Impact of CRM on Hospitals: A Study conducted to gain view of the Practitioners working in various Private and Govt. Hospitals in Delhi.

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Abstract

The purpose of this study is to determine the impact of CRM on hospitals from practitioner's perspective. The study was conducted in major private and government hospitals of Delhi from where the data is gathered from 578 practitioners working for the health industry. The population of the study includes doctors, administrators, hospital IT Staff and all other personnel working in hospitals. The objective of the study is to evaluate the various areas that show the considerable impact of CRM on hospitals and also to prioritize the major benefits. The Questionnaire was designed to gather the primary data of practitioners. The collected data is analyzed under three major demographics which are gender, age and Job Profile as through literature study it was found that CRM implementation is sensitive to these demographics. The regression equation is framed to show the impact of CRM which reveals that CRM implication has its major impact on Customer Satisfaction, better patient handling, time reduction, reduction in waiting time period and also the right allocation of doctors. The paper can serve as a guideline for health sector helping hospitals seeking for the implementation of CRM for their better services.

Keywords: Customer Relationship Management (CRM), Healthcare, Hospitals, CRM Impact.

I. INTRODUCTION

With the passage of time, there has occurred a significant difference in conducting and managing any kind of business. All the major industries are facing lots of challenges with strategic change in market dynamics. Similar is for the health industry also. One of the main challenges is to serve and maintain good relations with the king –"The Customers". In the earlier days, an industry would have just handful customers coming from the neighborhood. So, maintaining and satisfying a limited number of the customers was easier but now there are millions of customers from all over the world. Therefore the industries are relying on various other mediums that can help in understanding and measuring customer satisfaction. One of the important tools for customer satisfaction is customer relationship management (CRM). The important aspect of CRM is analyzed in the present study to gain an insight to its impact on hospital industry.

Problem Statement and Objectives:
Due to the rapid growth of Globalization and increased competition at both local and international level, the importance of CRM has been realized and increased significantly. The industry has realized that to be successful in the market they have to develop the strategies based on present needs that matches with the customer requirements as well. Therefore the industries are exploring various ways to manage the issue. The fulcrum to the problem is the selection of CRM, and the present study is an attempt to evaluate the impact of CRM on the Health Industry. The more specific purpose of research is to analyze the impact of CRM on hospitals. To study the impact of CRM on hospitals, the study is divided in two segments with an objective to analyze the perspective of two major stakeholders of the hospitals i.e.

the customers which are the patients visiting the hospitals and other is the Practitioners which includes the people working in various departments in the hospital. The research paper is depicting the view of the practitioners only. The practitioner in the study consist of the Doctors, Administrators, Hospital IT Staff and one category of others to consider the view of all other staff involved to support the hospital services. The view of the patient which is considered to be the user of the service, not the provider will be analyzed separately in further research. The variation in the analysis is studied for the three major demographics undertaken which are gender, age and the job profile. The answers to various questions are gained through the application of scientific procedures and methods and also the final variables are prioritized that can show the impact of CRM on hospitals and are depicted through the regression equation. Through the application of various methods and tools, the broad research question under investigation is:

Research Questions

- Is CRM implementation beneficial for the practitioners working in the hospital?
- To what extent CRM implementation is helpful for the hospital industry to change the image of the hospitals.

Objectives

The study aims to find the answer to certain practically valid questions such as; the contribution of customer relationship management in the healthcare industry and to measure the impact of customer relationship management on the image of the healthcare facility.

The following are the broad objectives of the study:

1. To have in-depth knowledge of Customer relationship management and its contribution to the health industry.
2. To analyze the use and benefit of CRM in hospitals.

3. To prioritize the critical factors those contribute to the improvement done by the implementation of CRM in the Hospitals.
4. To understand the ultimate objective of CRM in enhancing the operational efficiency in Health Industry.

II. LITERATURE REVIEW.

"Understanding the customers better will enable the organizations to serve them better and keep them loyal forever", it is main reason and theme for the development Customer Relationship management (CRM). However, the understanding of CRM is still incomplete and in growing phase as it encompasses its growth in various fields.

The concept of CRM has though been practiced for long. But today because of environmental pressures, the organizations in order to survive and grow in the 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 give prime focus on the customers and build a long-term relationship with them. But 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 customer 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.

