Implementation of Business Process Re-Engineering in the Service Sector

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Abstract

Achieving successful performance for the organizations is a choice of each and every organization. In this competitive age every organization needs to improve its performance as much as possible. Business process re-engineering (BPR) is no more an innovative technique and many organizations including service sectors are using this as a technique in their originations. Enterprise Resources Planning is a complex piece of software and the contemporary organizations are using this as a source in order to implement the BPR. It is believed that, hospitals are one of the most challenging organizations to implement the change in their business processes. This research is conducted by using quantitative approach to analyze the implications of BPR in a private hospital in Saudi Arabia. It is concluded that after the implementation of ERP system the both stakeholders' patients as well as employees including doctors are much satisfied with the new system.

Keywords: business process re-engineering, enterprise resources planning, service sector

1. Introduction

The contemporary organizations are implementing new techniques and tools in order to achieve the aims and objectives of the origination (Mohsen Attaran, 2004). The motivation behind BPR is re-organizing or re-examining of business procedures and it should be possible with the backing of programming applications like Enterprise Resource Planning (ERP) (Grover, Jeong, Kettinger, & Teng, 2005). Subramoniam and his colleagues scrutinized the implementation of ERP and revealed that every organization should develop its own approach accordingly (Subramoniam, Tounsi, & Krishnankutty, 2009). Furthermore, recently Delvin Grant 2015, stressed that, all organizations who implement ERP system, they should select their own approach on the basis of organizational needs, it means modules that are selected, they should not be more than the needs of company that will be expensive and have no utility and not less than the requirements of company both will create failure of the ERP system. In the service sector the hospitals exists in the every corner of the world in order to treat the society (John Jeston & Johan Nelis, 2014). The modern hospitals are using high technology equipment not only as hardware but also using different types of software in their hospitals. The doctors, paramedical staff, administrative staff and patients are the stakeholders of these hospitals. Chow-Chua mentioned that the hospitals must use the innovative techniques in order to treat the society (Chow-Chua, 2000). The patients are mostly affected by the waiting time in the hospitals, whether the outpatients or in emergency. Patient's satisfaction towards the hospitals might be related with patients care and reduction in the waiting time. For this purpose, the hospitals should use innovative methods in the services (Francis & Alley, 2013). Whereas it is observed that maximum reasonable waiting time is still achieved, it is important to investigate the reasons of long waiting time and find out the ways to improve it. In spite of the way that "the business world's grip of big business frameworks might actually be the most vital improvement in the corporate utilization of data innovation in the millennium decade (T.H. Davenport, 2008), wide based observational exploration in the CSFs that effect execution are still exceptionally constrained. Having said this, this paper is based on a data collected quantitatively from a medical Centre, which is a private hospital based in Kingdom of Saudi Arabia. Due to data ethics the name cannot be displayed here. The emphasis of Quantitative research is on collecting and analyzing numerical data; it concentrates on measuring the scale, range, frequency etc. of phenomena (Saunders, 2007). Closed-ended questions include a list of predetermined answers from which participants can choose. Open-ended

questions allow the participant to answer the question in their own words. Closed-ended questions are easier to analyze.

