



Department of Master in business administration (MBA)

Postgraduate Dissertation

“The Evolution of the Digital Health Care Ecosystem in Greece: Challenges and Opportunities”

Student’s Name: Manolakou Olga

Supervisor: Magkoutas Anastasios

Co-supervisor: Tsoulfas Ioannis

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Declaration

I hereby declare that this Master's dissertation submitted for the degree of the Interdepartmental Postgraduate Programme in Business Administration (MBA) of the Department of Business Administration at the Hellenic Open University has been written by me and has not been submitted or approved in the context of any other undergraduate or postgraduate degree, either in Greece or abroad.

This dissertation represents my own views on the subject. All sources used in its preparation have been fully acknowledged, including both printed and online sources, with complete references to the authors.

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Abstract

The ongoing shift towards digital healthcare has significantly altered both the provision and accessibility of health services worldwide. In Greece, digital health solutions - such as electronic prescriptions, online scheduling platforms, digital diagnostic reporting, and electronic health records - have seen notable growth in recent years, with the COVID-19 pandemic serving as a key driver of this transformation. Nevertheless, ongoing issues concerning interoperability, accessibility, ease of use, digital health literacy, and the integration of healthcare systems continue to affect how effectively digital health initiatives are implemented.

This study investigates the evolution of the digital healthcare ecosystem in Greece and explores citizens' experiences with the country's digital health services. Particular attention is given to perceptions of accessibility, ease of use, trust, interoperability, and future intentions to use digital healthcare services among residents of both urban and rural areas.

A quantitative approach was employed, utilizing a structured questionnaire that was prepared in both Greek and English languages. The final sample consisted of 199 valid responses collected from participants living in different regions of Greece. Descriptive statistical analysis was employed to identify patterns in citizens' awareness, use, and perceptions of digital healthcare services.

The findings suggest that participants generally hold favourable views of the Greek digital healthcare ecosystem and recognise its contribution to improving access to healthcare, reducing time requirements, and facilitating healthcare management. Respondents also expressed strong support for secure interoperability and electronic information sharing between healthcare providers. Nevertheless, the results highlight continuing challenges associated with digital health literacy, system usability, fragmented healthcare services, limited user guidance, and unequal accessibility among older adults and residents of rural communities.

Overall, the study concludes that Greece has made substantial progress in the digital transformation of healthcare; however, important organisational and accessibility challenges remain. Strengthening interoperability, promoting patient-centred digital services, improving digital inclusion, and developing more user-friendly healthcare systems should therefore remain central priorities for future digital health policy and implementation.

Keywords: digital healthcare, eHealth, interoperability, healthcare accessibility, digital transformation, healthcare ecosystems, Greece, digital health literacy, patient-centred healthcare.

Περίληψη

Ο ταχύς ψηφιακός μετασχηματισμός των συστημάτων υγείας έχει επηρεάσει σε μεγάλο βαθμό τον τρόπο με τον οποίο παρέχονται και αποκτώνται υπηρεσίες υγείας σε διεθνές επίπεδο. Στην Ελλάδα, η ανάπτυξη ψηφιακών υπηρεσιών υγείας, όπως η ηλεκτρονική συνταγογράφηση, η ψηφιακή πρόσβαση στα αποτελέσματα διαγνωστικών εξετάσεων, τα ηλεκτρονικά συστήματα προγραμματισμού ραντεβού και ο ηλεκτρονικός φάκελος υγείας, έχει επιταχυνθεί σημαντικά κατά τα πρόσφατα έτη, ειδικά μετά την εμφάνιση της πανδημίας COVID-19. Παρά τη σημαντική αυτή πρόοδο, εξακολουθούν να υφίστανται προκλήσεις που σχετίζονται με την προσβασιμότητα, τη διαλειτουργικότητα, τη χρηστικότητα, τον ψηφιακό γραμματισμό και τον συντονισμό των υπηρεσιών υγείας, οι οποίες επηρεάζουν την αποτελεσματική εφαρμογή των ψηφιακών λύσεων στον τομέα της υγείας.

Η παρούσα μελέτη αποσκοπεί στην ανάλυση της πορείας του ψηφιακού οικοσυστήματος υγείας στην Ελλάδα και η αποτύπωση των εμπειριών των πολιτών από τη χρήση των διαθέσιμων ψηφιακών υπηρεσιών. Η έρευνα εστιάζει ιδιαίτερα σε ζητήματα προσβασιμότητας, ευχρηστίας, εμπιστοσύνης, διαλειτουργικότητας και πρόθεσης μελλοντικής χρήσης των ψηφιακών υπηρεσιών υγείας από πολίτες που διαμένουν σε περιοχές τόσο αστικού όσο και αγροτικού χαρακτήρα.

Για την υλοποίηση της έρευνας ακολουθήθηκε ποσοτική ερευνητική προσέγγιση μέσω δομημένου ερωτηματολογίου, το οποίο διανεμήθηκε στην ελληνική και αγγλική γλώσσα. Συνολικά συλλέχθηκαν 199 έγκυρα ερωτηματολόγια από συμμετέχοντες που κατοικούν σε αστικές και αγροτικές περιοχές της Ελλάδας. Τα δεδομένα αναλύθηκαν κυρίως με τη χρήση περιγραφικής στατιστικής ανάλυσης, με στόχο την ανάδειξη των βασικών τάσεων και προτύπων που σχετίζονται με την υιοθέτηση των ψηφιακών υπηρεσιών υγείας και την εμπειρία των χρηστών.

Τα αποτελέσματα δείχνουν ότι οι Έλληνες πολίτες διατηρούν, σε γενικές γραμμές, θετική στάση απέναντι στο ελληνικό ψηφιακό οικοσύστημα υγείας και αναγνωρίζουν τη συμβολή των ψηφιακών υπηρεσιών στη βελτίωση της πρόσβασης στις υπηρεσίες υγείας, στην εξοικονόμηση χρόνου και στην αποτελεσματικότερη διαχείριση της υγείας τους. Παράλληλα, οι συμμετέχοντες εξέφρασαν ισχυρή υποστήριξη προς τη διαλειτουργικότητα και την ασφαλή

ηλεκτρονική ανταλλαγή πληροφοριών υγείας μεταξύ των παρόχων υπηρεσιών υγείας. Ωστόσο, η έρευνα ανέδειξε επίσης σημαντικές προκλήσεις που σχετίζονται με τις δεξιότητες στη χρήση ψηφιακών συστημάτων, τη χρηστικότητα των συστημάτων, τον κατακερματισμό του συστήματος υγείας, την ανάγκη παροχής καθοδήγησης προς τους χρήστες, καθώς και τις δυσκολίες πρόσβασης που αντιμετωπίζουν κυρίως οι ηλικιωμένοι και οι κάτοικοι αγροτικών περιοχών.

Η μελέτη καταλήγει στο συμπέρασμα ότι, αν και η Ελλάδα έχει καταγράψει αξιοσημείωτη πρόοδο στον τομέα της ψηφιοποίησης της υγείας, το ψηφιακό οικοσύστημα υγείας εξακολουθεί να χαρακτηρίζεται από οργανωτικό κατακερματισμό και άνιση προσβασιμότητα μεταξύ διαφορετικών ομάδων του πληθυσμού. Ως εκ τούτου, οι μελλοντικές στρατηγικές ψηφιακού μετασχηματισμού της υγείας είναι απαραίτητο να επικεντρωθούν στην ενδυνάμωση της διαλειτουργικότητας, στον σχεδιασμό υπηρεσιών με επίκεντρο τον πολίτη, στην προώθηση της ψηφιακής ένταξης, στη βελτίωση της προσβασιμότητας και στην ανάπτυξη απλών και φιλικών προς τον χρήστη συστημάτων συντονισμού της φροντίδας, τα οποία θα ανταποκρίνονται στις διαφορετικές ανάγκες των πολιτών.

Λέξεις-κλειδιά: ψηφιακή υγεία, ηλεκτρονική υγεία (eHealth), διαλειτουργικότητα, προσβασιμότητα υπηρεσιών υγείας, ψηφιακός μετασχηματισμός, οικοσύστημα υγείας, Ελλάδα, ψηφιακός γραμματισμός, φροντίδα με επίκεντρο τον ασθενή.

Chapter 1 – Introduction

Healthcare systems have experienced profound changes over the past decades as a result of rapid advances in digital technologies and information systems. Across the world, governments and healthcare organisations increasingly view digital transformation as a key strategy for improving healthcare quality, operational efficiency, accessibility, and patient experience. The extensive implementation of technologies such as electronic health records, telemedicine, e-prescribing, patient portals, and mobile health apps has significantly transformed both healthcare delivery and administration.

Digital healthcare is no longer defined simply by the introduction of new technologies. Instead, it represents the development of integrated digital ecosystems that enable communication, interoperability, and secure information exchange among healthcare providers, public authorities, and citizens. Within these ecosystems, Health Information Systems (HIS) play a central role by supporting clinical and administrative decision-making, improving organisational performance, reducing administrative complexity, and contributing to the modernisation of healthcare management. As digital transformation has progressed, increasing attention has also been given to issues such as digital inclusion, accessibility, patient-centred care, and the enduring viability of digital public services.

Greece has also made considerable progress in the field of digital healthcare during recent years. National initiatives, including the implementation of electronic prescribing, electronic referrals, online appointment services, digital diagnostic results, and the myHealth application, have expanded citizens' access to digital healthcare services and sped up the digital transformation of the healthcare sector. The COVID-19 pandemic propelled this shift even further by boosting the demand for remote healthcare solutions and underscoring the significance of digital preparedness within both healthcare organisations and public administration. As a result, digital technologies have simplified administrative procedures while improving access to healthcare for a growing number of citizens.

Despite these achievements, several challenges continue to influence the effective implementation and long-term adoption of digital healthcare services in Greece. Barriers related to digital health literacy, accessibility, infrastructure, interoperability, privacy protection, and organisational readiness remain important issues for the continued

development of an integrated digital healthcare ecosystem. In addition, demographic and socioeconomic characteristics may affect citizens' willingness and ability to engage with digital healthcare services, particularly among older adults and residents of rural or geographically remote areas.

The effective realization of digital transformation relies not just on technological advancements, but also on citizens' confidence in digital services, their willingness to use them, and their ability to interact with digital health platforms effectively. Understanding users' experiences, perceptions, and the barriers they encounter is therefore essential for healthcare organisations, policymakers, and public authorities seeking to design more accessible and citizen-centred digital health services.

Against this background, this dissertation examines the evolution of the digital healthcare ecosystem in Greece by exploring the benefits and obstacles linked to the implementation of digital health services and citizens' interaction with digital technologies. More specifically, the study investigates citizens' awareness and use of key components of the Greek digital healthcare ecosystem, including electronic prescribing, electronic appointment systems, digital health platforms, and related digital health services. It also explores the relationship between demographic characteristics and the adoption of digital healthcare technologies, and assesses the prospects for digital transformation within the Greek healthcare system, and proposes recommendations aimed at improving accessibility, usability, and citizen engagement.

To provide a coherent progression from theory to empirical investigation, the dissertation is structured into five chapters:

Chapter 1 introduces the research topic, explains its background and rationale, defines the aims of the study, and outlines the structure of the dissertation.

Chapter 2 reviews the existing literature on the evolution of digital healthcare, the development of digital healthcare ecosystems, international developments, and current trends in healthcare digitalisation. Special focus is given to digital accessibility, user adoption, digital inclusion, and the challenges of digital transformation in healthcare.

Chapter 3 details the methodological approach, including research design, research questions, questionnaire development, sampling strategy, data collection, statistical analysis, ethical considerations, and the study's limitations.

Chapter 4 presents the empirical findings. Results from the questionnaire are analysed through descriptive statistical methods and interpreted in relation to the research questions and existing literature.

Chapter 5 concludes by summarising the main findings, discussing their practical and managerial implications, identifying study limitations, and providing recommendations for future research and policy development in digital healthcare.

