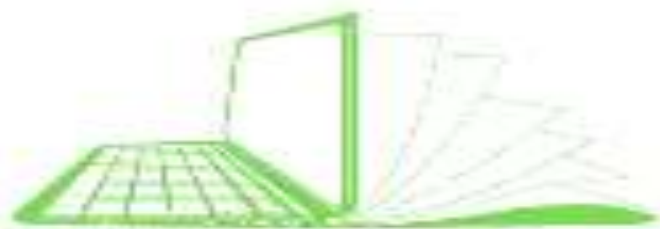# Analysis of the Application of Smart Technologies in the Healthcare Industry to Improve Service Quality and Customer Satisfaction: An Investigation of Smart Hospitals in Kerala State, India

HAMNIC Solutions
Research Support & Consultancy

STUDENT NAME

STUDENT ID:

SUPERVISOR: Mr. Hamza, Researcher

Introduction

Smart healthcare – born from concept of "Smart Planet" – IBM 2009. Technology is rapidly transforming- digitalize and informationalize

Digitalization in healthcare industry:

Access to Medical Information	Big Data	Improved Communication	Electronic Health Records
Telemedicine	Health Apps	Wearable Devices	

Research Aim, Objectives and Questions

| Aim	Objectives	Questions
• Understanding the factors of smart technologies relating to customer satisfaction and its impact on service quality.	• Understand the use of smart technology - factors of customer satisfaction in the current market. • Identify the various Smart health provisions available and their influence on the patient. • Examine factors of Smart Technology that influence the service quality • To recommend strategies that can help in promoting the use of Smart Technology in Healthcare Industry	• What are the factors that lead to quality service and customer satisfaction with regard to Smart Technology? • Are there any smart health provisions available in healthcare industry in Kerela that influence the patient? • What are some specific factors that influence service quality leading to customer satisfaction in healthcare industry in Kerela, India?

Literature Review
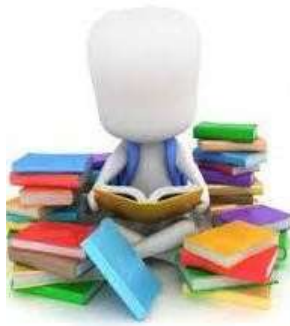
Park et al (2018)- technical feasibility, economic feasibility, organizational commitment and support for substantial smart healthcare.

Artificial intelligence support healthcare industry in administration, clinical and patient outreach- BOHR (2020)

Vatolkina et al (2020) - customer experience has a significant influence on customer satisfaction

Westbrook and Reilly (1983) proposed the Value-Percept theory. – customer satisfaction- emotional state – occurs due to evolution of services.

Owad et al (2022) - relationship between patient flow and patient satisfaction is positively mediated through healthcare service quality.
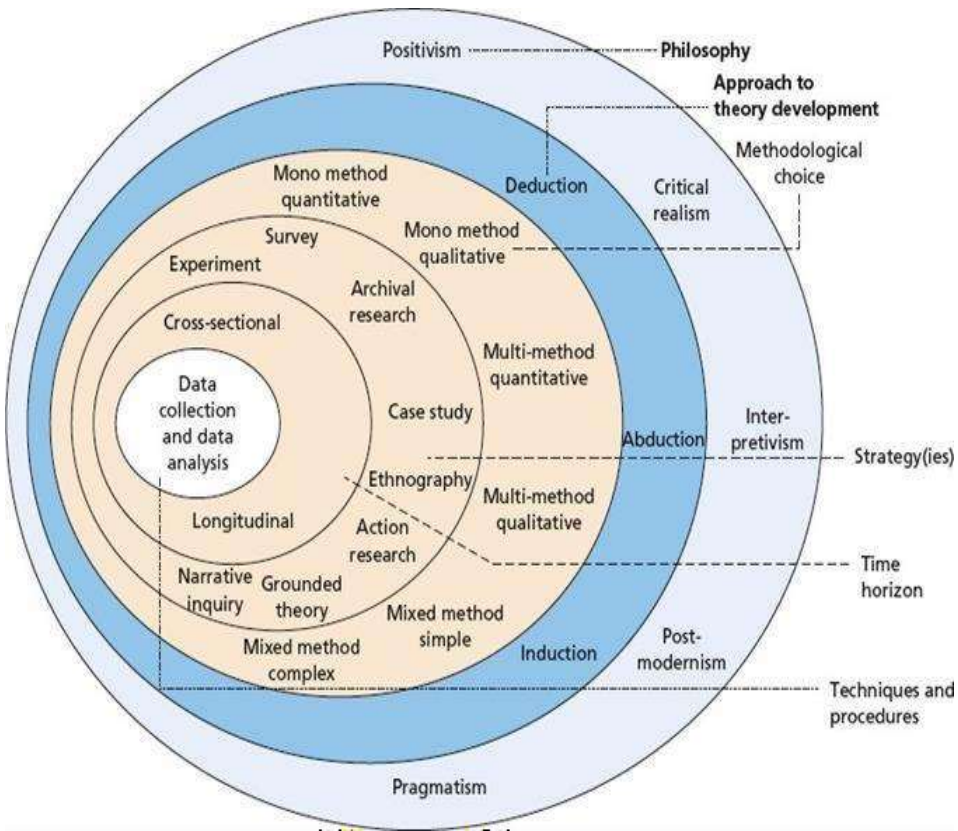
Research Gap