2. Literature Review

Business process re-engineering (BPR) is "*The fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed*". (Hammer & Champ, 2001). While in the same vein, Enterprise Resource Planning (ERP) may be defined as, *"a packaged business software system that enables a company to manage the efficient and effective use of resources (materials, human resources, finance, etc.) by providing a total, integrated solution for the organization's information-processing needs*" (Barthorpe et al, 2004). ERP software organizations are updating their products by supporting the business operations as well as decision-making. ERP works as an integral between the functional areas of business including supply chain. ERP systems are designed to enhance organization's competitiveness by upgrading an organization's ability to generate timely and accurate information throughout the enterprise (Ashim Raj Singla, 2005). Therefore, it could be said that the contemporary organizations are using ERP as a software tool in order to reengineer themselves (Grover, Jeong, Kettinger, & Teng, 2005). There is numerous literature available that after the implementation of ERP system the originations are able to increase their quality levels. Subramoniam and his colleagues examined the role of BPR in implementing ERP systems and found that all organizations which implement ERP systems should select their own approach based on organizational needs and constraints (Subramoniam, Tounsi, & Krishnankutty, 2009). ERP frameworks are mind boggling bits of programming. Because of the restrictions of time and venture, few organizations are actualizing the fractional ERP modules where as different organizations execute full ERP modules. Then again, it can be said that there is no distinction between incomplete execution of ERP framework and full usage of the framework. Furthermore, it is believed that the full implementation of the ERP system requires rigorous training and continuous finances. The recent innovations in information technology and software engineering are enhancing organizational performance through providing end-to-end connectivity in ERP. It is evident that, the ERP system integrating all the divisions of one organization into one single component. One current quantitative survey in the United States revealed that most of the organizations are saving 43% of their application budgets by using ERP systems (Tsai et al., 2007). With more than 60% of the U.S. Fortune 1000 infiltrated, major ERP sellers are progressively focusing on little and medium estimated undertakings (SMEs) to create new deals. Merchants and clients are additionally moving past center applications to stretch out ERP frameworks to bolster Web-based applications, e-trade, client relationship administration, and business arranging.

There are such a large number of explanations behind developing interest of ERP framework, for instance, aggressive weights to wind up, and desires of income development, capacity to contend all inclusive, and the longing to re-design the business to react to market challenges. The advantages of ERP are noteworthy, if appropriate ERP modules have been chosen are executed and these will be cause to the lessening in stock cost, crude material costs, lead time for patients (client), generation or administration time, and creation or administration costs (Huq & Martin, 2006).

In spite of the way that "the business world's grip of big business frameworks might truth be told be the most imperative improvement in the corporate utilization of data innovation in the 1990s (Davenport, 1998), expansive based exact examination in the CSFs that effect usage are still extremely constrained. For example, a percentage of the achievement variables recognized in four contextual analyses looked into by Sumner (Sumner, 1999) included: backing of senior administration, overhaul of business procedures to fit what the product will bolster, interest in client preparing, evasion of customization, and utilization of business experts with both business learning and innovation information (Bingi, Sharma, & Godla, 1999) distinguished basic issues accepted to affect an ERP execution. For instance, duty from top administration, reengineering of the current procedures, coordination of the ERP with different business data frameworks, choice and administration of experts, and representative preparing on the new framework must be considered to guarantee fruitful usage. (Reel, 1999).

3. Data Analysis

The survey poll comprise of two sections first is before execution and second is after usage of the ERP framework. The survey circulated to workers and patients of the healing center. It was explored from the member that by what means if they will be roused and fulfilled by the arrangement of healing facility.

3.1 Characteristics of the Respondents

The survey respondents were chosen in two congregations, representatives of staff and patients, these both

congregations have diverse attributes, the patients were chosen on the premise of who has significant reason for treatment and anticipated that would come later on for treatment to experience that climate the member get to be fulfilled by the actualizing of ERP framework, if yes, then how much the members get to be fulfilled. Same members were dispersed the survey for second time after the usage of ERP framework following four months of gathered information. Correspondingly workers were chosen as specialists and staff both.

