A Study of SWAYAM MOOCs Platform's Contribution in Providing E-learning Opportunities to the Students Pursuing Higher Education

ABSTRACT OF THE THESIS

SUBMITTED TO
BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
(A CENTRAL UNIVERSITY)
LUCKNOW

BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
LUCKNOW
प्रज्ञा शील करूणा
ESTABLISHED 1996

FOR THE AWARD OF THE DEGREE OF

Doctor of Philosophy

IN

MASS COMMUNICATION AND JOURNALISM

Submitted by

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Enrolment No. 1597/19

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2023

ABSTRACT

In recent years, the field of education has witnessed a significant transformation with the advent of online learning platforms. One such platform that has gained prominence in India is SWAYAM (Study Webs of Active Learning for Young Aspiring Minds). SWAYAM is a Massive Open Online Course (MOOC) platform initiated by the government, offering free online courses and resources to students pursuing higher education. However, despite advancements in technology and the availability of online learning platforms, access to quality education remains a challenge for many students, particularly those pursuing higher education. Limited access to educational resources, geographical constraints, and financial barriers often hinder their ability to access learning opportunities beyond traditional classroom settings. Thus, the present study is an endeavour to shed light on the **SWAYAM MOOCs platform's contribution to providing e-learning opportunities to students pursuing higher education.**

The study is being organized into five chapters, each supporting the completion of the study. The below sections summarize each chapter in brief:

Chapter 1: Introduction

1.1 Background

In the contemporary world, education plays a pivotal role in societal development and individual empowerment. However, traditional higher education systems face challenges like limited access, high costs, and rigid structures. In response, online learning platforms have emerged as a promising solution to these issues. One such platform is SWAYAM, launched by the Indian government in 2014, which offers Massive Open Online Courses (MOOCs) for free, bridging the gap between conventional education and technology-driven learning.

SWAYAM addresses the limitations of traditional education, especially for marginalized or remote learners, by providing open access to high-quality courses across various disciplines. The COVID-19 pandemic highlighted the importance of online education, with SWAYAM playing a vital role in ensuring uninterrupted

learning. The study aims to comprehensively analyse SWAYAM's impact, effectiveness, and user experience. It seeks to evaluate awareness levels among students, satisfaction with the platform, and the role of universities in promoting SWAYAM. Language preferences, credit transfer mechanisms, and the most preferred mass communication medium for promoting the SWAYAM MOOCs platform among higher education students will also be examined to enhance accessibility and outreach.

The research will focus on student-centricity, understanding learners' demands, preferences, and aspirations. By gauging their interests and learning needs, SWAYAM can offer specialized courses that cater to diverse academic pursuits and career goals. Additionally, the study will assess the platform's impact on academic performance and learning outcomes, leading to evidence-based improvements. To encourage broader adoption, the study will explore barriers hindering universities from integrating SWAYAM into their curricula and propose strategies and incentives for collaboration. By strengthening the relationship between SWAYAM and educational institutions, a robust educational ecosystem can be created.

The research also emphasizes the most preferred mass communication medium to enhance SWAYAM's accessibility and reach. Harnessing the power of communication and outreach will increase awareness and engagement, making SWAYAM a transformative force in education. In conclusion, the study seeks to generate valuable insights and actionable recommendations for SWAYAM's continuous evolution. By remaining inclusive, accessible, and transformative, SWAYAM can create a brighter and more equitable future for education, empowering learners from all backgrounds to excel in their academic and professional pursuits.

1.2 Statement of the Problem

In low- and middle-income nations like India, providing educational access to all through traditional institutions alone is challenging. The demand for online education has increased, with Massive Open Online Courses (MOOCs), particularly SWAYAM in India, gaining popularity for professional training. While MOOCs offer potential solutions to address deficiencies in higher education and expand opportunities for hardworking students, some learners perceive these courses primarily as tools for professional training rather than higher education.

