Study to analyze the variables that affect the CRM implementation in the Hospitals

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Abstract

Today in the competitive environment every industry is struggling hard to handle the issues related to business competition and frequent changes in the technology, similarly the health industry cannot be left behind. From past few years the health care industry is working on effective handling of the issues like firstly The use of IT and technology to do improvements in Health care Industry and secondly work on customer satisfaction which is one of the significant path for the improvement in the industry and patients are major and one of the customers of health industry who have direct affect. To handle the above mentioned issues the adoption of CRM software can be the one solution. The CRM is the management philosophy that changes the complete orientation of the company towards its existing and potential customers. So ,my paper takes the track towards the analysis of various variables and factors that affect the usage and the implementation of CRM through its software focusing on health industry and majorly the hospitals in Delhi.

Keywords: Customer Relationship Management, CRM Software, Health Industry.

INTRODUCTION:

Today the health care industry working hard to handle the issues of technology implication and better customer satisfaction. The health care provider had already stared implementing the various technological application in there industry. And they are also working on developing the better customer relationship between the provider and its customers (patients) which will ultimately lead to customer satisfaction.

Majorly in health care industry good relationship is very essential to improve and sustain the business as the unman-aged relationship with patients will make him feel ill treated during the treatments which in turn threat the business sustainability.

The importance of Customer Relationship Management in managing the better relationship with the customers and provider has been advent in all most every industry. Similarly the health care industry is also using the CRM as a tool to manage the relationship between patients and providers. Various private providers had already incorporated CRM as their integral part of business. They are also catering the developments in Information technology for better sustainability of their businesses but some are still under the phase of its implementation.

Today when health care industry is undergoing massive changes with various software's implementation for providing the better customer satisfaction and achieving overall customer satisfaction, the CRM can give health care providers with one-to one solution to enhance care delivery, reduce cost and increase patient satisfaction towards the providers which in turn enhance the organization success and sustainability.

LITERATURE REVIEW

The concept of CRM has though been practiced for long, but today because of environmental pressures, organizations in order to survive and grow in cut-throat business environment are forced to follow it much more seriously.

With the change of business focus from sales to the marketing companies now strive to provide maximum satisfaction to their customers. In order to achieve customer satisfaction objective, they try to focus on the customers and to build a long-term relationship with them. Managing customers relationship is a two – way process, in which the organization and all of its employees who need to interface with the customers get a complete access to every customers at every touch point and across all channels; and also the customers get all the required information about the company and products without much effort.[1]

Though there are many definition of CRM but this stated definition basically link the CRM with Information Technology.

According Swift (2000) Customer relationship management may be defined as an integrated sale, marketing and service strategy that focuses on managing all of the ways that an organization deals with its existing and potential new customers. It uses information technology to create a cross – functional enterprise system that integrates and automates many of the customer related processes in sales, marketing and customer services. CRM system is an integrated cross-functional information system that includes a set of tools to integrate and automate customer related processes in sales, marketing and customer services to provide fast, convenient and reliable services to its customers.[2]

According to Gartner, (2010), the three phases in which CRM helps to support the relationship between a business and its customers are, to:

Acquire: CRM is used to acquire new customers through excellent contact management, direct marketing, selling and fulfillment.

Enhance: eCRM is combined with customer service tools to offer customers excellent service using a team of trained and skilled sales and service specialists, which offers customers the convenience of one-stop shopping.

Retain: CRM software helps an organization to identify its loyal customers for rewarding them. It further helps in taking relationship marketing initiatives.[3]

Dr . Anil has done some work on CRM affect in hospitals and taken the variables for the study as affect of CRM on patients loyalty, CRM affect in addressing the patients requirement and issues, CRM affect on transactions and the CRM role in providing the accurate and quicker information to patients. Through the descriptive survey and study he has done in various Mumbai Metropolitan Hospitals he has concluded that CRM implementation had direct and essential impact on Hospital. Implementing the CRM is the win win situation for the entire stakeholder of hospitals [4].

