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Exploring Italian citizens' willingness to use the digital identity for healthcare purposes: A vignette survey experiment approach

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Exploring Italian citizens' willingness to use the digital identity for healthcare purposes

A vignette survey experiment approach

**Master Thesis – Master of Science in Public Administration (Economics &
Governance Track)**



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Preface

This master thesis is intellectual property of the author who is responsible for all its contents. Leiden University is only accountable for the educational coaching, and it cannot be held liable for the material presented in this research paper.

Acknowledgements

This master thesis is the culmination of a long journey of research, exploration, and discovery. Throughout this path, I have been guided by my passion for data-driven policymaking as well as by my desire to contribute to the existing body of knowledge in the artificial intelligence field. This thesis is the result of my efforts to gain a deeper understanding of the digital identity perceptions of citizens living in my homeland, Italy, and to explore the different theories and approaches that have been developed to assess users' acceptance of technological systems. It is with great hope that this master thesis will not only add to the academic discourses on this subject, but it will also serve as a valuable resource for practitioners and politicians who seek to build policies upon the work presented here.

Finally, I would like to thank my thesis supervisor Dr. Hsini Huang for the expertise and guidance offered during the thesis trajectory. Furthermore, I would like to express my gratitude to my family, boyfriend, and friends for the love they have always provided throughout this past academic year, whose encouragement has been instrumental in finalizing not only this thesis but the entire master. A special recognition also to those who participated in the vignette survey experiment dedicating time to fill the questionnaire; they have all provided the necessary data that made this study possible.

Abstract

Italy is currently undergoing a significant demographic shift characterized by a rapidly aging population. Due to age-related health concerns that require frequent medical attention and monitoring, there is a growing demand for outpatient visits and medical prescriptions. This coincides with a decline in the number of available physicians that can cater the increased demand for healthcare services. To alleviate strains on medical facilities and enhance the quality of care, SPID (Sistema Pubblico di Identita' Digitale), the Italian government-provided digital identity, is seen as a valuable solution for those services that do not necessarily require in-person visits to healthcare facilities. When using SPID, patients can easily book outpatient visits and retrieve e-prescriptions, without the need for physical visits to the doctor, decreasing the burden to the already limited healthcare personnel available. However, the digital identity system appears to not be widely used by Italian citizens to access healthcare services, hindering its potential. To investigate into users' acceptance of SPID and to identify potential barriers to its adoption that can inform policymakers on improvements to be made, this master thesis employed the notable Technology Acceptance Model (TAM) as a framework. By conducting a vignette survey experiment, data were collected and subsequently analysed using multiple linear regressions to evaluate the various hypotheses proposed in the TAM framework. The data retrieved from the survey revealed compelling evidence that perceived ease of use, perceived usefulness, and behavioural intentions towards SPID significantly influence citizens' willingness to use the digital identity for accessing outpatient services and e-prescriptions.

Keywords: citizens, digital identity, e-prescriptions, healthcare, Italy, outpatient services, policymakers, SPID, TAM, users, vignette survey experiment

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Abbreviations

AgID: Agenzia per l'Identita' Digitale

e-IDAS: Italian Electronic Identification and Trust Services

e-prescriptions: electronic prescriptions

EU: European Union

i.e.: id est

PNRR: National Recovery and Resilience Plan

SPID: Sistema Pubblico di Identita' Digitale

TAM: Technology Acceptance Model

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Chapter 1: Introduction

Governments worldwide have increasingly embraced emerging communication technologies to enhance the delivery of public services. To achieve this objective, they have embarked on various programmes aimed at digitalizing their administrative processes (Van Kersbergen & Vis, 2022). Among these initiatives, the implementation of digital identity systems stands out as a noteworthy endeavour. These systems empower citizens with the ability to conveniently access public administration services from their households (Sullivan, 2018). Through a simple login process and with just a few credentials, individuals can avail themselves of services such as applying for permits, obtaining official records, and much more without having to physically go to administrative offices (Mir et al., 2020). In line with this trend, the Italian government also adopted a digital identity program called Sistema Pubblico di Identita' Digitale (SPID), through which public administration services are offered online. Among others, Italian citizens can use SPID for booking outpatient visits and obtaining e-prescriptions (AGID, n.d., Camargo, 2021; De Biase, 2021; Dipartimento per la trasformazione digitale, n.d.). SPID has made these processes more convenient and efficient for patients, allowing them to reserve appointments and receive prescriptions remotely, without having to physically visit a healthcare facility. It had made it easier also for healthcare providers to manage their appointments and prescriptions workflows, reducing administrative burdens and freeing up time for those patients who require prompt medical attention, reducing the need for manual data entry, paperwork, and phone calls (Regione del Veneto ULSS 8., n.d.).

Accordingly, SPID plays a crucial role in enhancing access to healthcare services by effectively addressing the increased demand for care in Italy. The country's aging population, which is one of the oldest in Europe, has contributed significantly to the surge in outpatient services and medical prescriptions (Bartoloni, 2022; Ministero della Salute, 2020). As people age, their bodies undergo various changes that lead to declining health and an increase in the need for medical care (Colombier, 2018). This heightened demand has presented significant challenges for the Italian healthcare sector. With more patients seeking attention, the existing shortage of healthcare providers is struggling to manage the workload, resulting in overcrowded clinics and longer waiting times (Bartoloni, 2022). Despite the perceived advantages of SPID to access medical services that do not necessarily require physical contact, its adoption by citizens in the healthcare domain has not been widespread (Perrone, 2022). Only 30% of Italians tend to book their visits online with SPID and several users do not access their medical prescriptions with

SPID because of the perceived complications of using the system (Prosperetti, 2022; Redazione Dire, 2020). Understanding technology acceptance and leveraging digital identity systems like SPID for outpatient services and e-prescriptions becomes paramount as it can help to meet the growing demand for care and the shortage of doctors in Italy. In this realm, citizens' perceptions can provide valuable insights into how the system is being used and how it can be improved to enhance users' experience toward the innovative use of SPID for healthcare in the post-Covid era. By understanding citizens' behaviour toward SPID, areas where improvement is needed can be detected.

In the context of this master thesis, the Technology Acceptance Model (TAM) investigated the acceptance regarding the adoption of SPID for accessing outpatient services and retrieving e-prescriptions. According to TAM, users are primarily influenced by their beliefs about the technology's ease of use and usefulness (Mortenson & Vidgen, 2016). The stronger an individual believes that SPID is easy to use and useful to perform tasks in life, the more likely users are to adopt it for healthcare purposes (Alharbi and Drew, 2014; Bhatiasevi, 2011). The sample of this master thesis refers to Italian citizens living in the Veneto region as the primary end-users of the service in the context of healthcare services. The data have been collected from an innovative vignette survey experiment approach using a positive framing intervention, administered to a group of participants. It is widely acknowledged in academia that positive framing is particularly important when users exhibit resistance because it enables the strategic presentation of information in a way that can overcome objections and shape perceptions (Anteneh et al., 2021; O'Shea et al., 2016). To assess the effectiveness of framing, two short propaganda texts from the Italian government and the Veneto region were presented to a group of participants to determine if they could positively influence their willingness to use SPID for outpatient services and e-prescriptions compared to the group who did not receive any framing treatment. To measure the effect of the framing treatment and the various hypotheses presented in the theoretical framework, it has been executed a statistical analysis employing different multiple linear regressions. Based on these premises, this study aims to answer the following research question:

To what extent do the perceived ease of use and perceived usefulness of SPID influence the behaviour of Italian citizens to a continuous usage of SPID to access outpatient visits and e-prescriptions?

1.1 Societal and academic relevance

Digitalization is currently supported by the Italian government as also expressed in the new National Recovery and Resilience Plan (PNRR), with a 6.1 billion Euro in investments in encouraging the digital transformation toward fostering the implementation of new key e-government projects across the country (European Commission, n.d.). As such, regarding the societal relevance, the findings of this study could feed into the ongoing digital policy initiatives that are currently taking place in Italy. The results of this study can provide politicians, policymakers, and other government officials valuable insights into the various public opinions and discussions surrounding SPID. As the system is not widely used, it becomes paramount to have a better understanding of the factors influencing technology adoption of the digital identity system (Baldassarre, 2022; Prosperetti, 2022). Recognizing users' acceptance is vital for the successful implementation of any technology (Taherdoost, 2019). If users do not accept and barely use a specific digital tool, its potential benefits might not be fully realized. Consequently, having a greater comprehension of users' behaviours can help to detect potential barriers to its adoption to inform relevant stakeholders on where improvements are needed (OECD, 2009). This will serve to make the necessary adjustment to SPID and maximize the benefits of the digital identity system in Italy, meeting the needs and preferences of Italian citizens.

Furthermore, Italy is grappling with a supply-demand mismatch in the healthcare sector due to the aging population and a shortage of healthcare personnel (Bartoloni, 2022; Mistero della Salute, 2020). To mitigate the increased demand for outpatient services and medical prescriptions there is a need to promote a wider adoption of SPID among Italian citizens. A wider adoption of the digital identity in the healthcare domain will not only benefit patients by for example alleviating long waiting lines in the healthcare facilities, but it will also help to reduce the workload on healthcare personnel, minimizing in-person visits and phone calls, allowing doctors to dedicate more time for those who need prompt care (Curioso et al., 2022). Currently, the Italian government is already investing in the digitalization of healthcare services, with encouragements on the use of SPID to cut the red tape for outpatient visits and encourage patients to obtain e-prescriptions (Ministero della Salute, n.d.). However, further efforts are needed to foster SPID's adoption. As a result, the findings of this research could help stakeholders' discussions as Italian policymakers in artificial intelligence are developing, enacting, and assessing policies related to expand the digitalization process in the healthcare sector. As the Italian government is focusing on leveraging digital solutions, understanding the

acceptance of SPID becomes crucial in shaping effective policies for digital identification in the healthcare domain.

Moreover, the increasing significance of the digitalization of services and more precisely digital identity, has captured the interest of the scientific community, yet several aspects in this field still require further investigation. To accrue for this, this master thesis aims to bridge three existing gaps in the academic literature. First, most of the scholarly works on digitalization and technological advancements have been assessed to conduct investigations toward improvements related to digitalization of private sector's services, leaving the public ones somewhat unexplored (Davos, 2022; Hofmann & Ogonek, 2018). Secondly, the limited studies on governmental digital identity have been considered already in countries in which technological advancements are significantly ingrained into the lives of citizens such as Northern European countries like Denmark, Estonia, and Finland (Breugh et al., 2023; Leviakangas, 2016). These studies have then neglected and marginalized Southern European countries like Italy, where the process of government digitalization is still in its infancy. Thirdly, the role of digitalization in the public sector, is not well examined from the perspective of citizens (Gauld et al., 2010; Ma & Zheng, 2019). This leaves the question open on how digital identity is perceived by individuals and whether or in which forms e-government is wanted and is used by citizens. Thus, research is needed to analyse citizens' adoption and the detection of factors that may be hindering a digital identity's uptake as in the case of the Italian SPID. Given these considerations, the study of the Italian digital identity for outpatient visits and e-prescriptions has significant social and academic implications for the public policy sphere, making it an intriguing topic to research.

1.2 Thesis structure

This master thesis is structured as follows. The following section includes the literature review outlining the development of the digital identity system in Italy with a focus on the use of SPID in the healthcare services. The same section proceeds with a reflection on the importance of understanding citizens' perceptions and how positive framing interventions can help in influencing citizens' behaviours. The last part of the literature review contains a discussion on the theoretical framework applied in this master thesis. The study continues with a third chapter that explains the methodology selected, including the sampling strategy, regression models, and the validity and reliability of the research. The empirical findings obtained are provided in the coming chapter, and a deep analysis of the data with a thorough discussion of the hypotheses that this study aims to test are provided in Chapter 5. The thesis ends with some closing remarks

that summarize and discuss the main points of the study, with limitations and policy recommendations targeted at the Italian government.

Chapter 2: Literature Review

The subsequent literature review offers a comprehensive foundation for examining the significance of the concepts employed in this master thesis and it is organized in two macro areas. There is first a discussion on the digitalization process in Italy, referring to the development of SPID and the use of the digital identity in the healthcare sector. The chapter continues with a brief discussion on the importance in understanding citizens' attitudes toward technology adoption and how positive framing can influence individuals' perceptions. The second macro area narrows down the focus to the theoretical model employed for this study: TAM with the hypotheses that this study aims to test empirically.

2.1 Development and adoption of digital identity in Italy

Although Italy does not score high in terms of digitalization and technological use in the international rankings, its share of internet users has kept on growing in recent years, reaching 77 percent of the country's population in 2021 (Battisti, 2020; Statista Research Department, 2022). The digital population in Italy has exceeded more than 45 million active internet users, signifying that most recently there have been slow signs of change as the nation is currently experiencing new awareness with a constant increase in levels of digitalization (Statista Research Department, 2022). Moreover, with the drafting of the new PNRR, the Italian government also supports the transition with investments towards the digitalization of public administration services, intending to render the country more advanced in terms of its technological use (European Commission, n.d.). In this realm, the government has implemented various initiatives to modernize the country's digital infrastructure for example with the introduction of the digital identity system (Ministero della Salute, n.d.). More specifically, a digital identity is a collection of all the information that uniquely identifies a person, such as a name, address, date of birth, and biometric data such as fingerprints and/or facial recognition (Masiero & Bailur, 2021; Sullivan, 2018).

The Italian digital identity, called SPID, has been implemented in 2014. With SPID, Italian citizens can access varied services such as: declaring taxes, enrolling their daughters and/or sons

in schools, booking outpatient visits, retrieving medical prescriptions, reclaiming welfare benefits, and e-voting for referenda (Garcia, 2022). Moreover, households can also access those online services of the European Union (EU) countries that have joined the Italian Electronic Identification and Trust Services (eIDAS) node in which Italy has created, together with member states, a common framework in which users can conduct business across borders (Agenzia per l'Italia Digitale, n.d.). The introduction of SPID has surely helped to contribute to the digitization process in Italy as it has streamlined a unified process of accessing public services. Nevertheless, the adoption of SPID amongst citizens has been low, presenting significant challenges (De Biase, 2021). With low adoption rates, several individuals are still reliant on traditional and time-consuming methods such as physical visits and phone calls (Prosperetti, 2022; Redazione Dire, 2020). This does not only create inconvenience for citizens but also places a burden on public administration offices, leading to inefficiencies. Another problem associated with low SPID usage is the missed opportunities for the digital transformation of the government's digitization efforts (De Biase, 2021). The Italian government has invested significant resources in promoting digital transformation and SPID plays a pivotal role in achieving this goal. However, without widespread adoption, the full potential of SPID as a catalyst for digital innovation and improved public service delivery remains untapped.

2.2 The use of digital identity within the Italian healthcare sector

The Italian healthcare system is facing a growing demand for outpatient services and an increased need for medical prescriptions, primarily due to the rising percentage of elderly individuals in the country (Toscana Notizie, n.d.). As people age, their healthcare requirements often involve regular outpatient visits and reliance on prescribed medications (World Health Organization, 2022). The spike in calls for these services is putting strains on the overall Italian health sector, resulting in longer waits for access to medical services, lowering the quality of care for patients (Gabanelli, 2022). This has been coupled with the shortage of healthcare professionals, leading Italy to not have enough labour force in the healthcare sector to cater to the increasing demand for medical services (Bartoli, 2022; Bartoloni, 2022). To address these issues, SPID can be used as an effective tool to mitigate these strains as it allows a person to set up appointments and retrieve electronic prescriptions, hereinafter named e-prescriptions. Citizens can book a consult anytime, anywhere with their laptops and/or smartphones, avoiding long queues at the service desk and waiting on hold during phone calls (Ministero della Salute, n.d.). With a few clicks, patients can select their desired outpatient service, choose a convenient

time, and date, and complete the booking process rapidly. Moreover, rather than filling in a prescription on paper, the physician enters the data into an electronic health record system that securely transmits the prescription to the patient's chosen pharmacy (Wrzosek et al., 2021). Without having to pick up the paper prescription at the doctor's office, a person can go directly to the pharmacy to buy the medications (Portale Sanita' Regione del Veneto, n.d.).