According to DP Goyal, (2006),CRM is an iterative process that turns customer information into positive customer relationship. CRM is the new mantra, which uses intelligent methods in form of data mining techniques to get better insights of customer needs. The CRM cycle consists of five process stages:

- Target and Marketing.
- Development of offerings.
- Sales.

- Superior experience.
- Retention and win back.

A lot of researchers have made attempts to define CRM such as:

According to Swift(2000),Customer Relationship Management may be defined as an integrated sale, marketing and service strategy that focus 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.

According to Goldenberg (2000), CRM can serve as a multitasking technology that enables firms to maximize their relationships with their customers and the profits of the firm.

The Xu, Lin and Chou (2002) describe CRM as an information industry term that covers methodologies, software and usually Internet capabilities that help enterprises, manage customer relationships in an organized way.

The Jakabova and Misak (2011) believes that nowadays every enterprise that wants to survive in the market and grow. They eventually, have to solve the problem of satisfying the individual needs of customers and sustaining the long-term beneficial relationships with them.

CRM is more evolution than revolution. Thus, achieving the full potential of each customer relationship should be the major goal of every business. Dissatisfaction of customer causes market damage because they are more likely to persuade others to defect. It is therefore, no surprise that CRM is an important topic of conversation in the business world (Feinberg et .al., 2002).

Customer Relationship Management is also a concept of identifying customer needs; understanding and influencing customer behavior through ongoing communications strategies and an effort to acquire, retain and satisfy the customer. CRM is more than simply managing customers and monitoring their behaviour or attitude. It has the potential to change a customer's relationship with a company and increase revenues in the bargain. It also helps to know the customers well enough to decide whom to choose and whom to lose. The objective of CRM is to recognize and treat each and every customer as an individual. Customer relationship management enables organizations to provide excellent real-time customer service through the effective use of individual account information (Kotler and Keller, 2006). So, Organizations need to investigate customer needs, build relationships with both existing and potential customers, and will have to satisfy their customers' needs. (Rootman, 2006).

According to Picton and Broderick (2005), CRM is a view that emphasizes the importance of the relationships developed between an organization and its customers. It involves the strategic and tactical management tasks to achieve positive communications and long-term customer relationships.

Berkowitz (2006) also defines customer relationship management (CRM) as "the organizations attempt to develop a long-term, cost-effective link with the customer for the benefit of both the customer and the organization."

CRM is the infrastructure that enables the delineation of increase in customer value, and the correct means by which to motivate valuable customers to remain loyal-indeed, to buy again.(Dyche, 2001, p4).

CRM is a customer oriented business strategy that aims to increase customer satisfaction and customer loyalty by offering a more responsive and customized

service to each customer (Fayerman, 2002).

"CRM is an enterprise-wide mindset, mantra, and set of business process and policies that are designed to acquire, retain and service customer. CRM is not a technology, though technology is a CRM enabler" (Greenberg, 2001, p.14)

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

- Acquire: CRM is used to acquire new customers through excellent contact management, direct marketing, selling and fulfilment.
- Enhance: CRM 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 also helps in taking relationship marketing initiatives.

Therefore, CRM is an important tool that needs to be implemented in all types of businesses and industry.

CRM in Healthcare

CRM is an equally important in healthcare service as there exist great potential for healthcare providers to build ongoing relationships with patients. In the competitive world, the healthcare providers focus on CRM with the assistance of information systems to deliver value over price. According to Oliver, (2008), the value of CRM is to create and maintain good and long-term relationships with customers. Customer loyalty is a critical criterion for CRM. Loyalty refers to the repeated use of certain product and services by customers and even changes in business scenarios will not affect the purchase patterns or willingness to continue to use those products or services. Therefore, the core of

the CRM in healthcare service is to satisfy patients' interest and needs to increase the patient loyalty level. Healthcare system over-wrought with inconsistencies and errors can prevent even the best organization from developing strong relationships with its patients. Customer relationship management (CRM) for the healthcare industry sounds simple enough. In fact, one might think that the concept of CRM is implicit in the practice of healthcare. There are few relationships as important as the one-to-one relationship between patient and their healthcare provider. When patients choose providers, they trust those providers to have accurate and complete information about their health. Patients no longer tolerate the excuse that errors and inconsistencies in their medical information are just an unfortunate side effect of dealing with large amounts of data. The industry has begun to take notice that patients are pushing back at provider systems for accuracy, comprehensive record-keeping and stronger programs. The healthcare industry is in desperate need of a "patient service" overhaul to help organizations manage their customer relationships."(Springe-Verlog Berlin Heidelberg, 2009).

