire/Survey in a Research. *International Journal of Academic Research in Management (IJARM)*, 5(3), 28–36.
<https://doi.org/10.2139/ssrn.3205040>

Expert Content Validity Form

Reviewer's Name : _____

Affiliation : _____

Date : _____

RESEARCH DEFINITION

Term	Description	References
MAMPU	MAMPU - <i>Malaysian Administrative Modernisation and Management Planning Unit</i> . A central agency for the modernization and transformation of Malaysian Public Service Administration under the Prime Minister Office.	MAMPU's web site
MyGovUC services	MyGovUC - <i>Malaysia Government Unified Communication and Collaboration</i> . Manage by MAMPU. The service offered combines channels of communication via e-mail, video, audio conferencing, and instant messaging. MyGovUC provides services such as e-mail, unified communication (UC), and portal and social media. In addition to these major services, the project also provides additional "add-on value" services such as e-mail archiving, big mail transfer, e-mail relay, skype for business and active directory right management services (ADRMS).	(MAMPU, 2016)
Cloud computing (CC)	The practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer. It is a model for enabling convenient, on-demand network access to a shared pool of configurable computing that can be rapidly provisioned and released with minimal management effort or service provider interaction.	Mell & Grance (2011)
Cloud computing acceptance by Malaysian public sector	The willingness of Malaysian public sector to participate in cloud computing services and application provided by MAMPU.	Rogers (1983)
Technological Dimension	The viewpoint in assessing individual response to the cloud computing technology.	Alharbi et al (2016); Sallehudin et al. (2015b)
Human Dimension	The characteristic of the cloud computing which relevant to the individual acceptance.	Sallehudin et al. (2015a); Simões et al. (2018)

Please read each item and give any comment for its relevance for the survey instrument.

SECTION A : RESPONDENT PROFILE

No	Items/Questions & Options	Comment(s)
A1	Name of agency/department/unit	
A2	Gender <ul style="list-style-type: none"> • Male • Female 	
A3	Age <ul style="list-style-type: none"> • 25 or less • 26-35 • 36-45 • 46-55 • 56-60 • 61 and more 	
A4	Highest level of academic <ul style="list-style-type: none"> • PhD • Master • Bachelor • Diploma • Others, please specify: 	
A5	Years served in public sector <ul style="list-style-type: none"> • Less than 2 years • 2-4 years • 5-7 years • 8-10 years • more than 10 years 	
A6	Present position grade <ul style="list-style-type: none"> • JUSA • 54-56 • 48-53 • 41-47 • 29-38 • 19-28 • Others, please specify: 	
A7	Years of experience using cloud computing based applications <ul style="list-style-type: none"> • Never • Less than 1 years • 1-3 years • 4-6 years • more than 7 years 	
A8	Type of user <ul style="list-style-type: none"> • IT User • Non-IT User 	

Please read each item and rate it for its relevance in representing the factor. Please give comments and tick (✓) score as indication of the level of your argument with the statement. The scale of criteria as shows in Table 1.

Table 1: Criteria for Measuring Content Validity (adapted from Yaghmaie, 2003)

Criteria	Relevance	Clarity
Score 1	Not relevance	Not clear
2	Relevant but need some revision	Clear but need some revision
3	Very relevant	Very clear

Construct : OPTIMISM [OPT] / Optimistik & Keyakinan
 Definition : The extent to which positive vision and the belief in cloud computing technology can improve individual quality and work performance.
 Adapted from : (Parasuraman & Colby, 2014; Rojas-Méndez et al., 2017)

No	Items/Questions	Relevance			Clarity		
		1	2	3	1	2	3
OPT-1	Cloud computing contributes to a better quality of work. <i>Pengkomputeran awan menyumbang kepada kualiti kerja yang lebih baik.</i>						
OPT-2	Cloud computing gives people more control over their daily work. <i>Pengkomputeran awan membolehkan lebih kawalan terhadap kerja seharian.</i>						
OPT-3	Cloud computing gives me more freedom of mobility. <i>Pengkomputeran awan memberi lebih kebebasan mobiliti.</i>						
OPT-4	Cloud computing makes me more productive in my work. <i>Pengkomputeran awan menjadikan kerja lebih produktif.</i>						
OPT-5	Cloud computing is much more convenient to use. <i>Pengkomputeran awan memberi lebih selesa digunakan.</i>						
OPT-6	I prefer to use cloud computing technology in my work. <i>Saya lebih gemar menggunakan teknologi pengkomputeran awan dalam kerja saya.</i>						
Comments/Suggestions:							

Construct : INNOVATIVENESS [INN] / Inovasi
 Definition : The extent to which the individual nature wants to explore new things and fresh ideas will highlight the individual as a champion in mastering changes to the organization.
 Adapted from : (Parasuraman & Colby, 2014; Pradhan et al., 2018)

No	Items/Questions	Relevance			Clarity		
		1	2	3	1	2	3
INN-1	Other people come to me for advice on cloud computing services. <i>Orang lain mendapatkan nasihat saya tentang perkhidmatan pengkomputeran awan.</i>						
INN-2	I am among the first in my circle of friends to use cloud computing services when it was implemented. <i>Saya antara yang terawal dalam kalangan kawan-kawan yang menggunakan perkhidmatan pengkomputeran awan apabila ia dilaksanakan.</i>						

Appendix I Content Validity Confirmation Letter by Expert

Content Validity Confirmation Form

To Whom it May Concern,

CONFIRMATION BY EXPERT

The above matter is kindly referred.

2. This is to confirm my participation in the evaluation of the research item's relevancy to the research instrument in the study of ~~Cloud Computing Acceptance~~ by Mohd Talmizie bin Amron (PAN163018) from Razak Faculty of Technology and Informatics, Universiti Teknologi Malaysia

Acceptance of Cloud Computing
Application Services in the
Malaysia
Public
Sectors

Thank you.

Signature, Name & Designation:

Maslin

^S
T^X. DR. MASLIN MASROM
Associate Professor
Razak Faculty of Technology and Informatics
Universiti Teknologi Malaysia Jalan Sultan Yahya Petra
54100 Kuala Lumpur
Tel: 03-2180 5225 Fax: 03-2180 5380 H/P: 019-3956437

Date: 16 TH OCTOBER 2019

Kindly return this confirmation form via email to
talmizie@gmail.com or mtalmizie2@graduate.utm.my

Appendix J Content Validity Ratio (CVR) Result

ITEMS	E1		E2		E3		E4		E5		E6		E7		E8		E9		E10		E11		E12		RELEVANCE		CLARITY		
	R	C	R	C	R	C	R	C	R	C	R	C	R	C	R	C	R	C	R	C	R	C	R	C	R	C	nr	CVR	nr
OPT-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1	
OPT-2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1	
OPT-3	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	9	0.500	12	1		
OPT-4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
OPT-5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
OPT-6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
INN-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
INN-2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
INN-3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
INN-4	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	10	0.666667	8	0.333333		
INN-5	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	9	0.5	10	0.666667		
DIS-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	0.833333	8	0.333333		
DIS-2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	0.833333	12	1		
DIS-3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	0.833333	12	1		
DIS-4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	0.833333	12	1		
DIS-5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	0.833333	12	1		
INS-1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	0.666667	12	1		
INS-2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	0.833333	12	1		
INS-3	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	0.666667	12	1		
INS-4	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	0.666667	12	1		
INS-5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	0.833333	12	1		
INS-6	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	9	0.5	8	0.333333		
PER-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
PER-2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
PER-3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
PER-4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
EFF-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
EFF-2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
EFF-3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
EFF-4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
EFF-5	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	9	0.5	11	0.833333		
COM-1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	11	0.833333		
COM-2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
COM-3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
COM-4	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	11	0.833333		
COM-5	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	11	0.833333		
COM-6	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	9	0.5	8	0.333333		
SEC-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
SEC-2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
SEC-3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
SEC-4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		
SEC-5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	12	1		

Appendix K Confirmatory Factor Analysis for Pilot Study

Rotated Component Matrix ^a															
	Component														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
OPT1	.173	.052	.243	.236	.229	.730	-.088	.032	.005	.183	-.025	.057	.020	.075	-.035
OPT2	.103	.193	.239	.206	.228	.665	.018	-.068	.072	.039	.038	.151	.056	-.023	-.120
OPT3	.099	.221	.104	.171	.164	.673	-.021	-.034	.167	.153	.022	.416	.020	.089	-.069
OPT4	.249	.092	.224	.285	.113	.678	-.092	-.020	.218	.075	.101	-.083	.039	.077	.154
OPT5	.173	.143	.265	.218	.236	.627	-.021	-.122	.158	-.079	.130	-.138	.001	.072	.206
INN1	.047	.093	.093	.015	-.055	.425	.130	-.149	.567	.043	.159	.183	.254	-.078	.095
INN2	.100	.031	.145	.029	.085	.010	.124	-.066	.851	-.048	.061	.034	-.092	-.059	.046
INN3	.140	-.121	.053	.065	.171	.094	-.022	.069	.696	.104	.103	.185	.212	.243	-.064
INN4	.183	.170	.167	.215	.017	.209	.101	.004	.666	.265	.068	-.064	-.019	.087	-.071
INN5	.129	.016	.191	.149	.090	.245	-.032	-.085	.414	.183	.035	.022	.165	.547	.057
DIS1	-.011	.124	.015	.086	-.112	.073	.716	.171	.082	-.074	.085	.018	-.128	.323	-.026
DIS2	-.034	-.060	-.037	-.035	.022	-.025	.845	.067	-.078	.005	.102	-.028	.012	.084	-.024
DIS3	.036	-.005	-.014	-.042	-.142	-.110	.806	.156	.116	.038	-.001	-.202	-.074	-.044	-.123
DIS4	-.053	.104	-.034	-.076	.052	-.054	.749	.189	.046	.038	.097	.001	.069	-.254	.117
DIS5	.023	-.150	-.039	-.113	-.125	.027	.743	.110	.100	.032	-.038	.039	.193	-.019	.008
INS1	-.083	.142	.175	.107	.020	.011	.495	.508	.029	-.059	.064	.296	-.006	-.117	.146
INS2	-.139	.109	.081	-.095	-.018	-.005	.256	.678	-.044	-.039	-.019	.131	-.087	.388	.030
INS3	-.064	-.082	.044	.040	-.008	-.106	.222	.784	.030	.149	.158	-.014	.107	.019	.062
INS4	-.055	.116	-.019	-.075	-.010	.000	.261	.824	-.072	-.002	.169	.077	-.054	-.058	-.114
INS5	-.187	.013	.000	-.072	.097	-.044	.069	.803	-.036	-.060	-.033	-.193	.027	-.137	-.021
PER1	.106	.287	.441	.244	.237	.255	.142	-.172	.073	.201	.030	-.029	.052	.541	.127
PER2	.139	.320	.305	.398	.261	.173	.034	-.166	.020	.262	.118	.327	.189	.517	-.006
PER3	.354	.253	.340	.338	.101	.309	.036	-.173	.197	.234	-.239	.035	.018	.504	.003
PER4	.229	.244	.223	.220	.417	.219	.092	-.201	.122	.249	.153	.221	.177	.622	-.061
EFF1	.202	.097	.633	.232	.310	.287	.000	.035	-.020	.129	.132	.109	.219	-.085	.074
EFF2	.173	.075	.731	.164	.225	.242	.068	.006	.125	.102	.110	-.065	.208	-.032	.016
EFF3	.240	.150	.563	.187	.238	.154	-.057	.051	.098	.239	.263	.130	-.009	.123	-.242
EFF4	.118	.167	.732	.034	.138	.193	-.074	.097	.121	.132	.168	.099	-.022	.072	.010
EFF5	.270	.193	.568	.264	.117	.159	-.025	.134	.135	.022	.269	.189	-.047	-.048	-.153
COM1	.187	.156	.442	.294	.268	.094	-.171	-.029	.123	.081	-.040	.263	-.076	.276	.190
COM2	.174	.182	.453	.288	.140	.117	-.097	.091	.101	.049	-.060	.501	.122	.126	.012
COM3	.229	.159	.270	.159	.265	.033	-.067	.077	.183	.282	-.031	.503	.009	.305	.130
COM4	.212	.265	.333	.380	.239	.208	-.116	-.028	.151	.051	.043	.522	-.004	-.036	.146
COM5	.270	.305	.208	.311	.142	.124	-.108	-.029	.256	.156	.065	.531	-.075	.012	.062

