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Knowledge Sharing Pattern of Students of Engineering Universities of Karachi, Pakistan

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ABSTRACT

This study is conducted to explore the knowledge sharing patterns of students of engineering universities that are existed in Karachi, Pakistan. A questionnaire-based the survey method was adapted for the study. Total 288 respondents were selected from 6 universities i.e. 2 public and 4 private universities.

The results reveal generally students express positive perceptions and considered it beneficial. They percept, it increases the knowledge and more likely to share with group members in group-based assignments. Social apps are considered as an interactive channel along with face-to-face communication for knowledge sharing among students. To a large extent, tacit knowledge is shared with fellows rather than explicit knowledge. Hence, engineering students indicated that lack of confidence and intense competition is the barrier to active knowledge sharing patterns. Intrinsic motivation is assured that provoke students for voluntarily sharing of knowledge such as to learn from each other, passion to help others, self-satisfaction, etc. The results show there is no significant relationship between gender and knowledge sharing; and no significant relationship between ownership of universities i.e. private and public and knowledge sharing. It also reveals that relationship between years of study and knowledge sharing is highly insignificant.

The perception about knowledge sharing among students is positive and they percept it is valuable and important in their learning process. They are the collaborative-oriented learner. They use channels for sharing of knowledge on the basis of its accuracy, great speed and cost-effectiveness. Moreover, psychological *attributes affected on sharing i.e introvert students shy to present their opinion. Although fear is existed due to competition that other would perform better inhibits knowledge sharing. However, engineering students have high intrinsic motivation rather than extrinsic ones for sharing of knowledge.*

INTRODUCTION

World of knowledge has no frontiers; simultaneously it has no boundaries as it has diffusive characteristics. Its diffusion takes place through exchanging and sharing. By this method, it is used between and among knowledge seekers practitioners and participants. The powerful use of Knowledge is a cornerstone in all victorious achievements. Knowledge sharing is somewhere supposed to be the as reciprocal act; Knowledge sharer desires to receive something in exchange for something else has been coined as "reciprocity".

Sharing of knowledge utilizes and modifies the knowledge as the best way and overcome the deficiencies of the existent system. Wilem (2003) defines knowledge sharing *"The exchange of knowledge between at least two parties in a reciprocal process, allowing the reshaping and sense-making of the knowledge."* (cited in Anasi, Akpan and Adedokun, 2014, p.354).

Boer (2005) views are: "knowledge-sharing as a social-relational process through which individuals try to establish a shared understanding about reality and to established the potential ability to transform this understanding into collaborative action to yield performance." (cited in Anasi, Akpan, and Adedokun, 2014, p.354). Knowledge sharing pattern helps to solve specific problems and to remove hurdles which come across the way of success. Because of the tremendous advancement the rate of generation of information is fast; to overcome this issue we need to share our knowledge. Nevertheless, knowledge sharing patterns are the bridge between unknown to known in more effective and sufficient manner. The pattern of knowledge sharing helps the individual to take out from an isolated environment and enable to interact with the information society.

As overwhelmingly, students play a vital role in the information society. The informative society emphasizes student community to work hard for strengthening their intellectual level so then students can understand and appreciate the role of knowledge-sharing in their learning process and in the development of mental capabilities. For the dynamic learning process, Knowledge sharing patterns among students are very essential; it benefited both the sharer and recipient. However, sharer can refine and increase their knowledge; the recipient can perform assigned work more efficiently by gaining or receiving knowledge; as well as sharer nourishes his knowledge by sharing it.

The success of knowledge sharing greatly depends on collaborative-oriented learners. Assigned task is achieved inadequate manner through interaction and discussion among group members. By this pattern, they easily acquire tacit as well as explicit knowledge.

This study has been conducted to explore the knowledge sharing patterns of students of engineering universities existed in Karachi, Pakistan. The respondents are regular students of public and private engineering universities.

Objectives

The study is conducted in:

- Explore the perceptions of knowledge sharing pattern of students.
- Investigate the preferred sources they use for information seeking.
- Ascertain the situations where knowledge is more likely to share.
- Know that what's the amount of knowledge do they prefer to share.
- Know the communication channels which are mostly preferred for sharing of knowledge.
- Explore the factors that obstruct them for knowledge sharing.