Seeing this importance of CRM for the Healthcare, I am focusing present study to evaluate the impact of CRM on the Hospitals. Does the CRM implementation change the image of the hospital or it is just the additional cost for the hospital to incur? To evaluate the CRM impact the study was divided into two contexts the one who is the provider of the service and other who is the user of the service. The provider of the service is considered to be the hospital staff and management covered under the title of practitioners and the user of the service is patient visiting the hospital due to various reasons. The present research paper is focusing on the analysis of the data gathered through the practitioners working in the hospitals.

III.   METHODOLOGY

The Descriptive research is carried out in one segment of Health Industry that is the practitioner that broadly includes the Doctors, Administrators, IT staff and other staff working in hospitals. The survey conducted through the questionnaire, in that we were not having any control on responses i.e. all the respondents were filling the responses independently. Data is collected with respect to gender, age and job profile at the hospital. Demographics of gender, age and job profile are selected as it has been found that measurement of CRM impact is sensitive to these demographics. Mapping the CRM impact over age is significant as younger age employees are more pro to use technology in comparison to old age people; Hence responses may vary with respect to age.

Sample Description: The data of total 578 respondents is collected with prime consideration given to the following demographics.

Table 1

Demographics	Characteristics	N(%)
Gender	Male	307(53.1)
	Female	271(46.9)
Age	20 y - 30 y	94(16.3)
	30 y - 40 y	182(31.5)
	40 y - 50 y	175(30.3)
	50 y - 60 y	115(19.9)
	60 and above	12(2.1)
Department	Doctor	200(34.6)
	Administrator	208(36.0)
	Hospital IT Staff	158(27.3)
	Others	12(2.1)

(Table1: Distribution of the sample)

The reason for the variation of responses among different age groups can be inference through the general fact the population between 30-40 years are most importantly concerned with the use of technology while population above 50years are not much concerned about the technological implications

Further, the questionnaire was designed both in physical and e-format, so as to increase the reachability by a large number. In this era of the highly technological environment, people are more willing to fill e-questionnaires as it is convenient to them. With the help of GOOGLE forms, the soft form of the questionnaire is developed which was also compatible with Smartphone. Responses are recorded on the virtual drive. The physical copy of the questionnaire is taken to the respondents where either internet facility was not available or respondents were not comfortable in filling e-forms which were generally for the people working with the govt. hospitals.

The Questionnaire was designed to study the impact of CRM with various factors in consideration such as Hospital Image, Customer Satisfaction, Patient handling etc. For the factors considered in the questionnaire the data is collected on the modified five-point Likert scale with following descriptions and coding stated as Strongly Agree 5; Agree 4; moderately Agree 3; Disagree 2; Strongly Disagree 1.

Table2

Statements	Interpretation/Variable	Code
Implications of CRM (Information Technology) have changed the image of the hospital	Variable1: Hospital_Image	HI
CRM Implication has increased the customer (patients/Yours) satisfaction towards hospital services.	Variable2: Customer_Satifaction	CS
CRM (IT) implications in hospitals have contributed to reducing the time required for availing services in hospitals.	Variable3: Time_Reduce	TR
CRM Implications has contributed to reducing the Complaints filled by patients related to hospital service and working.	Variable4: Complaints_Reduce	CR
CRM Implications has contributed to easier handling of the greater number of customers(Patients)	Variable5: Patient_Handling	PH
CRM Software has	Variable6:	CuR

helped in maintenance of customer records which often required by Doctors	Customer _Records	
The software has reduced customers (Patients) counter running in hospitals	Variable7: Counter_ Running	CoR
CRM Software's has contributed to the centralization of data at one place thereby providing easier access.	Variable8: Data_Cent ralization	DC
CRM software has reduced the waiting time of customers/ patients in the hospitals	Variable9: Reduce_w aiting_tim e	RWT
CRM software helped the hospital in allocation of right Doctor to right patient	Variable1 0: Right_doc tor_allocat ion	RDA
CRM software helped us in reducing medical errors	Variable1 1: Reduce_m edical_err or	RME

(Table 2: Shows the variables along with their code undertaken in study)

IV.   ANALYSIS

The validity and reliability of the scale using the Cronbach Alpha test where the value of .816 is depicting that the reliability of all 11 variables is good and the variables are perfectly measuring the impact of CRM on Hospital performance. The correlation between the different variables is checked which depicts the weak correlation among the variable (Annexure: Table3) so in order to check whether removing the variable creates any difference on reliability, the Item_total Statistics was obtained and it has been observed that removing any variable will further reduce the reliability of the scale. Hence, we kept all eleven variables intact for further analysis. Further, The KMO and Barlett test, high value (0.914) of KMO score provides a validation to run factor analysis.
Table4

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.914
Bartlett's Test of Sphericity	Approx. Chi-Square	1215.000
	Df	55
	Sig.	.000

Table4 shows the results of KMO and Bartlett's test to check the validity of the scale.