SEC1	.733	.246	.155	.091	.035	.107	.001	-.125	.115	.145	.109	.108	-.021	.014	.095
SEC2	.661	.103	.045	.191	.165	.246	.052	-.171	.146	.102	.173	.092	.205	-.006	.158
SEC3	.801	.146	.145	.132	.082	-.022	-.053	-.215	.150	.128	.056	-.067	.114	.026	.048
SEC4	.740	.050	.147	.135	.161	.099	-.076	-.072	.108	.110	.083	.050	.048	.096	.097
SEC6	.416	.375	.076	.246	.344	.058	.027	-.079	.030	.091	.086	.145	.181	-.021	.255
TRU1	.790	.150	.104	-.001	.074	.168	-.091	.051	.042	.135	.024	.090	-.028	-.066	-.114
TRU2	.598	.101	.037	.112	.314	.231	-.037	.000	.048	.180	.164	.313	-.010	.012	-.022
TRU3	.739	.063	.230	.048	.227	.019	.127	-.091	-.024	-.004	.109	-.074	.096	.091	-.175
TRU4	.404	.228	.165	.051	.412	.035	-.041	.018	-.086	.236	.193	.164	-.055	.060	.419
MOB1	.191	.065	.241	.312	.677	.167	-.083	.081	.101	.023	.020	.087	.110	.021	-.023
MOB2	.158	.163	.207	.079	.777	.208	-.101	.117	.093	.056	-.007	-.061	-.106	.120	.068
MOB3	.198	.169	.156	.233	.721	.180	-.051	.053	.000	.063	-.056	.111	.100	-.013	.122
MOB4	.183	.230	.293	.322	.558	.060	-.130	-.109	.108	.081	.112	-.055	-.131	.053	-.133
MOB5	.135	.246	.146	.212	.774	.144	-.084	-.055	.059	.081	.193	.125	.083	-.090	-.048
ITK1	.255	.172	.347	.128	.041	-.001	-.030	.122	.234	.646	-.008	.003	.184	-.015	.028
ITK2	.215	.293	.219	.167	.332	.107	.020	.099	.000	.571	.107	.077	.150	-.004	.042
ITK3	.247	.242	.050	.244	.081	.115	-.013	-.098	.055	.640	.357	.118	-.006	.074	-.097
ITK4	.284	.344	.215	.138	.102	.162	.123	-.005	.056	.525	.352	.023	-.156	-.061	.069
ITK5	.304	.232	.239	.237	.083	.208	-.002	-.036	.161	.579	.203	.056	.050	.221	.126
TOP1	.137	.673	.266	.188	.168	.101	-.114	.052	.051	.132	.062	.022	.026	.080	.058
TOP2	.103	.650	.074	.209	.335	.104	-.058	-.020	.034	.168	.100	.130	.195	-.040	.002
TOP3	.106	.777	.255	.008	.056	.198	.035	.085	.184	.044	.000	-.063	-.092	.024	.012
TOP4	.120	.682	-.002	.222	.330	-.004	-.036	.017	-.103	.210	.171	.002	.202	.030	.059
TOP5	.174	.768	.047	.026	-.002	.176	.076	-.018	.024	-.037	.084	.337	-.016	.042	-.139
TOP6	.142	.769	.105	.124	.196	.006	.021	.085	-.097	.223	.151	.085	.047	-.024	.157
SOC1	.377	.336	.374	.142	.011	.033	.059	.219	.263	.125	-.014	-.099	.593	.040	.152
SOC2	.264	.402	.182	.178	.159	.049	.088	.133	.148	.180	.207	.094	.547	-.042	.098
SOC3	.220	.327	.197	.153	.071	.256	.109	-.159	.118	.016	.261	-.036	.595	.320	-.076
SOC4	.252	.465	.094	.230	.064	.065	.057	.018	.061	.185	.187	-.040	.576	.044	-.227
AWA1	.162	.267	.311	-.018	.320	.196	.097	-.021	.113	.327	.585	.053	.267	.082	.017
AWA2	.271	.317	.185	.090	-.089	.161	.063	.093	.228	.201	.625	-.072	-.074	-.063	.118
AWA3	.113	.104	.173	.058	.215	-.027	.127	.116	.135	.245	.675	.101	.153	.028	.038
AWA4	.216	.178	.148	.216	.048	.054	.155	.231	.044	.037	.719	-.012	.131	.035	-.017
BEH1	.184	.089	.164	.768	.294	.137	-.041	-.047	.046	.180	-.084	-.030	.066	-.083	.028
BEH2	.084	.189	.098	.788	.218	.158	-.069	-.015	.045	.122	.139	.196	.079	.015	-.053
BEH3	.143	.162	.134	.727	.241	.249	-.095	.014	.037	.105	.124	.095	.125	.115	.074
USE1	.128	.122	.447	.293	.103	.145	.081	-.011	.154	.109	.253	.085	.028	.179	.550
USE2	.082	.031	.238	.400	.089	.263	-.054	-.036	.222	.038	.210	.155	.037	.136	.577
USE3	.096	.056	.373	.241	.005	.114	.003	-.076	.337	.256	.264	-.131	-.024	.230	.502

Appendix L Final Items of Measurement of the Study

Construct	Code	Item
Performance Expectancy (PER)	PER-1	I find MyGovUC useful in my job.
	PER-2	Using MyGovUC enables me to accomplish tasks more quickly.
	PER-3	Using MyGovUC increases my productivity.
	PER-4	If I use MyGovUC, it will increase my chances to improve my performance.
Effort Expectancy (EFF)	EFF-1	Various cloud computing applications are easy for me to understand.
	EFF-2	MyGovUC is easy for me to use.
	EFF-3	Learning to operate MyGovUC is easy for me.
	EFF-4	MyGovUC is easy for me to be master.
	EFF-5	Using MyGovUC takes less time that my normal duties.
Compatibility (COM)	COM-1	MyGovUC is easy to integrate with existing IT infrastructure.
	COM-2	MyGovUC is compatible with other systems I use.
	COM-3	MyGovUC fits well with the scope of work and services I provide.
	COM-4	MyGovUC is compatible with the values and goals of my work.
Security (SEC)	SEC-1	I believe that MyGovUC and data centres are secure.
	SEC-2	I believe that the information shared are under a secured communication network.
	SEC-3	I believe that MyGovUC has sufficient security controls.
	SEC-4	I believe that data in MyGovUC is protected against unauthorised changes.
	SEC-5	I believe that MyGovUC always be available according to the level of user access.
	SEC-6	I believe that MyGovUC is trustworthy.
	SEC-7	I believe that MyGovUC is stable.
	SEC-8	I believe that certain technical procedures exist to protect personal and governmental information.
Mobility (MOB)	MOB-1	I expect that I would be able to use MyGovUC anytime and anywhere.
	MOB-2	I expect that MyGovUC would be easily accessible and portable.
	MOB-3	I expect that MyGovUC would be available for use whenever I need it.
	MOB-4	I expect that MyGovUC will allow me to complete my job outside my office.
	MOB-5	In general, I expect that I would have control over my use of MyGovUC anytime.
IT Knowledge (ITK)	ITK-1	I have the good knowledge about cloud computing.
	ITK-2	I have a good knowledge about the benefits of using cloud computing.
	ITK-3	I closely follow trends in cloud computing technology.
	ITK-4	I usually read information on cloud computing services.
	ITK-5	Overall, I am are knowledgeable on cloud computing technology.
Top Management Support (TOP)	TOP-1	My top management is highly interested in using MyGovUC.
	TOP-2	My top management support the use of MyGovUC.
	TOP-3	My top management is likely to invest funds MyGovUC.
	TOP-4	My top management is aware of the benefits MyGovUC.
	TOP-5	My top management is willing to take risks involved in the adoption of MyGovUC.
	TOP-6	My top management has a vision to project our organisation as a leader in the use of MyGovUC.
Social Influence (SOC)	SOC-1	People convince me to use MyGovUC cloud based-services.
	SOC-2	People who are important to me think that I should use MyGovUC.
	SOC-3	People around me is helpful in the use of MyGovUC.
	SOC-4	In general, organization-environment support the use of MyGovUC.
Awareness (AWA)	AWA-1	I am aware of the government cloud computing (MyGovUC) services provided to me.
	AWA-2	I have gone through training programs related to MyGovUC.

	AWA-3	I have come across government campaigns/advertisements related to using cloud computing services.
	AWA-4	I know that the government is fulfilling its responsibility to make people aware and to educate them on cloud computing.
Optimism (OPT)	OPT-1	MyGovUC contributes to a better quality of work.
	OPT-2	MyGovUC gives me more freedom of mobility.
	OPT-3	MyGovUC makes me more productive in my work.
	OPT-4	MyGovUC is more convenient to use.
	OPT-5	I prefer to use MyGovUC technology in my work.
Innovativeness (INN)	INN-1	Others seek my advice on MyGovUC.
	INN-2	I was among the first in the circle of friends who use MyGovUC when it is implemented.
	INN-3	I can usually figure out new features of MyGovUC without the help from others.
	INN-4	I keep up to date with the latest technology on MyGovUC as an area of interest.
Discomfort (DIS)	DIS-2	When I get technical support from a service provider, I sometimes feel as if I am being taken advantage of by someone who knows more than I do.
	DIS-3	The technical support team is not helpful because they do not explain things in terms I understand.
	DIS-4	Sometimes I think that MyGovUC is not designed for ordinary people use.
	DIS-5	I'm embarrassed when people around me know I'm having trouble with MyGovUC.
Insecurity (INS)	INS-2	I think people are too dependent on cloud-based application to do work.
	INS-3	I think the dependency on cloud computing would be harmful.
	INS-4	I think the widespread use of technology in work will reduce the quality of human relationships.
	INS-5	I do not feel confident doing my job that can only be reached online.
Behavioural Intention (BEH)	BEH-1	I intend to continue using MyGovUC in the future.
	BEH-2	I will always try to MyGovUC in my daily works.
	BEH-3	I expect that I would MyGovUC in the future.
Actual Use (USE)	USE-1	I use the MyGovUC on daily basis.
	USE-2	I use MyGovUC frequently.
	USE-3	I visit the MyGovUC portal often.