Chapter 2 – Literature Review

The global rise of digital technologies has profoundly transformed healthcare systems, influencing how services are structured, delivered, and experienced by both professionals and patients. Rather than simply introducing new tools, digital transformation is a comprehensive organisational change that integrates information systems, digital communications, data-driven strategies, and patient-focused models into a unified healthcare setting (Stoumpos et al., 2023; Van Kessel et al., 2023; Ambalavanan et al., 2025).

According to research, digital health now encompasses far more than just electronic medical records and telemedicine services. Electronic health records, mobile health apps, artificial intelligence, cloud-based platforms, wearable devices, interoperable information systems, and digital public health solutions are among the many interconnected technologies that make up today's digital healthcare ecosystem. These innovations aim to improve healthcare accessibility, service quality, efficiency, and overall population health outcomes (Shen et al., 2025; Erku et al., 2023; Al Mahmud et al., 2026; Ghadi et al., 2025; Ogenyi et al., 2026).

Across Europe, digital transformation has become a key policy objective, with particular emphasis on interoperability, secure health information exchange, patient empowerment, and the expansion of cross-border healthcare services. European digital health initiatives encourage the development of integrated infrastructures that support continuity of care while strengthening collaboration among healthcare providers, public authorities, researchers, and

citizens. These strategic priorities have significantly shaped healthcare reforms across Member States, including the ongoing digital transformation of the Greek healthcare system during the past decade (Salamatani et al., 2026; European Commission, n.d.; Ntafi et al., 2022; Fonseca et al., 2026).

Given the expanding influence of digital health in healthcare delivery and public health policy, it has become increasingly important to explore its historical evolution, current structure, and the challenges involved in its implementation. In line with this, the chapter examines the literature on the evolution of digital healthcare, the formation of digital healthcare ecosystems, the digital transformation within the Greek healthcare system, and the key challenges and opportunities that come with adopting digital health technologies. This review serves to establish the theoretical framework that supports the empirical analysis found in the following chapters.

2.1 Evolution of Digital Healthcare

The development of digital healthcare has closely followed the broader technological evolution of healthcare systems over the past few decades, reflecting advances in information technology, increased connectivity, and the growing integration of digital tools into clinical and administrative workflows. This progression has paved the way for new models of care, enhanced patient engagement, and improved health outcomes, while also presenting new challenges and opportunities for healthcare organisations and policymakers. Early digital initiatives were primarily introduced to improve administrative operations, including patient registration, appointment management, financial processes, and hospital administration. At this stage, health information systems mainly supported organisational functions and had only limited involvement in clinical decision-making, operating as stand-alone administrative solutions rather than integrated clinical platforms (Stoumpos et al., 2023; Lee et al., 2022).

As information and communication technologies advanced, healthcare information systems expanded beyond administrative tasks to support a wider range of clinical activities. Modern platforms now integrate electronic health records, diagnostic imaging, laboratory information systems, and clinical decision-support tools within unified digital environments. Improvements in computing power, internet infrastructure, and international health information standards enabled healthcare organisations to replace fragmented paper-based

records with integrated electronic systems. The development of digital healthcare has closely followed the broader technological evolution of healthcare systems over the past few decades, reflecting advances in information technology, increased connectivity, and the integration of digital tools into clinical and administrative workflows. These changes have paved the way for new models of care, enhanced patient engagement, and improved health outcomes by introducing solutions that enhance information management and continuity of care (Shen et al., 2025; Fadahunsi et al., 2021; Torab-Miandoab et al., 2023; Ambalavanan et al., 2025).

Over the past decade, digital health has evolved far beyond the simple digitisation of medical records. Contemporary digital healthcare ecosystems integrate a broad range of technologies, including telemedicine, mobile health (mHealth), wearable devices, electronic health records (EHRs), artificial intelligence (AI), cloud computing, big data analytics, and interoperable digital platforms. Collectively, these technologies support disease prevention, diagnosis, treatment, long-term monitoring, population health management, and patient engagement while enabling healthcare services that are increasingly personalised, efficient, and data-driven (Erku et al., 2023; Ahmed et al., 2025; Al Mahmud et al., 2026; Ghadi et al., 2025; Ogenyi et al., 2026).

Current literature emphasises that digital transformation extends beyond the adoption of new technologies. Rather than representing a purely technical change, it is a comprehensive organisational process requiring coordinated efforts among healthcare professionals, policy makers, patients, and technology providers. Its successful implementation depends on effective governance, investment in digital competencies, interoperable information systems, and regulatory frameworks that ensure secure data exchange, protect privacy, and promote equitable access to healthcare services. These foundations help ensure that the benefits of digital transformation are realised in a responsible and inclusive manner (WHO Europe, 2022; Van Kessel et al., 2023; Alotaibi et al., 2025; Ambalavanan et al., 2025).

Across Europe, digital transformation has been reinforced through common policy initiatives designed to improve interoperability and facilitate cross-border healthcare. These initiatives encourage Member States to develop integrated digital infrastructures capable of supporting secure health information exchange and improving continuity of care. A major milestone in this process is the European Health Data Space (EHDS), which aims to enable the secure sharing and reuse of health data for clinical care, scientific research, innovation, and

evidence-informed public health policy (WHO Europe, 2022; European Commission, n.d.; Salmatani et al., 2026; Fonseca et al., 2026).

2.2 Digital Healthcare Ecosystems

Digital healthcare ecosystems represent a shift from isolated digital applications towards integrated environments in which multiple technologies and stakeholders operate collaboratively. Rather than functioning as independent solutions, interconnected digital infrastructures enable communication and cooperation among healthcare providers, public authorities, researchers, and citizens. These ecosystems combine electronic health records, telemedicine, mobile health applications, wearable technologies, artificial intelligence, cloud-based services, and secure data-sharing platforms to support coordinated, efficient, and patient-centred healthcare delivery. Their operation is strengthened by interoperability standards and governance frameworks, including the European Health Data Space (EHDS), which promotes secure data exchange while safeguarding privacy, security, and equitable access to healthcare services (Lee et al., 2022; Shen et al., 2025; Saban et al., 2024; Al Mahmud et al., 2026).

Interoperability is widely recognised as one of the fundamental pillars of digital healthcare ecosystems. It refers to the ability of different healthcare information systems, software applications, and organisations to exchange, interpret, and use health information securely and effectively. High levels of interoperability allow healthcare professionals to access comprehensive patient information regardless of where care is delivered, thereby reducing duplication of services, improving continuity of care, and supporting better-informed clinical decision-making. Consequently, the literature consistently identifies interoperability as a prerequisite for the successful implementation of both national and cross-border digital health services (Negro-Calduch et al., 2021; Ntafi et al., 2022; Torab-Miandoab et al., 2023; Ambalavanan et al., 2025).

Electronic Health Records (EHRs) constitute one of the core components of digital healthcare ecosystems. Compared with traditional paper-based records, EHRs enable patient information to be stored, updated, and shared electronically across different healthcare settings. Modern systems integrate clinical documentation, laboratory results, diagnostic imaging, medication histories, and treatment plans within a unified digital environment, improving communication

among healthcare professionals while also providing patients with greater access to their own health information. Evidence indicates that mature EHR systems contribute to higher healthcare quality, improved patient safety, greater administrative efficiency, and enhanced availability of data for research and health system planning (Fadahunsi et al., 2021; Alomar et al., 2024; Cahill et al., 2025; Pattar et al., 2025; Ambalavanan et al., 2025).

Beyond electronic records, digital healthcare ecosystems integrate technologies that extend healthcare delivery outside conventional clinical settings. Telemedicine, remote patient monitoring, mobile health applications, and wearable devices facilitate continuous communication between patients and healthcare professionals, supporting chronic disease management, preventive care, and earlier diagnosis. At the same time, advances in artificial intelligence and health data analytics enhance diagnostic accuracy, optimise resource allocation, and strengthen evidence-based clinical decision-making. Collectively, these developments are transforming healthcare from a reactive model towards one that is increasingly proactive, personalised, and data-driven (Bahadori et al., 2025; Torous et al., 2022; Ghadi et al., 2025; Al Mahmud et al., 2026; Ogenyi et al., 2026).

As health information is increasingly exchanged across organisations and national borders, effective governance has become an essential element of digital healthcare ecosystems. Within the European Union, the European Health Data Space (EHDS) represents a major policy initiative aimed at establishing common standards for the secure sharing and secondary use of health data in clinical care, research, innovation, and public health policy. By promoting harmonised governance structures, interoperability standards, and greater citizen control over personal health information, the EHDS is expected to strengthen collaboration among Member States, accelerate the digital transformation of European healthcare systems, and support the continued evolution of digital health services in Greece (Salamatani et al., 2026; European Commission, European Health Data Space (EHDS), n.d.; Fonseca et al., 2026; Livieri et al., 2025).

2.3 Digital Transformation of Healthcare in Greece

Although many Northern and Western European countries began investing in healthcare digitalisation at an earlier stage, Greece initially experienced a slower pace of digital transformation. The fragmented organisation of the healthcare system, limited interoperability

between institutions, administrative complexity, and the lack of integrated digital infrastructures delayed the widespread implementation of digital health technologies. Nevertheless, considerable progress has been achieved during the past decade through successive digital governance reforms that have strengthened the efficiency, Accessibility, and quality of healthcare services (Bahadori et al., 2025; Van Kessel et al., 2023).

A major turning point in this transformation was the nationwide introduction of the electronic prescription (e-Prescription) system by IDIKA S.A. The digitalisation of prescribing procedures streamlined pharmaceutical service management by reducing administrative paperwork, improving prescription monitoring, minimising medication errors, and facilitating communication among physicians, pharmacists, insurance organisations, and public authorities. Beyond these operational improvements, the system familiarised citizens with the routine use of digital health services and established the technological foundation upon which subsequent digital healthcare applications were developed (IDIKA, 2026; IHE Europe, 2022; Katehakis & Kouroubali, 2021; Salmatani et al., 2026).

Following the successful implementation of e-Prescription, Greece gradually expanded its digital health infrastructure by introducing electronic referrals, online appointment services, digital diagnostic reports, vaccination platforms, and, more recently, the myHealth mobile application. These services allow citizens to access personal health information electronically, review prescriptions and diagnostic results, and communicate securely with healthcare professionals. Their growing availability illustrates the gradual transition from a provider-oriented healthcare model towards one in which patients play a more active role in managing their own health information (MyHealth.gov.gr, n.d.; Frigidis et al., 2024; Louizou et al., 2023; Fonseca et al., 2026).

The COVID-19 pandemic further accelerated healthcare digitalisation in Greece by creating an urgent need to maintain healthcare delivery while limiting unnecessary face-to-face contact. During this period, remote healthcare services expanded rapidly and became closely integrated with broader digital government initiatives. At the same time, the increased use of digital identity services and interoperable information systems enhanced citizens' familiarity with digital healthcare solutions and demonstrated their importance during periods of public health emergency (WHO Europe, 2022; European Commission – Digital Health and Care, n.d.; Stoumpos et al., 2023; Digital Transformation Strategy of Greece, n.d.).

The continued expansion of digital public services has reinforced the integration of healthcare within Greece's wider digital transformation agenda. The implementation of the myHealth application, together with the gradual deployment of the National Electronic Health Record, has improved citizens' access to their medical information while facilitating communication and information exchange between healthcare providers. These developments indicate Greece's steady progress towards a more integrated and patient-centred digital healthcare ecosystem that aligns with broader European digital health priorities (Salamatani et al., 2026; European Commission – European Health Data Space (EHDS), n.d.; Fonseca et al., 2026).

More recently, Greece has increasingly aligned its national digital health policies with broader European initiatives that promote interoperability and cross-border healthcare services. In particular, the European Health Data Space (EHDS), together with other EU digital health programmes, is expected to facilitate the secure exchange of health information, improve continuity of care, and strengthen collaboration among Member States. Within this context, ongoing reforms in Greece focus on improving interoperability across healthcare information systems, strengthening data governance, expanding citizens' access to electronic health records, and enabling the secondary use of health data for research, innovation, and evidence-informed health policy (European Commission – European Health Data Space (EHDS), n.d.; National Data Strategy Greece, 2022; Ntafi et al., 2022; Katehakis & Kouroubali, 2019; Fonseca et al., 2026).

