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Contributions of SECI in Characteristics of Knowledge Sharing and Learning Effectiveness: Exploring amidst Higher Education Students

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ABSTRACT: Higher Educational Institutions are globally acclaimed for their standard of education. In India Higher Education has witnessed impressive growth by imparting quality Education wherein the quality of structured knowledge is transferred. The ever-increasing demand for Effective Learning and the introduction of a Social Media Environment for Knowledge Sharing has given rise to the concept of characteristics of SECI. The underlying proposition behind SECI is to reduce several individual learning systems such as Formal Learning and Informal Learning into one integrated system supporting efficient learning. The purpose of this paper is to investigate the influence of Knowledge Creation on knowledge sharing and Learning Effectiveness in social media environments on higher education students. By theory and on approach, the study explores the relationship of students learning effectiveness by the creation of new knowledge. The data was collected from 600 students in a more diversified set of students through offline surveys (through hard copies). The study used confirmatory factor analysis and structural equation modeling in order to test the research hypotheses. Results from the data analysis demonstrate the positive and significant relationship between Learning Effectiveness, Knowledge Sharing, and Knowledge creation. However, the findings highlight that there is no direct impact of social media on Effective Learning. The study also identifies that SECI has some partial and serial mediation, also, it was observed that Environmental Uncertainty did not moderate the relationship whereas the mediation moderated by knowledge sharing has a serious impact on effective learning.

Keywords: Combination, Externalization, Internalization, Knowledge Creation, Knowledge Sharing, Social Media, Socialization, Learning Effectiveness.

Abbreviations: IT, information technology; ICT, information communication technology; KMS, knowledge management system; SECI- Socialization, Externalization, Combination, Internalization.

I. INTRODUCTION

Knowledge is a key of human capital to break through the way of engagement, enhancement, and enrichment of human intellectuals and it comes in many types of ways from different forms of sources to exploit the process of knowledge creation, sharing, and development. The most important thing in knowledge is to sustain the competitive advantage of organization goals and discover the new knowledge for futuristic development [6, 36, 53]. Hence, the concept of knowledge is defined as "the insights, understandings and the practical know-how that we all possess" [85].

There are two dimensions of knowledge, which have existed in the form of Explicit and Tacit [58, 80, 89]. Classifying of knowledge, thus the documented knowledge so-called explicit knowledge can be easily stored, accessed, shared and managed systematically, whereas knowledge could not be codified, which resides in the individual's mind called tacit knowledge refers to the skills and knowledge learned by experts over years of practice and experience that difficult to articulate. It plays a vital role in improving the quality for all that we perceive of sustained knowledge in competitiveness through the knowledge process [1, 13, 50].

The knowledge process could happen through the organized sequence of human-centered unit functions of knowledge entities. A knowledge process is a way, how knowledge has been captured, stored, organized, distributed, and used to integrate knowledge discovery, knowledge assessment, knowledge sharing, knowledge creation, and knowledge reuse. This process stimulates discovery and creates new knowledge, to enhance internal and external communication and efficiency of the knowledge. Knowledge creation is a process of the interactions between knowing information via knowledge, which has been implied by the users' activities, learning, and performance through an understanding of basic concepts in terms of knowledge creation and sharing.

The concept of knowledge creation should be a self-evident function. The knowledge that needs a context to create new knowledge which can happen only through sharing [15, 29, 45, 46, 52, 58, 71, 79]. There is a substantial amount of work on literature that has been discussed, focused more on inhibitors to knowledge sharing in organizational context among employees and addressed some determinants for knowledge sharing, whereas much less attention has been focused on Higher Educational Context.

Knowledge plays a significant role in higher educational institutions to explore, engage and enhance the learning quality and performance, whereas it was widely discussed in profit organizations [67]. Since, sharing of

knowledge, expertise, and resources has been vital to the success of Higher Educational Institutions [68]. Keeping track of these academic engagements, Higher Educational Institutions were a warehouse for knowledge generation and dissemination of academic communities to enhance their teaching and learning activities [7, 17, 21, 39, 60, 73, 74]. Effective learning can be achieved only on their varied skills like an innovative way of thinking, participation, intercommunication and evaluative thinking, which will help them to be successful in work-life, often this can be stated as "21st-century skills".