These proactive approaches help to minimize the number of patients waiting for medical services, reducing overcrowding in clinics and hospitals. Accelerating the digitalization of healthcare services can lead to cost reduction, minimization of inefficiencies, and an increase in the quality of services (Curioso et al., 2022). In the era of digital transformation, the Italian healthcare sector is increasingly adopting digital identity solutions to enhance patient care, streamline processes, and ensure a better and faster service allocation (Ministero della salute, n.d.). Despite the immense potential of SPID and the government's efforts in encouraging its uptake, only 30% of patients opt for booking online outpatient visits with SPID. Research reveals that the average patient who makes use of SPID to book hospitalized outpatient healthcare visits is between 25 and 44 years old (Redazione Dire, 2020). Furthermore, many users choose not to utilize SPID for accessing their medical prescriptions due to their perception of the system being cumbersome (Prosperetti, 2022). These data highlight the need for further efforts to promote the benefits and ease of use of SPID to encourage its widespread adoption. It is paramount to address users' concerns to maximize SPID's potential in improving healthcare services.

2.3 The importance of citizens perceptions toward technology adoption

As technology continues to advance rapidly, understanding citizens' perceptions toward technology adoption becomes crucial for policymakers, researchers, and organizations as users' behaviours toward the use of technology play a crucial role in determining the success or failure of technological innovations (Guo, 2022). Overall, researchers have shown that understanding citizens' perceptions is a vital component for policymakers and governmental officials seeking to develop effective strategies to ameliorate their digital service delivery (Font et al., 2016; OECD, 2009). Scholars have demonstrated that by considering citizens' perspectives, policymakers can make better informed decisions that align with societal needs, preferences, and demands (Clifton et al., 2022). This understanding allows for the creation of policies and initiatives that are more responsive, effective, and acceptable to the citizenry (OECD, 2009). This citizen-centric approach promotes inclusivity, ensuring that innovations are fit-for-purpose

considering individuals' needs (Brandsen et al., 2018). Currently, the Italian government is engaged in a debate regarding SPID, acknowledging that modifications are needed to better cater the preferences and concerns of citizens (De Biase, 2021; Pons, 2023). This as it acknowledges the importance of examining citizens' willingness to use SPID to identify any possible obstacle that might hinder its adoption.

2.4 Framing as a tool to influence citizens' perceptions toward technology adoption

Framing theory is a sociological perspective that examines how individuals interpret and assign significance to information in a given context. According to this doctrine, the framing of information has the potential to shape people's perceptions and understanding of facts, which in turn can impact their behaviours and attitudes (Anteneh et al., 2021). Studies have empirically demonstrated that the choice of language, the use of examples, and the narratives employed in a frame can have a noteworthy impact on influencing and shaping public opinions (Yang et al., 2018). One approach is to employ positive framing, which emphasizes the benefits, opportunities, and positive outcomes associated with a particular issue. By stressing the advantages and potential gains, scholars have empirically demonstrated that individuals are more inclined to perceive the issue in a positive light and from favourable opinions (O'Shea et al., 2016). For example, by framing the digital identity as a tool that improves access to health services, it is possible to shape Italian individuals' willingness to use this technological device and increase their acceptance of this systems, making them more inclined to incorporate it into their daily lives for healthcare purposes.

Consequently, the use of positive framing can create a sense of optimism about the potential benefits of digital identity. This becomes particularly crucial when there is resistance or scepticism towards a specific technology, as it is in the case of the Italian SPID. Framing can then help to shift the narrative and shape individuals' perceptions in a more accepting manner (Yang et al., 2018). Experiments testing for framing effects are often built with vignette scenarios as a common methodology. Vignettes are fictional yet realistic situations constructed to represent specific framing conditions (Steiner et al., 2017). These scenarios are built to manipulate the way through which information is presented and framed to participants, allowing researchers a clearer understanding of humans' cognitive processes and how the framing intervention influences individuals' perceptions and acceptances of a given issue (Harden et al., 2017). As such, by strategically employing framing techniques, it is possible to address concerns

and doubts that stem from perceived resistance, highlight the potential benefits and advantages of SPID to make users more inclined to use the system.

2.5 Theoretical Framework: Technology Acceptance Model (TAM)

In the age of information systems, users' acceptance of any new technological device is an important question that researchers and policymakers aim to answer. Decision-makers need to have sufficient information on the issues that can influence the behaviours and users' decisions towards the uptake or rejection of a particular technology. Without proper insights, practitioners cannot make informed decisions to better meet users' needs and preferences and ameliorate the uptake of a new digital device (Mortenson & Vidgen, 2016). TAM introduced by Fred Davis, became one of the dominant theoretical frameworks in looking into users' acceptance of a certain digital tool (Al-Emran & Shaalan, 2021). The primary objective of this model is to shed light on the processes and underlying mechanisms underpinning the acceptance of a technology to predict the behaviour of individuals (Alharbi & Drew, 2014; Bhatiasevi, 2011). The framework serves to provide a theoretical explanation for the successful implementation of a new technology system. Since its creation, TAM has been widely applied and empirically tested across various disciplines to examine different public's acceptance of diverse technologies, giving birth to a plethora of literature (Agrebi & Jallais, 2015; Marangunic & Granic, 2015).

First, TAM is considered an extension of the Theory of Reasoned Action (TRA), developed by Ajzen and Fishbein (Al-Emran & Shaalan, 2021). This theory posits that human behaviour is forecasted by an individual's overall evaluation and perception toward that behaviour. Individuals form their attitudes based on how they perceive the various aspects and consequences of engaging in a specific action, considering both the positive and negative evaluations associated with those outcomes (Sarver, 1983). This rational thinking process helps individuals in making informed decisions that align with their goals and values. In the same direction, in TAM, rational thinking is reflected in the perceived ease of use and usefulness of a certain technology (Davis, 1993). Both components require individuals to logically estimate the consequences and effects of a digital device, assuming a rational decision-making process on the part of users, that shapes their behaviour (Alharbi & Drew, 2014; Bhatiasevi, 2011). In this way, this theoretical model infers that when an innovative technology is given to users, perceived ease of use and perceived usefulness influence the determinations about how individuals behave to use a new digital tool (Naeini & Krishnam, 2012). These behavioural intentions will then help to validate a willingness to a continuous use of the system (Amoroso et al., 2018). Throughout

the years, there have been many studies that have assessed the rational thinking process of TAM concerning the perceived ease of use and usefulness. For example, in a study conducted by Venkatesh and Davis (2000), the authors found that perceived ease of use and perceived usefulness as being significant predictors of users' intentions in utilizing a specific technology. In a similar study, Lai (2017) assessed that perceived usefulness and perceived ease are factors that strongly influence users' behaviour to access social networking sites. These studies, among others, have provided valuable insights in demonstrating that acceptance of a technology involves a systematic rational evaluation of the perceived usefulness and ease of use that helps users to make informed decisions on whether to adopt a digital device.

However, critics often argue that users make decisions based on emotions, habits, and other non-rational factors that are not adequately accounted for in the model (Ajibade, 2018; Taherdoost, 2019). Rationality, as defined in TAM, is limited to a narrow range of cognitive processes, as weighting the usefulness and ease of use of a technology (Bhatiasavi, 2011). This circumscribed definition of rationality does not account for other important non-rational factors that may influence technology adoption as emotions and contextual factors such as economic conditions, technological advancements, and literacy levels (Malatiji et al., 2020). While usefulness and ease of use are the key predictors of a user's intention to use a digital device, external variables can influence these perceptions and, therefore, affect individual willingness toward technology adoption. Throughout the years there has been incorporated different external variables that although helped for a more nuanced and comprehensive understanding of the factors of technology adoption, several studies claimed that external variables are difficult to measure accurately in empirical studies. External variables such as social influence and economic conditions are often subjective and context-dependent and their effects on technology adoption might vary depending on the situation (Burton-Jones & Hubona, 2006). It might be challenging to capture the impact of external variables on digital usage, particularly in a way that can be reliably and consistently measured and analysed across different perspectives. Moreover, based on a detailed analysis of a fair amount of accredited academic articles, Burton-Jones and Hubona, (2006) found that only 60% of TAM studies considered external variables, concluding that there is "no explicit pattern regarding the selection of the external variables to employ in the TAM framework", suggesting the exclusion of external factors to measure an individual's adoption of a technology.

Although it has been recognized the role of external variables, several critics consistently argue that these external factors are given insufficient attention in the TAM frameworks (Zaineldeen et al., 2020). They claim that there is an overemphasis on internal variables, placing too much weight on perceived usefulness and ease of use; neglecting the complex interaction between external factors and users' adoption of a digital tool (Czaja et al., 2006; Giua et al., 2022). This could result in TAM models that oversimplify and underestimate the complexity of technology adoption, not accurately reflecting and embracing all the factors that drive digital usage in the real-world settings (Ajibade, 2018). Despite these critiques, TAM has been supported by empirical research studies and it has been shown to be effective in forecasting and assessing users' intentions across various technological domains. Researchers have shown and demonstrated that TAM's measures of perceived usefulness and perceived ease of use are key indicators of actual technology usage (Cavus et al., 2022; Marangunic & Granic, 2015). Its standardized measures have been empirically validated, recognizing how TAM can provide a straightforward way to assess individuals' behaviour toward technology adoption (Alharbi & Drew, 2014; Marangunic & Granic, 2015).

Since its creation, TAM has been widely applied and empirically tested across various disciplines to examine different public's acceptance of diverse technologies, giving birth to a wide array of literature on the matter (Marangunic & Granic, 2015; Naeini & Krishnam, 2012). Despite of several criticisms advanced towards TAM; the model remains a valuable tool for understanding users' behaviour toward a certain technology. The emphasis on users' perceptions and intentions in the adoption of technology enables understanding users' perceptions that can help practitioners in designing and improving technologies that are more likely to be adopted and used effectively by the end users (Alharbi & Drew, 2014; Bhatiasevi, 2011). Furthermore, the model's simplicity and empirical support developed through the years have made it a popular choice for practitioners and researchers alike. While the model lacks on certain aspects, it has been proven to impart a solid foundation for research and it has contributed to understanding the complex factors that influence technology adoption from the perspective of users (Naeini & Krishnam, 2012). TAM has received both praise and criticism, yet it remains a valuable tool for understanding and predicting users' acceptance of technology.

2.6 Technology acceptance model variables

In this section, it is provided an in-depth discussion of each variable examined in this study, their role in the TAM model, and their relevance regarding the adoption and usage of SPID.

Furthermore, at the end of each independent paragraph, there are also retrieved the hypotheses that this master thesis aims to test empirically.

2.6.1 Perceived ease of use

Perceived ease of use is defined as “the extent to which a person thinks that utilizing a certain technology would be free from effort” (Lai, 2017). In the context of this study, perceived ease of use delineates the degree to which an Italian citizen believes that using SPID is simple and user-friendly as for example, not requiring significant effort to utilize and easy to learn. Several studies have empirically demonstrated that as an individual’s perceived ease of use of a given technology increases, their behavioural intentions to use the technology also augment (Abdullah et al., 2016; He et al., 2018). As such, if Italian citizens perceive SPID as simple to utilize, they are believed to adopt positive behaviours toward the use of this digital device. In line with this school of thought, research conducted by Indarsin and Ali (2017), revealed and empirically demonstrated that perceived ease of use of a technology leads to positive behaviours to adopt a digital tool by users. In a study, Venkatesh and Davis (2000) discovered that perceived ease of use is not only a fundamental predictor of behavioural intentions to use a digital system, but it also influences and impacts perceived usefulness. According to the authors, if a system is easy to use, it will be perceived as more useful (Agrebi & Jallais, 2015; Lee et al., 2017). In the same direction, another study conducted by Raza et al. (2017) discovered a significant and positive influence of ease of use on both perceived usefulness and behavioural intentions to use a digital technology. Later research conducted by Al-Marroof and Al-Emran (2018) demonstrated that a technology that is user-friendly and simple to employ, increases the idea on the side of users that the system is also useful to adopt to conduct daily tasks. This perceived ease of use further increases to higher levels also individual behavioural intentions to adopt it (He et al., 2018). Given these theoretical formulations, the following hypotheses have been developed:

H1: *Perceived ease of use of SPID is positively related to perceived usefulness of SPID*

H2: *Perceived ease of use of SPID is positively related to behavioural intentions to use SPID*

2.6.2 Perceived usefulness

Perceived usefulness is defined as “the extent to which individuals believe that utilizing a technology will improve their life performance,” as for example making their lives easier (Lai, 2017). In studies conducted by Granic (2022) and Venkatesh et al. (2003), the authors further described that usefulness is a level where users believe that the adoption of a specific technology provides satisfaction and gains, positively impacting their lives. Accordingly, in this research,

perceived usefulness measures the degree to which Italian citizens think that using SPID would improve their personal lives, providing benefits. In several researches, perceived usefulness is demonstrated as being a direct antecedent to behavioural intentions, positively and significantly impacting behaviours toward the adoption of a digital device (Abdullah et al., 2016; Caffaro et al., 2020; Purnawirawan et al., 2012). As such, as an individual's perceived usefulness of a given technology increases, their behaviours to use the technology also increase (Abdullah et al., 2016; Rafique et al., 2020; Ranellucci et al., 2020). If users acknowledge that using a digital tool will be beneficial for them and this device satisfies their needs, they are believed to assume positive behaviours in adopting it. According to these theoretical formulations, if an Italian citizen perceives SPID as useful, that person is likely to engage more in its adoption, leading to adopt more positive behaviours in using SPID. In comparison to perceived ease of use, Davis (1989) demonstrated that perceived usefulness is believed to play a stronger influence on users' behaviour. Built upon these results, in related works, He et al. (2018) and Henderson and Divett (2003) demonstrated that perceived usefulness plays a more influential impact in affecting behavioural intentions to use a system than perceived ease of use. In conclusion, perceived usefulness of a given technology is a critical factor in TAM, playing a significant role in influencing users' behavioural intentions. It then becomes clear the causality of perceived usefulness for the study, leading to the following hypothesis:

H3: *Perceived usefulness of SPID is positively related to behavioural intentions to use SPID*

2.6.3 Behavioural intentions

Behavioural intentions are defined as “the individuals' aims and plans to perform a specific action” (Kiriakidis, 2017; Mortenson & Vidgen, 2016). In TAM, behavioural intentions serve to indicate the actual use of a certain digital system by individuals. In the context of this study, the behavioural intentions variable refers to Italian citizens' plan and intention to use SPID. Studies conducted by Kusdibyo et al. (2020), Revythi and Tselios (2017), Su and Chao (2022) and Unal and Uzun (2021) affirm that behavioural intentions towards the use of a technology are affected by an individual belief of a system as being simple to use and useful. This demonstrates that the adoption of a digital device is determined by a person's subjective perceptions of its ease of use and usefulness. In related works, Chuttur (2009) and Wu and Wang (2005) further demonstrated that behavioural intention plays a vital role in predicting willingness to a continuous usage of a technology. In this sense, behaviour is believed to be the only predictor of a person's willingness to use the technology. By observing how individuals behave in relation to the technology, once

can accurately determine the level of willingness to engage with it. Further studies conducted by Amoroso et al. (2018) and Yeo et al. (2017) asserted that behavioural intentions have a significant effect on the intentions to continue using a certain technology and that behaviours are predicted by a system being user-friendly and useful from the side of users. Consequently, it is expected that behavioural intentions will mediate the relationship between ease of use and usefulness of SPID towards a willingness to use the system for outpatient services and e-prescriptions.

