

# Leveraging Digital Literacy to Enhance E-Government Utilisation and Improve Health Institution Performance

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**Abstract:** E-governance has had an intensive effect on how services are delivered in many areas, such as health. Many countries have used e-governance to change the way health services work by setting up online treatment platforms and e-health data management systems. These programs have made healthcare resources work better and cut down on the time it takes to get treatment. This study looks at how digital literacy affects trust, satisfaction, and adoption of e-governance, as well as how different parts of e-governance affect the performance of health institutions. We used a quantitative cross-sectional approach to collect data and Smart PLS SEM to analyse it. The results showed that digital literacy has a positive effect on e-governance adoption, trust, and satisfaction. Also, e-governance adoption and trust were found to have a positive effect on the performance of health institutions, but e-governance satisfaction did not have a statistically significant effect on performance. The results show that health professionals' satisfaction with e-governance platforms is important, but it doesn't directly affect how well health institutions do their jobs. E-governance adoption and trust have a positive effect on performance, though. It is suggested that authorities improve e-governance platforms to make health workers better off, which will help health institutions do their jobs better.

**Keywords:** Digital Literacy, E-Governance Adoption, E-Governance Trust, E-Governance Satisfaction, and Health Institutions Performance are some of the main topics.

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## 1. INTRODUCTION

E-governance programs have greatly improved the quality of service delivery in both developing and developed countries (Badr et al., 2024). During the COVID-19 pandemic, the effects of e-governance on healthcare were especially clear, as many health services moved online and used different types of technology (Ostrowska et al., 2024). Hospitals and other healthcare facilities are using technology more and more to make things run more smoothly, which means that fewer people need to be involved in the health delivery process. For example, several African countries have started using the electronic and web-based District Health Information Software 2 (DHIS2) to help them move from paper-based to digital information management (Afetor et al., 2024).

The NHMIS Web-Based Data Management System, which was put into use in 2016, is a major example of e-governance in health in many developing countries, which makes it easier to collect and analyse healthcare data (Badr et al., 2024). The National Telemedicine Development Policy, which went into effect in Nigeria in 2010, was very important for controlling the COVID-19 outbreak and encouraging the use of electronic health records (Victor et al., 2023). The use of Electronic Health Records (EHR) systems and the digitalisation of the National Health Insurance Scheme in 2020 are two other examples of e-governance in Ghana, which is fast-tracking the treatment process by lowering time spent at the hospital and reducing wastage, which occurs through corruption (Kumah et al., 2024). These are also common in other sub-Saharan African countries (Armstrong, 2005).

In Ghana and other west African countries, e-governance initiatives in health include the introduction of electronic NHIS cards in 2015, linking the use of the nation health insurance to a real-time database for easy verification, the District Health Information Management System (DHIMS2) enabling the collection, analysis, and management of health data nationwide, thereby improving care quality and monitoring and the integration of Health Information Management Systems (HIMS) has also facilitated efficient management of patient data, enhancing decision-making, reducing errors, and improving healthcare quality (Afetor et al., 2024).

The idea behind e-governance in health and other services has gotten support from national governments. For example, in 2015, many African countries put in place the Health Management Information System (HMIS), which collects and stores information on health services, treatments, and disease surveillance (Burger et al., 2012). The World Health Organisation has also backed the e-governance-driven eHealth Strategy, which aims to digitise health information management systems in healthcare facilities in developing countries in Africa (Ismukhamedova et al., 2025).

Though these programs could make healthcare better in West Africa, the ehealth strategies could only maximise health output if people know how to use them (Victor et al., 2023). Research has shown that digital literacy has a big effect on how people use, trust, and are satisfied with e-governance in health (Eab-Aggrey & Khan, 2024). Some countries (Estonia, South Korea) may not have a big problem with digital literacy when it comes using e-governance in health facilities (Machackova et al., 2024), but there is a growing need for research on how digital literacy affects e-governance in health delivery in West African countries where technology penetration is averagely low (Hailat et al., 2025). Studies show that there isn't enough research in this area, and people don't know enough about technology, which makes it clear that more research needs to be done (Adel, 2024b).

The 2022 Afrobarometer, the 2019 World Bank report, and the Media Foundation for West Africa in 2022 all show that many Anglophone West African countries still have low levels of digital literacy (Weeden & Pamment, 2024). Even though people know that being able to use technology is becoming more important, there is still a gap. To close the digital divide, we need to put more effort into education, building infrastructure, and putting policies into place to improve digital skills across the region (Adel, 2024b). Several countries in Asia, Europe, and other places, especially China and Estonia, have shown that e-governance has a big effect on health care delivery (Solvak et al., 2019). These countries have successfully incorporated online platforms into their national operations, and a large number of their citizens use digital services every day (Ehin et al., 2022). Many West African countries, on the other hand, are not at the same level. Even though organisations like the World Health Organisation, the European Union, and other multilateral and bilateral bodies have helped make e-governance programs that improve health care delivery, people still have low digital literacy skills to enhance the full benefits of e-governance programs (Ismukhamedova et al., 2025). This study looks at how digital literacy affects citizens' trust, satisfaction, and use of e-governance in five Anglophone West African countries, as well as how trust, satisfaction, and use of e-governance affect the performance of health institutions.

## 2. REVIEW OF THE LITERATURE

E-governance has become a global tool for improving service delivery in many areas. It has benefits like less need for human intervention, fewer mistakes, lower costs, and higher efficiency (Solvak et al., 2019). Governments and businesses have made it easier for people to access important services by using digital technology. In places like China, a single e-governance platform, like WeChat, has changed how people pay for services, talk to each other, and do other digital services (Du et al., 2024). The COVID-19 pandemic accelerated the adoption of digital health solutions, transitioning from traditional telemedicine to more advanced mobile apps for contact tracing, hospital management, and identifying potential outbreak epicentres (Ali et al., 2024). Before the pandemic, there were digital health tools, but the crisis sped up the development and use of these tools, marking a new phase in e-governance for healthcare (Lee et al., 2024).

E-governance has influenced mobile apps such as mPharma and mPedigree in Ghana and other developing countries. These apps have simplified access for patients to obtain medicines by enabling them to order online and verify their authenticity (Lokesh et al., 2022). Similarly, in Nigeria, platforms like MaNaDr and Health Plus assist patients in finding doctors and healthcare facilities. Other African e-governance health initiatives, like mHealth and SMS for Life, demonstrate how digital health solutions are improving healthcare accessibility (Badr et al., 2024). However, despite these advances, e-governance projects in healthcare remain effective only if people are digitally literate. Providing digital skills is essential so individuals can fully utilise these technologies and enhance their health (Iyanna et al., 2022).

## 2.1. E-Digital Literacy

Digital literacy is the ability to use different digital technologies to find, evaluate, and create information in a useful and critical way (Al-shami et al., 2023). It includes the ability to use digital devices like computers, smartphones, and tablets, as well as the skills to find and evaluate information online, communicate through digital platforms more safely and responsibly, and manage digital identities and data. This includes skills like working together online, solving problems, and using basic software applications (Badr et al., 2024).

Digital literacy is very important for both healthcare workers and patients. It includes knowing how to use digital health tools like electronic health records (EHRs), telemedicine platforms, mobile health apps, and other digital tools in a useful way (Paillaud et al., 2025). Digital literacy has a big effect on how people use, trust, and are pleased with e-governance programs in healthcare and other services. This is because the level of digital literacy among citizens is one of the most important factors in the success of these programs (Park & Chung, 2021).