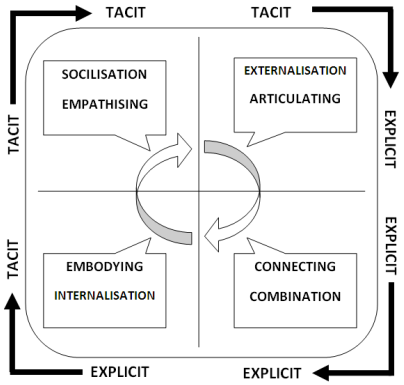

Fig. 1.

There are several studies by researchers on how well social media has been a powerful tool for knowledge sharing, this study is intended to see the probable potential of social media in facilitating knowledge creation for effective learning. Learning is a process whereby the knowledge created through the varied transformation of experience.

Learning as we know is the most important which begins from the individual level and progresses to the group which eventually leads to effective learning. Learning is a process whereby knowledge is created from the transformation of experience. It has been defined a dynamic and multilevel framework and introduced 4I: Intuiting, Interpreting, Integrating, and institutionalizing [20] which involves knowledge creation wherein this model does not distinguish the types of knowledge while [53] divides this to explicit and tacit types. Hence this individual learning transformed to group level and leverages for effective learning.

The purpose of this paper is to contribute to a better understanding of the concepts of effective learning through the creation of new knowledge. This paper has been structured as follows, by defining Nonaka's knowledge creation and how this inhibits, knowledge sharing for effective learning. Secondly, we have the extant literature related to this study. In the next section, we have framed the conceptual model based on the extent of literature and describing the methodology adopted for this study describing the summary in the context of higher education thereby concluding the research topic based on the analyses results and suggested the directions for future study.

II. LITERATURE REVIEW

During the last decades, there have been advancing systematic reviews on the underpinning phenomenon on the construed defined social media, knowledge creation, knowledge sharing, and learning-effectiveness. The literature provided us with different reviews which may be narrative or some may lack in methodology on whether social media and knowledge sharing has a direct impact on learning effectiveness. A methodical way in identifying relevant published works identified that several authors had done a meta-analysis on knowledge management and knowledge sharing in higher educational institutions which had not tried to establish social media, knowledge sharing, and knowledge creation leading for learning effectiveness. In higher educational institutions social media has been used as a tool for sharing knowledge but there was no empirical evidence on evidence of this study. To share information, Social media is a determinant of ICT for knowledge sharing [78]. The study is conducted in the IT industry and ICT has a positive impact on knowledge sharing through social media. It is defined that social media as, aids in participating, communicate in a social environment [78]. In many of the academic writings, it has been defined as the types of technologies like blogs, wikis, social tagging, etc. that people implicitly say as social media for sharing their views and points. Again there is a lack of empirical evidence on learning effectiveness [7]. Social media usage predicted that both motivation and attention have an implication on learning effectiveness. The studies which emphasize the role of social media for knowledge sharing have a positive impact on organizational performance by [23] but as according to [65] again there are very limited studies on higher educational institutional contexts. Enterprise social networking sites have an impact on knowledge management processes like creation and sharing which has implications on organizational learning in different organization types. It has been proposed a multi-modeling framework for higher education on organizational strategies on the culture, leadership, technology, and measurement and for the academic areas it is at the individual, institutional, and network level [3, 88]. Study investigated the key elements that influence knowledge sharing practice, primarily the relationship between knowledge sharing practice and organizational performance within the oil and gas (OG) industry.