Appendix M UTM Letter of Permission to Conduct Research

 UTM UNIVERSITI TEKNOLOGI MALAYSIA	UTM Razak School of Engineering and Advanced Technology UTM Kuala Lumpur	UTM Razak School of Engineering and Advanced Technology Level 7, Menara Razak Universiti Teknologi Malaysia Jalan Sultan Yahya Petra 54100 Kuala Lumpur, Malaysia
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Tel: +(6)03-21805138 Fax: +(6)03-21805380 <http://www.razakschool.utm.my>

OUR REF.: Ruj. Kami: UTM.K56.01.03/13.11/1/4 Jld. 9 (2)
Tarikh : 17 Julai 2019

KEPADA SESIAPA YANG BERKENAAN

Assalamualaikum dan Salam Sejahtera,

Tuan,

PERMOHONAN UNTUK MENJALANKAN PENGUMPULAN DATA BAGI TUJUAN PENYELIDIKAN

NAMA : MOHD TALMIZIE BIN AMRON
NO. K/P : 840704035159
NO. MATRIK : PAN163018
PROGRAM : DOKTOR FALSAFAH
TAJUK PENYELIDIKAN : "ACCEPTANCE OF CLOUD COMPUTING IN MALAYSIAN PUBLIC SECTORS"
NAMA PENYELIA : DR. ROSLINA BINTI IBRAHIM
EMAIL PENYELIA : iroslina.kl@utm.my
NO. TELEFON : 03-22031356

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Adalah disahkan bahawa penama seperti di atas adalah pelajar Doktor Falsafah di Fakulti Teknologi dan Informatik Razak, Universiti Teknologi Malaysia, Kuala Lumpur.

3. Untuk makluman tuan, penama di atas ingin memohon kebenaran menjalankan pengumpulan data di jabatan tuan untuk tujuan penyelidikan beliau.

4. Sehubungan dengan itu, pihak fakulti berharap agar tuan dapat memberikan pertimbangan yang sewajarnya ke atas permohonan pelajar ini. Sekiranya tuan memerlukan maklumat lanjut, sila hubungi penyelia utama beliau seperti butiran di atas.

5. Kerjasama dan sokongan daripada tuan amatlah kami hargai dan didahului dengan ucapan ribuan terima kasih.

Sekian.

"Berkhidmat untuk Negara"

Saya yang menjalankan amanah,


(NASIR BIN OSMAN)
Timbalan Pendaftar
Fakulti Teknologi dan Informatik Razak
UTM Kuala Lumpur
b.p. Naib Canselor
☎ 03 - 2180 5360
☎ 03 - 2180 5380
✉ nasir.kl@utm.my

For Researcher Only	Serial No:
	Date Return:

Survey Booklet

**Survey on Acceptance of
Cloud Computing Application
Services in the Malaysian
Public Sectors**

MyGovUC
KOMUNIKASI BERSEPADU



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Mohd Talmizie Bin Amron
Razak Faculty of Technology and Informatics
Universiti Teknologi Malaysia
Jalan Sultan Yahya Petra
54100 Kuala Lumpur



Survey Information

This survey is conducted by Mohd Talmizie Amron from the Razak Faculty of Technology and Informatics for his doctoral degree (PHD) requirement on the implementation of cloud computing-based services and application in the Malaysian government agencies. This research project is supervised by Dr Roslina Ibrahim, Associate Professor Dr Surliyati Chuprat and Ts. Dr Nur Azaliah Abu Bakar. This study is conducted to examine the factors that determine or inhibit cloud computing acceptance by the Malaysian public sector.

The questionnaire is targeted at the person who is generally responsible for the implementation of the IT innovation and person who used the cloud-based application services in your respective agency.

Most of the questions require the respondent to tick the appropriate box and number of scales. Please complete the survey as an incomplete questionnaire create difficulties for data analysis. Completed questionnaire can be returned or collected by our representatives. I have also prepared a softcopy and online version of the questionnaire. Online version available at URL : <https://bit.ly/35WgXBT>

The success of this survey greatly depends on your participation. Your cooperation is highly appreciated as it is beneficial to both academia and industry.

Further information:

Email: talmizie@gmail.com / mtalmizie2@graduate.utm.my
 Mobile No: 012-3488047

ALL THE INFORMATION SUPPLIED IN THIS QUESTIONNAIRE WILL BE TREATED IN STRICTEST CONFIDENCE AND WILL NOT BE USED FOR ANY PURPOSES EXCEPT THOSE OF THIS RESEARCH, AS DATA FROM THE SURVEY WILL BE ANALYSED ON AN AGGREGATED BASIS, THE INDIVIDUAL AGENCY WILL NOT BE REVEALED IN THE TEST RESULT.



Definition of Terms

Please refer to the following definitions when answering this questionnaire.
Sila rujuk kepada definisi dibawah apabila menjawab soalan kaji selidik ini.

Agency / Agensi	Refers to the respondent's actual workplace. <i>Menyujuk kepada tempat kerja sebenar responden.</i>
Cloud computing	Information technology services that have been introduced in the respondent's agency. These include public cloud, hybrid cloud, or government cloud model that have been implemented and used in the respondent's agency OR that have been implemented elsewhere before being implemented in the respondent's agency. The type of cloud computing included Software as a Service (SaaS), Platform as a Service (PaaS) or Infrastructure as a Service (IaaS). It includes a wide range of cloud-based services such as email, cloud file storage, data center, data recovery, web hosting, etc.
Pengkomputeran awan	<i>Perkhidmatan teknologi maklumat yang telah diperkenalkan di agensi responden. Ini termasuk public cloud, hybrid cloud, atau government cloud yang telah dilaksanakan dan digunakan di agensi ATAU yang telah dilaksanakan di tempat lain sebelum dilaksanakan di agensi responden. Jenis-jenis pengkomputeran awan termasuk Software as a Service (SaaS), Platform as a Service (PaaS) atau Infrastructure as a Service (IaaS). Definisi ini juga termasuk perkhidmatan berasaskan awan seperti e-mel, penyimpanan fail, pusat data, pemuliharaan data, web hosting, dan lain-lain.</i>
MyGovUC	Unified Communication and Collaboration services that are centrally managed at the Malaysian Administrative Modernization and Management Planning Unit (MAMPU). The service combines channels of communication via e-mail, video, audio conferencing, and instant messaging. In addition to the above, MyGovUC enables sharing of information through the Collaborative Portal and MyGovUC portal. Services provided include E-Mail, Unified Communication (UC), Portal and Social Media, and Add-on value services such as e-mail Archiving, Big Mail Transfer (BMT), ADRMS, E-Mail Relay (SMTP), and Secured E-mail.
MyGovUC	<i>Perkhidmatan komunikasi dan kolaborasi bersepadu yang diuruskan secara berpusat di Unit Pemodenan Tadbiran Dan Perancangan Pengurusan Malaysia (MAMPU). Perkhidmatan ini menggabungkan saluran-saluran komunikasi e-mel, perisidangan video dan audio, instant messaging serta Sistem Pengurusan Identiti. Selain itu, perkhidmatan ini turut menyediakan kemudahan perkongsian maklumat melalui Portal Kolaboratif dan portal maklumat awam melalui Portal MyGovUC. Perkhidmatan yang disediakan ialah E-Mel, Komunikasi Bersepadu, Portal dan Media Sosial dan Perkhidmatan Nilai Tambah seperti pengarkib e-mel, big mail transfer, ADRMS, perkhidmatan e-mel relay (SMTP) serta perlindungan keselamatan e-mel.</i>
Abbreviation	
MyGovUC	Malaysian Government Unified Communication
TRI	Technology Readiness Index

Survey on Acceptance of Cloud Computing Application Services in the Malaysian Public Sectors

SECTION A: GENERAL INFORMATION
Seksyen A: Maklumat Am

Please answer the following questions about yourself and your agency profiles.
Sila jawab soalan berikut berkenaan diri anda dan agensi anda.

A1 Name of Agency / Department / Unit / Nama agensi / jabatan / unit

A2 Gender / Jantina
 Male / Lelaki Female / Perempuan

A3 Age / Umur
 25 or less / 25 atau kurang 26 - 35 36 - 45
 46 - 55 56 - 60 60 and more / 60 dan ke atas

A4 Highest level of academic / Kelulusan akademik tertinggi
 PhD Master / Sarjana Bachelor / Sarjana Muda
 Diploma Others:
 Lain-lain:

A5 Years served in public sector / Tempoh perkhidmatan dalam sektor awam
 Less than 2 years / Kurang dari 2 tahun 2 - 4 years 5 - 7 years
 8 - 10 years / Lebih dari 10 tahun More than 10 years / Lebih dari 10 tahun

A6 Present position grade / Kumpulan grad jawatan sekarang
 JUASA 54 52
 48 44 41
 17 - 38 Others:
 Lain-lain:

A7 Years of experience using cloud computing based applications / Pengalaman anda menggunakan aplikasi berasaskan pengkomputeran awan
 Never Less than 1 year
 1 - 3 years 4 - 6 years
 more than 7 years

A8 Background of respondent / Latar belakang responden
 IT User Non-IT User

Survey on Acceptance of Cloud Computing Application Services in the Malaysian Public Sectors

SECTION B: CLOUD COMPUTING SERVICES INFORMATION
Seksyen B: Maklumat Perkhidmatan Pengkomputeran Awan

Please answer the following questions about provided cloud computing services.
Sila jawab soalan berikut berkenaan perkhidmatan pengkomputeran awan yang disediakan.

B1 Do you know about MyGovUC and the application provided?
Anda tahu tentang MyGovUC dan aplikasi yang disediakan?
 Yes / Ya No / Tidak Not Sure / Tidak Pasti

B2 Do you know that your agency is using the MyGovUC services?
Anda tahu agensi anda menggunakan perkhidmatan MyGovUC?
 Yes / Ya No / Tidak Not Sure / Tidak Pasti

B3 Are you using the MyGovUC service and the application provided in your daily work?
Adakah anda menggunakan perkhidmatan MyGovUC dan aplikasi yang disediakan dalam kerja harian anda?
 Yes / Ya No / Tidak Not Sure / Tidak Pasti

Please tick (✓) the scale relevant to your agency.
Sila tanda (✓) pada pilihan yang berkaitan dengan agensi anda.

