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**OPEN INNOVATION IN HEALTHCARE SMES: A PROPOSED**  
**MODEL FOR INNOVATION PERFORMANCE**

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***Abstract***

The innovation concept has acknowledged a lot of attention in recent years. Few studies have examined that innovation in India is becoming a common practice within the hospitals to improve performance. Although, innovation practices is significant among large private hospitals, but the concept of innovation practices is still lacking among small and medium private hospitals. Therefore, research main objective is at examining the factors that affect the innovation performance of small and medium private hospitals namely open innovation practices. Subsequently, it is also pertinent to scrutinize the role of service innovation orientation, organisational learning, and innovation culture on open innovation that lead to innovation performance. The study contributes to the literature by presenting interview findings of the study. The interview findings will offer an introductory insight on the relationship between open innovation to innovation performance of small and medium private hospitals. In practical point of view, the findings of the study provide useful information to service providers and policy makers to improve the overall performance of small and medium private hospitals.

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**Keywords:** Open innovation, innovation performance, small and medium private hospitals, India.



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## 1. Introduction

In India, the concept of innovation has become essential in the healthcare sector. The term innovation is used widely among organisations in India which include both large and small organisations (Pachouri & Sharma, 2016). ‘Innovation’ is a buzz word in 21st-century healthcare. Innovation is specified as the introduction and application of ideas, products, services, processes or technologies, which are either new or are improvements of the current system, that benefit individual, a group or the society as a whole (Deloitte, 2012).

In healthcare sector, hospital segment is the fastest growing segment and provides highest revenue (71%) to the whole healthcare sector (HDFC, 2015). In India, hospitals are divided into public and private hospitals. Public hospitals include general hospitals, healthcare centres, and district hospitals, whereas, private hospitals include large, medium and small private hospitals (Bhate-Deosthali et al., 2011). In India, only 20% of the population prefer public hospitals, while the remaining 80% of healthcare services are provided by private hospitals (Bumb, 2014; Yadavar, 2018). From that private hospitals 70% of healthcare service are administer by the medium and small private hospitals. Small hospitals are those which are managed by a single doctor with 1-25 beds. The hospitals with 25-100 beds managed by a single or multiple doctor are termed medium private hospitals (Kate, 2013).

### 1.1. Literature Review

- **Innovation Performance**

“Innovation is the enactment of a new or considerably improved product, services, or process, a new marketing method, or new administrative method in business practices, and it can organise something new in the organization which has not been available before” (Verbano & Crema, 2016, p. 526). Innovation can also be characterized as: “the creation and adoption of new ideas or something new” (Gopalakrishnan & Damanpour, 1997, p. 16). The statistics of innovation performance in small firms include the use technology for development, emphasising knowledge building, focus on the core competence and develop a culture in the organization (Johannessen et al., 1997). According to Damanpour and Evan (1984) innovation means the acceptance of some new ideas and behaviour which is new for an organization, and it includes creation, development and implementation.

The organization which focuses on innovation and continuously aim to achieve the goals must produce quality ideas and be capable of implementing them. Though the quality and quantity of ideas and capability are two separate parameters, when combined, they form the definition of innovative performance (Halim et al., 2014). Meyer and Goes (1988) argue that as innovation means new things, organizations should consider the departure from old things such as technology, diagnosis, prevention and treatment. Hospitals adopt new technologies and change the way of working to provide improved services to patients which help them enhance their performance.

- **Open Innovation**

Chesbrough (2017) open innovation shares two types of knowledge i.e., outside-in and inside-out. For example, when a company opens their IP to gain external knowledge inputs is termed as outside-in OI. When a company allow to use its internal knowledge, which is unused to external partners if it is relevant

this is termed as inside-out OI. In conclusion, OI is that where organizations can share and give some inputs related to technology and knowledge internally as well as externally. Organizations developing OI should acquire more external knowledge in the IP. Acquiring the external knowledge from different sources help organizations in finding new opportunities and resources to build up the ability of organization. Therefore, organizations can acquire creative and innovative ideas and encourage managers to develop their potential (Weng & Huang, 2017). The acquired external knowledge increases the production of innovative technology and improves organizational innovativeness and performance (Wang et al., 2012).

