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Article

Adoption of online degree programs in higher education in India: An exploratory study based on stakeholder perception and proposed policy measures

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Abstract: The progress of a country can be directly related to the education level of its countrymen. Over a time period, the internet has become a game changer for the world of disseminating education. From 2000 onwards, the scale of online courses has increased manyfold. The main reason for this growth in online learning can be attributed to the flexibility in course delivery and scheduling. Through this study, the authors analyzed the challenges in adopting Online degree programs in higher education in management in India. The authors used Focus Group discussions, semi-structured interviews, and in-depth interviews to collect the data from the various stakeholders. Thematic analysis was used to analyze the responses. Considering the challenges and constraints in India, the authors proposed a sustainable model for implementation. Based on the viewpoints of the different stakeholders, the authors find that online degrees can be instrumental in bringing inclusivity in higher education. There are obvious constraints like a lack of IT infrastructure, the inexperience of faculty in online pedagogy, and the need for more expertise in the administration of online programs by existing universities. However, using SWAYAM as a platform can overcome most of these constraints, as it reduces the burden on individual universities. Hence, the authors proposed models where SWAYAM (technology platform) and Universities (academic partners) can come together to provide a sustainable education model.

Keywords: online education; learning opportunity; education policy; quality education; basic education

1. Introduction

Education plays an important role both in an individual's life and in society as a whole. It helps one achieve their goals and helps society by improving its members' skill set and learning level. Eurich (1981) and Sims (1982) believe that the amount of economic growth of a country impacts the level of higher education in the country. There is a growing recognition of the importance of quality in higher education in this regard (Elassy, 2015). Higher education in this context refers to colleges and universities that provide postgraduate degrees, professional degrees, and equivalent

qualifications (Clark, 1986). Higher education has today become a universal aspiration for students worldwide.

Over the years, higher education has been disseminated in different formats. Traditional universities as learning centers of knowledge have existed for a long. These have followed the conventional campus learning style, fixed time schedules, rigid entry requirements, and associated costs. Under the traditional universities, there are government-sponsored universities and private universities. Distance learning courses evolved for the students who could not attend the classes in person. The course materials and assessments were delivered by mail. The reach of distance learning was huge as the physical distance was not a deterrent (Keegan, 1980). The landscape of distance education changed in the 1990s with advances in telecommunication and the increased usage of the Internet. The technological breakthrough in telecommunications has, over the years, made the internet faster and more affordable to the masses. The advantages of the Internet in education have been discussed by Kerka (1996). From the 1990s onwards, US universities started using a new form of dissemination of education along with traditional and long-distance forms. Certain universities introduced courses that were taught completely over the Internet. The online mode helped these courses reach a wider audience at a fraction of the cost. The lowering cost of the internet and the improving technology also started making online education more beneficial. Over a time period, the internet has proved to be a game changer for the world of disseminating education.

From 2000 onwards, the scale of online courses has increased manyfold. The main reason for this growth in online learning can be attributed to the flexibility in course delivery and scheduling. The higher education institutions offering these courses are also benefiting as the online courses are designed so that the marginal cost of instructing one additional student is zero. This has created a win-win situation for both the student and the educational institution. Some of the globally ranked universities offer various undergraduate and graduate degree programs. The duration of such courses is the same as that of similar traditional courses conducted on campus. The fees are the same as that of traditional courses. The biggest advantage to students is the flexibility and availability of the course anywhere in the world. Garrison (2001) and Alexander (2001) explain how e-learning technologies improve students' learning experience quality.

The biggest disruption in education dissemination came from the introduction of Massive Online Open Courses (MOOCs) in 2008. The idea behind MOOCs came from the Open Education resources movement. This movement gathered steam in 2001 when the Massachusetts Institute of Technology (MIT) shared its teaching materials through an open courseware system. MOOCs have worked on the idea that education should be available to all who desire it at a very low cost. Most courses available through MOOCs can be enrolled for free, and a certificate can be received for a small payment. The popularity of MOOCs has led to the formation of various platforms worldwide through which these courses are delivered. Some of the more popular MOOC platforms are Coursera, Edx, and Udacity. Pappano (2012) talks about the great response of students to one of the first MOOC classes held by EdX. The traditional universities in US and Europe, which had been offering online degree programs on their own platforms, have also recently launched these programs on

MOOCs sites. This may be due to the better IT infrastructure available to them and the wider reach of these MOOCs worldwide. All courses available on MOOCs are unregulated.

Unlike the US and European countries, where higher education is mainly in the private sector and largely unregulated, India has a stringent regulatory system in place for higher education. At the time of Independence in 1947, education was identified as one of the priority sectors to be developed by the government. Over the years, this policy has been modernized periodically to incorporate the new requirements as and when they arise. Sahney and Thakkar (2016) measure the higher education performance in India.

In 1948, University Education Commission was set up "to report on Indian university education and suggest improvements and extensions that might be desirable to suit the present and future needs and aspirations of the country". The University Grants Commission (UGC) (www.ugc.ac.in) was formally established for the same purpose in November 1956 as a statutory body of the Government of India through an Act of Parliament for the coordination, determination and maintenance of standards of university education in India. UGC is mandated with framing regulations on minimum standards in higher education in India. It determines and maintains standards of teaching, examination and research in universities. It monitors the developments in the field of collegiate and university education and disburses grants to the universities and colleges.

Apart from UGC, the Government of India also set up the All-India Council for Technical Education (AICTE) (www.aicte-india.org). It started in 1945 as a national-level advisory body to find out about the facilities available for technical education in India and to promote development in technical education. This mandate was formalized in 1987 through an act of the Parliament of India. The Act mandated AICTE to ensure proper planning and coordinated development of technical education systems throughout the country. It covers technical education programs like Engineering, Architecture, Management, Pharmacy, Hotel Management etc. All technical courses need to be approved both by UGC and AICTE.

More than 3500 colleges/institutes offer a Post Graduate Degree in Business Administration in India. All these come under the jurisdiction of AICTE. All the Post Graduate degrees in Management which are awarded by the Central, State and Private Universities come under the jurisdiction of UGC. These degrees are awarded both in the traditional mode of classroom teaching and in distance education. Fernandez et al. (2015) provide insights on the overall importance of MBA programs in facilitating students in receiving the latest business expertise and helps them in preparing for future corporate roles. The Government of India has also developed knowledge hubs like the National Repository of Open Educational Resources (NROER) in collaboration with the Department of School Education and Literacy. NROER hosts large number of educational resources for students.