Through the principal Component analysis (Table5: Annexure) it has been observed that all variables are extracting one factor only.
Therefore the scale is validated and all variables are valid for measuring the overall impact of CRM on Healthcare facility. Now, the normality of the data is checked using Kolmogorov-Smirnov Where the p-value is less that 0.05 shows that the data is normally distributed.

Table -6

Kolmogorov-Smirnov[a]		
Statistic	Df	Sig.
.019	578	.200[*]

Table6 shows the result of Kolmogorov-Smirnov

This gives the freedom to apply the parametric test on the data for the analysis. The comparison of the means with respect to various demographics gave us a bird's eye view on the level of agreement with different variables measured in the questionnaire. Through the comparison of the means with respect to gender,(Table7: Annexure) it can be observed that males and females both have highest agreement on "CRM (IT) implications in hospitals have contributed to reducing the time required for availing services in hospitals". The least agreement is observed on the statement, "CRM software helped us in reducing medical errors".
Now we see whether the difference of agreement amongst males and females is significant. Hence we formulae following alternate hypothesis and use an independent t-test to test it.
H_{11}: The difference in level of agreement amongst males and females is significant.

It can be observed (Table7: Annexure) that significance occurs only with the statement, "CRM Implications has contributed to easier handling of the greater number of customers".

Now we compare the level of agreement with age. From the comparison of means with age(Table8: Annexure), it can be observed that the highest agreement with age group 20yrs – 30yrs lies with the statement, "Software has reduced customers (Patients) counter running in hospitals". While the age group between 30yrs – 40yrs has the highest agreement on, "CRM Implications has contributed to easier handling of the greater number of customers (Patients)". The age group 40yrs – 50yrs, 50yrs-60yrs and also above 60yrs all has the highest agreement on,"CRM (IT) implications in hospitals has contributed to reducing the time required for availing services in hospitals".

Now the analysis of variance is applied to check whether this difference of agreement is significance or not and for this the alternate hypothesis is formulated.

H_{12}: The difference in level of agreement amongst different age groups is significant. From the analysis of variance(Table8: Annexure), it can be observed that the difference of level of agreement is significant on following statements as the significant value is less than the level of significance $(\alpha - 0.05)$.

Variable 7(CoR): Software has reduced customers (Patients) counter running in hospitals

Highest agreement with a mean score of 3.83 is seen in youngest age group i.e. 20yrs – 30yrs, while least agreement is observed in age the group of 60 yrs and above.

Variable 10(RDA): CRM software helped the hospital in the allocation of right Doctor to right patient

The highest agreement is observed in the age group between 50yrs – 60yrs (3.64) and the least agreement is observed in the age group 60 yrs and above. i.e. 2.73

Variable 11(RME): CRM software helped us in reducing medical errors

A person above 60 yrs falls in the bracket of high disagreement on the statement as the average level of agreement is 1.70. The difference of agreement is not significant on rest of the statements hence we do not reject the null hypothesis.

The comparison of means with respect to professions(Table9:Annexure) reveals that the doctor has the highest agreement on, "CRM (IT) implications in hospitals has contributed in reducing the time required for availing services in hospitals". Administration people have shown the highest level of agreement on, "CRM Software's has contributed to the centralization of data at one place thereby providing easier access". Information Technology staff is agreeing most on, "CRM Implications has contributed to easier handling of the greater number of customers (Patients)". Overall a higher agreement is observed in all statements.

We check whether the difference of agreements is significant or not by using analysis of variance and for this purpose, the alternate hypothesis is formulated.

H_{13}: The difference in level of agreement amongst different age groups is significant. The One Way Analysis on the variance for H_{13}(Table 9: Annexure) shows that difference of agreement is significant on following statements.

Variable 3(TR):CRM (IT) implications in hospitals have contributed to reducing the time required for availing services in hospitals.