A critical problem identified is the lack of awareness about the SWAYAM e-learning platform, both among registered and non-registered students. Additionally, the satisfaction level of registered learners with SWAYAM has not been adequately emphasized. The extent of involvement and efforts made by universities and educational institutions in promoting the adoption of SWAYAM also remains understudied. Moreover, the impact of SWAYAM on students' academic performance and learning outcomes requires assessment. Understanding the preferred language choices of students accessing content on the platform is essential to effectively catering to the diverse linguistic needs of learners.

The credit transfer mechanisms adopted by universities for SWAYAM courses need examination to ensure appropriate recognition of online learning efforts. Usability and accessibility aspects, including internet connectivity challenges faced by students, especially in rural areas, need evaluation. Content quality and relevance on SWAYAM must be assessed to ensure that the platform meets the diverse learning needs of students. Furthermore, understanding students' expectations and preferences towards SWAYAM is crucial to improving the platform's features, such as interactive elements, personalized learning paths, and collaborative opportunities.

This comprehensive research aims to gain insights into the role of universities in promoting SWAYAM, its academic effectiveness, language preferences, credit transfer mechanisms, usability, and student expectations. The study will also assess SWAYAM's preferred medium for mass communication. The results will contribute to enhancing the overall quality and accessibility of SWAYAM, fostering its integration into mainstream education, and ultimately advancing online education in India.

1.3 Higher Education: Higher education is defined by the United Nations Educational, Scientific, and Cultural Organisation (UNESCO) as encompassing "all types of education (academic, professional, technical, artistic, pedagogical, long-distance learning, etc.) offered by universities, technological institutes, teacher training colleges, etc., that are usually intended for students who have completed secondary education and whose educational goal is the attainment of a degree, grade, certificate, or diploma of higher education."

1.4 E-learning: The process of learning via the use of various electronic media and technology is known as e-learning, sometimes known as electronic learning or online learning. E-learning is also known as electronic learning or online learning (Elder et al. 2019).

1.5 MOOC/MOOCs

The term MOOC is abbreviated form of 'Massive Open Online Course' and its plural form is 'Massive Open Online Courses (MOOCs)'. Dave Cormier an educational researcher of the University of Prince Edward Island, Canada first used the term MOOC in 2008. An online course with open access and unrestricted enrolment is called MOOC or Massive Open Online Courses (MOOCs) are such online educational courses or programmes designed to provide open access to a wide range of geographically dispersed learners over the internet (**Wamala, R. and Ssembatya, V.A., 2015**).

1.6 SWAYAM

SWAYAM, an acronym for Study Webs of Active Learning for Young Aspiring Minds, is an Indian MOOCs platform launched by the Ministry of Human Resource Development (now Ministry of Education) in India on July 9, 2017. This initiative prioritizes educational quality, fairness, and accessibility, making it instrumental for personal growth and lifelong learning. Its primary objective is to make high-quality teaching and learning resources accessible to everyone, including the underprivileged **(https://swayam.gov.in/about).**

1.5 Objectives of the Study

The researcher tried to fulfil the following **objectives** of the study:

1. To analyse the awareness level of students about the SWAYAM MOOCs platform.
2. To find out the satisfaction level of registered learners towards SWAYAM.
3. To know the role of universities/institutions in promoting SWAYAM.
4. To evaluate the academic effectiveness of SWAYAM among students.

5. To identify the preferred language of content on the SWAYAM among students
6. To analyse the credit transfer mechanism being adopted by the universities for SWAYAM.
7. To evaluate the accessibility and connectivity of SWAYAM.
8. To evaluate the expectations of students regarding the SWAYAM.
9. To study the most preferred mass communication medium for promoting the SWAYAM MOOCs among students.

1.6 Need and Significance of the Study

The study aims to explore the diverse contributions of the SWAYAM MOOCs platform in higher education, providing valuable insights for shaping the future of e-learning. By understanding SWAYAM's impact on students' academic journeys, the research strives to create an inclusive and transformative educational landscape. This study seeks to contribute to the limited literature on MOOCs' effectiveness in higher education and inform policymakers and administrators on utilizing e-learning platforms effectively. Additionally, by assessing SWAYAM's accessibility and impact, the research aims to promote inclusivity and democratize education, fostering a more equitable educational environment. The study's outcomes can lay the groundwork for future research on MOOCs and their integration with traditional education systems.

