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Social Media And Higher Learning: Exploring Contributions Of Factors For Effective Learning

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Abstract

Higher Educational Institutions take a lead role in preparing graduates with new skills and with a wide range of know-how knowledge, to enter into a more competitive and complex interdependent world as quality is multidimensional. The creation of new knowledge relies on tacit knowledge sharing and dissemination of such knowledge may help in the process. This knowledge process helps to change learning to Effective Learning. This study identified various factors which influence and impede this knowledge transfer disseminate and gather required knowledge, as this transformation always relies on various individual and cultural factors. The paper tries to correlate various theories and practices and identify the factors for effective learning in the social media environment.

Keywords: Social Interaction SI, Social Media SM, Knowledge Sharing KS, Higher Educational Institution HEI

Introduction

The outbreak of social media has changed the course of humans in their daily lives and in the working environment. Every challenge opens up a new opportunity. Earlier, both Formal and Informal learning classified, knowledge for individuals can happen only in closed contact. Now knowledge can be gained using social media tool which is used for enhancing the knowledge that already we have and further for knowledge dissemination and knowledge sharing. Formal learning happened within the classroom, and the teacher and students had their interactions either with a blackboard or using computers and projectors. Further, Informal learning helped in enriching knowledge through interactions or mediated with technology. Earlier formal and informal learning relied on information from print and other media.

In the 2000s, with the advent of technology, the Internet was a big breakthrough. Further to formal and informal learning, the Internet seemed to be a more innovative mode of sharing knowledge. Then, Social media eased interactions for the student cohort among its peer group even for those who are geographically distributed. Ahead of the Internet and social media, Google is another source for information. During the last decade, with social media, the mechanism of learning has become tranquil and there are evident changes. The advent of social media enhanced access for various sources at ease. Diversified and expanded learning opportunities are emerged out from social media. In these years,

esteemed knowledge workers with the arrival of various social media tools are utilizing it for enhancing knowledge collaboration and sharing potentiality [1].

Only with the interchange of personnel knowledge of the individual's, Learning and Creation can happen [2,3]. Knowledge sharing and knowledge creation are mutually inclusive through a systematic approach. personal knowledge may lead to collective knowledge and can be articulated only by leveraging knowledge sharing. Social media eases leveraging of knowledge sharing [4]. Motivation plays a key role in this unprepared shift into digitalization in teaching and learning activities.

Information flow has increased in a drastic manner with social media tools and it has provided a channel for the exchange of information, among the cohort and increased access for peer reviews. Thus social media facilitated the Institutions, Faculty, and Students', and motivated to create a platform for knowledge seeking and sharing. Knowledge flow refers to transfer, creation, and integration. Intuitive and improved academic performances can be achieved through collaboration and networking. There are various pieces of literature that talk about the convergence of networking and performance at the organization level through the creation of new knowledge and various factors influencing knowledge sharing for this creation of new knowledge. These were explored and an integrated framework was detailed as knowledge management. There are theories and researches identified factors that hinder/influence knowledge sharing and are scant studies that discuss effective learning. Many researchers discussed various factors like Trust, costs of benefits, knowledge sharing, social capital, motivation systems, communication technologies, Environment, and management ideology [4,5,6,7,8,9,10,11,12,13]. Comprising from the literature the evolution of social media has a tremendous growth than traditional information technology [14]. Knowledge distribution may be from different sources which may be public or private [15]. Knowledge or the creation of new knowledge depends on various factors, those factors may influence or hinder performance.

Here in this study, the author identified some influencing factors contributing to knowledge seeking and sharing in the social media environment. Also, identified the effect of those influencing factors impact on effective learning.

Literature Review

Social Media

Devastating growth of knowledge has been facilitated through social media in a more rapid manner. Information is shared in a more efficient manner with social media tools. The assessed knowledge that currently eases the gap at an increasing pace and with technology the gain of knowledge and proliferate ideas has been made easier. The gap between humans and technology is bridged with social media.

Contributions and sharing experiences by users had seen a drastic change using social media tools [16]. Distinct activities are seen with social media than with traditional media [17]. Knowledge cannot be achieved through formal and informal learning, it can be achieved only through insights and expertise from the peer group. The purpose of gaining knowledge may be exhibited in nature, but attaining such knowledge also seeks expertise [18,19,20]. With the advent of social media, individuals are capable of knowledge sharing and able to access varied services for knowledge seeking and knowledge dissemination. Beyond geographical boundaries, knowledge seekers can connect to sources and able to gain knowledge [21]. Beneficial knowledge could be shared with people of similar interests [17].

Social Media has been referred to as that "The users interact in web with each other to generate and share information" [1]. Digitalization has paved way for socialization [23]. It facilitated interaction at ease and provided further opportunities for collaboration with peers apart, communicating with technology [23]. The

features that differentiate Social Media and IT are paralleled with the principles like participation, collective intelligence and egalitarianism, and networking. [24]. Knowledge sharing has been facilitated through social media [25].

Social Media enhanced innovative opportunities for knowledge creation [26,27]. In much of the knowledge management literature, there is an emphasis on social media [1,28]. Need to identify the drawbacks of the current technologies towards knowledge sharing [29]. Very limited literature speaks on the factors which are affected by social media adoption. [27]. Knowledge Sharing attitudes [6,12,61] and seeking [12,77,30] have been mentioned in psychology topics and in motivational features, each has been discussed separately and has a major contribution to knowledge repositories [30].