Hospital IT staff has highest agreement on the statement with a mean score above 4.03.

Variable 11(RME): CRM software helped us in reducing medical errors

The null hypothesis, in this case, may be rejected due to the low agreement of other category staff of the hospital.

V.   DISCUSSION

When the comparison of means is done with respect to various demographics, the comparison with respect to gender shows

that both males and females are having the highest agreement on the fact that the CRM implications have contributed in reducing the time required for availing the services in hospitals while the least agreement is on the fact that the CRM software's has helped in reducing medical errors. This shows that CRM needs an improvement in reducing medical error. This may be due to manual entry system in the phase data collection for the majority of the CRM Softwares. Employees may be trained better in order to increase the level of agreement on same. Further, the difference in the level of agreement amongst males and females is significant is checked using the Independent Sample t-test is checked and it revealed that females with a higher mean of 3.86 show a higher agreement on the statement while males have nearly 3% lesser agreement on the statement.

Further the comparison of level of agreement is done with age. The age group 20yrs – 30yrs lies with the statement, "Software has reduced customers (Patients) counter running in hospitals". This may be due to the fact that younger people are more involved on reception areas and front office; therefore they have a higher visual on patient chaos. While the age group between 30yrs – 40yrs has highest agreement on, "CRM Implications has contributed in easier handling of greater number of customers (Patients)". It is evident that this age group is mostly involved in operations of patient handling hence they find CRM has improved patient handling. The age group 40yrs – 50yrs has highest agreement on, "CRM (IT) implications in hospitals has contributed in reducing the time required for availing services in hospitals". People above 60 also have highest agreement on, "CRM Implications has contributed in easier handling of greater number of customers (Patients)". Further the difference of agreement with respect to age is significant or not is checked through the One-way ANOVA. The test signifies that CRM

implications has its impact on Counter running variable, right allocation of doctors variable and the reduction in the medical variables taken in the study. The highest agreement with these three variables is for the youngest age group while the lowest agreement is for the old age group. The reason for the above results may be due to the fact that the old age group is not that comfortable with the technology. Since the results is not significant for rest of the variable in the study so, the hypothesis difference of level of agreement amongst different age group is significant is accepted in the current study. Further the variables are checked for the profession through the comparison of means where the doctors have the highest agreement on the variable reduction in time period for availing services in hospitals while the administrators have the highest agreement on the factor CRM ease in the centralization of data at one place thereby providing easier access. These results seem to be logical as administration people need to dig out the information quite often. Therefore they are showing more agreement on the statement-

"CRM Software's has contributed in the centralization of data at one place thereby providing easier access". Also the Information Technology Staff shows the highest agreement on the fact that CRM helps in easier handling of great number of customers. The overall higher agreement is observed on the all variables. Further the difference of agreement is significant or not is checked through ANOVA, where the null hypothesis that the difference in level of agreement amongst different age groups is significant is rejected because difference of agreement is significant only for the two variables that is reduction in the time period where the Hospital IT Staff has the highest agreement and the CRM ease in reduction in medical errors .So due to low agreement of other category staff of hospitals the hypothesis is rejected.

Finally, the regression modeling is done where the statement "Implications of CRM (Information Technology) have changed the image of the hospital" is considered to measure the overall impact of CRM on hospitals being dependent variable on rest of the variables formed through the statements. The multiple regressions shows (Table18: Regression Coefficients) that variables complaints reduction, data centralization and reduction in medical errors is not making the significant contribution to the overall impact. Hence the regression equation for the CRM Impact is framed as

$$Y = 1.092 + .115x_1 + .093x_2 + .082x_3 + .065x_4 + .111x_5 + .187x_6 + .097x_7$$

Where Y measures the CRM Impact.

x_1 depicts Customer Satisfaction.

x_2 depicts Time Reduction.

x_3 depicts Patient Handling.

x_4 depicts Customer Record Keeping.

x_5 depicts Patients counter running in hospitals.

x_6 depicts the reduction in waiting time for patients in hospitals.

x_7 depicts allocation of right doctors to the right patient in hospitals.