Despite these achievements, several important challenges continue to affect the long-term sustainability of digital healthcare in Greece. Research indicates that technological infrastructure alone is insufficient to ensure successful digital transformation. Equal attention must also be given to improving digital health literacy, strengthening public trust in digital services, protecting personal data, enhancing system usability, and ensuring equitable access across all population groups. Older adults, individuals with limited digital skills, and residents of rural or remote regions remain more likely to experience barriers when using digital healthcare services. Addressing these issues requires sustained investment not only in technology but also in organisational change, citizen engagement, accessibility initiatives, and digital skills development (Richardson et al., 2022; Badr et al., 2024; Livieri et al., 2025).

Overall, Greece has established the essential foundations of a modern digital healthcare ecosystem through the successful implementation of services such as electronic prescribing, digital patient platforms, and the myHealth application. Maintaining this momentum will depend on continued investment in interoperable digital infrastructures, workforce and citizen digital competencies, patient-centred health policies, and inclusive digital strategies that promote equitable access and meaningful participation for all citizens (Fonseca et al., 2026; Livieri et al., 2025; European Commission – European Health Data Space (EHDS), n.d.).

2.4 Challenges and Future Directions of Digital Healthcare

Although digital healthcare has advanced substantially over the last two decades, the successful implementation of digital technologies depends on far more than technological progress alone. Current evidence indicates that sustainable digital transformation requires healthcare systems to address a broad range of technological, organisational, regulatory, and human factors. Issues such as digital health literacy, equitable access, interoperability, privacy, public trust, system usability, and organisational preparedness are now recognised as fundamental components of effective digital healthcare ecosystems. Consequently, ensuring that digital services remain secure, inclusive, and responsive to citizens' needs is considered equally important as technological innovation itself (Mukhtar et al., 2025; Van Kessel et al., 2023; Torous et al., 2022; Livieri et al., 2025).

Among the factors influencing the successful implementation of digital health, digital health literacy has been consistently identified as one of the most significant. It encompasses individuals' ability to find, understand, critically evaluate, and effectively use digital health information and services. Systematic reviews indicate that people with higher levels of digital health literacy are more capable of navigating digital healthcare systems, communicating effectively with healthcare professionals, and making informed decisions about their health. Conversely, limited digital skills are associated with lower adoption of digital health services, reduced confidence in using technology, and greater barriers to accessing healthcare resources, particularly among older adults and socially disadvantaged groups (Mukhtar et al., 2025; Yuen et al., 2024; Barbati et al., 2025; Alotaibi et al., 2025; Smith & Magnani, 2019; Wilson et al., 2021).

Digital health literacy is also closely linked to the issue of digital inequality. Although digital technologies can improve access to healthcare, unequal availability of reliable internet connections, digital devices, and technological competencies may prevent some population groups from benefiting equally and may further widen existing health disparities. The literature consistently identifies older adults, residents of rural areas, individuals with lower educational attainment, and socioeconomically disadvantaged populations as those most likely to encounter barriers when using digital healthcare services. Addressing these inequalities requires a combination of investment in digital infrastructure, targeted educational initiatives, inclusive service design, and public policies that promote equitable access to digital healthcare for all citizens (Badr et al., 2024; Yao et al., 2022; Lopez de Coca et al., 2022; MacAskill et al., 2026; Livieri et al., 2025).

Protecting privacy, ensuring cybersecurity, and maintaining public trust remain fundamental challenges in the digital transformation of healthcare. As digital healthcare ecosystems depend on the continuous collection, storage, and exchange of sensitive personal health information, safeguarding these data has become increasingly important. Concerns about cyberattacks, unauthorised access, secondary use of health information, and ethical governance can influence citizens' willingness to engage with digital health services. For this reason, strong regulatory frameworks, compliance with data protection legislation, and transparent governance practices are essential for fostering confidence in digital healthcare systems (Conduah et al., 2025; Trocin et al., 2023; Adjekum et al., 2018; Holm et al., 2020; Ambalavanan et al., 2025).

In addition to privacy and security considerations, the long-term success of digital healthcare technologies depends heavily on their usability. Even advanced digital solutions are unlikely to achieve widespread adoption if users perceive them as complex or poorly suited to their needs. Consequently, recent research highlights the importance of user-centred design, ongoing usability evaluation, appropriate training for healthcare professionals, and active involvement of patients and citizens throughout the design and implementation process. Digital health technologies that prioritise accessibility, simplicity, and positive user experience are consistently associated with greater acceptance, higher user satisfaction, and more sustainable adoption across diverse population groups (Maramba et al., 2019; Perski & Short, 2021; Jacob et al., 2022; Faux-Nightingale et al., 2022; Loisel et al., 2025).

Looking ahead, the continued evolution of digital healthcare will depend on the effective integration of emerging technologies within well-established governance frameworks. Artificial intelligence, advanced data analytics, wearable technologies, remote patient monitoring, and interoperable information systems are expected to support more personalised, preventive, and data-driven healthcare delivery. Nevertheless, international organisations emphasise that technological innovation must be accompanied by ethical oversight, interoperability standards, evidence-based implementation strategies, and continuous evaluation of clinical and organisational outcomes. Future healthcare systems are therefore expected to balance technological advancement with patient-centred care, digital inclusion, and sustainable governance (Saban et al., 2024; Ghadi et al., 2025; Ogenyi et al., 2026; Hussein et al., 2026; Aytekin et al., 2025; Mamun et al., 2026; Ambalavanan et al., 2025).

Overall, available evidence indicates that the future success of digital healthcare will depend less on technological innovation alone and more on healthcare systems' ability to build integrated, interoperable, secure, and inclusive digital ecosystems. Strengthening digital competencies, reducing digital inequalities, reinforcing public trust, and maintaining effective governance structures will remain essential priorities for maximising the benefits of digital transformation while ensuring equitable healthcare delivery across all population groups (Richardson et al., 2022; Livieri et al., 2025; Narayan et al., 2025).

The literature reviewed throughout this chapter demonstrates that digital healthcare has become one of the most dynamic areas within healthcare management and health informatics. International research consistently reports improvements in healthcare accessibility, interoperability, patient engagement, and service efficiency resulting from digital transformation. At the same time, researchers emphasise that these benefits can only be fully realised when challenges related to digital health literacy, privacy protection, cybersecurity, organisational readiness, usability, and equitable access are effectively addressed. Although research focusing specifically on Greece has increased considerably in recent years, it remains less extensive than the broader international literature, reflecting the relatively recent acceleration of national digital health initiatives and the continuing development of the country's digital healthcare ecosystem (Fonseca et al., 2026; Saban et al., 2024).

Digital healthcare should therefore be viewed as an evolving process rather than a completed transformation. Ongoing advances in artificial intelligence, emerging diagnostic and

therapeutic technologies, demographic changes, and future public health challenges will continue to shape healthcare systems worldwide. Continued scientific research will remain essential for evaluating the effectiveness, accessibility, sustainability, and broader societal impact of digital healthcare services, while supporting evidence-based policymaking and guiding the future development of integrated, patient-centred digital healthcare ecosystems (Ambalavanan et al., 2025; Livieri et al., 2025; Al Mahmud et al., 2026; Ghadi et al., 2025).

Chapter 3 - Research Methodology

This dissertation employs a quantitative cross-sectional survey to investigate the evolution of the digital healthcare ecosystem in Greece and to explore citizens' perceptions, experiences, and use of digital healthcare services. Quantitative surveys are widely recognised as an appropriate methodological approach for examining attitudes, behavioural intentions, technology acceptance, accessibility, and user experiences because they enable the systematic collection of standardised data from relatively large samples. Similar research designs have been adopted in recent studies exploring digital health literacy and the utilisation of digital healthcare services (Georgantopoulos & Lamnisis, 2025; Wilson et al., 2021; Mensah et al., 2022; Jokisch et al., 2022; Mukhtar et al., 2025). For these reasons, a quantitative survey was considered the most suitable approach for addressing the objectives of the present research.

The study follows a descriptive cross-sectional design while also incorporating comparative analyses. Descriptive statistics were used to present participants' demographic characteristics, levels of awareness, patterns of digital healthcare use, and perceptions regarding accessibility, usability, trust, and digital inclusion. Comparative analyses were subsequently conducted to examine whether these perceptions differed according to demographic variables such as age, educational attainment, and place of residence.

To address the research objectives, both primary and secondary sources of data were utilised. Primary data were obtained through a structured questionnaire administered to adult residents of Greece, whereas secondary evidence was gathered from relevant literature and official reports, was drawn from peer-reviewed literature, international reports, policy documents, and official publications relating to digital health, health information systems, interoperability, and healthcare digital transformation. Combining empirical findings with existing literature

strengthened the theoretical basis of the study and facilitated the interpretation of the research results.

A survey-based quantitative methodology was selected because it enabled the collection of comparable information from a relatively large number of participants while supporting statistical analysis of citizens' experiences, perceptions, and intentions regarding digital healthcare services. In addition, this methodological approach is consistent with research in the field of Business Information Systems, where digital transformation initiatives are commonly assessed using measurable indicators such as usability, accessibility, trust, technology adoption, and digital inclusion.

Based on this methodological framework, primary data were collected through a structured online questionnaire specifically developed for the purposes of this dissertation. The questionnaire was designed following an extensive review of the international literature on digital health, eHealth adoption, health information systems, and digital health literacy. Particular attention was given to previously published quantitative studies investigating citizens' acceptance and use of digital healthcare services, ensuring that the questionnaire reflected concepts and dimensions commonly examined in digital health research. Although the instrument was adapted to the Greek healthcare context, its overall structure was informed by established theoretical constructs, including perceived usefulness, accessibility, ease of use, trust, digital skills, interoperability, barriers to adoption, and future intention to use digital healthcare services (Cassidy, 2021; Norman & Skinner, 2006; Georgantopoulos & Lamnisos, 2025; Yuen et al. 2024).

The research instrument consisted primarily of closed-ended questions and five-point Likert-scale items, following the approach commonly adopted in digital health survey research (Georgantopoulos & Lamnisos, 2025; Mensah et al. 2022). The survey was organised into thematic sections covering demographic characteristics, awareness and use of digital healthcare platforms, perceived usefulness, accessibility and usability, trust and privacy, digital skills, interoperability, barriers to adoption, and future behavioural intentions. This structure facilitated the systematic collection of comparable data while ensuring that all research objectives of the study were adequately addressed.

The questionnaire was administered primarily through Google Forms, allowing data to be collected efficiently from adult participants living in different regions of Greece. To improve sample inclusiveness and increase participation among older adults and individuals with limited digital skills, approximately 30 questionnaires were also distributed in paper format. These responses were later transferred manually to the electronic database by the researcher. Combining online and paper-based questionnaires facilitated the inclusion of participants from both urban and rural communities while reducing the potential bias associated with the exclusive use of online data collection.

A non-probability convenience sampling method was employed because participants were recruited voluntarily through both the online questionnaire and the printed version. This approach is widely used in cross-sectional survey studies examining public perceptions, technology acceptance, and the use of digital health services (Wilson et al., 2021; Georgantopoulos & Lamnisis, 2025; Jokisch et al., 2022).

Participation in the study was entirely voluntary. Before completing the questionnaire, all participants were informed about the academic purpose of the research and their right to participate anonymously. No personally identifiable information was collected, and all responses were treated confidentially throughout the research process.

Particular attention was given to the design of the research instrument in order to maximise clarity and improve the accuracy of participants' responses. The questionnaire was developed using simple and comprehensible language, while its electronic format reflected the digital nature of the research topic and the increasing use of online technologies in contemporary academic research. This approach was considered appropriate for investigating citizens' interaction with digital healthcare services, as participants completed the survey within the same digital environment in which many of these services are provided.

Following data collection, all survey responses were entered into and analysed using Microsoft Excel. The software was chosen because it provides a practical and accessible environment for managing quantitative data and conducting descriptive statistical analysis, making it well suited to the requirements of the present MBA dissertation. Excel was used to organise the dataset, perform the statistical calculations, and produce tables and charts that facilitated the interpretation of the findings.

