

Role of Web 2.0 in Scholarly Communication: A Survey of Select Indian Institutes of Management (IIMs) in India

Malkeet Singh^{1*} and K.P. Singh²

¹Guru Nanak Prem Karamsar College, Kapurthala-144624, Punjab, India;
gillmalkeetsingh@gmail.com

²Department of Library and Information Science, University of Delhi, Delhi - 110007, India;
kpsingh330@gmail.com

Abstract

This study examines users' perceptions of Web 2.0 Technologies in the Indian Institutes of Managements (IIMs) in India. Survey approach was adopted for collection of data from students, researchers and information professionals. It was found that the young respondents are active users of Web 2.0 in their personal as well as academic lives. Facebook, LinkedIn, Skype and YouTube are prominent social networks that have profoundly influenced the respondents. These technologies have been used largely to acquire useful and up-to-date information pertaining to academic and research work and for socializing.

Keywords: Blogs, Indian Institutes of Managements (IIMs), Social Media, Social Networking Sites, User Study, Web 2.0, Wikipedia

1. Introduction

Web 2.0 has evolved as an interactive communication system, supporting collaboration and information sharing. It is a bundle of innovative technologies, such as, blogs, wikis, instant messaging, podcasts, RSS feeds, etc. assisting the users to generate, amend and distribute contents efficiently and creating a social community of like-minded people (Singh & Gill, 2012). It blurs the boundaries between Web users and producers, consumption and participation, authority and amateurism, play and work, data and the network, reality and virtuality (Zimmer, 2008). The features of Web 2.0 include freedom of data, virtual application and participative work for the user, sharing, communication (Miller, 2005). It is a knowledge sharing platform, where people can create individual web pages (blog), build online collaboration (wiki), to aggregate websites' content at a single place (RSS and News Feeds), in order to network with friends, colleagues and professionals (social networking sites), create online bookmarks, tagged items (social bookmarking) and integrate multiple sources and services (Mashups) (Singh, 2016).

2. Research Objectives

The main objective of the research is to investigate the usage of Web 2.0 technologies by the students, research scholars and LIS professionals of select Indian Institutes of Management (IIMs). The objectives are to:

- Examine the awareness and use of Web 2.0 Technologies by the IIM users;
- Identify the most used Web 2.0 tools;
- Identify the purpose of using Web 2.0 technologies;
- Identify the obstacles confronted by the users in using Web 2.0 Technologies;
- Know about the Web 2.0 literacy programmes provided by IIM libraries.

3. Literature Review

The study by Bharucha (2017) highlights how Indian students can benefit from social media beyond the classroom and also discusses challenges to its adoption in Indian higher education. It finds that despite the

*Author for correspondence

infrastructure students are unable to take advantage of this media in formal learning. The research by Honey and Raphael (2017) explores undergraduate student nurses' use of social media. It finds that almost all (99%) students use social media outside their studies. The study suggests that social media should be incorporated into teaching and learning activities, including its safe and ethical use. A pilot study Sutherland and Ho (2017) stated that social media skills should be taught as these skills and training are valuable for employability. Fasae and Adegbilero-Iwari (2016) investigate the use of social media for academic purposes by science students of selected public universities in Southwest Nigeria. The study finds that Facebook is the most popular network, followed by Google+ (63.77%) and Twitter (47.83%). These media are predominantly used to remain up-to-date with trending events/news. Poor Internet connectivity, receiving unwanted messages/pictures, and electricity failure are the leading problems encountered while using social media. A research by Pirshahid, Naghshineh and Fahimnia (2016) assesses the use of Web 2.0 tools by librarians in the university libraries of East Azerbaijan (EA) in Iran. The study reported that librarians were familiar with Web 2.0 tools, such as, wikis and blogs. Librarians believe that Web 2.0 tools can be used effectively for sharing information about library resources. The major hindrances confronting the adoption of Web 2.0 by librarians were Internet filtering, lack of access to high-speed Internet and absence of training. Palaigeorgiou and Grammatikopoulou (2016) discuss the potential benefits and the challenges of Web 2.0 learning activities in classroom. The teachers experience indicated that Web 2.0 learning activities promote the learning process help students learn how to cooperate and create digital content and extend the time-space of the educational dialogue and promote trust between students and teachers. The study carried out by Rahman, Idrees and Khan (2016) evaluates the awareness level of Web 2.0 applications among information professionals in the University Libraries of Khyber Pakhtunkhwa. Facebook, YouTube and Skype are most familiar networks, while majority of the respondents