According to Greenberg stated that CRM is a philosophy and a business strategy supported by a system and a technology designed to improve human interactions in a business environment. Furthermore, it is an operational and transactional approach to customer management that is focused around the customer facing departments, sales, marketing and customer service. Furthermore, the early CRM initiatives was the process for modification, culture change, technology and automation through use of data to support the management of customers so it can meet a business value of corporate objectives such as increase in revenue, higher margins, increase in selling time, campaign effectiveness, reduction in call queuing time, etc.[5]

Further Yina [7] examined health care providers in adopting CRM as a strategy in building trust to their patients as well as helping patients to avoid feel alienated in the health care environment and at the same time improving the service quality and efficiency of health care [6]. With the Web technology, CRM also affords health care providers the ability to extend services beyond its traditional practices, and it provides a competitive advantage environment for a health care provider to achieve a complex patient care goal. CRM enables a health care provider to capture essential patient (customer) information to be utilized effectively, especially in integrating the patient information in a system to promote superb service

OBJECTIVES OF MY STUDY

1.To have in depth knowledge of Customer relationship management and its contribution in health industry.

2.   To identify the variables that affects the CRM in healthcare organizations.

3. To identify the construct out various items of the scale using factor analysis.

Hypothesis

H_a : Sample is significantly adequate for factor analysis.

H_b: Presence of significant correlation among the variable.

RESEARCH METHODOLOGY

The research is **empirical** in nature and employs quantitative methods of analyses. This research is totally based on **Exploratory Research Design.**

It is based on primary database conducted in one of the Govt. Hospital in Patel Nagar that had implemented the one phase of CRM to improve the patient satisfaction and enhance it services. Further this research will be enhanced to compare in various Govt. Hospital and Private hospitals in Delhi and NCR region.

Secondary data used from available literature of the related content from various sources.

My research survey through questionnaire comprise of conducted representatives and customers from one of the Govt. Hospital in Patel Nagar with at least 100 users of CRM.

The probability sampling technique has been used for the study. Both random and stratified technique has been used. The random because respondents are selected randomly in unbiased manner for the study and stratified because a particular hospital is taken under study.

About 100 respondents were asked to rate 9 statements on a five point likert type scale.

All the data from the questionnaires were entered into a SPSS file and principal component analysis is done to do factor analysis of the variables.

Variables/Items of the scale

To find the most desirable components/factors out of various items which are going to have an impact on the CRM implementation and affect on hospitals. 60 respondents were asked to fill their responses for the following statements using a 5-point scale in the questionnaire. Their responses are used for

Principal Component Analysis, Factor Analysis to extract the most suitable constructs for the same study.

Variables/Items of the scale

V1: Do you think implications of CRM (Information Technology) have changed the image of hospital.

V2: Do you think the CRM Implication has increased the customer (patients/ Yours) satisfaction towards hospital services.

V3: Do you think CRM (IT) implications in hospitals has contributed in reducing the time required for availing services in hospitals.

V4: Do you think CRM Implications has contributed in reducing the Complaints filled by patients related to hospital service and working.

V5: Do you think CRM Implications has contributed in easier handling of greater number of customers(Patients)

V6: Do you think CRM Software has helped in maintenance of customer records which often required by doctors.

V7: Do you think CRM software's has reduced customers (Patients) counter running in hospitals.

V8: Do you think CRM Software's has contributed in the centralization of data at one place thereby providing easier access.

V9: Do you think CRM software's has reduced the waiting time of customers/ patients in the hospitals.

Data Analysis and Interpretation:

Exploratory Factor Analysis/ Principal Component Analysis:

The principal component factor analysis is conducted to select important components out of 9 variables, which will be used for the development of the framework based on the components selected.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.552
Bartlett's Test of Sphericity	Approx. Chi-Square	70.193
	Df	36
	Sig.	.001

As KMO=0.552 which is greater than 0.50, so we can say that the sample size is just sufficient for the factor analysis and this supports the hypothesis, H_a is accepted.

Then, according to Bartlett's Test of Sphericity, significance is .001, with 36 degree of freedom. Bartlett's test is highly significant, when p value < 0.005. It depicts that this study is significant and there is presence of significant correlation among the variables selected for PFA. H_b is accepted.

Communalities

"Communalities" explains the amount of variance of various items is explained by extracted components. So, it shows the proportion of variance expressed by each variable for new components. This table shows that all variables having values more than 0.50, then we will not remove any variable because of low value.

