

## Sharing of Knowledge among Faculty in a Mega Open University

Sujata Santosh & Santosh Panda

*Indira Gandhi National Open University (India)*

[sujata.santosh@ignou.ac.in](mailto:sujata.santosh@ignou.ac.in) & [spanda@ignou.ac.in](mailto:spanda@ignou.ac.in)

### Abstract

Developments in ICTs and knowledge societies have revolutionized the traditional paradigms of education. There is a lot of emphasis on a culture of sharing and collaboration in the education scenario of today though educators have certain inhibitions about sharing of knowledge, ideas and resources. The present study was undertaken to explore the sharing behaviour of the faculty of the National Open University in India. Data was collected through a structured questionnaire on knowledge sharing behaviour and barriers to sharing from 62 faculty members belonging to various disciplines. The findings suggested that sharing was less preferred voluntarily and in networks; publishing was most preferred knowledge sharing mechanism; sharing of learning materials was more encouraged in the institution; and borrowing from Internet was more preferred. The important perceived barriers included lack of recognition and absence of organizational knowledge sharing culture. The findings have been discussed in relation to related research and the existing institutional context.

**Keywords:** Knowledge Sharing; Sharing Behaviour; Barriers to Sharing; Faculty; Open University; Distance Education

### Introduction

In the ICT-integrated knowledge society of today (van Weert, 2005), knowledge is considered as an invaluable strategic asset (Narasimha, 2000) and a critical resource in the determination of competitive advantage (Grant, 1996; Dunford, Steane & Guthrie, 2001). Organisations are paying considerable attention towards proper “coordination and exploitation of organizational knowledge resources, in order to create benefit and competitive advantage” (Drucker, 1999, p. 157). There is an increased stress on sharing and optimal utilization of knowledge for improved productivity in organizations. This is also true for academic institutions, which are service-oriented and knowledge intensive organizations, of late facing ever-growing faculty demands for sharing quality resources and expertise (Kim & Ju, 2008). In today’s knowledge economy, knowledge sharing is equally crucial in the context of Open and Distance Learning (ODL) institutions. Effective knowledge management involves sharing of both tacit and explicit knowledge. Knowledge sharing and knowledge management in the context of academic institutions is often found to be inefficient and not systematic (Kim & Ju, 2008). Therefore, it was considered important to study, the status of and barriers to knowledge sharing in a mega open university. Further, as a sequel to this, to what extent therefore open universities are prepared to take along the current reforms in open sharing and open educational resources.

### Literature Review

#### *Knowledge Sharing: An Overview*

Knowledge is defined as “a fluid mix of framed experience, values, contextual information, and expert insights” (Davenport & Prusak, 1998, p. 5). It refers to sharing of mutual knowledge, beliefs and assumptions (Clark & Brennan, 1991). Van den Hooff and De Ridder (2004, p. 119) note that,

“knowledge sharing is the process where individuals mutually exchange their (tacit and explicit) knowledge and jointly create new knowledge”. Knowledge in an organization exists at multiple levels—individual, group and organizational levels (De Long & Fahey, 2000). Parry (2010) notes that knowledge creation takes place primarily at the individual level, knowledge sharing takes place at the group level, and utilization of knowledge occurs at the organizational level. Nonaka and Takeuchi (1995) pointed out that organizations cannot create knowledge without individuals and, unless individual knowledge is shared by other individuals and groups, such knowledge is likely to have limited impact on organizational effectiveness.

It is being realized that knowledge sharing is critical to knowledge creation, organizational learning, and performance achievement (Bartol & Srivastava, 2002). Eriksson and Dickson (2000) mention four basic elements in knowledge sharing—(i) shared knowledge creation process: the process of creating and distributing knowledge; (ii) IT (information technology) infrastructure: the system and tools that support information dissemination; (iii) catalysts: media that facilitate and promote knowledge sharing; and (iv) values, standard and procedure: social and cultural values that influence personal mind set.

According to Ipe (2003), factors that influence knowledge sharing include:

- the nature of knowledge,
- motivation to share,
- opportunities to share, and
- the culture of work environment.

Numerous researchers (Jolaei, Nor, Khani & Yusoff, 2014; Kuo & Young, 2008; Cabrera, Collins & Salgado, 2006; Bock, Zmud, Kim & Lee, 2005; Lin & Lee, 2004; Bock & Kim, 2002) have investigated knowledge sharing behaviour in terms of factors such as attitude, intention, subjective norms, and so on. Some other factors, found to be influencing knowledge sharing, are organizational context, management support, hoarding, reciprocity, trust, rewards mechanisms, and relationship with recipient. Lin (2007) mentions two factors as proximal determinants of knowledge sharing—enjoyment in helping others and knowledge self-efficacy.