had less experience of podcasting, RSS feeds, LinkedIn, Library Thing and Myspace. Power failure, lack of training, non-cooperation from higher authorities, low speed of internet and financial problems are being faced while accessing these technologies. The study by Costa, Alvelos and Teixeira (2015) analyses and compares the use of Web 2.0 tools by students in both learning and leisure contexts. It finds that 42% of the students do not use Web 2.0 tools intensively. Usoro and Echeng (2015) investigated the factors that influence increased engagement with Web 2.0 tools for learning activities. The findings from 203 Scottish students revealed that seven factors (perceived usefulness, facilitating condition, motivation, prior knowledge, performance expectancy and social factors) positively influence students' use of Web 2.0 tools for learning.

4. Scope and Methodology

A questionnaire was distributed among a random sample of 640 respondents across all disciplines. 500 filled in questionnaires (78%) were received. The survey covers the IIMs at Ahmedabad, Bangalore, Indore, Kolkata and Lucknow.

5. Analysis and Interpretations of Research

The analysis of the data collected is presented in the following sections.

5.1 Demographic Characteristics of Respondents

Table 1 depicts the gender description of respondents, of which 56.4% are male and 43.6% are females. The data related to age groups which indicate that a majority of the respondents, which is about 85% are under the age of 30, who usually admire these networks. It also symbolizes that the younger generation has evinced an enthusiastic interest in participating in Web 2.0 activities.

Table 1. Demographic characteristics of respondents

	Gender		Age Groups						
	Male	Female	Below 25	26-30	31-35	36-40	41-45	46-50	Above 51
Total	282 (56.4%)	218 (43.6%)	229 (45.8%)	201 (40.2%)	41 (8.2%)	09 (1.8%)	12 (2.4%)	05 (1%)	3 (0.6%)

5.2 Common Practice of Web 2.0 Technologies

5.2.1 Awareness about Web 2.0 Technologies

Figure 1 indicates that over 75% of the respondents are aware of these technologies and use them frequently.

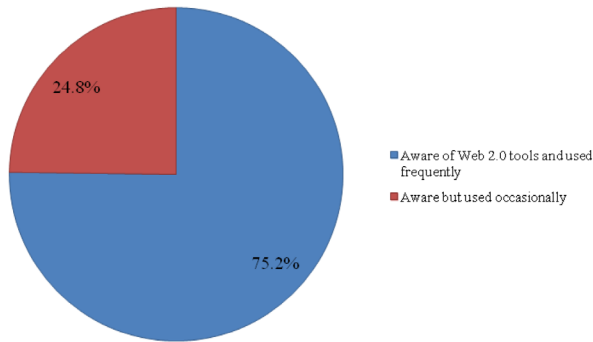


Figure 1. Awareness about Web 2.0 Technologies.

While the remaining is also aware, they use these technologies only occasionally. The most influencing

factor appears to be the help of these technologies in getting jobs and in setting their career goals in the corporate sector.

5.2.2 Most Commonly Used Web 2.0 Tools

Table 2 indicates that 98.6% use Social Networking Sites (SNSs) for connecting, communicating and sharing information, followed by Wikis (91%), (especially Wikipedia) for information about specific fields of learning. It has also been observed that blogs are used by 76% respondents to read and express opinions. Podcasts (11.8%) and Mashups (5%) are less popular among the respondents.

5.2.3 Purposes of Accessing Web 2.0 Technologies

A significant proportion of the respondents use these technologies for academic and research work (62%), and for socializing (58.6%).

