Impact of Social Entrepreneurship on Digital Technology and Students’ Skill Set in Higher Education Institutions: A Structured Equation Model

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Abstract: This research paper investigates the impact of social entrepreneurial initiatives implemented by Colleges and Universities on the utilization of digital technology, examining how this utilization, in turn, affects the learning process and the development of students’ skill sets. It emphasises the pivotal role of such initiatives in higher education institutions. Various societies and cells have been established within universities, providing students with opportunities for community engagement and social service. The study highlights how integrating social entrepreneurial initiatives and digital technology in higher education institutions impacts the student’s skill development. The research collects data from students affiliated with these societies through a structured questionnaire encompassing inquiries related to social entrepreneurship, digital technology usage, skill development, and their influence on students’ assimilative capacity impacting higher education institutions. Responses from 203 university students from Delhi NCR, India, participating in these cells are analysed using structural equation modelling using AMOS Graphics. The findings indicate that students actively engaged in social entrepreneurial initiatives demonstrate an increased reliance on digital technology in multifaceted ways while fulfilling their responsibilities within the respective cells. This heightened use of digital technology contributes to the enhancement of students’ skill sets, fostering a greater sense of social responsibility and ultimately facilitating improved academic performance. Further, the experiential knowledge and skills acquired through these initiatives empower students to excel based on their practical experiences, thereby advancing higher education institutions as a whole.

Introduction

Importance of Entrepreneurial education in academics has been recognized and acknowledged by various authors across the globe. The integration of entrepreneurial education within educational institutions has become imperative for inculcating the skills required to initiate a start-up, thereby nurturing their entrepreneurial skills from an early stage (Secundo et al., 2020). Similarly, getting engaged in the area of social entrepreneurship and a sense of community engagement needs to be emphasized from the formative years of an individual. Social entrepreneurs implement new services, products, practices and work towards problem-solving to create a sustainable change and engage people socially (Grimm and Bock, 2023). Their role has been acknowledged in achieving sustainable long-term growth (OECD, 2015). This perspective highlights the importance of teaching students how to develop entrepreneurial abilities and make them realize the
importance of serving society simultaneously. Teaching entrepreneurial skills is possible through theoretical learning and practical implementation to improve the students’ competencies (Martinez and Ventura, 2020; Reis et al., 2021; Teodoro et al., 2022).

Increased use of digital technology in the field of education has been recognized globally. Various tools like data sharing, social media platforms, MOOCs etc. are being used globally to engage educators and learners across the globe (Nambisan et al., 2017). In the post-COVID time, there has been a rapid increase in internet availability (Pal and Kumari, 2023), and the use of mixed methods has become an effective teaching method. How pandemic has impacted the field of education is a crucial area of research for scholars (Tiwari and Garg, 2023). For example, social media platforms used in the area of education and entrepreneurship open new avenues. It facilitates data collection, learning and analysing through the use of technology (Goel et al., 2022). Similarly, it also facilitates entrepreneur to understand the consumer environment deeply through easy interaction with the consumers and interacting with peers on networks helps them generate and execute new ideas (Waheed et al., 2022). It has made students more comfortable by allowing them to do things at their comfort level. It becomes more effective through innovation and creativity (Teodoro et al., 2022; Liguori and Winkler, 2020).

Digitalization process of universities is a time consuming and complex process dependent on varied factors like changes occurring at a constant pace that function strictly in accordance with the social role that universities play to provide services (Zhaskhenova et al., 2021). Certain level of skills is required to achieve success personally and professionally in accordance with the digital economy and development of information, communication and technology. It leads to personality development as well as professional growth of an individual (Bejinaru, 2019). Technology has always served as an element of National power, not only when it comes to transforming learning but also in creating knowledge in order to ensure adaptability to changing conditions and situations.

Changes in the economic conditions of a country put pressure on higher education institutions to bring changes in the way they function. There is a need to control the management of academic institutions in a way that improves the relationship between performance management and intellectual capital (Lupan and Bejinaru, 2019). In higher education, there is a need to study the entrepreneurial model in such a way that favours innovation and creativity in the digital economy and helps form an advanced university management system (Dinh, 2020).

Social entrepreneurial intention and initiatives from the student’s perspective need to be studied and how it impacts the use of digital technology and helps in improving their skill set will help in setting up more digitally empowered initiatives and connecting them with the universities can help create socially aware digitally advanced individuals with a sense of achievement for the society. Discussions in the field highlight the need to explore, identify and use digital technology in higher education to the greatest extent possible and facilitate the use of digital tools to achieve improved results and offerings for students and faculty members through the teaching-learning process (Langseth et al., 2023). Assessing the levels of digitalization can help identify areas where more work is required for the benefit of students and faculty members. There is a lack of research on key areas to be focussed on while framing a curriculum for entrepreneurial development that would develop public and policy entrepreneurs to ensure they possess analytical ability, problem-solving capacity and the ability to convert opportunities for their own benefit as well as for the benefit of the society (Grimm and Bock, 2022).