H4: *Behavioural intentions to use SPID mediate to a positive effect between perceived ease of use and perceived usefulness of SPID towards willingness to use SPID to access to outpatient visits and e-prescriptions*

2.6.4 Willingness to use

A study by Tawafak et al. (2018) defines willingness to use a digital system as an individual's inclination to persistently utilize a technological device in the upcoming period. Willingness to use a system is an important concept in TAM as it helps to explain the long-term adoption and utilization of a technology (Deghani et al., 2018; Harst et al., 2019; Ranellucci et al., 2020). The main influence on the intention to a willingness to use is a person's behaviour in the direction of technology utilization (Alomary & Woolard, 2015; Bhatiasevi, 2011; Davis, 1989; Lu et al., 2023). In the context of this master thesis, willingness to use SPID refers to users' future adoption of the digital identity to access outpatient services and to retrieve e-prescriptions.

2.7 Conceptual framework

The extensive body of literature presented in the previous sections has offered valuable insights into the relationships between the key constructs of TAM. Building upon this knowledge, a conceptual framework can be derived and applied to the specific context of SPID. Figure 1 illustrates a visual representation of the model and the variables' relationships forming the framework for this study. Specifically, the model used for this master thesis relates to the original TAM developed by Davis (1989). One reason for this is that the first TAM model, although its evident limitations, has been widely validated and tested in multiple studies (Cavus et al., 2022). Additionally, the original TAM is simple and straightforward, that given the time constraints for this master thesis, makes it easier to apply and interpret (Marangunic & Granic, 2015). As it can be seen from Figure 1, the first hypothesis to be tested in this study identifies perceived ease of use as positively affecting perceived usefulness (Indarsin & Ali, 2017). It proposes that as the perceived ease of use of SPID increases, individuals are more likely to perceive it as useful. This

hypothesis assumes that when users find a technology as user-friendly, they are more likely to perceive it as useful to use to conduct their daily activities (Agrebi & Jallais, 2015).

To continue with, the model predicts that perceived usefulness and ease of use are of primary relevance in affecting users' behaviour to use SPID: when individuals consider the digital identity useful and ease of use, these two factors create a positive behaviour towards its adoption (Al-Marroof & Al-Emran, 2018; Raza et al. 2017) These two relationships form hypotheses two and three, suggesting that when perceive usefulness and ease of use increase, users' behaviour to use SPID is expected to increase as well. Eventually, this positive behavioural intention of users towards SPID mediates to a willingness to use of such digital identity for a prolonged time (Al-Emran & Shaalan, 2021; Davis et al., 1989; Taherdoost, 2019). The mediating role of behaviour towards SPID implies that the effect on the willingness to use the digital identity is transmitted through the individuals' actual behaviour and experiences with SPID. As people engage more frequently and positively with it, they develop a greater willingness to use it for outpatient services and e-prescriptions.

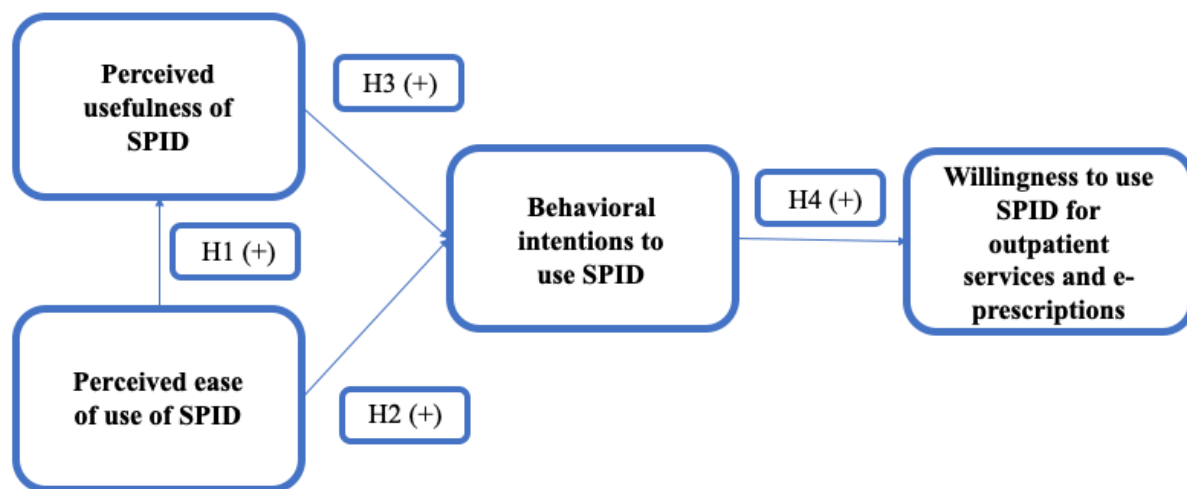


Figure 1. *Directions and signs of the hypotheses tested in this study.*

Chapter 3: Methodology

This chapter describes the research design used for this master thesis. The overarching goal of this study is explanatory, aiming to provide meaningful insights into the degree to which

perceived usefulness and perceived ease of use of SPID impact the behavioural intentions of Italian citizens to use SPID and to what extent their behaviour intentions mediate to a continuous usage of the digital identity for healthcare services. The theoretical framework used as a basis for this study relates to TAM, that given the vast amount of literature developed on this model, this master thesis made use of a deductive type of research, targeted to test the theory. More specifically, this research made use of a quantitative research design by means of an experimental vignette survey. “Quantitative researchers seek to explain research observations by building accurate and reliable measurements that enable for statistical analysis; allowing to learn more about patterns of a population and examining the intentions to generate findings that uncover trends and behaviours” (Goertzen, 2017, p.12). This notion accurately matches the purpose of this research as the study explores and aims to uncover citizens’ behaviours towards the willingness to use SPID for outpatient visits and e-prescriptions via an innovative approach to test previously formulated hypotheses through the employment of inferential statistics.

The methodology section is organized as follows. Firstly, there is a discussion on how the key variables used for this study have been operationalized and the reasons behind the inclusion of certain control variables that served to limit omitted variable bias. The second subchapter presents the targeted sample, arguing the motivations behind the selected country and sample for this study. Subsequently, there is included an exhaustive description of the survey methodology. This section further contains a brief description related to how the questionnaire has been structured. The fourth section provides the data analysis strategy that plots the regression strategy used. The methodology chapter concludes with a succinct reflection regarding the validity and reliability of this master thesis.

3.1 Operationalization of key variables

This section presents the operationalization of the key variables that are measured in this study. Operationalization is a crucial step that enables to make the constructs measurable with the use of indicators, ensuring that key variables of a study are accurately and consistently measured, which is fundamental for drawing valid and reliable research results in advancing scientific knowledge (Neumann, 2014).

3.1.1 Independent variables

This master thesis has two independent variables. The first one, perceived usefulness, assesses the degree to which Italian citizens believe that using SPID is beneficial, enhancing their productivity and performance in their lives. This is measured with five indicators adapted from

a study conducted by Davis (1989) that are plotted in Table 1. Whilst the second independent variable, perceived ease of use measures the extent to which Italian citizens think that utilizing SPID is free from effort. The indicators used are listed in Table 1 and they have been retrieved and adapted from the same study conducted by Davis (1989).

Variable	Indicators	Source
Perceived usefulness	Being fast Increase life performance Time saving Effort saving Useful	Adapted from Davis et al. (1989)
Perceived ease of use	Easy to learn Flexible	Adapted from Davis et al. (1989)

Table 1. *Operationalization of independent variables.*

3.1.2 Dependent variable

The dependent variable measured for this study is willingness to use a digital technology that refers to the extent to which Italian citizens utilize SPID to book outpatient visits and access e-prescriptions. This variable is measured by two indicators, described in Table 2, retrieved, and adapted from a study conducted by Deghani et al. (2018).

Variable	Indicators	Source
Willingness to use	Use in the future Increase the frequency of use	Adapted from Deghani et al. (2018)

Table 2. *Operationalization of dependent variable.*

3.1.3 Mediating variable

In this master thesis, behavioural intentions indicate the aim and plan of users to use the digital identity. This variable serves to mediate the relationship between perceived ease of use and usefulness of SPID towards a willingness to use the digital identity to book outpatient visits and retrieve e-prescriptions. Behavioural intentions have been operationalized based on the research of Venkatesh and Davis (2000) with the use of two indicators plotted in Table 3.

Variable	Indicators	Source
Behavioural intentions	Intention to use the system Prediction and plan to use the system	Adapted from Venkatesh and Davis (2000)

Table 3. Operationalization of mediating variable.

3.1.4 Control variables

Other factors can be correlated with a willingness to use a technology, and these can threaten the validity and reliability of this study, resulting in omitted variable bias. In this way, the relationship between the independent variables and willingness to use SPID to book outpatient visits and retrieve e-prescriptions could result in a spurious relationship, indicating that the association between them could be influenced by another factor, called confounding variable (Neumann, 2014). As such, in accordance with previous TAM research, several control variables have been used in this study (Burton-Jones & Hubona, 2006; Zahid et al., 2013). This process aimed to isolate the impact of the independent variables on the dependent variable by holding constant other factors that could potentially influence the willingness to use SPID for healthcare services. This will enhance the statistical power of the study as when variables are controlled, error variance is reduced and the precision of the estimates is increased, thus minimizing the risk of omitted variable bias (Neumann, 2014).

Framing intervention

Framing can have an impact on the dependent variable as how information is presented in the framing scenarios can have an influence on humans' perceptions and attitudes (Anteneh et al., 2021; O'Shea et al., 2016). To control for the impact of positive framing on the willingness to use SPID for outpatient services and e-prescriptions, this research aimed to hold this factor constant and isolate its specific effect on the dependent variable. This approach has been implemented to allow for a more precise examination of the relationship between the dependent and independent variables, controlling for the potential confounding effect of the positive framing intervention.

Age

Studies have empirically demonstrated that there is a digital divide between younger and older generations, with the latter adopting technologies at a slower pace (Harris et al., 2022). Moreover, old people tend to prefer to book an outpatient visit by either going physically to a service desk or calling the call center as this is perceived as a moment of social interaction,

making them feel less lonely as they can hear a voice or see someone (Herrler et al., 2022; Hülür & Macdonald, 2020). This can also apply when accessing e-prescriptions. In addition, physical and cognitive changes that come with aging can also affect technology adoption. Elderly individuals might have trouble in seeing digital content, using small buttons or touchscreens, or navigating complex interfaces. Thus, this can expose them to encounter more challenges in using technology effectively (Zayas et al., 2016). Moreover, some studies advocate that elderly exhibit both a negative attitude and resistance toward the use of digital devices because they have not grown up with technology during their formative years. This lack of familiarity can make technology seem daunting (Dequanter, 2022; Friemel, 2016; Lee & Coughlin, 2015). As such, a positive and statistically significant relationship between age and technology adoption has been demonstrated by previous studies, making it important to control for this factor.

Education

Academic studies indicate that individuals with higher levels of education tend to embrace technologies more rapidly compared to those with lower levels of education (Granic, 2022; Riddel & Song, 2017). Higher-level educated people are more likely to use technology because they have developed the skills, knowledge, and attitudes necessary to understand and use technology effectively. Highly educated people are associated with greater exposure to technology as they are often employed in fields that require the use of technology and this help them to develop a better understanding of its applications (Mackert et al., 2016). This might lead them to form a high degree of digital literacy, which refers to the ability to use and understand a technological tool (Granic, 2022). On the contrary, individuals with lower levels of education are more likely to be employed in jobs that do not require the use of technology, having limited or absent access to technological tools and resources in their workplace (Neumeyer et al., 2021). This can limit their exposure to technology and hinder the development of necessary skills for the effective use of digital devices.

Gender

Past studies demonstrate that gender plays a crucial role in influencing users' willingness to use a digital technology, and this can confound the causality of the main constructs (Hirpa Tufa, 2022; Mishra et al., 2020; Priyashantha et al., 2021). A study conducting a thorough literature review on gender differences in technology adoption showed that women experience more anxiety than men when using digital tools, lowering their self-efficacy, and making them perceive technology as requiring substantive effort (Goswami & Dutta, 2016). Moreover, in

Southern European countries like Italy, women tend to stay at home due to cultural and societal norms that prioritize traditional gender roles, assigning the responsibility of domestic work and childcare to women (Evason, 2017). As a result, these women may have more time available to book outpatient visits and retrieve medical prescriptions in person rather than using digital tools because they have more flexibility in their daily routines compared to those individuals who work. As they might be less exposed to technology given that they do not work, this can make women less comfortable with using digital tools for healthcare services.

Prior usage

Several studies have demonstrated that previous usage of a technology can influence an individual's willingness to use a digital system (Brown, 2008; Czaja et al., 2006). This as previous usage provides users with first-hand knowledge of the benefits and capabilities of the technology. Individuals have experienced how the system can enhance their productivity and this knowledge creates in them a sense of familiarity and confidence, reducing perceived risks with trying out a device (Kupfer et al., 2016; Yousaf et al., 2021). Prior usage can then increase a person's comfort level with a technology as it allows users to create a level of comfort and familiarity. When people are comfortable and familiar with a technology, they are more likely to adopt it because they feel secure using it as they already know how to employ it and they know its effectiveness (Yousaf et al., 2021).

Social influence

Social influence, in this master thesis, refers to the extent to which an individual perceives that others, especially, his/her acquaintances and friends believe that he/she should use a new system (Venkatesh et al., 2003). Studies have confirmed that social influence has a noteworthy impact on the willingness to use a new technology (Baptista & Oliveira, 2015; Lu et al., 2005). Moreover, in a Southern European country like Italy, people often live in joint family systems and are dependent on each other in multiple social and economic contexts (Evason, 2017). The opinion of these people can also encourage the end-users to utilize technological devices as social networks are highly interconnected and individuals rely on their close relationships for advice and guidance. This means that the opinions and behaviours of family and friends can play a crucial role in shaping individuals' technology adoption (Baptista & Oliveira, 2015). If a person perceives that their social network values traditional and conventional methods over new technologies, they may be more hesitant to adopt new digital tools themselves. Hence, it becomes crucial to control the effect of this construct upon acceptance of digital tools.

3.2 Targeted sample

The case selected for this master thesis is Italy. As previously mentioned, Italy is currently on the rise in terms of digitalization and technological advancements (European Commission, n.d.). Despite that, the country is lagging other EU nations and the digital identity system implemented shows a lack of citizens' adoption (Battisti, 2020). SPID is currently debated within the current governmental administration that is pondering to change it to accommodate citizens' needs to ameliorate service delivery through digital applications to enhance users' experience (De Biase, 2021; Pons, 2023). Therefore, since modifications to the SPID system are likely to be driven by a desire to improve its usability to higher levels, it makes important to investigate citizens' intentions to use the system to identify barriers. Accordingly, the outcome of this study can help to identify areas for improvements that can aid policymakers in making targeted changes to better meet the needs of Italian citizens.