Table 2. Most commonly used Web 2.0 tools

Web 2.0 Tools	IIML	IIMA	IIMB	IIMI	IIMC	Total (n=500)
Social Networking Sites (SNSs)	97	99	98	100	99	493 (98.6%)
Wikis	96	90	86	90	93	455 (91%)
Blogs	84	83	71	80	65	383 (76.6%)
Google Docs	75	77	74	65	59	350 (70%)
Instant Messaging (IM)	74	66	64	49	51	304 (60.8%)
Really Simple Syndication (RSS)	44	56	43	34	40	217 (43.4%)
Tagging	35	36	25	29	17	142 (23.6%)
Multimedia Sharing Tools	23	24	23	20	13	103 (20.6%)
Social Bookmarking Sites	17	15	09	14	22	77 (15.4%)
Podcasts	14	11	09	15	10	59 (11.8%)
Mashups	03	03	01	06	12	25 (5%)

Table 3. Purposes of accessing Web 2.0 technologies

Purposes of using Web 2.0	IIML	IIMA	IIMB	IIMI	IIMC	Total (n=500)
Find useful and up-to-date information	88	75	80	80	79	402 (80.4%)
Academic and Research	67	59	67	57	60	310 (62%)
Socializing	74	65	60	50	44	293 (58.6%)
Interactive communication	59	52	60	48	51	270 (54%)
To discuss social issues and events	49	49	36	35	40	209 (41.8%)
Keep up-to-date	46	52	35	25	29	187 (37.4%)
Connect the people of common interest	37	35	30	31	23	156 (31.2%)
To make academic network	25	32	27	32	37	153 (30.6%)
Get opinions/views	36	27	27	24	28	142 (28.4%)
Discussion Forum	26	16	28	21	32	123 (24.6%)
Share experience	30	34	20	14	18	116 (23.2%)
To help in finding objects learning	27	22	19	22	19	109 (21.8%)
Promote themselves/or work	26	18	17	21	23	105 (21%)
For completion of project work	22	19	18	21	28	98 (19.6%)
Finding and sharing useful information resources	32	21	10	19	11	93 (18.6%)
Share the problems with others	23	13	13	13	26	88 (17.6%)
Promoting team working skills	16	11	12	8	7	54 (10.8%)
Preparing collaborative assignment	16	6	13	9	9	53 (10.6%)
Entertainment	17	5	3	3	3	31 (6.2%)

5.2.4 Academic Effectiveness of Web 2.0 Technologies

Table 4 indicates that most of the respondents (78.8%) accepted that Web 2.0 technologies are an effective resource for studies and learning and a source of scholarly

communication (45.4%). Similarly, these tools also assist in offering an interactive discussion forum (41.6%), sharing problems with peers and finding solutions (36.4%) and enhance their research productivity (21%). A small number of respondents used them for developing ICT skills (17.8%) and others created online collaborations (14.2%).

Table 4. Academic effectiveness of Web 2.0 technologies

Academic Effectiveness	IIML	IIMA	IIMB	IIMI	IIMC	Total
Helping in studies and learning	82	77	82	77	76	394 (78.8%)
Scholarly communication	46	40	42	45	50	227 (45.4%)
Provide an interactive forum	47	40	42	39	40	208 (41.6%)
Sharing problems and finding solution	44	38	30	38	32	182 (36.4%)
Enhance work productivity	25	24	28	17	12	105 (21%)
Develop ICT skills	13	16	16	19	25	89 (17.8%)
To create collaborative space for common interest	13	16	14	19	9	71 (14.2%)

5.2.5 Source of Information about Web 2.0 Technologies

Friends (62.2%) and trial and error method (53.2%) are vital sources through which the respondents gained knowledge of Web 2.0 technologies (Figure 2). However, the student hostel and library were the preferred place for accessing Web 2.0 technologies (Figure 3).

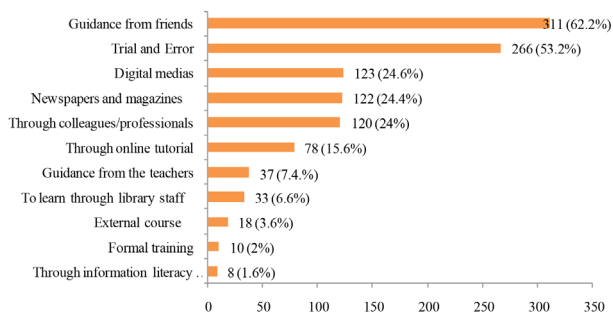


Figure 2. Source of information about Web 2.0 technologies.