Hypotheses

The following hypotheses were formulated for the study:

H_1: There is a significant relationship between gender and knowledge sharing patterns i.e. female students more preferred for knowledge sharing patterns as compared to male students.

H_2: There is a significant relationship between students of public and private university and knowledge sharing patterns i.e. students of public universities more likely to prefer for knowledge sharing patterns rather than private universities.

H_3: There is a significant relationship between year-wise distribution and knowledge sharing patterns i.e. 3rd and 4th-year students more willing for knowledge sharing patterns than 1st and 2nd-year students.

Relevant Studies

Dezdar(2017) investigate the non-monetary factors that encourage knowledge-sharing behavior among postgraduate students of Iranian public universities. Knowledge-sharing behavior is influenced by humility, interpersonal trust, reputation, self-efficacy, and enjoyment of helping others. Mutual trust among graduate students motivates them to share their knowledge.

Confidence in Personal ability is also motivating factor for sharing of knowledge as compared to those who lacked such confidence in themselves. The enjoyment of helping others was positively related to knowledge-sharing behavior.

Osman, Kamal, Ali, Noor, Anuar and Othman (2015) studied mechanisms of knowledge sharing among undergraduate students in University Teknologi MARA (UiTM) Johor, Malaysia. The findings revealed undergraduate students used technology frequently for sharing their information and knowledge. Academician should provide appropriate and effective learning approaches. To develop the informative culture and to establish knowledge mechanism, Anasi, Akpan and Adedokun (2014) studied ICT knowledge sharing among academic librarians in south-west Nigeria. The finding show academic librarians are increasingly utilizing ICT platforms for knowledge-sharing in preference to the traditional platforms.

However, inhibiting factors were ignorance of existing ICT knowledge-sharing platforms, limited ICT skills, and an unhealthy technology environment. Rahman, Khan, Alam, Mustamil, and Chong (2014) compare the knowledge sharing pattern among the undergraduate and postgraduate students of private universities of Dhaka, Bangladesh. Results show significant differences in the knowledge-sharing with between undergraduate and graduate students.

The postgraduate students show higher perceived attitudes towards knowledge sharing as compare to undergraduate students. However, both levels of students hold a positive attitude towards knowledge sharing. Majid and Chitra (2013) study highlighted that students of

colleges revealed positive attitude for sharing their knowledge but academic competition among them is one of the inhibiting factor that restrict them for exchanging their knowledge and innovative ideas. It is also revealed that students shared their knowledge with their own group members. It is academicians' responsibility to take necessary amendments in curriculum and promote the knowledge sharing culture.

Isika, Ismail and Khan (2013) compare the knowledge sharing behavior of postgraduate students in University of Malaya with corporate organizations. This research evaluates that students shared their knowledge in the classroom session. Thus, the collaborative environment lowers the degree of competition amongst them. Furthermore, there are no extrinsic rewards that motivate them for sharing information.

Chikoore and Ragsdell (2013) investigate the group dynamics in the context of knowledge sharing behaviors of undergraduate students in course work.

The quantitative, as well as qualitative method was used. The result shows that virtual learning platforms and social networks can be used to encourage students for sharing their experiences and knowledge.

Wei, Choy, Chew and Yen (2012) compare the knowledge sharing patterns of undergraduate students in the public and private universities of Malaysia. The results show significant differences. Students of private universities are prone to share knowledge with their peers than those in the public universities and group assignment is one of the factors that lead them towards sharing their knowledge with peers. The findings suggest group activities should be structured in all curricula in order to encourage sharing among students.

Yuen and Majid (2007) explore the general attitude of students of three public universities of Singapore towards knowledge sharing. The results show the positive attitude towards information and knowledge sharing and valued their peers as an important source of knowledge. The competitions among students to outperform their fellow students are the factors that inhibit knowledge sharing. The study emphasizes on reconsideration of teaching approaches and puts more emphasis on collaborative learning to avoid unnecessary competition among students.

METHODOLOGY

The questionnaire survey method was applied for the study. The population of this study is regular students of bachelors program in engineering fields i.e. computer science, electronic and telecommunication engineering.

The sample size is 288. Total 48 students were selected from each engineering university that is; NED University of Engineering and Technology, Dawood University of Engineering and Technology, Sir Syed University of Engineering and Technology, Iqra University, Hamdard University, and Bahria University.