The analysis focused on descriptive statistics, including frequency distributions, percentages, mean values, and graphical visualisations. These techniques enabled a clear overview of participants' responses and supported the identification of trends related to awareness, utilisation, accessibility, ease of use, and trust in digital healthcare services.

In addition to descriptive statistics, comparative analyses were conducted to investigate potential differences among demographic groups. Comparisons based on age, educational level, and geographical area of residence allowed the identification of variations in digital healthcare adoption, accessibility challenges, and user experiences. Tables, charts, and graphical visualisations were employed to facilitate the presentation and interpretation of the findings, while the results were discussed in relation to the existing literature and the broader process of digital transformation within the Greek healthcare system.

Ethical principles were respected throughout the research process. Participation was voluntary, respondents provided informed consent prior to completing the questionnaire, and all collected data were treated as anonymous and confidential. Participants were also informed that they could discontinue their participation at any stage before submitting the questionnaire without any consequences. The information obtained was used exclusively for academic purposes, ensuring compliance with fundamental research ethics principles regarding privacy, confidentiality, and the responsible management of research data.

Finally, certain limitations of the study should be acknowledged. Although the inclusion of printed questionnaires improved the participation of older adults and individuals with lower levels of digital literacy, the use of a predominantly online survey may still have influenced the composition of the sample. Consequently, individuals with limited internet access or minimal familiarity with digital technologies may remain underrepresented. Furthermore, the findings reflect participants' self-reported perceptions and experiences regarding digital healthcare services and, therefore, may not fully represent the views of the entire Greek population. Although probability-based sampling and larger, more representative samples would enhance the generalisability of future research, the methodological approach adopted in this study was considered appropriate for the aims of the present dissertation. It provided a robust basis for addressing the research questions and achieving the study's objectives within the available research context (Richardson et al., 2022).

Chapter 4 - Data Analysis and Discussion

This chapter analyses the findings obtained from the questionnaire survey and discusses their significance in relation to the research objectives. The results are interpreted to identify the key trends, perceptions, and experiences of participants, providing insight into the current development of the digital healthcare ecosystem in Greece.

To facilitate the presentation of the findings, the chapter is divided into four sections. It begins with an overview of the participants' demographic characteristics, followed by the presentation and interpretation of the principal survey results. The chapter then examines accessibility and digital inclusion issues across different population groups, followed by an analysis of the technical, organizational, and structural challenges that continue to influence the implementation of digital healthcare services in Greece. Finally, the findings are synthesized to identify the main opportunities for future development and the factors that may support a more integrated, accessible, and patient-centered digital healthcare ecosystem.

Overall, this chapter seeks not only to describe participants' responses but also to highlight the broader trends that emerge from the data and their relevance to the future evolution of digital healthcare in Greece.

4.1 Presentation of Findings

The following section summarises the results of the questionnaire survey and presents them according to the main themes investigated in this study. The findings are grouped into categories covering participants' demographic profile, awareness and use of digital healthcare services, accessibility and usability, trust and interoperability, together with future intentions to use digital health services and perceived training needs. Organising the results in this way provides a clear framework for understanding the survey outcomes and supports the interpretation discussed in the subsequent chapter.

4.1.1 Demographic Profile

A total of 199 valid questionnaires were included in the analysis, representing participants from both urban and rural regions of Greece. Responses were collected through a combination

of online and printed questionnaires to ensure broader participation. The demographic characteristics of the sample provide an important context for interpreting the results, as variables such as age, gender, educational attainment, and place of residence may influence individuals' use of digital healthcare services and their perceptions of digital health technologies.

The sample was predominantly female, with 149 women and 50 men participating in the survey. Although this imbalance may partly reflect the sampling approach, it may also be linked to the greater involvement of women in healthcare-related decisions and caregiving responsibilities within many households.

Most participants belonged to the 35–44 and 45–64 age groups, while younger adults and individuals aged 65 years or older represented a smaller proportion of the sample. This age profile is particularly relevant, as middle-aged adults often manage not only their own healthcare needs but also those of children or elderly family members. As a result, they are more likely to have regular contact with healthcare services and experience using digital health platforms.

The educational background of the participants was relatively high, with many respondents holding undergraduate or postgraduate qualifications. This may have influenced the overall findings, as previous research has consistently shown that higher educational attainment is associated with stronger digital skills, greater confidence in using digital technologies, and higher levels of digital health engagement (Yuen et al., 2024; Georgantopoulos & Lamnisos, 2025).

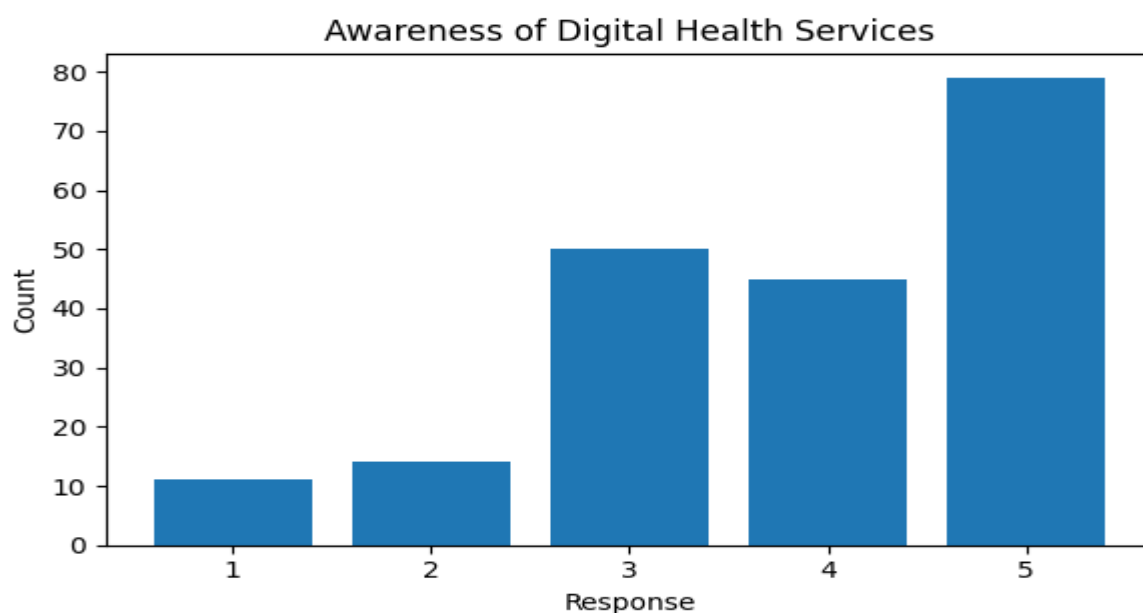
The sample also included participants from both rural and urban areas, providing a balanced geographical perspective. Specifically, 111 respondents lived in rural areas and 88 in urban settings. The inclusion of participants from both urban and rural areas enabled the study to examine experiences across different healthcare settings, in line with one of its primary research objectives. Most rural participants were from Laconia and the Municipality of Evrotas, while the majority of urban respondents lived in the Athens metropolitan area.

To encourage wider participation, the questionnaire was available in both Greek and English. Overall, 118 participants completed the English version and 78 completed the Greek version, helping to make the survey accessible to individuals with different language preferences.

Finally, almost all participants reported owning a digital device such as a smartphone or computer, with 185 out of 198 respondents confirming regular access to digital technology. This suggests that, for the population included in this study, access to digital devices is not the main factor limiting the use of digital healthcare services. Instead, the findings presented in the following sections indicate that digital literacy, confidence in using digital platforms, usability, and trust are more influential in shaping users' experiences.

4.1.2 Awareness and Usage

The survey responses suggest that awareness of digital healthcare services in Greece is generally high, while participants also expressed positive attitudes towards their everyday use. Overall, citizens appeared familiar with the main digital health services currently available and recognized their practical value in managing healthcare needs.



When asked about their awareness of digital healthcare services available in Greece, most respondents selected the two highest points on the Likert scale. Participants reported being familiar with widely used services such as electronic prescriptions, online appointment

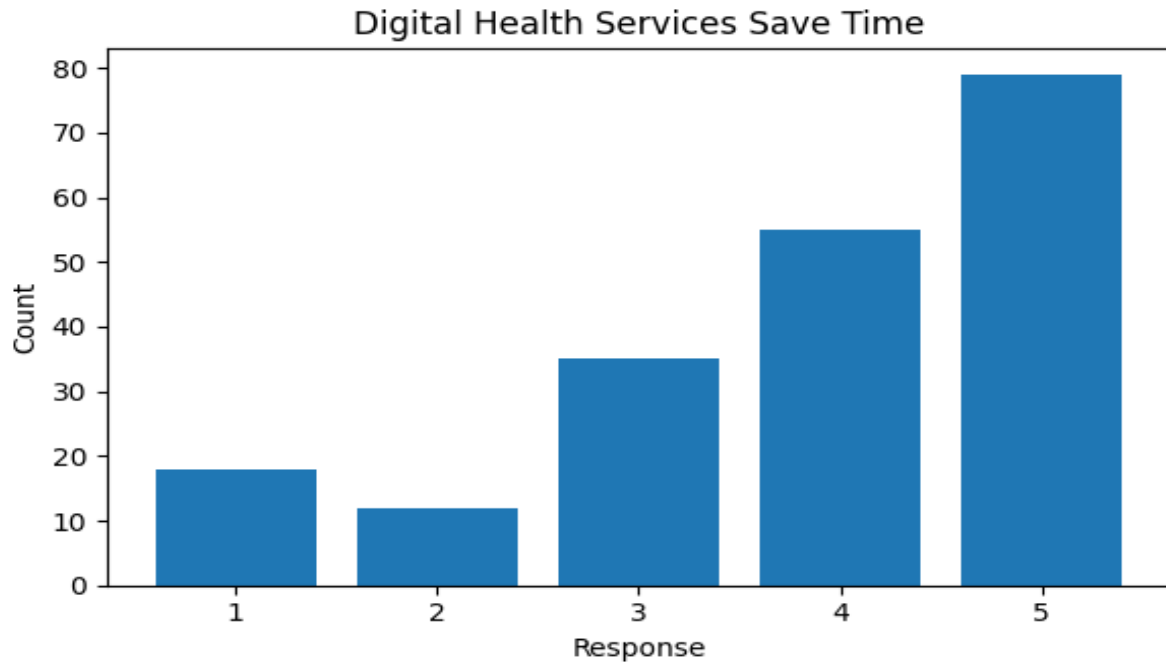
systems, digital access to examination results, and the myHealth platform. This suggests that these services have become increasingly integrated into everyday healthcare and are recognized by a large proportion of the population.

During the distribution of the questionnaires, an interesting pattern emerged among some older participants. While several respondents initially reported limited awareness of digital healthcare services, they often recognised these services once practical examples—such as electronic prescriptions, digital prescriptions, the myHealth platform, or online examination results—were mentioned. This observation suggests that familiarity with the terminology used to describe digital healthcare may differ from familiarity with the services themselves, particularly among older adults (Yuen et al., 2024; Mukhtar et al., 2025).

Respondents also reported relatively high confidence in accessing digital healthcare services when needed. Most indicated that they were able to navigate digital health platforms and locate the services they required. However, a noticeable proportion selected the middle point of the Likert scale, suggesting that being aware of available services does not always translate into confidence when using them in practice. For some users, occasional uncertainty or the need for guidance remains part of the digital healthcare experience.

Participants generally viewed digital healthcare services as useful in their everyday interactions with the healthcare system. Most agreed that these services make access to healthcare easier and help save time, particularly by reducing unnecessary visits to healthcare facilities and simplifying routine administrative procedures. These responses suggest that users increasingly perceive digital health tools as practical solutions that improve convenience and efficiency. This finding is consistent with technology adoption models suggesting that perceived usefulness is one of the strongest determinants of technology acceptance (Perski & Short, 2021; Mensah et al., 2022).