The Ministry of Education (MoE) (https://www.education.gov.in/), earlier known as the Ministry of Human Resource Development (MHRD) (www.mhrd.gov.in) of the Government of India identified the need for Open and distance learning for inclusivity of candidates who could not pursue higher education as full-time students. The first distance learning program was launched in 1962 by Delhi University

(www.du.ac.in), which started offering correspondence courses in various streams. Over a time period, other Central and State universities also started providing degrees through correspondence mode. Dr B R Ambedkar Open University (www.braou.ac.in), Hyderabad, was the first full-fledged Open University to be established in 1982, which only provided degrees through distance education mode. In 1985, Indira Gandhi National Open University (IGNOU) (www.ignou.ac.in)was established by an act of Parliament of India in 1985. The purpose of the formation of this university was to build an inclusive knowledge society through inclusive education. It has tried to increase the Gross Enrollment Ratio by offering degree and certificate courses through the Open and Distance Learning mode.

As per the international trend of online courses, MoE has also promoted the delivery of online courses for more inclusivity and greater participation of students from all across India. The first such initiative was the National Program on Technology Enhanced Learning (NPTEL) (www.nptel.ac.in), which was launched in the early 2000s and was mentored by the Indian Institute of Science and seven IITs. The main focus of this initiative was to build expertise in the faculty of engineering colleges to by providing them with content and pedagogy from the best acknowledged Engineering institutes in India. The government has been promoting e-learning by providing training to faculty to ease the process (Rao, 2011).

The most recent initiative by MHRD, UGC, and AICTE for inclusive education using internet platforms is SWAYAM (www.swayam.gov.in). It was launched in 2016. It is in the form of an online portal that provides MOOCs in various subjects across different streams. This effort aims to take the best teaching-learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have now remained untouched by the digital revolution and have been unable to join the mainstream of the knowledge economy. The courses delivered through this platform are free of cost to the learners. Like the various private initiatives of MOOCs, SWAYAM is now focused on providing standalone courses from various state and central universities. There is a provision for credit transfer from SWAYAM to traditional universities to fulfill degree requirements. As of now, there is no online degree being provided by SWAYAM. In addition, UGC has also now permitted students to transfer credits across the universities and higher educational institutions. Students can maintain an academic credit bank in which they can accumulate credits from their prior learning experiences. These banks of credits help in student mobility across Higher Education Institutes.

Apart from SWAYAM, certain premier institutes like IIM-Bengaluru and IIT-Bombay have also set up their own online course platforms in their respective areas of Management and Engineering. They are offering online courses like the ones being offered by international MOOCs. The students enrolling for these MOOCs see them more as skill enhancement and value addition courses. The courses are chosen based on the student's interests and may not have a connection with each other. Currently, an online degree in higher education does not exist in India. UGC has come up with certain draft guidelines regarding the same.

The Government of India has stated its objective to raise the standard of the institutes of Higher Learning in the country and make them world class. For this purpose, the government plans to establish "Institutions of Eminence," including ten

institutions from the central and state education institutions and ten private education institutions. The government's stated purpose is to empower these institutions and assist them in becoming world class teaching and research institutions.

This study is focused on analyzing the challenges in adopting Online degree programs in higher education in management in India.

2. Materials and methods

2.1. Online higher education

Various educational institutions across the globe offer fully online and hybrid/blended courses, merging online instruction with traditional teaching methods. Eisenbarth (2003) elucidated that the online degree and education market represents a crossroad for higher education. He highlighted the role of universities in using the Internet and the application of online education. Chhokar (2010) compared different educational approaches for sustainable education development in India. In their paper, Zhang et al. (2012) discussed the development of online higher education in China by reviewing the development of "Internet colleges". They examined the unique features and challenges of online higher education. Some of the common challenges that they identified are perceived low quality and prestige and limited opportunities for international collaboration. McPhee and Söderström (2012) compared the learning outcomes of distance, online, and campus higher education in Scotland and Sweden. The results showed no difference between the grades and test scores between campus students (face-to-face education) and distance students (McPhee et al., 2012).

Overseeing the discussions of the system of online higher education, it was imperative to analyze the literature from various stakeholders' points of view.

2.2. Online education: Students' perspective

Students' perspectives on the virtual graduate program were studied by Langan (1997) using a case study approach. The study highlighted that online management education would be as valuable as traditional offline classes if facilitated carefully and prudently. Considering the heterogeneous set of students who would be adopting the online degree, it becomes important for an instructor to provide opportunities to lead students to have an open deliberation and discussion with the aim of giving them a simulated and active participation as a learner in the virtual environment (Baltes, 2001; Sagadavan et al., 2019).

However, Pool and Axmann (2002) discussed the pitfalls and myths of the web education system. The authors in their study indicated that despite the challenges in the online education system, the computer intervened communication is one of the most inspirational platforms for students and other stakeholders to adopt in the changing face of higher education. A study conducted among Chinese students by Liu et al. (2003) concluded that learning by collaboration will soon replace the traditional mode of learning: learning by instruction. Dixon et al. (2005) commented that if educators start developing strategic, pedagogical, and commercial models, the online mode of delivery will translate into improved learning. Addressing the adverse side of online education, Adams and DeFleur

(2006), Columbaro and Monaghan (2009) argued on the acceptability of such online degrees from employers' perspectives.

Baltes (2010) favored asynchronous communication (online mode of delivery) as a method of learning for working professionals for whom time is a constraint to pursue higher education. Chawla and Joshi (2012) conducted a study in India to observe students' awareness, knowledge, and readiness to adopt online learning in management education. The factors identified for students to opt for online management education were their previous exposure to technology, ease of use, approach, and motivation. Lauver et al. (2013) further supported web-based education by stating that students prefer the online mode of delivery due to the flexibility and convenience in the online environment and the need to be self-motivated to undertake the online course fully.

During the recent outbreak of the COVID-19 pandemic, there have been changes in the overall educational environment. A study conducted by Han and Sa (2022) among Korean students confirmed positive views towards the adoption of online education. Davis's (1989) TAM was adopted as a theoretical framework for investigating how a new technology or service's perceived usefulness and ease of use affect its acceptance. In a similar study, post-COVID-19 in Malaysia by Lazim et al. (2021), TAM was adopted to confirm the positive of students toward online learning.