B4 What is the MyGovUC services utilized in your agency?
Apakah perkhidmatan MyGovUC yang digunakan di agensi anda?
 i E-Mail / E-Mel Yes / Ya No / Tidak
 ii File Storage / Penyimpanan Fail Yes / Ya No / Tidak
 iii File Sharing / Perkongsian Fail Yes / Ya No / Tidak
 iv Online collaboration or conference / Kolaborasi atau konferens dalam talian Yes / Ya No / Tidak

B5 What are the MyGovUC that you used in your daily work?
Apakah perkhidmatan MyGovUC yang anda gunakan dalam kerja harian anda?
 i E-Mail / E-Mel Yes / Ya No / Tidak
 ii File Storage / Penyimpanan Fail Yes / Ya No / Tidak
 iii File Sharing / Perkongsian Fail Yes / Ya No / Tidak
 iv Online collaboration or conference / Kolaborasi atau konferens dalam talian Yes / Ya No / Tidak

B6 How frequent you use MyGovUC in a week?
Berapa kerap anda menggunakan MyGovUC dalam seminggu?
 Never / Tidak pernah Seldom / Jarang-jarang Daily / Setiap hari

B7 Since when did you use MyGovUC? / Sejak bila anda menggunakan MyGovUC?
 Before 2016 (during pilot study period) / Sebelum 2016 (semasa kajian awal) 2016 2017
 2018 2019

Survey on Acceptance of Cloud Computing Application Services in the Malaysian Public Sectors

SECTION C / Seksyen C

Please tick (✓) the scale relevant to you and your agency. The scale is as follows:
Sila tandakan (✓) pada skala yang berkaitan dengan anda dan agensi anda. Skala adalah seperti berikut:

1	2	3	4	5
Strongly Disagree / Sangat tidak bersetuju	Disagree / Tidak bersetuju	Neutral / Neutral	Agree / Bersetuju	Strongly Agree / Sangat bersetuju

C1. TRI: OPTIMISM
TRI: Optimis

CODE	ITEMS	1	2	3	4	5
OPT-1	MyGovUC contributes to a better quality of work. MyGovUC menyumbang kepada kualiti kerja yang lebih baik.					
OPT-2	MyGovUC gives me more freedom of mobility. MyGovUC memberikan saya lebih kebebasan untuk bergerak.					
OPT-3	MyGovUC makes me more productive in my work. MyGovUC menjadikan kerja saya lebih produktif.					
OPT-4	MyGovUC is more convenient to use. Saya dapati MyGovUC lebih mudah digunakan dalam kerja.					
OPT-5	I prefer to use MyGovUC technology in my work. Saya lebih gemar menggunakan MyGovUC dalam kerja saya.					

C2. TRI: INNOVATIVENESS
TRI: Sifat Inovatif

CODE	ITEMS	1	2	3	4	5
INN-1	Others seek my advice on MyGovUC. Orang lain mendapatkan nasihat saya tentang MyGovUC.					
INN-2	I was among the first in the circle of friends who use MyGovUC when it is implemented. Saya antara yang terawal dalam kalangan kawan-kawan yang menggunakan MyGovUC apabila ia dilaksanakan.					
INN-3	I can usually figure out new features of MyGovUC without the help from others. Saya biasanya dapat mengetahui ciri-ciri baru MyGovUC tanpa bantuan daripada orang lain.					
INN-4	I keep up to date with the latest technology in MyGovUC as an area of interest. Saya sentiasa mengikuti perkembangan teknologi terkini mengenai MyGovUC sebagai bidang yang saya minati.					

C3. TRI: DISCOMFORT
TRI: Ketidakelesaan

CODE	ITEMS	1	2	3	4	5
DIS-1	When I get technical support from a service provider, I sometimes feel as if I am being taken advantage of by someone who knows more than I do. Apabila menerima sokongan teknikal daripada pembekal perkhidmatan, kadang-kadang saya berasa seolah-olah saya diambil kesempatan oleh seseorang yang tahu lebih banyak daripada saya.					
DIS-2	The technical support team is not helpful because they do not explain things in terms I understand. Pasukan sokongan teknikal tidak membantu kerana mereka tidak menerangkan dalam cara yang saya boleh faham.					

Survey on Acceptance of Cloud Computing Application Services in the Malaysian Public Sectors

DIS-3 Sometimes I think that MyGovUC is not designed for ordinary people use.
Kadang-kadang saya berfikir bahawa MyGovUC tidak dicipta untuk kegunaan orang biasa.

DIS-4 I'm embarrassed when people around me know I'm having trouble with MyGovUC.
Saya berasa malu apabila orang di sekeliling saya tahu saya menghadapi masalah dengan MyGovUC.

DIS-5 There is no manual for MyGovUC written in easy to understand.
Tiada manual MyGovUC yang ditulis dalam bahasa yang mudah difahami.

C4. TRI: INSECURITY
TRI: TIDAK SELAMAT

CODE	ITEMS	1	2	3	4	5
INS-1	I think people are too dependent on cloud based-services to do work. Saya fikir manusia terlalu bergantung kepada aplikasi berasaskan awan untuk melakukan kerja.					
INS-2	I think the dependency on cloud computing would be harmful. Saya fikir pergantungan terhadap perkhidmatan pengkomputeran awan akan memudaratkan.					
INS-3	I think the widespread use of cloud based-services in work will reduce the quality of human relationships. Saya fikir penggunaan meluas teknologi pengkomputeran awan dalam kerja akan mengurangkan kualiti hubungan manusia.					
INS-4	I feel not confident doing my job that can only be reached online. Saya berasa tidak yakin melakukan kerja yang hanya boleh dicapai dalam talian.					
INS-5	I feel unsafe to store data online. Saya berasa tidak selamat untuk menyimpan data dalam talian.					

C5. TECHNOLOGICAL: PERFORMANCE EXPECTANCY
TEKNOLOGI: JANGKAAN PRESTASI

CODE	ITEMS	1	2	3	4	5
PER-1	I would find MyGovUC useful in my job. Saya dapati MyGovUC berguna dalam kerja saya.					
PER-2	Using MyGovUC enables me to accomplish tasks more quickly. Menggunakan MyGovUC membolehkan saya untuk melaksanakan tugas-tugas dengan lebih cepat.					
PER-3	Using MyGovUC increases my productivity. Menggunakan MyGovUC meningkatkan produktiviti saya.					
PER-4	If I use cloud computing, I will increase my chances to improve my performance. Jika saya menggunakan MyGovUC, saya akan meningkatkan peluang untuk membaikprestai prestasi kerja saya.					

C6. TECHNOLOGICAL: EFFORT EXPECTANCY
TEKNOLOGI: JANGKAAN USAHA

CODE	ITEMS	1	2	3	4	5
EFF-1	My interaction with MyGovUC would be clear and understandable.					

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	Interaksi saya dengan MyGovUC adalah jelas dan mudah difahami.				
EFF-2	MyGovUC is easy for me to use. <i>MyGovUC mudah untuk saya gunakan.</i>				
EFF-3	Learning to operate MyGovUC is easy for me. <i>Belajar untuk menggunakan MyGovUC mudah bagi saya.</i>				
EFF-4	MyGovUC is easy for me to be skillful. <i>MyGovUC mudah untuk saya menjadi mahir.</i>				
EFF-5	Using MyGovUC takes less time than my normal duties. <i>Menggunakan MyGovUC mengambil masa yang lebih singkat berbanding tugasan biasa saya.</i>				

C7. TECHNOLOGICAL: COMPATIBILITY
TEKNOLOGI: KESERASIAN

CODE	ITEMS	1	2	3	4	5
COM-1	MyGovUC is easy to integrate with existing IT infrastructure. <i>MyGovUC mudah diintegrasikan dengan infrastruktur IT sedia ada.</i>					
COM-2	MyGovUC is compatible with other systems I use. <i>MyGovUC adalah serasi dengan sistem lain yang saya gunakan.</i>					
COM-3	MyGovUC fits well with the scope of work and services I provide. <i>MyGovUC sesuai dengan skop kerja dan perkhidmatan yang saya berikan.</i>					
COM-4	MyGovUC is compatible with the values and goals of my work. <i>MyGovUC bersesuaian dengan nilai & matlamat kerja saya.</i>					

C8. TECHNOLOGICAL: SECURITY
TEKNOLOGI: KESELAMATAN

CODE	ITEMS	1	2	3	4	5
SEC-1	I believe that MyGovUC and data centres are secure. <i>Saya percaya bahawa pelayan dan pusat data MyGovUC adalah selamat.</i>					
SEC-2	I believe that the information shared are under a secured communication network. <i>Saya percaya bahawa maklumat yang dikongsi berada dalam rangkaian komunikasi yang selamat.</i>					
SEC-3	I believe that MyGovUC has sufficient security controls. <i>Saya percaya bahawa MyGovUC mempunyai kawalan keselamatan yang mencukupi.</i>					
SEC-4	I believe that data in MyGovUC is protected against unauthorized changes. <i>Saya percaya bahawa data di dalam MyGovUC dilindungi daripada perubahan yang tidak dibenarkan.</i>					
SEC-5	I believe that MyGovUC always be available according to the level of user access. <i>Saya percaya bahawa MyGovUC sentiasa tersedia mengikut peringkat akses pengguna.</i>					
SEC-6	I believe that MyGovUC is trustworthy. <i>Saya percaya bahawa MyGovUC boleh dipercayai.</i>					
SEC-7	I believe that MyGovUC is stable. <i>Saya percaya bahawa MyGovUC stabil.</i>					
SEC-8	I believe that certain technical procedures exist to protect personal and governmental information.					

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	Saya percaya wujudnya prosedur teknikal untuk melindungi maklumat peribadi dan kerajaan.				
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C9. TECHNOLOGICAL: MOBILITY
TEKNOLOGI: MOBILITI

CODE	ITEMS	1	2	3	4	5
MOB-1	I expect that I would be able to use MyGovUC anytime and anywhere. <i>Saya jangkakan yang saya akan dapat menggunakan MyGovUC pada bila-bila masa dan di mana sahaja.</i>					
MOB-2	I expect that MyGovUC would be easily accessible and portable. <i>Saya jangkakan bahawa MyGovUC akan mudah diakses dan mudah alih.</i>					
MOB-3	I expect that MyGovUC would be available for use whenever I need it. <i>Saya jangkakan yang MyGovUC akan sedia untuk digunakan setiap kali saya memerlukannya.</i>					
MOB-4	I expect that MyGovUC will allow me to complete my job outside my office. <i>Saya harapkan MyGovUC akan membolehkan saya menyelesaikan kerja saya di luar pejabat.</i>					
MOB-5	In general, I expect that I would have control over my use of MyGovUC anytime. <i>Ummunya, saya jangkakan bahawa saya akan mempunyai kawalan terhadap penggunaan MyGovUC pada bila-bila masa.</i>					

C10. HUMAN: IT KNOWLEDGE
MANUSIA: PENGETAHUAN IT

CODE	ITEMS	1	2	3	4	5
ITK-1	I have the good knowledge about cloud computing. <i>Saya mempunyai pengetahuan yang baik mengenai pengkomputeran awan.</i>					
ITK-2	I have a good knowledge about the benefits of using cloud computing. <i>Saya mempunyai pengetahuan yang baik tentang faedah menggunakan pengkomputeran awan.</i>					
ITK-3	I closely follow trends in cloud computing technology. <i>Saya mengikut perkembangan semasa teknologi pengkomputeran awan.</i>					
ITK-4	I usually read information on cloud computing services. <i>Saya biasanya membaca maklumat mengenai perkhidmatan pengkomputeran awan.</i>					
ITK-5	In overall, I am knowledgeable on cloud computing technology. <i>Secara keseluruhan, saya berpengetahuan tentang teknologi pengkomputeran awan.</i>					

C11. HUMAN: TOP MANAGEMENT SUPPORT
MANUSIA: SOKONGAN PENGURUSAN ATASAN

CODE	ITEMS	1	2	3	4	5
TOP-1	My top management is highly interested in using MyGovUC. <i>Pengurusan atasan saya sangat berminat menggunakan MyGovUC.</i>					