Secondly, Italy has a unique context that makes it indispensable to investigate into citizens' adoption of SPID to access outpatient visits and e-prescriptions. The country has one of the oldest populations in Europe and it has seen a growing demand in recent years for healthcare services (Bartoloni, 2022; Ministero della Salute, 2020). As people age, they tend to develop more chronic conditions requiring ongoing monitoring (World Health Organization, 2022). Moreover, elderly need more preventive care to maintain their overall health which can be addressed through regular outpatient visits and the administration of drugs (Bartoli, 2022; Bartoloni, 2022). The surge in demand for outpatient visits and e-prescriptions tied with a scarce use of digital technology to access these services are leading to long waits when physically going to healthcare providers and enduring waiting times on hold during calls (Gabanelli, 2022). This is coupled with a shortage of personnel in the healthcare sector that are facing struggles to provide care for patients requesting assistance (Bartoloni, 2022). Ensuring more awareness of the use of SPID for those services that do not necessarily require in-person visits, could reduce the healthcare pressure as medical staff does not have to spend time on administrative tasks, decreasing the need for phone calls, paperwork, and redundant in-person visits. Making sure that the use of technology in the healthcare sector becomes more widely used, this can improve efficiency in healthcare delivery for both patients and healthcare providers.

As such, this study has been conducted in Italy, specifically in the Veneto region, from which the sample has been drawn. There was the need to focus on a specific region as the Italian

healthcare system is organized and managed at the regional level, with each of Italy's twenty regions having the responsibility for planning and delivering healthcare services within their borders (Ferre et al., 2014). Veneto has been selected because the region was an early adopter of SPID, with the system being implemented in 2016 (Regione del Veneto, n.d.). This means that the region has several years of experience in using the digital identity for healthcare services, which is advantageous compared to those regions that have recently implemented SPID for healthcare services or have yet to implement it. Citizens who have several years of experience using the digital identity are more likely to have formed robust opinions about SPID. Moreover, Veneto is one of the most populated regions in Italy, with over 4.8 million inhabitants (AdminStat Italia, n.d.). This means that the region's healthcare system is likely to have a high volume of outpatient visits and medical prescriptions, providing a valuable opportunity to examine the impact of SPID in accessing these healthcare services. Therefore, the sample for this study has been retrieved from the Veneto region, where Italian is the first language and which most citizens speak.¹ The survey has been presented in Italian, considering that only 13% of Italians speak English (Whyte, 2022). However, an English version is also provided in Appendix A for further consultation. In Appendix B, it is attached the Italian questionnaire.²

The survey has been distributed among personal networks via WhatsApp, using convenience sampling. From one hand, this gave the researcher a time-saving and cost-effective way of reaching a good number of participants considering the time constraints for drafting this master thesis. On the other hand, given the method of distribution, the data gathered from this survey might have suffered from convenience bias, resulting in a sample that might not accurately be representative of the population being studied. Moreover, most of the respondents have been people aged 20-29 which are also considered from the literature the group of people who make use the most of technologies (Peek et al., 2014). This group is also less prone to suffer from critical illnesses and might require less check-ups than its older counterpart and therefore, they might not access regularly to outpatient visits and e-prescriptions (World Health Organization, 2022). Notwithstanding, the further distribution of the vignette survey experiment relied on snowball effect as personal networks participants were kindly asked to re-share the questionnaire

¹ Sekaran and Bougie (2016) emphasize the importance of providing questionnaires in participants' native language to ensure that respondents fully understand the survey questions and are not hindered by language barriers, which can otherwise result in inaccurate responses or avoidance of certain questions.

² The vignette survey has been translated by two different translators and the difference in wording was discussed, to avoid translation bias. This was also pre-tested multiple times independently to ensure that the questions were comprehensible for the participants.

link with their own social circle. This has contributed to slightly decrease and minimize convenience bias, increasing the generalizability of the results obtained (Fink, 2017; Neumann, 2014).

3.3 Survey methodology

The method chosen for collecting data for this study refers to a vignette-experimental survey developed using QualtricsXM³ and distributed from 28th April 2023 until 7th May 2023. The survey consisted of five different parts. The first one presented the research interest and the informed consent paragraph in which it was indicated that the survey responses would be anonymous, and that data would not be shared beyond the scope of this master thesis. Respondents were invited to confirm they understood the scope of the study. The second section presented two screening questions attempting to assess the eligibility of the respondents: to take part in the questionnaire, respondents had to confirm that they reside in Italy and that they live in the Veneto region. If they did not comply with these two criteria, they were not allowed to continue with the survey and they would be automatically excluded from continuing the completion of the questionnaire. Once determined the eligibility criteria, respondents have been presented with the third questions' block, containing demographic questions and other inquiries relating to control variables that served to minimize the likelihood of omitted variable bias in the study. The fourth part contained two real-life scenarios in which respondents have been asked whether they preferred the use of SPID for booking outpatient visits and accessing e-prescriptions or other traditional methods.

The last section contained the experimental part. All the multiple-choice questions in this section have been constructed on a five-point Likert scale (1-totally disagree, 2-somewhat disagree, 3-neutral⁴, 4-somewhat agree, 5-totally agree) and numerically pre-coded with the QualtricsXM program. The experimental part of the survey consisted in randomly assigning respondents two short framing propaganda texts from the Italian government and the Veneto region to capture whether the positive framing intervention could increase users' willingness to use SPID for

³ QualtricsXM is an online survey software provided for free for all Leiden University students.

⁴ Studies indicate that including a middle point in a survey can lead to central tendency bias as some respondents might opt for the neutral choice when they lack a strong opinion or when they do not want to put effort into thinking about their answer (Chyung et al., 2017). Nonetheless, leaving the neutral option is important in capturing the true sentiment of respondents who might have mixed feelings about a certain theme, helping to decrease participants not feeling pressured to take a stance when they do not have a strong opinion, minimizing biased results.

outpatient services and e-prescriptions.⁵ The software has facilitated the incorporation of random assignment of framing as the system automatically allocated a participant to either a control (without framing intervention) or treatment group (with framing intervention). This random distribution took place as soon as the respondents opened the survey link. These two texts aimed to communicate key messages about the potential benefits of SPID highlighting the advantages of adopting the digital identity in the healthcare context, assuming to positively influence individuals' perceptions and opinions. By comparing the responses of those who received the framing intervention and those not, it has been possible to examine the impact of the framing effect on participants' beliefs and willingness toward the adoption and use of SPID for outpatient services and e-prescriptions.

3.4 Analysis strategy

After designing the vignette-experiment survey, determining the intervention being tested, and selecting the sample and sampling strategy, respondents have been randomly assigned by QualtricsXM to either the control or treatment group. The data retrieved from the questionnaire have been directly entered into an electronic file on Excel to check for any missing values and inconsistencies and to assign variable names to each column. Thereafter, the Excel file was exported to Stata 18 to perform several statistical analyses. First, to assess whether the framing intervention had an effect, this master thesis compared the effect of the treatment on the dependent variable, namely willingness to use SPID for outpatient services and e-prescriptions. By regressing the outcome of the framing intervention on the dependent variable, it has been possible to determine whether the effect had a significant impact and whether the observed changes could be attributed to the treatment itself. Moreover, to determine that both groups were balanced it has been conducted two balance tests: a two-sample t-test and a two-sample Wilcoxon rank-sum test. These two tests have been important instruments in providing valuable insights into whether there were substantial differences between the group receiving the positive framing intervention and that who did not (Angrist & Pischke, 2014).

The subsequent inferential analysis has been conducted by employing several regression analyses to test the four hypotheses of this study. The strategy employed to perform the

⁵ In comparison to traditional survey questions, a vignette-based experimental survey has several advantages. First of all, participants tend to perceive vignettes as a welcome relief compared to repetitive survey questions, offering a sense of novelty and engagement (Steiner et al., 2017). Secondly, the combination of a vignette survey with the experimental-type setting approach allowed minimizing the probability that those participating in the survey are aware of manipulation (Harden et al., 2021).

regressions for the hypotheses refers to multiple linear regressions. As the TAM model formulated in the conceptual framework contains several predictors to forecast the dependent variable of technology acceptance, multiple linear regressions have been thought to be the most suitable choice. This is because multiple linear regressions allowed to estimate the relationship between these predictors and the dependent variable while controlling for the effects of other variables. As this master thesis made use of several control variables, it was necessary to opt for a method of analysis that could account for potential confounding factors that might influence the relationships between predictors and the outcome (Toshkov, 2016). A special mention needs to be addressed to the fourth hypothesis as this contains a mediating variable, namely behavioural intentions. This master thesis employed a mediation analysis according to the acclaimed mediation model of Baron and Kenny (1986). According to the model, this study has followed three steps in the mediation analysis, namely: (1) demonstrate that the independent variables are correlated to the dependent variable, (2) show a correlation between the two independent variables with the mediating variable, and (3) illustrate that the mediator influences the dependent variable through controlled independent variables. If all these three individual phases are demonstrated to be significant and that in the last stage, the impact of the independent variable on the dependent one diminishes compared to the first one, it can be concluded that the mediation exists (Baron & Kenny, 1986).

3.5 Validity and reliability

By making the use of previous well-established research studies, this master thesis has been built upon a solid foundation of knowledge, methodology, and theory, increasing its validity (Neumann, 2014). More specifically, in terms of internal validity, this study has been safeguarded by including control variables. When holding constant factors that could potentially impact the effect of the independent variables on the dependent variable, this has reduced the influence of potential confounding factors, ensuring that, any observed effect was not due to confounding factors (Toshkov, 2016). However, this study lacks in terms of external validity. This research uses a sample from the Veneto region, whilst its aim to generalize the findings to the Italian population may be limited. Veneto region is a part of Italy, and it might not be representative of the entire Italian population. For example, there are some differences in technological adoption between the North and South of Italy. Historically, the northern regions have been more economically developed and technologically more advanced compared to their southern counterparts and this divide is a long-standing issue in Italy (Xiong, 2022).

Traditionally, the north of Italy has been more industrialized and urbanized, with higher levels of education and a more entrepreneurial culture. In contrast, the South has been more rural with higher levels of poverty (Benecchi et al., 2021). Thus, this digital divide can limit the external validity of this master thesis.

To continue the discussion, the reliability of this master thesis has been guaranteed by calculating Cronbach's Alpha (Bonett & Wright, 2015). In this way, it has been possible to determine the extent to which the research's items are reliable and consistent in measuring the intended constructs. The table containing the statistical calculation can be found in Appendix C. As can be noted, Cronbach's Alpha goes from 0.6723 to 0.8025, suggesting that the items within each scale demonstrate a moderate to a high level of internal consistency. Looking at the specific items, only 'treatment' and 'age' exhibit negative correlations with the other factors, suggesting that they might not align well with the overall constructs being measured. However, the overall test scale demonstrates a Cronbach's alpha value of 0.7491, showing good internal consistency and reliability for the measurement instrument as a value above 0.7 is considered acceptable (Bonett & Wright, 2015). Based on this assessment, most of the variables demonstrate good reliability and contribute positively to the measurement of the intended construct. However, further attention is needed to 'treatment' and 'age' to determine their relevance and suitability for inclusion in the scale. A special mention to an issue that can pose a limit to the reliability of this study needs to be addressed; this refers to the use of a convenience sample (Neumann, 2014). Respondents included those who were easily accessible and willing to participate, which could have resulted in a biased sample that might not accurately reflect the characteristics of the population being studied. Thus, the results could vary when the composition of the sample at stake is different.

Chapter 4: Empirical findings

This chapter discusses the findings obtained from the vignette survey experiment. First, it presents the descriptive statistics summarizing the characteristics of the data set as well as descriptive statistics of the main variables and a correlation matrix. Subsequently, the chapter presents two balance tests to assess any difference between the two groups of respondents. Afterward, there is a summary of the vignette scenarios in which respondents had to indicate their preferred method for accessing outpatient services and e-prescription. The last part contains

the inferential statistics carried out in terms of multiple linear regressions to test the four hypotheses.

4.1 Descriptive statistics of the sample

Upon deactivation of the survey on May 7th, 2023, there have been collected $n=94$ respondents that have been distributed to either the treatment or control group. Besides those respondents, a total of 16 individuals started the vignette survey without finishing it. This partial contribution has been safeguarded and kept for additional four days to enable respondents to come back to the survey and complete it. Given the partial contribution and the fact that the waiting time expired, these responses have been excluded from the analysis. This shows the difficulty to yield a substantive response rate in a survey and the number of individuals who initiated the survey without completion demonstrates that attrition is a legit concern in experimental studies (Toshkov, 2016). Moreover, an additional 10 individuals have been excluded from the analysis because they did not pass the screening questions and one person did not give her/his permission for the consent information form placed before the compilation of the questionnaire. Table 4 plots the demographic characteristics of the respondents who finished the entire questionnaire. Due to the previously mentioned situation in which some respondents have dropped from the analysis, the distribution of the treatment and control groups is uneven. However, the discrepancy is not that high given that in the treatment group, there have been allocated 45 individuals and in the control group 49, leaving only to a gap of 4 respondents more for the control group. In terms, of age, the leading cohort for both treatment and control groups are those ranging from 20-29. As for the education level, most of the respondents possess a high school diploma, followed by individuals who obtained a bachelor's degree. There is some distortion in the representativeness regarding education and age as some categories are underrepresented compared to others. Nevertheless, this was expected as the researcher relied on convenience sampling amongst her young, closed network. For the gender variable, the number of females and males in the treatment and control groups is balanced. Regarding the preferred methods of accessing public administration services, individuals stated that they favour going physically to the office and accessing services with SPID is the least chosen option. What it can also be noticed is that most respondents have used SPID. It is advantageous that the greater part of participants has utilized the digital identity because it enables them to form informed opinions based on their first-hand experience with the system.

	TREATMENT GROUP (with framing intervention)			CONTROL GROUP (without framing intervention)		
	Frequency	Percentage	Cum.	Frequency	Percentage	Cum.
AGE						
20-29	19	42.22	42.22	20	40.82	40.82
30-39	6	13.33	55.56	6	12.24	53.06
40-49	4	8.89	64.44	5	10.20	63.27
50-59	5	11.11	75.56	6	12.24	75.51
60-69	4	8.89	84.44	5	10.20	85.71
70-79	3	6.67	91.11	3	6.12	91.84
80-89	4	8.89	100.00	4	8.16	100.00
EDUCATION						
Bachelor's degree	15	33.33	33.33	10	20.41	20.41
Elementary school diploma	4	8.89	42.22	10	20.41	40.82
High school diploma	20	44.44	86.67	22	44.90	85.71
Master's degree	4	8.89	95.56	5	10.20	95.92
PhD	2	4.44	100.00	2	4.08	100.00
GENDER						
Female	23	51.11	51.11	23	46.94	46.94
Male	22	48.89	100.00	26	53.06	100.00
PUBLIC SERVICE ACCESS						
E-mail	13	28.89	28.89	10	20.41	20.41
Go to the office	22	48.89	77.78	22	44.90	65.31
Phone call	5	11.11	88.89	10	20.41	85.71
SPID	5	11.11	100.00	7	14.29	100.00
SPID PREVIOUS USE						
No	9	20.00	20.00	8	16.33	16.33
Yes	36	80.00	100.00	41	83.67	100.00
N	45			49		

Table 4. *Demographic characteristics of treatment and control group.*

4.2 Descriptive statistics of key variables

The descriptive statistics of the key variables employed in this study is plotted in Table 5.

More specifically, this table contains the comparison between the mean scores and standard deviations of respondents assigned to the treatment and control group regarding the independent, dependent, and mediating variables. As it can be noted, the mean for the control group is slightly higher compared to the treatment group for all factors. This can indicate that, on average, the

control group participants have higher scores on the measured variables than those individuals assigned to the treatment group. This difference can suggest that the treatment did not lead to a spike increase in the variables being measured when compared to the control group. However, the interpretation provided here is solely based on descriptive statistics and to determine the significance of the relationships between the key variables of this study and to verify whether the framing intervention had an effect it is necessary to conduct regressions.