The International Telecommunication Union (ITU) said in a report from 2022 that about 67% of the world's population is online (Solvak et al., 2019) but digital literacy rates, on the other hand, are very different in different parts of the world. A lot of developing countries have big problems with getting access to technology and learning how to use it, which makes it harder to use e-governance programs (Badr et al., 2024). Eurostat's 2020 report said that only about 56% of Europeans between the ages of 16 and 74 had basic or above-average digital skills. A World Bank report from 2021 also said that digital literacy is still a problem in many developing countries, even though access to the internet is growing quickly. For example, in sub-Saharan Africa, only 25% of people are digitally literate, which makes it hard for many sectors, including healthcare, to use digital technologies effectively (Hailat et al., 2025).

These numbers show how important it is to improve digital literacy so that everyone can access digital resources fairly, improve healthcare services, and encourage more people to use e-governance programs (Eab-Aggrey & Khan, 2024). The difference in digital literacy skills between developed and developing countries has a big impact on how people use, trust, and are satisfied with e-governance initiatives in healthcare (Mnguni et al., 2024). There isn't much research on this topic in Africa, but studies have shown that there is a strong link between digital literacy and the use of e-governance programs in Europe and the US (Machackova et al., 2024).

Low levels of digital literacy in Africa may have slowed down development in many areas, such as the successful use of e-governance in health systems (Molepo & Blöse, 2023). Because of this, important health technologies like system data sharing and mobile health apps, which help patients and doctors talk to each other, are still not being used enough (Badran, 2021). According to research, e-governance projects could make Africa's healthcare system stronger by cutting down on corruption, making it easier to hold people accountable for how they spend money, and making it easier for people to get healthcare (Victor et al., 2023). These programs can help healthcare organisations get the most out of their resources and work more efficiently (Adel, 2024b). But it's important to remember that being digitally literate is a must if you want to get the most out of e-governance in health (Badr et al., 2024).

To close the digital literacy gap, we need to take specific steps, such as offering educational programs, teaching people how to use technology, and building better infrastructure to support digital learning (Badran, 2021). As part of larger plans for digital transformation, governments and policymakers should make digital literacy a top priority (Gebremichael, 2023). Investing in digital education will not only improve people's skills, but it will also help e-governance projects in healthcare work better, which will make it easier for people to get healthcare and get better service (Boulaalam et al., 2018). Fixing the gaps in digital literacy will make sure that both developed and developing areas can fully use digital advancements to improve healthcare outcomes and promote inclusive digital development that will lead to citizens' adoption, trust, and satisfaction with e-governance in health in developing countries.

## 2.2. Trust in E-Governance

E-governance is very important for making health services better, but how people feel about e-governance projects is still very important (Badran, 2021). In studies of e-governance, important factors like citizens' trust, satisfaction, and adoption affect how digital platforms are used in healthcare and other service sectors (Badr et al., 2024). People need to trust e-governance for digital health initiatives to be adopted and used effectively. This trust is about how much people trust government-run digital services and platforms, which affects how willing they are to use these technologies (Ed-Dafali & Bouzahir, 2022).

One of the biggest problems with using digital health products is getting people to trust e-governance programs, especially in developing countries where people may not be very good at using technology (Badr et al., 2024). Patients will only use mobile apps to talk to doctors if they trust the system's security (Wu et al., 2021). Researchers have found that for both people and healthcare workers to use digital health tools like electronic health records (EHRs), mobile health apps, telemedicine, and AI-driven diagnostics, things like data security and privacy are very important (Thi et al., 2024). These things make sure that personal health information is safe from hackers and other people who shouldn't have access to it (Wu et al., 2021).

As health data becomes more valuable to drug companies, calls for e-governance trust must stress the need for openness and responsibility when it comes to using health data. It is also important that digital health platforms are reliable and work well (Alfano & Ercolano, 2021). These platforms need to work well, be easy to use, and not crash often. If they don't, users may lose faith in e-health services (Dupuy et al., 2024). Digital literacy among health professionals is a key factor in building trust in e-governance in healthcare because their understanding of these technologies is essential for them to trust the software (Alfano & Ercolano, 2021).

Ultimately, trust in e-governance is crucial for the success and acceptance of digital health initiatives. Without trust, even the most advanced digital health systems may encounter resistance, scepticism, and low engagement (Victor et al., 2023). To foster trust in e-governance for health service delivery, governments and healthcare institutions must prioritise security, transparency, and inclusiveness (Webb et al., 2024). Many e-governance projects in healthcare are being implemented in developing countries with support from international organisations such as the World Health Organisation. However, these countries still face challenges due to limited digital literacy, which reduces people's trust in systems like Electronic Health Records (EHR), Health Management Information Systems (HMIS), and programmes like mDiabetes. This can affect the efficiency and effectiveness of healthcare institutions (Paillaud et al., 2025).

### 2.3. Satisfaction with E-Governance

For e-governance initiatives in healthcare to succeed, people need to be satisfied with them (Wu et al., 2021). When individuals and healthcare workers are content with digital health systems, such as electronic health apps, it improves the overall functioning of health institutions (Badr et al., 2024). The level of digital literacy among citizens significantly influences their satisfaction with e-governance (Badr et al., 2024). E-governance satisfaction refers to the happiness and positive feelings that users, such as patients, healthcare professionals, and administrators, have towards government-operated digital platforms and services (Paillaud et al., 2025). According to Li et al. (2024), this indicates how effectively these projects meet users' needs for accessibility, efficiency, transparency, security, and overall functionality (Ahmad et al., 2023).

The ability of government agencies to offer consistently functional platforms that are easy to use and have reliable internet access is a big factor in how satisfied people are with e-governance (Ahmad et al., 2023). E-governance programs in health have been very successful in countries with high digital literacy, like Estonia. For instance, Estonia's e-Prescription service has changed the way medications are prescribed and given out (Slovak et al., 2019). Doctors write prescriptions electronically, and patients can pick them up at pharmacies using their ID cards. This system has been adopted by 99% of people, which has greatly improved efficiency and cut down on medication mistakes (Badr et al., 2024).

In Ghana, e-governance projects like the Ghana Card have also led to more people signing up for health insurance (Eab-Aggrey & Khan, 2024). People can now easily sign up for or renew their health insurance online, which makes it easier for them to get medical care and makes health institutions work better (Victor et al., 2023). But it is still hard to get a lot of people in developing countries to be satisfied with e-governance health apps (Majcherek et al., 2024). A lot of mobile apps don't put the needs of citizens first. For example, mPharma and other apps mostly work in English, which leaves out a lot of people who cannot read or write in that language (Eab-Aggrey & Khan, 2024).

Healthcare professionals generally trust e-governance mobile health apps because many of them have been trained to use them. However, poor mobile data connectivity and high internet costs may make them less likely to use these apps (Amoah et al., 2023). The Ministry of Health in Ghana and other countries launched the Lightwave Health Information Management System (LHIMS) in 2018. It digitises patient records and makes it easy for healthcare facilities to share data. This system makes it easy for healthcare professionals to look up patient histories and treatment plans, but it only works well if people can get online and the data is cheap (Afetor et al., 2024).

Trust in e-governance health initiatives directly influences patient engagement with digital platforms and allows healthcare professionals to make data-driven decisions, ultimately improving institutional performance (Nsiah-Boateng, 2016). Generally, e-governance satisfaction enhances healthcare professionals' productivity by streamlining medical operations. For instance, the UK's National Health Insurance System allows patients and doctors to interact online, reducing hospital visits and saving both time and money (Nsiah-Boateng, 2016). Implementing such systems in West African countries facing significant disease burdens and resource constraints would optimise healthcare resources and improve service delivery (Wu et al., 2021).