### ***Barriers to Sharing of Knowledge and Learning Resources***

Organisations and individuals do face barriers to knowledge sharing. Such barriers have been categorized as individual, organisational and technological (Riege, 2005; Taylor & Wright, 2004; Connelly & Kelloway, 2003). At the individual level, knowledge sharing is affected by barriers such as individual's attitude and willingness, lack of communication skills, lack of time and trust. At the organisational level, the barriers include lack of infrastructure and resources, culture and environment. At the technological level, barriers are correlated to factors such as unwillingness to use applications, unrealistic expectations of IS/IT systems, and difficulties in building, integrating and modifying technology-based systems.

Research studies have indicated that individuals have some reluctance to sharing of knowledge due to personal psychological reason—an individual's willingness to engage in knowledge sharing is a central barrier for sustainable knowledge sharing activities (Christensen, 2005). Driven mostly by self-preservation instincts, people are unwilling to share knowledge because they perceive knowledge as a valuable commodity that cannot be distributed freely (Ramayah, Yeap & Ignatius, 2013). It is also found that employees retain knowledge ownership to gain recognition among their colleagues (Murray, 2002). Further, self-seeking behaviour and opportunism pose a big challenge for knowledge sharing and lead to knowledge hoarding (Nickerson & Zenger, 2004; Cabrera & Cabrera, 2002).

Lack of knowledge sharing environment is found to be another significant barrier to sharing of knowledge in an organization (Hendriks, 1999; Davenport & Prusak, 1998). Ipe (2003) mentions that culture has a significant influence on knowledge sharing behaviour in organizations. Researchers (Hislop, 2003; McDermott & O'Dell, 2001; Chow, Deng & Ho, 2000; Gurteen, 1999) have discussed the importance of organisational culture in promoting and facilitating knowledge sharing. According to De Long and Fahey (2000), organizational culture influences knowledge sharing in four ways—it shapes assumptions about knowledge; it defines the relationships between knowledge at individual and organizational levels; it creates the context for social interaction; and it shapes creation and adoption of new knowledge. As mentioned by Riege (2005), absence of formal and informal mechanisms that provide continuous support to and improvement of diverse sharing activities also affects sharing of knowledge in an organization.

Knowledge sharing is facilitated by rewards and incentives (Cabrera & Cabrera, 2002; Lindenberg, 2001). Organizational culture must support a system that rewards the sharing and exchange of knowledge. As mentioned by Liebowitz and Chen (2003), incentives can be in the form of recognition, duty or need, a good frame of reference, a sense of give and take (*quid pro quo*), feedback mechanisms for letting knowledge sharers know their knowledge is being put to use, and the pleasure of helping someone attain their goals. Researchers indicate lack of incentives and rewards as a barrier to the sharing of knowledge (Riege, 2005; Al-Hawamdeh, 2003; Bartol & Srivastava, 2002; Hendricks, 1999). However, on the other hand, some researchers have argued that rewards and incentives rarely have an effect on knowledge sharing (e.g. Ellis, 2001; McDermott, 1999; O'Dell & Grayson, 1998; Finerty, 1997).

The major challenge for the managers is to create an environment in which people both want to share what they know and make use of what others know (Riege, 2005). Support and direction from the senior management is a key factor influencing sharing of knowledge. An emphasis on learning and innovation also impacts the knowledge sharing behaviour of the individuals in an organisation. Interaction and collaboration between individuals in an organisation is important as it determines the transfer of knowledge within the organisation and also conversion of knowledge from individual to organizational level (Gold, Malhotra & Segars, 2001).

Lack of trust is another significant factor directly influencing knowledge sharing behaviour (Holste & Fields, 2010; Renzl, 2008; Hislop, 2003; Andrews & Delahaye, 2000). Lack of trust may be because of the fear that others may misuse knowledge or take unjust credit for it, or it may be related to the accuracy and credibility of knowledge (Riege, 2005). The fear of one's intellectual property being stolen discourages knowledge sharing activities. Research indicates that trust influences an individual's willingness and desire to share information and ideas (Hendricks, 1999; Davenport & Prusak, 1998). Researchers have also identified time constraint, friction (Szulanski, 2000; von Hippel, 1994), and reciprocity (Nahapiet & Ghoshal, 1998) as sharing barriers.

### **Knowledge Sharing in Academic Institutions**

Academic institutions are knowledge-based organizations actively involved in knowledge creation, assimilation and dissemination. These involve activities such as research, teaching, curriculum development, planning and administration (Kidwell, Vander Linde & Johnson, 2000). In a higher education institution, there are two types of knowledge: i) academic knowledge related to the basic purpose of teaching-learning; and ii) organizational knowledge dealing with the functioning of the institution (Yeh, 2005). Knowledge thus exists as tacit knowledge (intuitive and inarticulate) as well as explicit knowledge (codified and documented) (Nonaka & Takeuchi, 1995; Lam, 2000). The idea of a university or an academic institution entails free exchange of knowledge and ideas among the academicians. A study involving public and private universities in Malaysia, by Chong, Yuen and Gan (2014) found the academic staff equally willing to share information and teaching-learning