Previous studies indicate that the concept of open innovation plays an essential part in improvement and upgrading of innovation performance (McDermott & Prajogo, 2012; Verbano & Crema, 2016). Sectors like manufacturing and service has shown that innovation is requisite for enhanced performance (McDermott & Prajogo, 2012). Innovation has been used in the manufacturing sector from last few decades and now is being proven as useful for service sector also. Innovation in the service sector defines as novel idea, improved idea of marketing, novel technology, novel service, and overall improved methods (Verbano & Crema, 2016). Innovation in service sector can also define as conceptualizing and implementing new concepts in the organization. Innovation is a vicious cycle of searching, investigating, and understanding and the end product of this cycle is novel techniques and technologies, new services and new markets (Marques, 2014).

- **Service Innovation Orientation**

In innovation literature Tushman and O'Reilly (1997) said that it is not necessary that innovation in firms will lead to long term success. They said that success of firm is based on the orientation of innovation. As innovation orientation has the capability of continuing innovation with multiple effect on the OP. According to Chuang and Lin (2017), service innovation orientation develops new solutions to the problems and provides improved existing services which meet customers current and future requirements in upgrading their business performance. At present, service innovation orientation in organizations helps in the advancement of new solutions and upgradation in the current services. This improvement or upgradation meets the customer existing and future requirements and firms performance (Durst et al., 2015).

- **Organizational Learning**

“Organisational learning is that process of learning which helps in developing new knowledge and understanding between people in the organizations and they should have potential to influence each other behaviours and promote firm’s capabilities” (Jiménez-Jiménez & Sanz-Valle, 2011, p. 414). The role of organizational learning is well recognized in academic research as well as in the industry (Chiva & Alegre, 2005). The process of organizational learning helps organizations to acquire new knowledge and infuse it into the organization so that the organization may become more innovative. Thorough review of literature reveals that the process of “organizational learning” has four steps i.e., “(i) acquisition, (ii) dissemination, (iii) interpretation and (iv) development (Tippins & Sohi, 2003)”. Innovation combined with organizational learning also enhances competitive advantage of the organization (Jiménez-Jiménez & Sanz-Valle, 2011).

The process of learning helps organizations in creating, transferring and integrating new information and practices. In recent times, organizational learning has become basic instrument for enhanced performance of the organizations. The research study has used the dimensions developed by Jiménez-

Jiménez and Sanz-Valle (2011) which are “knowledge acquisition” (KA), “knowledge distribution”(KD), “knowledge interpretation”(KI), and “organizational memory”(OM). Recent studies have investigated the role of OLP in context of innovation and enhanced performance of the organization (Darroch & McNaughton, 2003; Jiménez-Jiménez & Sanz-Valle, 2011; Tippins & Sohi, 2003).

**Knowledge Acquisition:** KA is the first step of organizational learning. Organizations in this first step acquire novel information and knowledge. According to the researchers, organization should bring in valuable knowledge to improve performance (Kohli & Jaworski, 1990). There are different types of source which can be used by the organizations to bring in information such as customers, system of the organization itself, and internal and external sources. Brought in information will act as source of knowledge development which will ultimately improve the performance of the organization.

**Knowledge Distribution:** The second step of organization learning process is KD. During this phase distribution of knowledge developed gets place among members of the organization. Knowledge which was developed among the employees through external and internal sources will be shared among other employees in the organization so that others can also get benefitted with novel information (Slater & Narver, 1995). Information distribution provides competitive advantage to the organization as employees response and share their perception related to “innovation” and “performance”.

**Knowledge Interpretation:** Third step of organizational learning is KI. During this step, information brought in and distributed among employees is interpreted as a common knowledge for organizational members. Information reconstruction through new meanings takes place in this step which gives new knowledge to the employees (Jiménez-Jiménez & Sanz-Valle, 2011). Information should be thoroughly distributed to the employees and then it is employees’ responsibility to maintain harmony in transformation of information. One of the essential parts of bringing in and analysing the upcoming information is interpretation (Slater & Narver, 1995). The construed knowledge will help organization to implement innovation.

**Organisational Memory (OM):** The last step of organizational learning process is OM. In this step, left over information or interpreted information which is not used is keep safe in OM so that can be used for future needs. Organization memory works as ware house of interpreted information of the organization (Sinkula, 1994). Information stored in organizational memory can be used to enhance the performance of the organization in future.

- **Innovation Culture**

In the management of innovation, important factor is considered as culture. It acts as an important factor because it influence creativeness and innovativeness in organizations, and it can effect in several ways such as socialization processes, policies, and day-to-day artifacts, practices and procedures, value proposition communicated through structures (Dobni, 2008). Organization members sharing simple values, beliefs and assumptions to simplify the innovation process is termed as innovation culture (Martín-de Castro et al., 2013). It strengthens the innovative capacity of organization employees to support the development and growth of organization. It can also be identified as organizational culture (Menzel et al., 2007).