Although mobile health applications are gradually increasing in developing countries, their success depends on user satisfaction, platforms like MDConsults, which offers live videoconferencing for remote consultations and facilitates patient data storage, and mPedigree, which enables consumers to verify medication authenticity, contribute significantly to healthcare (Eab-Aggrey & Khan, 2024). But for healthcare institutions to be affected, both patients and professionals need to trust and use these digital solutions (Paillaud et al., 2025). E-governance satisfaction is still one of the most important factors in the success of digital health initiatives, as it makes sure that they reach their goals in providing healthcare (Paillaud et al., 2025).

#### 2.4. E-Governance Adoption

E-Governance adoption is the process by which governments, businesses, and people accept, use, and incorporate digital technologies and information systems into the way public administration works (Eab-Aggrey & Khan, 2024). This means using information and communication technologies (ICTs) to make governance better, services better, more open, and encourage people to get involved (Burger et al., 2012). Governments in developing countries have gotten help to start health-related e-Governance projects because they see e-Governance as an important way to make healthcare and other public services better (Eab-Aggrey & Khan, 2024). The use of e-Governance in healthcare is clear, as many technology-based healthcare projects have been started in different countries in sub-Saharan Africa (Badr et al., 2024). Research shows that e-Governance projects in Europe, the US, and some parts of Asia have made health institutions work much better (Solvak et al., 2019). However, even though things are getting better, there are still problems that need to be solved before it can be successfully adopted in developing countries in Africa (Badr et al., 2024).

Some African countries have adopted e-Governance in healthcare, which is also known as e-Health. However, some problems could make it less effective at improving the performance of health institutions (Al-shami et al., 2024). One of the biggest problems is that both citizens and healthcare professionals don't know much about e-Governance initiatives (Victor et al., 2023). Governments may put these plans into action, but making people aware of them is still a problem. For example, many educated people don't know that e-Health apps exist, and in most cases, only people who live in cities know about these services. This means that people who live in rural areas have little to no access to information about these apps (Bejakovi & Mrnjavac, 2024).

Also, weak internet connections and bad ICT infrastructure make it even harder to use e-Governance programs. The expected improvements in healthcare performance may not happen if there isn't a reliable digital infrastructure (Badr et al., 2024). Language differences can also be a problem because many African countries have a lot of different languages. This can make it harder for mobile health apps that are meant to help patients and healthcare professionals talk to each other (Afetor et al., 2024). Digital literacy is very important for the success of e-Governance projects. The high levels of digital literacy in healthcare institutions across Europe and other developed areas have made e-Governance a huge success because they make people less resistant to change (Machackova et al., 2024). In Ghana and other West African countries, public sector workers may be against going digital because they are afraid of losing their jobs or don't want to learn new systems. However, traditional bureaucratic processes are still very strong, which makes the switch to digital health operations slow and difficult (Badr et al., 2024).

Even though some African countries have put in place e-Governance projects like electronic health record systems and health information systems, they still don't give international organisations full health indicators (Adel, 2024a). This may show how hard it is to use e-Governance projects in healthcare (Eab-Aggrey and Khan, 2024). Also, problems with interoperability make the process of adoption even harder. Many government agencies work in separate areas, which makes it hard to connect different e-Governance platforms so that services can be delivered smoothly (Machackova et al., 2024). In some health institutions, multiple applications do the same thing, which makes people less likely to use them and makes it harder to share information because there is no standardisation (Marinda et al., 2024).

## 2.5. The Study Is Conceptualized As Below, with the Following Objectives

1. To examine the influence of digital literacy on e-governance trust, e-governance satisfaction and e-governance adoption.
2. To examine the influence of e-governance trust, e-governance satisfaction and e-governance adoption on health institution performance

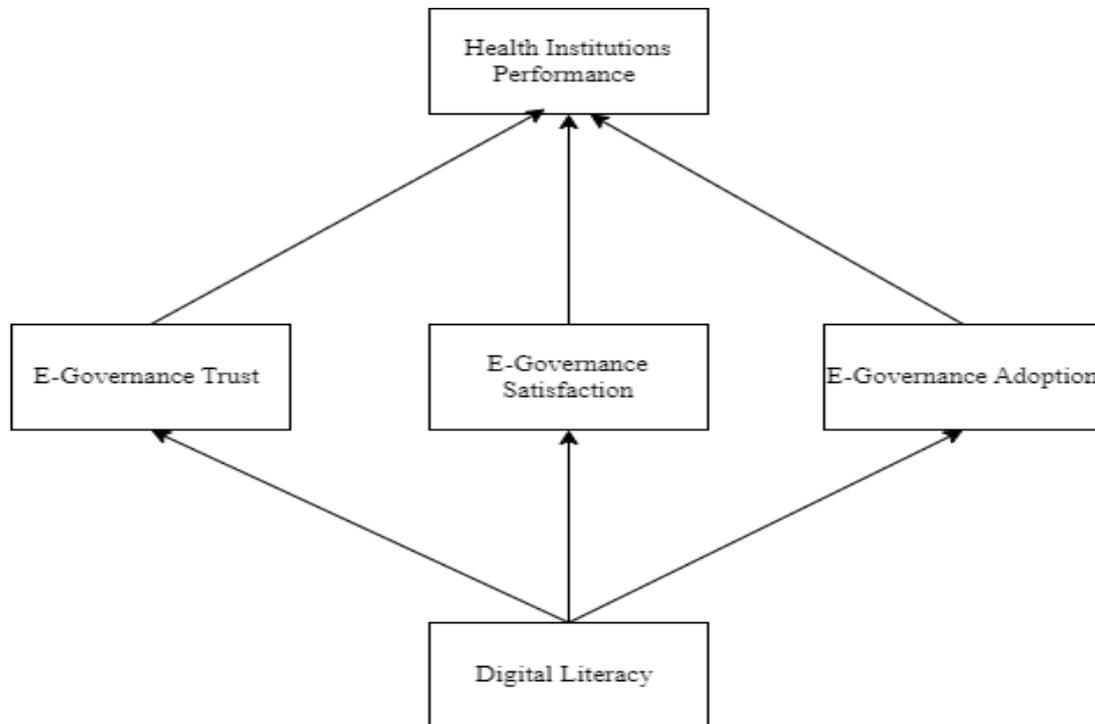


Figure 1: A framework for ideas

## 3. METHODOLOGY FOR RESEARCH

### 3.1. Study Design

This study uses a quantitative research design to look into how e-governance and digital literacy affect how well health institutions in Ghana do their jobs. We used a cross-sectional method to gather and analyse numerical data, which made sure that the results were fair and could be applied to other situations (Lyu et al., 2024). This method lets researchers get information from a wide range of healthcare professionals, giving them a good idea of what the research population is like.

### 3.2. Population and Sampling for the Study

The study focused on health professionals from Ghana because e-governance is a policy-driven issue that has a direct effect on the healthcare sector. The researchers decided that it was important to get professionals who know a lot about health delivery involved to make sure that the data they collected came from people who know a lot about e-governance in healthcare and are using different e-governance programs in the country. There were certain requirements for people to be chosen as participants: they had to work at a health institution and use e-governance tools in health. Respondents were asked to name e-governance projects they knew about to make sure they understood and were involved with the study's variables.