materials. Similar findings were reported by Fullwood, Rowley and Delbridge (2013) in a study on academics of universities of UK. According to Hug (2013), models and practices of sharing are not new to education. However, research has often indicated lack of knowledge sharing in the academic community (Ridzuan, Hong & Adanan, 2008; Kim & Ju, 2008; Carroll et al., 2003; Koppi et al., 1998). This is because of the fact that the academicians tend to be independent, individualistic, and autonomous while maintaining an objective distance from the work of their peers (Koppi et al., 1998). Their main focus is on individual academic goals and scholarly achievements rather than common organizational goals. It is often found that because of inherent individualism and exclusiveness the educators have certain inhibitions about sharing of knowledge, ideas and resources, and there is less willingness to share. As mentioned by Stauffer (1999), people cannot be forced to share knowledge. Individuals share knowledge and ideas if they trust that their interests will be guarded and it will benefit them, their colleagues and the organization as a whole (Garfield, 2006; Riege, 2005). Research has indicated that relationships are a determining factor in context of sharing among faculty. Academicians prefer to share knowledge and resources with closest friends (Lima, 1998), others with similar experiences and interest (Little, 1982), and with team members and most importantly trustworthy colleagues (Huberman, 1983).

Educational institutions are laying an increased emphasis on a culture of sharing and collaboration. Significant attention is being paid to the sharing of knowledge and resources among the academia. Institutions world-wide are promoting sharing and reuse of learning resources as Open Educational Resources (OERs). Research studies by Ramayah et al. (2013), Abdullah, Selamat, Jaafar, Abdullah and Sura (2008), Kim and Ju (2008), Mohayidin, Azirawani, Kamaruddin and Idawati Margono (2007), Lou, Yang and Shih (2007), and Maponya (2004) have focused on the importance of knowledge sharing and knowledge management in educational institutions.

### ***Knowledge Sharing in ODL Institutions in India***

The Open and Distance Learning (ODL) system has emerged as a major contributor towards meeting the rising demand for higher education. In the realm of distance education, at present India has one National Open University and 14 state Open Universities, and above 200 dual-mode universities catering to the educational needs of above 25% higher education students in the country. ODL programmes are characterized by the use of multiple media in instructional design and delivery. In addition to teaching, research and subject/ discipline related work (Kim & Ju, 2008), the faculty is involved in creation of large volumes of course related content, in different formats (such as text, audio, video, animations and so on). The concept of collaborative teaching and learning with sporadic practice of sharing of resources thus produced has mixed practice in the ODL system in the country. In this context, an exploration of knowledge sharing among the faculty becomes all the more significant. Research has indicated that national culture has an impact on knowledge sharing behaviour (Zhang, 2011). Organizational culture, seen as a manifestation of national and societal culture, affects organizational behaviour of the individuals (Kreitner & Kinicki, 2009). Research indicates that, culturally, Indians are not oriented to work cohesively as teams (Gupta, 1991; Roland, 1988) and prefer one-to-one and personal relationships while sharing knowledge (Mishra & Gupta, 2010). This needs further exploration of various aspects involved in the knowledge sharing behaviour of faculty in higher education institutions in India. Most of the past research is focused on various issues related to knowledge sharing and knowledge management in profit-oriented and business organizations. However, research in the area of knowledge sharing and knowledge management in universities and educational institutions, especially ODL institutions in India, is rather limited. Therefore, to fill this research gap, the present study examines the sharing behaviour of the faculty including the barriers to sharing in the National Open University in India.

## Conceptual Framework for the Present Study

In the present study, knowledge sharing is discussed in terms of both tacit knowledge (involving skills, ideas and experiences) and explicit knowledge (involving learning resources and instructional materials). An attempt was made to understand knowledge sharing from the point of view of both the dimensions. As mentioned by Ipe (2003), the processes related to knowledge sharing in institutions are very complex. However, based on this work as also on the literature review, as undertaken above, the following were considered as inter-related variables for knowledge sharing:

- interpersonal relations
- organisational structure
- opportunities to share knowledge
- inclination to share knowledge
- misfit between willingness and opportunities to share knowledge
- role of recognition and rewards.

Various aspects related to the field of knowledge sharing and the main barriers to knowledge sharing were examined. Though the present study is descriptive in nature, the key underlying concepts related to knowledge sharing in academic institutions in general and ODL institutions in particular, were then synthesized to form the conceptual framework guiding this study. The focus was on analyzing the main barriers to sharing of knowledge in academic activities at the National Open University. The key factors affecting knowledge sharing were analyzed in terms of:

- Individual inclination (such as lack of interest)
- Institutional culture (such as lack of policy, lack of trust, lack of communication, lack of opportunities for knowledge exchange)
- Institutional support (such as lack of rewards and incentives, lack of infrastructure)
- Personal limitations (such as time, lack of skills and knowledge to share).

The study investigates existing knowledge sharing practices in the National Open University to provide a comprehensive approach towards facilitating knowledge sharing in ODL institutions in India.

## Objectives of the Study

The main objectives of the study were:

- To investigate the sharing of knowledge and learning resources among the faculty of the national Open University.
- To study attitude of faculty towards sharing of knowledge and learning resources.
- To identify the perceived barriers and challenges to sharing among the faculty.