Sampling

The respondents were selected from 6 universities. These universities are recognized by Higher Education Commission (HEC). These belong to the public and private sector; 96 respondents were selected from the public sector and 192 were chosen from the private sector.

Table1. *Selection of respondents from each university*

#	Public Sector University	Respondents
1.	NED University of Engineering and Technology	48
2.	Dawood University of Engineering and Technology	48
Total		**96**
#	**Private Sector University**	**Respondents**
1.	Sir Syed University of Engineering and Technology	48
2.	Iqra University	48
3.	Hamdard University	48
4.	Bahria University	48
Total		**192**

The distribution of participants is equal in each university. Total 48 respondents were selected from each university (see table 2).

The selected six engineering universities of Karachi are commonly offering three engineering fields i.e. computer science, electronic and telecommunication engineering. The participants are selected are bachelor students in these subjects. 16 respondents were taken from each discipline; hence total 48 respondents were selected from each university. Engineering students get the professional degree of Bachelor of Engineering (B.E) after studying for four years. The distribution of students according to

year wise is the 1st year, 2nd year, 3rd year and 4th year. Equal numbers of respondents were selected from all year. 4 respondents were randomly selected from each year. Total 16 students were selected from each discipline. Thus, respondents were selected randomly.

The Questionnaire Construction

The questionnaire was adapted from Yuen and Majid's (2007) study and then made some amendments.

It consisted of two parts. In the first part of the questionnaire, the demographic questions were asked the i.e. name of the university, type of university, the name of the department, gender, age group and year. The second part of questionnaire investigates the knowledge sharing patterns of engineering students.

The one of the researchers conducted a survey and filled the questionnaire by herself. Just because of fair and refine data collection as far as for 100% coverage and to ignore any ambiguity.

For a fair response, researcher herself explains the term Knowledge Sharing to the respondents so that they could easily understand the nature of questions. Data were analyzed by using SPSS statistics v17.0 software. Frequency, percentage, mean score, as well as standard deviation, were calculated for the questions using the Likert scale, whereas hypotheses were tested Independent Samples T-Test.

RESULTS AND DISCUSSION

Total 288 questionnaires were analyzed to investigate the knowledge-sharing patterns of students of engineering universities of Karachi, Pakistan.

Participant Demographics

Table2. *Demographic details*

Demographic	Parameters	No. of responses	Percentage
Gender	Male	208	72.2%
	Female	80	27.8%
Age group	18 – 22	247	85.8%
	23 – 27	41	14.2%
	28 – 32	NIL	0%
	32 – onwards	NIL	0%
Year	1st year	72	25%
	2nd year	72	25%
	3rd year	72	25%
	4th year	72	25%

Table 3 shows the gender distribution of the respondents, 208 male (72.2%) and 80 female (27.8%); a majority of the participants were male because, in Karachi, male gender is like to enroll in engineering universities whereas females like in medical universities.

The age distribution of the respondents are 18 - 22 have 247 respondents with 85.8% and from 23 - 27 have 41 respondents with 14.2%; there were no respondents belong to age group of 28 - 32 and 32 - onwards. The year of study wise distribution of respondents is equal i.e. 72.

Perception towards Knowledge Sharing

Students were asked about perception towards knowledge sharing. The 12 most probable perceptions mix of positive and negative statements were given.

As shown in Table 4, a big majority of the students are agreed or strongly agreed that sharing knowledge with students would benefit for all, with the mean score of 4.37 whereas 3.89% agreed with "sharing is caring" and students strongly agreed that knowledge sharing upgrade knowledge and reputation with mean score 4.34.

On the other hand, an overwhelming majority of the respondents rejected seven statements presenting knowledge sharing in a somewhat negative context; most of the respondents disagreed or strongly disagreed, that knowledge sharing is necessary for dull students only with mean score 1.94;

Rahman, Khan, Alam, Mustamil, and Chong (2014) and Wei, Choy, Chew and Yen (2012) arrived at the similar findings that students of universities, generally showed a positive attitude towards knowledge sharing, but the findings of Yuen and Majid (2007) study are slightly different from aforementioned findings.