Knowledge Sharing

With Knowledge sharing among knowledge workers, there is a difference which is identified in the acquired knowledge which helped in progressing with new ideas; and in solving problems. Knowledge Sharing leverages personal knowledge into the collective knowledge, as Social media platforms facilitate this process. [4].

Sharing of knowledge and the willingness to share that knowledge in today's scenario, are achieved through social media and this provides an insight to develop a new hypothesis through qualitative researches and the same can be achieved using socialization, activities to be shared among others, and story-telling [17]. To share and to seek knowledge whereby adopting social media and for the conceptual model various theories are progressed separately. TRA - Theory of Reasoned Action and TAM - Technology Acceptance Model where these theories explain behavioral attitude with IT adoption. Whereas, [31] with protracted framework related to the attitude-behavior framework, and as these related factors determine the specific behavior". This research has a novelty in it, it extended in adopting social media instead of IT adoption, for the knowledge attribute in this integrated model.

Social Media's Impact on Knowledge Sharing for Effective Learning

[32] Technology can be used as an environment for learning, but it cannot be used independently for knowledge dissemination [33]. It cannot be generalized that students who spend more time online can give better performance. Social media can support users to increase their critical thinking and inculcate knowledge through collaboration. Social media provides a channel for students to share their thoughts among peers for the creation of new knowledge and develop their skills to gain more knowledge and expertise. [34,35,36,37,38,39]. Students who are connected in social media are more confident than those who are not connected. It helps them to be with their peers towards knowledge sharing. [36,38] Social media not only contributes to students' academic performance, but it also supports the student cohort through all means and for relationship building. [40,41,42]. Further, over a period of time classroom learning may be developed further for dissemination and seeking of information in a more efficient manner [43,44]. Social media distracts students, this may lead the student cohort to have some backlog in their studies [45].

By establishing necessary guidelines we may restrict the abuses using social media and cyberbullying & Cyber-plagiarism. [38,44,46] stated "The Institutions for launching basic morals, that has to strengthen things which are beneficial for the student community towards sharing knowledge". "Social media tools which are used for social interaction helps the students to move beyond memorization, can create products on their own that characterizes their voices"; [34,47,48] "These tools also help them to their curriculum content". This paper focuses on how well the student community learns in an effective manner using various attributes. [49] There may be an emotional involvement and cognitive effort at the time of face-to-

face interaction. [42,49] Variety of social media tools which may include web-based tools and services and are designed in such a way they are to promote community development for knowledge seeking and sharing". Social media facilitated interaction and helped the group of students for understanding and confine the spillover knowledge onto others.

"Higher levels of interactions are essential to achieve extremely reliant tasks, for information seeking & sharing when there exists an extremely interdependence among team members". [50], "Reciprocity helps the student group to work on to achieve common goals and to build a strong relationship". This also benefits academicians, to modify their course curriculum and learning and teaching methodology. [51,52] "Participating and collaborating among learners, the contributions of the students ". [34,52,53,54,55] Overall development and critical thinking, increased with social interactions and it helped them achieve their learning outcomes and improved their performance.

Theoretical Framing

Theoretical frameworks like, Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB) discuss how well new things can be easily accommodated and retrieved. TRA also explains about significance of behavior and attitude in adopting IT. There are researchers who implored TRA and its extended model which tried to explain various other IT adoption models [56]. Theory of Reasoned Action, Theory of Planned Behavior, Technology Acceptance Model, suggested the strength and behavioral intention to perform and determined with a particular behavior [57]. A person's behavior can be determined only through their attitude [58].

Information Technology Adoption and Its Role on Attitude

Envisioned behavior highlighted by various scholars defined through various theories and practices which to related attitudes [31], behavioral analysis thoroughly related to attitudes and at times of opposing attitudes are correspondingly important towards predictors behavior. [31] this study reasoned out the backgrounds that how well social media has been adopted by the students.