In view of the above-mentioned objectives, the present research addresses the following research questions:

- Are the faculty of the national Open University engaged in sharing of knowledge and learning resources?
- How are the faculty of the Open University sharing knowledge and learning resources?
- What are the preferred activities for sharing of knowledge and learning resources?
- What are the perceived barriers to sharing of knowledge and learning resources?



## Methodology

The present study is focused on the faculty (teachers and academics) of Indira Gandhi National Open University (IGNOU), the only national open university in India which has jurisdiction to offer programmes all over the country and overseas, and has a cumulative enrolment of about 3 million students. Survey method was used to study the sharing behaviour and barriers to sharing among the faculty members.

## Sample

The data for the study were obtained from the members of the IGNOU faculty using the survey method. At the time of study, there were 548 full time faculty members (teachers and academics) in the university in 21 schools of studies, a few divisions dealing with academic matters, and 67 regional centres. A questionnaire (with both structured and open ended questions) was sent to all faculty members of which 65 were returned; of those 62 were found complete in all respects (i.e. 11.2% of all the teaching population).

## Survey Questionnaire

A structured questionnaire, prepared on the basis of the review of related studies, was used in the survey. The survey questionnaire contained 19 main questions as:

- demographics (6 questions),
- sharing of knowledge and experiences (4 questions),
- sharing of learning resources (3 questions including an open response question),
- borrowing of learning resources (4 questions including an open response question),
- barriers to sharing among faculty members (1 question with 12 sub- items), and
- feedback on sharing of knowledge and resources (1 open response question).

The questionnaire consisted of dichotomous, multiple choice, ranking and opinion questions. A draft of the questionnaire was sent to 10 experts (working on OER and content repositories in various campus-based and open universities in India). Modifications in the formulation of questions were made before dispatching to the faculty members for responses.

The scale used for barriers had 12 sub- items measured on a three point scale having '1' (as Yes), '2' (as No), and '3' (as Not Sure). The scale had a Cronbach-alpha coefficient of 0.80 indicating high internal consistency of the items.

## Procedure of Data Collection

The questionnaire was distributed to the faculty through e-mail. Complete responses were received from 62 faculty members and academics of the university. The data was collected during September–October, 2015.

## Data Analysis

The data thus collected was classified, coded and transferred to MS-Excel worksheet for further analysis. The responses were analyzed and interpreted based on the objectives of the study. The findings of the study are discussed in the following sections, though responses to open ended questions have been appropriately discussed at the last (Discussion) section of the paper.

## Results

### *Participant Demographics*

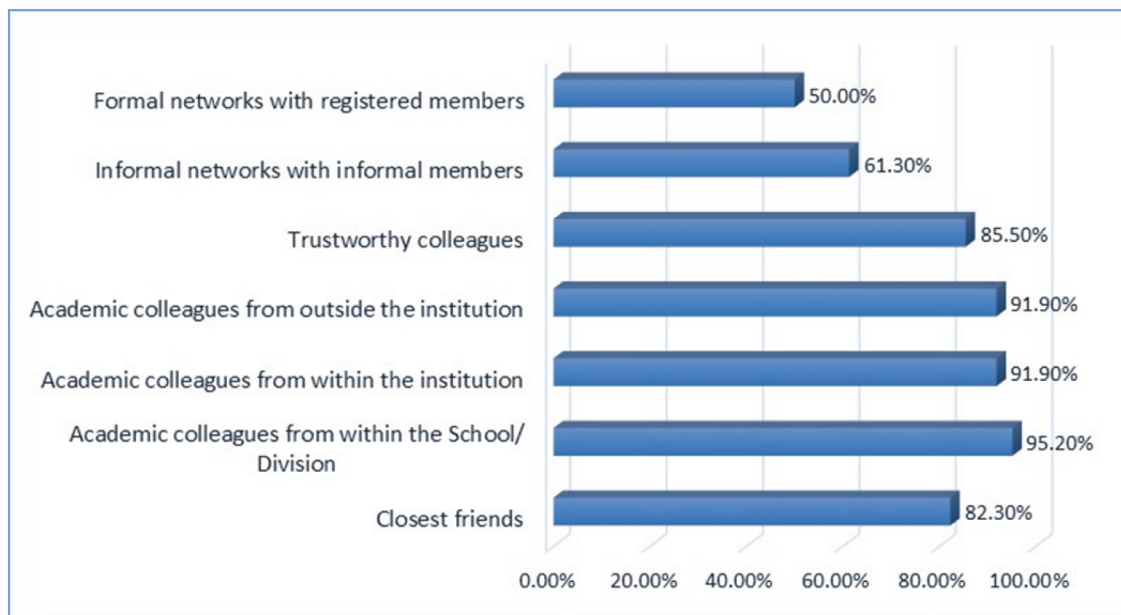
As shown in Table 1, out of the 62 respondents, 54.8% were females; 45.2% were assistant professors; the majority (53.2%) were from the 36–45 years age group; more than half (56.4%) had work experience of less than 10 years, and 16.1% had experience of more than 21 years in distance education.