Student participation in activities of an enterprise makes them take up responsibility, make them competent for leadership roles, have high self-esteem and use innovative and creative ideas to perform efficiently making them capable of solving practical problems with proper planning and strategies in everyday operations of the enterprise (Kabonga and Zvokuumba, 2021). Students must be able to apply theoretical learning in practical situations. Giving them an experience of how entrepreneurs and communities function through utilizing mixed methods in the teaching-learning process enables them to become good entrepreneurs in the future. This can also be termed experiential learning, which means ‘learning by doing’. According to the experiential learning theory given by John Dewey, a lot of learning takes place in the social environment (Dewey, 1938). When supported by experiences and practices, an individual learns from real-life experiences. Educators must facilitate an environment and organise situations where students learn from actual experiences. They play a significant role in creating a strong student base by laying a foundation for the educational institution (Verma & Bharti, 2023). There is a need to ensure that the quality of experience is maintained at a certain level and the learner is able to grasp what is being conveyed to them through situations. By inculcating community service and

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social work as a part of extra-curricular activities, it is ensured that they get experience of organising events, identifying communities, understanding their concerns and finding innovative ways of addressing their concerns.

Materials and Methods

After identification of the purpose and objectives of the research, the development of questionnaire items was required. A basic questionnaire was framed in accordance with the literature review and a 5-point Likert scale was applied (ranging from 1 indicating complete disagreement and 5 indicating total agreement). The questionnaire items included:

Digital Technology (DT) - 5 questionnaire items included various means of the usage of technology to ensure the decision-making process is facilitated, helps in spreading awareness about various topics, communicating within the societies and outside with various stakeholders, how it satisfies the information needs of the users (Choudhary and Harrigan 2014, Harrigan et al., 2015, Suh et al., 2011).

Social Entrepreneurship (SE): On the basis of the findings of Mueller and Kraus, 6 questionnaire items were developed. They included questions related to community service, social impact initiative, relationship building and working toward sustainability (Mueller, 2011; Kraus et al., 2017).

Skill Set (SS): 8 questionnaire items were developed based on skills acquired like confidence, innovation, creative capacity, successful planning, leadership and making one more considerate towards others (Morales et al., 2020).

Students’ Assimilative Capacity (SAC): 5 questionnaire items were developed, forming various higher education measures like understanding, discussion, communication and dissemination of information (Morales et al., 2020).

In order to improve the basic questionnaire, feedback from university experts, faculty members and a group of students working in the area of social entrepreneurship in higher education institutions was collected and the questionnaire was modified accordingly. It helped identify whether students were aware of the concepts and practices. It enabled the modification of various terms used and the improvement of those terms making it more understandable.

The research population consisted of students studying in various university colleges engaged in any kind of social service activity or entrepreneurial activity through societies and cells. The questionnaires were shared with the teacher coordinators from these cells of various colleges, and they circulated them among their student groups through social media platforms. Data was collected from 203 university students from Delhi NCR, India, for further analysis.

In order to ensure the reliability and validity of the questionnaire developed, Cronbach’s alpha test is used using SPSS software. A score of 0.885 of Cronbach’s alpha indicated good internal consistency (Sharma, 2016) and high reliability (Chan and Idris, 2017) of the instrument’s items. Validity of the instrument was checked with the help of a correlation matrix. Since, the significance value of all the items in the correlation matrix is either less than 0.01 or 0.05, it has been concluded that the questionnaire items are valid.