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TOP-2	My top management support the use of MyGovUC. <i>Pengurusan atasan saya menyokong penggunaan MyGovUC.</i>				
TOP-3	My top management is likely to invest funds MyGovUC. <i>Pengurusan atasan saya mungkin melabur dana dalam MyGovUC.</i>				
TOP-4	My top management is aware of the benefits MyGovUC. <i>Pengurusan atasan saya sedar tentang manfaat MyGovUC.</i>				
TOP-5	My top management is willing to take risks involved in the adoption of MyGovUC. <i>Pengurusan atasan saya bersedia mengambil risiko yang terlibat dalam penggunaan MyGovUC.</i>				
TOP-6	My top management has a vision to project our organization as a leader in the use of MyGovUC. <i>Pengurusan atasan saya mempunyai visi untuk meletakkan organisasi kami sebagai peneraju dalam pelaksanaan MyGovUC.</i>				

C12. HUMAN: SOCIAL INFLUENCE
MANUSIA: PENGARUH SOSIAL

CODE	ITEMS	1	2	3	4	5
SOC-1	People convince me to use MyGovUC cloud based-services. <i>Orang menyakinkan saya untuk menggunakan MyGovUC.</i>					
SOC-2	People who are important to me think that I should use MyGovUC. <i>Orang yang penting kepada saya fikir bahawa saya harus menggunakan MyGovUC.</i>					
SOC-3	People around me is helpful in the use of MyGovUC. <i>Orang sekeliling saya membantu dalam penggunaan MyGovUC.</i>					
SOC-4	In general, organization-environment support the use of MyGovUC. <i>Secara umum, persekitaran organisasi saya menyokong penggunaan MyGovUC.</i>					

C13. HUMAN: AWARENESS
MANUSIA: KESEDARAN

CODE	ITEMS	1	2	3	4	5
AWA-1	I am aware of the government cloud computing (MyGovUC) provided to me. <i>Saya tahu mengenai perkhidmatan pengkomputeran awan kerajaan (MyGovUC) yang disediakan kepada saya.</i>					
AWA-2	I have gone through training programs related to MyGovUC. <i>Saya telah mengikuti program latihan mengenai perkhidmatan MyGovUC.</i>					
AWA-3	I have come across government campaigns / advertisements related to using MyGovUC. <i>Saya telah melihat kempen/iklan kerajaan yang berkaitan dengan penggunaan MyGovUC.</i>					
AWA-4	I know that the government is fulfilling its responsibility to make people aware and to educate them on cloud computing. <i>Saya tahu bahawa kerajaan memenuhi tanggungjawabnya untuk menyedar dan mendidik orang ramai mengenai pengkomputeran awan.</i>					

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C14. BEHAVIORAL INTENTION
NIAT/HASRAT

CODE	ITEMS	1	2	3	4	5
BEH-1	I intend to continue using MyGovUC in the future. <i>Saya berhasrat untuk terus menggunakan MyGovUC pada masa hadapan.</i>					
BEH-2	I will always try to use MyGovUC in my daily works. <i>Saya akan sentiasa menggunakan MyGovUC dalam kerja harian saya.</i>					
BEH-3	I expect that I would use MyGovUC in the future. <i>Saya jangkakan yang saya akan menggunakan MyGovUC pada masa hadapan.</i>					

C14. ACTUAL USE OF MYGOVUC
PENGUNAAN SEBENAR MYGOVUC

CODE	ITEMS	1	2	3	4	5
USE-1	I use MyGovUC on daily basis. <i>Saya menggunakan MyGovUC setiap hari.</i>					
USE-2	I use MyGovUC frequently. <i>Saya sering menggunakan MyGovUC.</i>					
USE-3	I visit MyGovUC web portal often. <i>Saya kerap melawat portal web MyGovUC.</i>					

----- END OF QUESTIONNAIRE -----

Thank You.

Terima kasih.

Appendix O Common Method Bias Test

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	25.973	37.104	37.104	25.973	37.104	37.104
2	5.511	7.873	44.977	5.511	7.873	44.977
3	4.076	5.823	50.800	4.076	5.823	50.800
4	2.933	4.189	54.990	2.933	4.189	54.990
5	2.610	3.729	58.718	2.610	3.729	58.718
6	2.342	3.346	62.064	2.342	3.346	62.064
7	1.851	2.644	64.709	1.851	2.644	64.709
8	1.553	2.219	66.927	1.553	2.219	66.927
9	1.426	2.037	68.964	1.426	2.037	68.964
10	1.384	1.977	70.942	1.384	1.977	70.942
11	1.176	1.680	72.621	1.176	1.680	72.621
12	1.036	1.480	74.101	1.036	1.480	74.101
13	.903	1.291	75.391			
14	.879	1.255	76.647			
15	.793	1.132	77.779			
16	.748	1.068	78.847			
17	.721	1.030	79.878			
18	.674	.962	80.840			
19	.649	.927	81.767			
20	.625	.893	82.659			
21	.564	.805	83.465			
22	.553	.790	84.255			
23	.533	.762	85.017			
24	.516	.737	85.754			
25	.477	.682	86.435			
26	.467	.667	87.102			
27	.431	.615	87.717			
28	.417	.596	88.314			
29	.416	.594	88.907			
30	.402	.575	89.482			
31	.369	.527	90.009			
32	.355	.507	90.516			
33	.337	.482	90.998			

Appendix P Full Collinearity VIF Test Result

Construct	Item	VIF
Awareness	AWA-1	1.754
	AWA-2	1.568
	AWA-3	2.293
	AWA-4	1.977
Behavioural Intention	BEH-1	3.222
	BEH-2	4.650
	BEH-3	4.302
Compatibility	COM-1	2.598
	COM-2	2.965
	COM-3	3.879
	COM-4	3.788
Discomfort	DIS-2	1.936
	DIS-3	1.952
	DIS-4	1.495
	DIS-5	1.611
Effort Expectancy	EFF-1	2.862
	EFF-2	3.132
	EFF-3	2.749
	EFF-4	3.380
	EFF-5	2.691
Innovativeness	INN-1	1.994
	INN-2	1.670
	INN-3	1.688
	INN-4	2.259
Insecurity	INS-2	1.859
	INS-3	1.926
	INS-4	2.319
	INS-5	1.846
IT Knowledge	ITK-1	3.297
	ITK-2	3.404
	ITK-3	3.492
	ITK-4	2.821
	ITK-5	4.075

Construct	Item	VIF
Mobility	MOB-1	3.472
	MOB-2	3.817
	MOB-3	4.189
	MOB-4	3.383
	MOB-5	4.046
Optimism	OPT-1	3.237
	OPT-2	2.399
	OPT-3	3.324
	OPT-4	3.742
	OPT-5	3.598
Performance Expectancy	PER-1	2.395
	PER-2	3.321
	PER-3	3.219
	PER-4	2.738
Security	SEC-1	3.863
	SEC-2	3.749
	SEC-3	4.135
	SEC-4	3.625
	SEC-5	2.247
	SEC-6	3.373
	SEC-7	2.422
	SEC-8	2.490
Social Influence	SOC-1	2.885
	SOC-2	3.393
	SOC-3	2.332
	SOC-4	2.138
Top Management Support	TOP-1	2.583
	TOP-2	3.147
	TOP-3	2.160
	TOP-4	3.236
	TOP-5	2.579
	TOP-6	3.136
Actual Use	USE-1	3.730
	USE-2	3.600
	USE-3	1.408

Appendix P Discriminant Validity based on Fornell & Lacker criterion

	USE	AWA	COM	DIS	EFF	ITK	INN	INS	MOB	OPT	PER	BEH	SEC	SOC	TOP
USE	0.869														
AWA	0.567	0.814													
COM	0.626	0.503	0.938												
DIS	0.568	0.500	0.646	0.891											
EFF	-0.110	-0.005	-0.208	-0.251	0.765										
ITK	0.611	0.589	0.667	0.766	-0.223	0.881									
INN	0.435	0.437	0.340	0.492	0.045	0.475	0.817								
INS	-0.045	0.058	-0.138	-0.031	0.399	-0.059	0.121	0.821							
MOB	0.518	0.598	0.453	0.446	-0.030	0.487	0.451	-0.004	0.888						
OPT	0.526	0.497	0.717	0.583	-0.183	0.623	0.267	-0.086	0.390	0.904					
PER	0.533	0.466	0.632	0.695	-0.267	0.705	0.504	-0.064	0.425	0.525	0.879				
BEH	0.552	0.531	0.686	0.723	-0.195	0.758	0.437	-0.182	0.447	0.599	0.753	0.889			
SEC	0.383	0.498	0.421	0.559	-0.159	0.504	0.325	-0.180	0.399	0.475	0.490	0.559	0.844		
SOC	0.528	0.631	0.562	0.601	-0.094	0.565	0.454	0.009	0.458	0.457	0.538	0.614	0.590	0.864	
TOP	0.405	0.528	0.506	0.586	-0.165	0.499	0.401	-0.035	0.433	0.486	0.516	0.562	0.574	0.748	0.848