5.2.6 Difficulties in Accessing Web 2.0 Tools

Table 5 represents the obstacles faced by the respondents while accessing Web 2.0 tools. The users' statistics show

Table 5. Difficulties in accessing Web 2.0 tools

Difficulties	IIML	IIMA	IIMB	IIMI	IIMC	Total (n=500)
Time constraint	54	53	62	49	54	272 (54.4%)
Fear of misusing personal information	43	26	37	24	33	163 (32.6%)
Bandwidth connectivity	35	21	22	33	22	133 (26.6%)
Lack of training	24	21	12	17	30	104 (20.8%)
Lack of security and privacy	25	27	18	14	21	105 (21%)
Lack of academic/research information	19	13	18	12	39	101 (20.2%)
Information overload	18	24	25	16	16	99 (19.8%)

that about 55% of the respondents have accepted that due to the busy nature of their work, they are not fully utilizing these technologies, followed by the apprehension of misuse of personal information. At the same time providing adequate training, security, and privacy are also some of the key challenges for respondents to access Web 2.0.

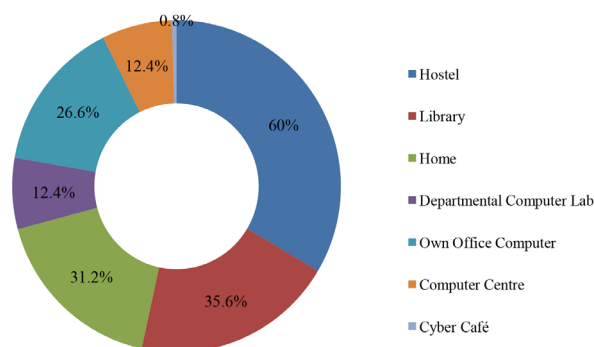


Figure 3. Place of accessing Web 2.0 tools.

Lack of quality resources	9	8	6	12	9	44 (8.8%)
Lack of technical support	8	12	4	18	11	63 (12.6%)
Access not allowed by institute	7	4	6	23	7	47 (9.4%)
Lack of ICT infrastructure	9	7	8	8	18	50 (10%)
Lack of computer literacy	3	7	4	6	8	28 (5.6%)
Hesitant to share information and contents with others	4	10	9	5	1	29 (5.8%)

5.2.7 Participation in Web 2.0 Literacy Programmes

Information literacy programmes are a significant tool for effective use of such services. The Figure 4 reveals that

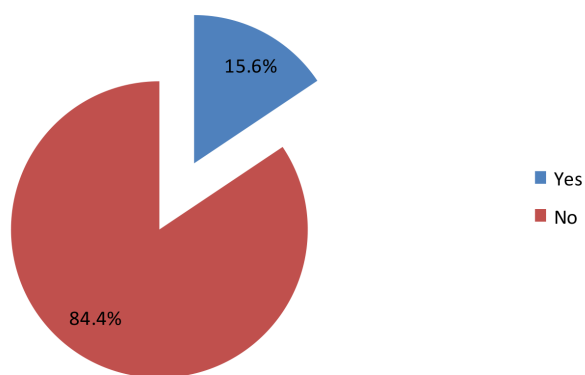


Figure 4. Participation in Web 2.0 literacy programmes.

most of the respondents (84.4%) were not getting any orientation regarding Web 2.0. It has been observed that libraries frequently conduct information literacy programmes for effective searching of e-resources, databases; yet, there is no provision for programmes on Web 2.0 applications. Hence, the study suggests that tutorial on various Web 2.0 tools should be a component of information literacy programmes.

5.3 Prominent Social Networking Sites (SNSs)

Table 6 indicates the frequently used SNSs by the respondents. The survey finds that Facebook, LinkedIn, YouTube and Skype are extensively used. The other SNSs, such as, Bebo, Ning and Bharat Student are less used. It has also been observed that academic/research oriented networks such as SlideShare, Scribd, Academia.edu and ResearchGate are gaining popularity among the respondents.