Participants also recognised the contribution of digital healthcare services to managing their own health. Although the responses remained positive, they were slightly more balanced than those related to time-saving or easier access. This may indicate that users currently associate digital healthcare primarily with administrative convenience, while its broader role in supporting long-term health management is still developing (Cassidy, 2021; Jokisch et al., 2022).



Most respondents reported feeling comfortable using digital technologies for healthcare-related purposes and believed that they could access digital healthcare services without assistance. At the same time, a sizeable minority acknowledged that they occasionally relied on family members or caregivers, indicating that digital confidence varies across the population.

During the completion of the questionnaires, several participants explained that they usually sought help from their children, relatives, or even local pharmacists when they encountered difficulties with passwords, authentication procedures, or navigating unfamiliar digital platforms. These comments illustrate that digital healthcare adoption often depends on informal support networks, particularly among older adults (Barbati et al., 2025).

One of the clearest findings of the survey was participants' willingness to continue using digital healthcare services in the future. Most respondents also stated that they would recommend these services to others, reflecting a generally positive perception of digital healthcare. This suggests that digital health tools are no longer viewed as temporary solutions but are increasingly becoming part of routine healthcare practice (Aydin & Kumruc, 2022; Mensah et al., 2022).

Despite these positive attitudes, the responses also revealed that many participants would welcome additional guidance on how to make better use of digital healthcare services. This

suggests that successful adoption depends not only on access to technology but also on users feeling confident when navigating healthcare-specific digital platforms. For many citizens, improving digital health literacy may be just as important as expanding digital services themselves. Similar findings have been reported in recent reviews, which suggest that continuous education and digital health training improve users' confidence, engagement, and long-term adoption of digital health technologies (Mukhtar et al., 2025; Smith & Magnani 2019).

Another notable finding was the strong support for interoperability and secure electronic access to medical records. Most respondents agreed that different healthcare providers should be able to share relevant medical information when necessary and considered electronic access to patient records beneficial for healthcare professionals. These responses reflect an increasing awareness of the value of coordinated care, particularly for patients who receive treatment from multiple providers or require ongoing medical follow-up (Negro-Calduch et al., 2021; Salmatani et al., 2026).

Taken together, the findings presented in this section show that awareness and acceptance of digital healthcare services are generally high among the participants. However, familiarity with digital health does not always guarantee confidence or independence in using these services. While citizens appear willing to embrace digital healthcare, their experiences also highlight the continuing importance of usability, guidance, and digital health literacy in supporting meaningful and sustained adoption. This finding is also supported by usability research indicating that intuitive design and user-centered development are essential for the successful implementation of digital health services (Maramba et al., 2019; Faux-Nightingale et al., 2022).

4.1.3 Accessibility and Ease of Use

Accessibility and ease of use emerged as two of the key factors influencing participants' experiences with digital healthcare services. Although the overall attitude towards digital health was positive, the responses showed that practical issues related to navigation, confidence, and everyday use continue to affect how easily different groups of citizens can benefit from these services.

Most respondents considered the basic functions of digital healthcare platforms relatively easy to use. Logging into the systems, accessing electronic prescriptions, viewing examination results, and scheduling appointments online were generally perceived as straightforward tasks. These responses suggest that many users have become familiar with the routine use of digital healthcare services in their everyday lives.

Even so, the responses also revealed areas where users still experienced uncertainty. A considerable number of participants selected the middle point of the Likert scale when asked whether they could easily locate the healthcare information they needed. This suggests that although access to digital healthcare services is widely available, finding specific information or navigating different sections of the platforms is not always straightforward.

During the completion of the questionnaires, some participants commented that they often knew a service existed but were unsure where to find it or which platform they should use. In several cases, they mentioned moving between different websites or applications before locating the information they needed. These comments highlight that accessibility is influenced not only by system availability but also by the clarity and organization of digital healthcare services (Faux-Nightingale et al., 2022; Maramba et al., 2019).

The survey also showed that digital independence varies across the population. While many respondents reported being able to use digital healthcare services without assistance, others acknowledged that they occasionally relied on family members, caregivers, or friends when encountering technical difficulties. This finding suggests that access to digital services does not necessarily mean that all users feel equally confident when using them.

The issue of digital inclusion becomes even more significant when considering elderly populations and individuals with limited technological familiarity. This became particularly evident during the data collection process. Several older participants required additional explanations regarding the meaning of digital healthcare services before completing the questionnaire. In many cases, practical examples such as electronic prescriptions, the myHealth platform, or online examination results helped participants recognize services that they were already using. This suggests that familiarity with the technology itself may be greater than familiarity with the terminology used to describe it (Mukhtar et al., 2025; Yuen et al., 2024).

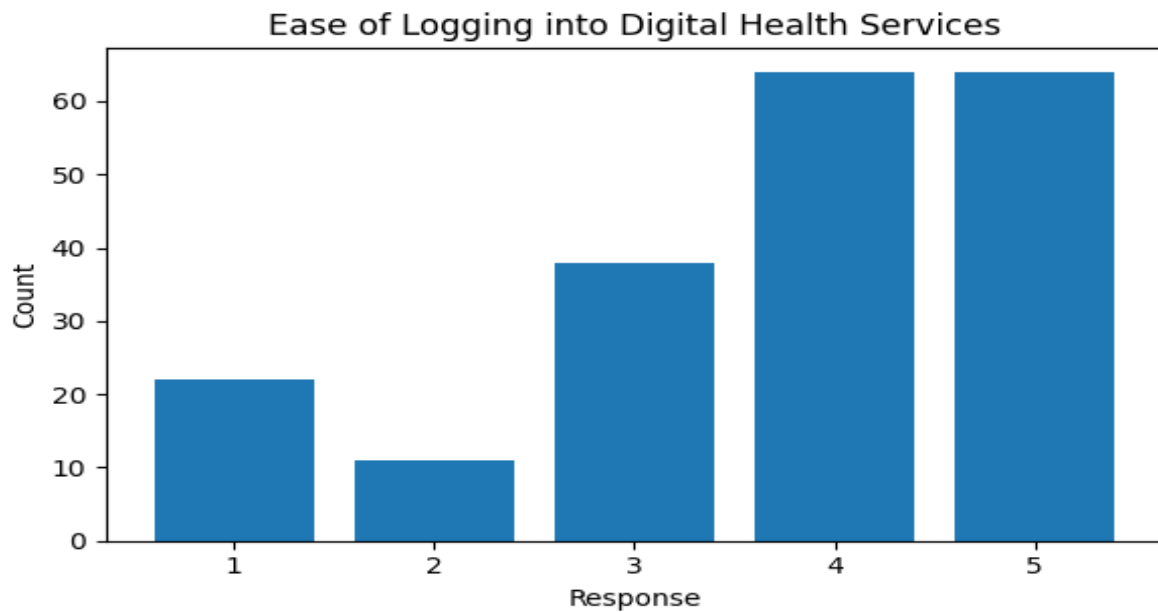
Some participants also reported practical difficulties when using digital devices, particularly for reading information on the screen or entering text. Although these challenges did not affect the majority of the sample, they were mentioned more frequently by older respondents and highlight the importance of designing digital healthcare platforms that are accessible to users with different levels of digital experience and physical ability (Vesperi et al., 2025; Barbati et al., 2025).

The findings additionally demonstrated strong interest in training and educational support regarding digital healthcare services. Many respondents indicated that they would like to receive guidance on how to use digital healthcare systems more effectively. Online tutorials emerged as the most preferred training format, followed by printed guides and in-person workshops. These results suggest that citizens recognize the benefits of digital healthcare services but simultaneously acknowledge the need for ongoing support and education in order to maximize usability and accessibility. Evidence from recent evaluations of digital health interventions indicates that difficulties related to system navigation, usability, and information retrieval can negatively affect users' overall experience and their continued engagement with digital health technologies (Main et al., 2025).

Internet connectivity also emerged as a moderate barrier for some participants, particularly those residing in rural areas. While the cost of devices and internet access did not appear to represent a major obstacle for most respondents, unstable internet connectivity was identified as a factor that could limit effective use of digital healthcare services. This finding may reflect regional disparities in digital infrastructure and highlights the importance of improving technological accessibility outside major urban centers (Raihan et al., 2025; Yao et al., 2022).

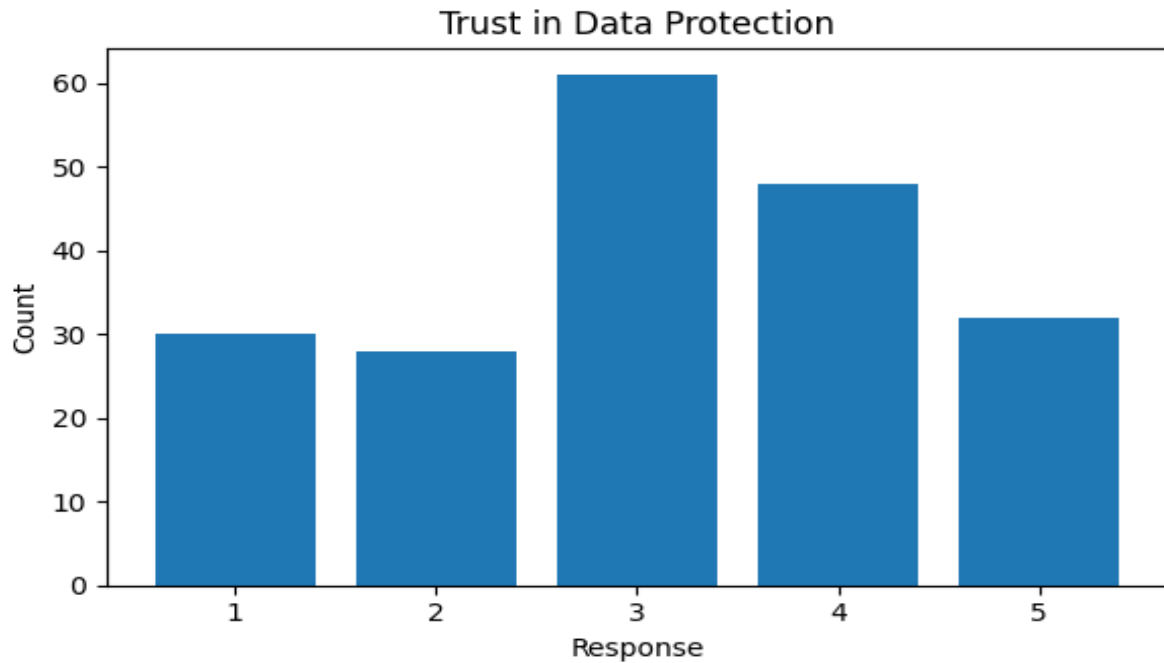
Overall, the findings suggest that digital healthcare accessibility in Greece extends beyond simple access to technology or device ownership. Instead, successful adoption depends on multiple interconnected factors, including digital literacy, usability, system simplicity, training availability, internet infrastructure, and the ability of healthcare systems to accommodate users with varying levels of technological confidence and healthcare knowledge. Recent evidence further suggests that equitable implementation of digital health depends on a combination of technological, socio-demographic, and organisational factors,

highlighting that accessibility extends beyond the availability of digital technologies alone (Vesperi et al., 2025; Yao et al., 2022; Hu et al., 2026).