3.2 Survey questionnaire of Patients

As mentioned earlier that for the purpose of this paper, two congregations were chosen, Patients and Employees. Both were broke down previously, then after the fact the execution of ERP programming. The accompanying Figures 1 and 2 demonstrate the outcome for level of fulfillment of patients previously, then after the fact the execution of programming framework.
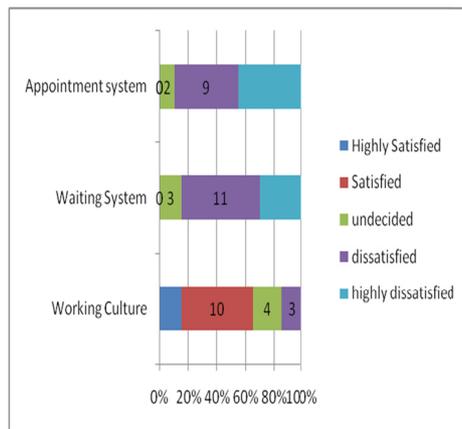
Figure 1. Survey before the BPR   Figure 2. Survey after the BPR
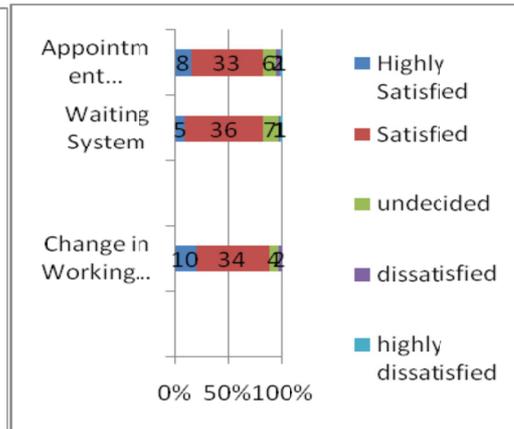
Figure 1, portrays the level of fulfillment of patients before execution of programming framework, just about 23 patients are disappointed, 14 are exceedingly disappointed and just 5 are fulfilled by arrangement framework. 15 are exceedingly disappointed and 15 are disappointed with holding up framework, 23 are disappointed, 15 are very disappointed and 2 are fulfilled by current society.

While after the usage Figure 2 speaks to right around 8 are exceedingly fulfilled and 33 are fulfilled by arrangement framework, 5 are very fulfilled and 36 are fulfilled by holding up framework and 10 are exceptionally fulfilled and 34 are fulfilled by working society.
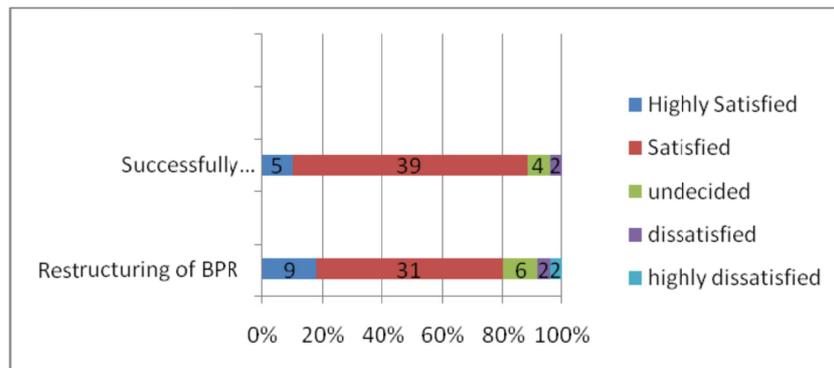