Table 6. Prominent Social Networking Sites (SNSs)

SNSs	IIM Lucknow	IIM Ahmedabad	IIM Bangalore	IIM Indore	IIM Calcutta	Total
Face book	99	98	96	96	95	484 (96.8%)
LinkedIn	83	75	68	65	78	369 (73.8%)
YouTube	74	82	75	66	69	366 (73.2%)
Skype	75	69	65	58	67	334 (66.8%)
Twitter	58	54	51	46	28	237 (47.4%)
Google Plus	53	51	47	41	30	222 (44.4%)
Orkut	49	41	44	40	46	220 (44%)
Slide Share	33	20	31	22	25	131 (26.2%)
Scribd	32	24	18	21	21	116 (23.2%)
Flickr	23	12	09	08	10	62 (12.4%)
Research Gate	13	10	10	12	15	60 (12%)
Academia.edu	13	13	09	03	07	45 (9%)
Hi5	08	08	07	06	13	42 (8.4%)
Google Buzz	14	06	07	06	08	41 (8.2%)

My Space	04	01	05	07	07	24 (4.8%)
Bebo	02	0	01	01	09	13 (2.6%)
Ning	0	01	0	0	07	8 (1.6%)
Bharat Student	01	0	0	01	05	7 (1.4%)

5.3.1 Blogs

Table 7 presents comprehensive information about blogs in three relevant aspects, such as, usage, purposes and the most popular blogging services. The survey of institutions reveals that 72.6% respondents are aware of blogs and used them extensively, while 18.4% have created their own blogs. They are utilizing this facility to read the blogs of others (66%) and view the opinion of experts (33.2%). Blogger (48.6%) is the most used blogging service followed by WordPress (32.2%).

Table 7. Blogs

Blogs	Respondents
Usage	
Yes	363 (72.6%)
Blog profile	92 (18.4%)
No	58 (11.6%)
Purposes	
Read the blogs of others	330 (66%)
View the opinions of experts	166 (33.2%)
For update themselves	105 (21%)
Explore awareness regarding social issues	103 (20.6%)
Discussion forum	101 (20.2%)
Share information through blogs	92 (18.4%)
Add post to blogs	79 (15.8%)
Provide useful information resources	58 (11.6%)
Share knowledge and experience	54 (10.8%)
Present their own view	20 (4%)
Software/Services	
Blogger	243 (48.6%)
WordPress	161 (32.2%)
Typepad	16 (3.2%)
Live Journal	14 (2.8%)
Moveable	7 (1.4%)

5.3.2 Wikis

Table 8 indicates the respondents' viewpoints regarding the usage of Wikis. 87.4% of the respondents have been

using Wiki services and 7.8% respondents have also created their own profiles on Wiki sites. Besides, they are using Wikis mostly for reading relevant information (83%) and have learnt subject-specific knowledge (47.4%). Wikipedia (91%) is by far the most popular service, followed by MediaWiki.

Table 8. Wikis

Wikis	Respondents
Usage	
Yes	437(87.4%)
Wiki profile	39(7.8%)
No	6(1.2%)
Purposes	
Reading information	415(83%)
Learn subject knowledge	237(47.4%)
Find relevant information	206(41.2%)
Exchange and share information	106(21.2%)
Accessing and review of resources	80(16%)
Discussion platform	69(13.8%)
Collaboration with people of similar interest	42 (8.4%)
Edit or update entries of Wikipedia	33(6.6%)
Project planning	37(7.4%)
Software/Services	
Wikipedia	455(91%)
MediaWiki	47(9.4%)
PBWiki	20(4%)
TWiki	15(3%)
TermWiki	8(1.6%)

5.3.3 Instant Messaging (IM)

Over 60% of the respondents are using instant messaging facility. Online chatting (60.6%) is the main purpose of accessing this service. GTalk (60.6%) is the most used IM service followed by Yahoo Messenger (51%) (Table 9).

Table 9. Instant messaging

IM	Respondents
Usage	
Yes	322 (64.4%)
No	78 (15.6%)
Purposes	
Online chatting	303 (60.6%)
Take any query	155 (31%)
Contacting colleagues	137 (27.4%)
To ask about useful resources	130 (26%)
Reference service	82 (16.4%)
Advice and guidance from experts	24 (4.8%)
Software	
GTalk	303 (60.6%)
Yahoo Messenger	255 (51%)
Window Live Messenger	105 (21%)
eBuddy	59 (11.8%)
AIM	27 (5.4%)
Meebo	29 (5.8%)

5.3.4 Really Simple Syndication (RSS)

Less than half the respondents use RSS (Table 10).