	Treatment			Control		
	N	Mean	SD	N	Mean	SD
Willingness to use SPID outpatient services	45	2.444	1.378	49	2.837	1.272
Increase frequency	45	2.511	1.440	49	2.816	1.302
Use future outpatient	45	2.378	1.451	49	2.857	1.354
Willingness to use SPID e-prescriptions	45	2.467	1.383	49	2.847	1.430
Increase frequency	45	2.4	1.405	49	2.857	1.458
Use future e-prescriptions	45	2.533	1.531	49	2.837	1.505
Perceived usefulness	45	2.516	1.201	49	2.996	1.239
Fastness	45	2.511	1.424	49	2.878	1.333
Life performance	45	2.333	1.365	49	3.061	1.405
Time saving	45	2.667	1.508	49	3.102	1.342
Effort saving	45	2.511	1.456	49	3.122	1.333
Usefulness	45	2.556	1.501	49	2.816	1.467
Perceived ease of use	45	2.2	1.150	49	2.98	1.346
Easy to learn	45	2.178	1.173	49	3.041	1.485
Flexibility	45	2.222	1.259	49	2.918	1.367
Behavioral intentions	45	2.4	1.241	49	2.806	1.357
Intention	45	2.444	1.455	49	2.776	1.403
Prediction	45	2.356	1.282	49	2.837	1.405

Table 5. *Descriptive statistics independent and dependent variables.*⁶

4.3 Correlation matrix

Table 6 presents the correlation matrix of the key variables. The correlation coefficient of 0.77 suggests a positive and statistically significant relationship between willingness to utilize SPID for outpatient visits and willingness to use SPID for e-prescriptions, indicating that individuals who are inclined to use the digital identity for outpatient visits are also likely to use it for e-prescriptions. The correlation coefficients of 0.77 and 0.63 suggest a strong positive interaction between ease of use and willingness to utilize SPID for outpatient services and e-prescriptions. This means that users who think that SPID is simple to use, are also more inclined to employ it for accessing healthcare services. The same interaction is observed for perceived usefulness and behavioural intentions, implying that individuals who perceive SPID as useful and who have stronger behavioural intentions to use the digital identity are more likely to employ it for

⁶ All variables have the same scale and unit with a minimum value of 1 and a maximum value of 5.

outpatient services and e-prescriptions. Regarding the SPID framing intervention, the variable consistently shows a negative sign in relation to other variables. This signifies that the framing intervention, as implemented in this master study, had a deterrent effect. For the control variables, age, gender, and social influence, these do not show a significant and direct relation with individuals' willingness to use the digital identity for outpatient services and e-prescriptions. Nevertheless, the correlation matrix indicates that individuals with higher education and prior experience with digital identity are more prone to adopt it for healthcare purposes.

<i>Variables</i>		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Willingness to use SPID outpatient	[1]	1.00									
Willingness to use SPID e-prescriptions	[2]	0.77*	1.00								
Perceived ease of use	[3]	0.77***	0.63***	1.00							
Perceived usefulness	[4]	0.79***	0.64***	0.79***	1.00						
Behavioral intentions	[5]	0.84***	0.67***	0.81***	0.81***	1.00					
SPID framing intervention	[6]	-0.15	-0.14	-0.30**	-0.20	-0.16	1.00				
Age	[7]	-0.03	-0.03	-0.06	-0.12	-0.09	-0.01	1.00			
Education	[8]	0.10	0.01	0.13	0.14	0.10	0.12	0.48***	1.00		
Gender	[9]	-0.14	-0.11	0.03	0.11	0.18	0.04	0.11	0.02	1.00	
Social influence	[10]	-0.08	-0.03	0.04	0.02	0.02	-0.03	-0.01	-0.10	-0.00	1.00
SPID previous use	[11]	0.11	0.03	0.17	0.17	0.17	-0.05	0.34***	0.26*	0.07	-0.04

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6. *Correlation Matrix.*

4.4 Balance test

To test for any difference between the treatment group compared to the control group with respect to age, education, and gender, it has been conducted a two-sample t-test (Table 7). Before performing it, assumptions such as normality and equal variance have been checked. As it can be seen from Table 7, there is no notable distinction between the group that received the framing intervention from those who did not. This is because the p-value is bigger than 0.005, indicating that these two groups are comparable in terms of education, gender, and age.

	Observations Control	Observations Treatment	Mean Control	Mean Treatment	Dif.	St.Err .	t-value	p-value
Education	49	45	2.327	2.555	.229	.207	-1.1	.27
Age	49	45	2.898	2.867	.032	.428	.05	.942
Gender	49	45	0.470	0.511	.042	.104	-.4	.69

Table 7. *Two-way simple t-test.*

Apart from the above-described t-test, it has also been conducted a two-sample Wilcoxon rank-sum test to assess that the two groups could be determined as comparable in terms of age, education, and gender. The null hypotheses state that age, gender, and education in the two groups are the same. For age, the test statistic (z) was computed as 0.110 whereas the probability (Prob>z) associated with the test statistic was found to be 0.9121. In terms of education, the test statistic (z) was -0.402 and its associated probability (Prob>z) has been calculated as 0.6876. Lastly, for the gender test statistic (z) was calculated as -1.337 and the associated probability (Prob>z) has been calculated to be 0.181. Therefore, given that for all three variables their related p-value is greater than the significance level of 0.05, this demonstrated that there is not enough evidence to reject the null hypothesis, drawing the conclusion that there is not a substantial divergence in education, age, and gender between the treatment and the control group.

4.5 Vignette scenarios

After having assessed that both groups are comparable in terms of age, gender, and education, Table 8 plots the frequency, percentage, and cumulative percentage of the treatment and control groups for the vignette scenarios for outpatient visits and e-prescriptions. For outpatient visits, in the treatment group, the most frequent option was ‘go to the office’ with a frequency of 22 and the least selected option was ‘SPID’ with a frequency of 1, representing only 2.22% of the total responses. Concerning the control group, the most selected option was also ‘go to the office,’ and the least frequent was ‘SPID’ with a frequency of 7, representing the 14.29% of the total responses. For e-prescriptions, in the treatment group, the most selected option was ‘go to the office’ with a frequency of 21, and the least frequent option was SPID, representing the 11.11% of the total responses. For the control group, the most frequent option was also ‘go to the office’ and the least frequent answer was SPID. It is interesting to denote that the respondents in both groups indicated a strong preference for physical visits. Although this overview provides a useful summary of the distribution of the responses in the treatment and control groups for

outpatient visits and e-prescriptions, it does not offer any relationship between the variables employed in the study. A more thorough representation of the results is provided in the next section.

	TREATMENT GROUP			CONTROL GROUP		
	Frequency	Percentage	Cum.	Frequency	Percentage	Cum.
OUTPATIENT VISITS						
Go to the office	22	48.89	48.89	22	44.90	44.90
Phone call	22	48.89	97.98	20	40.82	85.71
SPID	1	2.22	100.00	7	14.29	100.00
E-PRESCRIPTIONS						
Go to the office	21	46.67	46.67	25	51.02	51.02
Phone call	19	42.22	88.89	12	24.49	75.51
SPID	5	11.11	100.00	12	24.49	100.00
N	45			49		

Table 8. *Vignette scenarios.*

4.6 Testing the hypotheses

Before running the regressions, it has been conducted the Breusch-Pagan Test to check the presence of heteroscedasticity that can affect the accuracy of predictions made by the regression models. After conducting the test, it has been assessed that there is no heteroscedasticity given that the p-value from the regressions resulted to be above the predetermined significance level (>0.005). To start with the analysis, the first two columns in Table 9 tested the effect of the treatment on the dependent variable willingness to use SPID for outpatient services and e-prescriptions. A side note to indicate that a table with the complete results for all controls can be found in Appendix D. For space constraints, in this section it is presented a reduced table with the main results. For willingness to use SPID for outpatient services, the treatment coefficient is -0.430, indicating that on average, participants in the survey exposed to the propaganda texts had a decrease in their willingness to use SPID for outpatient services by 0.430 units compared to those in the control group who were not exposed to any intervention. The corresponding t-value in parenthesis of -1.55 suggests that the treatment effect is significantly different from zero

and the negative sign indicates that the intervention had a negative impact on their willingness to use SPID for outpatient services. Similarly, for the willingness to use SPID for e-prescriptions, the treatment coefficient is -0.405, showing that participants who were administered the intervention had a decrease in their willingness to use the digital identity to retrieve e-prescriptions. This indicates that the treatment, namely the exposure to two propaganda texts had a negative effect on users' willingness to use SPID for both outpatient services and e-prescriptions. Consequently, it can be derived that the intervention has not positively influenced the dependent variable. As the treatment had no effect on the dependent variable, the regression results in Table 10 represent the analysis conducted using the entire sample. When the treatment has no significant effect on the dependent variable, it is not worth separating the control and intervention in the regression analysis and presenting separate results. By merging the control and treatment groups in the regression table, this approach allowed to examine the overall relationship between the constructs of the TAM model without placing undue emphasis on the treatment group, given the unsuccessful framing intervention effect.

Hypothesis 1

The first hypothesis stating, '*Perceived ease of use of SPID is positively related to perceived usefulness of SPID*' aimed to test the impact of perceived ease of use of SPID on usefulness of SPID. As it can be noted in the third column of Table 9, the regression results indicate that perceived ease of use (i.e., believing that SPID is simple to utilize) has a positive effect on perceived usefulness (i.e., perceiving SPID as increasing individual life performance and effectiveness). The coefficient estimate suggests that for one unit increase in the perceived ease of use of SPID, there is a corresponding increase of 0.758 units in perceived usefulness. Furthermore, this relationship is statistically significant, with a t-value of 11.64. This suggests that as individuals perceived the digital identity as something not difficult to use and they have a clear understanding of how it works, they are more prone to believe it as an instrument and tool that is useful to increase their life productivity. Moreover, the r-squared value of 0.647 shows that approximately 64.7% of the variability in perceived usefulness can explain and predict the variation in perceived usefulness, suggesting a moderate to an elevated level of explanatory power and that the included predictor, namely perceived ease of use, has a strong influence on perceived usefulness.

	DEPENDENT VARIABLES							
	[1] Willingness to use SPID outpatient	[2] Willingness to use SPID e- prescriptions	[3] Perceived usefulness	[4] Willingness to use SPID outpatient	[5] Willingness to use SPID e- prescriptions	[6] Behavioural intentions	[7] Willingness to use SPID outpatient	[8] Willingness to use SPID e- prescriptions
SPID framing intervention	-0.430 (-1.55)	-0.405 (-1.35)	-0.105 (-0.62)	-0.172 (-1.02)	-0.145 (-0.61)	-0.205 (-1.37)	-0.071 (-0.46)	-0.065 (-0.28)
Perceived ease of use			0.758*** (11.64)	0.414*** (2.88)	0.423** (2.88)	0.507*** (5.45)	0.167 (1.52)	0.225 (1.36)
Perceived usefulness				0.521*** (4.83)	0.405** (2.68)	0.440*** (4.59)	0.307** (2.81)	0.234 (1.42)
Behavioural intentions							0.487*** (4.40)	0.390* (2.34)
Intercept	1.592 (1.91)	2.554** (2.84)	0.971 (1.97)	-0.293 (-0.58)	0.917 (1.30)	0.116 (0.26)	-0.349 (-0.77)	0.872 (1.27)
N	94	94	94	94	94	94	94	94
Control	YES	YES	YES	YES	YES	YES	YES	YES
R²	0.069	0.035	0.647	0.699	0.474	0.755	0.755	0.506

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 9. Multiple linear regressions results.

Hypothesis 2

The second hypothesis, affirming ‘*Perceived ease of use of SPID is positively related to behavioural intentions to use SPID*,’ aimed to assess the influence of perceived ease of use of SPID on Italian citizens’ behavioural intentions to use SPID. As it can be noted in Table 9 (column 6), the coefficient of perceived ease of use is 0.507 and it is statistically significant at

the 0.001 level, as also indicated by the three asterisks (***), implying that there exists a meaningful correlation between the perception of ease of use of SPID and behavioural intentions to use the digital identity. The coefficient of 0.507 signifies that for one unit increase in perceived ease of use of SPID, there is an expected increase of 0.507 units in behaviour, *ceteris paribus*. Moreover, the t-value of 5.45 suggests a strong and robust impact between the ease of use of SPID and an individual's behavioural intentions to use the system.

Hypothesis 3

The third hypothesis referred to '*Perceived usefulness of SPID is positively related to behavioural intentions to use SPID*' and it tested the impact of perceived usefulness of SPID on the behavioural intentions of Italian citizens to use the digital identity. As can be seen in Table 9 (column 6), the coefficient of 0.440 suggests that one unit increase in perceived usefulness is associated with an expected increase of 0.440 units in behaviour, *ceteris paribus*. Moreover, in brackets, it can be noticed that the t-value of 4.59 indicates a strong and statistically significant relationship between perceived usefulness and behaviour. Overall, these findings suggest that perceived usefulness plays a significant role in influencing behavioural intentions as individuals who hold a greater perception of the utility of SPID are correspondingly more prone to exhibit a heightened level of engagement in utilizing the digital identity in their daily lives. However, the influence of the variable perceived usefulness on behavioural intentions is less than perceived ease of use. This is in contrast with previous studies that suggested usefulness to be a stronger predictor of behavioural intentions to use a digital device than ease of use (He et al., 2018; Henderson and Divett, 2003).

Hypothesis 4

The last hypothesis proclaimed that '*Behavioural intentions to use SPID mediate to a positive effect between perceived ease of use and perceived usefulness of SPID towards willingness to use SPID to access to outpatient visits and e-prescriptions*' and it tested the influence of perceived ease of use and perceived usefulness of SPID on willingness to use the digital identity to book outpatient services and retrieving e-prescriptions, with the mediating role of behavioural intentions. As also presented in the 'Analysis strategy' section (3.4), this master thesis used the acclaimed mediation model of Baron and Kenny (1986) which involves three steps. The first one has been to establish the relationship between the two independent variables, ease of use and usefulness, on the dependent variable willingness to employ SPID for outpatient services and e-prescriptions. As can be seen in Table 9 (column 4), ease of use has a positive and statistically

significant effect (0.414, $p < 0.001$) on the willingness to use SPID for outpatient services. This indicates that citizens who believe that SPID is easy to use, are more prone to adopt the system for outpatient visits. Similarly, perceived usefulness has also a statistically significant positive effect on willingness to use SPID for outpatient services (0.521, $p < 0.005$). However, although the relationship between the two independent variables on the willingness to use SPID for e-prescriptions is positive, the effect is not significant. This suggests that ease of use and usefulness might not be key determinants in influencing individuals' willingness to use SPID for e-prescriptions. To continue with, the second step of Baron and Kenny (1986) mediation analysis, involved regressing the independent variables on the mediating variable, namely behavioural intentions. These regressions have been previously conducted for hypotheses 2 and 3 and the results suggested that ease of use and usefulness both influence behavioural intentions to use the digital identity.

