A Framework for Enabling E-Health Service Delivery in a Rural Environment in Algeria: A Framework Assessment

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Abstract

E-health is a new area that combines clinical practices, business, public health, and medical informatics. It can be used to address the growing demand for dependable, affordable health care on a worldwide scale. E-health has since been added to the planning calendars of other organizations. Hence, using the district of Iganga as a case study, this study intends to evaluate a created framework for assisting E-health service delivery in a rural setting of Algeria. E-health specialists evaluated the framework using the Delphi method as part of a quantitative research strategy. Three criteria made up the evaluation standard: traceability, usability, and functionality. Data analysis was done using SPSS v20, and descriptive statistics were produced. The findings showed that the framework was useful, intelligible, and practical in addressing the key issues preventing the implementation of e-health services in a rural environment. In order to assist health professionals and the government who seek to establish E-health services in remote areas, the study offers a baseline survey.

Keywords: E-health • Polyphenols • Population

Introduction

Healthcare access and delivery are frequently inadequate in developing nations, especially if a sizable portion of the population still lives in rural regions. New service models and accompanying technologies have the potential to improve these conditions [1]. The views on health in rural and urban areas are different. Residents' attitudes on their own health have a big impact on how they maintain their health, promote their own health, and deal with illnesses.

Delivery of health services to rural populations has always been difficult due to the lack of specialized services and infrastructure [2]. According to this argument, rural communities must deal with both in-migration of former urban residents who are frequently in their retirement years and out-migration of working-age persons from rural to urban regions. This has an impact on rural communities' quality of life and health. Nonetheless, these issues are thought to be resolved by health services. This is due to the fact that e-Health offers a variety of web portals and covers both essential medical services and social innovation. The use of ICT for a wide range of purposes that have an impact on the healthcare sector when it comes to health-related issues through the many available solutions is known as Electronic Health (E-health). E-health projects provide the potential to address issues with the healthcare sector, particularly for the rural community [3].

These projects are artefacts in the form of models, frameworks, platforms, and web- and mobile-based apps. Nonetheless, it is asserted that utilizing well-founded assessment methodologies, a developed artefact should be examined for quality, efficacy, and efficiency. Offer Mann continues by pointing out that a designed artefact can be assessed in terms of, among other things, its completeness, accuracy, functionality, reliability, consistency, traceability, understandability, and usability. Researchers should rigorously evaluate designed artefacts, it is claimed in a related study, and this should be done through observational, analytical, experimental, testing, and descriptive evaluation methods. It is further argued that artefact evaluation should be done through laboratory experiments, pilot applications, simulation procedures, expert reviews, and field experiments. So, the purpose of this article is to evaluate a created framework for facilitating the delivery of e-health services in Algeria's rural Iganga region using the expert judgement evaluation approach [4].

Literature review

Rural communities frequently have no other healthcare options but untrained private practitioners, while urban areas have access to everything from small private dispensaries run by trained doctors to five-star medical colleges. Healthcare in rural locations is limited in terms of quality. Poor infrastructure, low literacy, poverty, and inadequate patient monitoring of those with chronic or serious conditions are just a few of the issues that these rural areas face when it comes to providing high-quality healthcare. Due to the dearth of specialists in their locations, patients in rural areas spend a lot of money and time going long distances to consult specialists in cities. The numerous problems call for creative solutions that are practical, strong, and long-lasting. It is believed that doing design science research and creating artefacts involves evaluation as a fundamental activity. This is so that the innovative IT artefact can exhibit the progress, advancement, and consequent acceptance of technology.

Venable claims that evaluations show if a new technology created through Design Science Research (DSR) functions or serves the intended objective. Without evaluation, DSR results are only unsupported claims that the developed artefacts will serve their intended purpose if put into use. We further argue that design science requires appropriate artefact evaluation in order to thoroughly reveal the quality of a developed item. This outlines a rigorous process to assess the artifact's completion, effectiveness, and applicability. It is recommended that evaluating a designed artefact can be done on two different levels: either directly or through one or more instantiations of the abstract artefact. Evaluation criteria are also organized according to system dimensions and may be divided into a hierarchy of levels. There are numerous generic evaluation methods that can evaluate the same criterion. The type of assessment, secondary participant, level of evaluation, and relativeness of evaluation are the four key criteria that differentiate generic evaluation systems. Completeness, simplicity, clarity, style, homomorphism, depth of detail, and consistency can all be used to evaluate an artifact's structure.

Functionality, completeness, consistency, accuracy, performance, dependability, usability, fit with the organization, and other pertinent quality qualities can all be used to evaluate a designed artefact. It takes too long to evaluate artefacts, mostly because there are many factors involved and some of them are challenging to use. Owing to time restrictions, the study used three criteria as the FSEHSD evaluation criterion. Determining if the framework executes its functions (functionality), is simple to use (usability), and has traceability was also thought to be more crucial. Below is an explanation of each evaluation parameter; The degree to which a product may be utilized by specific users to achieve intended goals with effectiveness, efficiency, and satisfaction in a specific context of use is known as usability. This parameter's goal was to pinpoint any locations where users would be perplexed or uncertain, so that such areas might be clarified to improve how effectively and favorably they interacted with the framework.

The capacity to meaningfully chronologically relate the uniquely identifiable elements is known as traceability. This parameter was used to gauge how

successfully the planned framework could be traced using the framework's processes, concepts, and guidelines. It examines how the interconnections and interdependencies might be used to trace the origin of the framework requirements. An entity's functionality is defined as its intended activity, how that behavior is interpreted in relation to a purpose, a form of hierarchical abstraction, or how the entity's actions affect its surroundings. This criterion was used to assess whether the framework adequately addresses all of the significant issues impeding the delivery of e-health services in the Iganga District.

The Delphi method is a group approach used to poll and gather expert opinions on a certain subject. When decisions about policies, programmers, or concepts need to be founded on sound judgement, the Delphi technique is used. Where the insights and judgements of professionals are required, this strategy is helpful. It has been noted that the Delphi method employs a number of judges who act as subject matter experts to define or assess elements of a theoretical issue.

The availability of money will also help with capacity building, which will ensure that qualified staff and ICT workers are hired, ICT trainings are carried out, and the general public is made aware of e-health. Once trained, the personnel are capable of creating, running, and provide long-term technical support for coordinated E-health systems. E-health systems should include data reporting, a feedback mechanism, SMS notifications, and emails to stakeholders and service recipients. To ensure efficacy and thoroughness, proper monitoring and evaluation techniques should be applied throughout all chains. Hence, I assisted the delivery of E-health services. Since the majority of the issues relating to the delivery of E-health services have been resolved, the FSEHSD can now be utilized to support E-health service delivery in a rural environment in Algeria. Also, the opinions of the experts have also been included.

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