2.3. Online education: Faculty's perspective

No literature has highlighted the educator's viewpoint towards "online degree programs"; however, there is literature supporting the educator's perspectives towards online courses and online teaching pedagogy. Summers and Vlosky (2001) indicated a positive response from faculty towards using technology in higher education. The faculty appreciated the use of technology to enhance students' learning experience. The faculty were computer literate but lacked expertise on delivering quality lectures using technology. Taylor (2002) studied the pros and cons of online learning from the faculty's perspective. He concluded that faculty life might become more complicated if proper training is not imparted to educators for online teaching. Though faculty appreciated that this would increase their knowledge base, major limitations were found in the experience and expertise of the instructor.

Kinuthia (2005) conferred the importance of faculty development for the successful execution of online courses. The results of the study specified that faculty were well versed in basic technologies but less adept in more challenging technologies; the provision of incentives, such as a specific time period allocated for participating in such development activities, was a huge motivating factor for them and they had shown interest in personalized training and workshops. Christina (2007) conducted a qualitative descriptive study to understand the faculty's perspective towards the adoptability of a full web-based course for undergraduate health science students. The study highlighted the challenges in the implementation that a faculty would encounter. There were issues regarding the workload, evaluation patterns, and concerns regarding the conduct of assessments. Faculty felt that sufficient time should be provided to them

to develop attentive student engagement with students who would be enrolled in the course and develop a quality learning environment. Dadze-Arthur and Raine (2016) highlighted the opinion of faculty regarding the new online master's in public administration (MPA) program offered by the University of Birmingham. According to them, the biggest challenge in online programs was achieving a 'learner-centric' online design (rather than a teacher-centric one), facilitating effective communication (within the student group as much as between students and teachers), and building an effective online learning community.

2.4. Online education: Employer's perspective

Linardopoulos (2012) studied employers' perspectives towards an online degree. The results indicated a greater likelihood that a candidate with an online degree would be viewed less favorably for employment purposes compared to a traditional degree. Chebl and El Rayess (2017) highlighted the perceptions, hiring patterns, and acceptability of online library science degree holders in academic libraries across the Arab world. The findings reveal no significant relationship between the hiring decision of library managers and the degree type, whether earned through traditional education or online.

Analyzing the literature across different stakeholders' perspectives on online higher education, it became necessary to understand the factors responsible for the success of the administration of online degree programs.

2.5. Critical success factors for online higher education

Sharma et al. (2011) identified the critical success factors in crafting strategic architecture for e-learning at HP University in India. The major findings emphasized the non-availability of infrastructure issues like problems in electricity supply and slow internet connection. Alhabeeb and Rowley (2017) discussed the critical success factors for eLearning in Saudi Arabian universities. The two most important groups of critical success factors identified in this process were regarded as those related to student and instructor characteristics. Margalina et al. (2017) and Leilei et al. (2023) applied the relational coordination model to prove learners' and instructors' high satisfaction levels in e-learning. Online course learners and instructors from Spanish universities and private companies were surveyed on these issues. Using structural equation model analysis showed that high standards regarding relational coordination amongst learners and instructors explained students' high degree of satisfaction.

Looking at the literature related to online education, there have been significant disagreements between the acceptance of an online degree and a traditional degree from the point of view of students, faculty, and employers. There are questions about the sustainability of online MBA programs in India. If management schools aim to impart quality education, then through this research paper, we try to contribute to the debate around the value and sustainability of online degree programs.

2.6. Research question and design

The proposed research question for the study is:

What are the challenges in adopting Online degree programs in higher education management in India? Considering India's challenges and constraints, what can be the sustainable model for implementing such a program?

The authors addressed the research question through an exploratory study with the help of semi-structured interviews and Focus Group Discussions (FGDs). This was conducted to examine the opinions of stakeholders in the higher education sector.

Sekaran et al. (2010) emphasized the importance of an appropriate research design addressing the proposed research question. For descriptive research of this kind, a qualitative research design was deemed appropriate (Collis and Hussey, 2009). Sekaran and Bougie (2010) explained the importance of qualitative studies, which help in realizing research problems. They also elucidated that descriptive studies enable research scholars to describe appropriate aspects of a phenomenon of interest from individuals, educational institutes, recruiter-oriented, or other viewpoints.

Such studies were used to collect the viewpoints and opinions from different groups of stakeholders—Vice-Chancellors/Directors, faculty, employers, aspiring students, and aspiring working professionals involved in the delivery of MBA programs.

For the purpose of the study, four sets of stakeholders were identified—students, faculty in Higher Educational Institutes, Vice Chancellor/Director of Higher Educational Institutes and Employers from such institutes. In order to collect the data from these stakeholders, convenience sampling was used. This method of sampling was used based on the availability, accessibility, and willingness of the stakeholders to participate in the study.

While choosing the stakeholders, the following criteria were kept in consideration:

Students—Around 50 students (35 from the regular program and 15 from the executive program) were chosen and asked to give responses. All these students were enrolled in post-graduate program in Management. The students were in the age bracket of 22–28 and had an average work experience of around 18 months for regular students and 36 months for executive students. The gender proportion was taken at 50:50. Out of all the students approached, 30 students from the regular program and 12 students from the executive students gave responses.

- Faculty—It was a conscious choice to choose faculty who were teaching at Post Graduate Level across Government and Private Institutions with more than five years of experience in teaching. The authors approached around 40 faculty across India to give their responses. Thirty-two of these responded and were ready for the in-depth interviews.
- Vice Chancellor/Director—The authors chose the ten Vice-Chancellor and Director based on their acquaintance and the subject's availability for the interview. Seven of the chosen subjects were associated with Private Universities, and three belonged to government institutions.
- Employers—The authors approached the employers who regularly recruited students from the campus. This sample was also chosen based on personal acquaintance and willingness of the corporates to be interviewed. Thirty corporates were identified out of which 27 gave valid responses.