Table3. *Knowledge sharing perceptions*

#	Perceptions	SD	D	NOp	A	SA	Mean	St.Dev	Level of perception
1.	It is important to share Knowledge of other Students for the benefit of all.	11 (3.8%)	8 (2.8%)	4 (1.4%)	105 (36.5%)	160 (55.6%)	4.37	0.943	SA
2.	Knowledge sharing is only necessary for dull students.	92 (31.9%)	153 (53.1%)	20 (6.9%)	15 (5.2%)	8 (2.8%)	1.94	0.920	D
3.	Students should share Knowledge with their peers only when approached.	25 (8.7%)	106 (36.8%)	74 (25.7%)	74 (25.7%)	9 (3.1%)	2.78	1.025	D
4.	Students should voluntarily share their knowledge with their peers. (sharing is caring)	13 (4.5%)	25 (8.7%)	20 (6.9%)	153 (53.1%)	77 (26.7%)	3.89	1.040	A
5.	Sharing the knowledge increase your knowledge and upgrade you reputation.	12 (4.2%)	11 (3.8%)	13 (4.5%)	82 (28.5%)	170 (59%)	4.34	1.024	SA
6.	Your knowledge is a private asset.	78 (27.1%)	110 (38.2%)	22 (7.6%)	53 (18.4%)	25 (8.7%)	2.43	1.297	D
7.	You do not want to share your hard work.	66 (22.9%)	111 (38.5%)	37 (12.8%)	52 (18.1%)	22 (7.6%)	2.49	1.238	D
8.	Knowledge sharing is insensibility.	97 (33.7%)	104 (36.1%)	59 (20.5%)	24 (8.3%)	4 (1.4%)	2.08	0.999	D
9.	It is better to avoid sharing information with peers whenever possible.	57 (19.8%)	112 (38.9%)	35 (12.2%)	57 (19.8%)	27 (9.4%)	2.60	1.265	D
10.	Many students have the mindset that sharing of knowledge is a type of plagiarism.	37 (12.8%)	75 (26%)	77 (26.7%)	80 (27.8%)	19 (6.6%)	2.89	1.144	NOp
11.	Many students feel that they might be punished by the professor for sharing information & knowledge.	77 (26.7%)	89 (30.9%)	41 (14.2%)	63 (21.9%)	18 (6.3%)	2.50	1.266	D
12.	Many students have the mindset that sharing knowledge is equal to sharing marks.	49 (17%)	70 (24.3%)	27 (9.4%)	99 (34.4%)	43 (14.9%)	3.06	1.367	A

Note: *SD = Strongly Disagree; D = Disagree; NOp = No Opinion; A = Agree; SA = Strongly Agree*

Preferred Sources for Study-Related Tasks

Table4. *Preferred sources*

#	Preferred sources	LP	P	N	MrP	MsP	Mean	St.Dev	Level of preference
1.	Use the internet.	15 (5.2%)	50 (17.4%)	33 (11.5%)	68 (23.6%)	122 (42.4%)	3.81	1.292	MrP
2.	Consult other fellow students.	13 (4.5%)	96 (33.3%)	49 (17%)	89 (30.9%)	41 (14.2%)	3.17	1.170	P
3.	Consult the seniors.	23 (8%)	67 (23.3%)	61 (21.2%)	66 (22.9%)	71 (24.7%)	3.33	1.290	P
4.	Consult family members.	52 (18.1%)	57 (19.8%)	78 (27.1%)	58 (20.1%)	43 (14.9%)	2.94	1.312	N
5.	Consult the course professor.	18 (6.3%)	39 (13.5%)	27 (9.4%)	76 (26.4%)	128 (44.4%)	3.89	1.279	MrP
6.	Consult friends other than their university fellows.	71 (24.7%)	63 (21.9%)	61 (21.2%)	58 (20.1%)	35 (12.2%)	2.73	1.352	LP
7.	Use library resources to get more information on the topic.	34 (11.8%)	54 (18.8%)	24 (8.3%)	79 (27.4%)	97 (33.7%)	3.52	1.419	MrP

Note: *LP = Least Preferred; P = Preferred; N = Neutral; MrP = More Preferred; MsP = Most Preferred*

As shown in Table 3.3, students most preferred sources are “consult to the course professor” with high mean score 3.89 “use of the internet” with mean score 3.81; whereas "use of library

resources" is the more preferred source mean score 3.52. Students "preferred" sources are to "consult seniors and other fellow students", have mean score 3.33 and 3.17 respectively; Consult friends other than their university fellows was supposed to be "least preferred" and its mean score is 2.73.