Hypothesis and Research Model

Subjective norm-like constructs are excluded from the model of this study for varied reasons. By the adoption of social networks and upon certain specific factors, student cohort enjoyed delivering their services [15] which may sometimes affect effective learning [59]. [10] Knowledge sharing happens through technology either directly or indirectly. Hence the contributions and the characteristics of the factors for sharing knowledge are identified for both knowledge sharing and effective learning.
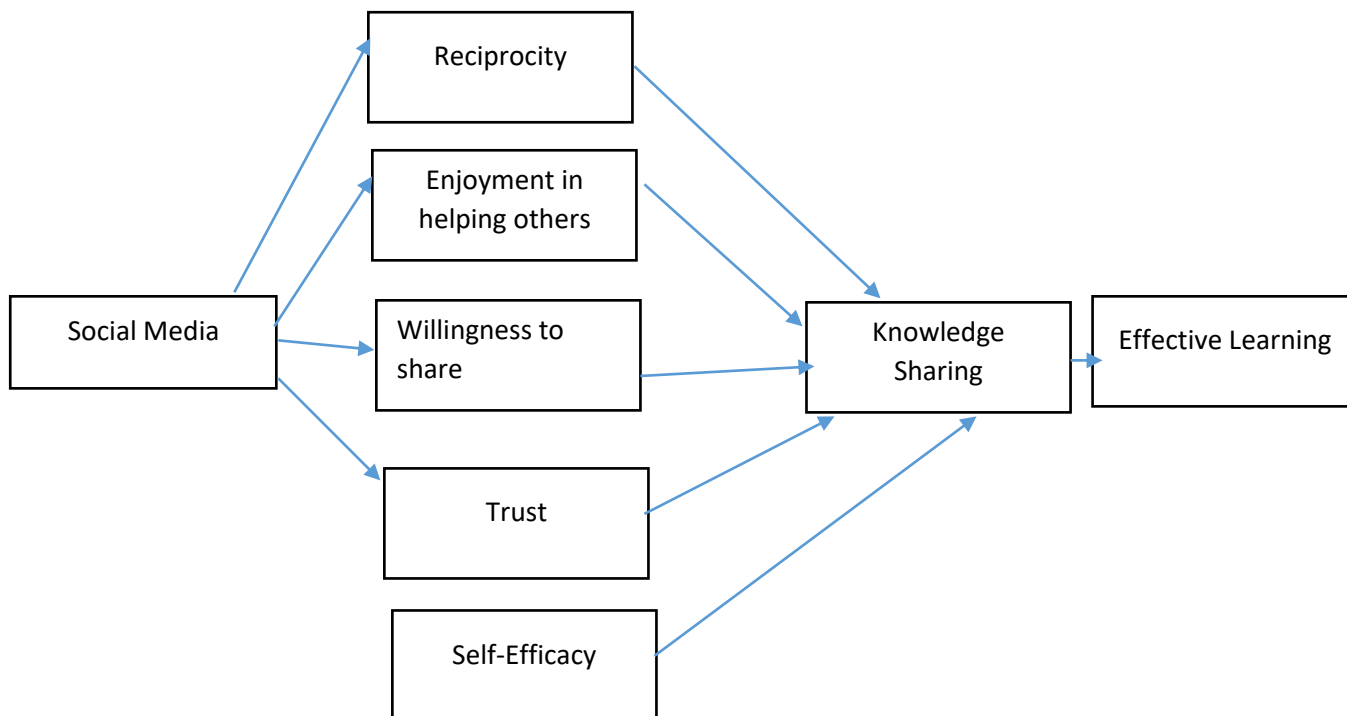
Significance of the Study

To compete in today's competitive world, and to achieve and excel, knowledge plays an important role. Nonaka defines two types of knowledge where explicit knowledge can be articulated whereas tacit knowledge cannot be articulated and resides in an individual's mind. Tacit knowledge can be identified only by a lot more interactions and by sharing experiences, also listening, and active participation with peers and individuals. Social media bridged this gap, and it is a more preferred medium than face-to-face situations. [60]; Hence to identify the factors enabling the students' to achieve their overall learning outcomes, social media medium enabled them to achieve their goals by sharing useful knowledge among their peers. But this sudden transition helped the higher educational institute students as their infrastructure is sufficient for such accesses.

Based on the extant literature and adopting various theoretical frameworks, outlined the hypothesis for the research and explained the model, finding, and the research methodology. Briefed on the effects of the

study with the theory, and practice mentioned are discussed. Based on the key observations sought, insights and the research limitations, and future studies which can be carried based on these observations are clearly explained further.

Figure 1

The experiences are explored, and identified various factors whose contributions to the learning process and, prospects via integrating through knowledge sharing. The model excluded subjective norms, and some construed constructs, and presented the research model. [5, 77], the most contributing factor for sharing knowledge and the intention to share both explicit and tacit knowledge is highly dependent on this factor reciprocity which leads to hypothesis H1.

H1. Do Reciprocity positively influence sharing of knowledge in Social Media for effective learning.

Factors influencing Knowledge Sharing

Knowledge sharing has a background in the Theory of Planned Behaviour. Sharing knowledge and further tacit knowledge sharing helps us to expertise on the subject knowledge and for creation of new knowledge. Hence this leads to hypothesis H2. This gives a tendency to feel empathy for others and help in value addition.

H2. Do Enjoyment in helping others influences knowledge sharing in Social Media for effective learning.

Theory of Technology Acceptance Model discusses more on the willingness. If there is a willingness to share and seek knowledge helps to achieve expertise and effectiveness in learning. Willingness to share has perceived value and has a significant impact on the learning process. This leads to Hypothesis H3.

H3. Do Willingness to share positively influence knowledge sharing in Social Media for effective learning.

Sharing knowledge in a group may not be seriously impacted in general, but relevant to the subject sharing of information has a lot more in a learning environment. Individuals who may not share their knowledge

outwardly may assume that they will be losing their identity if they share their knowledge in a group. Hence the most important factor which plays a crucial role is trust. Hence hypothesis H4.

H4. Do Trust impact knowledge sharing in Social Media for effective learning.

 Educational Institutions are not designed here for knowledge sharing or knowledge accumulation in any specific way, whereas by collaboration and through interactions, they share their knowledge for effective learning. Social cognitive theory and motivational theory have a mention on self-efficacy where without any intention to hide or share specific knowledge among others. Hence hypothesis H5

H5. Do Self Efficacy influences on knowledge sharing in Social Media for effective learning.

