Factors Influencing E-Health Care Services - An Empirical Study With Reference To Health Care Sector

K. Sivakumar[1], Annamalai Solayappan[2], Jothi Jayakrishnan[3], A. Kalaiselvan[4]

[1]Research Scholar (Part-Time), Roll No: 1911130133, Department of Business Administration, Annamalai University, Annamalai Nagar, Tamilnadu, India.
Assistant Professor cum H.O.D, Department of BBA, Jawaharlal Nehru College for women, Pali, Ulundurpet, Kallakurichi District
[2]Assistant Professor, Research Supervisor, Department of Business Administration, (On Deputation from Annamalai University) Sri Subramaniya Swamy Government Arts College, Tiruttani, Tamilnadu, India-631209, Email: an.solayappan@gmail.com
[3]Professor, Department of Business Administration, Annamalai University, Annamalai Nagar, Tamilnadu, India.
[4]Assistant Professor, Department of Business Administration, Peri College of Arts and Science, Mannivakkam, Chennai, Tamilnadu, India.

Received: 15.04.2024 Revised : 18.05.2024 Accepted: 26.05.2024

ABSTRACT
The main aim of the studyto analyze the various factors which influence the E-health careservices and Acceptance. This research study falls under the descriptive research design. Apollo, Billroth, Fortiz, Vijaya, MMM and Other leading hospital in Chennai are taken in to consideration. The methodology for selecting respondents for this study through non-Probability, convenience sampling method. A sample of 445 respondents are taken in to consideration. respondent data was collected from the google sheet and the same was transformed in to the software SPSS. While analyzing the e-health care services factors majority of the services are accepted by the patients and very few services are still not reachable due to the advancement of technology. Based on the given suggestions the conclusion will be drawn on e-health care services among customers highlights that digital health platforms have significantly enhanced access to healthcare services, improved patient engagement, and enabled personalized care management.

Keywords:E-health, E-health care services and Acceptance.

1. INTRODUCTION

E-health is generally seen as a strategic tool for overcoming the challenges faced by health-care sectors worldwide (Chismar and Wiley-Patton, 2003). The huge potential that is attributed to e-health to help balance an enormous and consistently growing health-care demand with limited resources, has already led to an increased use of the Internet as a source for health information and service delivery. Additionally, the market for information technology in health care is expected to grow even further (Cline and Haynes, 2001; Kerwin, 2002; Powell et al., 2003). Yet, the full potential of e-health is far from being tapped, which makes understanding citizens' needs and expectations and taking them in to consideration essential and a precedent for moving toward more sophisticated and high-quality health-care services.
E-health services include everything from very basic health information services to the more advanced interactive services. The most common e health services and applications discussed are electronic prescriptions, telemedical applications (such as teleconsultation and telemonitoring), evidence-based medicine, electronically supported administrative functions, electronic patient records, specialist-oriented and patient-oriented information provision, virtual health teams and other services connecting stakeholders in health care as well as distance learning and provider education (Ligtvoet, 2003; Sharma et al., 2005; Wen and Tan, 2005).

2. Method Adopted For The Study

This research study falls under the descriptive research design and focuses on e-health care services. The targeted area of the research are the patient experienced e-health care facilities in the leading private sector hospitals in Chennai. Apollo, Billroth, Fortiz, Vijaya, MMM and Other leading hospital in Chennai are taken in to consideration. The methodology for selecting respondents for this study through non-Probability, convenience sampling method.A sample of 445 respondents are taken in to consideration for

to analyse by using various statistical tools such as correlation and regression. The data collected was compiled and edited to check for logical inconsistencies. The data was then coded according to the responses. All the respondent data was collected from the google sheet and the same was transformed in to the software SPSS (Statistical Package for the Social Sciences) Version 29.