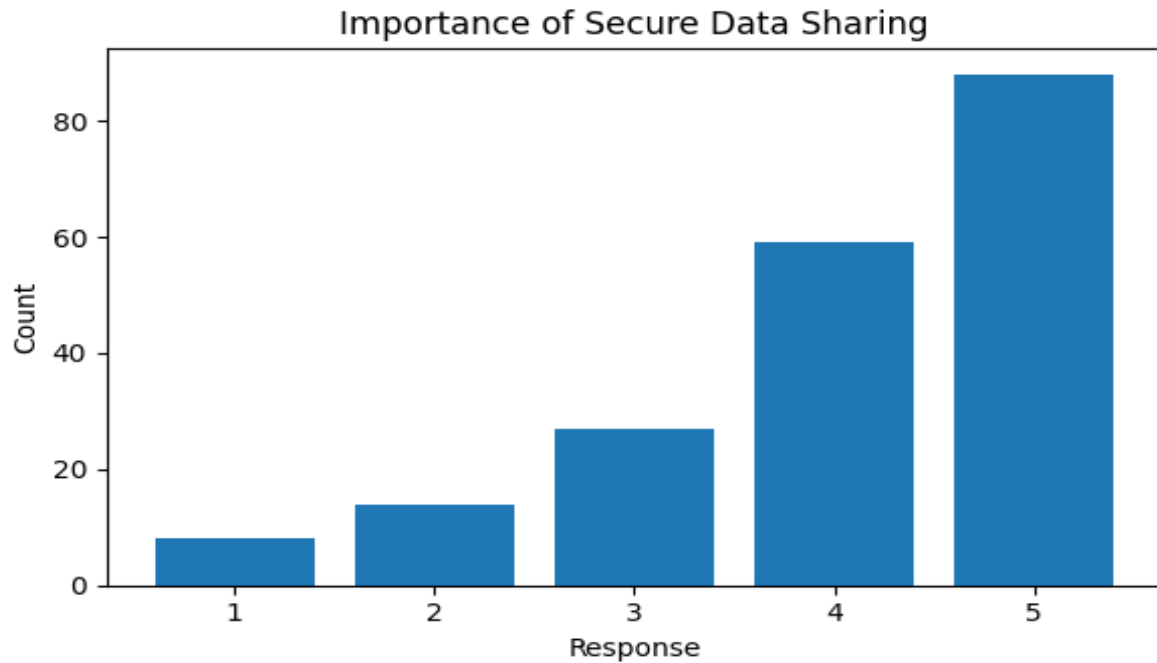
4.1.4 Trust, Privacy and Interoperability

Trust, privacy, and secure data sharing emerged as particularly important themes throughout the survey findings. While participants generally recognized the benefits of digital healthcare services and expressed positive attitudes toward digital healthcare transformation, responses regarding data protection and information sharing demonstrated more moderate and cautious attitudes (Conduah et al., 2025; Trocin et al., 2023).



When participants were asked whether they trusted digital healthcare services to protect their personal data, responses were noticeably more balanced compared to the strongly positive responses observed in questions related to usefulness and accessibility. Although many participants selected positive responses, a considerable proportion remained neutral or expressed lower levels of trust. This finding suggests that concerns regarding privacy, cybersecurity, and data protection continue to influence citizens' perceptions of digital healthcare systems. Similar concerns have been consistently reported in the literature, where trust in digital health systems is closely associated with robust privacy protection, cybersecurity measures, and transparent data governance (Conduah et al., 2025).

The findings additionally revealed moderate hesitation regarding willingness to allow healthcare providers access to personal digital health data. While many respondents agreed that healthcare professionals should have electronic access to medical records, responses regarding direct permission for data access were comparatively more cautious. This distinction is particularly important because it indicates that participants generally recognize the practical value of information sharing for healthcare purposes, while simultaneously maintaining concerns regarding privacy and control over personal medical information.



During the broader data collection process, it became evident that several participants associated digital healthcare data sharing with broader governmental or financial data access. In some cases, respondents initially believed that granting healthcare providers access to digital health data could potentially involve access to unrelated personal information such as tax records, financial accounts, or other government databases. After clarification that the question referred specifically to medical records, prescriptions, and healthcare-related information, many participants expressed more positive attitudes toward secure healthcare data sharing. This observation suggests that public concerns may sometimes arise from misunderstandings about the scope of digital healthcare systems rather than from opposition to data sharing itself. It also indicates that improving citizens' understanding of how health data are collected, shared, and protected may strengthen public trust and facilitate the wider acceptance of digital healthcare services, particularly within national digital health ecosystems (Salmatani et al., 2026; Mukhtar et al., 2025). These findings highlight the importance of clear communication, digital health literacy, and public understanding regarding the scope and purpose of digital healthcare systems (Aytekin et al., 2025).

At the same time, the findings demonstrated exceptionally strong support for interoperability between healthcare systems. Most respondents strongly agreed that it is important for different healthcare providers and healthcare systems to securely share medical information. Participants also expressed highly positive attitudes regarding electronic access to medical

records by healthcare professionals. These findings suggest that citizens recognize the importance of continuity of care, especially in emergency situations or when patients receive treatment from multiple healthcare providers (Negro-Calduch et al., 2021; Salmatani et al., 2026).

The strong support for interoperability may also reflect practical experiences associated with fragmented healthcare coordination. In many cases, patients and caregivers continue to rely on printed documents, repeated medical histories, and manual communication between healthcare providers. The survey findings therefore suggest that citizens perceive integrated healthcare information systems as potentially beneficial for improving healthcare efficiency, reducing administrative burden, and enhancing patient safety. Recent evidence from Greece further emphasises the importance of interoperable health information systems for strengthening continuity of care, reducing fragmentation, and supporting more efficient healthcare delivery across different providers (Negro-Calduch et al., 2021; Salmatani et al., 2026).

Another particularly important finding concerns participants' preference for visual presentation of health data. Most respondents agreed that visual representations such as graphs, charts, or simplified healthcare summaries would improve their understanding of personal medical information. This finding indicates growing interest in more patient-centered healthcare interfaces capable of transforming complex medical data into accessible and understandable formats (Faux-Nightingale et al., 2022; Maramba et al., 2019).

Overall, the findings indicate that Greek citizens do not reject digital healthcare systems or healthcare data sharing. Instead, participants appear to support secure interoperability and integrated healthcare coordination while simultaneously expressing concerns regarding privacy, transparency, and appropriate management of sensitive personal data. These findings highlight the importance of balancing technological innovation with strong data protection policies, transparent communication, user education, and patient-centered digital governance within the evolving Greek digital healthcare ecosystem. Building and maintaining public trust will therefore remain a key prerequisite for the successful expansion of digital healthcare services in Greece (Condua et al., 2025).

4.1.5 Future Adoption and Training Needs

The survey findings demonstrated generally positive attitudes regarding the future use and continued expansion of digital healthcare services in Greece. Most participants expressed willingness to continue using digital healthcare platforms in the future and indicated that they would recommend such services to other individuals. These findings suggest that citizens largely recognize the long-term value and practical benefits associated with healthcare digitalization.

Participants' responses indicate that digital healthcare services are increasingly perceived as a normal and useful component of everyday healthcare management. Electronic prescriptions, online examination results, appointment scheduling systems, and digital healthcare communication platforms appear to have become integrated into the healthcare experiences of many citizens. As a result, future behavioral intention toward digital healthcare usage was predominantly positive across the surveyed population (Jokisch et al., 2022; Mensah et al., 2022; Cassidy, 2021; Aydin & Kumruc, 2022).

At the same time, the findings clearly demonstrate that citizens continue to identify areas where digital healthcare systems could be improved. One particularly important finding concerns authentication and login procedures. A large proportion of respondents agreed that simpler login methods, such as biometric authentication, could significantly improve their user experience. This finding highlights the importance of usability-centered digital healthcare design and suggests that technical complexity may still create barriers for certain user groups, especially elderly individuals and users with limited digital confidence (Faux-Nightingale et al., 2022; Maramba et al., 2019; Cahill et al., 2025).

Participants also expressed considerable interest in receiving training or practical guidance to support their use of digital healthcare services. Although many participants reported relatively high levels of digital familiarity and technological comfort, a considerable proportion nevertheless expressed interest in additional support and educational resources. This finding suggests that awareness and access alone are insufficient for ensuring full digital healthcare inclusion and that users may continue to experience uncertainty when navigating healthcare-specific digital systems (Mukhtar et al., 2025; Alotaibi et al., 2025; Barbati et al., 2025).



Participants demonstrated varying preferences regarding training methods. Online tutorials emerged as the most preferred form of support, while printed guides and in-person workshops also received substantial support. These preferences suggest that future educational initiatives should combine digital and traditional forms of support to ensure that different population groups are not excluded. The continued preference for printed guides and physical support mechanisms may be particularly important for older individuals and users with limited technological experience (Wilson et al., 2021; Lopez de Coca et al., 2022; Alotaibi et al., 2025; Mukhtar et al., 2025).

Another significant finding concerns participants' strong preference for visual healthcare information. Most respondents stated that they would find it helpful to access their healthcare data through visual formats such as graphs, charts, or simplified trend presentations. This result suggests increasing demand for patient-centered healthcare interfaces that prioritize clarity, usability, and accessibility. Visual healthcare summaries may improve patients' understanding of medical information and support more active participation in healthcare management and decision-making (van der Nat et al., 2022; Jacob et al., 2022).

The findings additionally suggest that future digital healthcare strategies should focus not only on expanding technological capabilities but also on improving overall user experience, accessibility, and healthcare navigation support. Citizens appear willing to adopt digital

healthcare systems more extensively when platforms are perceived as simple, secure, understandable, and supportive of users' practical healthcare needs (Vesperi et al., 2025; Main et al., 2025; Raihan et al., 2025).

Overall, the survey findings indicate strong future potential for digital healthcare transformation in Greece. However, the results also demonstrate that sustainable digital healthcare adoption requires continuous investment in digital literacy initiatives, user-centered design, interoperability, accessibility improvements, and supportive healthcare governance structures capable of responding effectively to the diverse needs of citizens across different demographic and geographical groups (Mukhtar et al., 2025; Badr et al., 2024; Aytekin et al., 2025).

4.2 Accessibility and Inclusion Issues

The results suggest that accessibility and digital inclusion continue to represent important challenges for the development of the digital healthcare ecosystem in Greece. While most participants reported favourable perceptions of digital healthcare services and acknowledged their potential benefits, the findings also indicate that these services are not accessed or experienced equally by all population groups. This observation is consistent with recent research showing that digital health inequalities are shaped not only by access to technology but also by digital literacy, individual capabilities, and wider social determinants that influence people's ability to engage with and benefit from digital healthcare services (Richardson et al., 2022; Badr et al., 2024).

Age emerged as one of the most significant factors influencing digital healthcare accessibility and usability. Younger and middle-aged participants generally demonstrated higher levels of familiarity with digital healthcare technologies and reported greater confidence when using digital healthcare platforms independently. In contrast, older participants often experienced greater difficulties related to navigation, understanding system functionality, and completing digital healthcare procedures without assistance. This observation is consistent with recent studies identifying older adults as one of the population groups most vulnerable to digital exclusion due to lower digital health literacy and reduced confidence when using digital healthcare technologies (Barbati et al., 2025; Yuen et al., 2024; Raihan et al., 2025; Lopez de Coca et al., 2022).

During the data collection process, several elderly participants required additional explanations regarding the purpose and scope of digital healthcare services. In many cases, examples such as electronic prescriptions, digital examination results, and the myHealth platform were necessary in order to facilitate understanding of the questionnaire itself. This observation suggests that awareness of digital healthcare technologies does not always correspond to practical understanding or digital confidence among older populations. These findings are consistent with recent studies indicating that digital health literacy extends beyond technical competence, encompassing individuals' ability to understand digital health information and confidently navigate digital healthcare systems (Mukhtar et al., 2025; Barbati et al., 2025).

Furthermore, several elderly respondents required assistance during the completion of the questionnaire, while some participants preferred printed questionnaires instead of online forms. These findings highlight the continuing importance of alternative participation methods and inclusive communication strategies when designing digital healthcare systems. The preference for printed guides and in-person support identified in the survey findings further reinforces the importance of maintaining accessible support mechanisms for digitally vulnerable populations (Wilson et al., 2021; Lopez de Coca et al., 2022).

The results also indicate that digital healthcare adoption often depends on informal support networks such as family members, caregivers, pharmacists, and local service providers. Although many respondents reported being able to use digital healthcare services independently, a considerable proportion required occasional assistance from others. In practice, family members frequently support elderly relatives during healthcare-related digital procedures, including login processes, appointment scheduling, prescription management, and healthcare information retrieval (Wilson et al., 2021; Alotaibi et al., 2025; Livieri et al., 2025).

