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An Evaluative Study on the citizen's perception towards the Philippine Identification System through the lens of Technology Acceptance Model

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Abstract

Electronic Identification system is crucial component for every civilized nation and is was proven to be a successful way to improve public services in modern government systems. The Philippine Identification System (PhilSys) has been finally brought to light after two decades of consistent trial and error on passing and enacting the law for implementing a national identification system in the Philippines. The primary objective of this study was to conduct an evaluation specifically from the perception of the Filipino citizens towards the PhilSys through the lens of the Technology Acceptance Model (TAM). This study used a single-case quantitative methodology and gathered a total of 654 sample population. Findings were evaluated using Spearman's rank correlation in R statistical tool. Furthermore, based on citizens' perspective, this study also developed collective patterns of facilitating and hindering factors for ensuring the successful implementation of PhilSys ID. The study's findings revealed that the perceived usefulness and ease of using the Philippine Identification System (PhilSys) moderately influence the Filipino citizen's intention to use the ID System. However, there is a stronger correlation in trusting the Philippine ID system in correlations with public awareness, transparency and concerns related to privacy and security. Moreover, based on citizens' perspective on facilitating and inhibiting factors, public awareness is the most critical factor in PhilSys ID's success. Other inhibiting and facilitating factors is related to good governance, transparency, privacy and security, citizens cooperation, internet accessibility, secure IT infrastructure and technical expertise of both the citizens and government. The researcher believes that this case study of the Philippines as social phenomena provides relevant contribution to both theory and practice for a citizen-centric approach in governing the national identification system of the Philippines.

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Abbreviations

AMA	Accra Metropolitan Assembly
ATU	Attitudes Towards Using
BIU	Behavioural Intention to Use
COVID-19	Coronavirus disease in 2019 (COVID-19)
e-ID	Electronic Identification
GoI	Government of India
GoN	Government of Nepal
ICT	Information Communication and Technology
IdMS	Internet Identity Management Systems (IdMS
PEU	Perceived Ease of Use
PhilSys	Philippine Identification System (PhilSys)
PSA	Philippine Statis Authority
PSN	PhilSys Number
PU	Perceived Usefulness
TAM	Technology Acceptance Model
TRAM	Technology Readiness Acceptance Model
UID	Unique Identifier
UTAUT	Acceptance and Use of Technology

1 Introduction

Identification systems are becoming crucial components of every developed nation. Otherwise, it might become very complex to guarantee citizens' privileges, responsibilities and even healthy economic structure ('Top National ID Systems', 2020). Without a legal means of identification, it is difficult or unlikely to establish a bank account, obtain money, or obtain credit, establish qualifications for entitlements (health, retirement, and welfare nets), administer welfare services, establish land property or inheritance, and legally cross borders. It will also be difficult to prescribe and immunise against diseases and vote in elections, which has a detrimental effect on economic, political, and inclusiveness. Social exclusion of vulnerable individuals including women, children and the elderly will be common in such cases. It could also challenge governance and service provision problems through leakages in government services and a failure to track development (World Bank Group- Identity for Development, 2016). Electronic identification is critical for the proper operation of modern government systems. As part of the attempts to secure citizens' identities and to integrate e-government services, governments worldwide have implemented national electronic identification systems (Kő et al., 2019). Signed into law by President Rodrigo Roa Duterte in August 2018, The Philippine Statistics Authority (PSA) recognises the critical function of the Philippine Identification System (PhilSys) in assisting in the resolution of issues resulting from the COVID-19. Despite the pandemic, PSA is ordered to give priority to register at least five million low-income household heads with the Philippine Identification System (PhilSys) to obtain a national ID. PhilSys is intended to simplify public and private transactions and provide social and economic platforms that facilitate smooth social service delivery and other inclusive financial services. As the Philippines' cornerstone digital ID scheme, PhilSys can revolutionise how services are provided and consumed in the country, accelerating its transformation to a digital economy by enabling paperless, presence-less and cashless transaction ('Philippine Identification System Act (PhilSys)', n.d.).

Globally, there is a proliferation of digital identification systems. This might be related to the United Nation's Sustainable Development Goal 16.9 which calls for a legal identity for all by the year 2030 (UNCTAD, 2018). Coincidentally, the world is also seeing an increase in digitalization due to the pandemic of Coronavirus disease in 2019 (COVID-19). It has impacted economic growth and caused unemployment, lower wages, restrictions on domestic and international flights, limited investment and capital flow, as well as limitations on other activities such as recreation, tourism, retail, and food and board service, which are primarily engaged with regular face-to-face service operations (Asian Development Bank et al., 2020). COVID-19 has demonstrated the need and importance of digitalisation in many countries' economic and social resilience (World Bank, 2020). The pandemic has caused extreme disruption to the business sector and the government, but it also spurs organizations to pursue more effective usage of digital identity in their system (SecurityBrief, Australia, 2020). A recent example is the Philippines where, amidst COVID-19, the government continues to register its citizens for immediate implementation of the national identification system (World Bank, 2020).

As accessibility limits and social distancing policies restrict face-to-face connections and behaviours, the affordability of emerging technologies has emerged as a critical determinant of resilience. Emerging digital technologies allow companies, governments, and schools to operate digitally rather than shutting down entirely. The pandemic also enabled remote jobs, virtual educational classes and helped various government departments utilise online processes to provide social assistance to needy households more efficiently

(World Bank, 2020). By integrating a digital identity solution, private businesses and especially the public sector can provide users with the services whenever and wherever they need them while operating remotely (SecurityBrief, Australia, 2020).

Regrettably, not all countries have fully exploited emerging technologies due to the limited accessibility to high-quality internet and long-standing manual activities. COVID-19 has accelerated the introduction and usage of digital technology in the Philippines including the facilitation of the identification system. However, digitalization is still hampered significantly by the country's poor adoption of high-speed internet, which lags behind neighbouring middle-income countries. The digital divide in the Philippines is broad, with approximately 60% of households lacking internet connectivity and thus the Philippines is unable to profit from digitalization (World Bank, 2020).

The researcher in this study envisions to create academic research that pertains to the national identification system in the context and culture of The Philippines. Further, this paper also enhances the citizen's knowledge about the e-identification system in the Philippines and provides a recommendation to the government for citizen-centric electronic services attached to the PhilSys ID. More specifically, the objective of this study is to conduct an evaluation particularly from the perception of Filipino citizens as the primary end-users of the service and the acceptance of PhilSys ID. The variables used in the analysis of this study are central to the lens of the Technology Acceptance Model (TAM). Combined with the support of existing literature and best practices, the study aims to comprehensively discuss the argument pertaining to citizens' acceptance of electronic identification cards. The survey data is collected from 654 prospective PhilSys ID users and analysed using structural equation modelling (SEM). The findings aim to indicate that TAM's central constructs and perceived trust in The Philippines Identification System (PhilSys) significantly affect Filipino citizens' intentions to use the ID. Additionally, the research discusses the crucial relationships between variables on acceptance and how this insight may help increase citizens' adoption of the ID. Therefore, the research questions for the study are:

1. How does the usefulness and ease of use of Philippine e-ID influence the attitudes of Filipino citizens to actually use the service?
2. What are the perceived inhibitors and facilitators that affect the successful implementation of PhilSys ID?

The current Chapter 1, the introductory part of the study which summarises the research focus, research problems and objective, is followed by the Literature Review in Chapter 2. In this section, the knowledge area is divided into two main sub-sections. The first part discusses the world's best practices and existing academic studies on the national identification system, and briefly introduces the history of e-governance and identification system in the Philippines while identifying gaps in current literature. The second part presents the theoretical foundation of the study with the usage of TAM in e-governance adoption and citizen acceptance. This part of the literature supports the validity of the theoretical choice of the study and the development of the conceptual framework.

Chapter 3 presents the Conceptual Framework and seeks to summarize the knowledge established based on the literature review. The conceptual framework tailored to the need of the specific case of this study was developed to analyze the impact of different variables on the acceptance of Filipino citizens in the Philippine

Identification System and behavioural intention to adopt the system. In Chapter 4, the methodological strategy and design of the research are presented and discussed. The selected case study approach, data collection strategy and data analysis procedure used in the study will be further elaborated. Chapter 5 contains the case study description which provides a brief overview of the impact and measures implemented in the Philippines and a description of the Philippine Identification system and its functions.

Chapter 6 contains the presentation and analysis of the results. A summary of the answers provided by the respondents will be presented along with the results of the correlations will be mentioned, and a discussion of the findings, and the main hypotheses will be contested. In Chapter 7, the results will be analysed and discussed in relations to the research questions and theoretical implications presented earlier in the literature. Finally, Chapter 8, the concluding chapter, will summarize the main findings of the research regarding citizen acceptance on National ID in the Philippines, propose further research, and point out the limitations of the study.

2 Literature Review

According to Webster and Watson (2002), effective writing of the literature lays a strong basis for advancing understanding while still identifying fields that need further research (Webster & Watson, 2002). Moreover, a literature review may serve as a descriptive, analytical, and valuable summary of a topic. It may help define what is understood and what is unknown in a topic field, point out points of contention or disagreement, and formulate research questions. There are many types of literature reviews, including comprehensive reviews performed as primary research projects, reviews published as an introduction and basis for some research, such as a thesis or dissertation, and reviews conducted as a secondary source of data for the research (Bolderston, 2008).

In this section, the literature review is subdivided into four main themes and it aims to provide a piece of foundational knowledge for the study. The first theme is the overview of the definition of the identification system which provides the definition of the identity system and the terminal description used for this research. The second theme is a summary of the existing literature and its significant implications on the topic which is ended with its significance and the gaps identified in the literature. The third theme is the summary of best practices of national identity systems in the world which ends with its relevance on the current study topic which is the PhilSys ID. Finally, the fourth theme introduces and elaborates on the theoretical framework used for this research.

2.1 Identification, digital identity and identity management systems

Identification is a government-issued certificate that may be used to establish a person's identity. Notably, identification papers are not produced by individuals but rather by a government or organization that includes the name associated with the identification. A passport is an example of identification as it acts as evidence that an individual is a citizen of the country that issued the passport (Cheung, 2019). Further, identification is a person's sense of identity with someone or something; a means of proving a person's identity, especially in the form of official papers; the process of showing, proving, or recognizing who or what someone or something is; an official paper or a document that can prove who you are (Oxford Dictionary). Thus, human identity is described as the act of associating the information with a particular person, or the process of identification (Adjei, 2013; Clarke, 1994) In general, identifying a person entails emphasizing distinctive attributes such as names, birth dates, addresses, and could also include biological features such as fingerprint and facial features (Adjei, 2013).

In its simplest form, a digital identity could be a data file comprising specific identifiers, such as a unique identification number assigned to each citizen or resident in the issuing country. In the case of the proposed PhilSys ID system, the unique identifier is a PhilSys Number. It is not only a physical ID card that allows authentication, but it contains the data itself that constitutes a person's national digital identity. Notably, this data will directly affect citizens' lives as it is used to make transactions and process services with a government organization (Cheung, 2019).

The national digital identity system can consist of the following components: name, unique ID number, date of birth, voice sample, biometrics such as a blood sample, iris scan, fingerprint and hair sample, and tokenized data like ID chip card. A national digital identity system can be used for several day-to-day activities like travel, credit or financial services, availing healthcare services, social security services, and voting (Cheung, 2019). Digital ID systems allow financial firms and telecom companies to comply with customer specifications and conduct employee audits. They allow government agencies to communicate more easily with people at any time of day. Furthermore, they enhance protection and increase passenger throughput at border crossings when used in combination with face recognition and biometric identification systems, providing officials with the assurance that the individual identifying himself is authentic as he claims with his data (*National ID Cards*, n.d.)

However, in the context of this study, the focus is to study the Philippine Identification System which acts as a valid proof of identification that will facilitate public and private activities that will be used to enable the acquisition of several services. The Philippine ID will be issued together with a physical and virtual identity card. This identification system will serve as the Philippine's foundational digital ID scheme that would revolutionize how services are delivered and received through the digital system. PhilSys identification scheme would facilitate the shift to a digital economy, such as conducting transactions without the need for physical contact, paper, or cash ('Philippine Identification System Act (PhilSys)', n.d.).

As a system**,** identity management is the process of managing human identities, their identification, authorization, tasks, and permissions inside and across organizations (Kumar & Bhardwaj, 2018). Individual users are linked to their profiles through the electronic system/ID which comprises identification cards and credentials connected with the associated information systems and the infrastructure that allows the necessary verification of online activities (Antenn, n.d.). Digital identity management, therefore, seeks to digitise communication structures that have been used in face-to-face contact for centuries to facilitate trustworthy virtual interactions (Adjei, 2013). Moreover, identity management systems are made up of the mechanisms and technology necessary for the development, management, and use of identities and their associated attributes. Generally, electronic identity management systems aim to maintain transparency in corporate laws and guidelines; to strengthen control over user-to-application interactions; to automate business processes to reduce operational costs; to strengthen security; and to increase efficiency (Adjei, 2013).

Additionally, based on Adjei (2013), if identification is a procedure, the credibility and effectiveness of the process can be influenced by the effectiveness of the registry or enrollment procedures, the difficulty of duplicating or altering credentials, and the simplicity by which the relation between the given credentials and the individual displaying them may be verified.

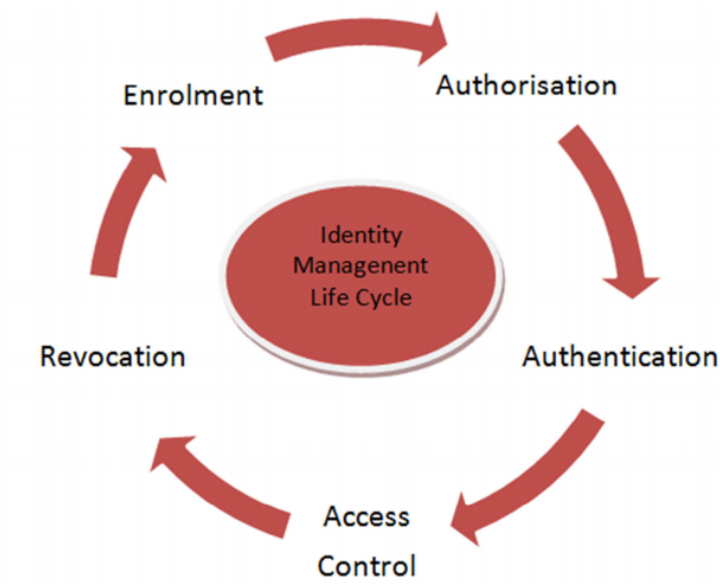

Figure 1: Identity Management Life Cycle (Adjei, 2013).

The processes involved in the identity management life cycle, as shown in Figure 1, is explained as follows:

1. Enrolment Procedure: Individuals must complete an initial registration or enrolment period through which their biometric data, such as iris scan, fingerprint and signature, is recorded. The enrollment procedure completes with the distribution of tokens or identifiers to those who have enrolled. Enrolment is, in essence, the mechanism by which an applicant is taken into the identification policy and resulting processes, resulting in the issuance of credentials and identifiers (Adjei, 2013). In the case of the Philippines, The Philippine Statistics Authority (PSA) started this procedure by enrolling citizens for pilot testing in 2019. To date, the government is registering its citizens aiming for all to acquire the ID by the year 2022 (Philippine Statistics Office, 2020).

2. Authorization procedure: After enrollment or registration procedure, a person is assigned authorization and permissions to access facilities and services based on a predefined identity policy (Adjei, 2013).

3. Authentication procedure: This information contains details that verify a user's identification and

information about the data and activities that the user is allowed to view and execute. Additionally, it encompasses the administration of descriptive data regarding the individual and how and from whom the data may be obtained and updated (Rosencrance & Craig, n.d.). Furthermore, authentication is the method of defining a user's identification with a high degree of trust or the process through which an individual is recognized as allowed to participate in or conduct any action (Whitley & Hosein, 2010). There are several authentication mechanisms. User login credentials, card reader or identity card, biometric like finger scan are few examples that can be used for authentication (Adjei, 2013).

4. Access Control procedure: The authentication mechanism consists of the access control process, through which the device verifies that a person requires a legitimate authorization to access the resource. Access control is the systematic control of access to a site or other resource (Adjei, 2013; *Rfc4949*, n.d.)

5. Revocation procedure: When an individual's privileges expire or when the individual is no longer affiliated with the system, a termination process is initiated, which results in the revocation of the certificates and related rights. These conditions may include a person's death, non-completion of education, or prolonged travel in a country after the allowed period (Adjei, 2013).

2.2 Literature on National Identification Systems

A low number of academic researchers are centered on identification systems. This section of the research aims to give an overview of the existing scientific studies with relevance and implications on current research. Relevant literature is presented in reverse chronological order (2013-2001) in the following paragraphs.

A previous study by Adjei (2013) focused on crafting a trusted national identity for a Citizen-Centric National Identification Management System. He provided a significant contribution to the literature on trusted identities by adding a metric for calculating the points of convergence between privacy concern and trust, which he called the privacy concern–curvilinear trust model. According to Adjei (2013), any effort to ensure institutional coordination and partnership has the benefit of increasing trust within the identity ecosystem. The majority of the advantages of trusted identities systems can be realised at this equilibrium.

Similarly, Backhouse & Halperin (n.d,) studied trust but focused on European citizen's trust in identification systems and their administering authorities. The researchers looked into the social implications of exchanging data, especially personal details, in the context of proposals for interoperable European eID schemes. The survey's design was inspired by an overarching philosophical structure of institutional trust. In June 2006, an online survey was localized into eight European languages and made accessible online for one month. The survey study results indicated a generally unfavourable view of the ID officials by EU residents. The vast majority of respondents do not trust the holding institutions and they

are skeptical of the authorities' integrity and their ability to treat personal data appropriately. Furthermore, they are concerned about the government misusing their personal information. Citizens' pessimistic views have significant consequences for all potential efforts to adopt eID cards, as these beliefs can well be converted into subsequent behaviours, such as aversion to usage or, in some instances, non-use. Moreover, respondents from the United Kingdom and Ireland have the most pessimistic views, whereas those from Central and Eastern Europe have the least pessimistic view (Backhouse & Halperin, n.d.).

On the same line, Alkhalifah & D'Ambra (2013) conducted an empirical study to investigate the factors which affect the adoption of Identity management systems. The researcher focused on Internet Identity Management Systems (IdMS), a modern and evolving area in which technologies and business processes are combined to create identity-centric methods to manage users, their credentials, authentication factors, and protection rights around the Internet inside an institution. This research study aims to fill this noticeable gap by building a theoretical model based on theories from the information systems and behavioural studies to clarify and empirically analyse the essential factors driving IdMS consumer acceptance. The thesis proposes a positive-quantitative method for explaining and predicting a causal model and validating the conclusions. The model was tested effectively, and statistically meaningful evidence that perceived ease of use, perceived usefulness, fit, trusting values, trust in the Internet, knowledge disclosure, privacy issues, and cost affected behavioural intentions to implement IdMS was obtained. The thesis logically expands the body of evidence of acceptance into the realm of IdMS. Meanwhile, it offers a theoretical user-adoption paradigm applicable to IdMS. For professionals, the report creates recommendations for IdMS programmers and calls for more targeted implementing activities. The report addresses some consequences as well as some possibilities for developing and improving new IdMS (Alkhalifah & D'Ambra, 2012).

Another study by Strauß & Aichholzer (2010) highlights the challenges of citizen-centric national e-Identity Management based on Austrian context and strategy. The researchers derived security and usability problems and interrelated them with user perception considerations based on Technology Acceptance Model (TAM). According to the authors, TAM offers an appropriate context for a more profound knowledge of consumer perception since it allows for identifying relevant determinants and reasons for a user's ability to engage with new technology. This subject is of particular importance in security systems and identity management since the ambiguous connection between usability and security necessitates a more detailed assessment of user perception in this area. The findings show a misconceived notion of user-centricity, with a critical need for a more careful analysis of users' perception and the development of adequate benefits that address a perceivable user benefit (Strauß & Aichholzer, 2010).

Along a similar path, Mariën & Audenhove (2010) studied the Belgian e-ID and its complex path. The researchers investigated the numerous factors that aided or hindered the introduction and deployment of e-ID in Belgium. According to the findings, e-ID adoption should not be viewed as a process in itself but rather as a series of essential antecedents that begin long before the e-ID is introduced. These preconditions were highly favourable, and the majority of them were met before the procedure started, allowing for the smooth application of the e-ID. Belgians have become accustomed to the concept of an ID card since the nation has provided a mandatory ID card for several years. In two significant ways, the government has already encouraged e-ID adoption. For example, it has not modified the existing system of issuance and delivery of the ID at the municipal level. Second, despite its limited size and the width of a bank card, the e-ID was designed in the same way as the previous paper-based ID. Additional features, such as biometric

details or the incorporation of the SIS card into the eID, may have had a negative impact on citizens' attitudes (Mariën & Van Audenhove, 2010).

On a different angle, Lips (2010) studied citizen-government partnerships. Accordingly, citizen identification knowledge has been a vital component of ICT-enabled government-citizen relationships. Not only are public servants dependent on digital citizen identification details for public service-related evaluations and decision-making, but people are now also mindful of the evident value of their data in shared public service partnerships through differing public service. Furthermore, as a consequence of the use of digital citizen personal data in public service contexts, citizen-government relations are evolving profoundly and in a variety of ways. For example, governments use digital citizen identity information to support people who are obedient to the everyday affairs of the Public by rewarding good citizen behaviour (Lips, 2010).

Lips (2010) further states that private organizations have emerged as key actors in implementing electronic citizen identification management system. This observation highlights critical questions of accountability and openness, including access to resident identification records. Furthermore, the study results suggest that, with a few deviations, informational improvements in citizen-government partnerships comply with data security regulations credentials (Lips, 2010). Accordingly, people are likely to reveal more identification details to the government in exchange for improved public service delivery or other incentives, notwithstanding the general belief, that government would "play privacy by the law" credentials (Lips, 2010). From the viewpoint of the government, it is essential to note that in specific public sector contexts, such as healthcare and emergency care, there is an understanding that only limited citizen identity data is needed to deliver services, resulting in standard 'privacy by design' control of citizen user credentials (Lips, 2010).

Rannenberg et al., (2009) have also analysed the citizens' attitudes toward the implementation of interoperable electronic identification systems in the context of Europe. The study draws on observational evidence gathered from the United Kingdom and German residents and analyses it to better understand how people view the threats posed by the transition to eGovernment systems in particular. By using contextual-based theory approaches, the study identified five distinct danger areas that are thought to be important in this regard: systems and technologies, authority competence, authority legitimacy, personal data control, and the power balance between citizen and state (Rannenberg et al., 2009). The results are then analysed and discussed, focusing on social risks and the consequences for state policy in this field. The report looks at citizens' views of the information threats inherent in the spread of electronic identities. The findings expand on social threats and some policy consequences for the state in this field. It is followed by an overview and discussion of the findings that develop the theme of social danger and some possible consequences for government policy in the field. (Rannenberg et al., 2009)

Finally, Cap & Maibaum (2001) studied the present-day use of identification principles to examine its implication on electronic governance. The researchers concluded and created six themes of concerns that create implication for e-governance (Cap & Maibaum, 2001).

(1) Researchers recommend that the reengineering of governmental systems be discussed to minimize the volume of exposed details (Cap & Maibaum, 2001).