Organizations creates innovation culture needs new process, new skills of leadership, and new people skills. Every organization whether it is small or large, follows innovation culture to enhance their

performance. Studies has identified that small and medium sized organizations have smooth culture of innovation such as they don't struggle for change, low dissatisfaction for risk, and tolerate every situation (Acs et al., 1997; Saleh & Wang, 1993). Every organization has their own innovation culture, as hospitals has their own related to managerial and structures. In manufacturing and service sectors, culture is considered as an important tool to improve performance (Prajogo & McDermott, 2011).

## **1.2. Conceptualisation of Research Framework**

On the basis of the above, this study provides a framework to explain the relationship between the orientation of business development , organizational learning, management culture towards creativity and management performance. The structure for this analysis is given in Figure 01 below.

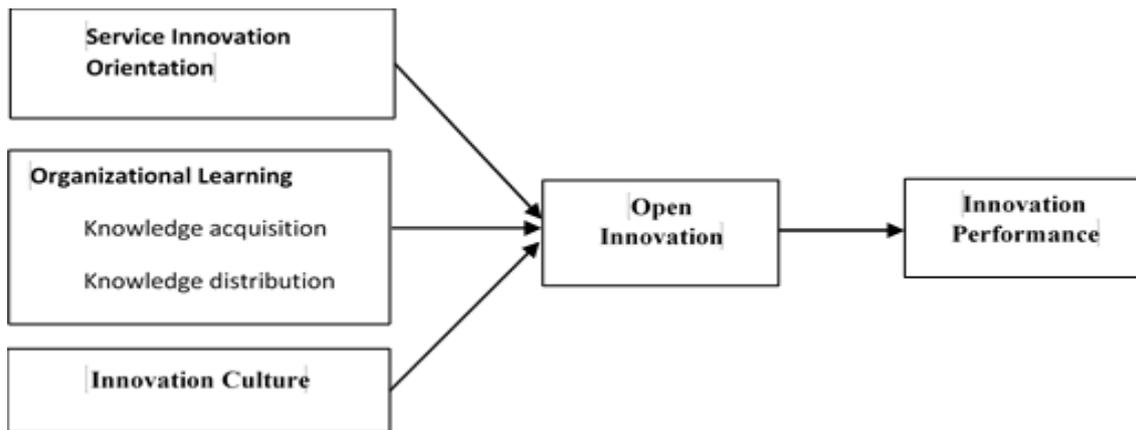
Previous studies have shown that innovation orientation has a significant positive relationship with innovation (Calantone et al., 2002; Grawe et al., 2009; O'Cass & Sok, 2013). Calantone et al. (2002) define that innovation signifies generating, accepting and implementing of new ideas, processes, products or services, study findings reveal that there is a positive relationship between orientation and innovation. O'Cass and Sok (2013) identified that the connection between SIO and innovation is essential as SIO improves the quality and flexibility of services and it also meets the requirements of the customer. They proposed that service innovation orientation in business to business firms have a significant relationship with innovation and performance. Studies found that many hospitals are performing innovation to improve or enhance their performances and has identified a positive relationship between innovation and performance (Lonial et al., 2008; Tsai, 2013).

The findings of the previous studies suggest the collaboration among organizations and their customers as well as competitors which help organization to acquire information from external sources and use this information in internal process of innovation and upgradation of novelty (Hurley & Hult, 1998; Narula, 2004; Pisano & Verganti, 2008). Studies examined the connection between organizational learning and creativity and established constructive relations between them (Cohen & Levinthal, 1990; Hall & Andriani, 2003; Nonaka, 2002; Sørensen & Stuart, 2000). The organizational learning process is descriptive, responsive and work-based for small and medium-sized businesses and enhances operational productivity in less time (Chaston et al., 2001). Business may benefit from experience inside or outside the enterprise to help promote innovation and improve analytical thinking skills (Hurley & Hult, 1998). Corporate learning should also be assumed to have a positive effect on the development of entrepreneurship in small and medium-sized businesses.

Previous studies show that innovation culture is important for hospitals in improving or improving performance (Stock et al., 2007). Innovation culture is measured as a moderator on innovation (Martín-de Castro et al., 2013) and shows that innovation culture has a directly positive impact on innovation. Researchers also argues that culture one of the most common mechanisms to innovation (O'Regan et al., 2006). From the above arguments it can be wind up that innovation culture has substantial connection with innovation and orgaization performance and it is useful for the reduction of errors in hospitals (Stock et al., 2007). Though, the literature related to open innovation is scarce, but it shows that culture is important factor for organizations.