Studies emerged of knowledge acquisition and knowledge sharing and relationship between the processes and organizational performance in public sector research universities [36]. Several researches investigated the role of factors related to both pieces of knowledge seeking and knowledge sharing, in the context of Web 2.0 use by health care professionals. Many authors explored perceived usefulness of KMS influences KMS use for sharing and retrieval; and knowledge content quality and perceived usefulness of KMS mediates the link between sharing and retrieval. Various studies have been Conducted in information systems on individual-level knowledge sharing [85, 86]. It has also been discussed more on the factors which influence knowledge sharing among individuals at the team and organizational level and also influenced more on how well the individual knowledge seeking and knowledge sharing happens in the social media environment [85, 86].

Knowledge sharing, distribution, and receptiveness of knowledge are cited repeatedly for a most effective way to for competitive advantage. The interface between tacit and explicit knowledge has been identified through a model called as SECI model [63]. Others [18, 41, 42] and explained how institutions can create and build knowledge continuously through sharing of explicit and implicit knowledge to sustain competitive advantage. Akhavan *et al.*, [4] examined the relationship between knowledge sharing mechanisms and knowledge

creation stages and found a significant association between the knowledge sharing mechanisms and stages of knowledge creation. It is depicted in the study that the spiral of creation of new knowledge, involves, both intellectual and innovative skills [19]. There is a significant impact of knowledge sharing on the knowledge creation process and individual performance as according to [83]. There are studies which discussed on significant impact of social media on the students' academic performance and also highlighted the mediating role of collaborative learning [51]. Other industries have a greater impact on collaborative learning and new knowledge creation other than higher educational institutions. Various Studies explains that the Knowledge creation process exhibits a significant impact on innovation performance in ICT companies [9-a]. The studies also establish the significant relationship between the knowledge creation process and organizational performance [4].

To achieve a depth understanding of new knowledge creation for effective learning, there are papers that make a reference and little relationships on SECI for effectiveness. Critical analysis on reviewing the evidence, arguments, and theoretical concepts of the SECI model. Amine *et al.,* [6-a], highlights the importance of collaboration and knowledge networking and conceptualized a framework for Web 2.0 driven learning, and further discussed the SECI model based on the learning process. The impact of knowledge sharing and knowledge effectiveness was examined in [89]. Also had a mention on Knowledge, Explicit and Tacit Knowledge Creation, Learning Effectiveness, Knowledge sharing. It is confined that for the creation of new knowledge, new technology, and sharing of that knowledge, a methodology has to be created for receiving and to generate or circulate among others for a better system [89]. Amine *et al.,* [6-a], highlighted the importance of collaboration and networking and conceptualized a structure for Web 2.0 driven learning, and further discussed on learning process through SECI. There are studies which also examined the knowledge creation stages and found a significant association between the knowledge sharing mechanisms and stages of knowledge creation [4].

Chou and Liu [19-a], presents a framework that addresses the relationship between learner control and learning effectiveness, which contains four categories: learning achievement, self-efficacy, satisfaction, and learning climate. The importance of knowledge management in higher education systems and how this approach may lead to increased improvements in explicit and tacit knowledge sharing and its benefits, and how the pedagogy has changed the different areas of the educational institution [38]. These studies has a mention, on managing knowledge in the context of higher education needs noteworthy based on their culture, values, structures, and reward systems [73, 57] SECI process. For the development of the new product, the key things which are identified by [5, 26, 82, 12] are "personal knowledge, experience, skills, and expertise".

SECI model was basically originated from [56] and this model has been utilized in the studies basically on innovative companies on information created using the knowledge process steps of socialization, externalization, combination, and internalization. It is evident that there are scant studies examining the impact of social media and on factors enabling knowledge management and subsequently on knowledge sharing. Considering, the evolution of the digital era this study also intends to explore the role of social media in enhancing the students' learning through knowledge creation and effective knowledge sharing.

"Socialization" synthesis, the similar outputs that are identified are online discussions, Community of practice, IM (Instant Message), video conferencing, virtual classroom, telephone, interactive learnings, web platform, email, wikis, and collaboration tools.

In the detailed "Combination" synthesis, similar outputs that are search-engines, collaborative systems, wikis, tags, bookmarks, social networks, RSS, e-mail, mashups, blogs, internet, reflective-analysis tool, pod-podcasting, PLE, SNA, rating" [5, 27, 82,12].