(2) Researchers propose that mandatory biometric components be added to current digital signature technologies and legislation, defining the requisite non-transferable token. Furthermore, applications can be limited to computers that are so small that the embedded device and signature programme cannot tamper with it as quickly as they can on a PC (Cap & Maibaum, 2001).

(3) Citizens have little trust in online security. As a result, we need a more evident public awareness of the principles of identities, digital signatures, and online protection, as well as the risks associated with their current implementations. We propose that, in addition to technical and legal advancements toward entirely trustworthy signature and identification schemes, public awareness campaigns be created to instill trust in digital identity management schemes in our fellow citizens (Cap & Maibaum, 2001).

(4) To achieve perceived and actual trust in identity schemes, they must establish audit technologies, transparent protocols, and norms and prohibit proprietary or restricted source identity scheme. Only open-source programmes, whose whole design standards are open to public scrutiny, allow for the secure verification of statements of adherence to existing regulations and protocols. As a result, in e-government identification processes, only certain technologies can be used. We also need an organizational culture that welcomes public auditing of all its technical environment and promotes discussion of security concerns, including security laws (Cap & Maibaum, 2001).

(5) We need regulations that address digital identification and identity theft reliant on electronic id (Cap & Maibaum, 2001).

(6) We should encourage citizen interest in debates about e-government programmes (Cap & Maibaum, 2001).

From their point of view, Cap & Maibaum (2001) predicted that over 85 per cent of Internet users will be still worried about online security even after 15 years. If the fast road to e-government that is being pursued today for economic purposes fails to ignore the impacts on citizens and does not reevaluate its status in terms of identification, it would either end up with the wrong alternative or an unexpectedly low rate of acceptance. Both scenarios would necessitate expensive reengineering (Cap & Maibaum, 2001).

2.3 Global practices on National Identification

Moving forward to 2021, digital identification solutions such as smart IDs containing biometrics and digitalised identity information of citizens and foreign nationals have come to age. Over 70 countries have implemented electronic identification cards, and over 120 countries have adopted electronic passports equipped with sophisticated protection features (National ID Cards, n.d.). National identification cards have undergone dramatic changes. A simple identity document designed for a single or particular function has evolved into a more intelligent form for more integrated and inclusive solution fingerprints (Gelbs & Metz, 2018; National ID Cards, n.d.). These citizen identity cards now contain microprocessors that allow more

comprehensive document inspection and online authentication and signature (Gelbs & Metz, 2018). They may be used for biometric identification and authentication when required since they include the cardholder's picture and fingerprints (Gelbs & Metz, 2018; National ID Cards, n.d.).

By 2021, 3,6 billion people would have a nationwide eID card. Although certain countries have been hesitant to accept eIDs, others have been even more optimistic. We have seen implementations in Europe (except the United Kingdom), Asia (China, Malaysia, Pakistan, Indonesia and the Philippines, to name a few), and Africa (Nigeria, South Africa, and, most recently, Algeria and Cameroun). One example is the EU regulation 2019/1157, signed on 20 June 2019, which allows its member states two years to adopt security features on ID cards that are equivalent to those on passports (National ID Cards, n.d.). Additionally, deployments around a wide area of Europe and Latin America have been materialised. Both of these examples demonstrate how eIDs can impact millions of everyday lives in developing and emerging economies.

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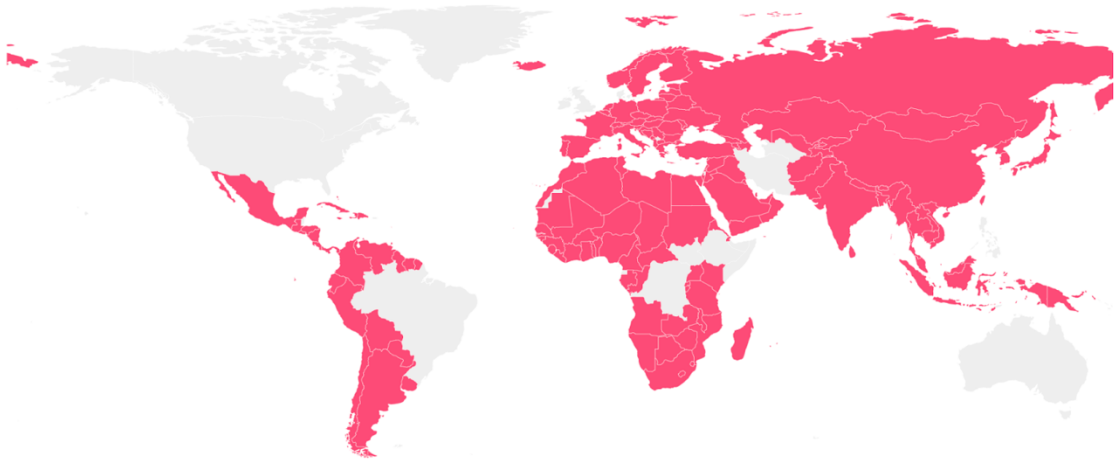


Figure 2: National IDs Around the World with National IDs (World Privacy Forum, 2017)

Estonia is home to one of the world's most integrated and inclusive national digital identity systems (ID-Card, n.d.). Citizens can authenticate their identification for programs such as nationalised health care and online banking by using tokens through their digital device such as mobile phones (Cheung, 2019). With the exception of marriage and the purchase/sale of real estate, Estonians may order process service electronically ('Top National ID Systems', 2020). Furthermore, the Estonian government allows citizens, voters and taxpayers to vote and submit transactions online. Around the year 2017, Estonia's digital identification scheme was subject to vulnerability in cryptography, allowing the reverse engineering of individuals' private keys using intercepted public keys (ID-Card, n.d.). This situation culminated in the possibility of identity exploitation, exposing nearly 750,000 digital identities (Cheung, 2019; Estonian EID Cryptography Mess – 750000 Cards Compromised, n.d.). However, infected ID cards were later upgraded and replaced with new keys for safer handling of credentials (Gelbs & Metz 2018; eEstonia 2017; Tammpuu & Masso 2019; Cheung, 2019; Estonian EID Cryptography Mess – 750000 Cards Compromised, n.d.;)

China**,** like Estonia, has a highly advanced national digital identity scheme. It is implemented widely in the telecommunications, transport, banking, and accommodation sectors. When a child reaches the age of sixteen, he or she must apply for a Resident Identity Card from the nation's Public Security Agency (A Look at China's Push for Digital National ID Cards, n.d.). China is also developing a smartphone version of the national identity scheme to phase out paper ID cards. China changed its real-name registration scheme in 2017, requiring users to connect their internet accounts to their Resident Identity Cards to post comments online (Cheung, 2019; Liao, 2017)

Similarly, In 2016, the United Kingdom launched GOV.UK Verify, a digital identity scheme that allows people to access government facilities electronically (GOV.UK Verify, n.d.). It allowed residents to access programs such as tax refunds, Universal Credit payments, pension checks, and mortgage signing. The scheme collaborates with the country's financial institutions to promote identity management and account formation, and people enter the e-government platform via these "certified firms" (Cheung, 2019; GOV.UK Verify, n.d.).

On the other hand, Singapore's national identification system requires citizens and permanent residents to obtain a mandatory National Registration Identity Card (National Registration Act - Singapore Statutes Online, n.d.). Like people of China and Estonia, Singaporeans may use their cell phones as a token to verify their identification while using government services online. Currently, it runs a service named "MyInfo" that allows people to access information regarding their income, permits, land, and schooling that the state has on file. Singapore intends to implement a "National Digital Identification System" by 2020, with the aim of "providing people with a common digital identity to communicate with both the public and private sectors" (Cheung, 2019; Singpass - Your Improved Digital ID, n.d.); (World Bank 2019)

People' digital identities in Canada are spread through many networks. On the federal level, citizens can access personal income tax and benefit records via the Canadian Revenue Agency's MyAccount platform (Agency, 2017) and maintain their driver's licence via a territorial identification scheme (Renew a Driver's Licence, 2013). Within the world, organisations such as the Canadian Bankers' Association have proposed creating a Canadian national digital identity (Canadian Banker's Association, 2018; Cheung, 2019) (World Bank 2019)

In October 2020, the Philippines began enlisting millions of people for national ID cards. The government intends to reach 92 million by 2022. PhilSys, the Philippine Identification System, collects biographical data (name, gender, date and place of birth, blood type, address, and nationality) as well as biometric data (fingerprints, facial photos and iris scans) (Republic Act 11055 of 6 August 2018). The government's objective is to provide a common national identity scheme for both Filipino people and resident aliens. Each individual will be assigned a specific ID number under the new unified structure, and ID cards will be distributed. The Philippine national ID, which replaces 33 identity cards, may be used as evidence of identification for any purchases, whether they are conducted by a government institution or a private entity. It is a critical component of financial and social inclusion (*National ID Cards*, n.d.; 'Philippine Identification System Act (PhilSys)', n.d.). (World Bank 2019)

2.4 Theoretical Framework

Together with the conceptual paradigm, the theoretical framework clarifies the research's direction and firmly grounds it in scientific research perspectives. The two frameworks' main goal is to provide more meaningful and significant empirical research findings and maintain their generalizability to the research field (Adom et al., 2018). This chapter provides a theoretical review and, thus, offer a basis for the research to support the hypothesis and conceptual paradigm of the study. The chapter begins with defining Technology Acceptance Model (TAM) and its variables and then followed with the usage of TAM in existing e-governance academic research. Many research studies in e-government have used the Technology Acceptance Model to measure citizens' acceptance of IT-enabled public sector services (Davis, 1989).

According to Ojha et al. (2009), the theoretical framework to research studies related to the citizen's adoption of e-government initiatives is usually TAM or theories which underpin the said framework. TAM is used for this research as well since it is the most recognized theory for the acceptance model. TAM is deemed to be the most suitable framework analysing the acceptance and adoption of citizens for the Philippine Identification System (PhilSys) for the following reasons: besides being simplified and understandable (King & He 2006), it is a general paradigm that contains essential variables that can be applied to any scenario involving the usage and adoption of information and communication technologies. Additionally, it has received widespread recognition for predicting how its target users will adopt the information system.

2.4.1 Technology Acceptance Model

Over the years, information system researchers have developed various models that facilitate predicting and understanding the acceptance, use, and adoption of technology. TAM is one of several models used by Information system researchers to analyse the factors that influence and motivate users in the adoption of

technology systems (Davis, 1989; Venkatesh, 2000). In this study, the researcher has chosen to apply Davis (1989)'s Technology Adoption Model (TAM) to be the most appropriate theory to apply.

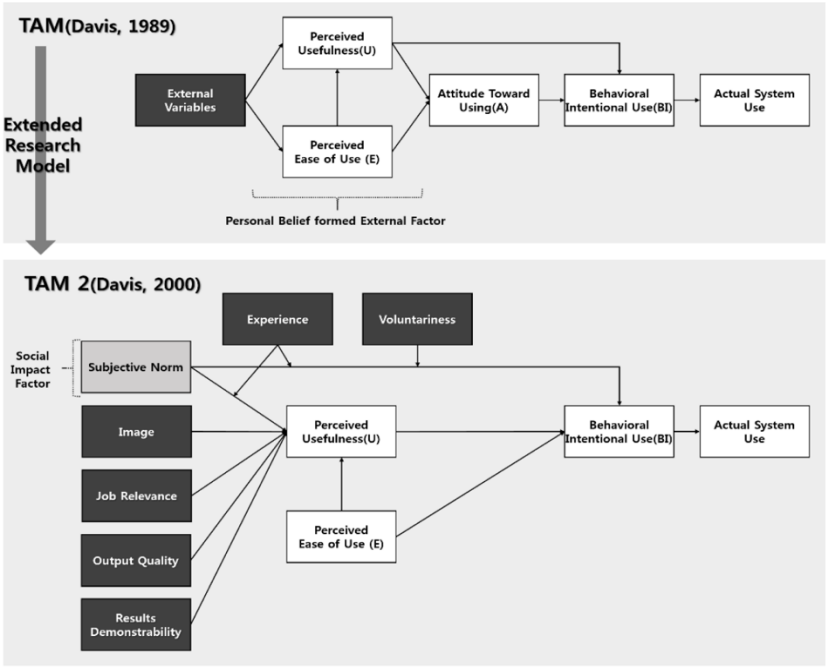


Figure 3: Evolution of TAM (Davis, 1989; Davis, 2000)

TAM proposes that the acceptance of a new information system (IS) may be predicted through users' behaviour intentions, attitudes toward the use and two important internal ideologies: perceived ease of use (PEOU) and perceived usefulness (PU). Davis (1989) described perceived usefulness as "the degree to which an individual believes that using a system will provide all relevant information", perceived ease of use as "the degree to which an individual believes the usage of a particular information system will require no mental effort", and attitude as "an individual's positive or negative attitude (interpretive influence) towards performing the target behaviour" (Davis, 1989; Venkatesh, 2000).

2.4.2 TAM in existing e-Governance literature

This section presents the existing academic pieces of literature on usage of TAM for assessing the acceptance and adoption of technology in electronic services more specifically in the public sector. This section of the research aims to give an overview of the existing scientific studies with relevance and implications on current research. The relevant literature is presented in reverse chronological order (2021-2014) in the following paragraphs.

In a recent study, Bhuvana & Vasantha (2021) studied the impact of COVID-19 on rural citizens' access to E-Government services. The study applied the Technological Acceptance Model to investigate the adoption of social media network used by students. This research conducted a theoretical analysis on rural people's access to e-governance services in the context of the COVID-19 pandemic by assessing their attitudes and behavioural intentions about trust aspects. The authors discovered that 'Subjective Norms' are the most consistent factor in the expansion of TAM. This research explored the dramatic shift in the rural population's willingness to accept government-provided technology-based programmes during the covid-19 pandemic situation (Bhuvana & Vasantha, 2021). Access to government portals has risen to 80%, though 114 million users already have access to the Aarokya Setu smartphone app (Bhuvana & Vasantha, 2021). This situation demonstrates that the public believes in and trusts the services facilitated by the government's technological advancements (Bhuvana & Vasantha, 2021). Even though the pandemic scenario poses a danger to people's lives, it depends on acquiring new information and accepting innovative improvements and or developments (Bhuvana & Vasantha, 2021). The research result aims to assist government leaders, lawmakers, and members of diverse segments of society in comprehending the fundamental needs and conditions for technology acceptance (Bhuvana & Vasantha, 2021).

Jamal et al. (2021) used TAM to investigate the factors affecting citizens' perceptions of electronic government in Iraq's Kurdistan region by using a single regression analysis tool. The researcher found that most Iraqi people had a favourable attitude toward utilising and adopting electronic government (Jamal et al., 2021). Additionally, the researchers discovered that an improvement in the perceived ease of use of an electronic government could increase the perceived usefulness of an electronic government, resulting in an increasingly favourable attitude toward electronic government (Jamal et al., 2021). Further, Iraqi citizens discovered the ease of using an electronic government, as most of them are still familiar with the ease of using technology. As a result, the findings indicated that increasing perceptions of the ease of using an electronic government could increase the perceived usefulness of an electronic government, increasing behavioural intention to use electronic government services (Jamal et al., 2021). Moreover, electronic government improves efficiency for citizens. It also improves outcomes for public and private sector organisations by streamlining processes and boosting performance (Ali & Anwar, 2021). It is critical to comprehend and appreciate the critical nature of a practical electronic government project's implementation. However, this study is limited to the factors that influence citizens adoption of electronic governance in Iraq's Kurdistan province. The research cannot be used for overgeneralization because they limit the samples to 256 units selected from Iraqi citizens and in the context of Kurdistan province, Iraq (Ali & Anwar, 2021).

Similarly, Tsap et al. (2020) used TAM as an underpinning theory to analyse the public acceptance of eID and user preferences for current authentication options in Estonia. The researchers explored the factors that contribute to its widespread eID adoption in Estonia. They surveyed 268 Estonian eID users to ascertain which of the available eID authentication methods are favoured and what factors influence these preferences. The findings indicate that users value simplicity, speed, and protection and the availability of several authentication mechanisms that coexist and can be used in different settings and circumstances (Tsap et al., 2020). Additionally, they discuss the significance of other influencing variables that are unique to Estonia (Tsap et al., 2020).

Mutaqin et al. (2020) used the extended theory of TAM which is the Unified Theory of Acceptance and Use of Technology (UTAUT), to investigate the Citizens Acceptance for e-Government Services, more specifically the e-punten application, in Bandung, Indonesia. The UTAUT model is used to determine the variables that affect the usage of e-punten applications in Bandung in connection with the SEM research analysis tool to determine the variables that affect the acceptance of e-punten applications. Researchers found that most of the respondents who used the application are students and workers from the age of 20-24 years old application (Mutaqin & Sutoyo, 2020). The study's findings indicate that the variables influencing direct use of e-punten systems are effort expectancy on behavioural purpose, facilitating conditions on user behaviour, and behavioural intention on use behaviour application (Mutaqin & Sutoyo, 2020). The greater the market aspirations of users of e-punten systems, the greater their desire to use their application (Mutaqin & Sutoyo, 2020).

Rai et al. (2020) used the UMEGA model developed by Dwivedi et al. (2017), which was created, designed, and tested specifically for e-government acceptance. Many TAM variables also underpin the UMEGA Model. However, the UMEGA model used here is a modified tool specifically to validate the acceptance factors for e-government services (Verkijika and De Wet, 2018). Shyan Kirat Rai et al. (2020) used it as the foundation for their research to create an acceptance model for Nepal's G2G system's implementation. This research demonstrates that it is essential to modify current frameworks to develop a technological acceptance model for the government background (Rai et al., 2020). The resulting model distinguishes different structures and their importance to apply G2G systems in the Government of Nepal (GoN) (Rai et al., 2020). The additional constructs, such as AL, CFL, and transparency of services within government departments, profoundly affected behavioural intention to use the scheme (Rai et al., 2020). This acceptance model would assist e-government in overcoming development problems in the GoN by emphasising the importance of multiple considerations to consider while planning, constructing, and integrating the framework (Rai et al., 2020). The study focused on 234 sample respondents from the Government of Nepal, which note the limitation of a small sample. Additionally, the research suggests that since e-government adoption varies by countries' context, an acceptance model should be modified to more accurately capture the nature of e-government acceptance in the specific country (Rai et al., 2020). However, countries in a similar position to Nepal will use the same strategy.

Chhabra et al. (2020), using the UTAUT constructs, studied the user acceptance of new technology as a mandatory adoption scenario for food distribution in India. They explore the effects of technology characteristics and user characteristics on the technology satisfaction of intermediaries required by law to use android tablets to provide efficient services to end-users in the Indian food security supply chain (Chhabra et al., 2020). The researcher then transforms the findings into actionable guidelines for facilities, customer characteristics, market efficiency, technology, and policy architecture. According to the research model, specific technological characteristics like screen design, technology significance, and terminology, and users' internal characteristics like resistance to change, technology anxiety, confidence in the internet, and result demonstrability, affect their technology satisfaction (Chhabra et al., 2020). The findings indicated that resistance to change, technical anxiety, internet trust, screen design, and language used affected how ICT users accepted emerging technology (Chhabra et al., 2020). It was discovered that in obligatory use, technology significance has little or no effect on technology satisfaction (Chhabra et al., 2020).

Poku Adu, Edmund (2019) used TAM for evaluating the acceptance of e-Government in Ghanaian local service delivery using the case of the Accra Metropolitan Assembly (AMA). The study aimed to determine the factors that affect AMA's Acceptance of the preferred e-Marriage application. Researchers modified TAM based on the results of their studies (Zhou et al., 2007; Muller-Seitz et al., 2007). In general, respondents to the research agreed that the PU and PEU of e-Marriage applications were critical determinants of the AMA's implementation of the digital strategy AMA (Adu & Bentil, 2019). Other concerns like social and political factors emerged from responses received during interview sessions with respondents about using e-forms for marriage licence application at the AMA AMA (Adu & Bentil, 2019). Aside from Perceived Usefulness (PU) and Perceived Ease of Use (PEU), the study revealed that User Characteristics, Trust, Culture, Political Leadership, and Awareness were the primary determinants in e-Marriage Application acceptance at AMA (Adu & Bentil, 2019).

K Adiyarta et al. (2018) used the theory of Lin (2007), which attempted to create an interconnected TRI and TAM model called "TRAM" (Technology Readiness Acceptance Model), to understand customer behaviour better when it comes to implementing technology-based e-services. Researchers specifically used the TRAM model to assess user acceptance in e-Government services. TRAM. This research aims to assess and investigate the degree to which users support e-Government systems. The analysis technique used in this study is a sample focused on a questionnaire circulated to 230 respondents using the TRAM strategy. TRAM measures consumer behaviour by combining TR with the two dimensions of TAM; perceived usefulness and perceived ease of use technology (Adiyarta et al., 2018). It is anticipated that this modern paradigm would aid organisations in properly comprehending the mechanism of technology acceptance technology (Adiyarta et al., 2018). The TRAM model explained why people with a high TR are unable to use modern technologies. According to the findings and study, TR (Technology Readiness) personality characteristics significantly affected the perceptual dimension of TAM (Technology Acceptance Model), the perceived ease of usage, and the perceived usefulness of technology (Adiyarta et al., 2018). According to Parasuraman and Colby (2001), optimism and innovativeness function as inducers of technical facilities; they motivate citizens to adopt emerging technology. On the other side, anxiety and fear function as barriers; they are demotivating or delaying the adoption of emerging technology (Adiyarta et al., 2018).

Nunes et al. (2017) described the variables that lead to citizen acceptance of e-Government and presents the model developed based on previous studies. This research enabled the authors to collect the variables that determined citizens' intentions to use e-Government services and their correlations with the chosen model. According to the findings, the most commonly employed frameworks were TAM (Technology Acceptance Model), UTAUT (Unified Theory of Acceptance and Usage of Technology), and UTAUT2 (Unified Theory of Acceptance and Use of Technology 2) (Nunes et al., 2017). TAM is a technique often employed in information management to investigate user acceptance of technology. The TAM has been commonly used to describe how computer technology is used (IT). The TAM states that an individual's desire to use IT, which is often used as a proxy for IT usage, is dictated by attitude, and two beliefs determine attitude: perceived utility and perceived ease of use (Nunes et al., 2017). The TAM has been shown in empirical research to be a parsimonious and reliable model. According to research findings, a loss of trust renders it impossible for people to follow e-Government systems, hence the continued existence of this variable (Nunes et al., 2017). The review and thorough characterization of variables and the adoption and usage of electronic government models may serve as the foundation for future research in this report (Nunes et al., 2017).

Chauhan et. al (2016) investigates the acceptance of UID among Indians using TAM. The results of this research indicate that the critical structures of TAM have a significant effect on citizens' intentions to use UID (Chauhan & Kaushik, 2016). The national identity system is a significant government effort to consolidate a country's e-government services. The Government of India (GoI) has launched a significant initiative called Aadhaar to enrol all people in a single database using a unique identifier (UID) number (Chauhan & Kaushik, 2016). This study aims to use the technology acceptance model to understand UID acceptance among Indian people (TAM). The survey data was gathered from 385 potential UID consumers and analysed using structural equation modelling (SEM). The findings indicate that the critical structures of TAM and presumed confidence in UID have a significant effect on Indian citizens' intentions to use UID. The research also offers a potential justification for the significant relationships between constructs and how this insight can increase India's scheme's adoption. The empirical findings indicate that ATU was affected by trust in the UID system (Chauhan & Kaushik, 2016. PEOU also affected its PU, which in turn influenced ATU and additionally, ATU influenced BI (Chauhan & Kaushik, 2016). The proposed model provides insights into how different variables influence UID adoption and usage, and this experience can be used to support UID further. The PEOU of UID, on the other hand, was discovered to have a significant impact on its PU (Chauhan & Kaushik, 2016. Regarding the effects of PEOU on PU, the findings were consistent with previous e-government research (Lin et al., 2011; Shyu and Huang, 2011). This result will mean that, while ease of use does not directly lead to acceptance, it does relate favourably to acceptance. Furthermore, even if the UID is a free service, there have been reports of people needing to pay for it. While enrolling all residents is ambitious, registration must be taken to citizens' doorsteps. There can also be increased understanding of the use of UID numbers to improve ease of use. Trust had a significant effect on ATU and planned to use the scheme in this report. Many people are skeptical of the program's effectiveness and doubt the time, money, and commitment expended. There have been reports of intermediaries charging prospective candidates for forms and collecting their phone number in advance. The government should reassure people about the protection of their data (Chauhan & Kaushik, 2016).