Smart Healthcare has gained importance in recent years

There is a dearth of analysis of smart healthcare specific to regions

Very few studies done on private sector hospitals

Research Methodology

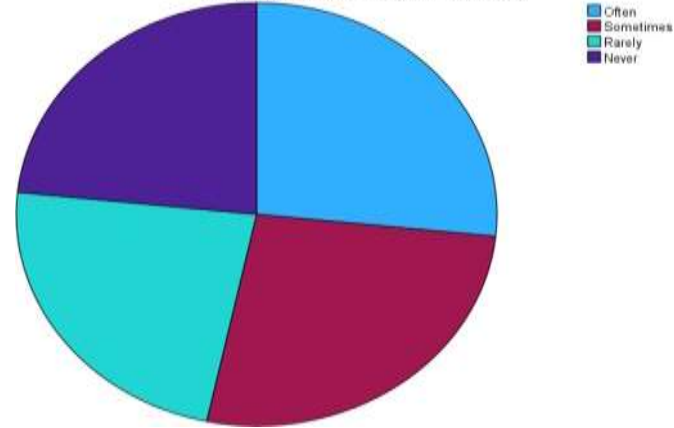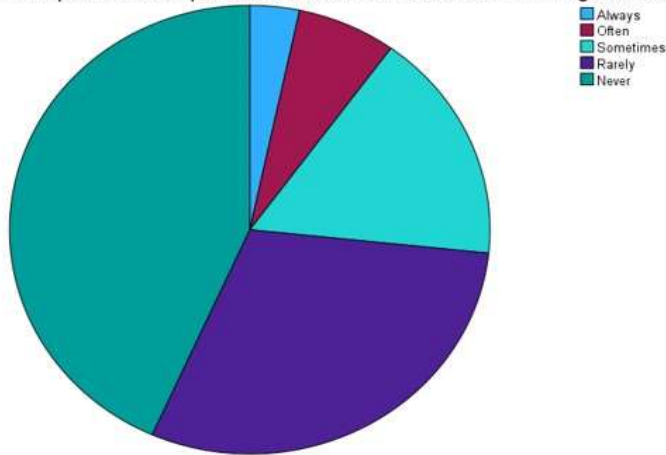| PHILOSOPHY	• Positivism
APPROACH	• Deductive Approach
METHODOLOGY	• Mono Quantitative
STRATEGY	• Survey Questionnaire
TIME HORIZON	• Cross-Sectional
DATA COLLECTION	• 30 Participants selected through Simple Random Sampling
DATA ANALYSIS	• Obtained in Excel, and studied using SPSS.

Analysis and Interpretation - Smart Healthcare Services

The hospital I visit to has an app and also a 24*7 call center to make the bookings
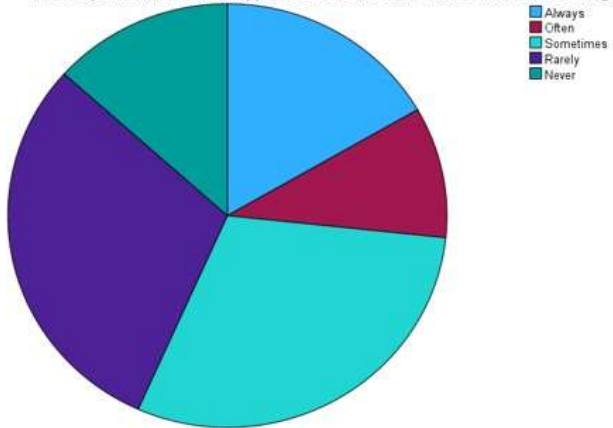
- Always
- Often
- Sometimes
- Rarely
- Never