Table 1. Constructs and Items

<table>
<thead>
<tr>
<th>Item Name</th>
<th>Item Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE1</td>
<td>Find ways to indulge in community service regularly.</td>
</tr>
<tr>
<td>SE2</td>
<td>Giving back to the society.</td>
</tr>
<tr>
<td>SE3</td>
<td>Initiate an action having a social impact that encourages others.</td>
</tr>
<tr>
<td>SE4</td>
<td>Aim of becoming a social entrepreneur within 5 years of graduation.</td>
</tr>
<tr>
<td>SE5</td>
<td>Building good relations with institutions that can help build social mission.</td>
</tr>
<tr>
<td>SE6</td>
<td>Building goals to work towards sustainability</td>
</tr>
<tr>
<td>DT1</td>
<td>Video content sharing</td>
</tr>
<tr>
<td>DT2</td>
<td>Facebook</td>
</tr>
<tr>
<td>DT3</td>
<td>Micro blogs</td>
</tr>
<tr>
<td>DT4</td>
<td>Career building forums</td>
</tr>
<tr>
<td>DT5</td>
<td>Discussion forums</td>
</tr>
<tr>
<td>SS1</td>
<td>Strategic thinking</td>
</tr>
<tr>
<td>SS2</td>
<td>Plan successfully before execution</td>
</tr>
<tr>
<td>SS3</td>
<td>Learning for the next assignment</td>
</tr>
<tr>
<td>SS4</td>
<td>Innovation and creative capacity</td>
</tr>
<tr>
<td>SS5</td>
<td>Leadership ability</td>
</tr>
<tr>
<td>SS6</td>
<td>Optimistic individual</td>
</tr>
<tr>
<td>SS7</td>
<td>Considerate towards the society</td>
</tr>
<tr>
<td>SS8</td>
<td>Come out stronger in times of challenges and obstacles</td>
</tr>
<tr>
<td>SAC1</td>
<td>Contribute towards discussion and communication with peers</td>
</tr>
<tr>
<td>SAC2</td>
<td>Helps in understanding new concepts and topics, imparting knowledge</td>
</tr>
<tr>
<td>SAC3</td>
<td>Application of topics and knowledge in education-related areas</td>
</tr>
<tr>
<td>SAC4</td>
<td>Sharing data with those who are concerned</td>
</tr>
<tr>
<td>SAC5</td>
<td>Staying at par with other scholars in the field of education</td>
</tr>
</tbody>
</table>

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Since data was collected for multiple variables, structured equation modelling (SEM) using AMOS Graphics was used as it is appropriate for analysing multivariate data and testing a pre-identified theory, which is learning theory (Bagozzi, 1980). It helps in evaluating theory through empirical data collected in the form of questionnaires. Multiple measures indicate the latent constructs of the relationships, amongst which are measured through SEM. Hypothesis testing is used and a model is generated. The main idea is to check whether the model generated is in sync with the data collected to reflect the theory. Goodness of fit statistics is measured to ascertain the fitness of the model. According to Kline, several observations greater than 200 are considered to be appropriate for SEM testing (Kline, 2005) also depending on various other factors like complexity of the model, methods used etc.

Goodness of fit indices is developed to support chi-square statistics. There are incremental and absolute indices (Bollen, 1989). Normed Fit Index – NFI (Bentler and Bonett, 1980), Comparative Fit Index – CFI (Bentler, 1989, 1990) are examples of Incremental Fit Indices. Value of CFI above 0.90 indicates a good fit (Bentler and Bonett, 1980). Considering the study results, it has been observed that the indices fall within the acceptance criterion.

Root mean square of approximation, RMSEA of 0.01 is considered excellent, 0.05 is considered good and 0.08 is considered medium fit (Steiger and Lind, 1980). RMSEA value of the model is 0.062 is considered to be an acceptable fit.

**Result and Discussion**

Figure 1 displays the proposed model of the study. The model demonstrates that the students' assimilative capacity can be enhanced through the refinement of their skill sets, achieved by the integration of digital technology within social entrepreneurial initiatives in higher education institutions. Such enhancements not only make them more considerate and aware of their responsibilities towards society but also contribute to the cultivation of mindful individuals poised for success as entrepreneurs in the long term.

Keeping in view the objectives of the study, 5 paths were identified. It tends to study how social entrepreneurial activities enhance and impact the use of digital technology in their area of work (Path 1) and how it impacts students' assimilative capacity (Path 2). It also studies the impact of social entrepreneurial activities on students' skill sets (Path 3) and how the development of skill sets impacts students' assimilative capacity (Path 4). It studies the direct impact of social entrepreneurial activities on students' assimilative capacity (Path 5). The actions and contributions of students make them learn through experiences, thereby termed experiential learning.

Using AMOS, path diagram of the suggested model was formed and on the basis of a good fit of path
diagram, full structured model was identified. Based on factor loadings, the findings suggest that:

Out of all the indicators, we can comfortably say that the indicators DT1, DT3, DT4 and DT5 provide value in explaining the unobserved construct. Out of all the indicators, we observe that the indicators SE2, SE4, SE5 and SE6 have a stable impact in explaining the unobserved construct. All the indicators of SS have a stable impact in explaining the unobserved construct. All the indicators of Students’ Assimilative Capacity have a stable impact in explaining the unobserved construct.