Objectives of the study

- ✓ To analyze the factors, influence the E-health care services and Acceptance
- ✓ To examine the relationship between e-health care services and acceptance of the service

Hypothesis of the study

$H_0$1: There is no significant relationship between e-health care services and Acceptance
$H_0$2:E-health care services do not influence on acceptance

3. Analysis And Intrepretation

Table 3.1. Respondent opinion towards e-Health care

Respondent opinion		**Frequency**	**Percent**
Experience of using e-health care services	1st time	238	53.5
	2nd time	98	22.0
	3rd time	13	2.9
	4th time	68	15.3
	Above 4th time	28	6.3
Preferred e-health care services Mode	Smart phone apps	117	26.3
	health care websites	219	49.2
	SMS/ Text messaging	20	4.5
	Voice Tele Health Services	60	13.5
	Video Calling services	29	6.5
Gadget access	Personal Computer	186	41.8
	Laptop	158	35.5
	Smart Phone	8	1.8
	Feature Phone	61	13.7
	Tab	32	7.2
hospitals do you avail e-health care services	Apollo	93	20.9
	Billroth	177	39.8
	Fortiz	46	10.3
	Vijaya	52	11.7
	MMM	24	5.4
	Others	53	11.9
Intensity of problem	Very Low	235	52.8
	Low / Mild	68	15.3
	Moderate	28	6.3
	High	68	15.3
	Very High	46	10.3
Hospital expenses to be met out	Self	261	58.7
	Insurance	82	18.4
	Organization	13	2.9
	Government scheme	49	11.0

	Other Sponsors	40	9.0
Insurance Coverage	1 lakh	291	65.4
	1–2 lakhs	53	11.9
	2–5 lakhs	5	1.1
	> 5lakhs	44	9.9
	No Coverage	52	11.7

Source: Primary data computed

Interpretation

Respondents' opinion towards e-health care services is displayed in table-3.1 Experience of using e-health care services, preferred e-health care services mode, gadget access, hospitals do you avail e-health care services, intensity of problem, hospital expenses to be met out, insurance coverage are considered as a respondent opinion of e-health care services for this study.

The distribution of the respondents based on experience of using e-health care services is depicted in the above table 3.1. Here experience of using the health care services of the respondents is categorized as 1st time, 2nd time, 3rd time, 4th time and above 4th time. A sample of 445 respondents is considered for our study. Out of 445 respondents 238 (53.5 percent) of the respondents are using e-health care services as 1st time, followed by 98 (22.0 percent) respondents are using e-health care services as 2nd time, 13 (2.9 percent) are using e-health care services as 3rd time, 68 (15.3 percent) are using e-health care services as 4th time and 28 (6.3 percent) respondents using e-health care services as belongs to the above 4th time. While gone through the table value majority of the respondents are using e-health care services as 1st time. From this it can be inferred that most of the 1st time respondents experience e-health care services.

The distribution of the respondents based on experience of using e-health care services is depicted in the above table 3.1. The preferred e-health care services mode is categorized as smart phone apps, health care websites, SMS/text messaging, voice tele health services and video calling services. While gone through the table value majority 219 (49.2 percent) of the respondents are using health care websites, followed by 117 (26.3 percent) respondents are using smart phone apps, 60(13.5 percent) respondents are using voice tele health services, 29 (6.5 percent) respondents are using video calling services and 20 (4.5 percent) respondents are using SMS/text messaging. From the above table value, it is to be noted that most of the respondents are using the health care websites. It is inferred that most of the respondents are using health care website effectively.

The distribution of the respondents based on gadget access of the depicted in the table 3.1. Here gadget access of the respondent are classified, as personal computer, laptop, smart phone, feature phone and tab. Out of 445 respondents, 186 (41.8 percent) of the respondents are using personal computer are followed by 158 (35.5 percent) of the respondents are using laptop are followed by 61 (13.7 percent) of the respondents using the feature phone are followed by 32 (7.2 percent) of the respondents are using tab are followed by 8 (1.8 percent) of the respondents are using smart phone. While gone through the table value a greater number of respondents are using personal computer. From this it can be inferred that most of the respondents having personal computer are utilizing e-health care services.