VI.   CONCLUSION

This paper focused on CRM implementation in the hospitals which can provide guidelines for the healthcare industry. As service industry is growing very quickly so the implementation of IT tools and services can help to reduce the gap between the expectation and perception that ensures better and quality service. The paper has analyzed the different works of literature on key terms and elements of CRM which is considered important for the sustainable growth in profitability. It has also analyzed the CRM implementation in the health industry. Supported through the data analysis it has been revealed that the CRM implementation has a significant impact on changing the hospital image. In other words, the CRM has a positive impact on the variables like better customer satisfaction, reduction in the waiting time of the patients to avail the hospital services. The CRM implementation also reduces the counter running from the counter to counter in the hospitals as all data can be significantly available at all time. The patient requirement can be met through one touch point through the implementation of the CRM. Besides this CRM implementation provides the gateway to the better patient handling as it significantly helps to reduce the total time taken by the practitioner to give the service as well by the patient to avail the service. The CRM also shows the impact on the right allocation of the right doctor to right patient in the hospitals. This analysis can be of great help to various hospitals which are in the phase of implementation of the CRM to achieve the goal of better customer satisfaction. Since the result shows the variation with respect to the age, so it suggested, IT tools and CRM Software should be made more comfortable for the age group above 60 years as the results vary a lot for the acceptance of CRM for this age group. Therefore, it depicts that CRM implementation has a direct effect in enhancing the Hospital image thereby providing the better customer satisfaction and retention.

VII.   LIMITATIONS

The major limitation is that the research is carried on one stakeholder of the hospital that is the practitioner still the research is underway for the patients which need to be evaluated for the different variables consideration. After seeking the evaluation from patient perspective also, the complete impact of CRM for the hospitals can be framed. Also, the study is focusing on one service industry i.e. the Healthcare and also more precisely only one segment of the healthcare which is the hospitals. The variable consideration results may vary for the different industries implementing and using the CRM tools and technologies. After completing research to evaluate the

CRM impact from the patient perspective, the complete model can be developed that will very useful to the hospitals to justify the implementation of CRM in their premises.

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ANNEXURE

Table 3

Code	CS	TR	CR	PH	CuR	CoR	DC	RWT	RDA	RME	HI
CS	1.000	.288	.262	.311	.278	.295	.302	.308	.227	.327	.286
TR	.288	1.000	.282	.292	.236	.279	.271	.300	.307	.327	.292
CR	.262	.282	1.000	.269	.262	.286	.305	.278	.299	.261	.242
PH	.311	.292	.269	1.000	.287	.361	.270	.318	.332	.301	.286
CuR	.278	.236	.262	.287	1.000	.234	.200	.304	.269	.319	.236
CoR	.295	.279	.286	.361	.234	1.000	.313	.325	.320	.338	.276
DC	.302	.271	.305	.270	.200	.313	1.000	.304	.281	.306	.221
RWT	.308	.300	.278	.318	.304	.325	.304	1.000	.290	.327	.342
RDT	.227	.307	.299	.332	.269	.320	.281	.290	1.000	.261	.272
RME	.327	.327	.261	.301	.319	.338	.306	.327	.261	1.000	.286
HI	.286	.292	.242	.286	.236	.276	.221	.342	.272	.286	1.000

Table 3 depicts the correlation among different variables

Table 5

	Component
	1
RWT	.633
RME	.625
CoR	.622
PH	.621
CS	.594
TR	.593
RDT	.589
DC	.574
HI	.569
CR	.567
CuR	.546

Extraction Method: Principal Component Analysis.
a.   1 components extracted.
Table5 shows the results of Principal Component Analysis.

Table 7

Variables	Gender	Mean	SD	t-value	Df	P value
Hospital_Image	Male	3.68	.661	-1.417	576	.157
	Female	3.76	.631	-1.421	572.521	.156
Customer_satisfaction	Male	3.72	.687	-1.197	576	.232
	Female	3.79	.621	-1.205	575.683	.229
Time_Reduction	Male	**3.80**	**.755**	-1.904	576	.057
	Female	**3.92**	**.696**	-1.914	574.936	.056
Complaints_Reduce	Male	3.52	1.015	.905	576	.366
	Female	3.44	1.016	.905	566.901	.366
Patient_Handling	Male	3.76	.744	-2.157	576	**.031**
	Female	3.89	.687	-2.167	574.825	**.031**
Customer_Records	Male	3.68	.674	-1.125	576	.261
	Female	3.74	.634	-1.130	573.666	.259
Counter_Running	Male	3.77	.713	-1.162	576	.246
	Female	3.83	.643	-1.170	575.741	.243
Data_Centralization	Male	3.76	.719	.503	576	.615
	Female	3.73	.688	.504	572.248	.614
Reduce_Waiting_Time	Male	3.68	.633	-1.250	576	.212
	Female	3.75	.629	-1.250	567.883	.212
Right_doctor_allocation	Male	3.48	.914	-.278	576	.781