### 3.3. Sampling

We used a purposive sampling method to choose respondents, focusing on healthcare professionals. There were three main steps in the selection process: Finding Health Experts: A list of possible respondents was made using academic social media sites. Their research backgrounds were checked to make sure they were healthcare experts. Respondents Recruitment: Experts who were found were contacted and asked to take part in the study. Survey Distribution: People who agreed to take part got questionnaires. The first response rate was 37%, so the researchers had to do it again and again until they got enough responses for the study.

### 3.4. Model of Measurement

The researcher used questions from earlier studies to fit the research variables to meet high scientific standards. We used five items from Milošević et al. (2025) to evaluate the performance of health institutions. We used five questions from Imjai et al. (2024) to test digital literacy. We used 4 items from Mansoor (2021) to make questions about trust in e-governance and 5 items from Mir et al. (2022) to measure satisfaction with e-governance. Wu et al. (2021) used five items to measure how well e-governance was being used. All of these tools had been tested in earlier studies.

### 3.5. Data Collection

Structured questionnaires were used to collect primary data. Each respondent got one by email. Respondents had two weeks to fill out and send back the questionnaires. But, as was said before, the first response rate was less than 40%, and some of the questionnaires were sent back with missing information. The process was done three times to make sure there were enough samples. The whole process of gathering data took eight weeks.

### 3.6. Analysis of Data

Smart PLS was used to analyse data. We looked at descriptive statistics and ran tests to see how reliable and valid they were. We used structural equation modelling (SEM) to examine the relationships between variables and make sure the statistical analysis was strong (Haq et al., 2023).

### 3.7. Ethical View

The Ecowell Africa, Ghana Ethical Review Committee gave its approval for this project with the approval number ECA871/24/02/23. All participants gave their informed consent, which meant that their privacy was protected and they could choose to take part.

## 4. RESULTS

### 4.1. Demography

We first contacted 582 health experts, but 326 of them either said no or didn't respond. People who agreed to take part were given questionnaires, and 318 people filled them out. The study included 273 fully filled-out questionnaires after screening. 83.7% of the participants were men, 63.2% had a master's degree, 31.5% had a bachelor's degree, and the rest were working on their PhD. Most of the people who took part (76.4%) worked as health information managers. 13.3% worked for health research organisations, and the rest worked only in hospitals. 76.1% of the people who answered had more than eight years of experience in their field, while the other participants had less than eight years of experience.

### 4.2. Test for the Reliability and Validity of Data

The reliability and validity results of the measurement model used in the study are shown in Table 1. All factor loadings (FL) are above the acceptable threshold of 0.60, confirming that the observed items measure their respective constructs effectively; variance inflation factors (VIF) for all items are below the critical value of 5, confirming no significant multicollinearity issues; Cronbach's Alpha ( $\alpha$ ) values for all constructs range between 0.806 and 0.882, demonstrating strong internal consistency; and the composite reliability values (CR-a and CR-c) also exceed the 0.70 minimum threshold, indicating robust measurement consistency. Additionally, the Average Variance Extracted (AVE) for each construct is above the recommended 0.50 level, confirming (Ben Moussa & El Arbi, 2020) (Haq et al., 2023)

**Table1: Reliability and Validity**

Variables	Code	FL	VIF	$\alpha$	CR-a	CR -c	AVE
Health Institutions Performance	HIP1	0.888	2.718	0.882	0.884	0.919	0.740
	HIP2	0.844	2.159				
	HIP3	0.885	2.712				
	HIP4	0.822	1.882				
E-Governance Trust	EGT2	0.826	2.092	0.859	0.862	0.904	0.720
	EGT3	0.840	20.54				
	EGT4	0.859	2.231				

E-Governance Satisfaction	EGS1	0.654	1.229	0.806	0.807	0.875	0.639
	EGS2	0.826	2.092				
	EGS3	0.840	2.054				
	EGS4	0.834	2.231				
E-Governance Adoption	EGA1	0.836	2.153	0.871	0.879	0.911	720
	EGA2	0.856	2.311				
	EGA3	0.867	2.320				
	EGA4	0.834	1.810				
Digital Literacy	DL1	0.863	2.193	0.859	0.868	0.904	0.740
	DL2	0.849	2.171				
	DL3	0.867	2.229				
	DL4	0.768	1.635				

Key: *FL* = Factor Loading; *VIF* = Variance Inflation Factor; *a* = Cronbach Alpha; *CR-a* = Composite Reliability (*rho-a*); *CR-c* = Composite Reliability; *AVE* = Average Variance Extracted

#### 4.3. Discriminant Validity: The Fornell-Larcker Criterion

The table shows the results of the Fornell-Larcker criterion for discriminant validity, which measures how different constructs are from each other. The values on the diagonal show the square roots of the average variance extracted (AVE), while the values off the diagonal show how constructs are related to each other. The diagonal values show that there is enough discriminant validity. Digital Literacy (0.839), E-Governance Adoption (0.848), and Health Institutions Performance (0.860) all have strong AVE values. The constructs show that they are different from each other, with moderate correlations, which supports their unique dimensions (Ab Hamid et al., 2017).

**Table 2: Discriminant Validity- Fornell-Larcker Criterion**

Variables	DL	EGA	EGS	EGT	HIP
Digital Literacy	0.839				
E-Governance Adoption	0.804	0.848			
E-Governance Satisfaction	0.588	0.804	0.799		
E-Governance Trust	0.483	0.468	0.499	0.838	
Health Institutions Performance	0.483	0.489	0.484	0.735	0.860

#### 4.4: Model Fit

The table shows the estimated model's fit statistics and the R<sup>2</sup> values for each variable. The SRMR value of 0.117 shows that the fit is acceptable because lower values mean a better fit. The d-ULS value of 2.870 and the d-G value of 0.727 show that the model and the data are not quite the same. The Chi-square statistic is 3.438, which is in the right range and shows that the fit is good. The model's fit is even better with an NFI of 0.965. The R<sup>2</sup> values for EGA (0.846), EGS (0.746), EG (0.833), and HIP (0.768) show that they explain a lot, which confirms that the model fits well overall.

**Table 3: Model fit**

Measures	Estimated Model	Variables	R <sup>2</sup>
SRMR	0.117	EGA	0.846
d-ULS	2.870	EGS	0.746
d-G	0.727	EGT	0.833
Chi-square	3.438	HIP	0.768
NFI	0.965		

Key: *SRMR* = Standardized Root Mean Square Residual; *d-ULS* = distance-based unweighted least squares; *d-G* = distance-based geodesic; *NFI* = Normed Fit Index; *EGA* = E-Governance Adoption; *EGS* = E-Governance Satisfaction; *EGT* = E-Governance Trust; *HIP* = Health Institutions P performances