TAM was used by Kollmann et al. (2015) to describe the reasons that led to the adoption of social networks for political contact. They combined social exchange theory with TAM to determine the importance of perceived risk and trust. They discovered that the TAM's central structures of perceived trust and risk have a profound impact on acceptance (Kollman et al., 2015).

Rashed & Alajarmeh (2015) applied TAM to study consumers' perception of Biometrics Authentication Technologies. This research is based on Arab people and their intentions to use biometrics as an authentication method. According to the results, variables like perceived ease of use and perceived use are essential predictors of using biometrics as an authentication tool. Furthermore, research showed that expected utility was an essential factor in implementing emerging technology. Moreover, security continues to be a significant factor influencing consumer behaviour. Based on the investigation, the researchers also discovered a strong association between age and level of acceptance, people at a younger age were more willing to adopt modern biometrics interfaces (Rashed & Alajarmeh, 2015)

Ali Alkhalifah (2015) studied the effect of privacy concerns on Identity Management System (IdMS) adoption. Concerns on privacy are among the most pressing topics in today's technologically advanced world. Previous research has found that privacy issues have a detrimental impact on an individual's

behavioural purpose against a particular web-based site or technology. This research discusses the multidimensional privacy issues of IdMS and seeks to comprehend and investigate their effect on users' behavioural intentions to implement IdMS (Alkhalifah & Al Amro, 2017). The researchers aimed to analyse and create a model of how multidimensional privacy concerns influence users' acceptance of web-based IdMS (Alkhalifah & Al Amro, 2017).

Goodstadt (2014) studied the Hong Kong e-Identity Card (EIC) and investigated the factors contributing to its success based on TAM. According to Davis' (1989) Technology Acceptance Model, the Hong Kong card is valuable and easy to use. However, there is no indication that utilising technologies to incorporate the need to bring identification into a community or environment for the first time would be successful. The popularity of the Hong Kong card can be mainly attributed to the advantages that obtaining a Hong Kong identification and citizenship bestows on residents and the comfort that it offers (Goodstadt et al., 2015). In Hong Kong, the effort to make the card universal was unsuccessful and Hong Kong citizens use a special Octopus card for many other services such as transport (Goodstadt et al., 2015). The concept of a virtual EIC opens up more possibilities and can be one way to spread the use of electronic identification through cell phones (Goodstadt et al., 2015). In some countries, where the usage of EICs for online resources has been restricted, its use for tax filing has become more successful (Goodstadt et al., 2015). Hong Kong could be exceptional in the level of dedication with which its people have embraced an EIC (Goodstadt et al., 2015). One of the causes for slow adoption may be what Poller et al. point to as the chicken-and-egg dilemma regarding achieving critical mass (Goodstadt et al., 2015). But it may also have broader origins in societal fears regarding privacy, rights, or other cultural considerations (Goodstadt et al., 2015).

3 Conceptual Framework

Miles and Huberman (1994) state that conceptual paradigm is "explained, either graphically or in narrative form, the main things to be studied the key factors, concepts, or variables and the presumed relationships among them". Three sources stimulate the formulation of the conceptual framework; the experience or the study's empirical data, the literature and presentation of essential concepts, and the theories that promote the systematised knowledge provided by the researcher (Adom et al., 2018; PESHKIN, 1993).

This subsequent chapter used the concepts outlined in the literature review to support the research study's findings and test the hypothesis to measure the citizen's acceptance of PhilSys ID. This framework comprises five variables that influence citizens. It is structured in a logical framework to help include a visual or graphic representation of how ideas and variables in research connect with each other (Adom et al., 2018; Grant & Osanloo, 2014). Furthermore, it is the easiest way for a researcher to introduce his or her claimed hypothesis and solution to the research problem that was identified (Mensah et al., 2020)

In this study, the conceptual paradigm, illustrated in Figure 4, is developed with the support of existing literature on the acceptance model of TAM, which is widely adopted in technology acceptance and adoption (Ven, 1987). It illustrates the research's expected findings by creating a paradigm, defining the concepts and stating the hypothesis to be tested in the study. This conceptual framework is specifically created to investigate citizen's acceptance of the national identification system in the Philippines. Nevertheless, this framework can be adapted to other studies, especially in a context similar to the Philippines.

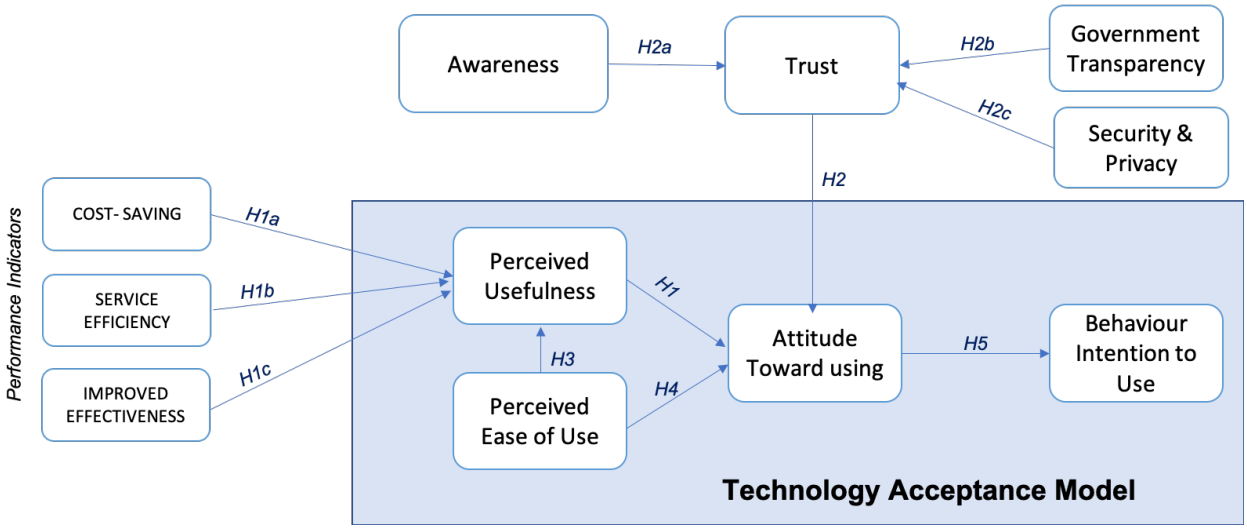


Figure 4: Proposed Conceptual Framework for the research

Following the conceptual framework, the next subsections below elaborate on the dependent independent variables of the study. Independent variables influence and affect the dependent variables. The behavioural intention to use the PhilSys ID, as it is the main objective of solving the research problem, is the dependent variable in this study. The independent variables for this study are the factors affecting citizen acceptance towards the Philippine ID system, which are pre-determined in the theoretical framework. These are: (1) Perceived Usefulness of PhilSys ID, which is further divided into service efficiency, cost reduction, improved service quality; (2) Trust, that has further been divided into public awareness, government transparency, privacy & security; (3) Perceived Ease of Use; (4) Attitudes Towards Using.

3.1 Perceived Usefulness of PhilSys ID

As shown in Figure 4, Perceived Usefulness (PU) is influenced by determinant factors such as Service Efficiency (SE), Cost-Saving (CS) and Improved Service Quality (IQS.) While as a result of perceived usefulness, the attitudes of the Filipino citizens and resident aliens towards using the PhilSys ID will also be influenced. The Philippine Identification System (PhilSys) is one of the primary strategies of the Philippines towards electronic governance and to streamline all public and private transactions using a centralized government-owned identification database ('Philippine Identification System Act (PhilSys)', n.d.-a)

According to Ndou (2004) and Panzardi (2002), the World Bank (2001) has defined e-government as:

> "*government-owned or operated systems of information and communications technologies (ICTs) that transform relations with citizens, the private sector and/or other government agencies so as to promote citizen empowerment, improve service delivery, strengthen accountability, increase transparency, or improve government efficiency" (Ndou, 2004; Panzardi et al., 2002).*

Moreover, according to Bertot et. al. (2008):

> "*an efficient and effective E-Government suggests that governments will gain economies of scale, reduce costs, and provide technology-enabled user services"*. (Bertot, 2008)

The Philippine Identification System strategy claims the ID system will facilitate making government transactions more cost-effective and efficient and simplify private and public transactions ('Philippine Identification System Act (PhilSys)', n.d.-a). Davis et al. (1992) define the Perceived Usefulness of the user's expectations of the experience's results. Similarly, Lee et al. (2006), together with Dhillon & Laxmi (2015), described Perceived Usefulness as such a degree to which an individual believes a specific system can help him/her perform a job more effectively and efficiently (Dhillon & Laxmi, 2015; Lee et al., 2006). This research aims to evaluate if, based on the perception of the Filipino Citizen, PhilSys will help to speed up the process of obtaining government services, expedite bureaucratic procedures, and reduce the time people spending in lining up to acquire service—*service efficiency*. This research will also inquire if PhilSys will lower service fee and transportation expense when claiming services to government offices—*cost saving*. Moreover, the research will also study if PhilSys will improve the quality of government-citizen

communication in service delivery—*improved service quality*. Therefore, in this study, to prove the PhilSys ID to be useful, the researcher concluded that the determinant factors of Usefulness must be associated with service efficiency, cost reduction and improved public service delivery.

The researcher then constructed the following hypothesis to test the perceived usefulness of the PhilSys ID.

H1. **Overarching Hypothesis of H1a-H1c:** Perceived usefulness (PU) in relation to determinant variables (perceived cost-saving, timesaving and effectiveness) has a positive effect on Attitudes towards Use (ATU) of the PhilSys Identification System (PhilSys).

H1a: A perceived cost-saving service (CS) has a positive effect on the Attitudes Towards Use (ATU) of the PhilSys Identification System (PhilSys).

H1b: A perceived Time Saving (TS) PhilSys service has a positive effect on the Attitudes towards Use (ATU) of the PhilSys Identification System (PhilSys).

H1c: A perceived Improved Quality (IQ) of PhilSys service has a positive effect on the Attitudes Towards Use (ATU) of the PhilSys Identification System (PhilSys).

3.2 Trust on PhilSys ID system and government administrators

This section will illustrate that the concept of Trust (TR) is influenced by determinant factors such as Public Awareness together with Government Transparency and Privacy and Security while as a result of Trust (T), the attitudes of the Filipino citizens and resident aliens towards using the PhilSys ID will also be influenced.

Ven (2020) defined *Public Awareness* as "How well citizens are informed about the application/tool, its availability, purpose, provider, etc.". The researcher foresees that if the citizens are not aware of the system, they will not trust the system. Furthermore, privacy and security are crucial components for citizens to trust the system. Moreover, this area of research tries to evaluate if the citizens trust the government's transparency towards handling citizens' data and privacy and security rights.

The researcher then constructed the following hypothesis to test the Trust of the citizen towards the PhilSys ID system and the government as administrators of the system:

H2. **Overarching Hypothesis of H2a-H2c:** Trust (T) in relation to determinant variables (public awareness, government transparency, privacy and security) has a positive effect on the Attitudes towards Use (TU) of the PhilSys Identification System (PhilSys).

H2a: Awareness (AW) on PhilSyis ID has a positive effect on Trust PhilSys Identification System (PhilSys).

H2b: Transparency in administering PhilSyis ID has a positive effect on Trust in the PhilSys Identification System (PhilSys).

H2c: Security & Privacy (SP) of PhilSys service has a positive effect on Trust to use PhilSys Identification System (PhilSys).

3.3 Perceived Ease of Use of the PhilSys ID system

In Figure 4, the Perceived Ease of Use is influenced by the determinant factor Technical Skills & Training. While as a result of Perceived Usefulness, the attitudes of the Filipino citizens and resident aliens towards using the PhilSys ID will be influenced. Technical Skills & Training are also the determining factors since the Ease of Use of PhilSys ID. Citizen's perception of if they have sufficient technical capability and training to use the PhilSys ID and e-services associated with it will affect how easy they find the system to use.

This research aims to study if Filipino citizens perceive the online environment of the PhilSys ID System easy and that if they believe that the biometric data (e.g. fingerprint, iris and face recognition) is essential to be stored in my PhilSys ID. The researcher then constructed the following hypothesis to test the Perceived Ease of Use (PEU) of the citizen to the PhilSys ID system and the Government as administrators of the system:

H3: Perceived ease of Use (PEU) in correlation with variable (technical skills & training) has a positive effect on Usefulness (PU) of PhilSys Identification System (PhilSys).

H4: Perceived Ease of Use (PEU) has a positive effect on Attitudes Towards Using (ATU) the PhilSys Identification System (PhilSys).

3.4 Attitudes Towards Using PhilSys ID system

Based on the core variables of TAM (Davis, 1989) the concept of Attitudes Towards Using (ATU) PhilSys ID is a determinant factor of Perceived Ease of Use (PEU). Perceived Usefulness and Trust will affect the Attitudes towards using the PhilSys ID. The "attitudes of using" the PhilSys will determine the Filipino citizens' and resident aliens' actual behavioural intention to use PhilSys ID.

The researcher then constructed the following hypothesis to test the Attitudes Towards Using (ATU) of the citizen to the PhilSys ID system:

H5: Attitudes Towards Using (ATU) in correlation has a positive effect on Behavioural Intention to Use (BIU) PhilSys Identification System (PhilSys).

The following table summarizes all the hypothesis constructed for the study.

Table 1: Summary of Hypothesis

Perceived usefulness

H1. **Overarching Hypothesis of H1a-H1c:** Perceived usefulness (PU) in relation to determinant variables (perceived cost-saving, timesaving and effectiveness) has a positive effect on Attitudes towards Use (ATU) of the PhilSys Identification System (PhilSys)

H2a: Awareness (AW) on PhilSyis ID has a positive effect on Trust PhilSys Identification System (PhilSys).

H2b: Transparency in administering PhilSyis ID has a positive effect on Trust in the PhilSys Identification System (PhilSys).

H2c: Security & Privacy (SP) of PhilSys service has a positive effect on Trust to use PhilSys Identification System (PhilSys).

Trust

H2. Overarching Hypothesis of H2a-H2c: Trust (T) in relation to determinant variables (public awareness, government transparency, privacy and security) has a positive effect on the Attitudes towards Use (ATU) of the PhilSys Identification System (PhilSys)

H2a: Awareness (AW) on PhilSyis ID has a positive effect on Trust PhilSys Identification System (PhilSys).

H2b: Transparency in administering PhilSyis ID has a positive effect on Trust in the PhilSys Identification System (PhilSys).

H2c: Security & Privacy (SP) of PhilSys service has a positive effect on Trust to use PhilSys Identification System (PhilSys).

Perceived Ease of Use

H3: Perceived ease of Use (PEU) in correlation with variable (technical skills & training) has a positive effect on Usefulness (PU) of PhilSys Identification System (PhilSys).

H4: Perceived Ease of Use (PEU) has a positive effect on Attitudes Towards Using (ATU) the PhilSys Identification System (PhilSys).

Attitude Towards Using

H5: Attitudes Towards Using (ATU) in correlation has a positive effect on Behavioural Intention to Use (BIU) PhilSys Identification System (PhilSys).

4 Methodology

This research is a case study to evaluate the citizen's acceptance of the Philippine Identification System (PhilSys) through the lens of TAM (Davis, 1989) In this chapter, the research philosophy adhered to, the used research approach, the data collection strategy, and the data analysis methods are explained. As the research problem and research aim are described in Chapter One, this chapter's objective is to describe the process flow of the search which is illustrated in Figure 5 below. The following areas of the research methodology are described in a textual form: research philosophy applied in the study; the research approach; case selection; the unit of analysis; data collection strategy; target population; survey questionnaire design; data analysis methods; ethical considerations; limitations and bias avoidance of the study.

4.1 Research Philosophy

Before performing research, it is essential to recognize the research philosophy to comprehend, recognize, and minimize bias in the execution of the research study. It is critical for the researcher to reflect on the philosophical stance adopted and contend for its selection over alternative directions and methodological approach of the research (Saunders et al., 2009). The development of genuine understanding and the essence of knowledge is embodied in research philosophy. It is recognized that both the researcher's preconceptions about the world and the research methodological approach selected in the study influence the administration of the research (Saunders et al., 2009). Based on Saunders et al. (2009), there are two main research philosophies to guide the research. First is epistemology, which examines what knowledge is and its sources. The second is ontology, which examines the nature of beings and their interactions. Both philosophies impact how research is conducted, leading to either a positivist or interpretivism or a mixture of the two, a relativist perspective (Galliers, 1991; Saunders et al., 2009).

In this study, the researcher adheres to the positivist approach. This philosophical stance is founded on evidence developed by observation of truth, reliance on knowledge, and quantitative measurement. Additionally, it believes in generally applicable frameworks that can be constructed using these universal laws as a foundation. Thus, the truth will only be produced by observation, classification, and empirical evaluation of human behaviour. The researcher is entrusted with measurable statistical results and conducting quantitative analysis on them in this study. Hypotheses are developed and tested based on the existing theory of TAM (Davis, 1897). The research has mainly gathered **654** respondents which in theory can be generalised to a population sample. Moreover, since the questionnaire is focused on citizen perceptions, the interpretivism paradigm must also be used. Every respondent has their interpretation of the current situation, and so in this study, the interpretation of citizens perception on Philsys ID is studied (Saunders et al., 2009). The researcher is mindful of the subjective mindset that evolves and how participants build their understanding during the execution of the study. But with sample size, the researcher will generalise these individual results and responses to a meaningful data analysis in a positivist direction. As the researchers wanted to ascertain citizens' perceptions towards actual use of the Philippine Identification System, the researcher's objective is to conduct a quantitative analysis survey and test the hypothesis made.

4.2 Research approach

It is acknowledged in this research that different analytical approaches can guide the application of research methodology to the theory. Deduction tests a hypothesis, while induction is the method of constructing a theory or concept, and abduction is a mixture of both (Saunders et al., 2009). Selecting the right research approach is critical since it is situation-dependent to research case specifics. In this case study, a deductive approach is used to answer the research questions and test the hypothesis made to evaluate the citizens' acceptance and perception of the actual use of PhilSys ID. According to Kothari (2004), typically, deductive methods are synonymous with quantitative analysis, in which a questionnaire develops an observational sample and the obtained evidence is used to determine whether the theory is supported. Additionally, this enables the study to be replicated if necessary.

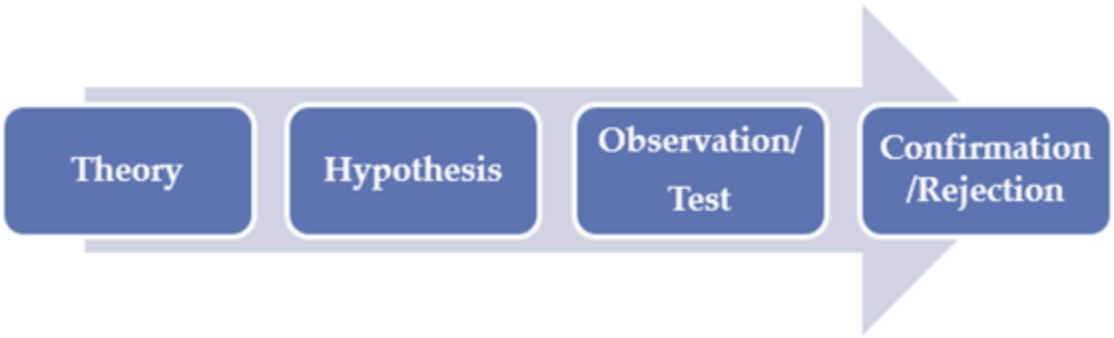


Figure 5: Application of Deductive Approach ('Deductive Approach (Deductive Reasoning)', n.d.)

As illustrated in Figure 5, this positivistic methodology progresses from broad to specific: from broad theory to the relevant experience acquired through the analysis phase, compared to the conceptual context (Saunders et al., 2009). The research took a deductive method, with a pre-existing paradigm, TAM (Davis, 1989) which served as the foundation for hypothesis formulation (Silverman, 2010).

4.3 Case selection

The case selection specifics may be chosen based on the research objectives of the study, which may be descriptive, exploratory, or informative, and may be influenced by empirical or theoretical considerations. For this study of evaluating the acceptance and perception of Filipino citizens and resident aliens with the Philippine Identification system, exploratory research is the most suitable. According to Mills et al. (2010), for an exploratory research study, researchers consider cases that maximize the possibility of developing hypotheses or interpretations that account for the social phenomena under investigation and because this study is a deductive design for testing the selected theory, the research focus is testing a hypothesis from an empirical research strategy (Mills et al., 2010).

Single-case designs investigate a single unit of a social phenomenon. In this study, the Philippines is the unit of the phenomenon, but, unlike other quantitative studies aided with survey method, this case is strategically selected. The researcher selected the case with a considerable amount of detail regarding the research objective at stake and its potential to falsify hypotheses derived from its theoretical foundation and studies related to it (Mills et al., 2010).

Much scientific research focused on assessing digital ID acceptance in different countries, both in developed countries (Adjei, 2013; Backhouse & Halperin, n.d.; Mariën & Van Audenhove, 2010, 2010; Strauß & Aichholzer, 2010) and developing countries (Chauhan & Kaushik, 2016). The Philippines is considered a deviant case study as context and social phenomenon in the country cannot be generalized. Findings based on other countries' acceptance and adoption of the digital identification system do not imply that it is directly applicable and adaptable in the case of the Philippines. Therefore, the case is worth investigating (Yin, 1984). Furthermore, the case investigation is relevant and timely to the country, the Philippines, as it has recently started to pilot the implementation of a national identification card (from 2019) and started to enrol or register the citizens from the beginning of 2021. Moreover, the country is determined to implement it fully by the year 2022.

In addition, studying citizens' perception towards the ID system will later help the scientific researchers and public sector officials in the country to consider the citizen-centric implementation of services attached to the ID system and provides an initial reference for this purpose. It is also essential to state the timeliness of the research as a study including opinion and perception of the citizens implies the higher rate of successful implementation. According to Monique (2017), technologies implemented in the field without consulting and including the user's perception most likely fail.

4.4 Data collection

The empirical data for the research is gathered mainly through a web-based questionnaire created through Google Forms, an online survey application for data collection. The web-based questionnaire was shared mainly through social media where it is likely to reach more people. The technique used in the study is considered both convenient and snowball sampling (Baltar et al., 2012). It is convenient as an online survey is efficient and likely to gather more sample population. However, as the study is conducted during the COVID-19 pandemic, a snowball sampling was also considered since it is a technique suitable when the target population becomes “hard to reach” (Baltar et al., 2012; Dusek et al., 2015). The COVID-19 pandemic stifled the data collection of the study as it is still causing major distress in the country of the Philippines and most people are focused on survival. This social phenomenon also supports the idea that the data collection strategy selected in this study is the most realistic strategy for the study as face-to-face interaction is limited.