	Female	3.50	.874	-.279	572.326	.781
Reduce_Medical_Error	Male	3.23	1.093	-1.285	576	.199
	Female	3.34	1.030	-1.290	573.476	.198

Table 8

Variable	Age Group												Sig
	20-30Y (N=94)		30-40Y (N=182)		40-50Y (N=175)		50-60Y (N=115)		60-Above (N=12)		Total (N=578)		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
HI	3.72	.614	3.76	.620	3.71	.657	3.71	.674	3.38	.883	3.72	.647	.413
CS	3.73	.655	3.72	.631	3.79	.684	3.81	.602	3.44	1.060	3.75	.657	.320
TR	3.80	.766	3.80	.701	**3.90**	**.703**	**3.93**	**.751**	**3.72**	**1.028**	3.85	.730	.446
CR	3.56	.845	3.49	1.072	3.42	1.067	3.50	.990	3.45	.929	3.48	1.015	.889
PH	3.86	.661	**3.81**	**.635**	3.86	.775	3.78	.784	3.58	.949	3.82	.720	.650
CuR	3.74	.629	3.76	.628	3.70	.669	3.63	.664	3.37	.918	3.70	.656	.196
CoR	**3.92**	**.677**	3.75	.615	3.80	.678	3.83	.740	3.26	.902	3.80	.681	**.019**
DC	3.76	.649	3.74	.652	3.76	.713	3.74	.778	3.55	1.035	3.75	.704	.894
RWT	3.67	.573	3.75	.595	3.74	.635	3.67	.686	3.36	.907	3.71	.631	.219
RDT	3.41	.863	3.54	.919	3.44	.933	3.64	.732	2.73	1.213	3.49	.895	**.008**
RME	3.34	1.145	3.28	1.095	3.23	1.057	3.47	.806	1.76	1.131	3.28	1.065	**.000**

Table 8 shows the comparison of means and t test result with respect to age

Table 9

Variable	Department										Sig.
	Doctor(N=200)		Admin(N=208)		IT Staff(N=158)		Others(N=12)		Total(N=578)		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
HI	3.75	.695	3.70	.684	3.71	.546	3.64	.403	3.72	.647	.879
CS	3.73	.661	3.76	.727	3.79	.536	3.64	.813	3.75	.657	.781
TR	**3.85**	**.756**	3.74	.765	4.03	.619	3.71	.651	3.85	.730	**.002**
CR	3.47	1.00	3.45	1.123	3.51	.911	3.91	.408	3.48	1.015	.464
PH	3.78	.735	3.82	.782	**3.87**	**.623**	3.85	.569	3.82	.720	.676
CuR	3.66	.703	3.75	.701	3.73	.523	3.43	.546	3.70	.656	.230
CoR	3.80	.717	3.76	.692	3.86	.631	3.65	.512	3.80	.681	.442
DC	3.69	.734	**3.83**	**.759**	3.69	.569	**3.97**	**.711**	3.75	.704	.097
RWT	3.71	.647	3.69	.684	3.74	.545	3.75	.525	3.71	.631	.880
RDE	3.51	.900	3.48	.951	3.54	.740	2.89	1.431	3.49	.895	.113
RME	3.38	.979	3.23	1.063	3.29	1.131	2.42	1.258	3.28	1.065	**.019**

(Table9 shows Comparison of Means and One Way ANOVA with respect to Department or Profession.

Table 10 Regression (Coefficients)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.092	.224		4.873	.000
	CS (x_1)	.113	.042	.115	2.712	.007
	TR(x_2)	.082	.037	.093	2.235	.026
	CR	.008	.025	.012	.304	.761
	PH(x_3)	.074	.039	.082	1.909	.057
	CuR (x_4)	.065	.041	.065	1.593	.112
	CoR (x_5)	.106	.039	.111	2.683	.008
	DC	.003	.038	.003	.075	.941
	RWT (x_6)	.192	.044	.187	4.397	.000
	RDT (x_7)	.070	.030	.097	2.356	.019
	RME	-.010	.025	-.016	-.400	.689

a. Dependent Variable: Item_1 Table10 shows the value of variable regression coefficients value