Studies found that open innovation is an appropriate tool for large firms in improving performance (Bianchi et al., 2010; Weng & Huang, 2017; Spithoven et al., 2013). It has been successfully used in the

strategies of large firms, but less attracted for small firms due to characteristics such culture, organization and strategy. Though, small firms have different attribute but it welcomes as the source of future growth and it can benefit from open innovation due to changing environment, increased willingness to take risks, and less bureaucracy (Colombo et al., 2014). Researcher also identified that OI is useful for both firms whether it is large, medium or small and it overcome challenges and improve performance (Gassmann et al., 2010). Therefore, it can be said that open innovation is a very useful concept which increases the performance of organizations.



**Figure 01.** Conceptual Framework

## 2. Problem Statement

Many large private hospitals have started to launch innovative activities to improve their performances, but the hospitals which provide healthcare services to 80% of population i.e., medium and small private hospitals is still lacking behind (Bumb, 2014). Though, hospitals are adopting innovation but there are some issues regarding their performance such as unqualified staff, inadequate learning, insufficient technological knowledge, poor relationship between staff, improper record keeping, inadequacy of learning, less focus on collaboration with internal and external partners, and unskilled manpower (Pachouri & Sharma, 2016; Robinson, 2017; Sharma, 2010). Therefore, to overcome with such challenges Deloitte (2012) stated that innovation is the way for hospitals to improve their performances.

Over the last few decades manufacturing sector is successfully using innovation to improve performance. However, in recent years innovation is also being used in service sector. Innovation has been used in the service sector in the form of new marketing strategy, new technology, new service, new idea and methods (Verbano & Crema, 2016). Innovation is a continuous process of search, explore and learn. Therefore, medium and small private hospitals need to act more innovatively by adopting open innovation practices and increase their use of information from internal and external sources which help to exploit their resources and improve their innovation performance (Ahmed et al., 2018; Gadre & Shukla, 2016).

### 3. Research Questions

Innovation practices can provide assistance to medium and small private hospitals to overcome the challenges they face in providing quality services. Therefore, to understand how innovation practices are taken place in these hospitals, the study seeks answers to the following research questions:

- What kind of innovation your hospital practice?
- What problems your hospital face to practice innovation?
- What kind of resource constraints your hospital face?

### 4. Purpose of the Study

The main objective of this research was to find a fresh and accurate picture of the medium and small private hospitals with regards to the open innovation practices. Therefore, several questions were asked to the doctors of medium and small private hospitals related to their view of open innovation practices, problems and resource constraints they faced during innovation.

### 5. Research Methods

For the purpose of this study a sequence of interviews with respect to open innovation and IP had been conducted among medium and small private hospitals. Altogether, 10 doctors (owners) had volunteered to participate and be interviewed. "Semi-structured interviews were conducted on an individual, face-to face basis. During the interviews, respondents were requested to comment on the OI practices and problems they faced at the time of innovation." The intention of this study is to understand the concept of open innovation towards the innovation performance of medium and small private hospitals. The approach used is an interview with doctors about their views on the progress of modern science and sustainability. If they agree that OI will have an impact on the success of their hospital in innovation. Preliminary interview results should provide an initial perspective on the relationship between OI and medium to small private hospital success in innovation.

### 6. Findings

The interview findings reveal the kind of innovation practices that medium and small private hospitals acquire, the problems they are facing, their practices and opinions about innovation, and resource constraints. A series of interview with regards to the OI and IP was conducted among the doctors of medium and small private hospitals. "Semi-structured interviews" were conducted on an individual, face-to face basis. In the interviews, respondents were invited to remark on the innovation practices and problems they face in adopting that innovation. The attributes of the respondents are shown in Table 01.