 Higher learning institutions play a key role in globalization and sustain economic growth.   A strategy for effectiveness in learning can be achieved only through sharing expertise and experiences of individuals, this sharing depends on various factors. Hence hypothesis H5.

H6. Do Knowledge Sharing has an impact on effective learning in a social media environment influenced by various factors.

 Envisioned through several studies related behaviors and attitudes [31], like behavioral attitudes at times will have opposing views like in the western countries marriages related to childbearing and taking care of old age parents. These studies clearly indicate that the advent of knowledge dissemination and knowledge gain in social media has different viewpoints and at times reveals certain specific views on issues related.

 Literature narrates, how students, share and seek their knowledge which relied more on their individual ability and with social tools improved their learning effectiveness in their academic activities.

 Learning may not depend on technology, whereas this may create an environment where there is definitely a knowledge gain. This research mainly identifies the factors influencing knowledge sharing and academic performance which in turn helped them develop their overall skill and career prospects in the social media environment, The findings categorize with major outbreaks, like pedagogy adopted in teaching-learning its benefits, and limitations.

Objective

To identify the enabling factors, influence knowledge sharing, and seeking for effective learning in a social media environment

To measure the model fit.

Methodology and Analysis

This research was conducted in centrally funded institutions using descriptive analysis.
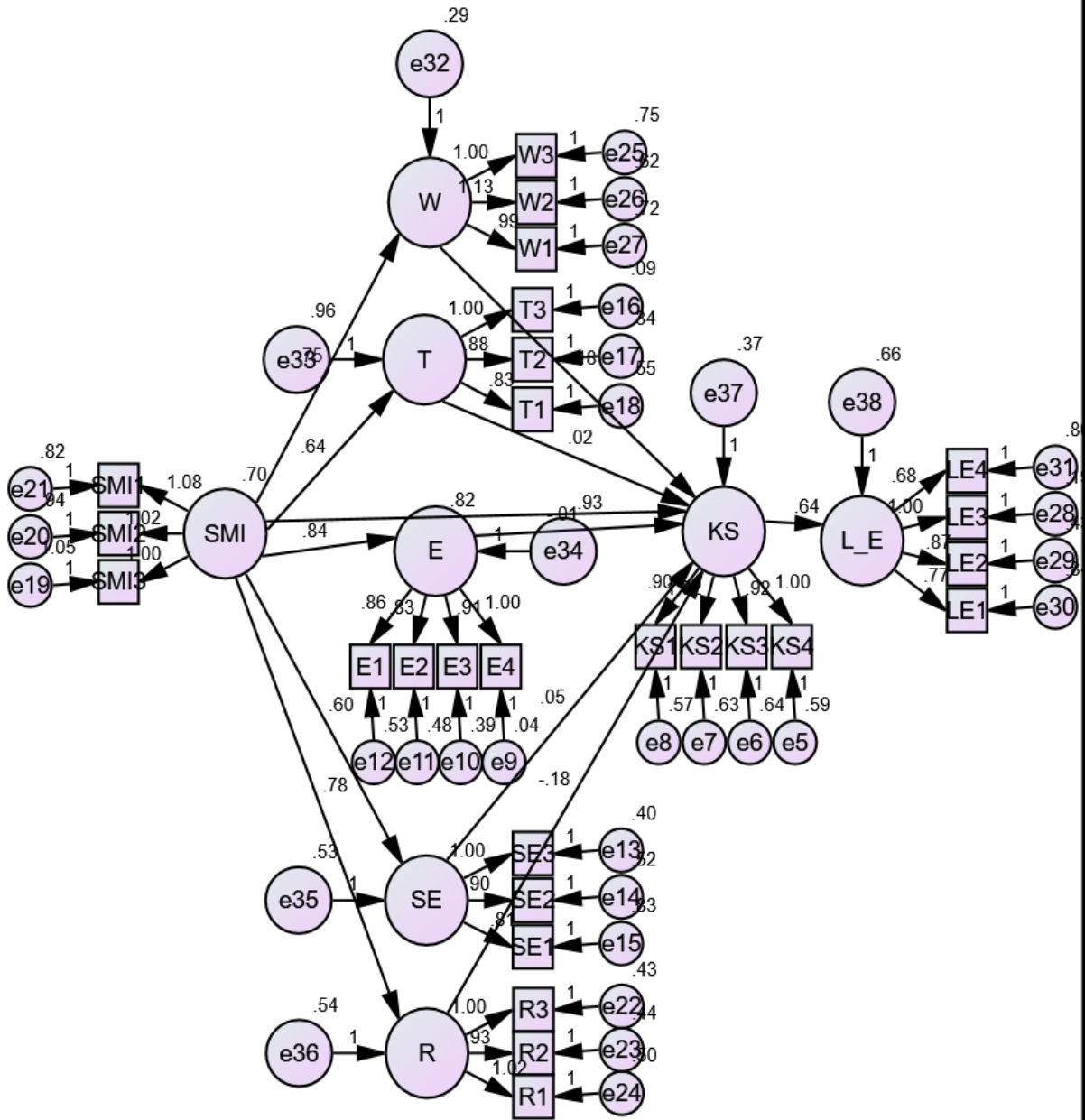
Data Collection

The instrument was prepared with the identified sources from the literature and later on finalized, based on the suggestions and comments of the research scholars and professors. An initial pilot study was done with around 50 students and a few modifications are done in the instrument based on those results. Centrally funded higher educational institution was chosen for collecting data for this study. A determined critical sampling technique was used in collecting data. The researcher had in conversation, with the respondent, briefed them on the content, and allowed only those who are really interested. Main data collection took more than a month and in total 600 numbers of questionnaires were collected. Amidst the collected data, 79 was removed for inconsistency & doubtful pattern.