As findings show that course professor is considered as the most preferred source for seeking information. His experience and knowledge gives current information, right direction and helps to clear the concepts. Hence, the findings of Rahman, Khan, Alam, Mustamil, and Chong (2014) study almost same with the result of this study. As well as the use of the internet was considered as the most preferred source for seeking information on study-related matters in each and every study.

According to Noraliza (2004) "Internet is widely used in learning and knowledge sharing activities". Students are now preferred to interact with the internet because of easy accessibility, high speed and user-friendly. Moreover, the other preferred sources are the library resources, course professor, seniors, University fellows and library resources because all are easily accessible and provide information voluntarily so students preferred them.

Knowledge Sharing in Different Study-Related Situations

Table5. *Study related situations for knowledge sharing*

#	Situations	F	LF	Never	Mean	St.Dev	Level of Frequency
1.	During lectures, tutorials & labs.	189 (65.6%)	70 (24.3%)	29 (10.1%)	1.44	0.671	LF
2.	While working on individual assignments.	140 (48.6%)	114 (39.6%)	34 (11.8%)	1.63	0.686	F
3.	While working on group assignments (within their own group).	197 (68.4%)	77 (26.7%)	14 (4.9%)	1.36	0.574	LF
4.	While working on group assignments (with fellows from other groups).	153 (53.1%)	93 (32.3%)	42 (14.6%)	1.61	0.728	F

Note: *F = Frequently; LF = Less Frequently; St.Dev = Standard Deviation.*

Aforementioned table 6 shows students frequently share knowledge while working on an individual assignment and while working on group assignment (with fellows from other groups) with the mean value of 1.63 and 1.61 respectively. However, they shared knowledge less frequently during lectures, tutorials and While working on group assignments (within their own group) with the mean value of 1.44 and 1.36 respectively. None of the students is found who never share knowledge.

Amount of Knowledge Shared

Table6. *Amount of knowledge*

#	Amount of knowledge Shared	LP	P	N	MrP	MsP	Mean	St.Dev	Level of preference
1.	Share all the knowledge that you have.	43 (14.9%)	78 (27.1%)	45 (15.6%)	68 (23.6%)	54 (18.8%)	3.04	1.363	P
2.	Share little bit knowledge & let them guide investigate further.	44 (15.3%)	83 (28.8%)	44 (15.3%)	78 (27.1%)	39 (13.5%)	2.95	1.310	MrP
3.	Do not share the Information & knowledge.	205 (71.2%)	24 (8.3%)	39 (13.5%)	15 (5.2%)	5 (1.7%)	1.58	1.019	LP

Note: *LP = Least Preferred; P = Preferred; N = Neutral; MrP = More Preferred; MsP = Most Preferred; St. Dev = Standard Deviation.*

Engineering subjects are mostly practical in nature rather than theory. Hence, students share knowledge mostly in group assignments and during lectures which increase their learning process. The findings are somewhat similar to Yuen and Majid (2007) study. On the other hand, knowledge is less frequently shared while working on individual assignments. This is probably due to intense competition among students to achieve better grades is hindering active knowledge sharing.

As far as the preference for the amount of knowledge is concerned the majority of the students prefer to Share all the knowledge that they have with mean value 3.04 as table 7 indicates, while the more preferred to share little bit knowledge with mean value 2.95. Whilst very least no. of the student with means score 1.58 does not share any information and knowledge.

Students have positive perceptions about knowledge sharing, but as far as the amount of knowledge prefer to share is small in quantity. Students likely to prefer guide their fellows to seek information themselves rather than share all the knowledge they have. It seems they consider their fellows as the competitor.

Types of Information and Knowledge Shared

Table7. *Types of knowledge shared*

#	Types of information & knowledge	No. of responses (%)
1.	By assisting other students in database search, software use and library use, etc.	158 (54.9%)
2.	By providing answers to improve understanding of other students	148 (51.4%)
3.	By providing their personal books, lecture and notes.	138 (47.9%)
4.	By providing examination-related materials (Past year papers etc.)	121 (42%)
5.	By sharing URLs of relevant websites.	118 (41%)
6.	By expressing their opinion on study-related matters.	114 (39.6%)

It is a multiple choice question regarding type of knowledge and information shared. As table 8 indicates knowledge is more likely to share by their classmates and their peers.