Details of the Doctor are given on the app

- Often
- Sometimes
- Rarely
- Never

The hospital has made a provision of virtual doctor assisatance when things are not serious

- Always
- Often
- Sometimes
- Rarely
- Never

Reports and Documents are paperless and digital copy of report is send to me and doctor
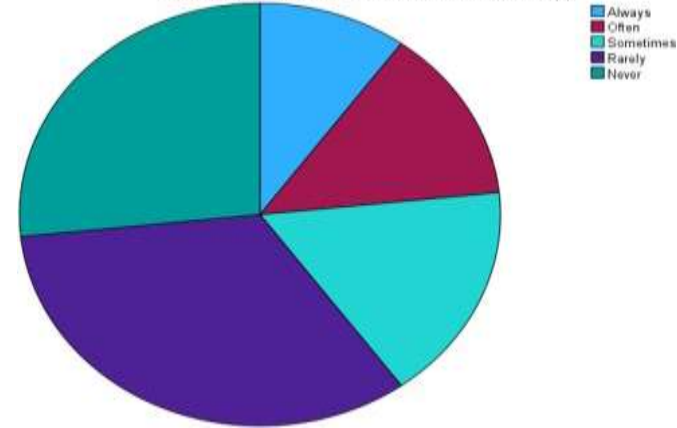
- Always
- Often
- Sometimes
- Rarely
- Never
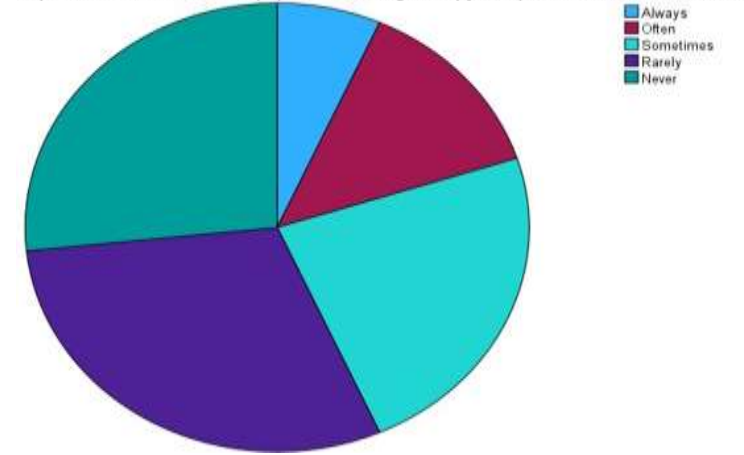
Analysis and Interpretation - Smart Healthcare Services

Previous records and caregiver details on the app
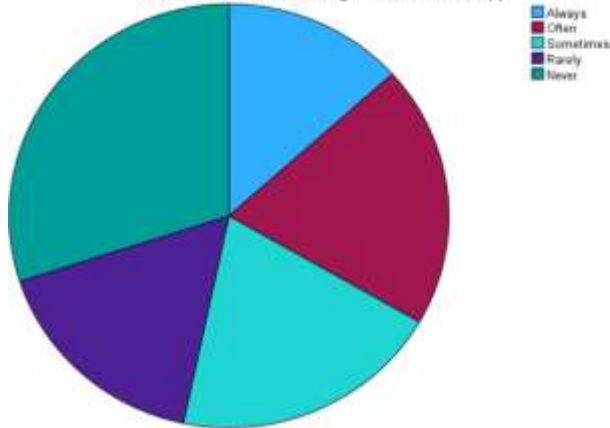
Legend: Always, Often, Sometimes, Rarely, Never

The chart here depicts that

Inceased awareness of insurance and details on app

Legend: Always, Often, Sometimes, Rarely, Never

The chart here depicts that

Easy to connect to healthcare providers through chatbox rather than visitng hospital

Legend: Always, Often, Sometimes, Rarely, Never
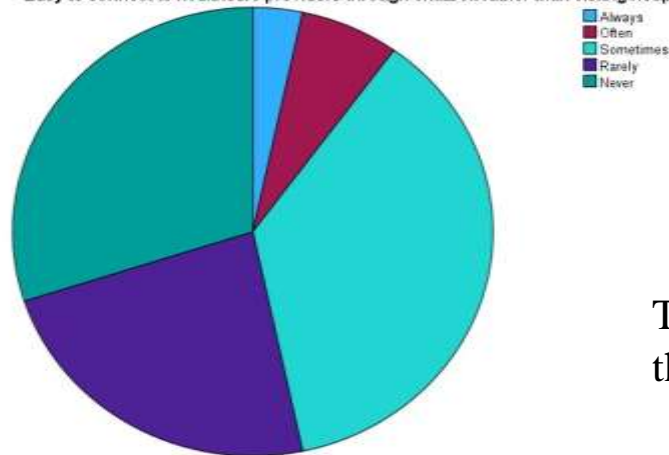
The chart here depicts that