A pilot study of around 25 respondents comprising a mix of students, faculty, vice-chancellors, and employers was conducted using thematic analysis to identify meaningful patterns by conducting personal interviews. The aim was to identify the challenges they face in the adoption of online degree programs. The interviews were recorded for further analysis. Questions were asked pertaining to industry acceptance, peer learning, personality enhancement, networking, infrastructure, financial assistance, technological expertise, credibility, online facilitation, quality of students, industry exposure, relevance of the program, credibility of the program etc. This helped in data familiarization through data coding and theme identification.

For the final study, semi-structured interviews approx. 20 to 30 min were organized around a set of open-ended questions for the Vice Chancellors/Directors of Universities/Institutes of Repute in India. A total of 15 VC/Directors were contacted for the interview, of which 10 agreed to participate in the study. By doing so, the interviewer provided opportunities for the interviewee to raise appropriate questions for the study. Additionally, focus group discussions (FGDs) were administered amongst aspiring students from two colleges who would begin enrollment in higher degree programs in India. These students were currently pursuing their graduation and were likely to choose from the choices that lie ahead in terms of preferring a full-time MBA degree program or adopting an online degree program. After conducting the first FGD (with 10 students), the authors could not gather sufficient information to justify the research question; hence, two more FGDs with similar sample sizes and research designs were needed. Another FGD was conducted among aspiring working professionals. This helped in providing an overview of recent issues and debates surrounding the theme of the study whilst, at the same time, highlighting common problems and dilemmas that might be encountered by working professionals while deciding on the mode by which they aspire for a higher education degree. To get the employers' perspective towards the adaptability of online degrees in higher education, in-depth interviews were conducted with them. These employers were the industry representatives involved in the campus recruitment process. A total of 35 employers were contacted for the interview, of which 27 agreed to participate in the study. In order to get insights from the faculty, in-depth interviews were organized. These faculty were representatives from various postgraduate management schools in India. A total of 60 faculty were contacted for the interview, of which 32 agreed to participate in the study. The study was administered on all four stakeholders once they fully understood the meanings of the questions and the purpose of the study.

The researchers used the session transcript of all the interviews conducted for the study and a video recording of the FGDs for the analysis. To analyze this data, captured thematic analysis (Braun and Clarke, 2006) was used, which echoed the stakeholders' perceptions. Manual color-coding of themes and concepts (Burnard, 1991; Creswell, 2009) was used to quote related segments of the transcript, capturing the different sustainability issues for adopting online degree programs in India of all the stakeholders in the study. Researchers' interpretation of the identified themes was the technique adopted named 'latent themes—interpretative'. This analytical approach goes beyond just going by what the respondent has filled by organizing data to provide a framework of meanings and connotations (Braun and Clarke, 2006).

In agreement with the above quoted papers, the authors adopted the following major steps viz. Familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining and naming the themes, and producing the report. Six phases of thematic analysis (Braun and Clarke, 2006) have been summarized in **Figure 1**.

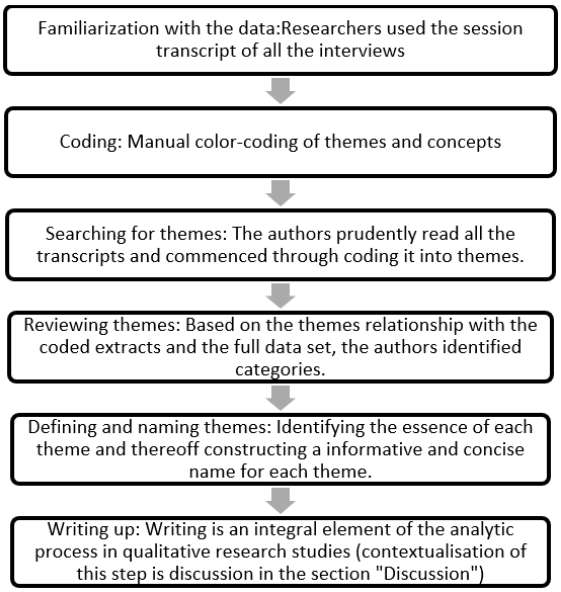

Figure 1. Thematic analysis procedure.

The authors prudently read all the transcripts and commenced coding it into themes. Coding involve a three-level process from identification of codes to themes to theory. Codes were identified based on their origin and their relationship with one another. The codes helped in being informed of the thoughts, reactions and perspectives of the research question. The identified themes were adopted to construct meanings and were based on the previously noted themes during the author's literature review and the stakeholders' transcripts. These themes were related to the study's research question. Transcripts were also inspected for any new themes emerging from the discussions. Themes identified had to be checked for coherency and should have been distinct from one another. Some qualifiers were: Did the themes make sense, did the data support the themes, were the themes within the data. Then, a summary description of each theme's meaning was written. The overall findings are presented in the next section.

3. Findings

As a social factor, education has many stakeholders, from the government, administrators, faculty, and students—current and prospective, industry and society. In this study, the authors identified the four sets of stakeholders who are directly connected with the delivery and receipt of education.

The first set of stakeholders identified was the current and prospective students for a course, second were the administrators like the Vice Chancellors and directors of institutes of higher education, third was the faculty who were involved in the

dissemination of the education, and fourth was the prospective employers who looked for the education in their employees.

3.1. Students' opinion

The aspiring students' discussions revolved around the pros and cons of adopting an online degree program. According to the students, the online degree programs can be adopted by them depending on the credibility of the program amongst the employers, value for money, flexibility in completing the degree, availability of discussion forums where information and knowledge are shared, and queries could be resolved and discussed within peers and the instructor. They also suggested that such online programs could be customized for the following groups of segments: students with rural backgrounds, physically challenged/disabled students, students who are >35 years of age for being ready for promotions and housewives who may have been out of the active workforce for some amount of time.

Students felt that an online program from a reputed university was better than a regular program from a local business school. They were comfortable with a blended learning course in which some classes or part of the course was delivered online apart from the traditional method of face-to-face classes. The flip side of completely online-based degrees was also deliberated in the FGD. The students were skeptical about companies not favoring the degrees due to their authenticity and credibility. Students seemed to prefer a shorter online degree program (around 1–1.5 years) than a traditional two-year traditional program. Infrastructure and technology were the major challenges identified in the discussion for implementing such programs. The students were doubtful of certain aspects which they felt were essential in the overall development of their personality. They feared they would lose out on certain aspects in the online degree program, such as networking, managing and working in a team, personality development, soft skills development, discussion forums, leadership skills, business communication, presentation skills and the holistic development of one's personality.