The distribution of the respondents based on experience of using e-health care services is depicted in the above table 3.1. Here the hospital does you avail e-health care services are categorized as Apollo, Billroth, Fortis, Vijaya, MMM and others. Out of 445 respondents, 177 (39.8 percent) of the respondents are experiencing Billroth hospital are followed by 93 (20.9 percent) of the respondents are experiencing Apollo hospital are followed by 53 (11.9 percent) of the respondents are experiencing to others are followed by 52 (11.7 percent) of the respondents are experiencing Vijaya hospital are followed by 46 (10.3 percent) of the respondents are Fortis hospital are followed by 24 (5.4 percent) of the respondents are MMM. While gone through the table value majority of the respondents are experiencing Billroth hospital. From this it can be inferred that most of the Billroth hospital respondents are experiencing e-health care services.

The distribution of the respondents based on intensity of problem is depicted in the above 3.1. Here the intensity of problem of the respondents are listed as very low, low/mild, moderate, high and very high. Out of 445 respondents 235 (52.8 percent) of the respondents are belongs to very low intensity, followed by the respondents of 68 (15.3 percent) are belongs to both low/mild and high intensity is followed by 46 (10.3 percent) of the respondents are in the very high intensity is followed by 28 (6.3 percent) of the respondents are in the moderate intensity. While gone through the table value majority of the respondents are very low intensity problem. From this it can be inferred that majority of the low intensity problem respondents are using e-health care services.

The distribution of the respondents based on experience of using e-health care services is depicted in the above table 3.1 The distribution of the respondents based on hospital expenses to be met out is depicted in the above. Here the hospital expenses to be met out of the respondents are classified as self, insurance, organization, government scheme and other sponsors. Out of 445 respondents, 261 (58.7 percent) of the respondents are using self-expenses is followed by 82 (18.4 percent) of the respondents are using to insurance expenses is followed by 49 (11.0 percent) of the respondents are using to government scheme expenses followed by 40 (9.0 percent) of the respondents are using to other sponsors expenses is followed by 13 (2.9 percent) of the respondents are using to organization expenses. While gone through the table value majority of the respondents are made self-expenses. From this it can be inferred that majority of the self-made expense's respondents are using e-health care services.

Insurance coverage of the respondent's distribution is showed in the above table 3.1 Here insurance coverage of the respondents is labelled as 1 lakh, 1-2 lakhs, 2-5 lakhs, greater than 5 lakhs and no coverage. Out of 445 respondents, 291 (65.4 percent) of the respondents are noted as using 1 lakh insurance is followed by 53 (11.9 percent) of the respondents are noted as using 1-2 lakhs insurance is followed by 52 (11.7 percent) of the respondents are noted as using no coverage insurance is followed by 44 (9.9 percent) of the respondents are greater than 5 lakhs insurance is followed by 5 (1.1 percent) of the respondents are noted using 2-5 lakhs. While gone through the table value majority of the respondents are using 1 lakh insurance coverage. From this it can be inferred that majority of the respondents insured 1 lakh are using e-health care services.

Table 3.2. Relationship between e-health care services and Acceptance

E-health care services	**Acceptance**	
	R-Values	**P-Values**
Perceived Usefulness	0.513	0.001*
Perceived Ease of Use	0.727	0.001*
Perceived Risk	0.852	0.001*
Compatibility	0.846	0.001*
Facilitating conditions	0.823	0.001*
Relative Advantage	0.846	0.001*
Trialability	0.818	0.001*
Self-Efficacy	0.905	0.001*

Source: Primary data computed, * Significant at one percent level.

Interpretation

Table-3.2 explains the relationship between e-health care services and Acceptance. Here, perceived usefulness, perceived ease of use, perceived risk, compatibility, facilitating conditions, relative advantage, trialability and self-efficacy are considered as independent variables and acceptance considered as dependent variable. The correlation values, it is observed that, Self-efficacy (0.905) is having high level correlation with acceptance. perceived risk (0.852), compatibility (0.846), relative advantage (0.846) and Facilitating conditions (0.823) and trialability (0.818) are having medium level relationship with acceptance. Perceived ease of use (0.727), is having low level relationship with acceptance and Perceived Usefulness (0.513) is having low level relationship with Acceptance.

H_o: There is no significant relationship between e-health care services and Acceptance.