**Table 1: Demographic Profile of the Respondents**

Demographic Status	Items	Respondents	Percentage
<i>Professional Group</i>	Professor	6	9.70%
	Associate Professor	5	8.10%
	Assistant Professor	28	45.20%
	Assistant Regional Director	17	27.40%
	Other (Category of Academics)	6	9.70%
<i>Age</i>	25 years and under	0	0.00%
	26–35 years	12	19.40%
	36–45 years	33	53.20%
	Over 46 years	15	27.40%
<i>Experience</i>	1–5 years	11	17.70%
	6–10 years	24	38.70%
	11–15 years	11	17.70%
	16–20 years	6	9.70%
	21 years and above	10	16.10%
<i>Gender</i>	Male	28	45.20%
	Female	34	54.80%

### *With Whom Does the Faculty Share Knowledge and Experiences?*

As shown in Fig. 1, it was found that 95.20% preferred sharing with academic colleagues from within the School/ Division followed by 91.90% preferring to share with academic colleagues from within and outside the institution. Formal networks with registered members (50.0%) and informal networks with informal members (61.30%) were found to be the least preferred options.



**Figure 1: Sharing of Knowledge and Experiences by the Faculty**

### ***What is the Faculty Predisposition for Sharing?***

A majority of the respondents (71%) indicated that they indulged in knowledge sharing only when others are interested in reciprocal exchange of knowledge (Table 2). However, 64.50% respondents shared voluntarily.

**Table 2: Faculty Predisposition for Sharing**

	Items	N	%
1.	Only when others are interested in reciprocal exchange of knowledge	44	71.00%
2.	Voluntarily	40	64.50%
3.	Only with those who have a high level of knowledge and experience	27	46.90%
4.	Only when I encounter some professional problem	26	43.50%
5.	Only when others encounter some professional problem	22	35.50%

### ***How Do they Share Knowledge and Experiences?***

The study revealed that majority of the respondents used phone (82.30%) for knowledge sharing followed by 75.80% participating in seminars and workshops. E-mails were used by 72.70% respondents (Fig. 2). It was found that webinars, video conferences and social media were the least preferred means for knowledge sharing.



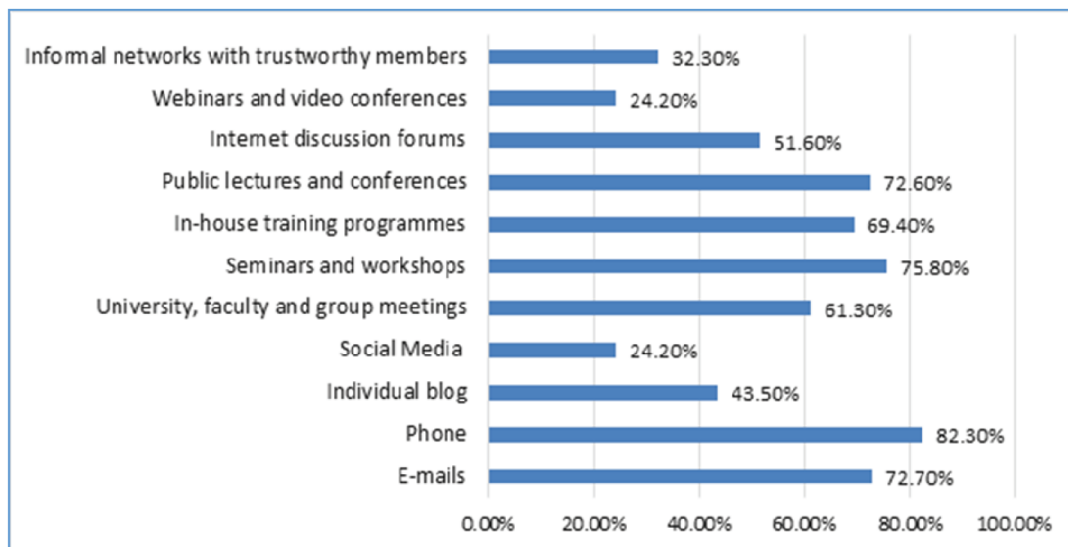


Figure 2: Means of Sharing Knowledge and Experiences

### *What are the Preferred Knowledge Sharing Activities?*

The study revealed that publishing books, journals and other academic materials was the most preferred knowledge sharing activity, with a majority of the respondents (83.90%) being involved in it. This was followed by informal discussions and sharing of research findings at 69.40% each (Fig. 3).