The students' learning styles would also decide their preference for online degree programs. The discussion with the aspiring working professionals who wanted to do an MBA emphasized that such online degree programs would benefit them as being in the corporate world, it would be difficult for them to quit their job and pursue higher studies. If universities offered such programs which they could complete at their convenience under the guidance of experienced faculty, they would prefer them over any traditional MBA program. However, the participants would have to be more focused, dedicated, motivated and driven to take online programs.

3.2. Vice chancellors'/directors' opinion

According to VCs/Directors, most of the Indian Universities in India are not equipped with the required funds for initial investment in setting up the digital platform vital for providing online degrees. Most of the older universities do not have the required staff for managing digital platforms. Hence, this became an important challenge in implementing online degree programs in these universities. The current level of technological expertise in universities is found to be completely inadequate

for the adoption of online degrees. Hence, more efforts for capacity building and training would be required in this regard. The UGC draft guidelines regarding the delivery of Online degrees have stringent rules about universities. Only NAAC-accredited 'A Grade' institutions can offer online degrees. The VCs/Directors agreed that this qualification of universities was important.

Younger faculty was seen to be more adaptable to the teaching style and innovations required for online degrees, but the mindset of senior faculty would take time to change. Intensive IT training and exposure to other institutions of repute would be required to develop faculty capabilities for online teaching. The instructional design suggested by UGC in its draft guidelines appeared to be appropriate. Online degrees would help bridge the gap between academics and industry. Appropriate mechanisms need to be developed for the same. Online degrees would help in the skill development initiative of the Government of India, provided it is linked with lab training, guidance and on-the-job training. However, they had apprehensions about the mushrooming of forged online degrees offered by non-accredited institutes/Universities, which might affect the quality of education.

3.3. Faculty's opinion

In-depth interviews with educators from various postgraduate management schools in India emphasized that though they were equipped with basic computer skills when it came to delivering the entire course online, it would be a challenge for many of them, especially senior faculty. However, some instructors showed keen interest in adopting different delivery modes as it enhanced their knowledge base. The faculty were very skeptical about the overall learning environment for the students. They were unconvinced about the online assessment and evaluation for the students as they felt it might encourage students towards unfair practices. The need for proper mechanisms to build toward monitoring of such programs was important. The time required for developing such online sessions was also a concern for a few faculties. Professors also raised their concerns towards industry exposure, personality development and holistic development of the students. They were also uncertain about getting focused student engagement for such online sessions as compared to the traditional courses. However, with personalized training and workshops, faculty were sure they could help create a better learning environment in this era of the digital world.

3.4. Employer's opinion

According to the corporate executives involved in the process of campus recruitment, online degrees could be a convenient way for working professionals to opt for the higher education required for their career growth. They felt that online degrees could be part of the learning evolution made likely by developments in technology. They had their apprehensions about the credibility of the online degree, as validating the credentials of the candidate being recruited is one of the important requirements in the recruitment process. Some recruiters agreed that online degrees would lack academic rigour and quality. The employers not only discussed regarding the campus recruitment process, but overall, they thought that if two applicants had a similar experience, the selection might be dependent on the candidate's degree and

whether it is an online or traditional degree. However, a few of them also said that many times in some organization's decisions are made based on name recognition and the reputation of the institute awarding the degree. The employers were also skeptical about the overall quality of education and personality development of students enrolling for online degrees.

After analyzing the opinions using thematic analysis by checking for patterns, checking whether the themes existed in the literature or were new themes, scrutinizing repetitions, noting the reported similarities and dissimilarities of themes among various stakeholders, identifying issues important in responding to the research question; a list of themes was prepared by the researchers. These themes offered vital information regarding implementing online degree programs from all the stakeholders' perspectives. The identified themes from all the stakeholders have been captured in **Tables 1–5**.

Table 1. Challenges in adopting online degree programs in India: Aspiring students' perspective.

Themes	**Percentage of occurrences in the sample (no of statements)**	***Sample statements**
Industry acceptance	61(64)	A management program provides an intense and rigorous experience. Industry-Institute collaboration is more important today, and we encounter such interactions in a traditional MBA program. Industry professionals look up to such program rigours and exposure to the industry, which ultimately makes one attain diverse experiences. I feel this lack of rigour will not be well accepted by the industry.
Peer learning	40(42)	The opportunity of working collaboratively with peers will not be possible through online education.
Placement opportunity	69.5(73)	The ultimate objective for me to do an MBA program is to get a better placement; I think the knowledge gained during MBA will help in getting placed and make me industry ready. … This might be a challenge if I go for an online degree.
Personality development	24(25)	Online education has its own limitations in helping us to develop our skills and personality, which are imperative in today's competitive world.
Networking	27(28)	We will not be able to network and bond with our peers which I think is one of the objectives for joining any MBA program.

*Total no of statements: 127. Total no of Aspiring students: 30. Total no of negative statements: 105.

Table 2. Challenges in adopting online degree programs in India: Aspiring executive students' perspective.

Themes	**Percentage of occurrences in the sample (no of statements)**	***Sample statements**
Industry acceptance	59 (13)	The degree should be well accepted in my organization as I would need it for my promotion.
Peer learning	82(18)	Students get an opportunity to share their ideas and thoughts with their peers, which enhances the knowledge level of the entire group in any traditional MBA program. In contrast, I think this will be a challenge for any online education.
Personality development	64(14)	Any management program should help build the participants' confidence level, and imbibe positive thoughts, which may seem difficult in proposed online degree programs.
Networking	86(19)	We can get an opportunity to build our network with people from various domains across the globe also, …I feel I will miss out on this opportunity if I opt for an online degree
Convenience	41(9)	It is difficult for us to quit our job and pursue higher studies. The online course helps in attending the classes at one's own time which is a major constraint at an executive level

*Total no of statements: 40. Total no of Aspiring Executive students: 12. Total no of negative statements: 22.

Table 3. Challenges in adopting online degree programs in India: Vice chancellors/directors' perspective.