In the final stage of the mediation analysis, it has been demonstrated that the mediator influences the outcome variable while controlling for the two independent variables. The regression results from Table 9 (columns 7 and 8) show that the coefficient for behavioural intentions in the regression model is statistically significant for both willingness to use SPID for outpatient services (0.487, $p < 0.001$) and willingness to use SPID for retrieving e-prescriptions (0.390, $p < 0.005$). Moreover, the impact of the independent variables decreased compared to the first step in the mediation regression. As also reported by Baron and Kenny (1986), when the relationship between the independent variables on the dependent variable decreases in the final stage of the mediation analysis, this signifies that mediation took place. This indicates that behaviour plays a key role in influencing individuals' willingness to use SPID for booking outpatient services and obtaining e-prescriptions as behaviour mediates the relationship between the two independent variables perceived ease of use and perceived usefulness and the dependent variable, willingness to use SPID for healthcare services. Hence, it can be concluded that this analysis provides robust and solid evidence supporting the mediation role of behaviour, suggesting that behaviour towards SPID plays a crucial role in shaping individual willingness to use it for healthcare purposes.

Chapter 5: Results discussion

This section presents a comprehensive discussion of the obtained results, and it is organized in three areas: there is first a reflection on the absence of the positive framing intervention, the

second paragraph provides an examination of the reasons why Italian citizens might be more prone to adopt classical methods to access administrative services as shown in the survey results. Finally, the last section contains a review and discussion of the four hypotheses tested.

5.1 Reflection on the absence of framing intervention

In the existing literature, it is commonly acknowledged that positive framing interventions have the potential to exert a prominent impact on the outcome of interest (Anteneh et al., 2021; O'Shea et al., 2016). Despite the initial expectations and efforts put into the design of the intervention for this study, the framing effect did not yield any significant change in the outcome of interest. The two propaganda texts from the Italian government and the Veneto region did not increase users' willingness to use SPID for outpatient visits and e-prescriptions. As reported from the regression results, the framing impact had a negative influence on the dependent variable willingness to use SPID for both outpatient services (-0.430) and e-prescriptions (-0.405). This finding stands in contrast to prior research that reports significant positive associations between positive framing texts and the outcome under investigation (Anteneh et al., 2021; O'Shea et al., 2016). Given the lack of a discernible effect, it was deemed unnecessary to present results for treatment and control groups. The absence of any effect raised several questions about several factors that might have contributed to this lack of impact.

A reason for the ineffectiveness of the framing intervention can be attributed to the limited duration of the study and the restricted scope of the intervention, involving only two short vignettes. The duration of the vignette survey experiment might have been insufficient to properly detect and observe the desired effects of the positive framing. Interventions require a longer period to give birth to noticeable changes (Berglund et al., 2018). Moreover, given that the survey administered only two short propaganda texts, this might have constrained its potential impact on the users' willingness to use the digital identity to access healthcare services. The two extracts used in the study might have provided a limited and insufficient representation of the full range of factors influencing the outcome variable. Individual behaviour and perceptions are multifaceted constructs influenced by a multitude of factors (Nijland et al., 2009). Disentangling the specific influence of the treatment in such a complex context might not be easy as the intervention administered might have been subtle and/or interacted with other factors in unpredictable ways (Zhen & Yu, 2016). Individual attitudes of the Italian population toward the healthcare system might have also influenced the treatment's effectiveness. Factors such as health literacy, previous experience with healthcare, and personal beliefs about medical

treatments could have impacted personal responses and willingness to engage with interventions (Bakeera et al., 2009). To conclude this section, it is important to acknowledge that null findings on the absence of framing effects are common in research (Zhen & Yu, 2016). Human behaviour is complex, and interventions do not always produce the desired effects.

5.2 SPID adoption for accessing to administrative services

The results from the survey revealed that both the control and treatment groups displayed clear favouritism for physically going to the office rather than using the digital identity when they have to access administrative services. Additionally, the analysis of the two short scenarios where respondents were asked to indicate a preferred method for booking outpatient visits and retrieving e-prescriptions based on the stories at hand, further demonstrated a predilection for physically going to the office rather than using SPID. While this study might have not dug deeper to a comprehensive understanding of the exact reasons behind the preference for physical visits, the literature offers some potential explanations. Given the cultural and social context in Italy, where people highly value face-to-face interactions, citizens tend to prefer going physically to access services rather than using digital tools (De Belvis et al., 2008). Italy has a strong tradition of personal relationships and human interactions as a method of communication (Di Nicola, 2011). Citizens might place a high value on personal connections, trust, and familiarity that come with visiting the office and interacting directly with the officer providers. The importance of building a solid rapport and having direct communication with the administrative staff might outweigh the convenience offered by digital solutions such as the use of SPID. In the context of healthcare, citizens might prefer to visit the office for booking outpatient visits and retrieving e-prescriptions due to the advantage it offers in terms of direct assurance (Leavitt & Leavitt, 2011). By visiting the office, people can ask questions, seek clarifications, and have answered all their doubts. This face-to-face interaction might provide a sense of security and confidence as individuals can immediately receive personalized attention and ensure that their concerns are addressed (Krevers & Milberg, 2014). In contrast, the use of SPID might be perceived as lacking the same level of certainty and assurance.

Moreover, bureaucratic complexity and digital literacy might be associated with low acceptance levels of digital solutions when accessing administrative services (De Biase, 2021). Although in Italy digital technologies have become increasingly prevalent in many aspects of citizens' lives, there are still variations in digital literacy (Benecchi et al., 2021). This might lead individuals to believe that utilizing SPID for services as booking outpatient visits and retrieving e-prescriptions

might involve navigating complex systems. Lack of awareness and complexity could then potentially explain this resistance (Prosperetti, 2022). In particular, the limited access to digital tools and infrastructure, mainly for older adults, might lead them to not be familiar with or have the necessary technology to use SPID when they have to access to public administration services (Redazione, 2021). The process of obtaining and setting up an account could be difficult for many users and the system may not be user-friendly for those who are not that comfortable with technology (CGIL Sindacato, n.d.). As a result, individuals might find it simpler and more convenient to visit the office directly. The high rate of uncertainty avoidance in a Mediterranean country like Italy might also play a role as people might feel more comfortable with traditional methods of accessing services rather than using new and unfamiliar digital tools (Santeramo et al., 2013). Individuals might be less willing to take risks and use new technologies being more risk-averse and resistant to change. Although the existing literature might provide explanations for reasons why Italian citizens exhibit a preference for traditional methods over digital alternatives, further studies are needed to investigate the underlying reasons.

5.3 Hypotheses discussion

An overview of the status of the hypotheses can be found in Table 10. Upon retrieving the data from the questionnaire, the results indicate that the first hypothesis, which posits a positive relationship between perceived ease of use and usefulness of SPID, is supported by the findings obtained from the survey experiment, leading to its acceptance. This is in line with previous literature postulating the same interaction between the ease of use and usefulness (Davis, 1989; Raza et al., 2017). This signifies that citizens who believe SPID is simple to use, they also find it useful when they have to carry out their administrative tasks. The perception of a system as being simple and uncomplicated leads humans to believe it is more valuable in meeting their needs (Agrebi & Jallais, 2015; Lee et al., 2017). A simple system enhances users' productivity by streamlining processes and eliminating unnecessary complexities. It enables users to not get overwhelmed by complicated functionalities, increasing the value of the use of the technology to accomplish their duties, and reducing burdens on users (Magnotti et al., 2016). The perceived ease of use factor acts as a catalyst, enabling individuals to navigate and interact with the digital tool comfortably, influencing positively their perceptions of its usefulness (Lee et al., 2017). This implies that a system that is intuitive, user-friendly and requires minimal effort is perceived as more useful by the users.

The second hypothesis, positing a positive interaction between ease of use and behavioural intentions in using SPID, is also accepted and it confirms the key findings retrieved and described in the theoretical framework (Al-Marroof & Al-Emran, 2018; He et al., 2018). This implies that there is a connection between individuals perceiving SPID as user-friendly and their subsequent behaviour of using it. This perceived value in terms of ease of use can motivate and enhance individuals to actively adopt SPID, engaging in positive actions, and supporting its usage (Raza et al., 2017). When people perceive SPID as simple to utilize, this might install a sense of confidence in their capability to navigate the system. This perception can increase their self-efficacy beliefs, leading them to believe that they have the required and necessary skills to use SPID (Agrebi & Jallais, 2015). As a result, they feel more empowered and motivated to engage in the necessary behaviours to leverage the benefits of SPID. Considering the deep interplay between perceived ease of use and behaviour, it becomes evident that the design of user-friendly systems can significantly impact individuals' behavioural adoption of such technology (Lee et al., 2017).

The third hypothesis, indicating a positive interaction between perceived usefulness and behavioural intentions to use SPID, is also accepted. As formulated in the theoretical framework, the data gained from the vignette survey experiment showed a robust interaction between perceived usefulness of SPID and behavioural intentions toward the use of the digital identity (Rafique et al., 2020; Ranellucci et al., 2020). This positive interaction derives from the belief that a useful system drives individuals to develop stronger and more positive intentions to engage in the behaviours to utilize it effectively. The perception of usefulness boosts confidence and motivation in humans as users recognize that the system can provide practical solutions for their needs, leading individuals to engage in actions that facilitate its adoption (Abdullah et al., 2016; Caffaro et al., 2020; Purnawirawan et al., 2012).

Regarding the fourth hypothesis, this is also confirmed, and it aligns with the literature described in the theoretical framework (Rafique et al., 2020; Ranellucci et al., 2020). The findings from the vignette survey indicate that behaviour acts as a mediator, positively impacting the relationship between perceived ease of use and usefulness of SPID with the dependent variable willingness to use the digital identity for outpatient services and e-prescriptions (Chuttur, 2009; Unal & Uzon, 2021). The mediating effect of behaviour suggests that users who perceived SPID as easy to use and useful are more likely to demonstrate behavioural engagement and these

positive experiences with the system reinforce their willingness to a continuous usage of the digital identity for healthcare purposes.

HYPOTHESIS		STATUS
1	Perceived ease of use of SPID is positively related to perceived usefulness of SPID	Accepted
2	Perceived ease of use of SPID is positively related to behavioural intentions to use SPID	Accepted
3	Perceived usefulness of SPID is positively related to behavioural intentions to use SPID	Accepted
4	Behavioural intentions towards SPID mediate to a positive effect between perceived ease of use and perceived usefulness of SPID towards willingness to use SPID to access to outpatient visits and e-prescriptions	Accepted

Table 10. *Hypotheses status.*

6. Conclusion

The data obtained in this master thesis provided valuable insights into the significance of perceived ease of use and perceived usefulness of SPID in shaping individuals' behavioural intentions to use the digital identity and to what extent these behavioural attitudes mediate toward a willingness to use SPID for outpatient services and e-prescriptions. The findings hold significance importance as they serve as key determinants in developing effective mitigation strategies for addressing the pressing challenge faced by Italy: an increased number of outpatient visits and e-prescriptions coupled with shortage of doctors. Issues that can be mitigated by leveraging digital identity solutions for overburdened healthcare facilities (Abbate, 2020; Bartoloni, 2022). To answer the research question: '*To what extent do the perceived usefulness and perceived ease of use of SPID influence the behaviour of Italian citizens to a continuous usage of SPID to access outpatient visits and e-prescriptions?*', the findings retrieved from the vignette survey experiment suggest that ease of use and usefulness of SPID work in tandem to shape users' behavioural intentions towards the use of the digital identity (Caffarro et al., 2020; He et al., 2018; Raza et al., 2017) . The data demonstrated, in line with the literature, that this positive behaviour further mediates to a willingness to use digital identity systems for accessing

outpatient services and e-prescriptions on an ongoing basis (Chuttur, 2009; Unal & Uzon, 2021). Hence, the extent to which perceived usefulness and perceived ease of use influence citizens' behavioural intentions to use SPID and how this positive behaviour impacts a continuous usage for healthcare services, is substantial. These findings provided valuable insights into the complex and intricate relationship involved in the adoption of SPID and they can be used to create strategies and interventions aimed to promote its effective utilization in the healthcare context.

However, although Veneto is part of Italy, the sample of this study might not fully represent the behavioural patterns of the entire Italian population and the data retrieved should be interpreted with caution (Xiong, 2022). It is important to acknowledge that there are regional differences in technological adoption within the country, particularly between the Northern and Southern regions. The South of Italy has historically been characterized by lower levels of economic development, limited access to educational resources, and less advanced technological infrastructure in healthcare (Benecchi et al., 2021). These factors contribute to disparities in digital literacy and access to digital devices compared to its Northern counterpart. These differences suggest that it is important to recognize and consider the specific context of each region when interpreting the results. Additionally, the dynamics influencing the adoption of digital identity can vary across different domains as education and all other services that can be accessed with SPID. While the insights provide valuable information for the healthcare sector, it is necessary to also understand the unique challenges and preferences associated with the adoption of SPID in other policy areas. This broader understanding will help in tailoring and implementing digital identity solutions across various sectors, considering the specific needs and requirements of each policy context.

Despite the limited generalizability of the findings, the data retrieved from this master thesis can serve as a point of departure to inform policymakers toward the development of key interventions that cater users' preference toward SPID. Based on users' insights, policymakers can make necessary adjustments to maximize the adoption of digital identity in Italy. Moreover, this study's application of TAM to assess digital identity in the specific context of outpatient services and e-prescriptions in Italy adds to the existing body of knowledge on technology acceptance in the healthcare domain. The innovative aspect of this study lies in the utilization of a vignette survey combined with an experimental approach to assess TAM. Although the positive framing intervention had not yielded any visible impact on the treatment group, the design and methodology applied to the model provide a departing point towards the use of this

novel method in analysing technology adoption. The experimental approach, coupled with the vignette survey methodology, added a layer of robustness and credibility to the findings as well as being a pioneering approach to test the TAM framework.

6.1 Policy implications

Based on the findings obtained from the collection of the data, three recommendations can be made to the Italian government on how to improve SPID adoption amongst Italian citizens. These three pieces of advice can help the Italian government to increase SPID usage across the country for accessing healthcare services.

Policy advice 1: Promotion campaigns on the use of SPID

First, the data gathered showed that Italian people participating in the survey prefer to access administrative services by physically going to the office. The vignette results also indicate a preference for not using the digital identity system when booking outpatient visits and retrieving e-prescriptions. This signifies a slightly moderate to low integration of SPID in the lives of citizens as compared to traditional methods. As such, the first policy recommendation for the Italian government refers to promoting the use of SPID in accessing administrative healthcare services. This also aligns with the broader digital transformation goals of the Italian government, enabling the government to harness the power of technology and bring digitalization to higher levels in the country (European Commission, n.d.). Promotion campaigns play a crucial role in raising awareness and encouraging the use of SPID for various purposes, including outpatient visits and e-prescriptions.

To effectively promote the use of digital identity, the government can develop and create comprehensive educational materials listing down the benefits and functionalities of SPID, clearly communicating how the digital identity simplifies administrative processes and improves overall convenience for patients and healthcare practitioners. The government can use various channels such as social media, brochures, and TV commercials to disseminate this information widely. As an example, the Italian government can take inspiration from the campaign “The State is on the Internet,” launched in 2015 by the Latvian government. This initiative included advertising and marketing the use of digital services to communicate to Latvian citizens the benefits and gains of digital identities in accessing to public services (Ozols, 2016). The Italian government can also enter in collaborations with relevant organizations, engaging in effective

partnerships promoting SPID adoption through coordinated campaigns, events, and conferences such as Italy's twenty regions or the EU.

Policy advice 2: Transform SPID to a more user-friendly system

Secondly, the results obtained from the vignette survey experiment confirmed the hypotheses of the TAM framework developed by Davis (1989). Previous research studies and the empirical evidence gathered in this master thesis indicate that ease of use and usefulness are crucial predictors in determining users' adoption of digital identity systems like SPID (Raza et al., 2017; Unal & Uzon, 2021). As the Italian government is actively dedicated to make the country more digitalized, efforts need to be made to enhance technology adoption to higher levels amongst Italian citizens, including the use of SPID. Given the lack of adoption from Italian citizens and their preference for traditional methods when accessing administrative services, the Italian government needs to consider that perceptions of a system that is easy to use increase users' utilization. It is then crucial for the Italian government to make the system more user-friendly to enhance its uptake.