Communalities

	Initial	Extraction
CRM Implications changed Hospital Image	1.000	.682
CRM Implications increased Customer Satisfaction	1.000	.744
CRM Implications reduces time required for availing services	1.000	.441
CRM Implications in complaints reduction	1.000	.690
CRM Implications helps in easier handling of greater number of patients	1.000	.599
CRM Implications helps in maintenance of patients records	1.000	.658
CRM Implications helps in counter running reduction	1.000	.750
CRM Implications helps in centralization of data	1.000	.788
CRM Implications helps in waiting time reduction	1.000	.624

Extraction Method: Principal Component Analysis.

Total Variance Explained

Here, first 4 components are explaining the 66.401% of total variance, to develop the new constructs for the study. It is reasonably good that the components which are extracted are going to explain more that 60% of the variance out of all variables. Further sustainability can be provided with the help of literature support.

Total Variance Explained

Component	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.943	21.591	21.591	1.931	21.460	21.460
2	1.626	18.066	39.657	1.400	15.554	37.014
3	1.385	15.386	55.043	1.328	14.757	51.771
4	1.022	11.359	66.401	1.317	14.630	66.401

Extraction Method: Principal Component Analysis.

Scree Plot

It is a graph of the eigen values against all the factors. It is used to measure that how many factors are needed to retain. This plot is used to measure the components which are important for the evaluation of the responses for this study.

Scree Plot
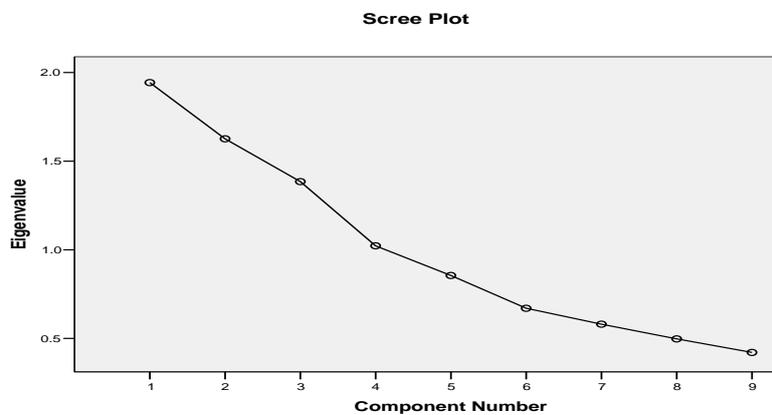
Components Pattern Matrix

The proposal of rotation is to decrease the number of items on which the components under explorations have high loading values. This underlying matrix depicts various loadings related to different variables which further show their association with their respective components. Here , absolute values of variables are observed, the variable having highest value in whichever component, that variable will be considered to lie under that same component. The highest loadings of various variables are in bold black, this shows that the same variable will lie in that component and used for further analysis as new factors.

Rotated Component Matrix(a)

	Component			
	1	2	3	4
CRM Implications in complaints reduction	**.776**			-.291
CRM Implications helps in easier handling of greater number of patients	**.712**	-.241	.159	
CRM Implications reduces time required for availing services	**.566**		-.289	.176
CRM Implications helps in maintenance of patients records	**.550**	.527	.276	
CRM Implications helps in centralization of data	-.122	**.878**		
CRM Implications helps in counter running reduction	.140		**.850**	
CRM Implications helps in waiting time reduction	**.336**	-.378	-.603	
CRM Implications increased Customer Satisfaction	.136	.175		**.828**
CRM Implications changed Hospital Image	-.184	-.336	.205	**.702**

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

In the Rotated Components Matrix, each number represents the partial correlation coefficient between the variable and the rotated component. Thee coefficients had helped me in identifying the component.

In my study the variables constituting Component 1 are:

- CRM Implications in Complaints reduction.
- CRM Implications helps in easier handling of greater number of patients.
- CRM Implications reduces time required for availing services.
- CRM Implications helps in maintenance of patients record.
- CRM Implications in waiting time reduction.

The variables constituting Component 2 is:

- CRM Implications helps in centralization of Data.

The variables constituting Component 3 is:

- CRM Implications helps in counter running reduction.
- The variables Constituting Component 4 are:
- CRM Implications increased Customer Satisfaction.
- CRM Implications changed Hospital Image.