In the detailed "Internalization" synthesis that are, knowledge- base, wikis, Q&A, simulation, structural-design software, reflective-analysis tool (IVT), ASAP web software, multiplayer gaming, RSS, work-flow systems, LMS, discussion forum.

Since its introduction, lots of discussion on implementing the SECI model has led to various definitions.

Based on the past researcher's recommendations, this study adopts the SECI model to examine knowledge sharing practices among students through Nonaka's knowledge creation and its significance on effective learning [53].

GAP: Most of the existing studies on knowledge creation (SECI model) and factors enabling knowledge management process and knowledge sharing through social media were conducted in the context of the Manufacturing Industry, Oil and gas industry, Information Technology/Information Technology Enabled Service industries. This creates a void in the context of higher education, where social media plays an inevitable role in knowledge creation and sharing which leads to better performance.

The impact of SECI in effective learning is unexplored as the majority of the studies have only explored the benefits of SECI and there is no empirical evidence confirming SECI in the context of Higher Educational Institutions on effective learning.

The factors affecting the relationship between social media and effective learning through the mediator SECI also need to be explored in order to make the studies relevant to real life.

The data for empirical research in SECI is mostly from Central Asian countries and European countries but not in India which shows that there is a need to study the SECI implementation in Southern Asia also.

Framed definitions based on the literature reading:

Based on the extensive review of literature in the field of knowledge creation and knowledge sharing, for the purpose of this study, adopted the SECI model of [53] to examine knowledge sharing practices among students through Nonaka's four knowledge creation processes "socialization, externalization, combination, and internalization", and its significance on effective learning, the author defined on the understanding the four knowledge creation processes beneath.

SOCIALIZATION – Tacit to Tacit

Tacit knowledge interactions can happen with others who do not have the knowledge through the social informal way of sharing of information which may be through physical proximity, face-to-face interactions during some discussions.

EXTERNALIZATION – Tacit to Explicit

This is the basis for new knowledge to measure into any type of documentation which may require a metaphor or model for an effective way

COMBINATION – Explicit to Explicit

This new knowledge circulated among others facilitated through large networks and puts in place for collective suggestions may help in bringing new concepts into practice for effective learning

INTERNALIZATION – Explicit to Tacit

This is the place where learning by doing happens and helps to measure the spiral of knowledge in shared mental

Hypothesis Development: Here in this study, we will examine how social media can influence this knowledge sharing, knowledge creation, and learning effectiveness. In relationship building [23] has found that in his study, on how social media has an effective relationship and an accurate transfer of knowledge. There are papers that have already discussed that social media usage predicted using various factors that may be both motivation and attention has an implication on learning effectiveness. Networking plays an important role and eases the process of sharing. Helping others may provide opportunities for growth and learning by [85]. For the creation of new knowledge, sharing of knowledge, and effectiveness in learning, how social media acts as an enabler has lead to hypothesis H1.

H1: Social media positively influences Knowledge Creation, Knowledge Sharing, and Learning Effectiveness.

Creation of new knowledge is a continuous process and sharing of thoughts both tacit and explicit between individual and group [13, 54]; were widely accepted on individual learning as well as in groups which enable sharing for creation of new knowledge and this paves way for the hypothesis H2.

H2: Knowledge creation processes positively influence the knowledge sharing process

Ranjan and Khalil [70] they had a mention how institutes can create a robust and flourishing knowledge environment in developing culture on accessing, collaborating, and managing knowledge. This leads to hypothesis H3 on how well higher education institutions can work on effective learning influenced by the creation of new knowledge. Ithad also widely discussed that Universities were warehouses for knowledge generation and dissemination [73, 74] which lead to hypothesis H3.

H3: Knowledge creation processes positively influences Learning Effectiveness

Knowledge sharing and knowledge effectiveness were widely discussed at the organizational level and in the context of higher education there are only scant studies that speak about effective learning by knowledge sharing. Many authors have widely discussed the effects of knowledge sharing on knowledge effectiveness which leads to hypothesis H4.