Figure 3. Satisfaction level after BPR

As delineated in Figure 3, after the usage of ERP framework 5 are profoundly fulfilled and 39 are fulfilled by execution of new framework and 9 are exceedingly fulfilled and 31 are fulfilled by rebuilding of the framework.
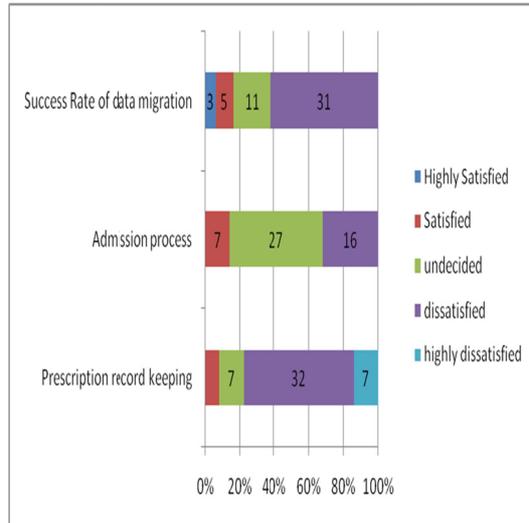
Figure 4. Information about record before BPR   Figure 5. Information about record after BPR
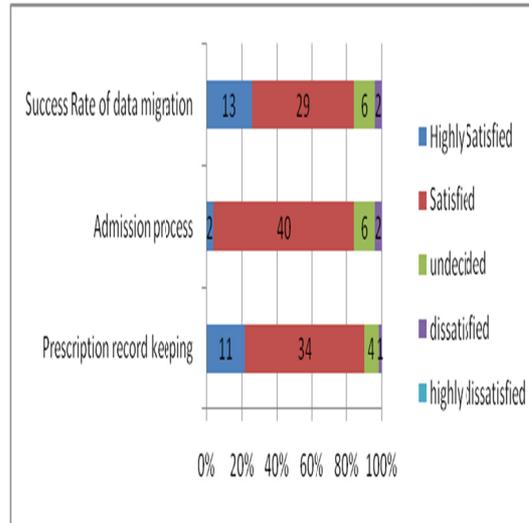
The above two Figures 4 and 5 are demonstrating information about remedy record of patient, procedure of confirmation of patient in the clinic, effectively and quick change of information from one division to other office before the usage of the framework. In Figure 4, 31 patients are disappointed with information relocation framework implies that information or data stream of patients from office to division is moderate and patients need to hold up a considerable measure though after the execution of programming framework 13 were profoundly fulfilled and 29 were fulfilled and just 1 is disappointed. Prior to the usage 27 were not fulfilled neither disappointed with the confirmation technique, 16 were disappointed nor 7 were fulfilled though after the execution 40 were fulfilled, 2 disappointed and 2 exceptionally fulfilled by the affirmation method. So also 32 were disappointed, 7 exceptionally disappointed and nobody was fulfilled by solution report keeping framework yet after the usage 34 were fulfilled and were profoundly fulfilled by the arrangement of remedy report keeping.
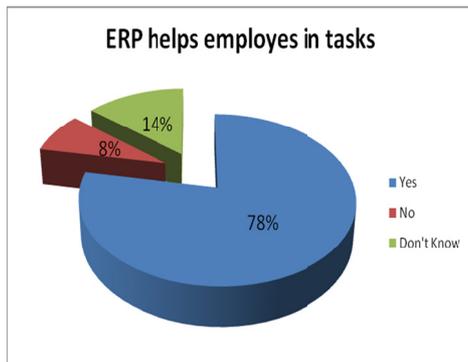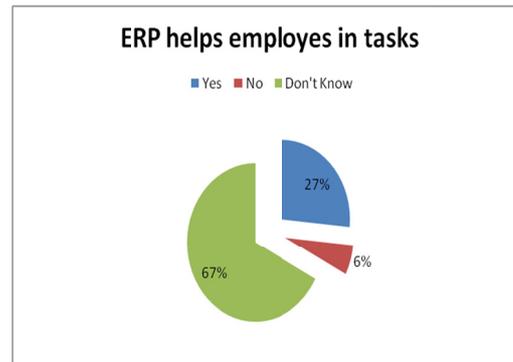

Figure 6.   Figure 7.

Figure 6 portrays that 67% patients don't concur that product framework can help representatives to make proficient and quicker in their execution while after the usage Figure 7 shows 78% patients concur with this announcement that with the presentation of new framework workers are more effective.
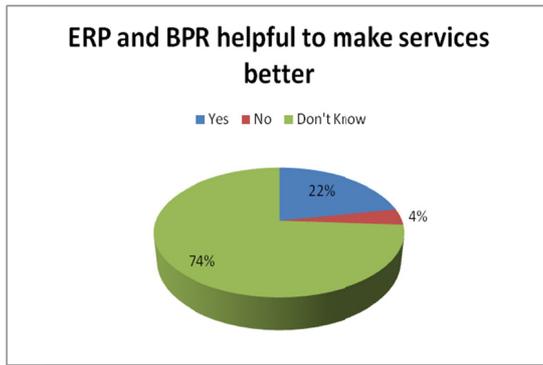
Figure 8.   Figure 9.