Geographical differences additionally influenced participants' experiences with digital healthcare accessibility. Respondents residing in rural areas reported greater concerns regarding internet connectivity and healthcare accessibility compared to urban participants. Rural participants were primarily located in the region of Laconia and the Municipality of Evrotas, areas characterized by greater geographical distance from specialized healthcare

facilities. In contrast, most urban participants resided in the Athens metropolitan area, where healthcare infrastructure and digital connectivity are generally more developed (Yao et al., 2022; Vesperi et al., 2025; Hu et al., 2026).

The geographical distribution of healthcare services in Greece appears to create additional barriers for residents of remote areas, particularly individuals requiring specialized or continuous healthcare treatment. In many cases, patients residing in rural areas may need to travel frequently to larger urban centers in order to access specialized healthcare services unavailable within local healthcare facilities. Consequently, digital healthcare services and interoperability systems may become especially important for improving continuity of care and reducing administrative and geographical burdens for rural populations (Negro-Calduch et al., 2021; Salmatani et al., 2026; European Commission – European Health Data Space (EHDS), n.d).

At the same time, the findings indicate that socio-economic barriers such as device ownership and internet costs were less significant than initially expected. Most participants reported regular access to smartphones or computers and did not consider the cost of digital technology to represent a major obstacle. Instead, the results suggest that accessibility challenges are more strongly associated with digital literacy, usability, healthcare system complexity, and guidance availability rather than purely financial limitations (Badr et al., 2024; Raihan et al., 2025; Vesperi et al., 2025).

Another important inclusion issue concerns the complexity of healthcare-related administrative procedures. Although healthcare services may be digitally available, users often continue to require guidance regarding navigation, documentation, reimbursement procedures, and healthcare rights management. This finding suggests that digital transformation alone does not automatically eliminate administrative burden and that successful digital healthcare ecosystems must prioritize simplicity, guidance, and user-centered healthcare coordination (Vesperi et al., 2025; Jacob et al., 2022; van der Nat et al., 2022).

Overall, the findings demonstrate that digital healthcare accessibility in Greece involves multiple interconnected dimensions including age, geographical location, digital literacy, healthcare infrastructure, and organizational complexity. The results suggest that future digital

healthcare strategies should prioritize inclusive design approaches capable of supporting elderly populations, rural communities, caregivers, and users with varying levels of technological confidence and healthcare knowledge (Richardson et al., 2022; Livieri et al., 2025; Mukhtar et al., 2025).

4.3 Technical and Structural Challenges

Taken together, the findings suggest that despite the substantial progress achieved in recent years, the Greek digital healthcare ecosystem continues to face important technical, organizational, and structural challenges that affect the effectiveness and inclusiveness of healthcare digitalization initiatives.

One of the most significant challenges identified through both the survey findings and broader participant observations concerns the fragmentation of healthcare systems and healthcare-related administrative processes. Although multiple digital healthcare services are currently available in Greece, including electronic prescriptions, online examination results, appointment systems, and digital healthcare records, these services do not always operate as part of a fully integrated healthcare ecosystem. As a result, patients and caregivers often continue to manage healthcare coordination manually through printed documents, repeated medical histories, and fragmented communication between healthcare providers and institutions (Salamatani et al., 2026; eHealth Greece, Cyprus & EU, 2025; Fragidis et al., 2024).

The issue of interoperability emerged as particularly important throughout the findings. Participants strongly supported secure electronic sharing of healthcare information among healthcare providers and considered interoperability essential for improving healthcare accessibility and continuity of care. Nevertheless, practical barriers continue to affect the efficient exchange and utilization of healthcare information across healthcare institutions. In emergency situations or during treatment across multiple healthcare providers, patients and caregivers may still be required to repeatedly provide medical documentation and explain healthcare histories manually (Negro-Calduch et al., 2021; Ntafi et al., 2022; Torab-Miandoab et al., 2023; Shull, 2019).

The findings additionally suggest that digital healthcare systems in Greece remain heavily dependent on patients and caregivers for healthcare coordination and information management. In many cases, caregivers function as informal healthcare coordinators responsible for appointment scheduling, examination management, prescription monitoring, reimbursement procedures, and communication between healthcare providers. This dependence on informal coordination mechanisms indicates that digital healthcare systems may not yet fully support seamless patient-centered healthcare pathways (Jacob et al., 2022; Livieri et al., 2025).

Organizational complexity and administrative burden also represent significant structural barriers within the healthcare ecosystem. Although several healthcare services have been digitized, many procedures continue to involve complicated navigation processes, multiple institutional interactions, printed documentation, or repeated verification procedures. Participants frequently expressed the need for guidance, explanations, and assistance regarding healthcare-related digital procedures, suggesting that usability and organizational simplicity remain important areas requiring improvement (Livieri et al., 2025; Vesperi et al., 2025; eHealth Greece, Cyprus & EU, 2025).

Another important challenge concerns healthcare accessibility in geographically remote areas. Participants residing in rural regions reported greater concerns regarding internet connectivity, distance from specialized healthcare facilities, and healthcare coordination difficulties. The concentration of specialized healthcare services within major urban centers such as Athens may create additional burdens for rural populations requiring continuous or specialized treatment. Consequently, digital healthcare technologies possess substantial potential for reducing geographical healthcare inequalities, but infrastructural and organizational limitations continue to restrict their full effectiveness (Yao et al., 2022; eHealth Greece, Cyprus & EU, 2025; Hu et al., 2026).

Cybersecurity and privacy concerns additionally remain important factors influencing citizens' perceptions of digital healthcare systems. Although participants generally supported secure healthcare data sharing and electronic access to medical records, many respondents simultaneously expressed hesitation regarding personal data protection and digital privacy. These findings indicate that public trust in digital healthcare systems remains closely

connected with transparency, cybersecurity protection, and clear communication regarding healthcare data governance (Conduah et al., 2025; Trocin et al., 2023; Holm et al., 2020).

The findings also highlight several usability-related technical challenges affecting digital healthcare adoption. Participants demonstrated strong interest in simplified authentication procedures, more accessible interfaces, visual healthcare summaries, and user-friendly navigation systems. The continued preference for training, printed guides, and in-person assistance suggests that digital healthcare platforms may still be perceived as complex or difficult to navigate by certain user groups, particularly elderly individuals and users with limited digital literacy (Maramba et al., 2019; Faux-Nightingale et al., 2022; van der Nat et al., 2022).

At the same time, the results indicate that the main barriers to digital healthcare adoption are not primarily related to technology ownership or internet costs. Instead, the challenges appear to be more strongly associated with organizational fragmentation, system complexity, digital literacy gaps, and insufficient healthcare coordination mechanisms. This distinction is particularly important because it suggests that future healthcare digitalization efforts should prioritize usability, interoperability, accessibility, and citizen-centered healthcare design rather than focusing exclusively on technological expansion (Salamatani et al., 2026; Vesperi et al., 2025; Mukhtar et al., 2025).

Overall, the findings demonstrate that digital healthcare transformation in Greece remains an ongoing process characterized by both substantial progress and continuing structural limitations. While digital healthcare services are increasingly integrated into citizens' daily healthcare experiences, the healthcare ecosystem continues to require stronger interoperability frameworks, simplified administrative processes, improved accessibility, and more coordinated patient-centered healthcare infrastructures capable of supporting equitable and sustainable digital healthcare delivery (eHealth Greece, Cyprus & EU, 2025; Salmatani et al., 2026; European Health Data Space (EHDS)).

4.4 Opportunities and Future Potential

Alongside the challenges identified throughout the study, the findings highlight significant opportunities for the continued evolution of Greece's digital healthcare ecosystem.

Participants generally viewed digital healthcare services positively and recognised their capacity to enhance access to healthcare, improve service efficiency, strengthen communication, and support better continuity of care.

Among the opportunities identified, the further expansion of integrated and interoperable healthcare systems emerged as one of the most important priorities. Participants strongly supported secure electronic sharing of healthcare information between healthcare providers and recognized the value of interconnected healthcare records, especially in emergency situations and during long-term treatment management. The growing public acceptance of interoperability suggests that future digital healthcare strategies in Greece may increasingly focus on integrated healthcare platforms capable of improving coordination between hospitals, physicians, pharmacies, laboratories, and public healthcare organizations (Negro-Calduch et al., 2021; Ntafi et al., 2022; Torab-Miandoab et al., 2023; European Commission, n.d.).

The findings additionally indicate strong demand for more patient-centered digital healthcare services. Participants expressed interest in simplified navigation systems, user-friendly authentication methods, visual healthcare summaries, and more accessible healthcare communication tools. These findings suggest that future digital healthcare development should prioritize user experience and healthcare accessibility rather than focusing exclusively on technological functionality (Perski & Short, 2021; Jacob et al., 2022; van der Nat et al., 2022).

Another important opportunity concerns the use of visualized healthcare information and healthcare data management tools. Most participants indicated that graphs, charts, and simplified visual presentations of medical information would improve their understanding of personal healthcare data. Visual healthcare interfaces may therefore contribute to greater patient engagement, improved health monitoring, and more active participation in healthcare decision-making processes van der Nat et al., 2022; Jacob et al., 2022; Faux-Nightingale et al., 2022).

The findings also highlight the importance of digital literacy initiatives and healthcare education programs. Although many participants demonstrated positive attitudes toward digital healthcare technologies, a considerable proportion expressed interest in receiving

additional guidance and support regarding digital healthcare usage. Future healthcare strategies may therefore benefit from combining technological innovation with inclusive educational initiatives, training programs, and public awareness campaigns capable of supporting users with varying levels of digital confidence and healthcare knowledge (Mukhtar et al., 2025; Barbati et al., 2025; Alotaibi et al., 2025; Wilson et al., 2021).

Furthermore, the results suggest that digital healthcare technologies possess significant potential for reducing geographical healthcare inequalities, particularly in rural and remote regions. Participants residing outside major urban centers frequently reported challenges related to healthcare accessibility, transportation, and specialized healthcare availability. Telemedicine services, remote healthcare monitoring, interoperable healthcare records, and improved digital healthcare coordination may therefore contribute to reducing geographical barriers and improving continuity of care for rural populations (Yao et al., 2022; Georgantopoulos & Lamnisis, 2025; Voutsidou, 2021).

The findings also point to opportunities for increasing the efficiency of the healthcare system while reducing administrative workload. Digital health solutions that integrate patient records, automate routine processes, provide proactive health notifications, and simplify reimbursement procedures have the potential to streamline administrative workflows for both patients and healthcare professionals. Greater integration across healthcare services could also minimise duplication of medical documentation, strengthen communication between providers, and facilitate more timely clinical decision-making (Fragidis et al., 2024; Stoumpos et al., 2023; Van Kessel et al., 2023).

Artificial intelligence and advanced digital healthcare technologies also represent important future opportunities within the evolving healthcare ecosystem. AI-based healthcare applications may support predictive healthcare analytics, personalized healthcare management, automated administrative support, and improved clinical decision-making. Although the present study did not focus specifically on artificial intelligence applications, participants generally demonstrated positive attitudes toward technological innovation when systems were perceived as useful, understandable, and supportive of practical healthcare needs (Mamun et al., 2026; Hussein et al., 2026; Saban et al., 2024).

At the same time, the findings indicate that future digital healthcare transformation should remain strongly connected with ethical governance, privacy protection, and inclusive healthcare design. Sustainable healthcare digitalization requires balancing innovation with accessibility, cybersecurity, transparency, and patient trust. Consequently, future healthcare policies should prioritize citizen-centered digital healthcare ecosystems capable of supporting both technological advancement and equitable healthcare participation (Conduah et al., 2025; Holm et al., 2020; Trocin et al., 2023).

The evidence presented in this study indicates that the long-term development of digital healthcare in Greece will be shaped less by the availability of new technologies than by their successful implementation, seamless integration into everyday healthcare practice, and acceptance by citizens. While participants expressed strong support for digital healthcare services and recognised their benefits, the results indicate that improving interoperability, strengthening digital health literacy, simplifying system design, protecting personal data, and reducing organisational complexity should be considered the main priorities for future policy and practice. These findings are consistent with recent literature emphasising that successful digital transformation requires a patient-centred approach combining technological innovation with education, trust, usability, and effective governance (Van Kessel et al., 2023; Stoumpos et al., 2023; Livieri et al., 2025; Salmatani et al., 2026).