H4: Knowledge Sharing positively influences Learning Effectiveness [2]; has defined that; in recent times education has taken an important place and researchers were interested in outlining the influences of social media, networking, knowledge creation, sharing knowledge, and pedagogical ways in teaching and learning, values, beliefs and ability to innovate ways for interpretation of information. To be specific, knowledge shared through a medium may be integrated into creating new knowledge and shared among the academicians for the outbreak of new knowledge and using that knowledge in a more effective way for growth. Consequently, the issue of underpinning, is that the individual's ability needs to bedealt with.

Research Model: With the above discussions, a model has been acclaimed with various constructs showing the relationship between them are discussed.

Conceptual Model based on the theory

Measures: The initial entry elements of the survey group were created in support of the existing literature and further with the expert's opinions in the academic field. Knowledge creation items were adopted from [58] and measured with 20 scale items. Knowledge-sharing items were adopted from [13-a]. Social Media was measured with three items [42-a] Effectiveness was measured using [23-a,89]. Scale items were measured using Five-point and seven-point Likert scale ranges from very low to very high.

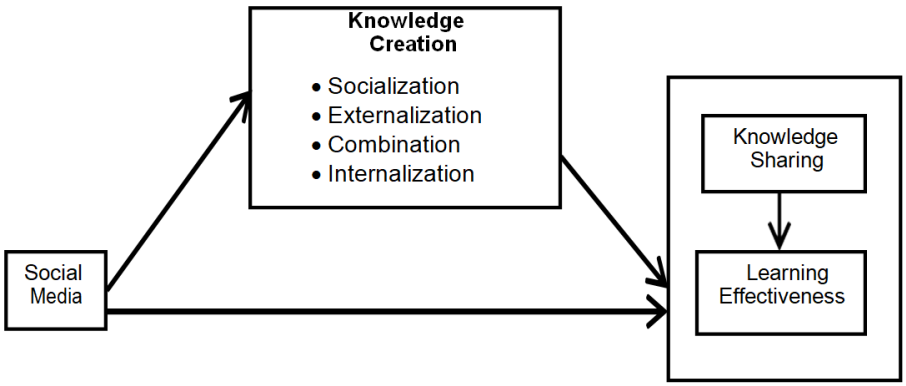

Fig. 2. Conceptual (Based on the Theory).

III. RESULTS AND DISCUSSIONS

Research Methodology

Sampling

Students of higher education institutions were identified and they can be seemingly appropriate for this study. 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 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. Demographic variable data analysis is provided in Table 1. In addition, the data was disseminated normally.

Table 1: Demographic characteristics of the sample.

Characteristics		Frequency	Percentage (%)
Age	Less than 18	36	6.52
	Between 18-24	337	61.05
	Between 25-34	68	12.32
Gender	Female	143	25.91
	Male	378	68.48
Educational Level	Under Graduate	348	63.04
	Post Graduate	171	30.98
	Others	2	0.36
Using Social media for sharing academic related activities	Yes	443	80.25
	No	78	14.13
Preferred source for gathering information other social media tools	Library	11	1.99

Table 2: Constructs and source.

Construct	Items	Source
Social Media	3	[42-a]
Knowledge creation (Socialization, Externalisation, Combination and Internalization)	6	[58]
	4	
	4	
	5	
Knowledge Sharing	6	[13-a]
Learning Effectiveness	4	[23-a], [89], [9-b], [4]

Harman's Single Factor Test used, for testing Common Method Bias: Harman's single factor test was carried out for identifying biasness or measurement errors on the estimates as the questionnaire that is used by the same for both the dependent and independent variables [64-a]. Findings revealed that the variance extracted by one factor is 37.112%, which does not exceed 50% and hence this may be acceptable, and can be concluded that the bias is not much significant.

Table 3: Scale values for the Descriptive and standardized regression weights.