Model fit statistics were calculated and it was found that the model is a good fit. The chi-square statistic was 442.164, and a Probability level of 0.000 was achieved. Here, we observe that the probability value of 0.000 significantly impacts the overall model fit. CFI value being 0.905, CMIN/DF value being 1.783, favourable FMIN and RMSEA values represent a good fit for the model. A CFI value above 0.90 indicates a good fit (Bentler and Bonetti, 1980). RMSEA value of the model is 0.062 is considered to be an acceptable fit.

**H1:** SE has a positive impact on the use of DT

Based on the p-value, at a 5% level of significance, we can conclude that social entrepreneurship has a significant positive impact on the use of digital technology. Whenever there is an initiative related to community service or taking up an entrepreneurial activity, digital technology is increasingly used. It can be in the form of collecting responses through Google Forms, discussion through discussion forums, data sharing tools, research analysis software, connecting with the clients through meeting software and building connections. Nowadays, communities which are being promoted and adopted by social entrepreneurs also connect with the outside world through technology. For example, farmers trying to sell their produce online. Therefore, we can see that an activity involves active participation of the students and the communities which is made effective by the use of digital technology.

**H2:** SE has a positive effect on SS

Based on the p value, at 1% level of significance, we can conclude that social entrepreneurship has a significant positive impact on the Skill Set of students.
As we can see that, social entrepreneurship activities take place through the educational and extra-curricular cells created by higher education institutions that try and inculcate among the students the social service element and make them more aware of their surroundings and sufferings of people who lack even the basic necessities of life. It positively impacts the kind of skills that students develop, and as a result, it helps them function successfully in the long run. It helps them think strategically and plan before execution. It improves their innovation and creative capacity for future activities, enhancing their leadership ability and making them more optimistic towards whatever situation might come in front of them. It makes them more considerate towards society and helps them become stronger in times of challenges and obstacles.

**H3 : DT has a positive effect on SAC**

Based on the p-value, at 5% level of significance, we can conclude that Digital Technology has a significant positive impact on Students’ Assimilative Capacity. Various platforms used in digital technology assist higher education institutions in teaching-learning process and empower students to use different ways to enable them to have practical and hands on experience. It helps them assimilate data and information received online and through peers and processes. It helps contribute to contributing and communicating information to colleagues and research and education-related topics. It enables them to communicate new concepts and topics imparting knowledge in education related areas. It also helps in staying updated and at par with all other scholars in the field of education.

**H4 : Skill Set has a positive effect on Students’ Assimilative Capacity**

Based on the p-value, at 1% level of significance, we can conclude that Skill Set has a significant positive impact on Students’ Assimilative Capacity. As the societal activities give students an experience of entrepreneurial activities and give them valuable learning takeaways, it helps improve the skill set and leads to skill development of the students. It positively impacts higher education and the institutions that impart the same. In the institutions where students are skilled, they can extract the most of the available opportunities to their own benefit and it helps them improve their profiles which is very beneficial to their career in the future. This helps improve the ranking and position of higher education institutions and the impact it makes on society and various stakeholders achieving good ranks globally.

**Conclusion**

The study's findings highlight the need for ongoing enhancements and expansion of the initiatives that not only cultivates students’ adaptability to evolving circumstances but also ensures the sustainability of their entrepreneurial ventures. An improvement in the students' skill set makes them mindful, talented and proficient individuals who actively work for the betterment of their nation, community and personal growth.

The study's findings underscore the need for strategic policy interventions in higher education. Policies should be enacted to seamlessly integrate digital technology into curricula, accompanied by clear guidelines for educators to ensure effective implementation. Simultaneously, there is a need to introduce policies mandating the inclusion of social entrepreneurial education in higher education institutions, aligning students’ learning experiences with community service and societal responsibilities. Furthermore, policies supporting the establishment of
mentorship programs are crucial. These programs would connect students with accomplished entrepreneurs, providing valuable guidance and experiential learning opportunities.

In the context of curriculum development, higher education institutions must encourage students to think outside the box and learn outside the class. They need to focus more on practical application of theoretical knowledge imparted to the students in the classroom, as it promotes individuals' holistic and comprehensive development, equipping them to win over challenges and obstacles effectively. Encouraging research initiatives focused on the interplay between digital technology, entrepreneurial education and societal impact is paramount. Policies facilitating global collaboration among higher education institutions and encouraging the exchange of best practices in integrating digital technology into entrepreneurial education are essential for mutual enrichment and progress in the academic realm.

With the mentoring of teachers and guides, it will be immensely beneficial for the students to develop these skills in the normal course of curriculum and extracurricular activities. This sets them on a path to becoming effective leaders from a young age—an aspect that warrants further encouragement. This, in turn, enables higher education institutions to place their students in prominent positions, enhancing the institutions' ranking and establishing a competitive edge in a global landscape driven by excellence.

Conflict of Interest

The authors have no competing interests to disclose.

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