Chapter 5 - Conclusion and Recommendations

The present study examined the evolution of the digital healthcare ecosystem in Greece by investigating citizens' awareness, accessibility, usability, trust, and future intentions regarding the use of digital healthcare services. The findings demonstrate that Greece has made substantial progress in the digitalization of healthcare services during recent years, particularly through the implementation of electronic prescriptions, digital healthcare records, online examination results, appointment systems, and broader healthcare digitalization initiatives (Stoumpos et al., 2023; Salmatani et al., 2026).

Overall, the survey findings indicate that participants generally recognize the usefulness and practical value of digital healthcare services. Most respondents demonstrated relatively high levels of awareness regarding available digital healthcare platforms and expressed positive

attitudes toward their continued use in the future. Participants also acknowledged that digital healthcare services contribute to easier healthcare access, time savings, and improved healthcare management (Mensah et al., 2022; Jokisch et al., 2022).

Despite the progress observed, important accessibility, usability, and organisational barriers remain. The evidence suggests that successful adoption of digital healthcare services in Greece depends not only on technological infrastructure but also on digital health literacy, the complexity of healthcare systems, users' confidence in digital technologies, and the availability of appropriate guidance and support mechanisms (Mukhtar et al., 2025; Alotaibi et al., 2025; Barbati et al., 2025).

One of the most important findings concerns the role of interoperability and healthcare coordination. Participants strongly supported secure electronic sharing of medical information between healthcare providers and recognized the importance of integrated healthcare systems capable of improving continuity of care. These findings suggest that citizens increasingly value coordinated healthcare ecosystems and recognize the practical limitations associated with fragmented healthcare information systems (Torab-Miandoab et al., 2023; Ntafi et al., 2022; Shull, 2019).

The study additionally demonstrated that digital healthcare accessibility is not equally experienced across all population groups. Elderly individuals, rural populations, and users with lower digital confidence may experience greater difficulties when navigating digital healthcare systems independently. The results also highlight the continuing contribution of caregivers, family members, pharmacists, and informal support networks in helping vulnerable populations access and use digital healthcare services (Wilson et al., 2021; Lopez de Coca et al., 2022; MacAskill et al., 2026).

Public trust, together with privacy and data security, remained a central consideration throughout the study. Although participants generally expressed support for secure health data sharing and the use of electronic health records, concerns about privacy, cybersecurity, and the management of personal health information persisted. These results reinforce the need for transparent governance, robust data protection measures, and clear communication regarding the collection, use, and safeguarding of healthcare data (Holm et al., 2020; Conduah et al., 2025; Trocin et al., 2023).

Another important conclusion concerns the distinction between technological digitalization and effective user-centered healthcare transformation. Although many healthcare services are technically available online, participants often continued to report challenges related to usability, navigation complexity, fragmented administrative procedures, and lack of coordinated guidance. Consequently, the study suggests that successful digital healthcare transformation requires not only technological infrastructure but also organizational simplification, patient-centered design, accessibility-focused policies, and continuous digital literacy support (Fragidis et al., 2024; Pattar et al., 2025; Maramba et al., 2019; Perski & Short, 2021; Jacob et al., 2022).

Finally, the findings indicate that citizens generally do not reject digital healthcare technologies. Instead, participants appear willing to adopt digital healthcare services more extensively when systems are perceived as secure, understandable, accessible, and supportive of practical healthcare needs. This conclusion highlights the strong future potential of digital healthcare development in Greece, provided that future digital healthcare strategies prioritize inclusiveness, interoperability, usability, and healthcare system integration (Cassidy, 2021; Aydin & Kumruc, 2022; Mensah et al., 2022).

Looking ahead, the continued evolution of digital healthcare in Greece will depend less on technological progress itself than on the ability to implement digital solutions that are inclusive, trusted, interoperable, and centred on citizens' needs. Achieving equitable access to these services should remain a strategic priority for healthcare policy, ensuring that digital transformation delivers meaningful benefits for every member of society (Van Kessel et al., 2023; Ambalavanan et al., 2025; Salmatani et al., 2026; European Commission, n.d.).

5.1 Policy Recommendations

Drawing on the findings of this research, several policy and managerial actions can be identified to strengthen the future development of an integrated, accessible, and patient-centred digital healthcare ecosystem in Greece.

First, improving interoperability between healthcare systems should represent a major strategic priority. The findings demonstrated strong public support for secure electronic sharing of medical information between healthcare providers, particularly in situations

involving emergency care, chronic disease management, and treatment across multiple healthcare institutions. Future healthcare policies should therefore focus on strengthening integrated healthcare information systems capable of supporting seamless communication between hospitals, laboratories, pharmacies, physicians, and public healthcare organizations. These findings are consistent with the work of Ntafi et al. (2022) and are further supported by more recent studies (Torab-Miandoab et al., 2023; Salmatani et al., 2026).

Second, digital healthcare transformation strategies should place greater emphasis on usability and user-centered healthcare design. Although digital healthcare services are increasingly available, many participants continued to experience practical navigation difficulties and expressed interest in additional guidance and support. Simplified interfaces, clearer navigation structures, visual healthcare summaries, and easier authentication methods such as biometric login systems could significantly improve accessibility and overall user experience (Maramba et al., 2019; Cahill et al., 2025; van der Nat et al., 2022).

Third, healthcare digitalization policies should prioritize digital inclusion and accessibility for vulnerable population groups. Elderly individuals, people with limited digital literacy, rural populations, and users requiring caregiver support may experience greater barriers when using digital healthcare services independently. Policymakers should therefore support inclusive healthcare strategies combining digital services with accessible educational resources, printed support materials, in-person guidance, and alternative communication channels capable of addressing diverse user needs (Wilson et al., 2021; Barbati et al., 2025; Alotaibi et al., 2025; Monasterio et al., 2026).

Fourth, digital literacy and healthcare education initiatives should be expanded at both national and local levels. The findings demonstrated strong interest in receiving training regarding digital healthcare usage despite generally positive attitudes toward technology. Future educational initiatives may include online tutorials, community workshops, healthcare navigation support programs, and collaboration with local healthcare providers, pharmacies, municipalities, and citizen service centers (Mukhtar et al., 2025; Qiu et al., 2025; Zhao et al., 2024).

Fifth, future healthcare policies should strengthen patient-centered healthcare coordination and reduce administrative fragmentation. Many healthcare-related procedures continue to

require significant patient and caregiver involvement regarding documentation management, reimbursement procedures, appointment coordination, and healthcare communication. More integrated digital healthcare pathways and proactive healthcare information systems may help reduce bureaucratic complexity and improve healthcare accessibility for citizens managing chronic or complex healthcare conditions (Fragidis et al., 2024; Pattar et al., 2025).

Sixth, rural healthcare accessibility should receive additional strategic attention within future healthcare digitalization initiatives. Participants residing in geographically remote areas reported greater concerns regarding healthcare accessibility, transportation burdens, and healthcare infrastructure limitations. Telemedicine services, interoperable healthcare records, remote monitoring technologies, and improved digital healthcare coordination may significantly contribute to reducing geographical healthcare inequalities and improving continuity of care outside major urban centers (MacAskill et al., 2026; Ugwu et al., 2026).

Another important recommendation concerns transparency and public communication regarding healthcare data governance and cybersecurity. The findings demonstrated that some participants remained uncertain regarding the scope and management of digital healthcare data sharing. Clear public communication regarding data protection, medical confidentiality, cybersecurity policies, and healthcare data usage may contribute to strengthening public trust and increasing confidence in digital healthcare systems (Conduah et al., 2025; Hou et al., 2026; Mateus et al., 2026).

Additionally, future healthcare systems could benefit from incorporating more proactive and personalized digital healthcare support mechanisms. Automated healthcare reminders, personalized healthcare notifications, medication management support, integrated healthcare guidance, and simplified access to healthcare-related information and social support services could improve healthcare coordination and reduce informational fragmentation for patients and caregivers (Main et al., 2025; Ogenyi et al., 2026).

Finally, healthcare digitalization strategies should remain closely aligned with broader principles of healthcare equity, inclusiveness, and sustainable healthcare governance. Technological innovation alone cannot guarantee effective healthcare transformation unless healthcare systems are designed to support the practical needs of diverse population groups. Consequently, future digital healthcare development in Greece should prioritize balanced

integration between technological advancement, organizational simplification, ethical governance, and patient-centered healthcare delivery (Ambalavanan et al., 2025; European Commission – European Health Data Space (EHDS), n.d; Van Kessel et al., 2023; Stoumpos et al., 2023).

5.2 Limitations and Future Research Directions

Notwithstanding the insightful results this study produced, a number of limitations should be noted. In order to ensure transparency and to direct future research on Greece's digital healthcare ecosystem, it is critical to acknowledge these limitations.

First, only 199 participants made up the study's comparatively small sample size. The sample cannot accurately reflect the Greek population as a whole, despite offering valuable information about citizens' experiences and opinions of digital healthcare services. As a result, when attempting to draw conclusions at the national level, the results should be interpreted cautiously.

Second, the sample distribution was influenced by the researcher's social and geographical accessibility. A higher proportion of participants were female and belonged primarily to middle-aged groups, particularly individuals between 35 and 64 years old. Additionally, many rural participants originated from the region of Laconia and the Municipality of Evrotas, while most urban participants resided in the Athens metropolitan area. Although this geographical distribution provided valuable comparisons between urban and rural populations, broader regional representation could further strengthen future studies.

Another limitation concerns the use of self-reported questionnaire data. Participants' responses were based on personal perceptions, experiences, and levels of understanding regarding digital healthcare services. As a result, certain responses may have been influenced by subjective interpretation, varying levels of digital literacy, or misunderstanding of healthcare-related terminology and concepts.

The study additionally relied primarily on descriptive statistical analysis rather than advanced statistical modeling techniques. While descriptive statistics were considered appropriate for the objectives and scope of this MBA dissertation, future research could incorporate more

advanced analytical methods in order to explore deeper relationships between demographic variables, healthcare accessibility, trust, and digital healthcare adoption patterns.

As the present research focused primarily on citizens' experiences, future studies would benefit from incorporating the perspectives of healthcare professionals, healthcare administrators, policymakers, pharmacists, and caregivers. Including these stakeholder groups would provide a more comprehensive understanding of the organisational, managerial, and operational challenges involved in implementing digital healthcare services (Alotaibi et al., 2025; Fonseca et al., 2026).

An additional limitation concerns the rapidly evolving nature of digital healthcare technologies and healthcare policies. Digital healthcare systems in Greece continue to develop quickly, particularly in relation to interoperability initiatives, electronic healthcare records, telemedicine services, and European digital healthcare integration policies. Consequently, some findings may evolve over time as healthcare technologies, regulations, and citizen experiences continue to change (European Commission, n.d.-b; Salmatani et al., 2026).

Future research could therefore explore several important directions. Comparative studies between different regions of Greece or between Greece and other European countries could provide valuable insights regarding healthcare digitalization strategies and best practices. Further investigation is also needed to evaluate the long-term impact of digital healthcare adoption on healthcare accessibility, patient outcomes, administrative efficiency, and the overall sustainability of healthcare systems (Van Kessel et al., 2023; Ambalavanan et al., 2025).

Additionally, future research could look into particular vulnerable demographics like the elderly, people with disabilities, patients with chronic illnesses, caregivers, and individuals living in isolated rural areas. More focused digital healthcare policies and support systems could greatly benefit these groups, who may face particular accessibility issues (Monasterio et al., 2026; MacAskill et al., 2026).

Finally, future research may also explore the growing role of artificial intelligence, predictive healthcare analytics, remote healthcare monitoring, and personalized digital healthcare systems within the Greek healthcare ecosystem. As digital healthcare technologies continue to

evolve, ongoing research will remain essential for understanding how healthcare systems can balance technological innovation with accessibility, trust, ethical governance, and patient-centered healthcare delivery (Hussein et al., 2026; Hou et al., 2026; Mateus et al., 2026; Ogenyi et al., 2026).

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