Component Correlation Matrix:

In Component correlation matrix, as all diagonal values are 1.000 and lower matrix is the mirror image of the upper matrix. This depicts that it is an identity matrix and describes that all new components extracted are symmetrical in nature. It shows the linear correlation among the various components extracted. This satisfies that the new components can be used for further testing and analysis.

Component Transformation Matrix

Component	1	2	3	4
1	.988	-.033	-.145	-.042
2	.109	.777	.604	-.141
3	.094	-.185	.427	.880
4	-.057	.601	-.657	.451

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

RESULT

Ha: Sample is significantly adequate for factor analysis

As KMO=0.552 which is just greater than 0.50 so we can say that the sample size is just sufficient for the factor analysis and this supports the hypothesis. H_a is accepted.

**Hb: Presence of significant correlation among the variables.**

Then, according to Barlett's Test of Sphercity, significance is 0.001 with 36 degrees of freedom. Bartlett's test is highly significant, when p value < .005. It depicts that is study is significant and there is presence of significant correlation among the variables selected for the further analysis. H_b is accepted.

Below table is summarizing the various new components using various existing items:-

Components	Nomenclature
1	Operational Efficiency
2	Data Centralization
3	Existing Customer Management
4	Hospital Image

Respective absolute values of the rotated component matrix were considered for the components then accordingly nomenclature assigned with the help of literature support for the same. These new components and variables are going to be used in further research.

With the help of above extracted components, a conceptual framework can be generated that is
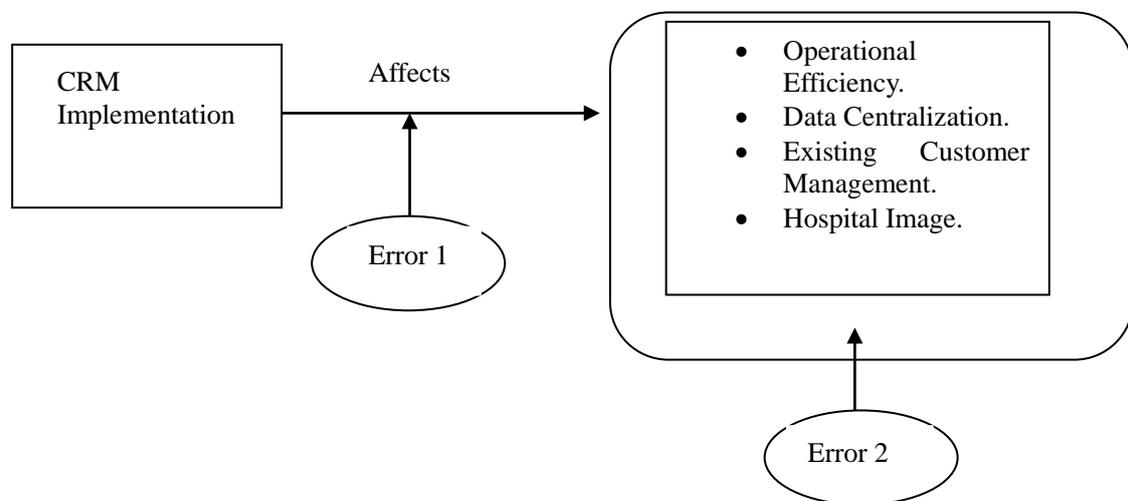
CRM Implementation and its Effects

CONCLUSION

In this study, the various variables were identified that contribute to the affect of CRM in Hospitals, the questionnaire was developed and their responses were taken from one of the Govt . Hospital in Delhi. With the help of Principal Factor Analysis various components were extracted to develop the conceptual framework. As a result increases operational efficiency, helping in the centralization of data, better management of the existing customers and enhancing hospital image are some of the effects of CRM implementation in the Hospitals. Further the analysis will be enhanced to identify other factors and data analysis from various Govt. and Private Hospitals in Delhi and NCR.

SIGNIFICANCE

This research will help the IT, Health, Education and research sector in general and particularly scholars in dealing and understanding the CRM in Hospitals. This research will also enrich literature on CRM.

LIMITATIONS

The components extracted in this study can be further used for developing the model for analyzing the benefits of CRM for the Health Industry particularly hospitals. Further new components can be added and can be tested with various other statistical tools. The study can also be enhanced to study major other Govt. and Private Hospitals of Delhi and NCR.

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