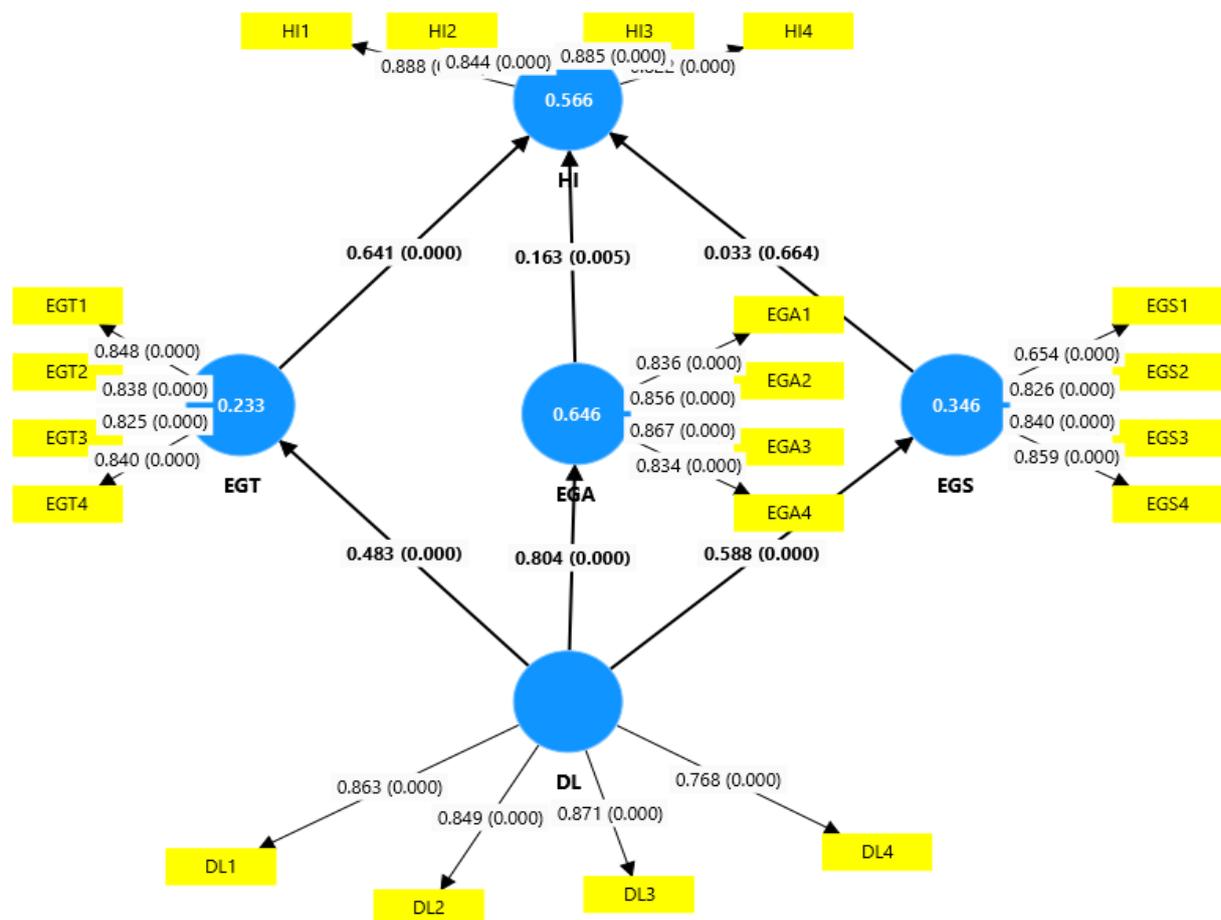
**4.5. Testing Relationships between Variables**

The results of the structural path analysis, which show the importance and strength of the relationships between the study variables, are shown in Table 4. The findings demonstrate that all three e-governance dimensions are significantly impacted by Digital Literacy (DL). With a robust effect, DL specifically predicts E-Governance Adoption (EGA) with a path coefficient of 0.804 ( $t = 35.339, p < 0.001$ ). Similarly, with path coefficients of 0.588 and 0.483, respectively, DL has a significant impact on E-Governance Satisfaction (EGS) and E-Governance Trust (EGT), both of which are significant at  $p < 0.001$ . EGT demonstrates a strong and significant effect (0.641,  $t = 12.339, p < 0.001$ ) on the influence of e-governance dimensions on Health Institutions Performance (HIP), indicating that trust in e-governance systems is essential for improving institutional performance. EGA has advantages as well.

**Table 4: Testing Relationships between Variables**

Paths	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistics (O/ STDEV)	P-Value
DL-EGA	0.804	0.805	0.023	35.339	0.000
DL-EGS	0.588	0.591	0.042	13.904	0.000
DL-EGT	0.483	0.485	0.052	9.253	0.000
EGA-HIP	0.163	0.164	0.059	2.786	0.005
EGS-HIP	0.033	0.033	0.076	0.435	0.664
EGT-HIP	0.641	0.640	0.052	12.339	0.000

KEY: DL = Digital Literacy; EGA = E-Governance Adoption; EGT = E-Governance Trust; EGS = E-Governance Satisfaction; HIP = Health Institutions Performance



**Figure 2: Diagram of the Path**

## 5. DISCUSSION

E-governance has become a major force in the service industry in many countries, especially in North America, Europe, and parts of Asia, like China and Japan, where digital literacy and digital transformation have made business operations easier (Machackova et al., 2024). E-governance is currently having a major impact on healthcare in these areas. For example, Estonia is using digital platforms to make virtual interfaces for patients and doctors, which makes online consultations and treatments more common (Amon et al., 2024). E-governance works well in these countries because people trust and are satisfied with it, and there are steps in place to make it easier for people to use it (Pevkur & Lubi, 2025). But there is still a gap in e-governance implementation in many African developing countries compared to the developed countries mentioned above (Afetor et al., 2024). Studies have shown that e-governance is still improving the quality of healthcare in these areas by making health institutions run more smoothly, using timely and accurate data to make decisions, making it easier to share information, and helping to make mobile apps for treatment (Badr et al., 2024).

Similarly this study found that digital literacy is very important for how people interact with e-governance services in health delivery. It was shown that being digitally literate makes people more likely to adopt e-governance, trust it, and be satisfied with it. This finding shows how important it is for people to be able to use digital platforms well and how their digital skills affect how they feel about and use e-governance systems (Machackova et al., 2024).

These results are in line with other research that shows how digital literacy affects the success of e-governance usage. Countries with higher levels of digital literacy tend to use e-governance systems more and trust them more (Amon et al., 2024). For instance, e-governance in health has worked better in countries like Estonia and South Korea, where people are good at using technology. Again, studies have established that people use digital services when they trust and are satisfied with the digital platforms (Solvak et al., 2019).

Other studies in line with our findings of positive relationships between digital literacy and e-governance show that digital literacy, which is the ability to access, understand, and use digital technologies, remains a fundamental basis for using e-governance platforms. As people get better at using digital tools, they will be better able to understand and use e-governance services (Pevkur & Lubi, 2025).

Digital literacy has a direct effect on the use of e-governance platforms in Ghana, like mobile money apps, online payment systems, and mobile vehicle request apps (Eab-Aggrey & Khan, 2024). Even though many people in developing countries in Africa may not be very good with technology, the working class is more likely to use e-governance systems because they are more comfortable with technology and willing to use online services (Adel, 2024a). It should be noted that using some online systems is becoming necessary. For instance, some schools and hospitals now require payments to be made through online platforms, which forces people to use these e-governance services (Adel, 2024b).

The study found that people who are good at using technology are more likely to trust e-governance. Trust in e-governance is a measure of how much faith people have in the government's ability to offer safe, dependable, and effective services through digital platforms (Solvak et al., 2019). Other studies established that People who are more digitally literate can better understand how e-governance platforms work, such as the security measures that are in place to keep their personal information safe (Machackova et al., 2024). This knowledge builds trust because people feel surer that they can use these systems safely (Van Hout et al., 2024). Studies in Ghana and Nigeria have shown that people who know how to use digital tools are more comfortable using online banking systems because they trust the security of these sites (Adel, 2024a). The study shows that digital literacy affects trust in e-governance, but other research has shown that many developing countries still have problems with using e-governance platforms (Afetor et al., 2024). People often do not trust each other because of these gaps, which are caused by poor internet connections and adults and less educated people not knowing how to use technology well (Van Hout et al., 2024).