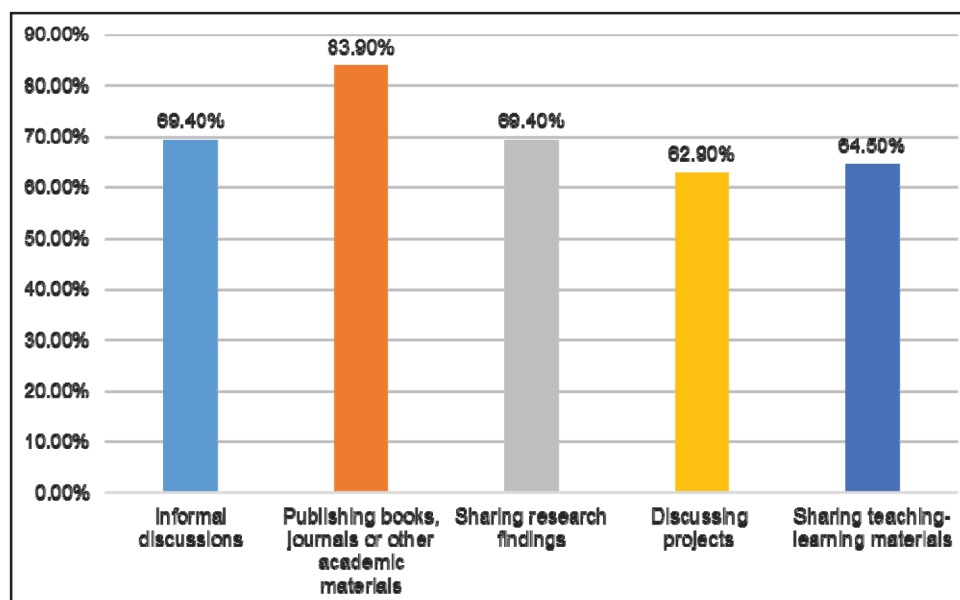
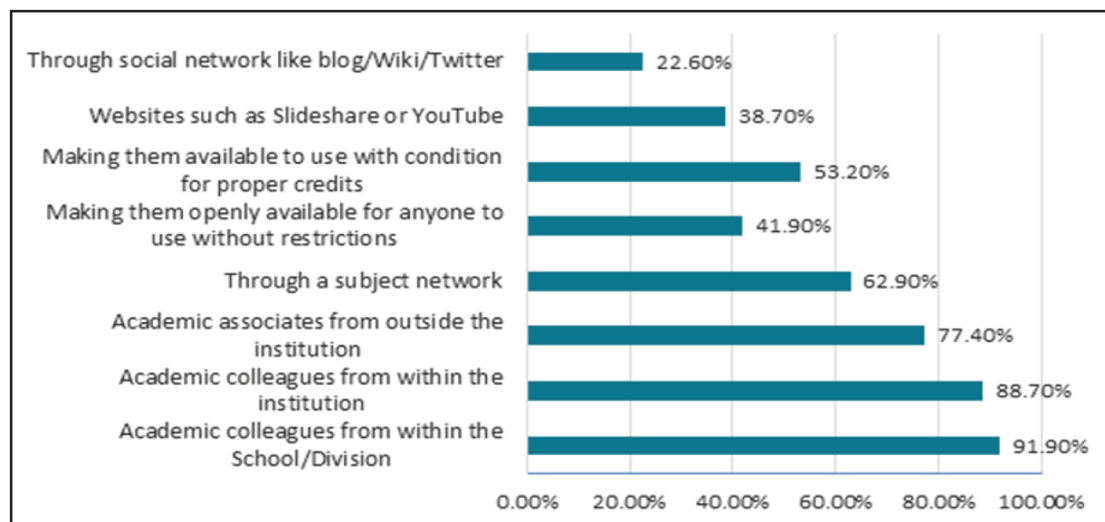


Figure 3: Preferred Knowledge Sharing Activities

### ***Do they Share Learning Resources?***

Majority of the respondents (96.8%) affirmed that they generally shared learning materials. The largest percentage of faculty (91.90%) preferred to share learning resources with academic colleagues from within the School / Division (Fig. 4). This was followed by sharing with academic colleagues from within and outside the institution (77.40%). Wiki or Twitter were found to be the least used channels for sharing of learning resources with only 22.60 (88.70%).



**Figure 4: Sharing of Learning Resources**

### ***Do they Borrow Learning Resources?***

Majority of respondents (96.80%) indicated that they used teaching or research materials produced by others. Further probing suggested that a majority of the respondents (90.30%) used resources openly available on the Internet. This was followed by academic colleagues from within the School/ Division (75.80%), from within the institution (72.60%) and from other institutions (69.40%). Only 45.20% respondents indicated the use of social networks like Blog/ Wiki/ Twitter for borrowing of learning resources (Table 3).

**Table 3: Borrowing of Learning Resources**

	Items	No of Respondents	Percentage
1.	Resources openly available on the Internet.	56	90.30%
2.	Academic colleagues from within the School/ Division.	47	75.80%
3.	Academic colleagues from within the institution.	45	72.60%
4.	Academic colleagues from outside the institution.	43	69.40%
5.	Websites such as Slideshare or YouTube.	42	67.70%
6.	Social network like blog/Wiki/Twitter.	28	45.20%

### **Usage of Learning Resources**

The study revealed that majority of the respondents (69.40%) adapted resources to meet their academic requirements, and 59.70% indicated using online resources made available by others while taking care to use only copy-right free resources (Table 4). This was followed by 50% respondents indicating that they use whatever is required for from the online resources made available by others, without any consideration of copyright issues. The respondents preferring to use their own resources and preferring to work individually were found to be only 32.30%.