Figure 8 demonstrates that regardless of whether patients were fulfilled after the usage of ERP framework by showing signs of improvement administrations.

The pie diagram demonstrates that 74% patients were not fulfilled by improving administrations before the usage of new framework yet Figure 9 shows after the execution of new framework 82% patients concurred that they are getting the preferred administration over past framework.
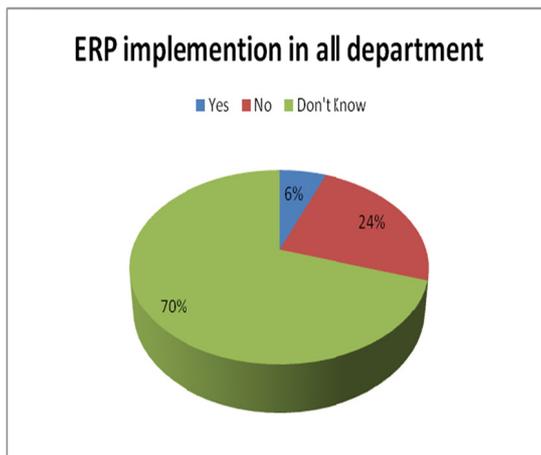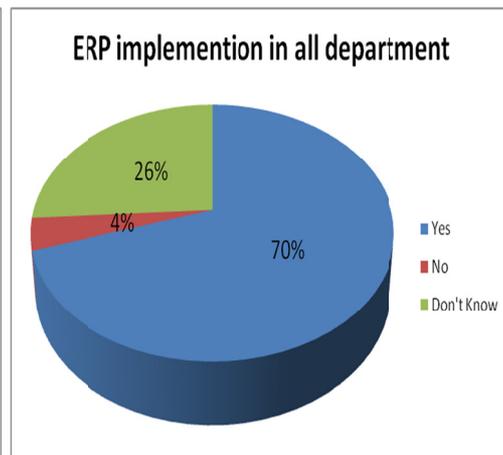

Figure 10.   Figure 11.

Figure 10 delineates that before the execution of ERP framework patients don't think about the usage of mechanized framework in all offices.

Figure 11 represents that after the execution of ERP framework patients concurred that 70% new electronic framework is being actualized.

3.3 Survey Questionnaire of Employees

The 28 representatives are working comprise of specialists, executives, bookkeeper, and assistant. In this exploration survey were dispersed to 25 workers whereas 18 representatives were partaken to answer the poll.
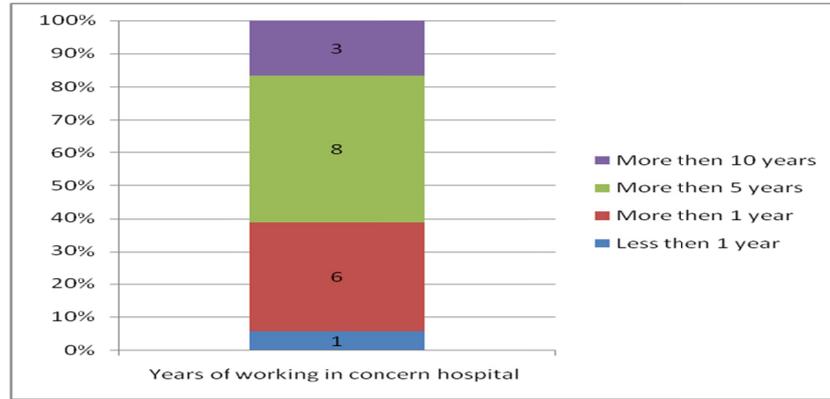
Figure 12.