The study also showed that digital literacy has a major effect on how satisfied people are with e-governance. Research from developed countries shows that people who are more digitally literate are more likely to have good experiences with e-governance platforms because they can easily access services, make transactions, and solve problems without getting frustrated (Bejakovi & Mrnjavac, 2024). People are satisfied with e-governance systems when they feel like they can use digital tools well (Badr et al., 2024). The study makes it clear that people's digital literacy is getting better because some e-governance platforms have been around for a while, which has made people happier (Solvak et al., 2019). For instance, Ghana's e-Justice System, the Ghana Integrated Financial Management Information System (GIFMIS), and other platforms

have gotten easier to use over time, making them more accessible and useful for citizens. These programs have satisfied because they have learned more about the systems and are more sure that they can use them well (Pevkur & Lubi, 2025).

The study also looked at how e-governance adoption, trust, and satisfaction affected the performance of health institutions. The results showed that both adopting e-governance and trusting e-governance made health institutions work better. But, e-governance satisfaction did not have a statistically significant effect on performance. This difference gives us useful information about how these factors affect the operational effectiveness of health institutions and their overall performance in providing health services (Machackova et al., 2024).

Adopting e-governance greatly improved the performance of health institutions, mostly by making them more efficient, accessible, and coordinated (Victor et al., 2023). Digital platforms in healthcare, like combining patient data management systems, keeping medical records, and offering telemedicine services, make it easy for health institutions to run smoothly (Somefun et al., 2024). These changes make it easier for healthcare providers to communicate with each other, deliver services more effectively, and make fewer mistakes (Solvak et al., 2019). E-governance also makes it easier to get real-time information, which helps people make decisions quickly that lead to better patient care (Paillaud et al., 2025).

The study also established that e-governance trust, satisfaction and adoption influence the performance of healthcare institutions. The positive influences of various aspects of e-governance on performance of health institutions in Ghana can be supported by the various e-governance initiatives instituted by government of Ghana which include the National Health Insurance Scheme (NHIS) Digitalization, the Ghana Integrated Health Information Management System (IHIMS), the Ghana Health Service (GHS) Electronic Health Records (EHR) System, and e-Health and Telemedicine Services are all examples of successful e-governance projects in Ghana that have improved the performance of health institutions (Solvak et al., 2019). These systems working together have made it easier to manage patients and provide services (Afetor et al., 2024).

The study is in line with other research around the world that shows how e-governance can be good for people. For example, Estonia and South Korea have seen improvements in healthcare delivery since they successfully integrated e-governance systems into their health sectors (Paillaud et al., 2025). These systems have helped with better resource management, more openness, and lower administrative costs, all of which are important for improving healthcare performance (Machackova et al., 2024). Ghana is also gradually making its health institutions more efficient by using these e-governance tools, which is a sign of how well these systems work around the world (Van Hout et al., 2024).

E-governance trust was also found to be a major factor in the success of health institutions because it shows how much faith healthcare workers and the public have in the safety, dependability, and speed of digital platforms (Pevkur & Lubi, 2025). More trust in e-governance services leads to better coordination between healthcare providers and better service delivery overall (Eab-Aggrey & Khan, 2024). The IHIMS and GHS EHR system have been used for a long time in Ghana, which has built trust among healthcare workers. This trust improves collaboration and makes service delivery more efficient, which directly affects the performance of health institutions (Solvak et al., 2019).

The fact that e-governance trust has a positive effect on the performance of health institutions is also in line with what other studies have found, especially in countries with well-developed digital health systems (Uyen Nguyen et al., 2024). For example, in the Nordic countries, a lot of trust in e-governance platforms is a key factor in the success of digital health solutions (Badr et al., 2024). People and healthcare workers in these countries use e-governance systems a lot because they know their personal information is safe and the platforms offer good, reliable services (Moravec et al., 2024). This study's results show that building trust in e-governance platforms is important for making health institutions work better in Ghana and other Asian countries (Bejakovi & Mrnjavac, 2024).

On the other hand, the study found that e-governance satisfaction did not have a statistically significant effect on how well health institutions did their jobs. The study says that while users need to be happy with digital platforms, that isn't enough to make organisations work better (Badr et al., 2024). People may be satisfied with e-governance platforms because of their own experiences and preferences, like how easy they are to use or how good the customer service is (Moravec et al., 2024). But this satisfaction does not always mean that health institutions are able to do their jobs better or more effectively (Pevkur & Lubi, 2025). The study's results go against other research that has said that being satisfied with e-governance leads to better performance in organizations.

This result shows that things like using e-governance systems and trusting these platforms are more important to how well health institutions work than individual satisfaction (Bejakovi & Mrnjavac, 2024). Individual perceptions may affect satisfaction, but it doesn't always lead to real improvements in service delivery or operational efficiency (Machackova et al., 2024). The study did not find a significant link between satisfaction and the performance of health institutions. However, this does not mean that e-governance initiatives have no effect. In fact, the use of e-governance and trust in these platforms are making health services work better and more effectively (Moravec et al., 2024).

### FINAL THOUGHTS AND SUGGESTIONS

In conclusion, the study shows that digital literacy, e-governance adoption, and trust are all very important for making health institutions work better. Individual satisfaction with digital platforms is important, but it doesn't have a direct effect on how well an institution performs. The results show that health institutions should focus on implementing e-governance systems and building trust in these platforms to improve the quality of their services and how well they work. Policymakers and healthcare administrators should make it a priority to come up with ways to get more people to use digital platforms, while also dealing with issues like digital literacy, infrastructure, and access to technology.

Also, governments should spend money on improving digital literacy so that citizens and healthcare workers can use e-governance systems with confidence. In developing countries like Ghana, filling in the gaps in digital literacy and infrastructure will be very important for getting more people involved in e-governance projects and making healthcare better. To make sure that e-governance programs really do improve healthcare services, we need to keep making digital platforms better and build trust in these systems.