Data has been collected from the validated questionnaire adapted from the existing researches. This was collected offline from Higher Educational Institutions. A Five-Point measuring scale indicated 1 to 5 and 5 as strongly agree and 1 as strongly disagree and varied accordingly. Interactions were held with students on the content of the questionnaire and briefed them with the intention of the variables associated with the study. The study included students at various levels from Undergraduate, Post Graduate and Researchers.

Analysis of the Data

 The Collected data were analyzed with the SPSS and (AMOS) 16 software. The study used SEM for data analysis. Based on the statistical structures interpreted the analysis and further explained the limitations of this study and future researches on this area.

Figure 2

Influence of social media and various factors for knowledge sharing contributing to effective learning

Social Media and Influencing Factors for effective learning. The Confirmatory Factor Analysis tool may levy limits to the researcher to confirm on the model based on the flow of the theory.

From CFA the interpretations on the construct are fit and the results are tabulated below in the table.

Measure	Estimate	Threshold	Interpretation
CMIN	596.478	--	--
DF	296	--	--
CMIN/DF	2.015	Between 1 and 3	Excellent
CFI	0.947	>0.95	Acceptable
SRMR	0.048	<0.08	Excellent
RMSEA	0.054	<0.06	Excellent
PClose	0.170	>0.05	Excellent

The demographic characteristics of the study clearly indicate that the participants are in the age group between 18-24 and have access to social media. Also, the social media tools are accessed by the male members than the female members and Undergraduate students have more access than others.

Reliability of the Constructs

Constructs and source		
Construct	Items	Source
Social Media	3	Lee and Kozar (2009)
Knowledge creation (Socialization, Externalisation, Combination, and Internalization)	6	(Nonaka et al., 2000)
	4	
	4	
	5	
Knowledge Sharing	6	(Bock et al, 2005)
Reciprocity	3	(Chennamaneni et. Al.(2012))

Enjoyment in helping others	4	(Chennamaneni et. al.(2012)), (Razmerita Kirchner, Nielsen (2016))
Willingness to Share	3	Wasko & Faraj (2005)
Trust	3	(He and Wei (2009)
Self Efficacy	3	(Kankanhalli et al.(2005a, 2005b)
Learning Effectiveness	4	(Fang et al., 2008), (Wu and Lin, 2012; Bicen and Sadikoglu, 2015; Akhaven, Ramezan and Yazdi, 2014)

Internal consistency and the scales correlation identified based on Cronbach's efficiency with the mean and standard variance and the data are validated as it is adhered as stated in the table.

Figure 3: Structural Equation Modeling (SEM) for assessing Model Fit

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	66	731.328	312	.000	2.344
Saturated model	378	.000	0		
Independence model	27	6027.806	351	.000	17.173

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.891	.898	.923	.916	.930
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.055	.070	.081	.100

Model	RMSEA	LO 90	HI 90	PCLOSE
Independence model	.214	.209	.218	.000

For testing the hypothesis, structural equation analysis was conducted. The results of the Structural equation model for the hypothesis was shown in figure-3. The goodness of fit is within the recommended limit from the analysis. X2/df-2.344, P-0.000, CFI-0.930, TLI-0.908, IFI-0.916, RMSEA-0.055 and PCLOSE-0.100.

The estimated SEM Model is shown in Figure-3. As per Browne and Cudeck (1993); the value of RMSEA which is less than 0.08 is acceptable. Hence, hypothesis testing says, there is a noteworthy influence of self-efficacy, willingness to share, and trust in knowledge sharing which further influenced effective learning. Whereas Reciprocity and Enjoyment in helping may not have influenced knowledge sharing in the social media environment.

Implications of the Study

With an extant review of literature, knowledge is the key and influencing factor for the creation of new knowledge and for effective learning. Knowledge needs to be shared as sharing and seeking to have a greater impact on effective learning in the social media environment. In this digital era, social media allows individuals to share their knowledge. This sharing and seeking are influenced by various factors and based on theories and practical implications, this study has identified some five factors and analyzed on its influences on knowledge sharing.

Further based on the results which clearly indicate, social media contributed to knowledge sharing and which influenced effective learning with varied factors. The factors are not very much influence sharing, some of the considered factors in this study based on the review of literature are reciprocity, enjoyment in helping others, self-efficacy, willingness to share, and trust. The results of the study clearly vindicate that reciprocity, and enjoyment in helping contributed to knowledge sharing and effective learning.

Practical Implications

More importantly, the study reveals sharing is the most important for effective learning and social media has a greater impact on it. Whether useful knowledge has been shared or the actual knowledge which helps in the creation of new knowledge for developing overall skill has not been identified.