The Figure 12 portrays that 3 representatives are working since 10 years, 8 are working from five years, 6 are working from one years and just 1 has as of late joined.
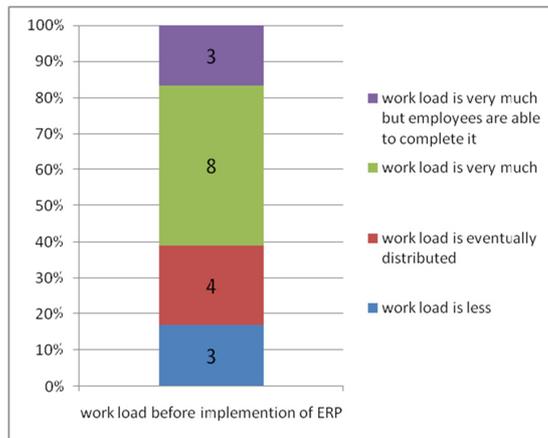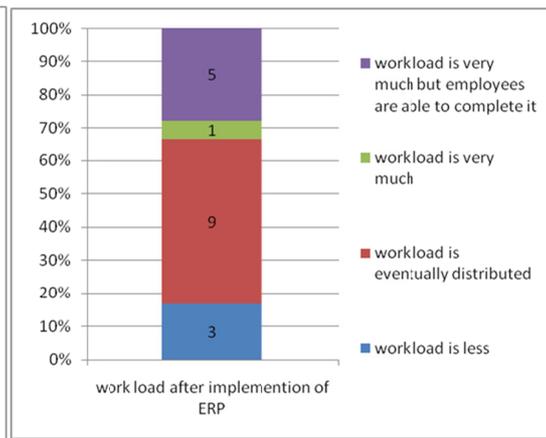

Figure 13.   Figure 14.

The Figure 13 portrays the respondents before the execution of ERP framework, while Figure 14 demonstrates the respondents after the usage of ERP framework. These figures speak to the contrast between the work heap of representatives prior and then afterward the usage of ERP framework. Prior to the execution 8 representatives' comments that work burden is all that much and 3 said that work burden is less out of 18 members. After the usage 9 said that work is in the long run circulated and just 1 said that work is all that much.
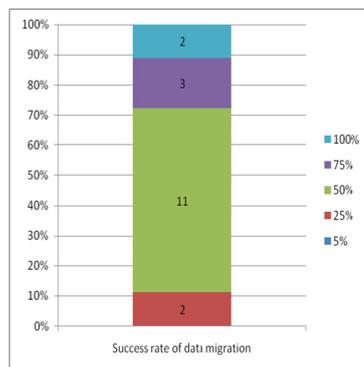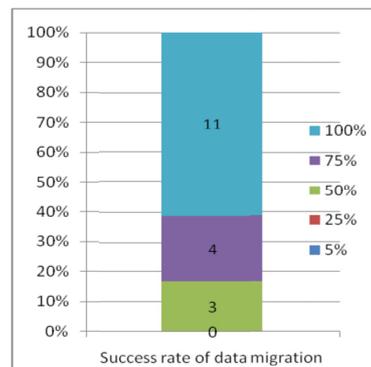

Figure 15.   Figure 16.

Figure 15 demonstrates the respondents before the execution of ERP framework and Figure 16 demonstrates the respondents after the usage of ERP framework. The members express that before the usage of ERP framework, 11 members rate the half, 2 with 100%, 3 with 75% and 2 with 25% with information relocation framework implies that information or data stream of patients from office to office is moderate and patients need to hold up a great deal though after the execution of ERP framework 11 rate as 100% as exchange of information turns out to be quick and impeccable whereas just 3 rate as half.
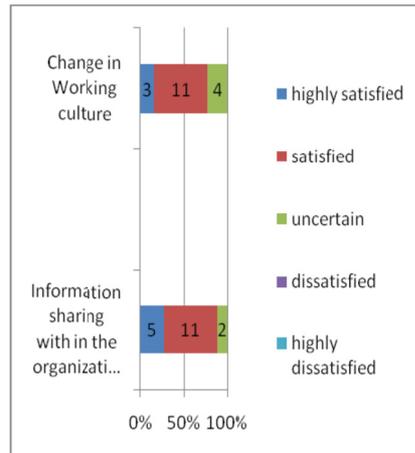