### REFERENCES

- [1] Adel, N. (2024a). Heliyon The impact of digital literacy and technology adoption on financial inclusion in Africa , Asia , and Latin America. *Heliyon*, 10(24), e40951. <https://doi.org/10.1016/j.heliyon.2024.e40951>
- [2] Adel, N. (2024b). The Impact of Digital Literacy and Technology Adoption on Financial Inclusion: Evidence from Emerging Economies in Africa, Asia, and Latin America. *Heliyon*, 10(24), e40951. <https://doi.org/10.1016/j.heliyon.2024.e40951>
- [3] Afetor, M., Adolf Bosoka, S., Azumah Abanga, W., Zeng, V., Sunkwa Tamal, C., Razak Issahaku, G., Tetteh Narh, C., Baiden, F., & Kubio, C. (2024). Cases of burns reported to health facilities in the Volta Region of Ghana, 2019–2023. *Burns Open*, 8(4), 100373. <https://doi.org/10.1016/j.burnso.2024.100373>
- [4] Ahmad, M., Hani, S. H. B., Sabra, M. A., & Almahmoud, O. (2023). Big data can help prepare nurses and improve patient outcomes by improving quality, safety, and outcomes. *Frontiers of Nursing*, 10(2), 241–248. <https://doi.org/10.2478/fon-2023-0026>
- [5] Al-shami, S. A., Al, A., & Rashid, N. (2023). Heliyon Happiness at workplace on innovative work behaviour and organisation citizenship behaviour through moderating effect of innovative behaviour. *Heliyon*, 9(5), e15614. <https://doi.org/10.1016/j.heliyon.2023.e15614>
- [6] Al-shami, S. A., Damayanti, R., Adil, H., Farhi, F., & Al, A. (2024). Heliyon Financial and digital financial literacy through social media use towards financial inclusion among batik small enterprises in Indonesia. *Heliyon*, 10(15), e34902. <https://doi.org/10.1016/j.heliyon.2024.e34902>
- [7] Alfano, V., & Ercolano, S. (2021). Social capital, quality of institutions and lockdown. Evidence from Italian provinces ☆. *Structural Change and Economic Dynamics*, 59, 31–41. <https://doi.org/10.1016/j.strueco.2021.08.001>
- [8] Ali, M., Mubarak, S., Saadeh, R., Abdoon, M. A., Qazza, A., Al-kuleab, N., & El, F. (2024). Modeling COVID-19 spread and non-pharmaceutical interventions in South Africa : A stochastic approach. *Scientific African*, 24(March), e02155. <https://doi.org/10.1016/j.sciaf.2024.e02155>
- [9] Amoah, B., Amoah, A., Kwablah, E., & Dzeha, G. C. (2023). Trust in government and electronic levy payment decisions in Ghana. *Urban Governance*, 3(4), 252–258. <https://doi.org/10.1016/j.ugj.2023.08.004>
- [10] Amon, S., Gerold, J., Akweongo, P., Bulthuis, S. E., Agyemang, A., & Aikins, M. (2024). SSM - Health Systems De facto health governance policies and practices in a decentralized setting of Ghana : Implication for policy making and implementation. *SSM - Health Systems*, 3(May 2023), 100017. <https://doi.org/10.1016/j.ssmhs.2024.100017>

- [11] Armstrong, E. (2005). Integrity, Transparency and Accountability in Public Administration: Recent Trends, Regional and International Developments and Emerging Issues. Integrity, Transparency and Accountability in Public Administration: Recent Trends, Regional and International Developments and Emerging Issues, August.
- [12] Badr, J., Motulsky, A., & Denis, J. (2024). Health policy Digital health technologies and inequalities : A scoping review of potential impacts and policy recommendations. Health Policy, 146(October 2023), 105122. <https://doi.org/10.1016/j.healthpol.2024.105122>
- [13] Badran, M. F. (2021). Digital platforms in Africa: A case-study of Jumia Egypt's digital platform. Telecommunications Policy, 45(3), 102077. <https://doi.org/10.1016/j.telpol.2020.102077>
- [14] Bejakovi, P., & Mrnjavac, Z. (2024). Heliyon The characteristics and role of digital literacy in an effective health protection ˇ. 10(April). <https://doi.org/10.1016/j.heliyon.2024.e29737>
- [15] Ben Moussa, N., & El Arbi, R. (2020). The impact of Human Resources Information Systems on individual innovation capability in Tunisian companies: The moderating role of affective commitment. European Research on Management and Business Economics, 26(1), 18–25. <https://doi.org/10.1016/j.iedeen.2019.12.001>
- [16] Boulaalam, O., Aghoutane, B., Ouadghiri, D. El, Moumen, A., & Cheikh Malinine, M. L. (2018). Proposal of a Big data System Based on the Recommendation and Profiling Techniques for an Intelligent Management of Moroccan Tourism. Procedia Computer Science, 134(2017), 346–351. <https://doi.org/10.1016/j.procs.2018.07.200>
- [17] Burger, N. E., Kopf, D., Spreng, C. P., Yoong, J., & Sood, N. (2012). Healthy Firms : Constraints to Growth among Private Health Sector Facilities in Ghana and Kenya. 7(2). <https://doi.org/10.1371/journal.pone.0027885>
- [18] Du, Z., Yan, X., Liu, Y., Pei, Y., Zhou, J., Zhang, L., Han, D., & Chen, L. (2024). Effects of precision health management combined with dual-energy bone densitometer treatment on bone biomarkers in senile osteoporosis patients. Experimental Gerontology, 198(November), 112642. <https://doi.org/10.1016/j.exger.2024.112642>
- [19] Dupuy, J., Barnay, T., & Defebvre, E. (2024). Social Science & Medicine Clear as a bell? Policy stringency and elderly health during Covid-19. Social Science & Medicine, 349(March), 116878. <https://doi.org/10.1016/j.socscimed.2024.116878>
- [20] Eab-Aggrey, N., & Khan, S. (2024). Prospects and challenges of online pharmacy in post-Covid world: A qualitative study of pharmacists' experiences in Ghana. Exploratory Research in Clinical and Social Pharmacy, 13(September 2023), 100395. <https://doi.org/10.1016/j.rcsop.2023.100395>
- [21] Ed-Dafali, S., & Bouzahir, B. (2022). Trust as a governance mechanism of the relationship between venture capitalists and managers of venture capital-backed firms in Morocco. Transnational Corporations Review, 14(2), 210–226. <https://doi.org/10.1080/19186444.2021.1911281>
- [22] Ehin, P., Solvak, M., Willemson, J., & Vinkel, P. (2022). Internet voting in Estonia 2005–2019: Evidence from eleven elections. Government Information Quarterly, 39(4), 101718. <https://doi.org/10.1016/j.giq.2022.101718>
- [23] Gebremichael, H. S. (2023). Contextualizing entrepreneurship for Africa ' s post-Covid-19 recovery and growth. Scientific African, 22(February), e01946. <https://doi.org/10.1016/j.sciaf.2023.e01946>
- [24] Hailat, M. A., Alomari, M. W., & Bashayreh, A. (2025). The chronic illness of poverty: the effects of microfinance on the severity of poverty and the cost of its eradication. Journal of Economic Studies, 52(2), 412–429. <https://doi.org/10.1108/JES-01-2024-0048>
- [25] Haq, S. U., Khan, K. A., Hafeez, H., & Chughtai, M. A. (2023). Trust and knowledge sharing in project teams in construction industry of Pakistan: moderating role of perceived behavioral control. Kybernetes. <https://doi.org/10.1108/K-07-2021-0630>
- [26] Ismukhamedova, A., Uvaliyeva, I., & Belginova, S. (2025). Informatics in Medicine Unlocked Integrating machine learning in electronic health passport based on WHO study and healthcare resources. Informatics in Medicine Unlocked, 44(December 2023), 101428. <https://doi.org/10.1016/j.imu.2023.101428>