Particular of the items		Mean	Standard Deviation	Std. Loading
Social Media Interactions CR = 0.907	SM tools that provide features for an interactive communication with co-students	4.8222	1.21226	.692
	Social media tools that provide appropriate amount of interactive features	4.9407	1.15429	.712
	Social media tools which contain components that help interaction with fellow students	4.8376	1.13526	.778
Socialization CR = 0.932	Gathering information from faculty members	5.1778	1.17767	.729
	Sharing experiences among other students and friends	5.1211	1.22981	.759
	Engaging in dialogue with other college students	5.4149	1.22231	.853
	Finding new ideas and opportunities by accidental/unplanned Discussions inside the college	5.6701	1.24491	.752
	Creating learning environment that allows co students understand various skill/technique and expertise	5.2784	1.27381	.923
	Seeking information from co-students	5.2964	1.23149	.954
Externalization CR = 0.869	Usage of creative and exchange of ideas	5.2062	1.19160	.868
	Use of deductive and inductive thinking	5.0722	1.22841	.835
	Exchanging various ideas and concepts	5.1082	1.21304	.841
	Emphasizing on sharing subjective opinion	5.0835	1.23952	.852
Combination CR = 0.849	Planning strategies using published texts, forecasting and computer simulation	4.8325	1.29610	.652
	Creative academic projects and assignments	4.8582	1.22759	.764
	Collecting materials by gathering technical facts and information	4.7990	1.11638	.848
	Emphasize on transmitting newly created concepts	4.8608	1.13948	.768
Internalization CR = 0.943	For building dynamic interactive activities by cross functional teams with other department	4.9278	1.24927	.770
	Forming model teams and sharing and conducting experiments with entire department	5.0438	1.21814	.837
	Sharing and searching new values and thought paves way to create new knowledge	4.9485	1.21039	.899
	Sharing and understanding subject Knowledge through communication with co students	3.9768	1.24804	.868
	Benchmarking and testing the overall subject knowledge	4.7320	1.30009	.902
	I share information with students in other departments through social media	5.7577	1.52602	.816
	College group projects/ assignments are performed by sharing information through social media	5.8093	1.55509	.797
	In future I will share my project reports with my team members frequently	5.2242	1.59415	.758

Knowledge Sharing CR = 0.916	In future I plan to share my subject knowledge with students of other college more frequently using social media	5.6649	1.53717	.823
	Always provide information at the request of students of other colleges through social media	5.2474	1.48224	.886
	It is expected that student cohort Will share proprietary; knowledge of the relevant projects; information	5.5773	1.64927	.836
Learning Effectiveness CR=0.848	Through peer groups were able to get Wide variety of learning materials	5.3711	1.28050	.824
	An appropriate learning environment can be chosen for improving learning achievement	5.2268	1.30991	0.818
	I was pleased with the learning environment and with the overall learning effectiveness	5.4742	1.32042	0.767
	Knowledge received from student cohort contributed to contentment in the projects	5.2861	1.33841	0.784

Analysis

Confirmatory-Factor analysis: After data collection was completed, the data was subject to various evaluative procedures like correlation and regression. The reliability has been checked. For the constructs, a Confirmatory Factor Analysis (CFA) was done. The data collected was tested using Kaiser-Meyer-Olkin (KMO) for sampling adequacy and for sphericity Bartlett's test was conducted (Hair et al. (1998)). KMO calculated a value between 0 and 1 by observing the size of observed correlation coefficients with a magnitude of partial correlation coefficients. The value may be close to 1 indicating a larger number of inter relations among the variables. The adequacy of the sample was measured as 0.902 as agreeable to KMO. Bartlett's test has provided significant results. The items which were ranging between 0.40 and 0.80 with adequate correlations were retained and were considered for conducting CFA. The analysis was initiated for Learning effectiveness which has 4 items and SECI which had 20 and the study also revealed that social media directly do not have any significance on learning effectiveness and knowledge sharing. From the modification indices, the comparative fit and goodness of fit indices were above the 0.90 criterion.