4.5 Unit of analysis and target population

The study's target respondents are Filipino residents and foreign nationals aged 18 and above who currently reside in the Philippines and are entitled to receive public services. Since the sample size is far less than the population sampled, survey data may make certain inferences about the population (Kadam & Bhalerao, 2010). The proposed sample size is 500 people, with a confidence level of 99 per cent and a margin of error of 5 per cent.

4.6 Questions and Survey Design

The web-based survey questionnaires are guided based on the conceptual framework of the study. The TAM (Davis et al., 1989; Venkatesh et al., 2003) is the foundational theory of the study, the questions used are mainly produced based on the study paradigm. The web-based survey questionnaires consist of seventeen (17) main questions, out of which, fifteen (15) questions are designed as a checklist in a 5-Point Likert scale format (agree to disagree questions). These questions aim to quantify the citizens' attitudes and behaviour towards citizens acceptance of the use of the PhilSys ID. In addition, there are two (2) open-ended questions that are related to the facilitating and hindering factors of successful implementation of PhilSys ID based on citizens perception. The survey does not take more than five minutes of response time per individual respondents. The researcher also ensured to design the survey to ensure the respondents' legitimacy, trust, and confidentiality.

4.7 Quantitative Data analysis methods

Quantitative data analysis is exhaustive, and it is likely the only data form capable of displaying analytic findings in graphs and charts. Quality data will yield accurate outcomes, and data analysis methods are almost undoubtedly necessary since weak data will jeopardise your findings' credibility and validity and cause the conclusions to be unstable (Duncan, 2003; Treiman, 2014). The data analysis procedure used to interpret the quantitative data in this study was designed based mainly on Spearman's 5-point Likert scale correlation ranks through R statistical programming tool (de Winter et al., 2016; Vance, 2009). The remaining questions were quantified and clustered into categories.

Fifteen (15) out of 17 questions in the online survey was designed on a 5-point Likert scale. The researcher added a neutral option to allow respondents for a neutral or exit option. This is not to force the choices they are making in the given research survey tool (Boone & Boone, 2012; Joshi et al., 2015). Example usage of the Likert is when asked if "PhilSys ID will be useful to improve quality government-citizen communication in service delivery". To answer this question, the respondents were given options like "strongly agree", "agree", "neutral", "disagree", "strongly disagree". The number of responses will be interpreted in descriptive information as part of the result of the study.

Spearman's rank correlations will be run through the R statistical programming tool. The R language is a valid statistical tool and widely used among statisticians and data analyst (Vance, 2009). In this study, it is also important to note that the data-based analysis by means of Spearman correlations is not used to test the hypothesis but rather understand the correlation coefficient of each variable of the study to measure how weak or strong the relationship is (de Winter et al., 2016). The relation between variables are -1 to +1 and the correlation coefficient is defined in the following table.

Hypothesis	Coefficient path	Questions to correlate	Results
H1	PU→ATU	Q7,8,9 -> Q4	Supported
H1a	PU←EF	Q7-> Q4	Supported
H1b	PU←CS	X Q8-> YQ4	Supported
H1c	PU←IQ	Q9-> Q4	Supported
H2	T→ ATU	Q6, Q5 → Q1	Supported
H2a	T← GT	Q1→ Q5, Q6	Supported
H2b	T←S&P	Q6→ Q1	Supported
H2c	T←W	Q5→ Q1	Supported
H3	PEU→PU	Q11→Q9	Supported
H3a	PEU←TST	Q11→Q4	Supported
H4	PEU→ATU	Q4->Q3	Supported
H5	ATU→BIU	Q7,8,9 -> Q4	Supported

Table 2: **Relationships between Hypothesis and Variables, together with the survey questions**

- + or - .00 to .19: Very weak
- + or - .20 to .39: Weak
- + or - .40 to .59: Moderate
- + or - .60 to .79: Strong
- + or - .80 to 1.0: Very Strong

The "p-value" or probability value will be used to determine the statistical significance of the correlations. If the p-value exceeds 0.05, it is assumed that no correlation exists between the variables, and hence the null hypothesis is accepted. With values less than 0.05, the null hypothesis is rejected. Assuming that a correlation exists between the variables, the correlation coefficient indicates the strength or weakness of that relationship (Kain & MacLaren, 2007; Vance, 2009).

4.8 Ethical considerations

Throughout the study, research ethics is carefully applied in order to maintain research credibility (Yin 2011). Given that the investigation is focused on human subjects, extra precautions were taken during the

data collection process to ensure the respondent's privacy. The researcher collected data with informed consent and respected voluntary participation in the survey without enforcing coercion, deception and manipulation of the study respondents. There is informed consent and guarantee to the respondents for anonymity and confidentiality of their responses. The research questionnaires are considered valid methods to relate to solving the research problem of the study specifically. The research design addresses the research question and is correlated to develop the study's conclusion. And the sampling and data collection strategy also considered the most feasible and realistic approach considering the situation that the target respondents are experiencing during the COVID-19 pandemic. Additionally, this study adheres to the American Statistical Association's (1998) Ethical Guidelines for Statistical Practice, which ensures that the results gathered in the survey are analyzed accurately and objectively. It also made sure the integrity of the study is ensured, as misleading or undocumented claims is not practised. Also, a proper mathematical method was applied in the results to get the accurate results for the survey (Jones & Jones, 2005).

4.9 Limitations and bias avoidance

In this study, the researcher adheres to the positivist approach. The researcher is mindful of the subjective mindset that evolves and how participants build their understanding during the execution of the study. Still, with sample size, the researcher will generalise these individual results and responses to a meaningful data analysis in a positivist direction. As the researchers wanted to ascertain citizens' perceptions towards actual use of the Philippine Identification System, the researcher's objective is to conduct a quantitative analysis survey and test the hypothesis. The empirical evidence for the research is gathered mainly through a web-based questionnaire and the COVID-19 pandemic stifled the study's data collection as it is still causing major distress in the. Other data collection strategies may impose more constraints. The study's target respondents are Filipino residents and foreign nationals aged 18 and above. Since the data collection strategy is facilitated online, those without internet access or with minimal skills to use electronic gadgets such as laptops and cellphone may be challenging to reach.

5 Case Description

In this chapter, the case study that is analysed in this research will be described. Firstly, the history of the identification system in the Philippines will be presented. Second is the description of the PhilSys ID and its features, followed by its functionality. It will end by providing a tabular form of the overview and specification of the PhilSys ID.

5.1 History of Identification System in the Philippines.

More than two decades have passed since the Philippine government first attempted to introduce a national identification scheme for Filipino citizens. The first attempt was made by late President Ferdinand Marcos, who proposed establishing a National Reference Card scheme under the regulation of a National Registration Coordinating Committee under Presidential Decree 278 series of 1973. The card was intended to replace all government-issued identification documents with a single National Reference Card. This card would be available to all Filipinos and foreigners residing in the country. Anyone who failed to register would face legal liability. However, this proposal did not materialise (PhilSys 2021, 2021; Presidential Decree No. 278, s. 1973 | GOVPH, n.d.)

In 1996, the second attempt was proposed by former President Fidel Ramos, who passed the Administrative Order (AO) No. 308 mandating the implementation of a National Computerized Identification Reference System. The issuance of this AO was appealed at the Supreme Court but was never considered. It was suspended for several reasons, one of which was a violation of citizen's privacy rights. The Court asserts that the AO failed to specify acceptable requirements, such as biological data and the particular technology to be used, posing a direct threat to the right to privacy by enabling the exploitation or manipulation of acquired personal data (Administrative Order No. 308, s. 1996 | GOVPH, n.d.; PhilSys 2021, 2021; Garcia, 2018; Vitangcol 3rd, 2016)

The third attempt came in 2005 when President Gloria Macapagal Arroyo released Executive Order 420, which aimed to harmonise and streamline the ID systems of all public bodies and government-owned and operated entities using a single multipurpose identification (UMID) scheme. As with Ramos's AO No. 308, the Order's legality was challenged in a Supreme Court appeal. This policy, on the other hand, escaped the fiasco unscathed. In ruling in favour of the plaintiffs, the Court observed that the statute establishes reasonable limitations on data processing and has stringent provisions to ensure their secrecy. Additionally, it would not vest federal departments with extra data collection authority (Executive Order No. 420, s. 2005 | GOVPH, n.d.; PhilSys 2021, 2021; Garcia, 2018).

This effort to implement a single national identification system finally came to life on August 6, 2018, when President Rodrigo Duterte signed a legislative Act No. 11055 titled "Act Establishing the Philippine Identification System (PhilSys)". This act aims to serve as the government's foundation for identity management in the Philippines to create a single, inter-government agency-managed, and nationally recognised identity database system, and physical or virtual card for all Filipino citizens and resident aliens (PhilSys 2021, 2021; Republic Act No. 11055 | GOVPH, 2018)

5.2 Philippine Identification System (PhilSys) and its features

Figure 6: Physical Feature of the Philippine Identification Card (*One ID, One Number: What You Need to Know about the Phil ID System – Manila Bulletin*, n.d.; Philippine Statistics Office, 2020)

Each record in the PhilSys database is legitimate, accurate, and adequate proof of identity in all government agencies and private or commercial institutions that include identification and background checks of citizens. The database produced by the system is named PhilSys ID and will be included among the primary valid identification documents in the Philippines for use in private or public transactions. As a result of Senate Bill No. 1738, each PhilSys ID would include permanent physical characteristics, a residence address, and a unique number identifier. Each printed copy will contain a facial picture, the full name as it appears on the citizen's or resident's Philippine Statistics Authority (PSA) birth certificate, sex, permanent address, birth date and location, blood type, biometrics (iris and fingerprint scan), and the citizen's or resident's PhilSys Number (PSN). Additionally, it will contain extra information such as marital status, contact information (landline and mobile), and a valid email address. Citizen's unique identification number will remain permanently associated with their identity (‘Philippine Identification System Act (PhilSys)’, n.d.-a)

5.3 PhilSys features and functionalities

The legislation specifies the following transactions with which the PhilSys ID can be used. It can be used for applying (a) social welfare and benefits; (b) services offered by the GSIS, SSS; (c) PhilHealth, Pag-I big, and other government agencies (d)passport and driver's licenses (e)Tax-related transactions; (f) registration and voting identification purposes; (g) schools, colleges, universities, and other learning

institutions; (h) employment and other related transactions ; (i) Opening bank accounts and other transactions with banks and financial institutions; (j) Verifying criminal records and clearances and other transactions defined in the implementing rules and regulations (IRR) (Gavilan, 2018; *One ID, One Number: What You Need to Know about the Phil ID System – Manila Bulletin*, n.d.; *Republic Act No. 11055 | GOVPH*, 2018)

To sum it up, the Philippine Identification System is a strategy for simplifying and streamlining all public and private transactions using a centralised government-owned identification database. Overall, the government claims that this initiative will facilitate good governance, make government transactions more efficient, and encourage ease of doing business and commerce transactions. The proponents of PhilSys also asserted that this would help combat corruption and reduce bureaucratic red tape, and it will significantly boost the distribution of government services, Moreover, According to Socioeconomic Secretary Ernesto Perna it will also "will expand opportunities, especially for the poor and disadvantaged, and will improve the efficiency of public service delivery." (Gavilan, 2018; 'Philippine Identification System Act (PhilSys)', n.d.-b)

Table 3: The scope, key features and functions of Philippine Identification System

KEY FEATURES	**Philippine Identification System Specifications:** (source: (*Republic Act No. 11055 | GOVPH*, 2018)
Title	**Philippine Identification System "PhilSys ID"**
Coverage/Scope	1. All Filipinos 2. All residents of the Philippines, including citizens of foreign countries residing in the country for an aggregate period of more than 180 days during any calendar year
Components	1. PhilSys Number (PSN) 2. Philippine Identification Card (PhilID) 3. PhilSys Registry
Data Entries	10 only, including biometric information: · 5 on the face of the card
Definition of Biometric Information	Facial image, fingerprint, and iris scan of an individual. 1. Facial image 2. Full set of fingerprints 3. Iris scan
Implementing Agencies **16 government agencies, with the Philippine Statistical Authority**	Philippine Statistical Authority The DICT provides technical assistance. PhilSys Policy and Coordination Council, which has at least 13 members. The Council can modify or expand its membership, as necessary.

Use/s of the ID	Official government-issued identification document of cardholders in dealing with all national government agencies, local government units (LGUs), government-owned or controlled corporations (GOCCs), government financial institutions (GFIs), and all private sector entities. In transactions requiring proof of identity and proof of address, such as, but not limited to: 1. Application for eligibility and access to social welfare and benefits given by the government, including but not limited to those provided to under Section 82 of Republic Act No. 10963; 2. Application for services and benefits offered by GSIS, SSS, PhilHealth, HDMF, and other government agencies; 3. Transactions with any government agency; 4. Voting identification; 5. Securing tax identification number and other tax-related transactions; 6. Admission to any government hospital, health centre or similar institution; 7. Application for admission in all schools, colleges, learning institutions and universities, whether public or private; 8. Opening of bank accounts and other transactions with banking and financial institutions; 9. Applications for passports; and 10. Other similar transactions or uses that may be defined in the implementing rules and regulations.
Protection Against Unauthorized Disclosures, Sharing, or Publication of Registered Data	No person may disclose, convey, disseminate, publish, or use any information of registered persons, give access thereto or give copies thereof to third parties or entities, except in the following instances: 1. When the registered person provides express consent; 1. When the interest of public health or safety so requires; and 2. Upon the order of any competent court.
Private entities required to accept ID as proof of identity, without requiring additional documents	YES
Effect of Failure to Present the Card	Silent. It may be inferred, however, that an individual may simply present his/her ID Number and allow his biometric information to be collected for authentication.

Punishable Acts	1. Refusal to accept, acknowledge and/or recognize the PhilID as the only official identification of the holder/possessor, without just and sufficient cause 2. Use of the PhilID in an unlawful manner or to commit a fraudulent act or for an unlawful purpose 3. Willful submission of or causing to be submitted a fictitious name or false information in the application, renewal, or updating in the PhilSys 4. Unauthorized printing, preparation, or issuance of a PhilID 5. Willful falsification, mutilation, alteration, or tampering of the PhilID 6. Except for the one to whom it was issued, use or unauthorized possession of a PhilID without any reasonable excuse, or the possession of a fake, falsified, or altered PhilID 7. willful transfer of the PhilID or the PSN to any other person 8. accessing the PhilSys without any authority 9. willful use or disclosure of data or information 10. For officials, employees or agents who have the custody or responsibility of maintaining the integrity of the PhilSys: 11. malicious disclosure or processing of data or information 12. providing access to the System or allowing the processing or disclosure of any data or information therein without any authority from the law, due to negligence

6 Result and analysis

This chapter presents the data gathered from the survey with the interpretation and analysis. This chapter is sub-divided into four main sub-sections: (1) Presentation of Respondent's Demographic Profile (2) Results and interpretation based on the variables of the awareness, trust, perceived usefulness (PU), perceived ease of use (PEOU), behavioural intention to use (BIU), and attitudes towards using(ATU). Moreover, the researcher will discuss the correlations between these variables and summarize the results and findings (3) Presentation of correlations of coefficients of the variables to solve the hypothesis and (4) Presentation of facilitating and hindering factors towards the success of PhilSys ID.

6.1 Demographic Profile of Respondents

The survey has gathered a total of 654 responses. From the answers, 503 of the respondents (76.91%) are from Luzon island, 100 respondents (15.29%) from the Visayas, 48 (7.34%) from Mindanao and 3 (.46%) from Filipinos living abroad. The demographic origin of the respondents can be seen in the pie chart presented below. There is a minimal representation from the Mindanao region. Besides the COVID pandemic, the limitation of the language used in the survey may have caused lesser representation in other islands. Although the country's official languages are used during the distribution of the survey (English and Tagalog version), there are almost 170 dialects spoken in the country. Another concern might be regarding the internet connection, but since the target population is very active in social media like Facebook, it can be assumed that this is not a big concerning factor.

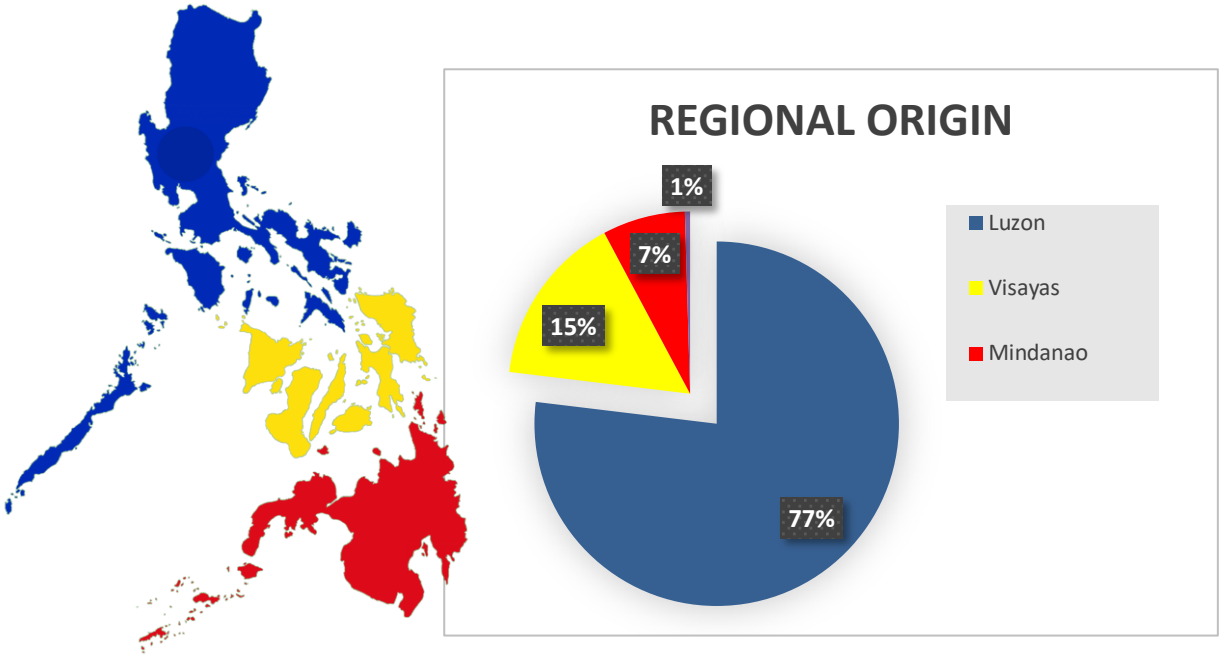


Figure 7: Geographical location of respondents

Based on the web-based survey, as shown in Figure 8, the research gathered 375 respondents (57,34%) that are employed; 136 respondents (20,80%) that are not employed; 132 who are students (20, 18%), and 11 retired citizens (1.68%). It is assumed by the researcher that since most of the older people have less access to the internet and electronic gadgets, the retired citizens have the lowest participation. At this point, they are also the highest risk group in terms of the COVID pandemic spread as they have a high rate of fatality.

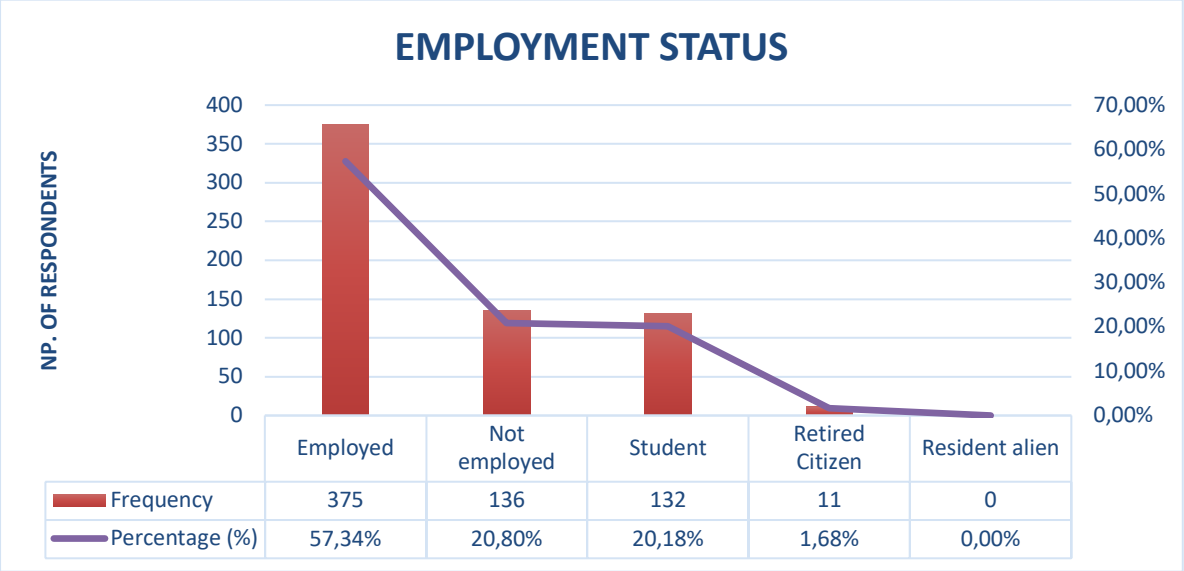


Figure 8: Employment status of the respondents

The Philippines continues to be Asia's leading example of bridging the gender divide, according to the World Economic Forum's Global Gender Gap Report 2020. It was placed 16th out of 153 nations with a minor gender disparity between men and women, down eight spots from last year's position (Schwab et al., 2019). It corresponds with the high participation of women in this survey as shown in Figure 9. The research has gathered 426 female respondents (64, 98%), followed by 172 Male respondents (26.30%) and 51 (7,80%) respondents from members of the LGBTQ+ community. The researcher believes that providing gender representation is a vital component of the investigation as people have different opinion and rights in public services according to their gender. In the case of the Philippines, the women rights law and the public services per their needs may also be attached to the services that will later be provided under the Philippine Identification System.