For example, the presence of multiple identity providers within the SPID system can contribute to the perception that the digital identity is not user-friendly. Citizens might find it challenging to navigate through the diverse options, understand the differences between identity providers, and select the one that fits best their preferences (Agenzia per l'Identita' Digitale). Individuals might lack the confidence or knowledge to make an informed decision, leading them to prefer other methods when accessing healthcare services (De Biase, 2021). As such, to render SPID more user-friendly, the government can simplify the providers selection process by unifying the multi-provider approach, as in The Netherlands where DigiD system acts as the single provider for creating and managing the digital identity for governmental services (Brown, 2023). With a single provider, users do not need to navigate through multiple registration processes or remember different sets of credentials for each identity provider, thus simplifying users experience and reducing potential confusion.

Policy advice 3: Continuous monitoring of users' preferences focusing on low educated and individuals who do not have developed digital skills

The Italian government needs to conduct users' testing and gather feedback to continuously improve SPID concomitantly with addressing any usability issue. Integrating users' feedback

plays a crucial role in enhancing technology adoption as feedback will allow to collect insights directly from SPID's users regarding their needs, preferences, and expectations. Understanding and assessing citizens perspectives can help to tailor the use of digital identity to better align with users' requirements, meeting their needs, thus increasing the likelihood of SPID's adoption in their lives (OECD, 2009). Moreover, collecting feedback can help to identify those areas where users might be encountering difficulties and experiencing frustration with the use of SPID, leading to prefer other methods for accessing administrative services. Continuing to monitor users' opinions is necessary for improvements, enhancing users experience and making SPID more appealing to adopt (Guo, 2022). This approach has been already implemented by the UK government which created service teams speaking to people to gain a thorough understanding of the needs and preferences of users, targeting mostly low-educated people and those who do not have high digital skills (Andrews, 2022). The focus on engaging with individuals who have lower education and limited digital skills is important because often those people face additional barriers when it comes to adopting and using digital services (Neumeyer et al., 2021). By specifically targeting this group and being inspired by the British initiative, the Italian government can bridge the digital divide among different segments of the Italian population, focusing on users who are most likely to experience difficulties.

6.2 Limitations & Future research

This research is not without limitations and there is the need for follow-up studies in the context of digital identity in Italy. Acknowledging these limitations and suggesting future research in this area can further enhance Italian digital identity's role and potential. One key limitation pertains to the generalizability of the findings considering the limited size of the sample and the exclusive inclusion of participants from the Veneto region. To accrue for this, future researchers can increase the sample size as a larger sample enhances the representativeness of the population from which data are inferred, improving external validity. Future studies should also consider expanding the research scope beyond the Veneto region. By including a more diverse sample that represents different geographical areas and cultural contexts, future researchers can capture a broader range of perspectives and patterns related to digital identity adoption and usage, increasing the generalizability of the findings.

A second limitation concerns the focus of this study as the thesis considered the use of SPID in booking outpatient services and retrieving e-prescriptions. However, the Italian digital identity can be used to access a multitude of other services than healthcare. For example, SPID can be

used to declare taxes, to obtain unemployment benefits, and to enrol children in schools (Garcia, 2022). The willingness to use SPID amongst Italian citizens might be different when accessing other policy areas than healthcare. Future research can broaden the scope to include other aspects of digital identity services. This might include the development of comparative studies that compare the effectiveness and users' acceptance of SPID in healthcare and in other domains, as for example education. All of this would enable a more comprehensive evaluation of the digital identity systems, providing valuable insights into the patterns of citizens' willingness to use SPID.

The last limitation refers to the method of data collection. Surveys provide a limited depth of information and details, making it complicated to obtain a nuanced comprehension of the concerns and issues of respondents (Neumann, 2014). For example, respondents in this study assessed that their preferred method to access administrative services is going physically to the office. However, this study did not provide an accurate explanation of the underlying reasons why they prefer traditional methods over the use of the digital identity. This limitation can be addressed by conducting follow-up interviews or focus groups to gather qualitative data to provide a more in-depth understanding of the perceptions of SPID. Using open-ended questions will allow to obtain more detailed responses, allowing participants to respond in their own words, without being constrained by predetermined options (Neumann, 2014). This will provide greater flexibility in the data collected.

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APPENDIX A: VIGNETTE SURVEY – ENGLISH VERSION

1st Block: Consent Form

Dear Participant,

My name is Beatrice Bosco and I am currently finishing a Master of Science in Public Administration (Economics and Governance track) at Leiden University, in The Netherlands.

I hereby invite you to participate in this interactive vignette survey that aims to collect information on the behaviour of Italian citizens residing in Veneto in accessing governmental services with SPID, and more specifically in booking outpatient healthcare visits and accessing digital healthcare prescriptions.

The responses to this survey will be used for my master thesis and your participation is greatly appreciated as your input will make a significant contribution to my research project! The results of your responses, will be presented in aggregated statistical way, using a software called Stata.

The survey will take approximately 15 minutes to complete. In compliance with the legislation that protects privacy (Law 679/2016 General Data Protection Regulation), I guarantee that participation in this survey is completely anonymous. I assure you that all the information you provide will be kept confidential and is solely used for the scope of this master thesis. You can drop anytime from the participation in this survey!

For any information and/or clarification related to this study, you can contact the undersigned via email beatribosco@icloud.com, responsible for the research and survey presented here.

Thank you for your cooperation and enjoy the vignette survey!

Beatrice Bosco

Question 1

Before starting the survey, kindly confirm that:

- a) you have carefully read the informed consent
- b) you give the permission to process the data obtained from your responses throughout the duration of this study
- c) you are voluntary taking part in this questionnaire, with the possibility to drop out at any time

- ☐ I confirm
- ☐ I do not confirm

2nd Block: Screening Questions

Question 2

Do you reside in Italy?

- ☐ Yes
- ☐ No

Question 3

Are you currently living in the Veneto region?

- ☐ Yes
- ☐ No

3rd Block: Demographic Questions

Question 4

Which age group does correspond to yours?

- ☐ Under 20
- ☐ 20-29
- ☐ 30-39
- ☐ 40-49
- ☐ 50-59
- ☐ 60-69
- ☐ 70-79
- ☐ 80-89

Question 5

Which category does correspond to your gender?

- ☐ Male
- ☐ Female
- ☐ A gender not present in the list
- ☐ I prefer not to answer this question

Question 6

What is your highest education level?

- ☐ Elementary school diploma
- ☐ High school diploma
- ☐ Bachelor degree
- ☐ Master degree
- ☐ Doctoral degree
- ☐ I do not possess any diploma

Question 7

How much do you agree with the following statement: “I am easily influenced by my social network (i.e. family, friends) when it comes to making decisions?”

- ☐ 1 – strongly disagree
- ☐ 2 – somewhat disagree
- ☐ 3 – neutral
- ☐ 4 – somewhat agree
- ☐ 5 – strongly agree

Question 8

What is your preferred way to access administrative services?

- ☐ Send an e-mail to the office department
- ☐ Access the online portal of the office department with SPID
- ☐ Go physically to the office department
- ☐ Make a phone call to the office department

Question 9

Have you ever used the Public Digital Identity System (SPID) for accessing administrative services?

- ☐ Yes
- ☐ No

Question 10

If yes, in which policy area do you use more frequently SPID?

(If you answered no to the previous question, you can skip this question and proceed to the next one)

- ☐ Healthcare policy (i.e. access to outpatient services)
- ☐ Finance policy (i.e. tax declarations)
- ☐ Education policy (i.e. subscribe children to school)
- ☐ Labour policy (i.e. unemployment benefits)
- ☐ Justice policy (i.e. heritage declaration form)
- ☐ General public administration services for the citizens (i.e. passport request, obtain birth certificate)
- ☐ To access online services across all European Union (i.e. services of eIDAS)

4th Block: Vignette Scenarios

Both treatment and control group

Question 11

Please read this short vignette

Maria is a 70-years old woman who lives in a small countryside city close to Treviso. She has just been diagnosed with diabetes. While until now her health was good, now she needs to book outpatient visits for regular check-ups to measure her blood test values at least once every two months. As she lives alone she values social interaction. Maria does not have a driving license and the hospital is 30 minutes away from her house and the bus stop is 10 minutes walking from her home. As a senior citizen, she is retired and she does not work anymore.

Given the scenario that you just read, if you were Maria, how would you book the outpatient visits?

- ☐ Book the outpatient visits with the online portal of the healthcare provider accessible with SPID
- ☐ Book the outpatient visits by physically going to the service desk of the healthcare provider
- ☐ Book the outpatient visits by making a phone call to the service desk of the healthcare provider

Question 12

Please read this short vignette

Benedetta is a 35-years old divorced woman who lives in a small countryside city close to Treviso. She had been taking medication for high blood pressure for several years, but she was due for a routine check-up and a new drug prescription. She is a busy worker that has to drive every day 20 minutes to her job and she has also a 1-year-old son to take care of. She is now weighing the options to access the medication: from one hand, she is intrigued by the convenience of obtaining the prescription for the new drug without having to leave her home or waiting on hold when phoning the doctor, but also concerned about a more comprehensive exam that she can benefit from during a more extensive in-person visit or by simply interact with her general practitioner with a short call.

Given the scenario that you just read, if you were Benedetta, how would you access the medical prescription?

- ☐ Access the electronic prescription with SPID, sent directly to the pharmacy without having to further consult the doctor
- ☐ Go physically to the doctor for a further check-up before obtaining the prescription
- ☐ Make a phone call to the doctor for an assessment before obtaining the prescription

5th Block: SPID Framing Intervention (for treatment) / no framing (for control)

TREATMENT GROUP

Next, the Public Digital Identity System (SPID) is a key to allow Italian citizens to access to digital services of local and central administrations regarding healthcare policy

Please read this short text about SPID

“Digital healthcare with SPID offers effective solutions to render medical services more accessible and inclusive for everyone, putting the citizen at the center of the healthcare system. A more technological and digital healthcare sector can improve the process of care and assistance for patients, reducing long waits and hospitalizations, optimizing costs, and reminding patients directly on their cell phones regarding therapies to follow or recommended screenings. With interconnected databases applications of artificial intelligence, we can improve the lives of patients and the work of healthcare personnel”

Retrieved from: <https://innovazione.gov.it/italia-digitale-2026/il-piano/sanita-digitale/> & <https://innovazione.gov.it/notizie/interventi/sanita-digitale-dal-fascicolo-personale-alle-televisite/>

Question 13

Please rate on a scale from 1 to 5 to what extent do you agree with the statements presented below, where 1 is ‘strongly disagree’ and 5 is ‘strongly agree’.

Using SPID to accomplish administrative tasks is quick

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

Using SPID improves my life performance and productivity

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

Using SPID makes it easier to access administrative services

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

Using SPID saves time when accessing administrative services

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

Using SPID is useful to access administrative services

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

Learning how to use SPID was easy for me

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I find SPID functions to be flexible to interact with, allowing me to easily adjust to changing circumstances and needs

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I intend and plan to use SPID to book outpatient visits

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I predict to use SPID to book outpatient visits

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I think I will use more frequently SPID to access outpatient visits

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I think I will use SPID in the future to access outpatient visits

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

Please read this short text about SPID

“Thanks to the web portal Sanita’ km zero Fascicolo, accessible with SPID, citizens of Veneto can enjoy this tool that helps them to autonomously manage many aspects of their health, such as pharmaceutical prescriptions. Digital prescriptions represent a vital step towards a complete dematerialization of paper pharmaceutical and specialist prescriptions, replacing them with equivalent digital documents. Without having to pick up a paper reminder from their doctor’s office, patients can directly go to the pharmacy to collect their medications, submitting a request for a prescription renewal directly to their doctor”

Retrieved from: <https://www.agid.gov.it/it/agenzia/stampa-e-comunicazione/notizie/2020/04/17/ricetta-medica-digitale-il-punto-sulle-novita> & <https://www.agid.gov.it/it/piattaforme/sanita-digitale> & <https://salute.regione.veneto.it/web/fser/cittadino/fascicolo-sanitario-elettronico-regionale>

Question 14

Please rate on a scale from 1 to 5 to what extent do you agree with the statements presented below, where 1 is ‘strongly disagree’ and 5 is ‘strongly agree’.

I intend and plan to use SPID to access electronic prescriptions

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I predict to use SPID to electronic prescriptions

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I think I will use more frequently SPID to access electronic prescriptions

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I think I will use SPID in the future to access electronic prescriptions

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

CONTROL GROUP

Question 13

Please rate on a scale from 1 to 5 to what extent do you agree with the statements presented below, where 1 is ‘strongly disagree’ and 5 is ‘strongly agree’.

Using SPID to accomplish administrative tasks is quick

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

Using SPID improves my life performance and productivity

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

Using SPID makes it easier to access administrative services

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

Using SPID saves time when accessing administrative services

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

Using SPID is useful to access administrative services

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

Learning how to use SPID was easy for me

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I find SPID functions to be flexible to interact with, allowing me to easily adjust to changing circumstances and needs

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I intend and plan to use SPID to book outpatient visits

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I predict to use SPID to book outpatient visits

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I think I will use more frequently SPID to access outpatient visits

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I think I will use SPID in the future to access outpatient visits

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

Question 14

Next, please rate on a scale from 1 to 5 to what extent do you agree with the statements presented below, where 1 is ‘strongly disagree’ and 5 is ‘strongly agree’.

I intend and plan to use SPID to access electronic prescriptions

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I predict to use SPID to electronic prescriptions

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I think I will use more frequently SPID to access electronic prescriptions

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

I think I will use SPID in the future to access electronic prescriptions

1-strongly disagree 2-somewhat disagree 3-neutral 4-somewhat agree 5-strongly agree

APPENDIX B: VIGNETTE SURVEY – ITALIAN VERSION

Prima parte: consenso informativo

Gentile Partecipante,

Mi chiamo Beatrice Bosco e sto completando un Master of Science (laurea magistrale in discipline scientifiche) in Pubblica Amministrazione, seguendo il corso di Economia del Governo presso l'università di Leida, nei Paesi Bassi.

La invito a partecipare a questo questionario interattivo che mira a raccogliere informazioni in merito al comportamento dei cittadini Italiani residenti in Veneto nell'accesso ai servizi di pubblica amministrazione tramite SPID, e più specificatamente, nella prenotazione di visite ambulatoriali e nell'accesso di ricette mediche digitali.

Tutte le risposte a questo questionario saranno utilizzate per la mia tesi di laurea e la sua partecipazione è molto gradita in quanto il suo contributo farà una significativa differenza e contribuirà in maniera considerevole per il mio progetto di ricerca! I risultati delle sue risposte saranno analizzati in modo statistico, utilizzando un software chiamato Stata.

La compilazione del questionario richiederà circa 15 minuti. In conformità con la legislazione che protegge la privacy (Legge 679/2016 Regolamento Generale sulla Protezione dei Dati), le garantisco che la partecipazione è completamente anonima. Tutte le informazioni da lei fornite saranno esclusivamente utilizzate per lo scopo della mia tesi di laurea. Può interrompere la partecipazione a questo questionario in qualsiasi momento!

Per qualsiasi informazione e/o chiarimento riguardo a questo questionario o alla mia ricerca, può contattare la sottoscritta via e-mail beatribosco@icloud.com, responsabile dell'indagine e inchiesta qui presentata.