Structural Equation Modelling

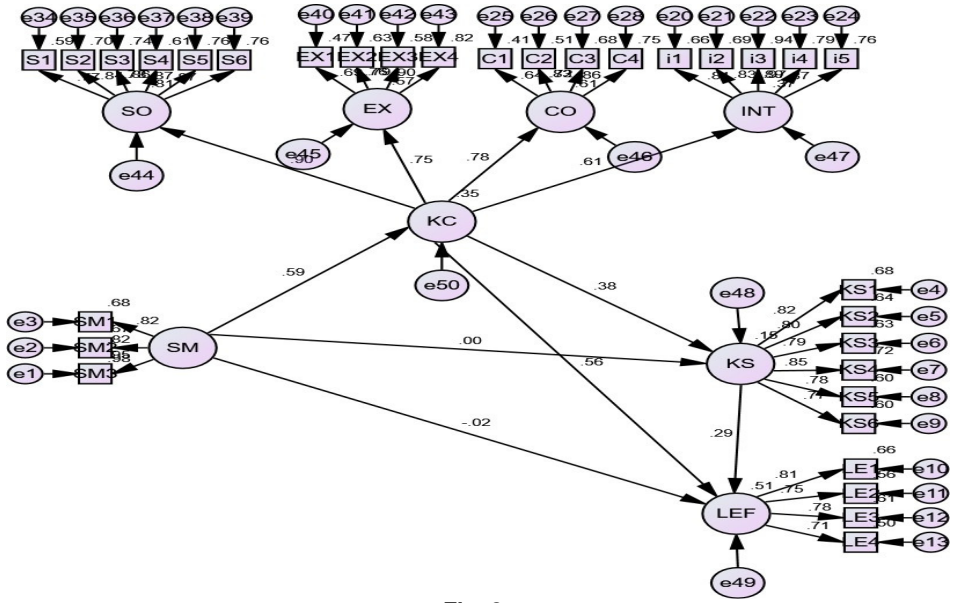

Fig. 3.

Note: *SM: Social Media, KC: Knowledge Creation, KS: Knowledge Sharing, LEF: Learning Effectiveness*

Validity

	CR	AVE	MSV	MaxR(H)	LEF	KS	INT	CO	SO	EX	SM
LEF	0.848	0.583	0.377	0.853	**0.764**						
KS	0.916	0.645	0.250	0.918	0.500	**0.803**					
INT	0.943	0.769	0.285	0.965	0.369	0.226	**0.877**				
CO	0.849	0.587	0.514	0.875	0.495	0.289	0.469	**0.766**			
SO	0.932	0.695	0.514	0.936	0.614	0.348	0.521	0.717	**0.834**		
EX	0.869	0.625	0.448	0.894	0.496	0.295	0.449	0.613	0.669	**0.791**	
SM	0.907	0.767	0.285	0.958	0.379	0.229	0.534	0.367	0.520	0.443	**0.876**

SEM Results

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	73	1260.635	455	.000	2.771
Saturated model	528	.000	0		
Independence model	32	10058.013	496	.000	20.278

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.092	.840	.814	.724
Saturated model	.000	1.000		
Independence model	.622	.176	.122	.165

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.875	.863	.916	.908	.916
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	.068	.063	.072	.000
Independence model	.223	.219	.227	.000

For testing the hypothesis, structural equation analysis was conducted. The structural equation model of the hypothesis was shown in Fig. 3. The goodness of fit is within the recommended limit from the analysis. X2/df-2.771, P-0.000, CFI-0.916, TLI-0.908, IFI-0.916, RMR-0.092, RMSEA-0.068, and CLOSE-0.000.

The estimated SEM Model is shown in Fig. 3. As per Browne the value of the RMSEA which is less than 0.08 is acceptable as according to [19-b]. Hence, hypothesis testing says, there is a noteworthy influence as regards social media on knowledge creation (Beta=0.59) whereas, on knowledge sharing and learning effectiveness, social media do not create any significant impact. Nonaka's knowledge creation through social media tools has a greater impact on effective learning among the students (Beta = 0.56). Unexpectedly the knowledge sharing does not have much influence directly on learning effectiveness (Beta = 0.29). Social media tools were effective on social interaction for knowledge creation, but, do not have any direct influence on Learning Effectiveness. Hence it can be concluded that Nonaka's knowledge creation has a greater influence on learning effectiveness and social media supports in knowledge creation whereas this survey data helps to conclude that social media do not have any direct impact on effective learning and only the creation of new knowledge has greater impact.