	USE	AWA	COM	DIS	EFF	ITK	INN	INS	MOB	OPT	PER	BEH	SEC	SOC	TOP
USE-1	0.938	0.549	0.613	0.513	-0.099	0.585	0.382	-0.052	0.473	0.530	0.512	0.531	0.382	0.516	0.403
USE-2	0.929	0.494	0.591	0.507	-0.155	0.516	0.374	-0.073	0.431	0.486	0.481	0.482	0.334	0.456	0.352
USE-3	0.722	0.430	0.398	0.471	-0.006	0.500	0.400	0.030	0.470	0.329	0.388	0.423	0.275	0.400	0.291
AWA-1	0.492	0.835	0.501	0.464	-0.044	0.569	0.326	-0.053	0.542	0.559	0.439	0.541	0.405	0.532	0.447
AWA-2	0.428	0.716	0.260	0.335	0.089	0.358	0.437	0.101	0.445	0.180	0.303	0.306	0.366	0.467	0.436
AWA-3	0.493	0.862	0.374	0.379	-0.010	0.464	0.343	0.055	0.503	0.406	0.340	0.396	0.409	0.470	0.385
AWA-4	0.435	0.836	0.440	0.424	-0.010	0.478	0.365	0.126	0.451	0.375	0.403	0.428	0.440	0.575	0.460
COM-1	0.454	0.397	0.496	0.851	-0.140	0.627	0.437	0.066	0.345	0.435	0.536	0.555	0.416	0.496	0.499
COM-2	0.461	0.435	0.486	0.877	-0.182	0.652	0.422	-0.014	0.395	0.489	0.562	0.582	0.489	0.504	0.508
COM-3	0.578	0.475	0.663	0.922	-0.289	0.751	0.444	-0.057	0.427	0.591	0.696	0.708	0.526	0.585	0.544
COM-4	0.515	0.468	0.624	0.914	-0.258	0.689	0.455	-0.082	0.416	0.541	0.658	0.706	0.549	0.546	0.536
DIS-2	-0.054	0.012	-0.146	0.804	-0.148	-0.091	0.052	0.311	-0.015	-0.104	-0.177	-0.109	-0.146	-0.076	-0.080
DIS-3	-0.122	-0.010	-0.209	0.948	-0.274	-0.260	0.024	0.375	-0.053	-0.194	-0.285	-0.223	-0.125	-0.086	-0.173
DIS-4	-0.034	0.118	-0.093	0.549	0.019	-0.001	0.250	0.333	0.022	-0.075	-0.004	0.029	0.060	0.136	0.079
DIS-5	-0.059	0.012	-0.129	0.701	-0.094	-0.087	0.123	0.330	0.063	-0.112	-0.097	-0.042	-0.150	-0.041	-0.101
EFF-1	0.560	0.525	0.619	0.715	0.880	-0.234	0.456	-0.034	0.402	0.535	0.635	0.678	0.444	0.518	0.503
EFF-2	0.607	0.508	0.654	0.690	0.894	-0.208	0.404	-0.042	0.439	0.631	0.660	0.695	0.453	0.524	0.463
EFF-3	0.499	0.498	0.538	0.604	0.864	-0.180	0.347	-0.061	0.457	0.511	0.559	0.625	0.376	0.421	0.358
EFF-4	0.529	0.544	0.558	0.645	0.899	-0.173	0.452	-0.076	0.438	0.507	0.624	0.668	0.451	0.517	0.420
EFF-5	0.487	0.518	0.555	0.715	0.867	-0.180	0.425	-0.051	0.413	0.553	0.617	0.669	0.491	0.500	0.440
ITK-1	0.467	0.485	0.390	0.417	-0.054	0.878	0.447	0.008	0.519	0.345	0.378	0.409	0.363	0.430	0.377
ITK-2	0.471	0.475	0.450	0.410	-0.045	0.894	0.380	0.003	0.554	0.426	0.401	0.437	0.372	0.426	0.402
ITK-3	0.435	0.376	0.399	0.362	-0.043	0.893	0.376	-0.052	0.507	0.311	0.364	0.376	0.344	0.398	0.361
ITK-4	0.461	0.401	0.383	0.368	0.019	0.859	0.354	0.015	0.548	0.313	0.342	0.370	0.346	0.375	0.400
ITK-5	0.466	0.421	0.380	0.421	-0.007	0.913	0.451	0.008	0.521	0.324	0.399	0.389	0.344	0.399	0.381
INN-1	0.345	0.334	0.213	0.320	0.084	0.327	0.819	0.081	0.343	0.128	0.430	0.348	0.238	0.332	0.292
INN-2	0.386	0.332	0.210	0.333	0.118	0.304	0.750	0.136	0.302	0.196	0.288	0.229	0.197	0.269	0.230
INN-3	0.308	0.334	0.301	0.423	-0.031	0.431	0.807	0.029	0.345	0.291	0.398	0.361	0.283	0.345	0.327
INN-4	0.397	0.419	0.354	0.498	0.014	0.455	0.887	0.155	0.459	0.241	0.494	0.446	0.317	0.494	0.422
INS-2	-0.030	0.080	-0.137	0.022	0.294	-0.028	0.105	0.777	-0.016	-0.068	-0.022	-0.124	-0.079	0.061	0.048
INS-3	0.008	0.170	-0.024	0.077	0.312	0.029	0.205	0.747	0.090	-0.010	0.009	-0.071	-0.033	0.107	0.028
INS-4	-0.041	0.061	-0.140	-0.030	0.369	-0.068	0.138	0.900	0.046	-0.108	-0.065	-0.178	-0.080	0.034	-0.006
INS-5	-0.054	-0.022	-0.107	-0.086	0.336	-0.072	0.029	0.850	-0.074	-0.058	-0.084	-0.172	-0.311	-0.088	-0.123
MOB-1	0.494	0.463	0.677	0.522	-0.134	0.550	0.271	-0.034	0.901	0.346	0.483	0.525	0.432	0.408	0.399
MOB-2	0.457	0.441	0.587	0.481	-0.193	0.564	0.236	-0.050	0.899	0.345	0.469	0.515	0.395	0.386	0.411

MOB-3	0.482	0.411	0.652	0.540	-0.180	0.554	0.218	-0.067	0.915	0.341	0.470	0.541	0.447	0.428	0.445
MOB-4	0.489	0.472	0.686	0.561	-0.157	0.588	0.250	-0.132	0.895	0.354	0.495	0.583	0.438	0.432	0.465
MOB-5	0.451	0.456	0.627	0.522	-0.168	0.561	0.230	-0.103	0.910	0.377	0.451	0.541	0.429	0.408	0.473
OPT-1	0.429	0.400	0.548	0.596	-0.244	0.599	0.398	-0.048	0.384	0.885	0.453	0.634	0.458	0.449	0.468
OPT-2	0.424	0.362	0.542	0.538	-0.196	0.604	0.398	-0.071	0.391	0.843	0.443	0.637	0.357	0.408	0.380
OPT-3	0.473	0.452	0.563	0.601	-0.212	0.582	0.418	-0.085	0.390	0.886	0.46	0.705	0.427	0.462	0.482
OPT-4	0.517	0.421	0.578	0.671	-0.267	0.653	0.493	-0.034	0.353	0.892	0.479	0.668	0.466	0.528	0.475
OPT-5	0.494	0.408	0.545	0.642	-0.252	0.656	0.499	-0.044	0.353	0.886	0.469	0.664	0.441	0.510	0.459
PER-1	0.507	0.497	0.625	0.600	-0.152	0.686	0.361	-0.164	0.401	0.565	0.860	0.621	0.469	0.516	0.449
PER-2	0.558	0.527	0.674	0.689	-0.185	0.696	0.392	-0.106	0.448	0.563	0.913	0.681	0.467	0.585	0.531
PER-3	0.468	0.413	0.595	0.641	-0.191	0.666	0.381	-0.210	0.342	0.502	0.906	0.710	0.532	0.533	0.496
PER-4	0.426	0.451	0.542	0.639	-0.164	0.649	0.421	-0.168	0.401	0.503	0.877	0.665	0.524	0.550	0.524
BEH-1	0.559	0.463	0.631	0.592	-0.188	0.598	0.295	-0.145	0.422	0.687	0.570	0.922	0.413	0.526	0.482
BEH-2	0.592	0.474	0.622	0.616	-0.211	0.613	0.312	-0.115	0.422	0.664	0.580	0.949	0.392	0.516	0.451
BEH-3	0.610	0.479	0.676	0.611	-0.186	0.664	0.349	-0.129	0.431	0.667	0.628	0.944	0.380	0.541	0.491
SEC-1	0.292	0.410	0.301	0.390	-0.113	0.409	0.295	-0.197	0.377	0.330	0.380	0.450	0.844	0.482	0.469
SEC-2	0.334	0.437	0.347	0.396	-0.087	0.417	0.321	-0.194	0.347	0.386	0.394	0.442	0.862	0.502	0.446
SEC-3	0.299	0.388	0.306	0.430	-0.130	0.426	0.278	-0.265	0.328	0.361	0.354	0.453	0.871	0.518	0.499
SEC-4	0.273	0.393	0.311	0.459	-0.142	0.403	0.276	-0.174	0.296	0.375	0.378	0.430	0.875	0.472	0.461
SEC-5	0.401	0.458	0.461	0.573	-0.125	0.447	0.294	-0.113	0.348	0.463	0.462	0.532	0.818	0.538	0.510
SEC-6	0.306	0.416	0.348	0.420	-0.130	0.408	0.268	-0.151	0.323	0.402	0.424	0.448	0.872	0.500	0.474
SEC-7	0.314	0.407	0.357	0.565	-0.166	0.452	0.271	-0.046	0.301	0.402	0.483	0.511	0.791	0.512	0.506
SEC-8	0.327	0.424	0.349	0.480	-0.178	0.419	0.180	-0.111	0.365	0.440	0.389	0.471	0.818	0.431	0.489
SOC-1	0.469	0.533	0.410	0.547	-0.056	0.487	0.426	0.103	0.387	0.343	0.441	0.504	0.510	0.841	0.599
SOC-2	0.423	0.517	0.438	0.529	-0.070	0.477	0.412	0.073	0.354	0.340	0.449	0.511	0.537	0.888	0.659
SOC-3	0.529	0.576	0.511	0.504	-0.057	0.479	0.397	-0.029	0.416	0.420	0.469	0.514	0.472	0.871	0.585
SOC-4	0.404	0.547	0.556	0.504	-0.131	0.506	0.346	-0.082	0.415	0.453	0.489	0.581	0.521	0.854	0.725
TOP-1	0.406	0.500	0.469	0.523	-0.192	0.487	0.399	-0.081	0.413	0.452	0.464	0.513	0.575	0.654	0.858
TOP-2	0.370	0.461	0.529	0.529	-0.180	0.481	0.331	-0.107	0.383	0.504	0.470	0.537	0.499	0.642	0.883
TOP-3	0.265	0.364	0.308	0.469	0.002	0.370	0.366	0.108	0.325	0.305	0.434	0.417	0.365	0.541	0.780
TOP-4	0.348	0.480	0.494	0.522	-0.186	0.438	0.303	-0.052	0.345	0.493	0.447	0.520	0.490	0.688	0.888
TOP-5	0.316	0.399	0.311	0.453	-0.080	0.336	0.344	0.020	0.352	0.274	0.388	0.383	0.461	0.619	0.803
TOP-6	0.322	0.452	0.371	0.470	-0.131	0.374	0.317	0.019	0.383	0.345	0.413	0.440	0.500	0.647	0.867

	USE	AWA	COM	DIS	EFF	ITK	INN	INS	MOB	OPT	PER	BEH	SEC	SOC	TOP
USE															
AWA	0.681														
COM	0.699	0.547													
DIS	0.652	0.560	0.689												
EFF	0.131	0.101	0.208	0.193											
ITK	0.697	0.652	0.713	0.826	0.171										
INN	0.536	0.536	0.373	0.550	0.201	0.525									
INS	0.073	0.150	0.138	0.100	0.507	0.069	0.184								
MOB	0.600	0.674	0.484	0.480	0.066	0.524	0.503	0.086							
OPT	0.582	0.524	0.762	0.619	0.174	0.664	0.294	0.088	0.413						
PER	0.603	0.517	0.680	0.746	0.207	0.758	0.558	0.074	0.457	0.560					
BEH	0.633	0.588	0.743	0.783	0.148	0.823	0.485	0.188	0.484	0.645	0.819				
SEC	0.422	0.555	0.439	0.587	0.171	0.534	0.355	0.186	0.423	0.495	0.517	0.597			
SOC	0.614	0.727	0.609	0.665	0.126	0.619	0.514	0.129	0.499	0.491	0.588	0.678	0.640		
TOP	0.453	0.599	0.525	0.633	0.165	0.525	0.447	0.123	0.465	0.499	0.555	0.601	0.605	0.818	