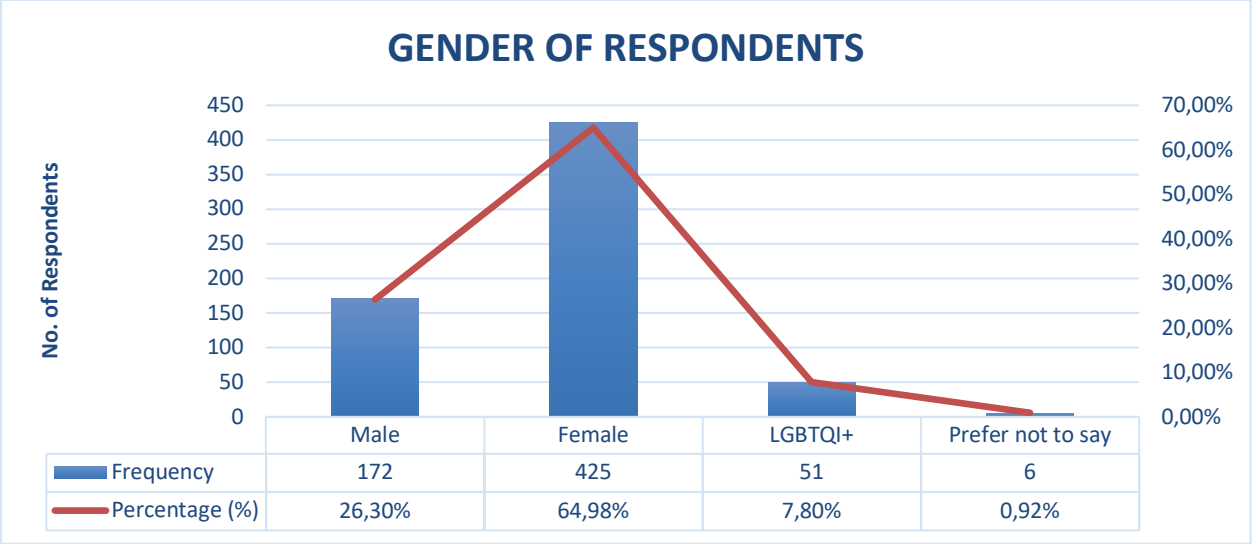


Figure 9: Gender of the respondents

Figure 10 shows the age of the respondents. The legal law for a child to avail of a PhilSys ID card is 18 and above. In this survey, most of the respondents who answered are between the age of 18 to 30 (56%) which support the idea that most youths spend their time using social media (e.g., Facebook and Twitter). It is followed by respondents aged 31-40 (24%). It is a concern that only 3% (60 and above) represent the elderly and retired citizens who gave their opinion on the identification system. Past studies on the identification system imply difficulty in using electronic services for older people. The problem is reflected in this research as well, as only a few of them participated in the survey. The older generation's perception must be gathered as they are entitled to social security services that are primarily attached to this national identification card.

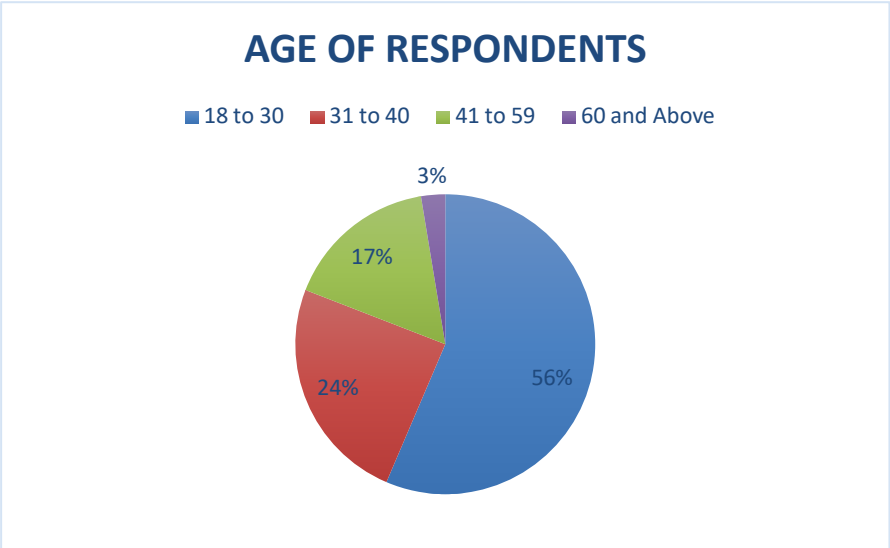


Figure 10: Age of the Respondents

Figure 11 below displays the distribution of respondents according to their educational status. 459 respondents (70, 18% of the total) of the survey have attained a university level of education and 86 respondents (13.15% of the total) have attended high school. The number of respondents who have attained vocational training was 80 (21% of the total) and 2 respondents have no formal education. This data represents that those with higher education, such as a college degree, have more access to digital devices and have more knowledge of the internet and social media. There is a lack of representation from citizens with no formal education which only composed of 0.31% of the total sample population.

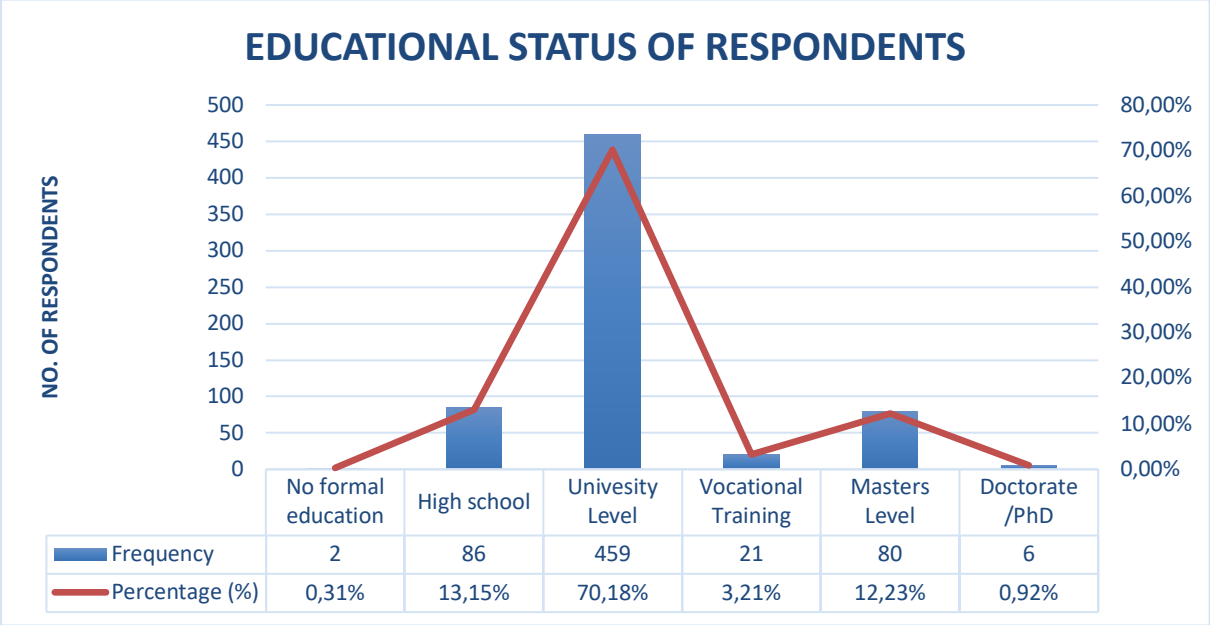
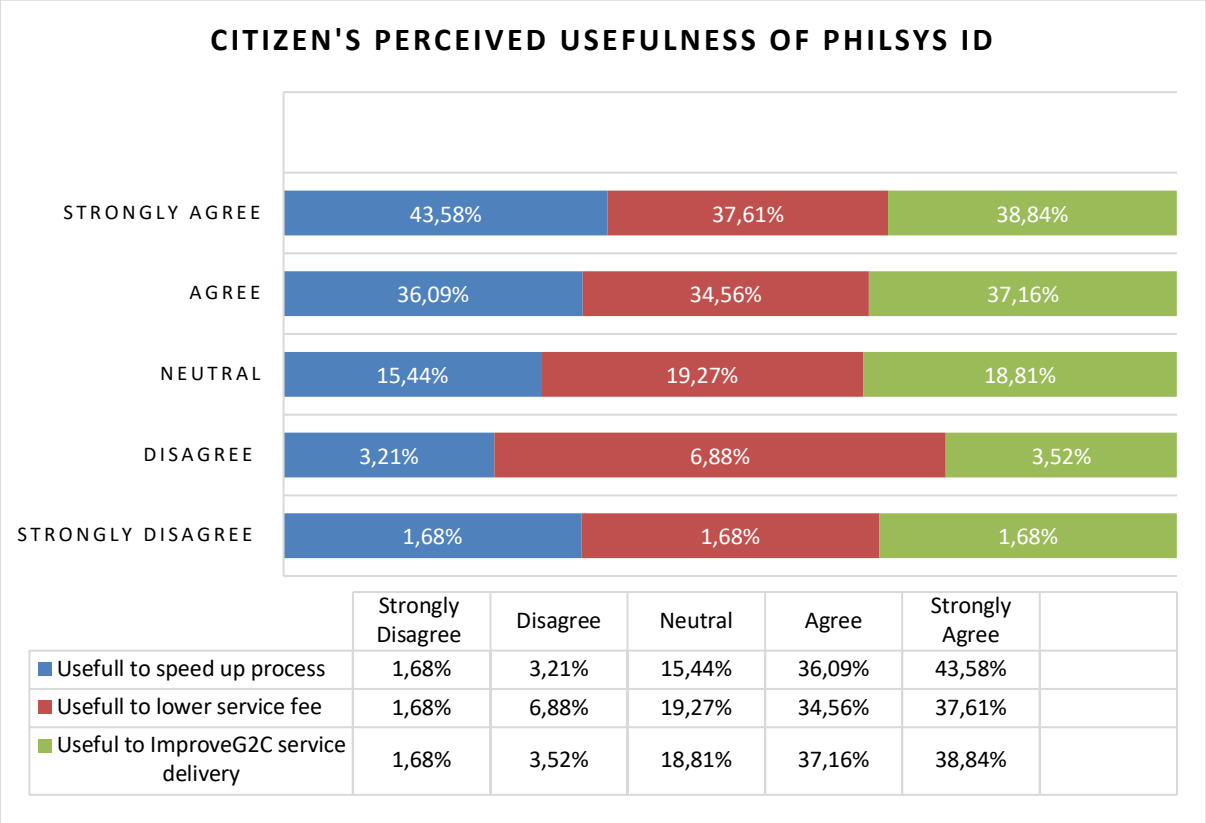


Figure 11: Educational status of respondents

6.2 Awareness, trust, perceived usefulness (PU), perceived ease of use (PEOU), behavioural intention to use (BIU), and attitudes towards using (ATU)



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Usefull to speed up process	1,68%	3,21%	15,44%	36,09%	43,58%
Usefull to lower service fee	1,68%	6,88%	19,27%	34,56%	37,61%
Useful to ImproveG2C service delivery	1,68%	3,52%	18,81%	37,16%	38,84%

Figure 12: Perceived Usefulness of PhilSys ID

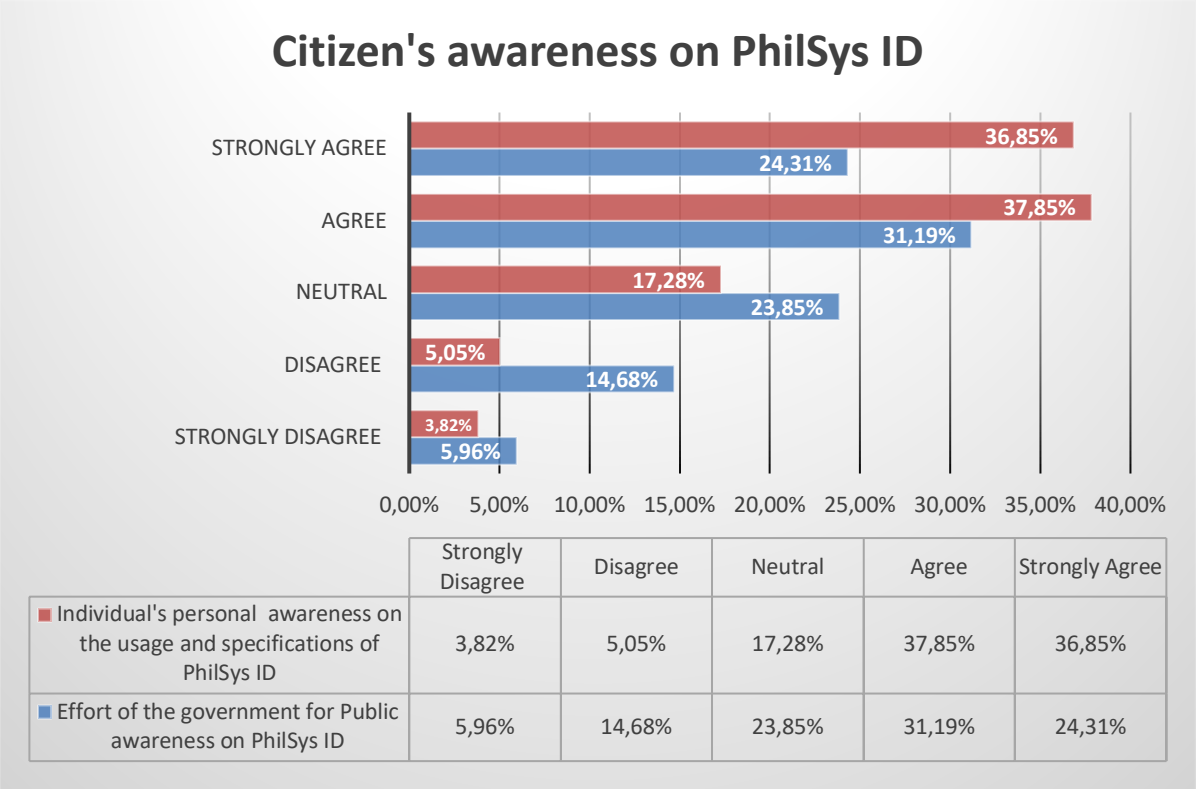
The Philippine Identification System strategy claims that the ID system will simplify private and public transactions, making government transactions more cost-effective and efficient, and ('Philippine Identification System Act (PhilSys)', n.d.). The elements of efficiency, cost-saving and improved service quality were evaluated to determine the usefulness of PhilSys based on citizens' perspective.

In the survey, citizens were asked if they perceived that the PhilSyS ID would help speed up the government-related public service transactions process, will it help expedite bureaucratic services, and reduce citizens' time queuing for public services aligned with the PhilSys ID. As shown in Figure 12, among 654 respondents, 43% strongly believed that the PhilSys ID would facilitate the efficient implementation of public service transactions and government processes. 36% of the respondents agreed and 4.89% disagreed that it would do so.

In addition, in the survey citizens were also asked about their perception if PhilSys will lower service fee and transportation expense when availing services at government offices or if it will be cost-saving. Approximately one-third of the respondents (37.6% of respondents) strongly agreed, and almost one-third

(34.6% of respondents) likely believed that PhilSys ID will assist in reducing service fees and expenses in processing transactions. 19% of respondents neutrally perceived that it will be useful to reduce the service charge, and 8.5% of respondents disagree that this service will help reduce the service charge.

Lastly, to determine the usefulness of the PhilSys Identification, citizens were asked whether the PhilSys would improve the interaction between the citizen and government on the delivery of public services. 38, 84 % strongly agreed, while 37, 16% consider that the PhilSys ID will enhance service delivery between government and residents. Around 5.2% of the sampled population feel uncertain or disagree regarding how PhilSys ID may improve the overall G2C service delivery provision of government services that are reliant on PhilSys ID. However, the researcher may assume that over 70% of surveyed respondents felt that the PhilSys ID would help foster better citizen-government interactions among those surveyed.



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Individual's personal awareness on the usage and specifications of PhilSys ID	3,82%	5,05%	17,28%	37,85%	36,85%
Effort of the government for Public awareness on PhilSys ID	5,96%	14,68%	23,85%	31,19%	24,31%

Figure 13: Awareness as Determinant of citizen's trust

Trusting a new technology such as PhilSys Identification System relies on a person's awareness of it. Awareness is an important component of trust for acceptance of the technology (reference). In the context of the Philippines, public awareness arises from the government's initiative to increase public understanding of PhilSys ID and the citizen's efforts to be engaged and be informed about it.

In this study, the citizens were asked whether, based on their perception, the government had made an adequate effort to educate the public about the PhilSys Identification system. Based on the findings, it shows that a total of 24.31% among the sampled population strongly agree that they made a great effort to inform the public, whereas a total of 23.85% neither agree nor disagree. The remaining 20.64% disagreed that the government made an adequate effort to inform the public.

Moreover, individual citizen's level of awareness is also evaluated based on their effort to learn about the PhilSys ID. Among the respondents, 36.85% have sufficient knowledge and awareness about the system, while 8.87% disagree that they have sufficient knowledge. Overall, the data also shows that 74.7 % of the respondents have a favourable response on their awareness, while only 55% positively agreed that the government had given them sufficient awareness of the coverage, functionalities and services involved with PhilSys ID.

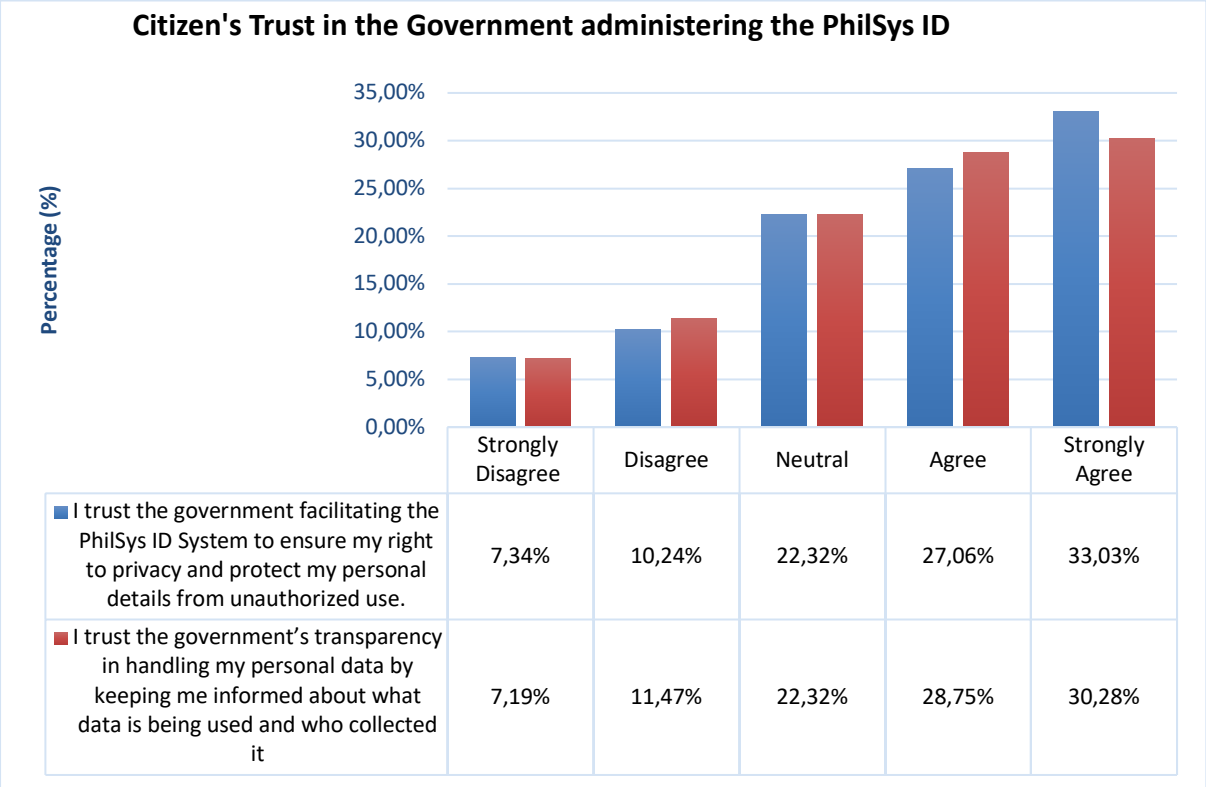
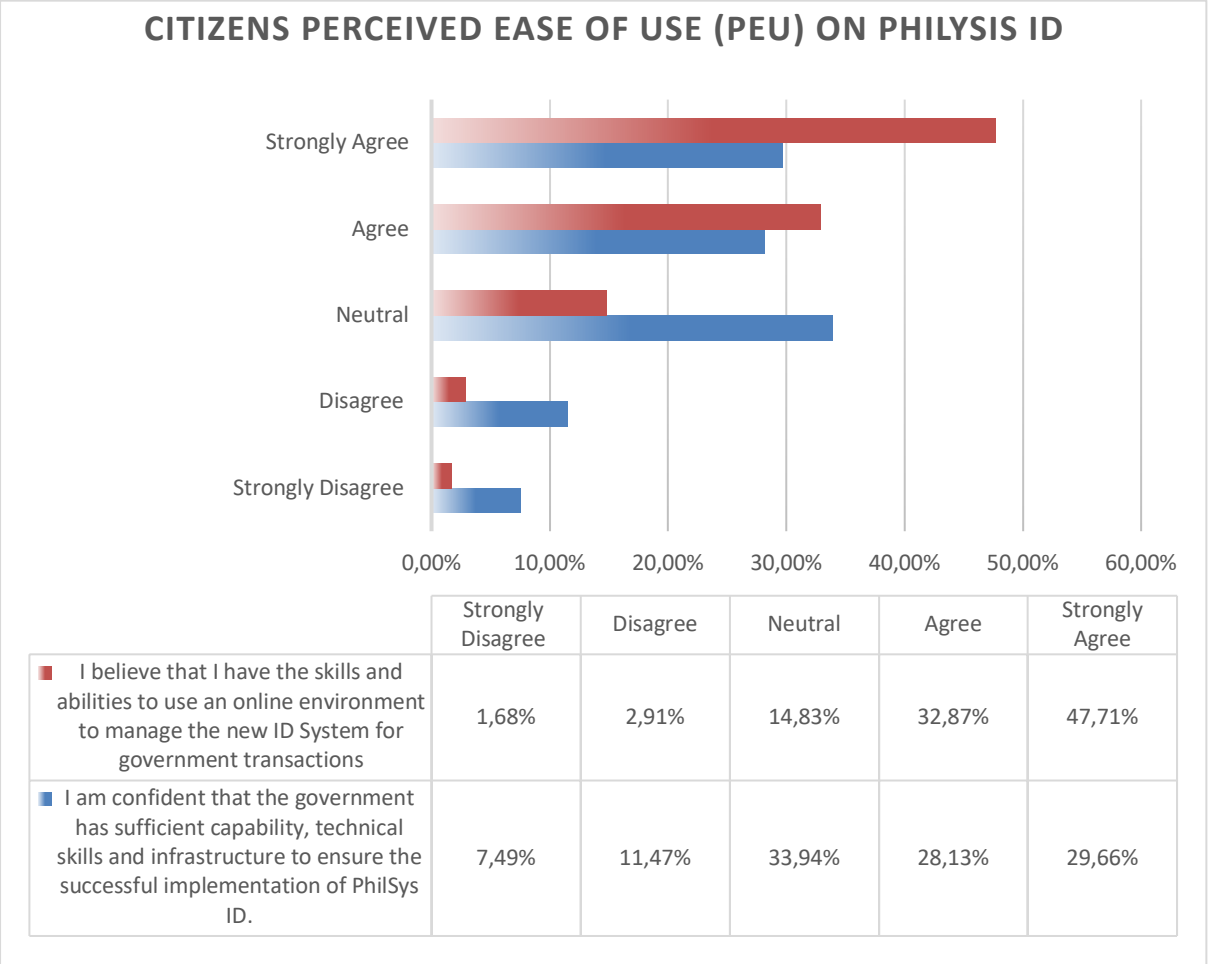


Figure 14: Government Transparency, Privacy and Security as Determinant Factors of Trust

Trust in the system and trusting the government are both essential in putting a Philippine Identification system in place. Citizens were surveyed to determine their level of trust in the government's role in facilitating the PhilSys ID system and protect their right to privacy. Approximately 30.28% of those surveyed said they strongly trusted the government, whereas 33% of those polled agreed that they trust the government. Additionally, 22.32% of those tested either agreed or disagreed, while 18% strongly disagreed and did not trust the government to protect their privacy and security of personal data.