**Table 4: Use of Learning Resources**

	Items	No of Respondents	Percentage
1.	I adapt resources to meet my needs.	43	69.40%
2.	I use online resources made available by others for my teaching requirements but take care to select only copyright-free resources.	37	59.70%
3.	I use whatever I need from the online resources made available by others.	31	50.00%
4.	I use resources from someone I know and trust.	30	48.40%
5.	I use my own resources and prefer to work individually.	20	32.30%

### **Barriers to the Sharing of Knowledge and Learning Resources**

The respondents were asked to identify, on a 3-point scale (where '1' = Yes, '2' = No and '3' = Not Sure), what they considered to be the most significant barriers from a list of 12 barrier statements. These are summarized in Table 5 in rank order for 'yes' responses. The greatest barriers identified were lack of proper recognition and rewards, absence of an institutional knowledge culture, and lack of faculty interest in sharing. This was followed by poor understanding about the copyright related practices. A considerable percentage of respondents (50%) mentioned that lack of time was not a barrier to sharing of resources for them. Similarly, 46.67% of the respondents indicated that there was no lack of supportive colleagues, though 36.67% of the respondents reported that institutional decision makers did not value sharing of resources among faculty and others.

**Table 5: Barriers to Sharing**

	Items	Yes		No		Not Sure	
		N	N %	N	N %	N	N %
1	Lack of proper recognition, incentives and rewards for sharing in the institution.	36	60.00%	15	25.00%	9	15.00%
2	Absence of knowledge sharing culture at the organizational level.	35	58.33%	15	25.00%	10	16.67%
3	Lack of interest in the sharing of resources amongst the faculty.	34	56.67%	20	33.33%	6	10.00%
4	Lack of collaborative environment in the institution.	33	55.00%	20	33.33%	7	11.67%

	Items	Yes		No		Not Sure	
		N	N %	N	N %	N	N %
5	Lack of knowledge about copyright and available licensing options.	32	53.33%	21	35.00%	7	11.67%
6	Lack of adequate infrastructure for sharing in the organization.	30	50.00%	22	36.67%	8	13.33%
7	Lack of free and open communication amongst the faculty in my institution.	30	50.00%	23	38.33%	7	11.67%
8	Relatively low priority is given to sharing of resources in my institution.	28	46.67%	19	31.67%	13	21.67%
9	Absence of trust among faculty members.	26	43.33%	20	33.33%	14	23.33%
10	Lack of time.	23	38.33%	30	50.00%	7	11.67%
11	Lack of supportive colleagues.	22	36.67%	28	46.67%	10	16.67%
12	Sharing of resources is not valued by the decision makers in the institution.	21	35.00%	22	36.67%	17	28.33%

## Discussion and Conclusion

The findings clearly suggest that the faculty of the national open university are actively engaged in sharing of knowledge and learning resources to meet their teaching and learning requirements. The results from the respondents have provided a wider perspective of the knowledge sharing behaviour of the faculty throwing light on the related aspects of the knowledge sharing activities. The findings suggest that the faculty prefer to share their knowledge and experiences with other academics from within the faculty and institution and also from outside the institution. This is consistent to what Collinson and Cook (2004) suggested, that the faculty decision to share is influenced by norms of equality and reciprocity. Moreover, one study suggests that people are five times more likely to turn to friends and colleagues for answers to their problems rather than to other sources of information (Cross & Baird, 2000).

The findings indicate that 65% respondents are engaged in sharing voluntarily. Previous research indicates that individuals are more willing to share knowledge than anticipated (Wasko & Faraj, 2005; Adler, 2001). As opined by Stauffer (1999), creating and sharing knowledge are intangible activities that can neither be supervised nor forced out of people. These activities happen only when people cooperate voluntarily. The findings reveal that feedback in the process of knowledge sharing and exchange is highly valued by the faculty, as also can be seen in the following responses to open-ended question:

*It gives me broader perspective of understanding by receiving feedback.*

*Exchange of knowledge helps in constructing the knowledge and comprehension to solve problems in particular situation.*

The results show that a majority of the respondents use phone followed by seminars, workshops, public lectures, conferences and training programmes for knowledge sharing. E-mail was also used by a large number of respondents. However, the use of blogs, social media webinars and discussion forums was found to be comparatively less. Previous research (Cheng, Ho & Lau, 2009; Kim & Ju,

2008; Cabrera & Cabrera, 2002) has stressed on the importance of open and frequent contact opportunities such as seminars, workshops, and other small group meetings to facilitate exchange of ideas, opinions, and knowledge among faculty members. The need for open platform for knowledge exchange has also been stressed by the respondents in response to the open ended question:

*Institution should have a platform either online or face-to-face to share knowledge.*

The findings suggest that academics were engaged in publication as the major knowledge sharing activity. The result is consistent with the findings of a research conducted in an institution of higher learning in Malaysia (Nossuora & Hasan, 2010).