- [27] Iyanna, S., Kaur, P., Ractham, P., Talwar, S., & Najmul Islam, A. K. M. (2022). Digital transformation of healthcare sector. What is impeding adoption and continued usage of technology-driven innovations by end-users? *Journal of Business Research*, 153(July), 150–161. <https://doi.org/10.1016/j.jbusres.2022.08.007>
- [28] Kumah, E., Asana, Y., Agyei, S. K., Kokuro, C., Ankomah, S. E., & Fusheini, A. (2024). Does health insurance status influence healthcare-seeking behavior in rural communities? evidence from rural Ghana. *Health Policy OPEN*, 6(April), 100119. <https://doi.org/10.1016/j.hpopen.2024.100119>
- [29] Lee, D., Hyun, S. Y., Kim, H., Kwak, E., Lee, S., Baik, M., Paik, J. W., Sim, M., & Jung, S. J. (2024). Comparative analysis of mental health impairment among COVID-19 confirmed cases across the pandemic period in South Korea. *Asian Journal of Psychiatry*, 101(September), 104233. <https://doi.org/10.1016/j.ajp.2024.104233>
- [30] Lokesh, S., Chakraborty, S., Pulugu, R., Mittal, S., Pulugu, D., & Muruganantham, R. (2022). AI-based big data analytics model for medical applications. *Measurement: Sensors*, 24(August), 100534. <https://doi.org/10.1016/j.measen.2022.100534>
- [31] Machackova, H., Jaron Bedrosova, M., Muzik, M., Zlamal, R., Fikrlova, J., Literova, A., Dufkova, E., Smahel, D., Boomgaarden, H., Song, H., Tolochko, P., d'Haenens, L., Joris, W., Kalmus, V., Tikerperi, M. L., Opermann, S., Napp, M., Soidla, I., Uibos, A., ... Helsper, E. J. (2024). Digital skills among youth: A dataset from a three-wave longitudinal survey in six European countries. *Data in Brief*, 54. <https://doi.org/10.1016/j.dib.2024.110396>
- [32] Majcherek, D., Hegerty, S. W., Kowalski, A. M., Lewandowska, M. S., & Dikova, D. (2024). Opportunities for healthcare digitalization in Europe: Comparative analysis of inequalities in access to medical services. *Health Policy*, 139(October 2023). <https://doi.org/10.1016/j.healthpol.2023.104950>
- [33] Mnguni, L., Nuangchalerm, P., Zaky El Islami, R. A., Sibanda, D., Sari, I. J., & Ramulumo, M. (2024). The behavioural intentions for integrating artificial intelligence in science teaching among pre-service science teachers in South Africa and Thailand. *Computers and Education: Artificial Intelligence*, 7(June), 100334. <https://doi.org/10.1016/j.caeai.2024.100334>
- [34] Molepo, M. J., & Blose, S. (2023). Towards a conceptual framework for communicating library training to students in South African university libraries: A literature review. *Social Sciences and Humanities Open*, 7(1), 100422. <https://doi.org/10.1016/j.ssaho.2023.100422>
- [35] Moravec, V., Hynek, N., Gavurova, B., & Rigelsky, M. (2024). Who uses it and for what purpose ? The role of digital literacy in ChatGPT adoption and utilisation. *Journal of Innovation & Knowledge*, 9(4), 100602. <https://doi.org/10.1016/j.jik.2024.100602>
- [36] Nsiah-Boateng, E. (2016). Reducing Medical Claims Cost to Ghana's National Health Insurance Scheme: Paper-Based Versus Electronic-Based Claims Review. *Value in Health*, 19(7), A468. <https://doi.org/10.1016/j.jval.2016.09.708>
- [37] Ostrowska, A., Wojciechowska, W., Rajzer, M., Weber, T., Bursztyn, M., Persu, A., Stergiou, G., Kie, G., Chrostowska, M., Doumas, M., Parati, G., Bilo, G., Grassi, G., Mancia, G., Januszewicz, A., & Kreutz, R. (2024). European Journal of Internal Medicine The impact of the COVID-19 Pandemic on hypertension phenotypes ( ESH ABPM COVID-19 study ). August. <https://doi.org/10.1016/j.ejim.2024.08.027>
- [38] Paillaud, E., Galvin, A., Doublet, S., Poisson, J., Gay, P., Perrin, C., Boudou-Rouquette, P., Grellety, T., Teyssonneau, D., Ayati, S., Saint-Lezer, A., Culine, S., Annonay, M., Solem-Lavie, H., Boulhassass, R., Baldini, C., Tchalla, A., Lalet, C., Hue, L., ... Mathoulin-Pélissier, S. (2025). Health literacy and the use of digital tools in older patients with cancer and their younger counterparts: A multicenter, nationwide study. *Patient Education and Counseling*, 130(September 2024). <https://doi.org/10.1016/j.pec.2024.108420>
- [39] Park, J., & Chung, E. (2021). Learning from past pandemic governance: Early response and Public-Private Partnerships in testing of COVID-19 in South Korea. *World Development*, 137(April 2020), 105198. <https://doi.org/10.1016/j.worlddev.2020.105198>

- [40] Pevkur, A., & Lubi, K. (2025). The age of AI in healthcare research: An analysis of projects submitted between 2020 and 2024 to the Estonian committee on Bioethics and Human Research. *Journal of Responsible Technology*, 21(February). <https://doi.org/10.1016/j.jrt.2025.100113>
- [41] Solvak, M., Unt, T., Rozgonjuk, D., Vörk, A., Veskimäe, M., & Vassil, K. (2019). E-governance diffusion: Population level e-service adoption rates and usage patterns. *Telematics and Informatics*, 36(August 2018), 39–54. <https://doi.org/10.1016/j.tele.2018.11.005>
- [42] Somefun, O. D., Nweje, M. J. I., Casale, M., Ronnie, G. H., Cluver, L., George, A., & Toska, E. (2024). Designing HIV prevention interventions that are acceptable to young adults in sub-Saharan Africa: Insights from a mapping review and inductive thematic analysis. *Children and Youth Services Review*, 161(April), 107649. <https://doi.org/10.1016/j.chilyouth.2024.107649>
- [43] Thi, T., Nguyen, U., Nguyen, P. Van, & Quynh, G. (2024). Journal of Open Innovation : Technology , Market , and Complexity Investigating the impact of citizen relationship quality and the moderating effects of citizen involvement on E-government adoption. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(3), 100372. <https://doi.org/10.1016/j.joitmc.2024.100372>
- [44] Uyen Nguyen, T. T., Van Nguyen, P., Truong, G. Q., Ngoc Huynh, H. T., & Hoang Le, T. P. M. (2024). Investigating the impact of citizen relationship quality and the moderating effects of citizen involvement on E-government adoption. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(3), 100372. <https://doi.org/10.1016/j.joitmc.2024.100372>
- [45] Van Hout, M. C., Klankwarth, U. B., Fleißner, S., Pont, J., & Stöver, H. (2024). State of transition to Ministry of Health governance of prison healthcare in the Council of Europe region. *Public Health*, 229, 151–159. <https://doi.org/10.1016/j.puhe.2024.01.020>
- [46] Victor, A. A., Frank, L. J., Makubalo, L. E., Kalu, A. A., & Impouma, B. (2023). Digital Health in the African Region Should be Integral to the Health System’s Strengthening. *Mayo Clinic Proceedings: Digital Health*, 1(3), 425–434. <https://doi.org/10.1016/j.mcpdig.2023.06.003>
- [47] Webb, F. J., Bilello, L., Vaccaro, J., Jones, R., Neff, D., & Gaillard, T. (2024). Community engagement strategies for population health research with culturally diverse adults. *Journal of Medicine, Surgery, and Public Health*, 2(December 2023), 100037. <https://doi.org/10.1016/j.glmedi.2023.100037>
- [48] Weeden, A., & Pamment, N. (2024). “You walk on glass if you are in that space”\_ Risks and harms of corruption in wildlife justice pathways in Uganda. *Journal of Economic Criminology*, 6(September), 100102. <https://doi.org/10.1016/j.jeconc.2024.100102>
- [49] Wu, D., Gu, H., Gu, S., & You, H. (2021). Individual motivation and social influence: a study of telemedicine adoption in China based on social cognitive theory. *Health Policy and Technology*, 10(3). <https://doi.org/10.1016/j.hlpt.2021.100525>