Advanced products like oximeter etc present to improve overall vigilance on health

Legend: Always, Often, Sometimes, Rarely, Never

The chart here depicts that

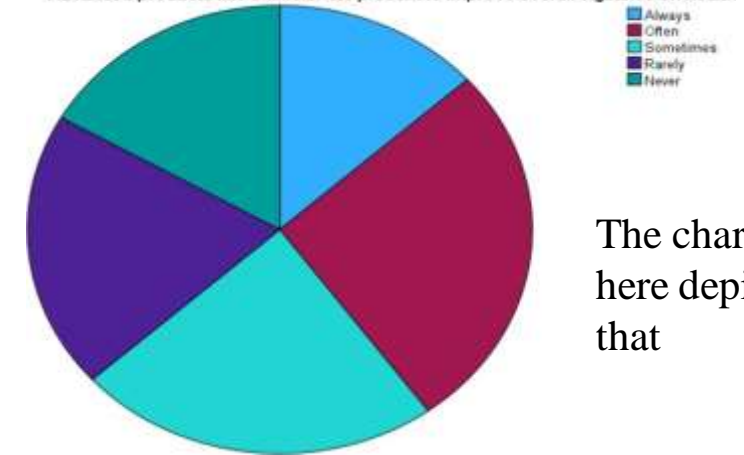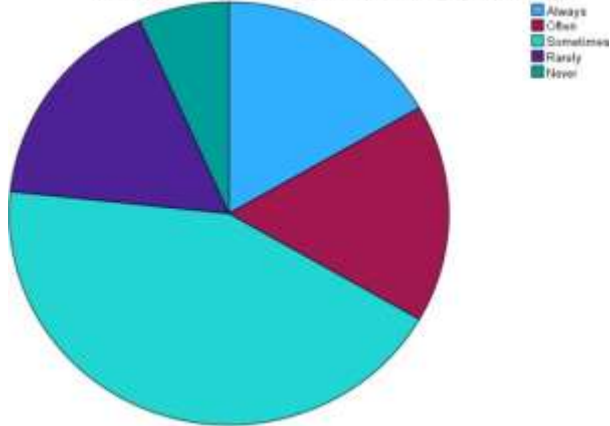# Analysis and Interpretation - Smart Healthcare Services

Process of making the booking is easy and all age group friendly

- Always
- Often
- Sometimes
- Rarely
- Never

The chart here depicts that

In case of telemedicine/virtual assisrance, the person is calm before transferring the calls to departments

- Always
- Often
- Sometimes
- Rarely
- Never
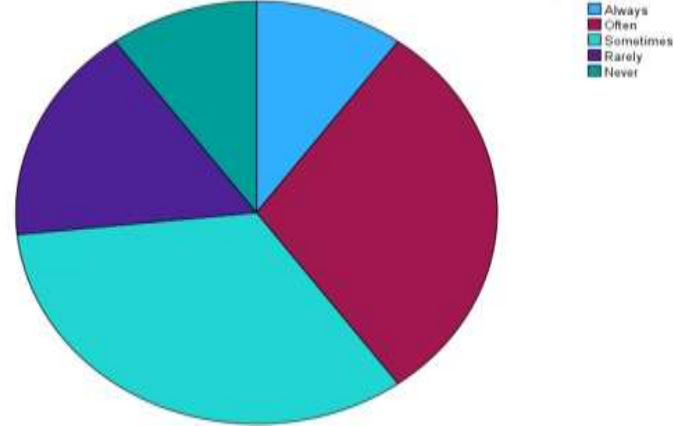
The chart here depicts that