Furthermore, when asked whether they trust the government to be transparent about how their data is handled and keep them informed about how their data is used and who collects it, 30% strongly agreed and 27% just agreed. 22.32% of those surveyed indicated that they were neutral in their views on the government's transparency in handling personal data, and the remaining 18% of the respondents indicated that they lacked trust in the government's ability to keep data secure. Overall, these results show that only half of the surveyed population has shown trust that the government will be transparent in handling the citizens' data.



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I believe that I have the skills and abilities to use an online environment to manage the new ID System for government transactions	1,68%	2,91%	14,83%	32,87%	47,71%
I am confident that the government has sufficient capability, technical skills and infrastructure to ensure the successful implementation of PhilSys ID.	7,49%	11,47%	33,94%	28,13%	29,66%

Figure 15: Citizen's Perceived Ease of Use (PEU) on PhilSys ID

Citizens were questioned about their perception that if they possess the online skills and abilities necessary to use the new ID systems for government transactions. The survey found that 47.71% of the respondents were confident in their ability to do tasks via an online environment, and 32% agreed, while 14% replied neutrally. Only 4.49% disagree that they have the online capacity.

Additionally, the government's perceived level of technological and infrastructural preparedness was also examined based on citizen perceptions. More than half of the sample (57.79%) was convinced and agreed

that the government has adequate competencies, technological skills, and infrastructure to guarantee the success of PhilSys ID. When asked, 33% of respondents showed that they agreed with the statement, while 94% did not. Conversely, 19% of respondents disagreed that the government had the competence to implement the system. The findings suggest that only half of the surveyed people had high confidence in the government's ability to deploy the PhilSys Identification system successfully.

6.3 Other Technological Concerns related to Identification System.

In the survey, the participants were asked if they believe that biometric data (e.g. fingerprint, iris and face recognition) is essential to be stored in my PhilSys ID. Among the respondents, 47.25% strongly agree that it is necessary, while 28.44% answered they neither disagree nor agree and 10.84% of the respondents disagree to disagree strongly.

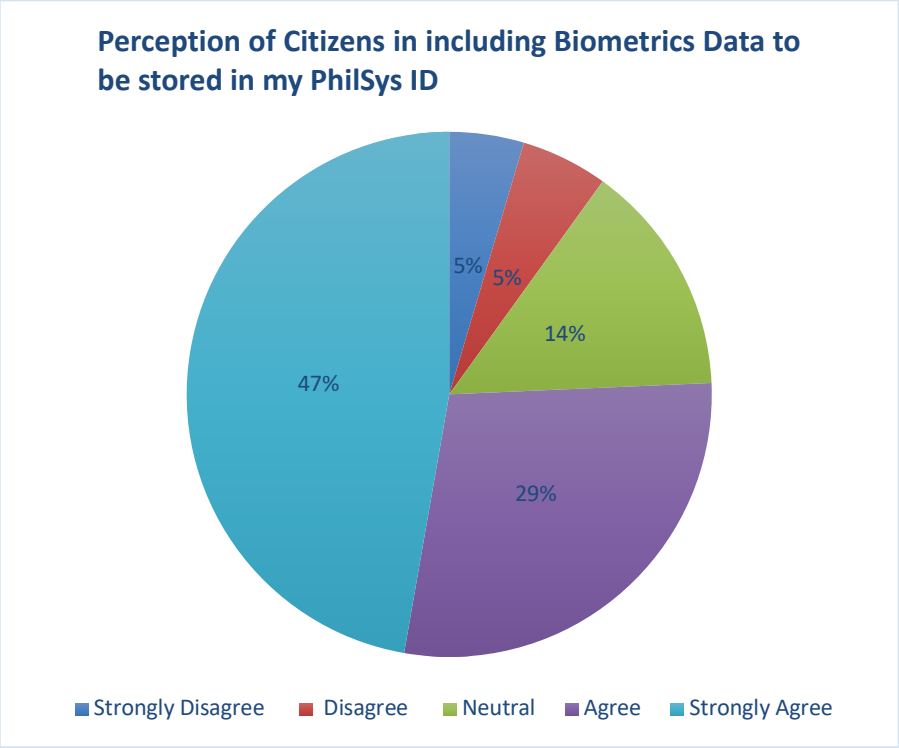


Figure 16: Perceptions on storing of biometrics data

Citizens were also asked for their authentication preferences to identify themselves when using the PhilSys ID online. 45.41% of the respondents indicated that they prefer to use the PhilSys ID number, while 21% stated the combination of previous option such as username and password, PhilSys ID Number, Phone number & Email. It is interesting to note that only 1.83% of the population prefer to go to the government office to ask for assistance from the officials.

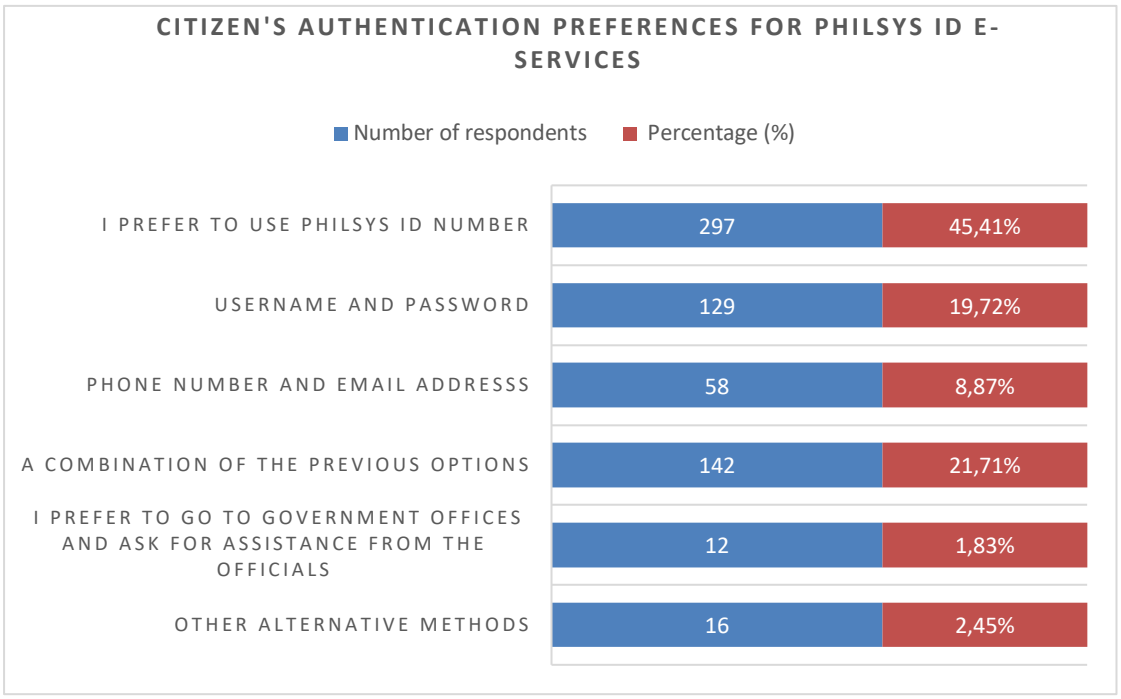


Figure 17: Authentication preference of the respondents

Among the 654 respondents, 35.78% of them strongly provided a favourable opinion and 38.07% view the PhilSys Identification System as a progressive effort by the Philippine government to improve the quality of services delivery. Only 5.37% of total respondents had a negative opinion about the ID.

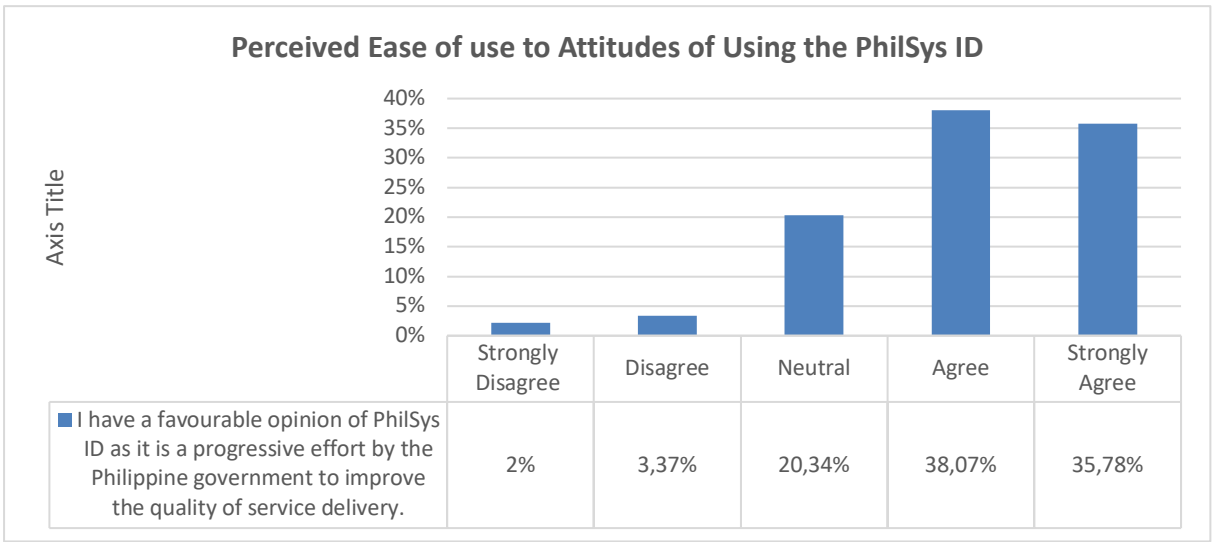
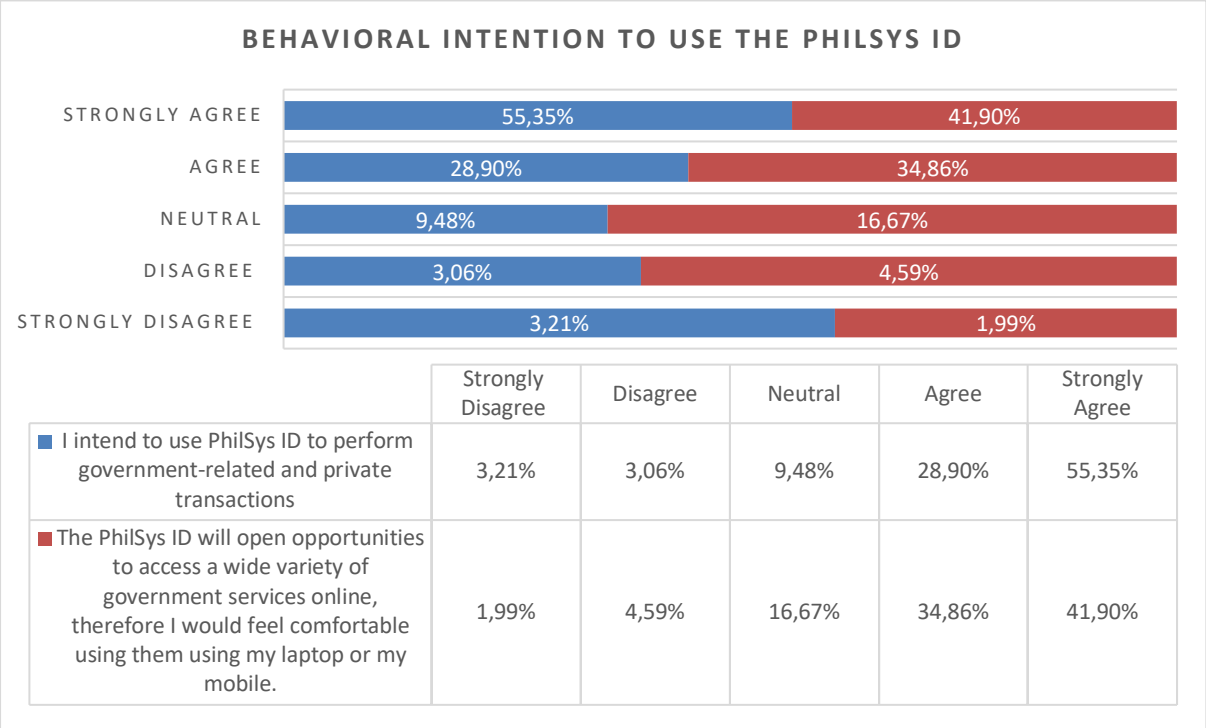


Figure 18: Perceived Ease of use to Perceived Usefulness and Attitudes of Using the PhilSys ID

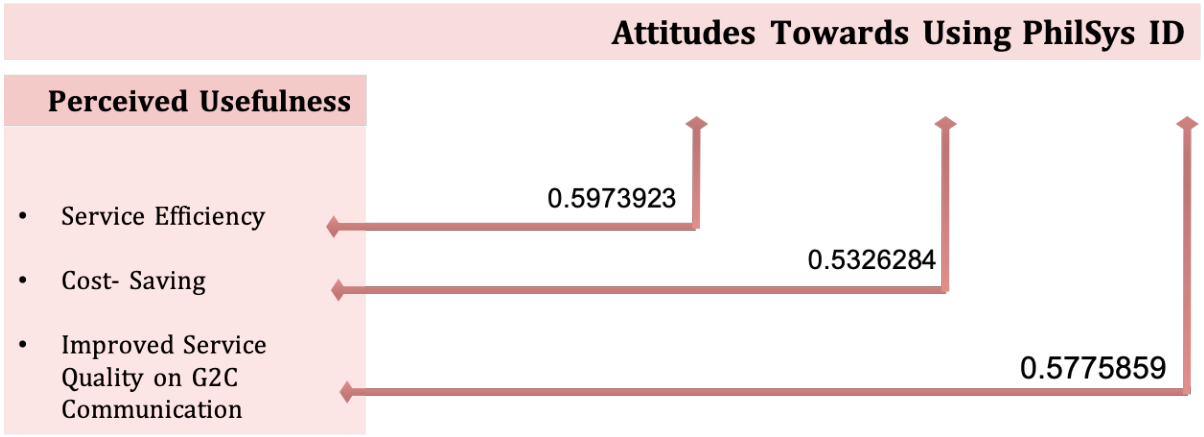
Based on the law of PhilSys ID, the citizens are mandated by the law to register themselves for the PhilSys identification system. Despite making it mandatory, citizens may register themselves and acquire an ID to comply with the law but will not be able to fully maximise the ID based on its underlying services that are under the PhilSys ID. Therefore, they might stick to the old ID system and the traditional service channels as these are not discontinued by the government. It means, for example, other IDs such as driver's license remains valid. Among the surveyed population, 55.35% of the respondents stated that they intend to use PhilSys ID to perform government-related and business-related transactions. Only 6.26% of the surveyed population expressed that they do not intend to use the PhilSys ID for public and private transactions. Among the respondents, 41.90% believed that the PhilSys ID would open opportunities to access a wide variety of government services online, therefore making them open to use their laptops and mobile phones. 16.67% of the respondents neither agree nor disagree about this idea, while 6.98% disagree that it opens vast opportunity and that they will be comfortable accessing public services online. Only 6.58% of the respondents disagree or strongly disagree with accessing government services using their laptops and phones. Overall, the citizens show a positive behavioural intention on using the PhilSys ID for accessing services online.



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I intend to use PhilSys ID to perform government-related and private transactions	3,21%	3,06%	9,48%	28,90%	55,35%
The PhilSys ID will open opportunities to access a wide variety of government services online, therefore I would feel comfortable using them using my laptop or my mobile.	1,99%	4,59%	16,67%	34,86%	41,90%

Figure 19: Behavioral Intention to Use

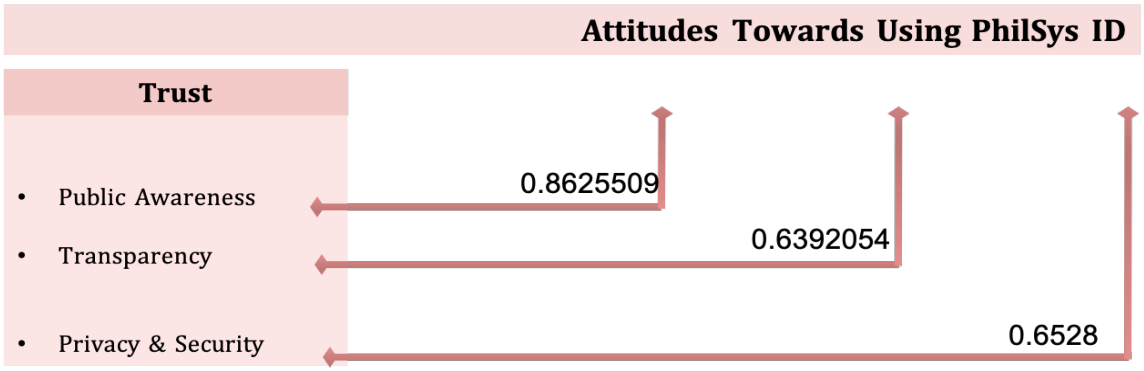
6.4 Correlations between the variables



Note: N=654 **p-value < 2.2e-16

Figure 20. Correlation Matrix for Perceived Usefulness and Attitudes Towards Using PhilSys ID

The correlation between Perceived Usefulness (PU) and Attitude Towards Using (ATU) can be seen in Figure 20. The correlation for PU is dependent on the determinant factors which are: service efficiency, cost-saving and improved service quality. For service efficiency, the correlation towards ATU is 0.597* (moderate), while cost-saving in correlation with ATU is 0.532** (moderate). The correlation of improved service quality to ATU is 0.577* (moderate). All correlations observed here are considered moderate correlation.

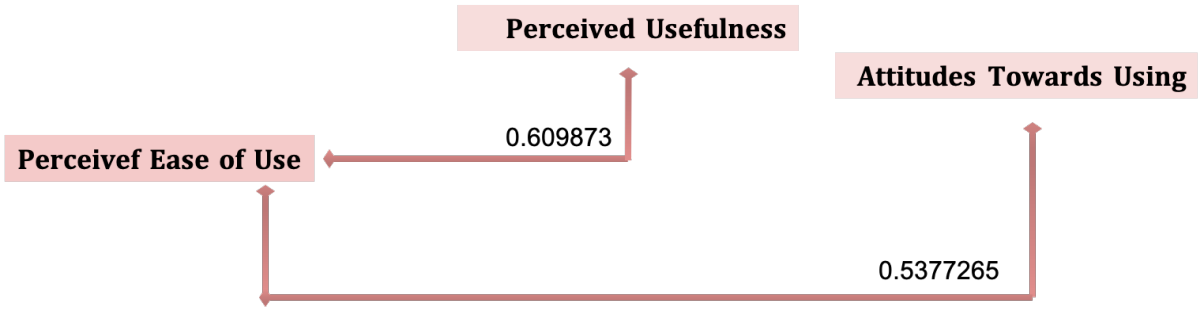


Note. N=654 **p-value < 2.2e-16

Figure 21: Correlation Matrix TRUST and Attitudes Towards Using PhilSys ID

The correlation between Trust and Attitude Towards Using (ATU) is represented in Figure 21. The correlation for Trust is dependent on the determinant factors which are; Public Awareness, Transparency,

Privacy & Security. The correlation between Awareness towards ATU is 0.862*, while Transparency in correlation with ATU is 0.639**(Strong). The correlation between Privacy & Security to ATU is 0.658** (Strong). All values are considered to be strong correlations.



Note. N=654 **p-value < 2.2e-16

Figure 22: Correlation Matrix on Perceived Ease of use to Perceived Usefulness and Attitudes of Using the PhilSys ID

The Correlation between Perceived Ease of Use (PEU) and Perceived Usefulness (PU) can be seen in Figure 22. The correlation coefficient value between PEU and PU is 0.609** (strong). In addition, the correlation between PEU and Attitude Towards Using (ATU) is 0.537**, which is considered a strong correlation.

Note. N=654 **p-value < 2.2e-16

Figure 23: Correlation Matrix Behavioral Intention to Use to Attitudes Towards Using

The correlation between Attitude Towards Using (ATU) and Behavioural Intention to Use (BIU) is 0.640**, which is depicted in Figure 23. This value shows a strong correlation between attitudes of the citizens and their behavioural intention to use the PhilSys IS system.

6.5 Facilitating and hindering factors for successful implementation of PhilSys ID system

As part of the study, the researcher created open-ended questions to gather citizens' perceptions on the factors that hinder and drives success for the successful implementation of PhilSys ID. This section is divided into two parts. Part 1 explores the hindering factors of success and Part 2 presents the recommendations and facilitating factors of success for PhilSys ID.

6.5.1 Hindering factors for successful implementation of PhilSys ID system

In this subsection of the study, the citizens explain the reasons that hinder the successful implementation or execution of the Philippine Identification System. Out of 654 respondents, 240 of them shared their opinions. The researcher then was able to cluster the respondents of the citizens into ten (10) categories. These are: (a) Corruption and Bad Governance, and Misuse of the System (b) Ineffective Implementation of PhilSys ID (c) Lack of IT Skills of Public Officials and Availability of Secure IT Infrastructure (d) Lack of Internet literacy, accessibility to internet and technology and efforts of the government to inform the citizen I Lack of Cooperation and Participation of Citizens (f) Public Awareness (g) Data Protection, Privacy & Security (h) Trust in Government (i) Government Transparency (j) Impacts of COVID-19.

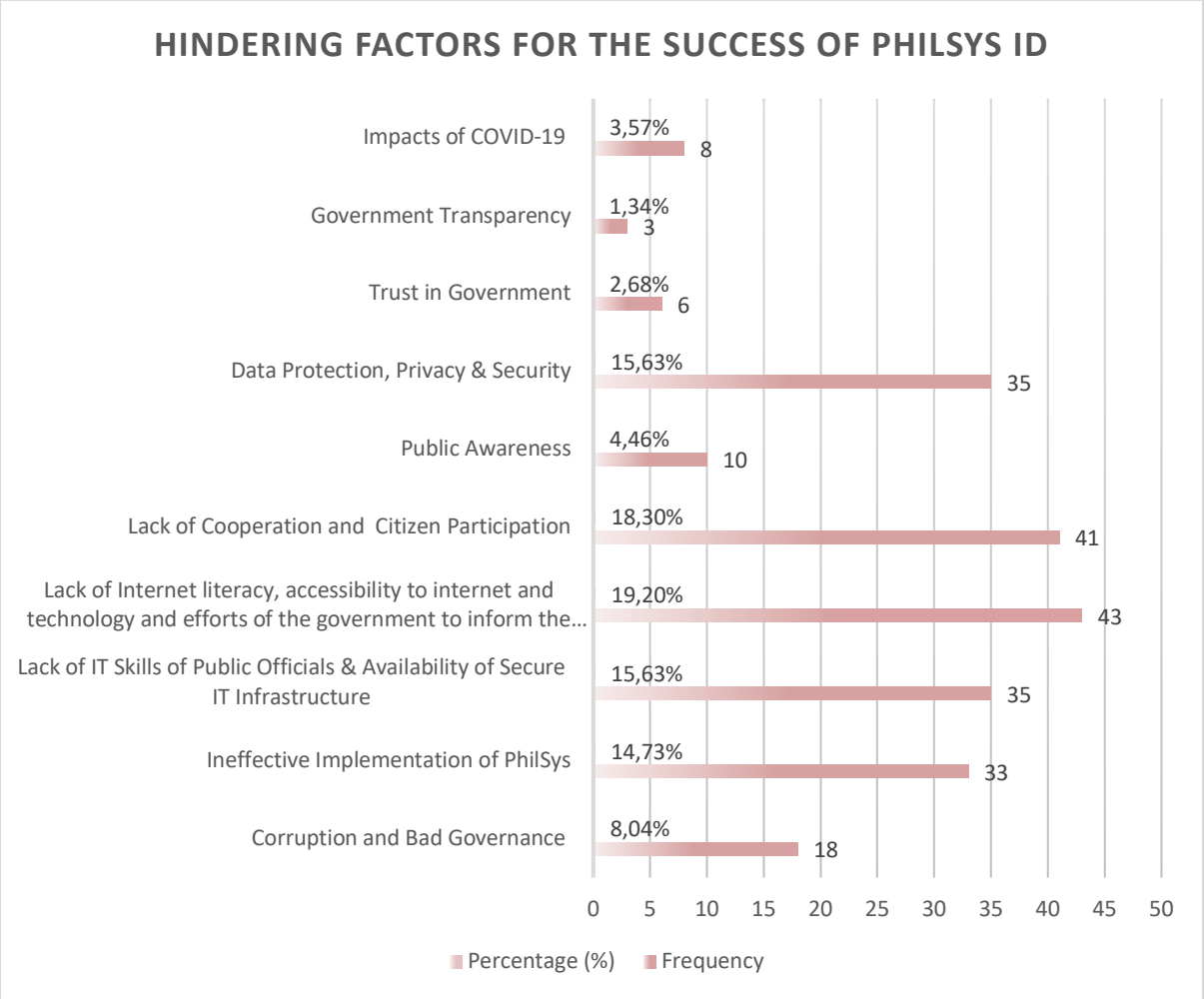


Figure 24: Hindering factors for successful implementation of PhilSys ID system

Corruption and Bad Governance, and Misuse of the System.