Preferably, neither for rewards nor mere for pleasure, and in helping others, the student does not share their knowledge beyond they improve on their skills and to shape the overall personality the students share their knowledge. Hence, the Institutions should have a strategy to implement systems, strengthen self-efficacy towards knowledge sharing, (i.e), students are to be encouraged for their valuable contributions and to project those contributions highlighted to other members. This study demand focus for the Institutions to nurture students and to help in the process. Further on, the literature clearly indicates that knowledge creation based on the existing knowledge definitely paves way for effective learning and this can be achieved only by sharing and seeking. But this transition in the social media environment has to be feasible for the student cohort with an appropriate system by the institutions.

Technical Infrastructure and Accessibility

The infrastructure provided by the institutions should suffice the students' sharing and seeking and contributions for improving their performance and for developing and improving their overall skill for their future endeavors.

Learning Competencies and Pedagogies

The readiness and preparedness of teachers may lift this challenge as it may be more diversified. Yet, the quality of education should not be compromised if it is face-to-face or in the social media environment

Conclusions and Future Research

The investigations from the study lead to a lot more for future researches. Though the sample considered for this study is quite a large number, this may be increased, and investigating with the increased sample can generalize the results. To eliminate researcher, bias the sampling some other statistical techniques can be involved for better results, though convenience sampling seems to be good enough for empirical investigation. Factors involved in this study were based on various theories which has different pro-active results to this present study as the factors like Self-efficacy and trust which are determined and influenced by various other motivational factors supported knowledge sharing in the current research, whereas reciprocity and enjoyment in helping others do not need any strategy or motivation required by the Institutions which is not supported. Hence this needs further researches since there are limitations to this study.

Earlier researchers were debating whether social media has a role in sharing knowledge on the student community to improve their performance but now for the development of our country to develop in all areas and in the economy and to compete in the global scenario number of studies as to come on, and how well social media can contribute and whether the sharing and seeking, dissemination has contributions to effective learning and to identify the factors which influence for effectiveness in learning.

There is a lot of work on the link between learning and performance, and researchers also agree that the knowing-doing gap always exists (Pfeffer & Sutton 1999). Researchers have also looked at various factors that moderate the relationship between learning and performance. This research has given a new dimension to these cognitive elements by achieving effective learning.

The study may have certain limitations with collected data using the questionnaire and there may be some measurement errors with the representation of the sample. There may be some susceptible measurement errors with the representation of the sample, this may also be due to participants who were in the urge to complete the questionnaire. Secondly, the study has been conducted with graduate and post-graduate students in higher education institutions that are centrally funded. In the future, research can also be conducted with the experiences of students in private educational institutions and state government institutions. A study may also be conducted with graduate, postgraduate, and researchers and a comparative study may be conducted from the collected questionnaires. Huge corporates, governments, and universities may work together for possible knowledge creation that happens through the student community for the prosperity of this country.

REFERENCES

M Levy. WEB 2.0 implications on knowledge management. J Knowl Manag 2009; **13**, 120-134.

B Kogut and U Zander. Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology. Organ Sci 1992; **3**, 383-397.

J Nahapiet and S Ghoshal. Social Capital, Intellectual Capital, and the Organizational Advantage. Acad Manage Rev 1998; **23**, 242-266.

L Razmerita, K Kirchner and T Nabeth. Social Media in Organizations: Leveraging Personal and Collective Knowledge Processes. J Org Comp Elect Com 2014; **24**, 74-93.

GW Bock and Y Kim. Breaking the Myths of Rewards: An Exploratory Study of Attitudes about Knowledge Sharing. Inform Resour Manag J 2002; **15**, 14-21.

MM Wasko and S Faraj. Why Should I Share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice. MIS Quart 2005; **29**, 35-57.

M. Alavi and D Leidner. Knowledge Management Systems: Issues, Challenges, and Benefits. Commun AIS 1999; **1**, 1-37.

M Hsu, TL Ju, C Yen, and C Chang. Knowledge sharing behavior in virtual communities: The relationship between trust, self-efficacy, and outcome expectations. Int J Hum-Comput St 2007; **65**, 153-169.

W Orlikowski. CASE Tools as Organizational Change: Investigating Incremental and Radical Changes in Systems Development. MIS Quart 1993; **17**, 309-340.

GW Bock, RW Zmud, YG Kim and JN Lee. Behavioral Intention Formation in Knowledge Sharing: Examining the Roles of Extrinsic Motivators, Social-Psychological Forces, and Organizational Climate. MIS Quart 2005; **29**, 87-111.

CM Chiu, MH Hsu and ETG Wang. Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. Decis Support Syst 2006; **42**, 1872-1888.

A Kankanhalli, BCY Tan and KK Wei. Contributing Knowledge to Electronic Knowledge Repositories: An Empirical Investigation. MIS Quart 2005; **29**, 113-143.

J Koh and YG Kim. Knowledge sharing in virtual communities: an e-business perspective. Expert Syst Appl 2004; 26, 155-166.

M Parameswaran and AB Whinston. Social Computing: An Overview. Commun AIS 2007; **19**, 762-780.

TH Davenport. Rethinking knowledge work: A strategic approach. McKinseyQuart 2011; **1**, 88-99.