Chapter 2: Literature Review

Rauf et al. (2016) demonstrated that integrating MOOCs in engineering education effectively addresses engineering challenges. The mixed, flipped paradigm, combining online technical information delivery and valuable class discussions and practical applications, is favored by educators and researchers.

Kaveri et al. (2016) conducted comparative research on traditional higher education, SWAYAM, and global MOOCs. Global MOOCs were found to be more student-focused, contributing positively to cooperation, accessibility, and cost-effectiveness. Traditional higher education was preferred for long-term societal impact, while

SWAYAM can complement the regular educational system, enhancing affordability, accessibility, and inclusivity.

Matliwala (2017) identified several benefits of SWAYAM, including ongoing involvement, language support, accessibility, and digital assistance. Key obstacles to SWAYAM's implementation included the need for digital literacy, certificate validity, real-time feedback, distinct instructor roles, utilization of multimedia content, and limited evaluation options.

Shelley and Srivastava (2017) found a correlation between gender and MOOCs usage in the classroom, with males using MOOCs more frequently than females for teaching and learning purposes.

Jagetiya, Challa, and Prashanthi (2018) highlighted the growing demand for technology-driven education and the promise of MOOCs in offering diverse courses and certificates. MOOCs provide benefits like flexibility, cost-effectiveness, and improved educational outcomes, but challenges include infrastructure limitations, assessment methods, invalid degree programs, and dropout rates. India has made significant progress in MOOC implementation, ranking second globally.

Mohapatra and Mohanty (2018) conducted an empirical study on MOOCs in India, finding learner perception, usability, availability, affordability, and knowledge providers to significantly influence MOOC adoption, accounting for 68.1% of the variation.

Gul, Shafiq, Mahajan, Shafi, and Shah (2018) emphasized MOOCs' potential to enhance intellectual capacities while addressing apprehensions in online learning and suggesting strategies to improve pass-out percentages, language translation, and content formats.

Sahoo, Mohanty, Ratha, Meher, and Sahu (2018) studied MOOCs globally, including the Indian platform SWAYAM, which provides multi-learner access from different regions through prominent academic and research platforms.

Majumder (2019) described SWAYAM as a free, custom-designed solution offering high-quality education to the general public, supplementing formal education, and promoting skill development and self-assessment.

Mondal, Gourish, and Majumder (2019) discussed the challenges instructors face with SWAYAM, including course transactions, credit transfers, language barriers, necessary infrastructure availability, and course recognition.

Shrivastava, Hasteer, and Soni (2019) explored Curriculum Inclusive MOOCs (ciMOOCs) and their integration in university curricula, comparing student performance with conventional MOOCs, using a Computer Science course from NPTEL.

Bordoloi, Das, and Das (2020) emphasized the importance of MOOCs and OERs in offering global learning opportunities in India while acknowledging challenges in their adoption and popularity.

Virani, S. R., Saini, J. R., & Sharma, S. (2020) highlighted the lack of empirical research on MOOC adoption from teachers' perspectives in India, using the technology acceptance model to study teachers' intentions to adopt MOOCs and validate determinants and future intentions.

Khan, Nabi, Khojah, and Tahir (2020) conducted a study during the COVID-19 pandemic to examine students' perceptions and readiness towards online learning in Delhi, India. The research showed positive acceptance of e-learning as an effective substitute for offline teaching, with potential for further improvement through social media integration.

Raja and Kallarakal (2020) explored the outcomes of MOOCs during COVID-19 for higher educational institutions (HEIs) in India, emphasizing their role in crisis management and developing intellectual human assets through flexible and cost-effective learning opportunities.

Singh and Sharma (2021) conducted an empirical study on MOOC user satisfaction, finding positive social influence and facilitating conditions enhancing satisfaction. Self-regulation positively influenced self-efficacy in MOOC pursuit, with implications for the pandemic environment.

Bordoloi, Das, and Das (2021) revealed the challenges of emergency online teaching in India, considering the digital divide between rich and poor learners and the need to

understand perceptions of online and blended learning to develop suitable policies and designs.