The study investigated into what inhibited the academics from sharing of knowledge and learning resources. It was found that lack of proper recognition and rewards, absence of knowledge sharing culture, and lack of interest in sharing were ranked as the main barriers. Previous studies (Kim & Ju, 2008; Jain, Sandhu & Sidhu, 2007; Riege, 2005; Al-Hawamdeh, 2003; Earl, 2001; O'Reilly & Pondy, 1980) have identified reward system, and incentives (Lou, Yang & Shih, 2007) as a significant factor affecting knowledge sharing. A recent study on knowledge sharing in academic institutions in Malaysia found that appropriate incentives and reward mechanisms, even if they are in the form of recognition by the institution, are crucial for creating a conducive knowledge sharing environment (Cheng, Ho & Lau, 2009). The results of the present study are consistent with the findings of previous studies (Ramayah et al., 2013; Sohail & Daud, 2009; Bock & Kim, 2002) that have suggested the influence of organisational culture on knowledge sharing behaviour. Organisational culture is "perhaps the most difficult constraint that knowledge managers must deal with" (Davenport, De Long & Beers, 1997). Stoddart (2001) argues that knowledge sharing can only work if the culture of the organization promotes it. The study by De Long and Fahey (2000) shows that culture influences knowledge sharing by as much as 80%. Lack of interest of the faculty in knowledge sharing is an indicator towards the need for motivation for sharing. The need for culture is also highlighted by the responses to the open-ended question:

*Culture has to be created in the institution.*

*Sharing of resources and knowledge should be encouraged by the institution.*

*Sharing of knowledge and resources should be improved to establish a healthy academic culture in the institution. Also, due credit must be given to those who are willing to share.*

As for the National Open University, it is found that there is near absence of an organized institutional culture of knowledge sharing in as much as there is lack of any official recognition and reward system for doing so. Moreover, for quite some time, the open resource repository (i.e. e-Gyankosh), once freely available to one and all, had been withheld (which in a way contradicts open sharing).

Lack of knowledge about copyright and available licensing options has also emerged as a prominent barrier. Open responses by the respondents also highlight this aspect, which could be addressed by providing training programmes:

*This is an area where more awareness needs to be created. Many people have doubts about IPR issues which they would like to clarify before engaging in sharing of educational resources.*

*Training sessions should be organised regarding copyright and plagiarism – to clarify the doubts.*

In an earlier study on the national open university, Panda and Mishra (2007) had reported that significant barriers to e-learning perceived by the faculty included access to technology and training on e-learning, followed by institutional policy and instructional design on e-learning. The findings reported in the present paper could also be seen in conjunction with two other works being carried



out by the authors (Santosh, 2012; Santosh & Panda, 2016). Santosh & Panda (2016) in a recent study found a strong positive inclination among the faculty towards knowledge sharing. They also stressed the need for proper training and awareness on IPR and copyright issues for facilitating sharing and re-use of resources.

The findings of the study suggest that the faculty preferred colleagues rather than networks to share with. This could be attributed to a culture of self-sufficiency and also to a latent fear of external scrutiny. The findings also reveal that voluntary sharing was much less; publishing was most preferred over sharing through social and professional networks. Use of Internet for resource use was frequent though use of networks was minimal, as also use of own resource. These could suggest a conservative and protective mindset, and dependency on others (even if the principle of OER sharing suggests one can use freely as long as one can contribute freely). The current mindset, developed over a period of time in the institution, is seen as a result of barriers like lack of proper recognition and incentives, absence of organizational knowledge sharing culture and collaborative environment, lack of awareness of copyright issues, and lack of adequate infrastructure.

Following the initial stages of the development of the university, resource sharing with the society, especially the students and faculty, was seen as a progressive and democratic step. The creation of the first national resources repository (E-Gyankosh) by the university was a pointer to this direction (for open sharing of print, audio, video, and multi-media course materials). Contrary to OER movement getting momentum globally, the university later decided to abandon open sharing, thereby legitimizing the dogmatic view of a few. However, recent developments towards openness are very encouraging—this can sustain only when policy decisions and operational provisions are made appropriately.

The study highlights the existing knowledge sharing culture in an open university, at the same time stressing the need for strong institutional support mechanisms in the form of opportunities for knowledge exchange and provision of rewards and recognition, thus creating a sound but open academic culture. Proper trainings with respect to IPR and copy right issues will create the awareness among the faculty thus inculcating the confidence to share. The study was limited to only a single open university in India and had a small sample size of 65 faculty. However, the findings are indicative enough to encourage the existing positive attitude and individual use of knowledge sharing on one hand, and build in conducive policies and institutional culture towards knowledge sharing (including continuous awareness and training interventions) on the other.

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