Appendix S Discriminant Validity based on HTMT ratio

Appendix T TR Score for Each Respondent

No	OPT	INN	DIS	INS	SCORE
1	5.00	4.50	3.20	1.80	4.13
2	5.00	2.00	2.40	2.00	3.65
3	4.20	3.25	2.80	2.40	3.56
4	4.40	4.75	2.60	3.40	3.79
5	3.80	3.75	2.80	2.80	3.49
6	4.00	3.00	2.20	4.20	3.15
7	3.80	4.00	2.80	2.20	3.70
8	4.40	4.25	2.60	2.80	3.81
9	4.40	4.50	3.00	3.60	3.58
10	3.40	2.75	3.60	3.20	2.84
11	4.40	4.00	1.60	2.60	4.05
12	4.00	3.75	2.40	4.00	3.34
13	3.40	3.50	3.00	3.60	3.08
14	4.40	4.25	2.80	2.60	3.81
15	4.60	4.00	3.00	2.80	3.70
16	4.40	3.75	4.00	3.00	3.29
17	3.20	3.50	3.20	3.00	3.13
18	3.00	4.00	3.00	3.00	3.25
19	3.00	3.00	3.00	3.00	3.00
20	3.20	3.75	3.40	3.20	3.09
21	3.00	3.00	3.00	3.00	3.00
22	3.60	3.50	3.60	3.00	3.13
23	3.40	3.00	3.60	3.40	2.85
24	3.60	3.50	3.60	3.40	3.03
25	4.00	3.50	3.00	3.40	3.28
26	4.20	4.25	2.60	5.00	3.21
27	5.00	4.00	2.00	3.20	3.95
28	5.00	4.50	5.00	5.00	2.88
29	3.80	4.00	4.00	3.80	3.00
30	5.00	3.75	2.40	3.20	3.79
31	4.20	4.00	3.00	2.00	3.80
32	3.60	3.75	3.00	4.20	3.04
33	5.00	3.75	2.40	2.20	4.04
34	3.60	3.50	2.40	4.20	3.13
35	4.00	3.25	2.20	3.00	3.51
36	5.00	4.25	3.40	4.40	3.36
37	5.00	4.50	3.00	4.00	3.63
38	4.80	4.50	4.00	5.00	3.08
39	5.00	4.25	4.00	2.60	3.66
40	4.00	2.75	2.80	4.80	2.79
41	2.40	3.50	3.00	3.40	2.88
42	5.00	5.00	2.60	3.40	4.00
43	3.60	1.75	2.60	4.80	2.49
44	4.40	3.25	3.40	3.20	3.26
45	3.80	4.00	3.60	4.00	3.05
46	5.00	3.75	3.80	3.80	3.29
47	4.40	4.50	4.60	4.60	2.93
48	4.20	4.00	4.00	2.80	3.35
49	4.20	3.75	3.60	2.60	3.44
50	5.00	4.25	1.80	3.20	4.06
51	3.60	2.00	3.20	5.00	2.35
52	4.40	3.50	2.20	2.80	3.73
53	4.00	4.00	4.00	3.00	3.25
54	4.00	4.00	3.00	3.40	3.40
55	4.20	4.00	3.80	3.80	3.15
56	5.00	5.00	4.00	5.00	3.25
57	4.00	3.50	4.00	4.00	2.88
58	4.60	4.25	2.60	2.60	3.91
59	3.20	3.50	3.60	3.00	3.03

No	OPT	INN	DIS	INS	SCORE
60	5.00	4.75	4.40	4.20	3.29
61	5.00	4.25	4.40	5.00	2.96
62	5.00	4.50	2.40	2.60	4.13
63	5.00	4.50	3.20	3.00	3.83
64	4.00	4.00	3.20	3.80	3.25
65	4.00	3.50	1.80	2.40	3.83
66	5.00	3.50	3.40	4.80	3.08
67	4.00	4.00	2.60	2.40	3.75
68	4.00	2.50	2.40	3.20	3.23
69	4.40	3.50	2.20	2.80	3.73
70	3.80	3.50	1.60	3.00	3.68
71	4.00	4.00	4.00	4.00	3.00
72	4.00	3.25	3.20	3.20	3.21
73	5.00	4.50	2.00	3.80	3.93
74	4.00	4.50	4.00	4.00	3.13
75	4.00	3.50	3.80	4.00	2.93
76	4.80	4.50	3.80	2.40	3.78
77	3.80	3.75	3.00	3.00	3.39
78	4.20	4.25	3.60	3.20	3.41
79	5.00	3.50	2.60	3.00	3.73
80	4.00	3.25	4.00	4.00	2.81
81	4.40	2.75	2.40	3.60	3.29
82	3.40	2.00	3.40	3.00	2.75
83	5.00	3.75	4.00	2.80	3.49
84	4.00	4.00	4.00	1.60	3.60
85	4.00	3.25	3.20	2.20	3.46
86	3.00	3.25	3.40	3.20	2.91
87	5.00	4.00	4.60	4.20	3.05
88	4.00	3.50	2.40	1.80	3.83
89	3.40	3.25	2.00	4.00	3.16
90	5.00	5.00	3.60	3.80	3.65
91	4.80	3.75	3.40	2.60	3.64
92	4.00	4.00	3.60	3.80	3.15
93	5.00	4.75	2.60	3.00	4.04
94	4.40	3.50	4.20	3.40	3.08
95	4.80	3.50	2.40	3.00	3.73
96	3.60	3.25	3.20	2.40	3.31
97	4.60	4.25	1.40	2.40	4.26
98	4.00	3.25	3.40	3.20	3.16
99	4.40	3.75	2.80	2.80	3.64
100	3.80	3.25	3.40	2.60	3.26
101	5.00	4.25	1.00	3.00	4.31
102	4.20	4.75	2.00	1.60	4.34
103	4.40	4.00	4.00	3.80	3.15
104	4.00	4.00	3.00	3.00	3.50
105	4.40	2.75	3.20	3.80	3.04
106	5.00	5.00	2.00	2.40	4.40
107	5.00	3.50	2.80	3.00	3.68
108	4.80	4.00	2.20	2.00	4.15
109	4.80	4.00	3.00	3.20	3.65
110	4.00	3.25	3.60	4.20	2.86
111	4.00	2.75	2.20	3.00	3.39
112	4.00	3.25	2.60	3.20	3.36
113	5.00	2.75	1.00	1.40	4.34
114	3.40	4.00	2.40	2.80	3.55
115	4.20	3.50	3.60	2.40	3.43
116	4.00	2.75	2.00	2.00	3.69
117	4.00	2.75	2.20	4.00	3.14
118	4.40	4.25	4.40	2.60	3.41

No	OPT	INN	DIS	INS	SCORE
119	4.40	5.00	3.80	2.20	3.85
120	3.80	3.75	2.60	3.80	3.29
121	4.80	4.25	3.80	4.00	3.31
122	4.60	4.00	3.20	2.60	3.70
123	5.00	5.00	1.00	1.00	5.00
124	5.00	4.50	1.20	1.40	4.73
125	4.20	3.50	2.80	3.20	3.43
126	4.80	3.50	1.80	1.60	4.23
127	4.40	4.25	2.40	3.60	3.66
128	4.80	3.00	3.00	2.20	3.65
129	4.00	2.75	4.00	3.40	2.84
130	4.20	3.50	1.80	3.00	3.73
131	4.00	2.75	2.00	2.00	3.69
132	4.40	3.25	1.20	1.60	4.21
133	5.00	3.50	2.20	3.00	3.83
134	4.00	3.50	4.00	4.00	2.88
135	4.20	4.00	2.80	1.80	3.90
136	2.00	2.25	2.80	2.20	2.81
137	4.20	3.00	2.60	2.20	3.60
138	4.00	3.25	3.00	4.00	3.06
139	3.20	2.50	3.00	2.40	3.08
140	3.40	3.00	3.80	4.00	2.65
141	3.40	3.50	3.00	3.00	3.23
142	2.60	3.50	3.00	2.00	3.28
143	3.00	2.00	3.00	2.40	2.90
144	4.00	3.50	2.00	2.60	3.73
145	4.60	3.00	1.60	1.60	4.10
146	4.60	3.00	1.60	1.60	4.10
147	4.00	3.25	2.80	4.20	3.06
148	5.00	2.50	1.40	1.40	4.18
149	4.40	3.25	2.40	4.00	3.31
150	4.00	3.00	3.20	3.80	3.00
151	5.00	4.00	2.20	2.60	4.05
152	4.80	3.75	2.80	3.20	3.64
153	4.00	2.75	2.20	2.60	3.49
154	4.00	3.25	1.00	3.00	3.81
155	4.40	1.00	2.80	1.80	3.20
156	4.00	2.25	1.40	2.80	3.51
157	4.40	2.00	1.80	3.00	3.40
158	3.00	3.00	3.00	3.00	3.00
159	4.00	4.00	2.00	1.80	4.05
160	5.00	4.00	2.20	2.60	4.05
161	3.40	4.00	3.00	2.60	3.45
162	4.00	3.25	2.80	3.40	3.26
163	3.40	3.50	3.20	3.00	3.18
164	4.00	3.50	2.40	2.80	3.58
165	5.00	2.50	1.40	1.40	4.18
166	3.00	3.75	2.20	3.20	3.34
167	4.00	3.00	2.00	2.80	3.55
168	4.00	2.75	2.40	2.60	3.44
169	2.80	3.00	3.60	1.40	3.20
170	5.00	3.75	3.20	3.60	3.49
171	4.60	4.25	4.00	4.60	3.06
172	4.40	3.25	2.40	4.00	3.31
173	3.80	4.00	3.00	3.00	3.45
174	5.00	4.00	2.00	2.40	4.15
175	2.20	2.00	3.80	3.40	2.25
176	4.20	2.75	1.60	1.80	3.89
177	3.80	2.75	3.00	2.20	3.34
178	3.00	3.00	3.20	3.20	2.90
179	5.00	4.75	2.60	2.60	4.14
180	5.00	5.00	3.00	2.60	4.10
181	3.60	3.50	1.00	3.20	3.73