Themes	*Percentage of VC/directors responded (no of VC/directors)	*Sample statements
Infrastructure	100(10)	Technical infrastructure is an important facilitator of success, which is lacking in the current education system. Infrastructure issues like electricity supply, and Internet connection have been common problems that deter universities from going online.
Funds	90(9)	Indian Universities are not equipped with the necessary funds for IT infrastructure / setting up digital platforms, which is vital for providing online degrees.
Technological expertise	80(8)	The current level of technological expertise in Indian universities is inadequate for adopting online degrees.
Quality Faculty	60(6)	Intensive IT training and exposure to other institutions offering online programs are required to develop faculty capabilities for adopting online teaching. Similarly, more efforts for capacity building and training is required in this age of technology.
Industry Acceptance	50(5)	There may be apprehensions and uncertainty attached to online degrees relating to the quality and acceptance by industry.

*Total no of VC/directors: 10.

Table 4. Challenges in adopting online degree programs in India: Faculty perspective.

Themes	*Percentage of faculty responded (no of faculty)	Sample statements
Past Experience	59(19)	Our experience in the past has mostly been teaching in a brick-and-mortar classroom setting, and transitioning to online would require cooperation from educators, administrators and designers.
Time	87.5(28)	The time required for developing online sessions would concern some faculty. However, the time spent would yield short-term pain but long-term gain.
Technological expertise	65.6(21)	Most of us are equipped with basic computer skills and may not have the right blend of technical expertise when it comes to delivering the entire course online and hence would initially be a challenge.
Learning environment	47(15)	We are unsure of the overall learning environment that the student would be exposed to. We are also not convinced about the online assessment and evaluation for the students.
Online facilitation	31(10)	Training on using technology to develop different modes of delivery/pedagogical innovation would be helpful.

*Total no of faculty: 32.

Table 5. Challenges in adopting online degree programs in India: Employers perspective.

Themes	*Percentage of employers responded (no of employers)	Sample statements
Credibility	74(20)	We have apprehensions about the credibility of the online degree, as validating the credentials of the candidate being recruited is one of the important requirements in the recruitment process.
Quality of students	85(23)	We feel that the quality and effectiveness of students might be a challenge in the absence of robust guidelines from the governing bodies.
Relevance	74(20)	In today's competitive market, an online degree may not be a viable and relevant proposition.
Personality enhancement	70(19)	Students who enrol for online programs need to authenticate/ check for the credibility of their overall quality of education and personality development.
Industry exposure	50.5(15)	Students will not have any opportunity of going in the market and be exposed to corporate culture. Lack of industry exposure regarding internships and live projects will be a big challenge for motivating us to recruit students undergoing online degree programs.

*Total no of employers: 27.

The above-identified themes can be summarized through the analysis below (**Table 6**).

Table 6. Mapping the themes and the impact on the stakeholders.

Themes	Concerned stakeholders	Impact on adoption choice
Placement Opportunity	Students	Job from campus, may not opt unless job opportunities are there immediately after completion of the degree
Convenience	Executive students	Online education needs to ensure the flexibility for the learners
Infrastructure, Funds, technological expertise, Quality faculty	Vice Chancellor/Director	Resources for building the capacity and infrastructure to meet the expectation of students, needs long term commitment of the leadership team of the University/Institution
Industry acceptance	Vice Chancellor/Director, Students, Executive students,	Attractiveness of the programme, career impact, growth etc. are drivers to choose online education
Peer learning, Networking	Students, Executive students	Involvement of the participants outside the classroom sessions, asynchronous learning opportunity
Past Experience, Time, Expertise, learning environment, online facilitation	Faculty	Constraints of resources and training, needs long term investment strategy for the Universities/Institutes
Credibility, Quality, Relevance, Industry exposure	Employers	Skepticism till the online education demonstrates impact, needs to involve employers in designing and delivery
Personality development/enhancement	Employers, Students, Executive students	Expectations are not limited to jobs, but shaping the personality

4. Discussion and proposition

Online education will play a vital role in building an inclusive education system by reaching out to the geographies where quality education cannot be imparted through the traditional mode. In the discussion of students, it was seen that they felt that an online program from a reputed University was better than a regular MBA program from a local Business School. The higher penetration of mobile and internet services and the falling price of data usage will help online programs reach to masses in India. This would allow aspirants from the small towns and villages of India to get an online degree from a reputed University. This would also help aspire working professionals who were not able to leave their regular jobs but wanted to pursue higher studies to further their careers.

The thematic analysis of the transcripts of the interviews and the FGDs of the different stakeholders provided valuable insights into the opportunities and challenges for online higher education in India in the management field. It is believed that huge investment in IT infrastructure may deter Universities in starting an online postgraduate program in management. Based on the opinions collected, there is also seen a lack of requisite expertise with universities to manage admission, delivery, examination, and conducting the course in an online mode. Recruiters were also sceptic about the credibility of the online programs. They may want to wait and monitor the quality of online education before they treat online programs at par with traditional classroom programs. Aspiring students were also not very comfortable with online degrees. This was partly because of the uncertainty attached to such degrees relating to the program's quality and partly due to acceptance by the industry.

Without any reliable platform to provide online degrees, private sector involvement in designing and investing in IT infrastructure to provide online education is possible. Unreliable institutions may exploit these platforms to provide online degrees massively unless regulatory bodies develop appropriate guidelines. UGC came out with Draft guidelines for online degree programs in June 2016. Although online degree programs are still in the guideline stage, the Government of India has made a foray into online education through SWAYAM. In 2016, MHRD, UGC and AICTE created an online platform, SWAYAM, for inclusive education. This platform is being used for disseminating online courses in different fields. The model being followed is the same as international MOOCs models such as Coursera and EdX.

The authors recommend that the SWAYAM platform may be used for offering online degrees across approved disciplines where the various Partnering Universities will be responsible for the academic inputs. The regulatory bodies can monitor the compliance of guidelines as the degrees will be offered on SWAYAM. This will obviate investment in IT infrastructure by each online degree offering University/Institute.