**Table 01.** Attribute of the Respondents

Profile	Frequency	Percentage
<b>Year of establishment</b>		
0-10 years	2	20
11-20 years	5	50

21-30 years	1	10
31 and above	2	20
<b>No of Years in this Position</b>		
0-5 years	3	30
6-10 years	3	30
11-15 years	1	10
16 and above	3	30
<b>Gender</b>		
Male	3	30
Female	7	70
<b>Ownership</b>		
Individually Owned	5	50
Partnership	5	50
<b>Age</b>		
25-35	3	30
36-45	3	30
46-55	2	20
56 and above	2	20

Table 01 exhibits that, 20% of medium and small private hospitals were established from 10 years, 50% were established from 11-20 years, 10% were established from 21-30 years and 20% were established for more than 31 years. The results also showed that 30% of doctors were treating patients from 5 years, 30% of them were in their position for 6-10 years, about 10% of doctors were in their position for 11-15 years and 30% of doctors were in their position for more than 16 years. It also shows that 70% of doctors are female and 30% of doctors are male in the study hospitals. It was also found that 50% of the study hospitals are individually owned and 50% of the study hospitals are run as a partnership. Finally, for the age of doctors it shows that 30% of doctors were 25-35 age, 30% were 36-45 age, 20% were 46-55, and 20% were above the age of 56.

The findings reveal the problems that the study hospitals are facing regarding their innovation practices and opinion about the open innovation towards the IP. The results show that the physicians of the study hospitals are familiar with the term open innovation. Excerpts that are related to the main interests of the study are presented below and are divided into three themes: innovation, problem and resource constraints.

### 6.1. Types of Innovation

For the first research question the responses were:

One of the doctor responses: *As our hospital is small so we focus more on incremental innovation, which helps us to improve our performances. We do innovation in terms of technology.*

Another respondent respond: *Innovation to our hospital means creating simple solutions which can increase performance. Our hospital adopt innovation in terms of latest medical equipment's and new treatment modalities. Sometimes, we take advice from experts in terms of adopting innovation.*

Another doctor said that: *Innovation is something which is new to our hospital. We do innovation internally as well as externally. Internally we used to provide learning session to our staff so that they are*

updated about the outside things. Externally we take feedback from our patients regarding service offered to them.

As also stated by one doctor of small and medium private hospital: *Our hospital adopt innovation to enhance the performance. Our hospital follow the hospital management innovation process which helps internally as well as externally to improve the medical service quality by changing the management functions and administrative tasks.*

## **6.2. Problems Faced in Innovation**

The responses for the second research question related to problems were:

One of the doctors respond that: *The problem faced at the time of innovation is poor communication between staff and providers, lack of technological knowledge, and shortage of nurses which affect our performances.*

Another respondent said: *The problem faced by our hospital is with the new staff, as they take time to accommodate to new innovations, due to which the practice of new things relatively decreases and cannot achieve our desired output.*

Additionally, one doctor respond: *The problem is with quality staff which our hospital is working on and trying to get more exposure related to innovation practices.*

## **6.3. Resource Constraints**

The responses for the third research question:

One of the doctors of small hospital responses: *Innovation is easy but the main problem that our hospital face is with marketing and funding. Everyone can be innovative if they have money and capability.*

Other doctors responses that:

- *The resource constraint is the salary of the staff which is high for skilled staff.*
- *The main resource constraints in our hospital is skilled and practised labour, staff salaries and high cost for quality due to which innovation performance diminishes.*
- *The resource constraint is acquisition of latest technology.*

Based on the above interview with doctors, findings reveal that medium and small private hospitals are engaged with open innovation practice regarding acquiring technology and knowledge, sharing knowledge, learning programmes, and updated about new equipment and technology in the market. As, medium and small private hospitals are focusing on innovation practices, it is suitable to derive a conceptual framework to investigate further the relationship between open innovation and innovation performance.

## **7. Conclusion**

This study aimed to explore the role of OI on IP. More specifically, this study has attempted to bridge the research gap by investigating the effect of OI and IP of medium and small private hospitals in India. The interview findings suggested that medium and small private hospitals are performing innovation to enhance their innovation performance, but the physicians of the medium and small private hospitals recognize that innovating once will not improve their performances, as innovation is a continuous process which should be updated through new innovation practices. Though, doctors could not predict what is going

to be next, but they should try to adopt innovation practices in terms of technology, knowledge, culture, and orientation in order to improve their IP. Therefore, the concept of open innovation is important for them to enhance IP of medium and small private hospitals.

In conclusion, this study will help medium and small private hospitals to understand the importance of the variables service IO, OL, and IC towards the OI and which further leads to IP. The study also tries to help doctors to know about the importance of open innovation toward IP. As previous studies in manufacturing and service sector have shown positive relationship between open innovation and innovation performance (Ahmed et al., 2018; Colombo et al., 2014; Hung & Chou, 2013). The study also guides future studies to understand more on open innovation in medium and small private hospitals. It facilitates OI to enhance the IP of medium and small private hospitals.

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