In order to examine the above stated hypotheses, Pearson correlation is executed. The P-values are significant at one percent level. Thus, the stated hypothesis (H_0) is rejected. It infers that the self-efficacy, perceived risk, compatibility and relative advantage are having high level relationship with acceptance. Facilitating conditions, , and trialability are having medium level relationship with acceptance. Perceived ease of use is having low level relationship with acceptance and Perceived Usefulness is also having low level relationship with Acceptance. Hence there is a significant relationship between e-health care services and Acceptance.

Table 3.3. Factors influence the E-health care services and Acceptance

R	**R Square**	**Adjusted R Square**	**F**	**Sig.Value**
0.965[a]	0.932	0.930	535.949	0.001*

Source: Primary data computed. *Significant at one percent level.

Coefficients[a]					
	Unstandardized Coefficients		Standardized Coefficients		
E-health care services	B	Std. Error	Beta	t	Sig.Value
(Constant)	0.130	0.092		1.416	0.157
Perceived Usefulness	0.091	0.013	-0.108	-6.751	0.001*
Perceived Ease of Use	0.084	0.024	-0.099	-3.520	0.001*
Perceived Risk	0.259	0.046	0.277	5.587	0.001*
Compatibility	0.035	0.032	0.040	1.115	0.265
Facilitating conditions	0.129	0.027	-0.153	-4.857	0.001*
Relative Advantage	0.009	0.040	-0.009	-0.237	0.813
Trialability	0.159	0.028	0.176	5.753	0.001*
Self-Efficacy	0.442	0.033	0.481	13.236	0.001*
Subjective Norms	0.297	0.023	0.289	12.773	0.001*
Attitude	0.120	0.023	0.134	5.290	0.001*
Trust	0.085	0.028	-0.090	-3.083	0.001*

Source: Primary data computed. *Significant at one percent level.

Interpretation

Table-3.3 explains the factors influence the E-health care services and acceptance. Here, perceived usefulness, perceived ease of use, perceived risk, compatibility, facilitating conditions, relative advantage, trialability, self-efficacy, subjective norms, attitude and trust are considered as independent variables and acceptance considered as dependent variable.

H_0:E-health care services do not influence on acceptance.

Further, stepwise multiple regression is applied to identify the most predictors of e-health care services on acceptance. Among the E-health care services variables, perceived usefulness, perceived ease of use, perceived risk, compatibility, facilitating conditions, relative advantage, trialability, self-efficacy, subjective norms, attitude, and trust are found to be high predictor variable on acceptance. From the adjusted R square value, it is inferred that the perceived usefulness, perceived ease of use, perceived risk, compatibility, facilitating conditions, relative advantage, trialability, self-efficacy, subjective norms, Attitude, and trust have influenced at 93 percent on acceptance. The p-value is significant at one percent level, so the hypotheses (H_0) is rejected. Acceptance is expressed by the equation:

Acceptance = 0.130 + 0.442 (Self-Efficacy) + 0.297 (Subjective Norms) + 0.259 (Perceived Risk) + 0.159 (Trialability) + 0.120 (Attitude) + 0.091 (Perceived Usefulness) + 0.084 (Perceived Ease of Use) + 0.085 (trust) + 0.129 (Facilitating conditions)

It is found that the self-efficacy, subjective norms, perceived risk, trialability, attitude, perceived usefulness, perceived ease of use, trust and facilitating conditions are positively influencing the acceptance. Hence, E-health care services influence on acceptance.

4. FINDINGS OF THE STUDY

Findings related to the Respondents opinion towards e-Health care services.

A respondent opinion of e-health care services such as Experience of using e-health care services, preferred e-health care services mode, gadget access, hospitals do you avail e-health care services, intensity of problem, hospital expenses to be met out and insurance coverage are considered as opinion towards e-Health care services.

Findings 1

- Majority 53.5 percent of the respondents are using e-health care services as 1st time. It can be inferred that most of the 1st time respondents experienced e-health care services.
- Most of the respondents (49.2 percent) are using health care website. It is to be noted that most of the respondents are using health care website effectively.
- A greater number 41.8 percent of respondents are using personal computer. From this it clearly mentioned that most of the respondents having personal computer are highly utilizing e-health care services.