HH Chuang and SS Chang. Social capital and individual motivations on knowledge sharing: Participant involvement as a moderator. Inform Manage 2011, **48**, 9-18.

S Panahi, JA Watson, and H Partridge. Conceptualizing social media support for tacit knowledge sharing: physicians' perspectives and experiences. J Knowl Manag 2016; **20**, 344-363.

YA Ahmed, MN Ahmed and NH Zakaria. Towards exploring factors that influence social media-based knowledge sharing intentions in disaster management. J Theor App Inf Tech 2016; 88, 487-498.

Y Yan, RM Davison and C Mo. Employee creativity formation: The roles of knowledge seeking, knowledge contributing and flow experience in Web 2.0 virtual communities. Comput Hum Behav 2013; **29**, 1923-1932.

TH Kim and I Benbasat. Effectiveness of Knowledge Seeking Behaviors Embedded in Social Networks: A Perspective of Individuals in Workplaces. In:Sprague RH (ed.). Proceedings of the 45th Annual Hawaii International Conference on System Sciences. IEEE, New Jersey, 2012, p. 3848–3857.

NB Ellison, JL Gibbs and MS Weber. The Use of Enterprise Social Network Sites for Knowledge Sharing in Distributed Organizations: The Role of Organizational Affordances. Am Behav Sci 2015; **59**, 103-123.

N Oostervink, M Agterberg and M Huysman. Knowledge Sharing on Enterprise Social Media: Practices to Cope with Institutional Complexity. J Comput-Mediat Comm 2016; **21**, 156–176.

A McAfee. Enterprise 2.0: New Collaborative Tools for Your Organization's Toughest Challenges. Harvard Business School Publishing, Boston, 2009, p. 256.

MNK Boulos and S Wheeler. The emerging Web 2.0 social software: an enabling suite of sociable technologies in health and health care education. Health Info Libr J 2007; **24**, 2-23.

KY Huang, N Choi and L Horowitz. Web 2.0 use and organizational innovation: a knowledge transfer enabling perspective. In: Proceedings of the Sixteenth Americas Conference on Information Systems, Association for Information Systems, Lima, 2010, p. 1-8.

SJ Andriole. Business impact of Web 2.0 technologies. Commun ACM 2010; **53**, 67–79.

J Bughin, M Chui and M Harrysson. How Social Tools Can Reshape the Organization. McKinsey Quart 2016; **1**, 1-9.

D Weinberger. The real difference between the two 2.0s. Perspective on Knowledge 2009; 1.

S Paroutis and AA Saleh. Determinants of knowledge sharing using Web 2.0 technologies. J Knowl Manag 2009; **13**, 52-63.

W He and KK Wei. What drives continued knowledge sharing? An investigation of knowledge-contribution and -seeking beliefs. Decis Support Syst 2009; **46**, 826-838.

EA Jennings, WG Axinn and DJ Ghimire. The Effect of Parents' Attitudes on Sons' Marriage Timing. Am Sociol Rev 2012; **77**, 923–945.

NM Aguilar-Roca, AE Williams and DK O'Dowd. The impact of laptop-free zones on student performance and attitudes in large lectures. Comput Educ 2012; **59**, 1300-1308.

PSH Chen, AD Lambert and KR Guidry. Engaging online learners: The impact of Web-based learning technology on college student engagement. Comput Educ 2010; **54**, 1222-1232.

RM Carini, GD Kuh and SP Klein. Student Engagement and Student Learning: Testing the Linkages. Res High Educ 2006; **47**, 1-32.

Y Shoshani and RB Hazi. The Use of the Internet Environment for Enhancing Creativity. Educ Media 2007; **44**, 17-32.

SG Mazman and YK Usluel. Modeling educational usage of Facebook. Comput Educ 2010; **55**, 444-453.

LA Annetta, J Minogue, SY Holmes and MT Cheng. Investigating the impact of video games on high school students' engagement and learning about genetics. Comput Educ 2009; **53**, 74-85.

C Jackson. Your Students Love Social Media ... and So Can You. Teach Tolerance 2011; **39**, 38-41.

M Tomai, V Rosa, ME Mebane, A D'Acunti, M Benedetti and D Francescato. Virtual communities in schools as tools to promote social capital with high school students. Comput Educ 2010; **54**, 265-274.

GD Kuh. In Their Own Words: What Students Learn Outside the Classroom. Am Educ Res J 1993; **30**, 277–304.

M Ebner, C Lienhardt, M Rohs and I Meyer. Microblogs in higher education: A chance to facilitate informal and process-oriented learning? Comput Educ 2010; **55**, 92-100.

N Arnold and T Paulus. Using a social networking site for experiential learning: Appropriating, lurking, modeling and community building. Internet High Educ 2010; **13**, 188-196.

TL Heafner and AM Friedman. Wikis and constructivism in secondary social studies: Fostering a deeper understanding. Comput Sch 2008; **25**, 288-302.

B Chen and T Bryer. Investigating instructional strategies for using social media in formal and informal learning. Int Rev Res Open Dis 2012; **13**, 87-104.