La ringrazio per la sua collaborazione e spero si diverta nella compilazione di questo sondaggio!

Beatrice Bosco

Domanda 1

Prima di iniziare il questionario, gentilmente confermi che:

- a) Ha letto attentamente il consenso informativo
- b) Concede il permesso nell'elaborazione dei dati ottenuti dalle sue risposte per tutta la durata dello studio
- c) Sta partecipando volontariamente a questo sondaggio, consapevole della possibilità di interrompere la partecipazione in qualsiasi momento

- ☐ Confermo
- ☐ Non confermo

Seconda parte: domande di screening

Domanda 2

Risiede in Italia?

- ☐ Sì
- ☐ No

Domanda 3

Attualmente vive nella regione Veneto?

- ☐ Sì
- ☐ No

Terza parte: domande di natura demografica

Domanda 4

Quale fascia di età corrisponde alla sua?

- ☐ Meno di 20
- ☐ 20-29
- ☐ 30-39
- ☐ 40-49
- ☐ 50-59
- ☐ 60-69
- ☐ 70-79
- ☐ 80-89

Domanda 5

A quale genere si identifica di più?

- ☐ Maschile
- ☐ Femminile
- ☐ Un genere non presente nella lista
- ☐ Preferisco non rispondere a questa domanda

Domanda 6

Quale è il suo livello di istruzione più alto mai raggiunto?

- ☐ Diploma di scuola elementare
- ☐ Diploma di scuola superiore
- ☐ Laurea triennale
- ☐ Laurea magistrale
- ☐ Dottorato di ricerca
- ☐ Non possiedo alcun diploma

Domanda 7

In che misura è d'accordo con la seguente affermazione: "Sono facilmente influenzabile dalla mia rete sociale (ad esempio famiglia, amici) quando si tratta di prendere decisioni?"

- ☐ 1- Fortemente in disaccordo
- ☐ 2- Abbastanza in disaccordo
- ☐ 3 - Neutrale
- ☐ 4 – Abbastanza d'accordo
- ☐ 5- Fortemente d'accordo

Domanda 8

Quale metodo preferisce quando deve accedere ai servizi di pubblica amministrazione?

- ☐ Inviare un'email all'ufficio competente
- ☐ Accedere al portale online dell'ufficio competente con SPID
- ☐ Recarmi fisicamente presso l'ufficio competente
- ☐ Telefonare all'ufficio competente

Domanda 9

Ha mai utilizzato il Sistema Pubblico di Identità Digitale (SPID) per accedere ai servizi amministrativi?

- ☐ Sì
- ☐ No

Domanda 10

In caso abbia risposto sì alla precedente domanda, in quale area utilizza più frequentemente SPID?

- ☐ Politiche sanitarie (ad esempio nell'accesso ai servizi ambulatoriali)
- ☐ Politiche finanziarie (ad esempio per le dichiarazioni dei redditi)
- ☐ Politiche dell'istruzione (ad esempio per l'iscrizione dei figli a scuola)
- ☐ Politiche del lavoro (ad esempio per la richiesta di disoccupazione, reddito di cittadinanza)
- ☐ Politiche giudiziarie (ad esempio per compilare il modulo per la richiesta di successione)
- ☐ Servizi amministrativi generali per i cittadini (ad esempio per la richiesta di passaporto)
- ☐ Per accedere ai servizi online in tutta l'Unione Europea (ad esempio i servizi eIDAS)

Quarta parte: vignette

Domanda 11

Per favore, legga attentamente questa breve vignetta.

Maria è una donna di 70 anni che vive in una piccola città di campagna vicino a Treviso. Le è appena stato diagnosticato il diabete. Fino ad ora, la sua salute era buona, ma adesso, vista la sua condizione medica, deve prenotare visite ambulatoriali per controlli regolari per tenere sotto controllo i valori del suo esame del sangue almeno una volta ogni due mesi. Poiché vive da sola, le fa piacere interagire con le persone. Maria non ha la patente di guida e l'ospedale dista 30 minuti da casa sua, mentre la fermata dell'autobus è a 10 minuti a piedi dalla sua abitazione. Data la sua età, è in pensione e non lavora più.

Dato lo scenario appena descritto, se lei fosse Maria, come prenoterebbe le visite ambulatoriali?

- ☐ Prenoterei le visite ambulatoriali tramite il portale online del fornitore dei servizi sanitari accessibile con SPID
- ☐ Prenoterei le visite di persona alla reception del fornitore dei servizi sanitari
- ☐ Telefonerei alla reception del fornitore dei servizi sanitari

Domanda 12

Per favore, legga attentamente questa breve vignetta.

Benedetta è una donna di 35 anni, divorziata, che vive in una piccola città di campagna vicino a Treviso. Da diversi anni sta assumendo dei farmaci per l'ipertensione, e dopo una visita di controllo le è stato somministrato un nuovo farmaco. Benedetta è una lavoratrice molto impegnata che ogni giorno deve guidare per 20 minuti per raggiungere il suo posto di lavoro e deve anche prendersi cura di un figlio di un anno. Adesso, Benedetta sta valutando le varie opzioni per accedere a questa nuova terapia: da un lato è attratta dalla comodità di ottenere la prescrizione per questo nuovo farmaco tramite il portale sanitario senza dover uscire di casa o aspettare in coda al telefono. Allo stesso tempo, però, è preoccupata di non poter beneficiare di un esame più completo se lei si recasse fisicamente dal medico a ritirare la ricetta. In questo modo, potrebbe avere una visita più estesa. E' anche attratta nel chiamare il medico, potrebbe avere un breve chiarimento anche con una chiamata riguardo al nuovo farmaco.

Dato lo scenario appena descritto, se lei fosse Benedetta, in che modo accedrebbe alla prescrizione medica?

- ☐ Accederei alla prescrizione elettronica con SPID, inviata dal medico direttamente alla farmacia, senza doverlo consultare ulteriormente
- ☐ Andrei fisicamente dal medico per ottenere la prescrizione, in maniera tale che possa chiarire un mio eventuale dubbio
- ☐ Farei una telefonata al medico per una valutazione prima di ottenere la prescrizione

Quinta parte: SPID Framing Intervention (for treatment) / no framing (for control)

TREATMENT GROUP

In seguito, il Sistema Pubblico di Identità Digitale (SPID) è un importante strumento che consente ai cittadini Italiani di accedere ai servizi digitali delle amministrazioni locali e centrali riguardanti le politiche sanitarie.

Per favore, legga attentamente questo breve testo riguardante lo SPID

“La sanità digitale con SPID offre soluzioni efficaci per rendere i servizi dedicati più accessibili ed inclusivi per tutti, ponendo il cittadino al centro dei nostri sistemi sanitari. Un settore sanitario più tecnologico e digitale può migliorare il processo di cura e assistenza dei pazienti, riducendo le lunghe attese, le ospedalizzazioni ed ottimizzando i costi e ricordi ai pazienti direttamente sul loro cellulare le terapie da seguire o gli screening raccomandati. E con basi dati interconnesse e applicazioni di Intelligenza Artificiale potremo migliorare la vita dei pazienti e il lavoro di medici”

Tratto da: <https://innovazione.gov.it/italia-digitale-2026/il-piano/sanita-digitale/> & <https://innovazione.gov.it/notizie/interventi/sanita-digitale-dal-fascicolo-personale-al-telesito/>

Domanda 13

Per favore, indichi su una scala che va da 1 a 5 in che misura lei e' d'accordo con le seguenti affermazioni, dove 1 corrisponde a 'fortemente in disaccordo' e 5 corrisponde a 'fortemente d'accordo'

Utilizzare lo SPID per svolgere compiti amministrativi e' veloce

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Utilizzare lo SPID migliora le mie prestazioni e produttivita' nella vita

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Utilizzare lo SPID facilita l'accesso ai servizi amministrativi

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Utilizzare lo SPID permette di risparmiare tempo nell'accesso ai servizi amministrativi

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Utilizzare lo SPID e' utile per accedere ai servizi amministrativi

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Imparare ad usare lo SPID e' stato facile per me

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Trovo le funzioni SPID flessibili e facilmente adattabili a diverse circostanze e necessita'

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Ho intenzione e pianifico di usare lo SPID per prenotare visite ambulatoriali

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Prevedo di usare lo SPID per prenotare visite ambulatoriali

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Penso di utilizzare piu' frequentemente SPID per accedere a visite ambulatoriali

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Penso di usare SPID in futuro per accedere a visite ambulatoriali

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Per favore, legga attentamente questo breve testo riguardante lo SPID

“Grazie al portale web Sanita' km zero Fascicolo, i cittadini del Veneto possono godere di questo strumento molto importante per aiutarli a gestire in maniera autonoma molti aspetti della loro salute, come le ricette farmaceutiche. Le ricette digitali costituiscono un processo verso la complete dematerializzazione delle prescrizioni farmaceutiche e specialistiche cartacee, sostituendole con gli equivalenti documenti digitali. Senza passare a ritirare il proprio cartaceo in studio medico, i pazienti si possono recare direttamente in farmacia a ritirare i propri farmaci, inoltrando direttamente al medico la richiesta di rinnovo di una ricetta”

Tratto da: <https://www.agid.gov.it/it/agenzia/stampa-e-comunicazione/notizie/2020/04/17/ricetta-medica-digitale-il-punto-sulle-novita> & <https://www.agid.gov.it/it/piattaforme/sanita-digitale> & <https://salute.regione.veneto.it/web/fser/cittadino/fascicolo-sanitario-elettronico-regionale>

Domanda 14

Per favore, indichi su una scala che va da 1 a 5 in che misura lei è d'accordo con le seguenti informazioni, dove 1 corrisponde a 'fortemente in disaccordo' e 5 corrisponde a 'fortemente d'accordo'

Ho intenzione e pianifico di usare lo SPID per accedere alle prescrizioni mediche elettroniche

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Prevedo di usare lo SPID per accedere alle prescrizioni mediche elettroniche

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Penso di utilizzare più frequentemente SPID per accedere alle prescrizioni mediche elettroniche

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Penso di usare SPID in future per accedere alle prescrizioni mediche elettroniche

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

CONTROL GROUP

Domanda 13

Per favore, indichi su una scala che va da 1 a 5 in che misura lei e' d'accordo con le seguenti affermazioni, dove 1 corrisponde a 'fortemente in disaccordo' e 5 corrisponde a 'fortemente d'accordo'

Utilizzare lo SPID per svolgere compiti amministrativi e' veloce

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Utilizzare lo SPID migliora le mie prestazioni e produttività nella vita

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Utilizzare lo SPID facilita l'accesso ai servizi amministrativi

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Utilizzare lo SPID permette di risparmiare tempo nell'accesso ai servizi amministrativi

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Utilizzare lo SPID e' utile per accedere ai servizi amministrativi

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Imparare ad usare lo SPID e' stato facile per me

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Trovo le funzioni SPID flessibili e facilmente adattabili a diverse circostanze e necessita'

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Ho intenzione e pianifico di usare lo SPID per prenotare visite ambulatoriali

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Prevedo di usare lo SPID pre prenotare visite ambulatoriali

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Penso di utilizzare piu' frequentemente SPID per accedere a visite ambulatoriali

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Penso di usare SPID in future per accedere a visite ambulatoriali

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Domanda 14

Per favore, indichi su una scala che va da 1 a 5 in che misura lei e' d'accordo con le seguenti informazioni, dove 1 corrisponde a 'fortemente in disaccordo' e 5 corrisponde a 'fortemente d'accordo'

Ho intenzione e pianifico di usare lo SPID per accedere alle prescrizioni mediche elettroniche

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Prevedo di usare lo SPID pre accedere alle prescrizioni mediche elettroniche

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Penso di utilizzare piu' frequentemente SPID per accedere alle prescrizioni mediche elettroniche

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

Penso di usare SPID in future per accedere alle prescrizioni mediche elettroniche

1- Fortemente in disaccordo 2- Abbastanza in disaccordo 3 – Neutrale 4 – Abbastanza d'accordo 5- Fortemente d'accordo

APPENDIX C: CRONBACH'S ALPHA TEST

<i>Item</i>	Observation	Sign	Item-test correlation	Item-rest correlation	Average interim covariance	Alpha
Willingness to use outpatient	94	+	0.8428	0.7722	.2407193	0.6723
Willingness to use e-prescriptions	94	+	0.7058	0.5811	.2652907	0.7019
Perceived ease of use	94	+	0.8203	0.7430	.2469795	0.6780
Perceived usefulness	94	+	0.8371	0.7707	.2488758	0.6766
Behaviour	94	+	0.8455	0.7773	.2416091	0.6723
SPID framing intervention	94	-	0.2300	0.1611	.3649428	0.7523
Age	94	-	0.4175	0.1367	.3368587	0.8025
Education	94	+	0.3603	0.2282	.3431304	0.7493
Gender	94	+	0.1492	0.0787	.3713054	0.7565
Social influence	94	+	0.1710	0.0118	.3754062	0.7751
SPID previous use	94	+	0.3083	0.2575	.3620693	0.7488
Test scale					.3088352	0.7491

APPENDIX D: REGRESSION RESULTS WITH CONTROLS – FULL TABLE

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
	Willingness to use SPID outpatient	Willingness to use SPID e-prescriptions	Perceived usefulness	Willingness to use SPID outpatient	Willingness to use SPID e-prescriptions	Behavioral intentions	Willingness to use SPID outpatient	Willingness to use SPID e-prescriptions
SPID framing intervention	-0.430 (-1.55)	-0.405 (-1.35)	0.105 (0.62)	0.172 (1.02)	0.145 (0.61)	0.205 (1.37)	0.0718 (0.46)	0.0650 (0.28)
Perceived ease of use			0.758*** (11.64)	0.414*** (3.96)	0.423** (2.88)	0.507*** (5.45)	0.167 (1.52)	0.225 (1.36)
Perceived usefulness				0.521*** (4.83)	0.405** (2.68)	0.440*** (4.59)	0.307** (2.81)	0.234 (1.42)
Behavioral intentions							0.487*** (4.40)	0.390* (2.34)
Gender	0.356 (1.28)	0.314 (1.04)	0.250 (1.56)	0.185 (1.13)	0.175 (0.77)	0.310* (2.15)	0.0333 (0.22)	0.0543 (0.24)
Age	0.0239 (0.30)	0.0303 (0.35)	-0.0593 (-1.29)	0.0211 (0.46)	0.0239 (0.37)	-0.0289 (-0.70)	0.0352 (0.84)	0.0352 (0.55)
Education	0.171 (1.06)	0.0546 (0.31)	-0.0340 (-0.36)	0.00761 (0.08)	-0.0946 (-0.72)	-0.0813 (-0.98)	0.0472 (0.55)	-0.0630 (-0.49)
Social influence	0.107 (0.87)	-0.0297 (-0.22)	-0.0274 (-0.39)	0.0695 (0.98)	-0.0656 (-0.66)	-0.0101 (-0.16)	0.0745 (1.15)	-0.0616 (-0.63)
SPID previous use	0.241 (0.63)	0.0528 (0.13)	0.00379 (0.02)	-0.114 (-0.51)	-0.268 (-0.86)	0.0340 (0.17)	-0.131 (-0.65)	-0.281 (-0.92)
Intercept	1.592 (1.91)	2.554** (2.84)	0.971 (1.97)	-0.293 (-0.58)	0.917 (1.30)	0.116 (0.26)	-0.349 (-0.77)	0.872 (1.27)
<i>N</i>	94	94	94	94	94	94	94	94
<i>R</i>²	0.069	0.035	0.647	0.699	0.474	0.755	0.755	0.506

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$