Figure 17. Before the BPR   Figure 18. After the BPR
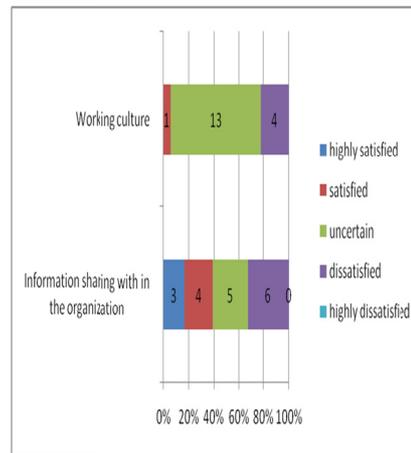
Figure 17 demonstrates the respondents before the usage of ERP framework and Figure 18 demonstrates the respondents after the execution of ERP framework. Figure 17 demonstrates that stand out respondent is fulfilled, 4 are disappointed and other 13 didn't remark with the way of life of doctor's facility and nobody is exceptionally fulfilled and after the usage 3 are very fulfilled and 11 are fulfilled and nobody is disappointed with working society. Here before the execution 3 are exceptionally fulfilled and 4 are fulfilled by data sharing and after the usage 5 are exceedingly fulfilled and 12 are fulfilled by the data sharing. Here after the execution 3 are exceptionally fulfilled and 11 are fulfilled by data partaking in the healing facility.
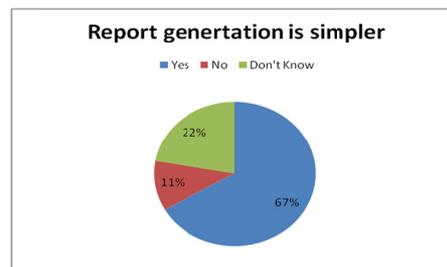

Figure 19.

Figure 19 depicts the information after the usage of ERP framework which demonstrates that after execution of ERP framework report era is much less complex as 67% members concurred with this announcement.
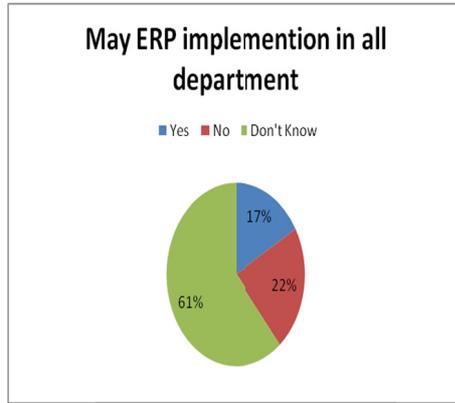
Figure 20.
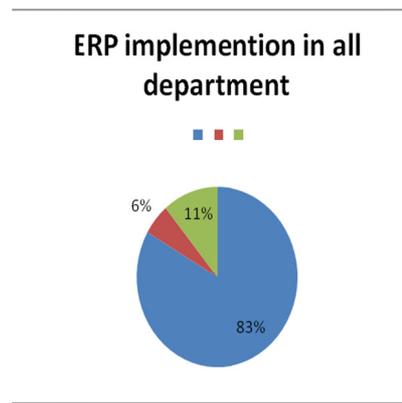
Figure 21.

Figure 20 demonstrates the respondents before the execution of ERP framework and figure 21 demonstrates the respondents after the usage of ERP framework.