54.9% students share knowledge by assisting fellows in database searching, software use, and library use, etc whereas 51.4% share by providing answers to improve understanding of other students.

47.9 % share knowledge by providing their personal books, lecture, and notes. 42% students share URLs of relevant websites and by providing examination related materials. Comparatively a small number of students 39.6 percent shared by expressing opinions on certain study-related matters.

Students have no issues in sharing of their skills and competencies. They share and learn in friendly environment effectively. As half of the students shared through discussion to understand the concept.

As result shows decline ratio towards explicit knowledge, mostly students hide their collected explicit knowledge such as notes, personal books, etc because they considered their explicit knowledge as the private asset. Nevertheless, 40% students reported that they express their opinions on study-related matters;

Preferred Channels for Knowledge Sharing

Table8. *Channels for knowledge sharing*

#	Communications Channels	LP	P	N	MrP	MsP	Mean	St.Dev	Level of preference
1.	Face-to-face.	20 (6.9%)	61 (21.2%)	16 (5.6%)	73 (25.3%)	118 (41%)	3.72	1.366	MsP
2.	Social apps. (Skype, messenger, etc.)	33 (11.5%)	57 (19.8%)	50 (17.4%)	81 (28.1%)	67 (23.3%)	3.32	1.331	MrP
3.	E-mail.	54 (18.8%)	79 (27.4%)	62 (21.5%)	55 (19.1%)	38 (13.2%)	2.81	1.308	P
4.	Telephone/cell phone.	67 (23.3%)	69 (24%)	41 (14.2%)	55 (19.1%)	56 (19.4%)	2.88	1.460	LP

Note: *LP = Least Preferred; P = Preferred; N = Neutral; MrP = More Preferred; MsP = Most Preferred; St.Dev = Standard Deviation.*

As illustrated in Table 9, it was found that face-to-face communication is the most preferred communication channel for sharing knowledge among students with the mean score of 3.72. Then the more preferred channel is social apps with the mean value of 3.32. The preferred knowledge sharing channel is the email with a mean score of 2.81, and the least preferred communication channel is telephone mean score 2.88).

Students considered face-to-face communication as an effective channel for knowledge sharing purpose because it offers non-verbal clues, instant feedback and conveys of the message without any misinterpretation. Simultaneously, it has ability to resolve many conflicts and issues. The findings of Rahman, Khan, Alam, Mustamil, and Chong (2014) study are almost same. Secondly, a more preferred channel is social apps because it is the cheapest and viral communication channel, therefore, any student can afford it and it can adequately meet the student's needs. Students prefer e-mail as a more convenient channel to save, send and share assignments, e-books, articles, relevant URLs.

Factors that Inhibit Knowledge Sharing

Table9. *Barriers to knowledge sharing*

#	Inhibit factors	No. of responses (%)
1.	Lack of confidence & hesitation to ask the question.	220 (76.4 %)
2.	Afraid that others would perform better.	192 (66.7 %)
3.	Afraid to provide the wrong information.	177 (61.5%)
4.	People only share with those who share with them.	176 (61.1%)
5.	Shy to provide own opinions.	175 (60.8%)
6.	Do not get the plate form / suitable environment to share knowledge.	168 (58.3%)
7.	Lack of depth in the relationship.	166 (57.6 %)
8.	Lack of appreciation of knowledge sharing.	158 (54.9%)
9.	Afraid that your opinion mismatch & would offend others.	153 (53.1%)
10.	Lack of knowledge-sharing culture.	152 (52.8%)
11.	Do not want to be perceived as a “show off”.	132 (45.8%)
12.	Lack of time.	120 (41.7%)
13.	Do not know what to share.	112 (38.9%)

The students express inhibit factors which create hurdles in knowledge sharing. It was multiple choice question and the most probable thirteen options were given. As table 10 indicates 76.4% students do not want to share due to lack of confidence; 66.7% students afraid that others would perform better. Whereas 61.5% afraid that others would provide wrong information. Students (61.1%) perceive that people only share with those who share with them. However, other inhibiting factors are lack of appreciation (54.9%), fear of opinion mismatch (53.1%), lack of time (41.7%) and do not know what to share (38.9%); were the factors that inhibit sharing of information and knowledge effectively.