No	OPT	INN	DIS	INS	SCORE
182	2.00	2.00	3.20	3.80	2.25
183	3.40	2.25	2.20	1.00	3.61
184	4.00	3.00	3.00	3.40	3.15
185	4.00	2.00	3.20	3.40	2.85
186	3.40	2.00	3.20	2.40	2.95
187	2.80	3.50	3.00	3.40	2.98
188	3.20	1.75	3.20	3.40	2.59
189	3.00	3.00	3.00	3.00	3.00
190	3.00	3.00	3.00	3.40	2.90
191	2.80	2.50	3.00	2.20	3.03
192	4.00	3.25	2.40	2.20	3.66
193	3.00	2.00	3.00	3.00	2.75
194	3.00	2.00	3.00	3.00	2.75
195	2.60	2.00	2.80	2.60	2.80
196	4.00	3.00	2.80	5.00	2.80
197	3.20	3.00	3.00	2.20	3.25
198	3.00	3.00	3.00	3.00	3.00
199	3.00	2.00	1.00	2.00	3.50
200	3.20	1.75	2.20	2.00	3.19
201	3.80	3.00	2.40	2.20	3.55
202	5.00	3.25	3.00	2.00	3.81
203	3.60	2.50	2.00	2.60	3.38
204	3.00	3.00	3.00	3.00	3.00
205	2.80	4.75	3.20	3.40	3.24
206	3.60	2.00	2.20	2.80	3.15
207	4.00	3.00	2.40	2.00	3.65
208	5.00	2.00	3.40	1.80	3.45
209	4.00	2.00	2.00	2.00	3.50
210	3.20	3.25	1.60	1.80	3.76
211	3.20	3.00	3.00	2.20	3.25
212	5.00	5.00	5.00	5.00	3.00
213	4.80	4.75	3.60	4.00	3.49
214	4.00	5.00	5.00	4.00	3.00
215	4.00	2.75	2.60	3.00	3.29
216	4.00	2.75	2.60	3.00	3.29
217	4.00	2.00	2.40	3.00	3.15
218	3.40	2.25	2.20	2.40	3.26
219	4.00	4.00	3.00	4.00	3.25
220	4.00	3.50	3.60	3.80	3.03
221	4.00	2.75	2.60	3.00	3.29
222	4.00	4.00	4.00	4.00	3.00
223	3.80	3.00	3.20	2.20	3.35
224	3.20	2.00	3.20	2.80	2.80
225	4.00	2.75	2.00	3.20	3.39
226	4.80	3.25	2.40	1.20	4.11
227	3.00	2.25	2.80	3.00	2.86
228	4.00	3.00	2.00	2.00	3.75
229	4.00	3.00	3.00	2.80	3.30
230	4.00	2.75	2.00	2.00	3.69
231	4.20	3.25	2.00	4.00	3.36
232	4.00	2.00	2.00	2.00	3.50
233	4.40	3.00	2.60	2.40	3.60
234	4.40	2.50	3.00	3.20	3.18
235	5.00	3.75	2.20	2.00	4.14
236	3.00	2.00	2.80	3.00	2.80
237	4.00	2.00	2.80	3.20	3.00
238	4.00	3.00	2.00	2.00	3.75
239	4.00	3.25	2.40	2.00	3.71
240	4.20	3.25	2.60	3.00	3.46
241	3.60	3.00	3.80	2.40	3.10
242	4.00	3.00	3.20	3.80	3.00
243	3.60	2.75	2.80	3.20	3.09
244	3.60	3.25	3.20	3.00	3.16

No	OPT	INN	DIS	INS	SCORE
245	4.00	3.00	3.00	3.00	3.25
246	4.00	4.00	4.00	4.00	3.00
247	4.00	3.50	3.60	2.20	3.43
248	4.00	3.25	2.80	4.20	3.06
249	5.00	3.25	2.00	2.20	4.01
250	4.00	2.75	3.20	3.20	3.09
251	3.40	3.00	2.60	3.00	3.20
252	3.00	2.25	3.00	3.00	2.81
253	4.00	2.50	3.00	2.20	3.33
254	3.60	2.25	2.40	2.40	3.26
255	3.20	3.25	2.00	2.40	3.51
256	4.80	2.25	1.00	2.20	3.96
257	3.00	1.00	3.00	3.00	2.50
258	4.00	3.00	3.00	3.00	3.25
259	3.00	3.25	3.00	3.40	2.96
260	3.60	3.50	2.40	2.20	3.63
261	3.80	2.50	3.60	3.40	2.83
262	3.00	2.50	2.60	3.00	2.98
263	3.80	3.00	2.60	3.20	3.25
264	3.20	3.25	2.20	3.00	3.31
265	4.00	3.00	3.00	3.00	3.25
266	4.00	4.00	3.80	3.60	3.15
267	3.80	3.50	3.60	4.00	2.93
268	4.20	3.75	2.40	2.20	3.84
269	4.00	3.00	2.20	2.00	3.70
270	4.80	3.75	4.00	2.00	3.64
271	3.60	3.00	3.00	3.00	3.15
272	3.00	2.75	2.40	2.40	3.24
273	3.60	2.75	3.00	2.60	3.19
274	4.80	3.50	1.80	2.60	3.98
275	4.40	2.50	3.00	3.40	3.13
276	4.40	2.50	1.40	2.40	3.78
277	4.00	3.00	3.00	2.40	3.40
278	4.00	2.50	3.20	2.80	3.13
279	3.80	3.25	2.20	3.60	3.31
280	3.60	1.75	1.60	2.40	3.34
281	3.60	2.75	2.80	2.80	3.19
282	5.00	4.00	1.40	2.80	4.20
283	4.20	3.25	2.20	2.80	3.61
284	3.00	3.00	3.00	3.00	3.00
285	4.80	3.00	3.00	2.80	3.50
286	4.00	1.75	2.00	2.00	3.44
287	5.00	2.50	1.00	2.00	4.13
288	5.00	4.50	1.80	2.80	4.23
289	4.00	2.00	2.00	3.80	3.05
290	4.00	3.25	2.20	2.60	3.61
291	5.00	5.00	1.20	2.00	4.70
292	5.00	2.25	2.60	3.40	3.31
293	4.00	2.50	2.40	3.00	3.28
294	4.00	3.00	2.60	2.20	3.55
295	4.00	3.50	2.40	2.00	3.78
296	3.80	3.00	2.20	2.20	3.60
297	5.00	4.25	1.40	2.00	4.46
298	5.00	3.00	2.20	3.40	3.60
299	4.00	3.00	2.80	3.60	3.15
300	3.60	3.50	3.60	3.40	3.03
301	4.00	3.50	3.00	3.40	3.28
302	4.20	4.25	2.60	5.00	3.21
303	5.00	4.00	2.00	3.20	3.95
304	5.00	4.50	5.00	5.00	2.88
305	3.80	4.00	4.00	3.80	3.00
306	5.00	3.75	2.40	3.20	3.79
307	3.80	3.75	3.00	3.00	3.39

No	OPT	INN	DIS	INS	SCORE
308	4.20	4.25	3.60	3.20	3.41
309	5.00	3.50	2.60	3.00	3.73
310	4.00	3.25	4.00	4.00	2.81
311	4.40	2.75	2.40	3.60	3.29
312	3.40	2.00	3.40	3.00	2.75
313	5.00	3.75	4.00	2.80	3.49
314	4.00	4.00	4.00	1.60	3.60
315	4.00	3.25	3.20	2.20	3.46
316	3.00	4.00	3.00	3.00	3.25
317	3.00	3.00	3.00	3.00	3.00
318	3.20	3.75	3.40	3.20	3.09
319	3.00	3.00	3.00	3.00	3.00
320	3.60	3.50	3.60	3.00	3.13
321	3.40	3.00	3.60	3.40	2.85
322	3.60	3.50	3.60	3.40	3.03
323	4.00	3.50	3.00	3.40	3.28
324	4.20	4.25	2.60	5.00	3.21
325	5.00	4.00	2.00	3.20	3.95
326	4.40	3.25	2.40	4.00	3.31
327	3.80	4.00	3.00	3.00	3.45
328	5.00	4.00	2.00	2.40	4.15
329	2.20	2.00	3.80	3.40	2.25
330	4.20	2.75	1.60	1.80	3.89
331	3.80	2.75	3.00	2.20	3.34
332	3.00	3.00	3.20	3.20	2.90
333	5.00	4.75	2.60	2.60	4.14
334	5.00	5.00	3.00	2.60	4.10
335	3.60	3.50	1.00	3.20	3.73
336	2.80	3.50	3.00	3.40	2.98
337	3.20	1.75	3.20	3.40	2.59
338	3.00	3.00	3.00	3.00	3.00
339	3.00	3.00	3.00	3.40	2.90
340	2.80	2.50	3.00	2.20	3.03
341	4.00	3.25	2.40	2.20	3.66
342	3.00	2.00	3.00	3.00	2.75
343	3.00	2.00	3.00	3.00	2.75
344	2.60	2.00	2.80	2.60	2.80
345	4.00	3.00	2.80	5.00	2.80
346	4.00	3.00	2.00	2.00	3.75
347	4.00	3.25	2.40	2.00	3.71
348	4.20	3.25	2.60	3.00	3.46
349	3.60	3.00	3.80	2.40	3.10
350	4.00	3.00	3.20	3.80	3.00
351	3.60	2.75	2.80	3.20	3.09
TOTAL TR SCORE					3.38

LIST OF PUBLICATIONS

Indexed Journal

1. **Amron, M.T.**, Ibrahim, R., Abu Bakar, N.A. (2020). Cloud Computing Acceptance Among Public Sector Employees. *Telecommunication, Computing, Electronics and Control (TELKOMNIKA)*. Volume 19. No 1. DOI: 10.12928/telkomnika.v19i1.17883. **(SCOPUS)**
2. **Amron, M.T.**, Ibrahim, R., Abu Bakar, N.A., Chuprat, S. (2019). Acceptance of Cloud Computing in the Malaysian Public Sector: A Proposed Model. *International Journal of Engineering Business Management (IJEEM)*. Volume 11. DOI: 10.1177/1847979019880709. **(Web of Science & SCOPUS)**

Indexed Conference Proceeding

3. **Amron, M.T.**, Ibrahim, R., Abu Bakar, N.A., Chuprat, S. (2020). The Validity and Reliability Evaluation of Instruments for Cloud Computing Acceptance Study. In *2020 The 6th International Conference on Information Management (ICIM)*. IEEE. DOI: 10.1109/ICIM49319.2020.244710 **(Indexed by SCOPUS)**
4. **Amron, M.T.**, Ibrahim, R., Abu Bakar, N.A., Chuprat, S. (2019). Determining Factors Influencing the Acceptance of Cloud Computing Implementation. In *Information Systems International Conference (ISICO) 2019*. Procedia Computer Science. Volume 161: 1055-1063. DOI: 10.1016/j.procs.2019.11.216. **(Indexed by SCOPUS)**
5. **Amron, M.T.**, Ibrahim, R., Chuprat, S. (2017). A Review on Cloud Computing Acceptance Factors. In *Information Systems International Conference (ISICO) 2018*. Procedia Computer Science. Volume 124: 639-646. DOI: 10.1016/j.procs.2017.12.200. **(Indexed by SCOPUS)**

Non-indexed Journal

6. **Amron, M.T.**, Ibrahim, R., Abu Bakar, N.A., Chuprat, S. (2019). Development and Validation of a Questionnaire to Measure the Acceptance of Cloud Computing in Public Sectors. *Open International Journal of Informatics (OIJI)*. Volume 7 (Special Issue 2).
7. **Amron, M.T.**, Ibrahim, R., Abu Bakar, N.A., Chuprat, S. (2018). Preliminary Study on the Implementation of 1GovCloud Among Public Agencies in Malaysia. *Open International Journal of Informatics (OIJI)*. Volume 6 (4).

Poster Presentation

8. **Mohd Talmizie Amron**. Cloud Computing Implementation Level for Malaysian Public Sector (2018). *Razak Faculty Research Week 2018*. 15-19 Oct. UTM Kuala Lumpur

5 Minutes Thesis Presentation

9. **Mohd Talmizie Amron**, Dr Roslina Ibrahim, Ts. Dr Nur Azaliah Abu Bakar, Cloud Computing Readiness and Acceptance Among Public Sector Employees, *Thesis in 5 Minutes Series 1/2021*, 1 March 2021, MNNF Network

BEST PAPER AWARDS





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for the paper entitled

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DEAN

Razak Faculty of Technology and Informatics
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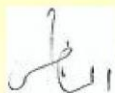
with a title:

**"CLOUD COMPUTING TECHNOLOGY READINESS
AND ACCEPTANCE AMONG PUBLIC SECTORS EMPLOYEES"**

in category:

PHD SCIENCE, ENGINEERING, TECHNOLOGY

1 March 2021



**Md Nadzri Salleh
Director, MNNF Network**