NE Hurt, G Moss, C Bradley, L Larson, M Lovelace, L Prevost, N Riley, D Domizi and M Camus. The 'Facebook' Effect: College Students' Perceptions of Online Discussions in the Age of Social Networking. Int J Teach Learn 2012; **6**, 1-24.

J Smailes and P Gannon-Leary. Peer mentoring: Is a virtual form of support aviable alternative. Res Learn T 2011; **19**, 129-142.

A Lamb and L Johnson. Bring Back the Joy: Creative Teaching, Learning, and Librarianship. Teach Librarian 2010; **38**, 61-66.

R Junco. Too much face and not enough books: The relationship between multiple indices of Facebook use and academic performance. Comput Hum Behav 2012; **28**, 187-198.

JK Rilling, AG Sanfey, JA Aronson, LE Nystrom and JD Cohen. The neural correlates of theory of mind within interpersonal interactions. Neuroimage 2004; **22**, 1694-1703.

R Junco, G Helbergert and E Loken. The effect of Twitter on college student engagement and grades. J Comput Assist Lear 2011; **27**, 119-132.

TFN Laird and GD Kuh. Student Experiences With Information Technology And Their Relationship To Other Aspects Of Student Engagement. Res High Educ 2005; **46**, 211–233.

GD Kuh. Assessing what matters to student learning: Inside the National Survey of Student Engagement. Change 2001; **33**, 10-17.

GR Pike, GD Kuh and AC McCormick. An Investigation of the Contingent Relationships Between Learning Community Participation and Student Engagement. Res High Educ 2011; **52**, 300-322.

GD Kuh. What student affairs professionals need to know about student engagement. J Coll Student Dev 2009; **50**, 683-706.

GD Kuh, TM Cruce, R Shoup, J Kinsie and RM Gonyea. Unmasking the effects of student engagement on first-year college grades and persistence. J High Educ 2008; **79**, 540-563.

MM Al-Debei, E Al-Lozi A Papazafeiropoulou. Why people keep coming back to Facebook: Explaining and predicting continuance participation from an extended theory of planned behaviour perspective. Decis Support Syst 2013; **55**, 43–54.

M Fishbein and I Ajzen. Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. Addison-Wesley, Boston, MA, 1975, p. 578.

I Ajzen. From Intentions to Actions: A Theory of Planned Behavior. In: J Kuhl and J Beckmann (eds.). Action Control, Springer, Heidelberg, p. 11–39.

SC Goh, C Elliott and TK Quon. The relationship between learning capability and organizational performance: A meta-analytic examination. Learn Org 2012; **19**, 92-108.

MK Kabilan, N Ahmad and MJZ Abidin. Facebook: An online environment for learning English in institutions of higher education? Internet High Educ 2010; **13**, 179-187.

HF Lin. Knowledge Sharing and Firm Innovation Capability: An Empirical Study. Int J Manpower 2007; **28**, 315-332.

DZ Levin and R Cross. The strength of weak ties you can trust: the mediating role of trust in effective knowledge transfer. Manage Sci 2004; **50**,1477–1490.

A Ardichvili, V Page and T Wentling. Motivation and barriers to participation in virtual knowledge-sharing communities of practice. J Knowl Manag 2003; **7**, 64-77.

KC Desouza, Y Awazu and Y Wan. Factors governing the consumption of explicit knowledge. J Am Soc Inf Sci Tec 2006; **57**, 36-43.

W He, Y Fang and K Wei. The role of trust in promoting organizational knowledge seeking using knowledge management systems: an empirical investigation. J Am Soc Inf Sci Tec 2009; **60**, 526-37.

JW Kinch. Social Psychology. McGraw-Hill, New York, 1973, p. 245.

V Gecas. The self-concept. Annu Rev Sociol 1982; **8**, 1- 33.

JW Kinch. A Formalized Theory of the Self-Concept. Am J Sociol 1963; **68**, 481-486.

V Gecas. Parental Behavior and Dimensions of Adolescent Self-Evaluation. Sociometry 1971; **34**, 466-482.

MV Covington and RG Beery. Self-worth and school learning. Holt, Rinehart & Winston, New York, 1976, p. 166.

A Bandura. Social learning theory of aggression. J Commun 1978; **28**, 12–29.

DW Organ and CN Greene. Cognitive versus affective determinants of organizational citizenship behavior. J Appl Psychol 1989; **74**, 157-164.

P Blau. Exchange and power in social life. Wiley, New York, 1964, p. 352.

D Constant, S Kiesler and L Sproull. What's Mine Is Ours, or Is It? A Study of Attitudes about Information Sharing. Inform Syst Res 1994; **5**, 345-449.

GP Huber. Transfer of knowledge in knowledge management systems: unexplored issues and suggested studies. Eur J Inform Syst 2001; **10**, 72-79.

BA Barton, KS Adams, BL Browne and MC Arrastia-Chisholm. The effects of social media usage on attention, motivation, and academic performance. Act Learn High Educ 2021;**22**, 11–22.

GW Bock, A Kankanhalli and S Sharma. Are norms enough? The role of collaborative norms in promoting organizational knowledge seeking. Eur J Inform Syst 2006; **15**, 357–367.

M Cole. Using wiki technology to support student engagement: Lessons from the trenches. Comput Edu 2009; **52**, 141-146.

FD Davis. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS Quart 1989; **13**, 319-340.