- 39.8 percent of the respondents are experiencing Billroth hospital. It is clearly identified that most of the respondents are highly experiencing e-health care services in Billroth hospital.
- It is found that majority 52.8 percent of the respondents are facing very low intensity problem. From this it can be identified that majority of the low intensity problem faced respondents are using e-health care services.
- It is to be noted that majority 58.7 percent of the respondents are made self-expenses. From this it can be inferred that majority of the self-made expense's respondents are using e-health care services.
- It is clearly noted that majority 65.4 percent of the respondents insured 1 lakh are highly using e-health care services.

Finding highlight the relationship between e-health care services and acceptance of the e-health care services.

Findings 2

- To find out the relationship between e-health care services and Acceptance, Pearson correlation is executed. The P-values (0.001) are significant at one percent level. Thus, the stated hypothesis (H_0) is rejected. Hence there is a significant relationship between e-health care services and Acceptance. It infers that the self-efficacy, perceived risk, compatibility and relative advantage are having high level relationship with acceptance. Facilitating conditions and trialability are having medium level relationship with acceptance. Perceived ease of use is having low level relationship with acceptance. Perceived Usefulness is having low level negative relationship with Acceptance.

Findings investigate the factors influencing the E-health care services and Acceptance

Findings 3

- Stepwise multiple regression is applied to identify the most predictors of e-health care services on acceptance.Among the E-health care services variables, perceived usefulness, perceived ease of use, perceived risk, compatibility, facilitating conditions, relative advantage, trialability, self-efficacy, subjective norms, attitude, and trust are found to be high predictor variable on acceptance. From the adjusted R square value, it is inferred that the perceived usefulness, perceived ease of use, perceived risk, compatibility, facilitating conditions, relative advantage, trialability, self-efficacy, subjective norms, Attitude, and trust have influenced at 93 percent on acceptance. It is to be found that E-health care services factors influence on acceptance. It is inferred that the self-efficacy, subjective norms, perceived risk, trialability, attitude are positively influencing the acceptance but perceived ease of use, trust, perceived usefulness, and facilitating conditions are negatively influence the acceptance.

5. SUGGESSITIONS

Based on the above finding's suitable findings-based suggestions will be given along with general suggestions as follows:

- Give the services in the regional languages so all the people can access and have intention to use.
- By using these services, give some promotional offer or free of cost for certain period to create confidence and trust. this will reduce the risk level.
- By way of giving app in user friendly mode it will improve the self-efficacy.
- Using modern technology within healthcare enables professionals to reduce inefficiency, save time and accurately diagnose and treat diseases.

6. CONCLUSION OF THE STUDY

This research paper aims to analyze the factors, influence the E-health care services and Acceptance. While analyzing the e-health care services factors majority of the services are accepted by the patients and very few services are still not reachable due to the advancement of technology. Based on the given suggestions the conclusion will be drawn on e-health care services among customers highlights that digital health platforms have significantly enhanced access to healthcare services, improved patient engagement, and enabled personalized care management.

REFERENCE

[1] Chismar, William G. and Wiley-Patton, Sonja, (2003). Does the Extended Technology Acceptance Model Apply to Physicians.Proceedings of the 36th Hawaii International Conference on System Sciences (HICSS'03).

[2] Cline, R.J.W. and Haynes, K.M. (2001). Consumer health information seeking on the Internet: the state of the art, Health Education Research Theory & Practice, 16(6), 671-692.

[3] Kerwin, Kathryn E. (2002). The Role of the Internet in Improving Healthcare Quality. Journal of Healthcare Management,47(4), 225-236.
[4] Ligtvoet, A. (2003). e-health, Prisma Strategic Guideline 2, Stitching RAND Europe, the Netherlands, 136.
[5] Powell, T. E., & Renner, M., (2003). Analyzing qualitative data. 1st ed. Wisconsin: University of Wisconsin-Extension.
[6] Sharma, S.K., Ahmed, N., and Rathinasamy, R.S., (2005). E-healthcare: a model on the offshore healthcare delivery for cost saving.International Journal of Healthcare Technology and Management,6(3), 331-351.
[7] Wen, J. and Tan, J. (2005). Mapping e-health strategies: thinking outside the traditional healthcare box.International Journal of Electronic Healthcare, 1(3), 261-276.