Factors that Motivate for Knowledge Sharing

Table10. *Motivators for knowledge sharing*

#	Factors that motivate	No. of responses (%)
1.	To learn from each other.	213 (74%)
2.	To help others.	206 (71.5%)
3.	As an exchange or feedback. (give & take)	170 (59%)
4.	Self-satisfaction.	163 (56.6%)
5.	To get bonus marks.	133 (46.2%)
6.	To cultivate the image of expertise.	129 (44.8%)
7.	To obtain reward & recognition.	124 (43.1%)

Table 10 illustrates motivating factors that provoke for knowledge sharing. The highly appreciating is to learn from each other factor by 74% students while 71.5% students share knowledge to help others, and 59% students’ percept an exchange or feedback (give & take). Similarly to cultivate the image of expertise (44.8%) and to obtain reward and recognition (43.1%), are considered as less motivating factors for knowledge sharing. According to Robbins (1993) "Motivation is a necessary prerequisite for knowledge-sharing behavior". The findings for factors of motivation to some extent are same as Yuen and Majid (2007)

study. To a great extent for enhancement of voluntary knowledge sharing patterns need both types of motivations intrinsic as well as extrinsic.

Hypotheses Testing

Table11. *Hypotheses testing*

Demography	Group	Mean	Mean difference	t-statistics	Level of Significance
Gender	Male	3.08	0.127	0.707	Insignificant
	Female	2.95			
University	Public	3.09	0.078	0.458	Insignificant
	Private	3.02			
Year wise distribution	3rd and 4th year	3.03	-0.014	-0.086	Highly insignificant
	1st and 2nd year	3.05			

Independent Samples T-test was applied to evaluate the significance of hypotheses. Aforementioned table 11 is expressed the values:

- Hence, the t-statistic value for H_1 is 0.707 which interpreted that insignificant relationship between gender discrimination and knowledge sharing patterns. It implies that male and female, both possessed almost same attitude towards knowledge sharing patterns. Therefore, hypothesis (H_1) is rejected.
- For second hypothesis (H_2), the t-statistic value is 0.458; interpreted as public and private university's students occurs insignificant relationship towards knowledge sharing patterns. Therefore, hypothesis (H_2) is rejected.
- The t-statistic value for H_3 is -0.086. Hence, negative sign shows highly insignificance; therefore year-wise distribution is highly insignificant relationship difference for knowledge sharing patterns. Thus, hypothesis (H_3) is also rejected.

Conclusion

The perception about knowledge sharing among students of engineering universities is positive; they percept sharing of knowledge is beneficial for the recipient as well as sharer because it may increase and modify existed knowledge. Students aware knowledge sharing is important in their learning process so they do not avoid and provide the erroneous guide to knowledge seeker.

As well as, they have no fear that they might be penalized by their lecturers just because of knowledge sharing behavior. Most students share their knowledge to upgrade their reputation as well as students thought that knowledge sharing is congruent to sharing marks; these types of learners are competitive learners as an overwhelmingly they assume their peers as competitors instead of learning partners.

Due to intense competition among students to achieve better grades is hindering active knowledge sharing.

They are the collaborative-oriented learner. Thus, channels are prioritizing on the basis of its accuracy, great speed and cost-effectiveness for sharing of knowledge; however, knowledge sharing through face to face interaction is still prevalent and dominant channel. Since interactive channels are now commonly used for knowledge sharing purposes that overcomes the barrier of lack of time. Although perceptions are positive they share little amount of knowledge due to competition and like to share their tacit knowledge rather than explicit ones.Moreover, psychological attributes affected on sharing i.e introvert students shy to present their opinion. Usually, these types of students do not know how much tacit knowledge they have. At-large extent lack of trust and rewards, inadequate curriculum activities, egocentric or un-like minded fellows are the reasons that create hurdles in the conducive sharing environment.

Although fear is existed due to competition that other would perform better inhibits knowledge sharing. It is desirable universities emphasis on collaborative learning environment.

However, engineering students have high intrinsic motivation rather than extrinsic ones for sharing of knowledge. Universities students are devoted to participating in active knowledge sharing; furthermore public or private, year of study and gender does not affect knowledge sharing patterns of the engineering student in the learning process.

The study suggests initiating a more interactive knowledge-sharing culture to minimize the barriers and constraints towards knowledge sharing patterns.

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