Table 10. Really Simple Syndication (RSS)

Really Simple Syndication (RSS)	Respondents
Usage	
Yes	226 (45.2%)
No	149 (29.8%)
Purposes	
Keep up-to-date	189 (37.8%)
Latest subject information	154 (30.8%)
Current news and events	134 (26.8%)
Journal articles alert	46 (9.2%)
New books release alert	31 (6.2%)
Seminar/conference alert	34 (6.8%)
Websites content upgradation alert	39 (7.8%)
New products alert	26 (5.2%)
Employment alert	23 (4.6%)

Social bookmarking sites are yet to gain popularity among the respondents as less than 20% of the respondents seem to be using these services.

6. Major Findings and Suggestions

The major findings are:

- Social networking sites are used by all categories of respondents, followed by wikis; Facebook, LinkedIn, Skype and YouTube are impacting respondents,
- A substantial number of respondents regularly access these technologies to obtain useful and up-to-date information for academic and research work (62%) and for socializing (58.6%),
- Web 2.0 technologies are an effective resource for studies and learning and for a source of scholarly communication (45.4%),
- Friends and colleagues are the major sources for becoming aware of Web 2.0 technologies. However, these technologies are not being fully utilized at present,
- Wikipedia is a very popular tool among the respondents, and
- The information literacy programmes of libraries do not have a component on Web 2.0 technologies. It is suggested that these be made a significant component of such programmes.

7. References

- Bharucha, J. (2017). Learning and social software: exploring the realities in India. *Journal of Information, Communication and Ethics in Society*, 16: 75-89. <https://doi.org/10.1108/JICES-04-2017-0025>.
- Costa, C., Alvelos, H. and Teixeira, L. (2015). The use of Web 2.0 tools by students in learning and leisure contexts: A study in a Portuguese institution of higher education. *Technology, Pedagogy and Education*, 25: 377-94. <https://doi.org/10.1080/1475939X.2015.1057611>.
- Fasae, J. K. and Adegbilero-Iwari, I. (2016). Use of social media by science students in public universities in Southwest Nigeria. *The Electronic Library*, 34: 213-22. <https://doi.org/10.1108/EL-11-2014-0205>.
- Honey, M. and Raphael, D. (2017). Preparation for working in a knowledge-based society: New Zealand student nurses' use of social media. *Informatics*, 4: 1-5. <https://doi.org/10.3390/informatics4020008>.
- Miller, P. (2005). Web 2.0: Building the new library. *Ariadne*, 45. <http://www.ariadne.ac.uk/issue45/miller/>
- Palaigeorgiou, G. and Grammatikopoulou, A. (2016). Benefits, barriers and prerequisites for Web 2.0 learning activities in

- the classroom. *Interactive Technology and Smart Education*, 13, 2-18. <https://doi.org/10.1108/ITSE-09-2015-0028>.
- Pirshahid, S. E., Naghshineh, N. and Fahimnia, F. (2016). Knowledge and use of Web 2.0 by librarians in university libraries of East Azerbaijan, Iran. *The Electronic Library*, 34: 1013-30. <https://doi.org/10.1108/EL-10-2014-0192>.
- Rahman, A. U., Idrees, H. and Khan, A. (2016). Prerequisite and awareness status of Web 2.0 applications in University Libraries of Khyber Pakhtunkhwa. *Library Hi Tech News*, 33, 5-7. <https://doi.org/10.1108/LHTN-04-2016-0019>.
- Singh, K.P. and Gill, M.S. (2012). *Use of Social Networking Sites in India: Practices, Prospectus and Problems*. Germany: Lambert Academic Publishing; p. 210.
- Singh, M. (2016). Role of Web 2.0 technologies in career development of library professionals. In: *Human resources management in libraries and information centres*, Ed. I. V. Malhan, A. S. Chandel and M. P. Satija. New Delhi, 2016, 300-16. PMCID: PMC5234170.
- Sutherland, K. and Ho, S. (2017). Undergraduate perceptions of social media proficiency and graduate employability: A pilot study. *Higher Education, Skills and Work-Based Learning*, 7, 261-74. <https://doi.org/10.1108/HESWBL-02-2017-0018>.
- Usoro, A. and Echeng, R. (2015). Model of acceptance of Web 2.0 technologies for increased participation in learning activities. *International Journal of Intelligent Computing and Cybernetics*, 8, 208-21. <https://doi.org/10.1108/IJICC-09-2014-0042>.
- Zimmer, M. (2008). Critical perspectives on Web 2.0. *First Monday*, 13(3). <https://doi.org/10.5210/fm.v13i3.2137>.