The authors propose two models of delivery of online degrees in management education, identified as "Sustainable education models". These models are similar in nature to the business models given by Jansen et al. (2007), Afuah (2004) and Osterwalder (2005). Osterwalder et al. (2009) defines a business model as one: "which describes the rationale for how an organization creates, delivers and captures value." Tian and Martin (2014) expanded this business model concept to higher education and focussed on market dynamics, value drivers, complexity and sustainability in building their models. The identified themes across the different stakeholders brought out new insights that can be exploited further to draw conclusions and repeat the study in different geographical contexts to check for similarities that can help in subsequent theory-building on this research topic. The findings suggest that while students are more concerned about placement opportunities and personality development, Vice-chancellors/Directors were concerned about funding, infrastructure, and expertise. Faculty members were concerned about lack of technical expertise and time and were unsure about the learning environment. The concerns of these stakeholders may converge towards the feasibility of a quality educational platform that ensures the learning environment and involves the employers as a part of the platform. Repetition of such studies in different countries, under different policy scenarios, may be useful in the future to progress research towards theory building on this topic.

Though this study doesn't amount to theory building, the themes identified through literature and thematic analysis supported the construction and proposal of two models of delivery of online degrees in management.

Higher education in India is a crowded marketplace, with both Central and Private Universities working hard to distinguish themselves. There are major challenges identified related to their infrastructure which may prove a deterrent for them in providing online degree programs. The main value drivers in these models are education and the online platform. Together both these value drivers give a sustainable education model. Barth et al (2007) talk about building a sustainable model in higher education by developing key competencies, which in this case are the value drivers.

The authors propose the following two models of delivery of online degrees. These models are suggested based on the identified themes and their interlinkages with the adoption of online degree programs. These propositions can be subsequently validated in future research by drawing comparisons with successful delivery models across the globe. The themes identified through the qualitative study emphasize the lack of resources, funding, and expertise to implement impactful online programs. This necessitates the involvement of policymakers to provide appropriate funding or exploit the existing technology infrastructure/platforms like SWAYAM for online educational deliveries with the help of partnering universities. However, such programs must have corporate linkages and faculty facilitations to ensure quality delivery and job/internship opportunities. Moreover, such collaborative models should take care of the holistic development of students ensuring, networking opportunities personality development, periodic quality verifications and continuous improvement. Based on the identified themes across different stakeholders, this study proposes following two virtual models of learning in Indian context.

Virtual learning model 1: In this model, SWAYAM would act as an aggregator for online programs being offered by various Universities/Institutes. Individual Universities/institutes can be allowed to offer the online degree on the SWAYAM platform as per the guidelines about credit structure, the conduct of the sessions, learning material, proctored examination and award of degree. SWAYAM would charge a percentage of the program fee from the degree offering universities/Institutions for providing the platform to run the program.

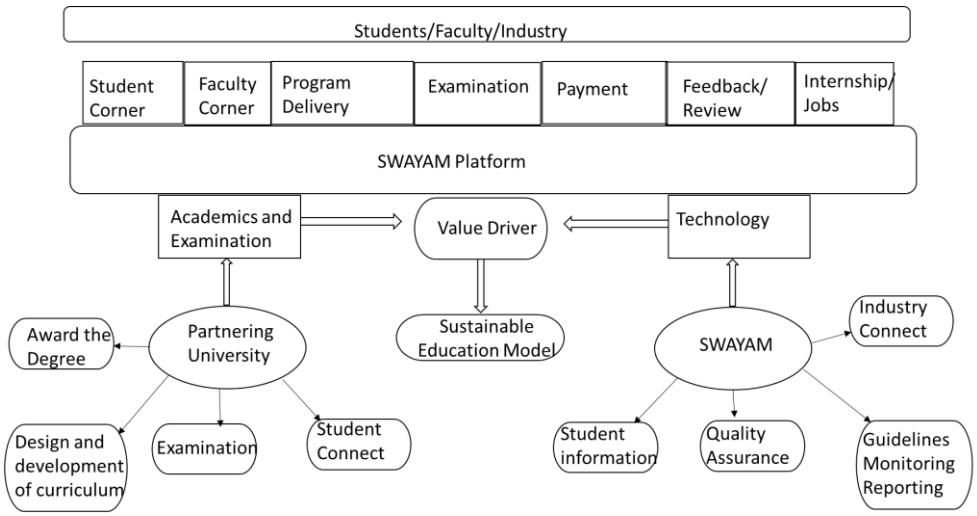

Figure 2. Virtual Learning Model 1.

Figure 2 explains the roles of SWAYAM and Partnering University in the virtual learning model 1.

Here, the SWAYAM platform will be used as a user interface. The user interface would have various functionalities, such as:

- Student Corner—Providing information on the available degree programs offered by the various Partner Universities.
- Delivery of the Course—The materials pertaining to the course, like the videos, reading material, cases, articles, discussion forum etc., will be available here.

- Payment Gateway for the fees
- Conduct of examination—Partner University will evaluate students on the pre-informed criteria
- Feedback and Reviews—Students will give their feedback and suggestions
- Faculty Corner—Providing an interface to faculty regarding FDP, training and the tools required for online delivery.
- Industry interface—Connect with the industry regarding live projects, internships, and job openings.

This model's two main value drivers are the Academics and Technology platforms. The Partner University would manage the academic platform, and SWAYAM would manage the technology platform. They become value drivers in this model as both, University and SWAYAM work in the areas where they have the expertise. When these two key competencies come together, they lead to the development a sustainable education model.

The academic part in the model would be completely looked after by the Partner University. The university would be responsible for building the curriculum, delivering the course, conducting the examination and awarding the degree. The partner universities would also create awareness among aspiring students regarding the online degrees they offer in the Student Corner of the user interface.

The technology would be managed by SWAYAM itself or through a vendor. SWAYAM, along with UGC and MHRD, would be forming the guidelines for the conduct of online degree programs. They would be monitoring the functioning of the partner universities. They would ensure that the quality of the degree programs is adhered to. They would be collating information regarding student enrollment, high-demand programs, high-demand universities and student feedback and reviews. This information will be shared in the Student Corner. This platform would also enable the faculty with training programs in technology and designing the courses. SWAYAM would also be responsible for bringing an industry connection with the platform's online programs.

The Partner University would be charging a fee for the full program, which will be collected through the SWAYAM platform and paying a portion of the fee to SWAYAM for its maintenance and future development.

Virtual Learning Model 2—In the proposed Second Model, the authors propose that UGC, MHRD and AICTE propose an Online Open University or Affiliate University (AU), similar to Open Universities like BROU and IGNOU. In this model, SWAYAM would allow partner Universities/Institutions to offer online courses on its platform. These courses would be classified under various buckets. Aspiring students would be able to choose various courses from different buckets of courses across the Universities/Institutes, to fulfil the credit requirements in a choice-based credit system. In this case, the degree would be offered by the Affiliate University based on fulfilling the credit requirements of the online programs.