A total of 18 respondents (8.04% of respondents) believe that corruption and red tape will slow down or hinder the success of the PhilSys project, and they stated that this would delay every government transaction. The Philippine Identification System requires serious management, and it is essential to ensure that government officials, and those in authority, cannot misuse it for their gain or take control over a vulnerable or neglected sector. Moreover, some respondents expressed that they favour the PhilSys system, but they do not like the administration and government implementing it.

Ineffective Implementation of PhilSys ID

33 respondents (14.73% of respondents) expressed that the production of the IDs of the PhilSys ID is long due. Moreover, they expressed that there might be a problem with 100% registration of all qualified citizens and its accessibility in remote areas.

Lack of IT Skills of Public Officials and Availability of Secure IT Infrastructure

A total of 35 respondents (15.63% of the respondents) expressed that the government's technical capacity, both human resource and IT infrastructure, hinders the success of PhilSys implementation. One respondent expressed that "*I doubt the system is robust enough to be secure from data breaches (Respondent 30, 2021)."*

Another crucial factor that hinders success is "*the capacity of the government to safeguard the relevant private information of the populace (some government portals have been hacked: i.e COMELEC). Second, the preparedness of the different government agencies to synchronize with implementing online transactions. It will defeat the purpose if not all government agencies have the capacity to implement*." *(Respondent 196, 2021)*

Similarly, a different respondent notes that a factor that hinders success is "*ICT infrastructure and relevant resources like human capacity during the rollout, information dissemination to increase trust in the government and acceptance of the e-service, availability of data privacy and protection officers, concerns on cybersecurity, and interoperability of government systems and data, and managing change and transition" (Respondent 209, 2021)."*

Lack of Internet literacy, accessibility to internet and technology and efforts of the government to inform the citizen

59 respondents (26.34%) stated that accessibility is a barrier to the success of PhilSYs ID. It mostly relates to the accessibility of robust internet connections and technology, particularly in remote places and islands outside the National Capital Region (NCR).

Additionally, one respondent remarked, *"The fact that not all of our fellow Filipino citizens have the means to use such form of technology advancement presents as a visible challenge."* (Respondent 388, 2021) Additionally, *" Not everyone knows how to use technology"* (Respondent 388, 2021) and senior citizens' access to the internet, as well as their ability to use technology, is a challenge.

Not all citizen have computer literacy or have access internet. *"The technological and online literacy especially of older people who are used to the "manual" system of going to the offices*." (Respondent 247, 2021). Similarly, another respondent added *"I think one thing that might hinder this is that the lack of knowledge of most senior citizens in handling or gadgets"* (Respondent *156, 2021).*

Concerns may also evolve as "*Technical problems, slow internet connection, Filipinos who do not understand fully well the purpose of the National ID, elderly Filipinos who fear advancements in technology, Filipinos who refuse to have themselves registered for the National ID because they prefer the traditional way of lining up and filling out forms"* (Respondent 105, 2021).

Lack of Cooperation and Participation of Citizens

41 respondents (18.30%) states that cooperation and participation of the citizens is a vital component for the success of PhilSys ID and may hinder success. One respondent asserts ***"****Whether the antagonistic and pesterers approve the Phil ID System it is their choice! The government is doing the rightful act to facilitate government and private transactions. If they want complicated transactions, then, give them what they deserve." (Respondent 29, 2021)*

Public Awareness

10 respondents (4, 46%) indicated that lack of public awareness hinders the success of PhilSys. Respondents expressed that *"In my opinion, the visible challenges that might hinder the overall possible success of the PhilSys ID implementation are the misconception that Filipinos have about it, being misinformed by some and the slow process we often experience here in the Philippines."* (Respondent 380, 2021)

Another respondent added that *"Letting all the Filipinos know about the Philippine ID system (Publicity and ensuring the transfer of information"* (Respondent 357, 2021). Similarly, another respondent pointed out that there is a *"Lack of proper communication to the public on how to use the PhilSys ID and its benefits for faster government transaction and violation of data privacy"* (Respondent 14, 2021).

Data Protection, Privacy & Security

35 respondents (15.63%) expressed that data protection issues and securing the privacy of citizen's data hamper the success of PhilSys ID system.

One of the respondents had concerns regarding *"Data protection, identify theft, government might use it for red-tagging, infrastructure capable of handling data of 107 million people"* (Respondent 415, 2021).

Another respondent expressed his concern that *"This system would be great but I'm worried about my data privacy. I doubt the Philippine government can protect my personal data. hackers from other countries can easily breach our system."* (Respondent 94, 2021). A similar concern was expressed as *"I think some of the people are afraid of the personal information security. They are afraid that the data will leak and can be hacked by other people to use for fraudulent activity. This will most likely hinder the implementation of the PhilSys ID. As we all know, transparency speaking, some people don't trust the government system due to corruption."* (Respondent 101, 2021).

Trust in Government

6 respondents (2.68%) expressed issues on Trust with the government.

According to one respondent, the *"Overall sentiment of the Filipino people whether the government is trustworthy enough to put PhilSys to good use. "(*Respondent 254, 2021).

They doubt how the government will handle their information, expressing their concern as *"How can we trust that the government will not use to other means besides its purpose" (*Respondent 124, 2021).

Government Transparency

According to 3 respondents (2, 23%), the transparency of the government may hinder success. One respondent expressed concern regarding "*The government's lack of transparency and the public perception of possible mishandling of data and abuse". (*Respondent 264, 2021).

Impacts of COVID-19

Lastly, the current COVID-19 situation, according to 8 respondents (3.57%), is the visible reason that is hindering the implementation of PhilSys ID. The insufficient manpower and service hubs to continue the implementation while battling with the COVID-19 pandemic is slowing down the implementation of the system.

6.5.2 Facilitating factors for successful implementation of PhilSys ID system

As part of the study, the researcher also created an open-ended question to gather citizens perceptions on the factors that drive success for successful implementation of PhilSys ID. In this subsection of the study, the citizens explain the recommendations and facilitating factors that will help the successful implementation or execution of the Philippine Identification System. Out of 654 respondents, 260 of them shared their opinions.

The researcher clustered the responses of the citizens into nine (9) categories. These are: (a) Provide Public Awareness through Information Dissemination, Seminars and Training (b) Ensure Accessibility (c) Proper enforcement of PhilSys Law & Implementation (d) Acquire enough Technical Skills and Consult best practices (e) Good Governance and ensure Transparency (f) Availability of effective IT infrastructure (g)

Secure Privacy and Data Protection (h) Improve Service Features and Functionality (i) Citizens Participation and Cooperation.

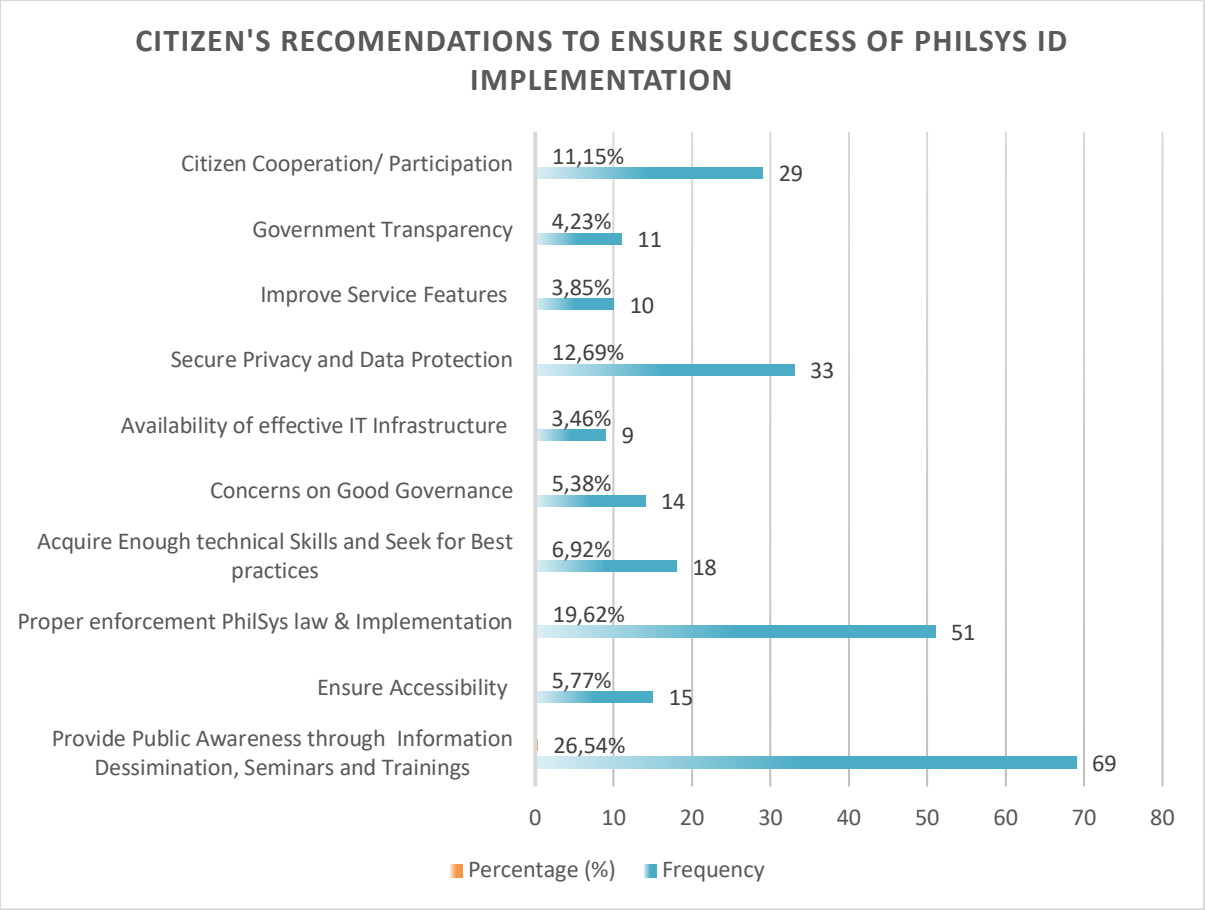


Figure 25: Citizen's recommendation to ensure success of PhilSys ID implementation

Provide Public Awareness through Information Dissemination, Seminars and Training

Among the 260 respondents, 69 (26.54%) recommend that ensuring the success of the National ID implementation will require the government to provide effort for public awareness through information dissemination, seminars and training. They suggested educating more citizens about the National ID and inform the public on its value, use and benefits.

One respondent stated "Educate the people on its benefits and assure them that their identity will not be compromised. Produce IECs in different Philippine languages about the how is and the why is. Ensure that data will not be used to red-tagged people who criticize the Government. Build capacity of individuals assigned to data protection and information technology. Furthermore, pay them liveable wages!" (Respondents 415, 2021).

The Government should also extend an effort to reach those people in remote areas, which should be the priority. One respondent expressed "Please orient all the barangays, including the Geographically Isolated and Disadvantaged Areas (GIDA) and far-flung areas Involve all the possible means to include all the disadvantaged, vulnerable and indigenous people. Coordinate with interagency and advisory councils. Try to reach our armed forces to assist you in disseminating the information and processes. Make sure that no one is left behind." (Respondents 412, 2021).

Ensure Accessibility

Among the respondents, 14 (5.38%) suggest ensuring that every qualified citizen gets access to the PhilSys system and everyone will receive their ID.

Proper enforcement of PhilSys Law & Implementation

51 respondents (19.62%) suggest maximizing the functions of Local Government Units (LGU) to ensure proper use of the PhilSys ID. Facilitate a bottom-up approach to implement the electronic services and provide requirements in each LGUs. Make sure to have a centralized and accurate database based purely on house-house procedure (e.g., Listahanan or 4Ps) as it might have inaccuracy and false information. Respondents also suggest investing in proper machinery to cater to the needs for the production of the IDs and provide people with the necessary information about the ID.

One of the respondents suggests to "include in the Information, Education, and Communication (IEC), the end-to-end process of the PhilSys ID; who can benefit, what are the transactions, how will the data be handled and, how can the individual come forward if he/she feels his/her data is being wrongfully used. This info may be out there already. Nevertheless, I consider myself to be a fairly informed individual. I work in the PH government and I am surrounded by people who are also up to date on issues and trends. So, if this kind of process is still not very clear to me, then there is a huge gap in the IEC of the implementation." (Respondent 22, 2021).

Acquire enough Technical Skills and Consult best practices

Among the 260 respondents, 18 respondents (16.92%) suggest the improvement of the IT system in the Philippines and the employment leaders with competent technological skills to handle the Philsys Implementation as critical components to the success of the PhilSys Implementation. Therefore, the citizens recommend employing trustworthy officials and consulting with experts with proper knowledge of implementing similar systems.

One of the respondents recommends to "Hire IT experts such as legit Project Managers, Database Administrators, Break-fix team and more. We can avoid all the hassle if we have technically competent people orchestrating this initiative." (Respondent 404, 2021). Another respondent came up with the suggestions to "Hire advisor from the most advanced country in ID card system like Singapore or Estonia". (Respondent 26, 2021).

Good Governance and ensure Transparency

Among the 260 respondents, 14 respondents (5.38%) recommend that to ensure PhilSys Implementation's success, the government should be transparent and possess good governance. The government should ensure that the citizen's identification data will be used only for the facilitated transactions. The privacy of the citizens must be well respected at all costs.

Availability of effective IT infrastructure

Among the 260 respondents, 9 respondents (3.46%) suggest ensuring the proper connectivity of internet connection to perform PhilSys related transactions properly and quicker. It is mentioned that there are still many places in the country that do not have a phone signal and internet connection. As mentioned by one respondent, "the government should also invest in long-term infrastructure for consistent implementation" (Respondent 373, 2021).

Secure Privacy and Data Protection

Among the 260 respondents, 33 respondents (12.69%) suggest increasing security and safeguarding the data as there was a previous experience of a data breach in Comelec. One respondent suggests to "Ensure proper safeguarding and private information and imprints collected from the populace so that it will not be used for fraudulent transactions" (Respondent 196, 2021). Furthermore, it is recommended that the government should ensure that PhilSys will be secure and the public data will not be given nor open by unauthorized personnel. Government should further ensure the public that this system will not pose a risk but rather will serve to make citizen's life easier.

Improve Service Features and Functionality

Among the 260 respondents, 10 respondents (3.85%) suggests that besides ensuring the security features of the PhilSys ID, more service features and functions can be added to the PhilSys ID system.

One suggestion was to "Make 100% online, including registration, instead of physical ID, electronic ID should suffice. Printing of IDs is a waste of resources and public funds." (Respondents 41, 2021). Another recommendation was "the registration of sim cards to prevent scams. Some people nowadays are using their mobile transaction to do fraudulent activities. If getting a sim card requires the collaboration of the National ID, then tracing the fraudulent activity would be very easy. It is also important to make the National ID physically unique to avoid tampering." (Respondents 101, 2021).

Citizens Participation and Cooperation

Among the 260 respondents, 29 respondents (11.15%) emphasized that people's participation, discipline, cooperation and optimism play a vital role in the success of the PhilSys ID. Citizens must follow the rules and regulation about the Philsys Law. It is encouraged that everyone helps each other to get informed and share the knowledge on the importance of the new law of the Philippine Identification System. As one respondent mentions "Every citizen must work together with others so that the PhilSys ID can be implemented on time. This will also help to speed up the transactions in every branch of government." (Respondent 476, 2021).

7 Discussion

This chapter seeks to construct meaningful relationships and correlations on the descriptive data presented in the results and analysis chapter. Moreover, it will also summarize the findings and answer the research questions and hypothesis of the study as explained in Chapter One and Chapter Three of this thesis report.

The primary objective of this study was to conduct an evaluation specifically on the perception of the Filipino citizens towards the Philippine Identification System (PhilSys). Understanding the citizens' perception of PhilSys' ease of use and usefulness leads to their attitude for actual usage of the PhilSys ID through the lens of TAM (Davis, 1989). Moreover, this study also investigated the citizen's opinions on facilitating and hindering factors that ensure PhilSys ID's success.

Results indicate that the demographic data of the respondents revealed important practical implications and limitations of the study. The majority of the respondents in the online survey (76%) represents citizens from Luzon Island and only minimal respondents were from Visayas and Mindanao islands. This may be interpreted as factors such as language barrier, accessibility on internet connections and active citizen participation may be limited in the later islands. These are important factors to consider in the implementation of PhilSys ID as they may impact the successful implementation and adoption of the national ID. Moreover, most of the respondents have attained university level of education (70.18% respondents) and is considered to have sufficient knowledge and accessibility to electronic gadgets and media.

There is a significant representation of females (64%) in the survey, which is not surprising in the country's context as it is considered one of the leading countries in gender equality in the Asian region (Schwab et al., 2019). Gender is an important factor to consider in the PhilSys electronic services as gender rights and public services are intertwined. Additionally, it is important to note that this finding also shows minimal participation from the senior citizens, which is only 3% of the total surveyed population. This study may assume that the older generations have less access to online media and electronic gadgets and may be one of the obstacles that must be considered for the full implementation of the PhilSys ID.

The first research question that this research aimed to explore was:

How does the usefulness & ease of use of the Philippine Identification System (PhilSys) influence the attitudes of Filipino citizens to actually use the ID System?

The findings show that there is a moderate correlation between PU and ATU of the PhilSys ID. These findings are similar to the earlier studies on determining the relationship between PU and ATU (Ali & Anwar, 2021; Backhouse & Halperin, n.d.; Davis, 1989) and speed as an important component of usefulness (Tsap et al., 2020). However, this study is different based on its context and added determinant factor such as cost-saving and perceived improved quality to measure usefulness. In this study, to understand the usefulness of the Identification System, we measure the service efficiency, the cost and the effectiveness of improving the quality of government to citizen communication. Thus the first hypothesis was proposed as:

H1. **Overarching Hypothesis of H1a-H1c:** Perceived usefulness (PU) in relation to determinant variables (perceived cost-saving, timesaving and effectiveness) has a positive effect on Attitudes towards Use (ATU) of the PhilSys Identification System (PhilSys) *

H1a: A perceived cost-saving service (CS) has a positive effect on the Attitudes towards Use (ATU) of the PhilSys Identification System (PhilSys).

H1b: A perceived Time Saving (TS) PhilSys service has a positive effect on the Attitudes towards Use (ATU) of the PhilSys Identification System (PhilSys).

H1c: A perceived Improved Quality (IQ) of PhilSys service has a positive effect on the Attitudes Towards Use (ATU) of the PhilSys Identification System (PhilSys).

Findings show that the citizens perceived the PhilSys ID would be useful to speed up government and private transactions (79.67% positive responses), it will help in reducing cost (72.17% positive responses) and improve the quality (76% positive responses). In line with the hypothesis, as PU is one of the determinant variables of ATU of PhilSys ID, the study concludes that this finding supports hypothesis H1 (H1a-H1c) and has overall moderate correlations on each determinant.

The results of the study also show that there is a strong correlation between Trust and Attitudes towards using the PhilSys ID. This supports earlier studies (Chauhan & Kaushik, 2016) that Trust is an important variable of PU. Moreover, other similar studies also investigate trust as an important component of e-services usefulness (Adjei, 2013; Backhouse & Halperin, n.d.; Bhuvana & Vasantha, 2021) which also supports the findings. This research is unique from the earlier mentioned study because it determines the factors that affect trust is nearly related to major concerns of the Philippine case. Moreover, Trust is measured in relation to factors that affect public acceptance: awareness, transparency, privacy and security (Adjei, 2013; Alkhalifah & Al Amro, 2017; Bhuvana & Vasantha, 2021, 2021; Tsap et al., 2020). Therefore the following second hypothesis was proposed:

H2. **Overarching Hypothesis of H2a-H2c:** TRUST (T) in relation to determinant variables (public awareness, government transparency, privacy and security) has a positive effect on the Attitudes towards Use (TU) of the PhilSys Identification System (PhilSys).

H2a: Awareness (AW) on PhilSyis ID has a positive effect on TRUST PhilSys Identification System (PhilSys).

H2b: Transparency in administering PhilSyis ID has a positive effect on TRUST in the PhilSys Identification System (PhilSys).

H2c: Security & Privacy (SP) of PhilSys service has a positive effect on TRUST to use PhilSys Identification System (PhilSys).

In this study, findings show that there is a strong correlation between Trust and Public Awareness (0.86**). Moreover, findings also show that the citizens have a sufficient awareness (74.7% positive responses) on

the usage and specifications of PhilSys ID and that only have of the surveyed population (55.5%) believe that the government has sufficient effort to inform the citizens about the ID system. Moreover, findings show that (60.09% positive responses) there is a moderate correlation between Trust and Transparency (0.65**). Findings also reveal that citizens (60.09% positive responses) moderately trust the government transparency in governing the PhilSys, including the handling of citizen's personal data. Furthermore, there is a moderate correlation between Trust and Privacy, and Security (0.63**). Findings reveal that citizens (60.09% positive responses) moderately trust the government in ensuring their privacy & security in terms of handling their personal data. In line with the hypothesis, as Trust is one of the determinant variables of ATU of PhilSys ID, the study, therefore, concludes that this finding supports Hypothesis 2 (H2a-H2c) and has overall strong-moderate correlations on each determinant.

The third and the fourth hypothesis proposed by the research were:

> **H3:** Perceived ease of Use (PEU) in correlation with variable (technical skills & training) has a positive effect on Usefulness (PU) of PhilSys Identification System (PhilSys).
>
> **H4:** Perceived Ease of Use (PEU) has a positive effect on Attitudes Towards Using (ATU) the PhilSys Identification System (PhilSys).

The results of the study have shown that there is a moderate correlation between PEU and PU of the PhilSys ID (0.60**) and also a moderate correlation between PEU and ATU (0.53**). The variable assessed in this study to understand PEU is the technical skills and training that citizens acquire to use the PhilSys ID in an online platform and based on the survey, citizens perceive positive responses (80.58%) that the PhilSys related e-services is easy to use. Moreover, 73.85% of the citizens have the favourable opinion that PhilSys is an innovative effort from the government to improve the delivery of public services. Inlined with the hypothesis, as PEU to PU and ATU has overall moderate correlations and therefore, supported the following hypothesis.