These outlines demonstrates that before the usage 61% members don't think about the execution of ERP framework. After the usage 83% members acknowledge that ERP has been in all divisions.
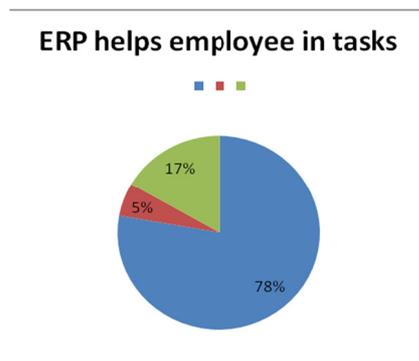

Figure 22.
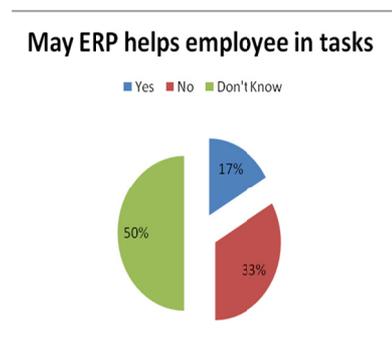
Figure 23.

Figure 22 demonstrates the respondents before the usage of ERP framework and Figure 23 demonstrates the respondents after the execution of ERP framework.
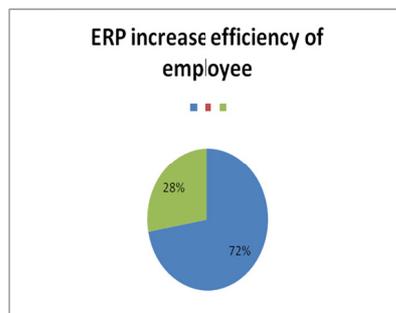

Figure 24.
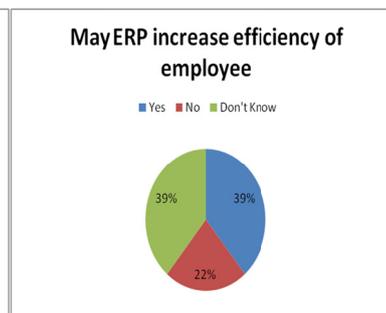
Figure 25.

Figure 24 demonstrates the respondents before the usage of ERP framework and figure 25 demonstrates the respondents after the execution of ERP framework. In these charts it can be seen that, 24 members demonstrates that 39% workers have no clue with the change in their effectiveness where as 39% representatives concurred

with this announcement.

4. Conclusions

Business Process Re-Engineering (BPR) through the usage of Enterprise Resource Planning (ERP) framework is useful to make player administrations in the healing center. It might likewise encourage the patients, spare their holding up time and give them hitter environment. In this exploration two gatherings were chosen i.e. Representatives and Patients, survey were appropriated to both the gatherings previously, then after the fact the execution of ERP framework. There are around 28 representatives working in the clinic. Out of which 18 representatives took an interest. Around 120 patients going by day by day to the healing facility and from them 93 patients were given survey. From those 93 patients the respondents were just 50. Purpose behind such less reaction was that patients couldn't watch the eventual outcomes of the usage of EPR framework and rest didn't took part. It is found that before the usage of ERP framework patients were not fulfilled by the arrangement framework, holding up framework and working society of the healing facility. The working society was moderate; patients need to hold up a great deal even they need to hold up long time at the counter in line for accepting the card number for checkup. As after the usage of ERP framework working society has turned out to be better and for the most part patients get to be fulfilled. Because of this holding up framework and confirmation procedure is likewise enhanced and patients are fulfilled by this framework, patients don't need to hold up long time in line at counter in light of the fact that with the assistance of programming framework patients get their data by time. Prior to the usage of ERP framework as per patients information was exchanged gradually from office to division and absence of precision arrived and after the execution information exchange rate turn out to be quicker. There was no record for remedies of patients so that, representatives experiences issues to discover patients records.

The representatives of the doctor's facility, for the most confessed that the work burden is reduced much before the usage and after the execution. Representatives rate that stream of information from division to office is about at half at time implies it requires investment to exchange of information, for example, patients' therapeutic reports and important data. Prior to the execution for the most part workers were not fulfilled and nor disappointed with the way of life of doctor's facility whereas after the usage representatives get to be fulfilled by the authoritative society and few were not fulfilled and nor disappointed. Workers additionally express that data sharing inside of the association has been expanded after the execution of ERP framework.

Acknowledgements

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