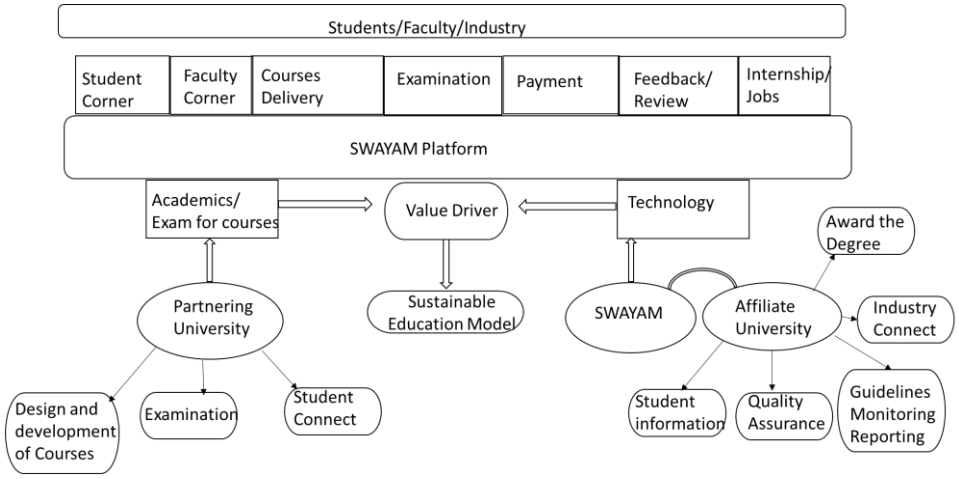

Figure 3. Virtual Learning Model 2.

Figure 3 explains the Virtual Learning Model 2, and the role of SWAYAM, the Partnering University and the Affiliate University in this model. As in the first model, in this model also, the SWAYAM platform will be used as a user interface. The user interface would have the same functionalities as in Model 1.

In this model, the Affiliate University would decide the credit requirements for completing the degree. The Partnering university here would be offering courses as per their expertise. They would be responsible for building the course structure, delivery of the course and conducting evaluations for the course. The partner universities would also be creating awareness among aspiring students regarding the online courses and the subjects they offer in the Student Corner of the user interface. The students would be given a choice of picking courses from different universities to meet their credit requirements.

The technology would be managed by SWAYAM itself or through a vendor. In this model, the Affiliate University would be forming the guidelines for the conduct of online degree programs. They would specify the combination of credits required for the award of the online degree. They would monitor the curriculum, content and delivery of the courses offered by the Partner Universities/Institutes.

The role of the SWAYAM platform would be limited in this case to providing the technology platform in facilitating the delivery of the online program. The Affiliate University would award the degree. **Table 7** below provides a comparison of Virtual Learning Model 1 and Virtual Learning Model 2.

Table 7. Virtual learning model 1 vs virtual learning model 2.

Criteria	Virtual Learning Model 1	Virtual Learning Model 2
Platform	SWAYAM	SWAYAM
Degree offered by	Partnering University/Institution	Affiliate University
Program Structure	Students can select a degree program from the various courses the partnering University/Institution offers.	Students can select their preferred courses from the various courses listed on SWAYAM from all the partnering Universities/Institutions.
Program Fee, commencement of the program	Decided by the partnering University	Decided by SWAYAM Affiliate University

Table 7. (*Continued*).

Criteria	Virtual Learning Model 1	Virtual Learning Model 2
Revenue Model for SWAYAM	The program fees are collected by the Partnering University from the enrolled students to their respective programs, and SWAYAM charges part of the program fees as Platform charges.	The Affiliate University collects program fees from the enrolled students through the SWAYAM payment gateway. Partner University/Institution is paid based on the number of students opting for their courses on a per student per course basis
Facilitation of the Program	The academic facilitation will be the responsibility of the partnering University/Institution. The technical facilitation regarding the functioning of the platform/conduct of the exam should be with SWAYAM or outsourced by SWAYAM to the eligible vendor.	The academic facilitation will be the responsibility of the partnering University/Institution. The technical facilitation regarding the functioning of the platform/conduct of the exam should be with SWAYAM or outsourced by SWAYAM to the eligible vendor.

5. Limitations of the study

One of the limitations of the study was the use of convenience sampling. This sampling methodology was used as the authors wanted in-depth interviews with certain stakeholders, and these interviewees had to be selected based on their availability and willingness to answer the questions. The study was done based on qualitative methodology. In a qualitative study, the interviewee's responses may be impacted by the relationship with the researcher.

Lastly, the study proposes two virtual models that are conceptual in nature. Their practical application and viability still need to be tested.

6. Conclusion

Online education can ensure inclusive education to many aspirants where quality in regular mode of education may not be available, especially in management education. This will also enable working executives who cannot avail of regular education to continue their studies. It will also help those prospective students who cannot move to other places for education due to financial and other constraints. However, providing online degrees in India requires the desired ecosystem, including policy guidelines, infrastructure, and industry acceptance.

The analysis in the study revolves around existing literature and the views expressed by the different stakeholders like students, vice chancellors, faculty members and employers/industry. The thematic analysis of the views of different stakeholders points at several challenges like lack of proper infrastructure, lack of expertise on conduct of the online sessions, administration of exams etc., for regular Universities to offer online degrees. The investment required for online platforms is also identified as a major deterrent for such offerings. Thus, the SWAYAM platform developed by MHRD that, currently offers various certification courses may be used to offer such online programs by partnering with regular universities.

This study aims to aid policymaking by proposing virtual online learning models in the area of higher education in the management field. The proposed model looks to mitigate the challenges of investments required in infrastructure, acceptance of online degrees among employers, teachers and students' adaptability to such programs and other challenges found in the study. The model highlights the importance of inclusivity

in higher education. It aims to provide alternate means of larger coverage and meet the requirements of those who cannot join mainstream education.

The authors believe that the online model of higher education should not be confined to management education. The possibility of extending it to other fields should be explored. There should be a provision for the presence of students for specific periods in designated labs/industries to complete mandatory requirements of experimentation and internship.

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