The fifth and the final hypothesis of the research was:

> **H5:** Attitudes towards using (ATU) in correlation has a positive effect on behavioural intention to use (BIU) PhilSys Identification System (PhilSys).

The results of the study also shown that there is a moderate correlation between ATU and BIU of the PhilSys ID (0.64**). Citizens displayed a positive behaviour (84.25% positive response) on their intention to use the PhilSys ID to perform G2C and B2C transactions. It was also found that the PhilSys ID will open a wide range of government services online (76.76% positive response). In line with the study, the final hypothesis is, therefore, supported.

As earlier mentioned, this study also aims to solve the second research question, which is as follows:

What are the facilitating and hindering factors towards successful implementation of PhilSys ID based on citizen's perspective?

The first part is in regard to the hindering factors of the successful implementation of PhilSys ID. Based on the findings, the researcher identified 10 patterns in the citizens' responses and developed categories to provide the overall scope of their responses. These are; (a) Corruption and Bad Governance and Misuse of the System (8.04% of respondents); (b) Ineffective Implementation of PhilSys ID (14,73 % of respondents); (c) Lack of IT Skills of Public Officials and Availability of Secure IT Infrastructure (15,63 % of the respondents); (d) Lack of Internet literacy, accessibility to internet and technology and efforts of the government to inform the citizen (26, 34%); (e) Lack of Cooperation and Participation of Citizens (18,30%); (f) Public Awareness (4, 46%); (g) Data Protection, Privacy & Security (15, 63%); (h) Trust in Government (2, 68%); (i) Government Transparency (2, 23%) (j) Impacts of COVID-19 (3, 57%).

The last part of the discussion is regarding identified patterns of facilitating factors towards the success of PhilSys ID. Based on the responses, citizens suggested nine (9) collective categories, which includes: (a) Provide Public Awareness through Information Dissemination, Seminars and Training (26,54%); b. Ensure Accessibility (5,38%) (c) Proper enforcement of PhilSys Law & Implementation (19,62%); (d) Acquire enough Technical Skills and Consult best practices (16,92%); (e) Ensure Good Governance and Government Transparency (5,38%); (f) Availability of effective IT infrastructure (3,46%); (g) Secure Privacy and Data Protection (12,69%); (h) Improve Service Features and Functionality (3,85%); (i) Citizens Participation and Cooperation (11,15%).

Summary of Hypotheses	Correlation	Null Hypothesis	Supported
Perceived usefulness			
H1. Overarching Hypothesis of H1a-H1c: Perceived usefulness (PU) in relation with determinant variables (perceived cost-saving, timesaving and effectiveness) has a positive effect on Attitudes towards Use (ATU) of the PhilSys Identification System (PhilSys) *		No	Yes
H1a: A perceived cost-saving service (CS) has a positive effect on the Attitudes towards Use (TU) PhilSys Identification System (PhilSys	0.5973923	No	Yes
H1b: A perceived time-saving (TS) PhilSys service has a positive effect on the Attitudes towards Use (TU) PhilSys Identification System (PhilSys)	0.5326284	No	Yes
H1c: A perceived improved quality (IQ) of PhilSys service has a positive effect on the Attitudes towards Use (TU) PhilSys Identification System (PhilSys)	0.5775859	No	Yes
Trust			
H2. Overarching Hypothesis of H2a-H2c: TRUST (T) in relation with determinant variables (public awareness, government transparency, privacy and security) has a positive effect on the Attitudes towards Use (TU) of the PhilSys Identification System (PhilSys)		No	Yes
H2a: Awareness (AW) on PhilSyis ID has a positive effect on TRUST PhilSys Identification System (PhilSys)	0.8625509	No	Yes
H2b: Transparency on administering PhilSyis ID has a positive effect on TRUST in the PhilSys Identification System (PhilSys)	0.6392054	No	Yes
H2c: Security & Privacy (SP) of PhilSys service has a positive effect on TRUST to use PhilSys Identification System (PhilSys)	0.6528	No	Yes
Perceived Ease of Use			
H3: Perceived ease of Use (PEU) has a positive effect on Usefulness (PU) of PhilSys Identification System (PhilSys)	0.609873	No	Yes
H4: Perceived ease of Use (PEU) has a positive effect on Attitudes Towards Using (ATU) the PhilSys Identification System (PhilSys).	0.5377265	No	Yes
Attitude Towards Using			
H5: Attitudes towards using (ATU) in correlation has a positive effect on behavioural intention to use (BIU) PhilSys Identification System (PhilSys)	0.6409867	No	Yes

Table 4: Summary on result of hypothesis

8 Conclusion

The primary objective of this study was to conduct an evaluation specifically from the perception of the Filipino Citizens towards the Philippine Identification System (PhilSys) through the lens of the Technology Acceptance Model (TAM). This study used a web-based questionnaire and gathered a total of 654 sample population. Then the findings were evaluated using Spearman's correlation for testing the proposed hypothesis. Furthermore, based on citizens perspective, this study also developed collective patterns of facilitating and hindering factors from ensuring the successful implementation of PhilSys ID.

The usefulness and ease of using the Philippine Identification System (PhilSys) moderately influence the Filipino citizen's intention to use the ID System. The Perceived Usefulness of the PhilSys ID is moderately correlated with efficiency, cost-saving, and perceived improvement regarding government-citizen interactions. The Perceived Ease of Use then correlated with the technological skills and training that the citizens possess or acquire. It is essential to note here that the factors related to trust in the government in administering the PhilSys play a more important role in comparison to the usefulness and ease of use of the system. More importantly, there is a strong-moderate correlation in trusting the Philippine ID system in correlations with public awareness, transparency and concerns related to privacy and security.

The citizens made several important recommendations to implement the PhilSys ID successfully. Interestingly, the majority of responses further validate the correlations derived from the Spearman statistical strategy. To ensure the success of the PhilSys implementation, the citizens urge that the government starts with an awareness campaign and other forms of information dissemination such as seminars, training, and workshops. It is to educate the public about the advantages and use of the PhilSys and prioritise more citizens that reside in off-the-grid locations. The second recommendation is to ensure that the law, rules, and guidelines for PhilSys are effectively enforced. Citizens also observed that the government is lagging when it comes to the implementation of the PhilSys. Additionally, citizens propose to seek technical experts and consult the best practices of digitally advanced nations like Singapore and Estonia for guidance, especially in implementing the mational ID. The fourth recommendation is about ensuring the protection of citizens' data and ensuring the security of that data. Fifth, citizens are encouraged to practise cooperation and participation when dealing with the Philsys Law. Lastly, it necessary to provide a stable internet connection first before putting up the services to ensure smooth operation of the system. A further suggestion is related to streamlining services online and ensure the authentication procedure of the ID.

Based on the collective view of the citizens, a number of potential hindrances stand in the way of a successful PhilSys implementation. Public awareness is the most important factor in PhilSys ID's success. The ability to connect to the internet, especially in rural regions, and the technical proficiency of the users, are seen as potential issues. Uncooperative citizens are another factor that may cause setbacks to the implementation of PhilSys. The third is the technical competence of the PhilSys administrators to operate a secure IT infrastructure. And lastly, the respondents suggested that issues related to corruption, government transparency, information misuse, data protection, privacy, and security can be challenges that might impede the PhilSys ID from being implemented successfully.

8.1 Limitations and further research

The findings of this study provide a basis for further research on the Philippine Identification System. One of the aims of TAM is to evaluate the attitudes and behavioural intention of the users to use the technology (Davis, 1989). The literature review of this study provides the basis for best practices identification system and the use of TAM in different electronic services in the public sector. Further qualitative study is suggested based on the study results, such as acceptance or adoption of PhilSys based on Filipino citizens' age, gender, and demographic location. The findings of the study also show a very low representation of the older community in the survey, and it may be necessary to investigate why. Moreover, a thorough case study related to the impact of identified hindering and facilitating factors may be investigated, such as public awareness, government transparency, privacy and security, technical skills and training of public administrators, PhilSys IT infrastructure and more. This study can also be a basis for the further consideration of legal acts and practical implementation of the Philippine Identification System, more specifically the e-services that later may be attached to it.

One limitation of this study is that the data collection strategy mainly gathered citizens who have access to the internet (e.g. social media). This strategy was adopted mainly because of the COVID-19 pandemic that restricts face to face interactions with the people. Moreover, besides the concern on internet accessibility for citizens to participate in the survey, the online survey was conducted in only the two primary national languages of the country; Filipino and Tagalog. This may also explain that the higher representation came from Luzon Island compared to other major islands like Visayas and Mindanao. It is essential to note that the country has more than 170 dialects, and the survey must have been off-limits limitations for those who wanted to participate but do not speak either of the mentioned languages. Therefore further research using a majority of languages and dialects is suggested. Lastly, as the Philippine Identification System is a recent initiative in the Philippines, there is a significant limitation in existing published research. In this study, the central information related to the ID relies on the policy documents, government websites, media news, reports and published implementation plans to present the fact. Further researches may also encounter similar limitation.

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Appendix

A. English Version of Survey Form

An Evaluative Study on the citizen's perception towards the Philippine Identification System through the lens of Technology Acceptance Model

Thank you for agreeing to take part in this survey and for sharing your opinions on the Philippine Identification System (PhilSys). This survey should take 5 minutes to complete. Be assured that all answers you provide will be kept in the strictest confidentiality.

In August 2018, President Rodrigo Roa Duterte signed Republic Act No. 11055, an "Act Establishing the Philippine Identification System" (PhilSys). This act serves as the government's primary foundation for identity management in the Philippines to create a centralized nationally recognized identity database system, and physical or virtual card for all Filipino citizens and resident aliens. This act is intended to simplify public and private transactions such as: applying for social welfare and benefits, and services offered by the GSIS, SSS, PhilHealth, and Pag-Ibig; applying for passports and driver's licenses; tax-related transactions; opening bank accounts; verifying criminal records and clearances; and other transactions defined in the implementing rules and regulations of RA 11055.

This study aims to collect citizen's perception of the PhilSys ID and provide citizen-centric recommendations to the government for future e-services of PhilSys ID in the context and culture of the Philippines.

Name: (Optional) _____**Age:** _____

Email Address: (Optional)_____**Regional Address**:_____ __

Gender: ☐ Femal ☐ Male ☐ LGBTQI+ ☐ Preferred not to say

Employment Status: ☐ Employed ☐ Not Employed ☐ Student ☐ Retired Citizen

Educational Attainment: ☐ No Formal Education
☐ High School
☐ College/University Level
☐ Vocational Training
☐ Masters
☐ Doctorate/PhD

	Check (√) the column for your answer. Answering Option: 1= Strongly Disagree | 2= Disagree | 3= Neutral | 4= Agree | 5= Strongly Agree	**1**	**2**	**3**	**4**	**5**
1	I believe that the Philippine government has given reasonable effort to educate the public about the implementation of the National Identification Card and the benefits it intends to provide to the citizen					
2	I know that the PhilSys ID will be a unique identification system to perform online transactions between the government and citizens, therefore, the government will collect, process and share my personal data for that purpose					
3	I intend to use PhilSys ID to perform government-related and private transactions (e.g. DSWD benefits, PhilHealth, Pag-Ibig, NBI clearance and other identification purposes).					

4	The PhilSys ID will open opportunities to access a wide variety of government services online, therefore I would feel comfortable using them using my laptop or my mobile.					
5	I trust the government facilitating the PhilSys ID System to ensure my right to privacy and protect my personal details from unauthorized use.					
6	I trust the government's transparency in handling my personal data by keeping me informed about what data is being used and who collected it					
7	PhilSys ID will be useful to speed up the process of obtaining government services, expedite bureaucratic procedures, and reduce the time people spend in lining up to acquire service					
8	PhilSys ID will be useful to lower service fee and transportation expense when claiming services to government offices.					
9	9. PhilSys ID will be useful to improve quality government-citizen communication in service delivery.					
10	10. I believe that the online environment of the PhylSys ID Systems will have a positive effect to facilitate the transactions with the Government					
11	11. I believe that I have the skills and abilities to use an online environment to manage the new ID System for government transactions					
12	12. I have a favourable opinion of PhilSys ID as it is a progressive effort by the Philippine government to improve the quality of service delivery.					
13	13. I believe that biometric data (e.g. fingerprint, iris and face recognition) is essential to be stored in my PhilSys ID.					
14	14. I am confident that the government has sufficient capability, technical skills and infrastructure to ensure the successful implementation of PhilSys ID.					

15. When accessing services in means of authentication in the PhilSys ID, which authentication procedure do you prefer:

____ I prefer to use PhilSys ID Number.
____ Username and password
____ Phone number and email address
____ A combination of the previous options.
____ I prefer to go to government offices and ask for assistance from officials.
____ Other Alternative Methods.

16. In your opinion, what are the visible challenges that might hinder the overall possible success of the PhilSys ID implementation? (Optional)

17. What would be your recommendations to ensure the success of the National ID implementation? (Optional)

B. Tagalog Version of the Survey Form

Isang Masusing Pag-aaral sa pananaw ng mamamayan tungo sa Philippine Identification System (PhilSys) sa pamamagitan ng lens ng Technology Acceptance Model (TAM)

Salamat sa pagsang-ayon na makilahok sa survey na ito at sa pagbabahagi ng iyong mga opinyon sa Philippine Identification System (PhilSys). Ang survey na ito ay tataagal ng limang (5) minuto upang makumpleto. Makatitiyak na ang inyong personal na sagot na iyong ibibigay ay pangangalagaan at itatago sa mahigpit at kompidensiyal.

Noong Agosto 2018, nilagdaan ni Pangulong Rodrigo Roa Duterte ang Republika Batas No. 11055, "Batas na Nagtatag ng Sistema ng Pagkakakilanlan ng Pilipinas" (PhilSys). Ang batas na ito ay nagsisilbing pangunahing pundasyon ng pamahalaan para sa pamamahala ng identification system sa Pilipinas upang lumikha ng sentralisadong sistema at database na may pisikal or virtual ID card para sa lahat ng ng mga Pilipino at residenteng dayuhan. Ang batas na ito ay inilaan upang gawing simple ang publiko at pribadong mga transaksyon tulad ng: pag-apply para sa kapakanan at mga benepisyo sa lipunan, at mga serbisyong inaalok ng GSIS, SSS, PhilHealth, at Pag-Ibig; pag-apply para sa mga passport at lisensya sa pagmamaneho; mga transaksyong nauugnay sa buwis; pagbubukas ng mga bank account; pag-verify ng mga talaan ng kriminal at clearances; at iba pang mga transaksyon na tinukoy sa pagpapatupad ng mga patakaran at regulasyon (IRR) ng RA 11055.

Nilalayon ng pag-aaral na ito na kolektahin ang pang-unawa ng mamamayan sa PhilSys ID at magbigay ng mga rekomendasyong sa gobyerno na nakasentro sa mamamayan para sa hinaharap na eletronikong serbisyo kaugnay sa PhilSys ID na nakaayon sa konteksto at kultura ng Pilipinas.

Pangalan: (Opsyonal) _____**Ano ang edad mo:** _____

Email Address: (Opsyonal)_____**Saang rehiyon ka nagmula?**_____

Kasarian: ☐ Babae ☐ Lalak ☐ LGBTQI+ ☐ Mas gusting hindi sabihin

Katayuan sa Trabaho: ☐ Nagtatrabaho ☐ Hindi nagtatrabaho ☐ Estudyante ☐ Retiradong Mamamayan

Lebel ng edukasyon: ☐ Walang pormal na edukasyon
☐ High School
☐ College
☐ Vocational Training
☐ Masters
☐ Doctorate/PhD

	Lagyan ng Check (√) ang column ng inyong sagot **Opsyon na sagot:** **1** = Lubos na hindi Sumasang-ayon | **2** = Hindi Sumasang-ayon |**3** = Walang kinikilingan | **4** = Sang-ayon | **5** = Lubos na Sumasang-ayon	**1**	**2**	**3**	**4**	**5**
1	Naniniwala ako na ang gobyerno ng Pilipinas ay nagbigay ng makatuwirang pagsisikap upang turuan ang publiko tungkol sa pagpapatupad ng National Identification Card at ipaalam ang mga benepisyo napapaloob dito para sa mamamayan.					
2	Alam ko na ang PhilSys ID ay magiging isang natatanging sistema ng pagkakakilanlan upang magsagawa ng mga online na transaksyon sa pagitan ng gobyerno at mga mamamayan. Samakatuwid, kokolektahin, iproseso at ibabahagi ng gobyerno ang aking personal na data patugon sa sa hangaring iyon.					
3	Nilalayon kong gamitin ang PhilSys ID sa mga transakyon kaugnay sa pampubliko at pribadong ahensya (hal. Mga benepisyo ng DSWD,					

	PhilHealth, Pag-Ibig, NBI clearance at iba pang mga layunin sa pagkilala).					
4	Magbubukas ang PhilSys ID ng mga pagkakataon upang ma-access ang iba't ibang mga serbisyo ng gobyerno sa online, samakatuwid magiging komportable ako sa paggamit sa dito gamit ang aking laptop o mobile.					
5	Tiwala ako sa gobyerno na pinapabilis ang PhilSys ID System upang matiyak ang aking karapatan sa privacy at protektahan ang aking personal na mga detalye mula sa hindi awtorisadong paggamit.					
6	Nagtitiwala ako sa transparency ng pamahalaan sa paghawak ng aking personal na data sa pamamagitan ng pagpapanatili sa akin ng kaalaman tungkol sa kung anong data ang ginagamit at kung sino ang nagkolekta nito					
7	Ang PhilSys ID ay magiging kapaki-pakinabang upang mapabilis ang proseso ng pagkuha ng mga serbisyo ng gobyerno, mapabilis ang mga pamamaraang burukratiko, at mabawasan ang oras na ginugugol ng mga tao sa paglinya upang makakuha ng serbisyo					
8	Ang PhilSys ID ay magiging kapaki-pakinabang upang babaan ang bayad sa serbisyo at gastos sa transportasyon kapag nag-claim ng mga serbisyo sa mga tanggapan ng gobyerno.					
9	Ang PhilSys ID ay magiging kapaki-pakinabang upang mapabuti ang kalidad ng komunikasyon ng gobyern at mamamayan sa paghahatid ng serbisyo.					
10	Naniniwala ako na ang online-environment ng PhilSys ID Systems ay magkakaroon ng positibong epekto upang mapadali ang mga transaksyon sa Gobyerno.					
11	Naniniwala ako na mayroon akong mga kasanayan at kakayahan sa onlin-environmentupang magamit ang bagong ID System para sa mga transaksyon ng gobyerno sa onlin-environment.					
12	Mayroon akong kanais-nais na opinyon ng PhilSys ID dahil ito ay isang progresibong pagsisikap ng gobyerno ng Pilipinas na mapabuti ang kalidad ng paghahatid ng serbisyo.					
13	Naniniwala ako na ang biometric data (hal. Fingerprint, iris at face recognition) ay mahalagang detalye na i-store sa aking PhilSys ID.					
14	Tiwala ako na ang gobyerno ay may sapat na kakayahan, teknikal na kasanayan at imprastraktura upang matiyak ang matagumpay na pagpapatupad ng PhilSys ID.					

Kapag nag-a-access ng mga serbisyo sa paraan ng pagpapatotoo (authetication) sa PhilSys ID, aling mga pamamaraan ang gusto mo:

_____Mas gusto kong gumamit ng PhilSys ID Number.
_____Username at password
_____Numero ng telepono at email address
_____Isang kumbinasyon ng mga nakaraang pagpipilian.
_____Mas gusto kong pumunta sa mga tanggapan ng gobyerno at humingi ng tulong mula sa mga opisyal.
_____Iba Pang Mga Alternatibong Paraan

16. Sa iyong palagay, ano ang mga nakikitang hamon na maaaring makahadlang sa pangkalahatang posibleng tagumpay ng pagpapatupad ng PhilSys ID? (Opsyonal)

17. Ano ang iyong mga rekomendasyon upang matiyak ang tagumpay ng pagpapatupad ng PhilSys ID? (Opsyonal)

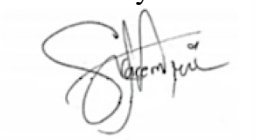
C. R Code to find correlation coefficient of PhilSys' study variables

```
phylsysSurveyData <- read.csv("../Viven/Thesis-Survey-DATA-Clean.csv", header = TRUE)

h1a <- cor.test(phylsysSurveyData$Q7, phylsysSurveyData$Q4, method = "spearman")
# S = 18683980, p-value < 2.2e-16
# alternative hypothesis: true rho is not equal to 0
# sample estimates:
#   rho
# 0.5973923

h1b <- cor.test(phylsysSurveyData$Q8, phylsysSurveyData$Q4, method = "spearman")
# S = 21789300, p-value < 2.2e-16
# alternative hypothesis: true rho is not equal to 0
# sample estimates:
#   rho
# 0.5326284

h1c <- cor.test(phylsysSurveyData$Q9, phylsysSurveyData$Q4, method = "spearman")
# S = 19693340, p-value < 2.2e-16
# alternative hypothesis: true rho is not equal to 0
# sample estimates:
#  rho
# 0.5775859

h2a <- cor.test(phylsysSurveyData$Q5, phylsysSurveyData$Q6, method = "spearman")
# S = 6408006, p-value < 2.2e-16
# alternative hypothesis: true rho is not equal to 0
# sample estimates:
#  rho
# 0.8625509

h2b <- cor.test(phylsysSurveyData$Q6, phylsysSurveyData$Q1, method = "spearman")
# S = 16820580, p-value < 2.2e-16
# alternative hypothesis: true rho is not equal to 0
# sample estimates:
#   rho
# 0.6392054

h2c <- cor.test(phylsysSurveyData$Q5, phylsysSurveyData$Q1, method = "spearman")
# S = 16186786, p-value < 2.2e-16
# alternative hypothesis: true rho is not equal to 0
# sample estimates:
#   rho
# 0.6528

h3 <- cor.test(phylsysSurveyData$Q11, phylsysSurveyData$Q9, method = "spearman")
# S = 18188087, p-value < 2.2e-16
# alternative hypothesis: true rho is not equal to 0
# sample estimates:
#   rho
# 0.609873

h4 <- cor.test(phylsysSurveyData$Q11, phylsysSurveyData$Q4, method = "spearman")
# S = 21551624, p-value < 2.2e-16
# alternative hypothesis: true rho is not equal to 0
# sample estimates:
#   rho
# 0.5377265

h5 <- cor.test(phylsysSurveyData$Q4, phylsysSurveyData$Q3, method = "spearman")
# S = 16737536, p-value < 2.2e-16
# alternative hypothesis: true rho is not equal to 0
# sample estimates:
#   rho
# 0.6409867
```

Declaration of Authorship

I hereby declare that, to the best of my knowledge and belief, this Master Thesis titled **"**An Evaluative Study on the citizen's perception towards the Philippine Identification System through the lens of Technology Acceptance Model" is my own work. I confirm that each significant contribution to and quotation in this thesis that originates from the work or works of others is indicated by proper use of citation and references.

Tallinn, Estonia
31st May 2021



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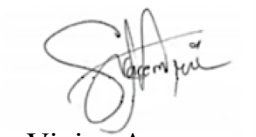

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