Smart services have reduced the waiting hours and extra time

- Always
- Often
- Sometimes
- Rarely
- Never
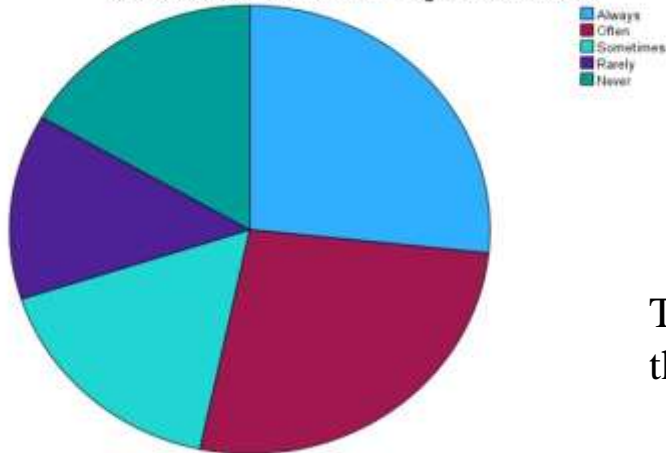
The chart here depicts that

Bills with details generated online and payment links along with insurance are given

- Always
- Often
- Sometimes
- Rarely
- Never
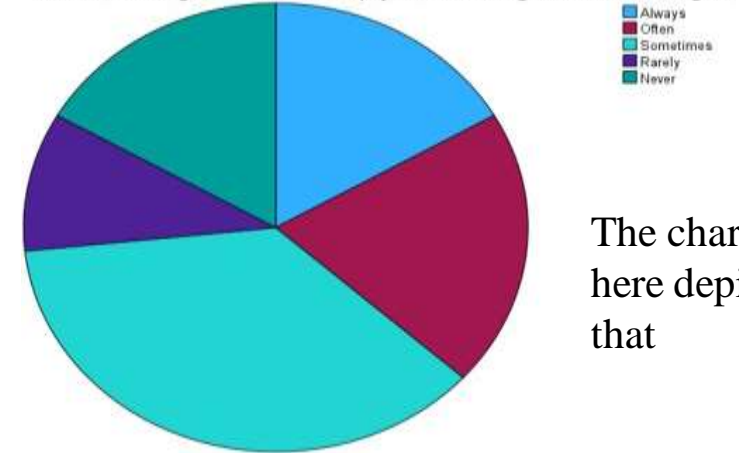
The chart here depicts that

Reliability and Data Mean Calculation

Reliability Statistics

Cronbach's Alpha	N of Items
.725	17

Since the reliability of all the questions was more than 0.6, it indicates that the data has acceptable level of reliability and good to go for research.

Item Statistics

	Mean	Std. Deviation	N
Age of Respondent	2.8667	.93710	30
Education of Respondent	2.9000	.84486	30
Occupation of the Respondent	2.2667	1.08066	30
experience using smart apps	3.1667	1.01992	30
hospital visit in last 3 months	1.8333	1.08543	30
The hospital I visit to has an app and also a 24*7 call center to make the bookings	3.1333	1.27937	30
The hospital has made a provision of virtual doctor assistance when things are not serious	4.0333	1.09807	30
Reports and Documents are paperless and digital copy of report is send to me and doctor	3.5667	1.22287	30
Details of the Doctor are given on the app	3.4333	1.13512	30
Previous records and caregiver details on the app	3.3000	1.44198	30
Increased awareness of Insurance and details on app	3.5333	1.30604	30
Easy to connect to healthcare providers through chatbot rather than visiting hospital	3.7000	1.08755	30
Advanced products like oximeter etc. present to improve overall vigilance on health	3.0000	1.31306	30
Process of making the booking is easy and all age group friendly	2.8000	1.12648	30
In case of telemedicine/virtual assistance, the person is calm before transferring the calls to departments	2.8667	1.13664	30
Bills with details generated online and payment links along with insurance are given	2.9000	1.29588	30
Smart services have reduced the waiting hours and extra time	2.6667	1.44636	30

From the mean analysis it is noted that in the smart services, availability of the virtual doctor was the most used Smart service, while inclination to agree that smart services have reduced waiting hours was the lowest. This means smart services is an addition to services reducing the number of visit to hospitals, but has not reduced the waiting hours or extra time at the hospital.

Conclusion and Implications

People are aware of the smart health provisions in the healthcare industry

The quality of service had a direct influence on the customer satisfaction. The five dimensions of service quality namely reliability, responsiveness, assurance, empathy and tangibility play key role in customer satisfaction and loyalty.

People, system and the process are often not connected. People are technically updated but are not generally aware of the smart provisions in healthcare.

Telemedicine have come up a long way and are better adapted by the customers.

Recommendations

- Communication with patients encourages better feedback.

- The hospital environment has a major role in customer service.

- The information generated in the hospital - paperless, autoformatted and in a structured format.

- Management should train workforce to introduce policies and processes to embrace AI.

- The market size of the smart hospitals should be increased.

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