IV. DISCUSSIONS AND CONCLUSIONS

While there is a lot of work on the link between learning and performance, researchers agree that a knowing-doing gap exists [63-a]. Researchers have also looked at various factors that moderate the relationship between learning and performance. The present work has studied various literature with knowledge creation, knowledge sharing supporting effective learning in higher educational institutions and in Dynamic organizations [53, 57, 58, 85, 4].

This study indicates the importance of SECI for effective learning. The findings from the study specify the implication of SECI in knowledge sharing and how knowledge creation helps the student community for effective learning. Researchers have shown that Knowledge, knowledge sharing is the cognitive element for better performance. This research has given a new dimension to these cognitive elements by achieving effective learning. The present study has delivered a new dimension of SECI in higher education for effective learning as performance cannot be measured with the measurable analysis.

It is recommended by the author that instead of simply solving problems, students can create and define new things. This study reveals the benefits of developing and identifying an innovative way of solving and creating new techniques for the existing methods and then further develop skills on their approaches. Students are not just reverberating information, but an entity that can create new knowledge through action and interaction [20].

As we all know that knowledge is effective, and it can be created through socialization between individuals and groups, and it is contextually specific, as knowledge relies on time and space Hayek, (1945). Knowledge cannot be stacked that it is tangible, unbounded, and dynamic, it has to be shared for the creation of new knowledge which may help to develop the individual's capacity. Knowledge needs to be created and integrated and this has to be applied in the required place only then there will be innovation. However, it need not have to be bound to a specific space or time it only needs a mental or virtual place. Only through effective sharing, it can enable individuals to share perceptions and allow them to learn from them. This may definitely result to expand the individual's abilities. This process of creating and executing knowledge sharing can enable a creative and innovative ways for learning to happen in a more effective way. This study supplemented student's attribute level and affirms that through this cognitive process knowledge is achieved through, sharing and creation.

The study also reveals that social media do not have a direct impact on effective learning whereas both knowledge creation and sharing of knowledge influences significantly and contributed to effectiveness, but social media effectively contribute to knowledge creation when mediated through Socialization and Externalization in SECI and during the course of the research that it has been observed that there are serial mediations which paves way for effective learning. This may augment outcomes of learning into effective learning.

V. FUTURE SCOPE

This study has certain limitations with the collected data through questionnaire and there may be some measurement errors with the representation of the sample. This study has certain limitations with the collected data through questionnaire and 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. Thirdly, similar researches conducted in other countries may also be compared and a study may be conducted with those data as this will definitely help the student community to prosper in their interested fields. Fourthly, this research work concentrated more on introducing SECI for knowledge sharing and effective learning.

Similar studies can be conducted on various factors which influence knowledge sharing. Studies may be conducted on how the institutions provide management support and technology support. In the future, the study may be conducted in experimental and longitudinal methods for testing the model. Future research can be done on various other individual factors which also influence knowledge sharing and how its implications are affected in the learning process. Sixthly this research can have different dimensions on effective learning and this may be taken to a particular dimension and can explain its impact in a more elaborative manner. Future researches may also focus on how the four dimensions of SECI and how this impacts effective learning. Huge corporates, governments, and universities may work together for possible knowledge creation that happens through the student community for the prosperity of this country.

This study suffers from the fact that a closed questionnaire limits the ability of respondents to express opinions and, moreover, it is very difficult to judge as to why certain boxes were ticked by the respondents. To rectify this limitation, a series of semi-structured interviews with Students could be pursued in the future. Also, future research can consider data from a specific set of students to examine the relationships explored in this study. Finally, future research can consider other moderators such as the presence of Institute support, Faculty support with a higher number of respondents to provide added insights into the effect of these moderators on the relationship between social media and effective learning.

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