Kumar and Mahendraprabu (2021) highlighted the importance of OERs for researchers in Tamil Nadu state universities, focusing on SWAYAM's open educational practices and implications for research scholars.

Dhiman (2021) found that MOOCs fostered interactive user forums, offering free access to advanced education and attracting interest from venture capitalists and corporations seeking to enter the higher education market.

Ahmad et al. (2022) proposed MOOCs 5.0, incorporating Industry 4.0 technologies for a richer and more personalized learning experience, to effectively implement Industry 4.0 technologies.

- **Research Gap**

The identified research gaps in the literature review of the SWAYAM MOOCs platform highlight crucial areas for further investigation. Understanding the awareness levels among both registered and non-registered students will help gauge the platform's reach and effectiveness. Assessing the satisfaction level of registered learners will provide insights into strengths and weaknesses, aiding improvements. Understanding the role of universities/institutions in promoting SWAYAM will foster collaboration for successful integration. Evaluating the academic effectiveness of SWAYAM among students will assess its impact on learning outcomes. Identifying the preferred language of content delivery will foster inclusivity. Understanding the credit transfer mechanism will ensure appropriate recognition of online learning efforts. Evaluating the use of accessibility, connectivity, and content will improve the user experience. Studying students' expectations will align offerings with their needs. Analyzing the most preferred mass communication platform will enhance outreach. Addressing these gaps will contribute to a more effective and accessible learning experience for all students, shaping the future of higher education in India.

Chapter 3: Research Methodology

- **Research Design:** The present study has used a descriptive, exploratory, qualitative, and quantitative research design.
- **Data type and source:** The study is mainly based on primary data collected through administering questionnaires and schedules for the respondents.
- **Questionnaire Development and Administration**

Development of Research Constructs

- Section-I Demographic Profile of the Respondents.
- Section II: Online educational platform.
- Section III: Challenges Faced in Online Study.
- Section IV: Preferred Language of Content on Online Educational Platforms (such as SWAYAM).
- Section V: Awareness about SWAYAM MOOCs.
- Section VI: Role of Universities in promoting SWAYAM.
- Section VII: Most preferred mass communication medium for promoting SWAYAM MOOCs among students.

After the 7^{th} section of the questionnaire, three questions were asked to know how many of the students were registered learners on SWAYAM or had ever registered in it, and the last section of the questionnaire was devoted to being only filled out by those students who had ever registered on SWAYAM. Below are the questions:

1. Have you ever registered on SWAYAM?
2. How did you come to know about SWAYAM? Through
3. Are the courses related to the subject or topic of your interest available on SWAYAM?

Section VIII: Satisfaction Level from SWAYAM MOOCs Platform

Section IX: Academic Effectiveness of SWAYAM

Section X: My Expectations to Join SWAYAM

Section XI: Accessibility and Connectivity of SWAYAM

Section XII: Credit Transfer Mechanism Adopted by universities for SWAYAM

- **Pilot Study: A** pilot study was conducted with a sample size of **102** respondents who were from Lucknow, UP, and these respondents were chosen through personal contacts using the convenience sampling method. As a result of the pilot study, the questions that had a Cronbach alpha value less than 0.6 were deleted, and in this way, from the 35 questions, eight questions were removed, and the final questionnaire had only 27 questions.

- **Sample Size:** But the researcher collected the data of 638 respondents, which was more than the minimum sample size (384).

- **Sampling technique:** The researcher used **purposeful sampling techniques** to decide universities for sample collection. There were 15 universities in Lucknow; researchers chose 4 government and 2 private universities excluding specialised universities. Researchers further divided the entire population into two groups: **registered learners and non-registered learners,** and from each university, data from both unregistered learners and registered learners was taken. Hence, the non-random sampling technique **(quota sampling)** was used to collect the primary data.

- **Method of collecting primary data: The** researcher used both online and offline modes of collecting data.

- **Response Rate:** For the data collection of students, 1500 questionnaires were used in offline mode, but only 567 filled-out questionnaires were received by the researcher. From these filled questionnaires, 125 that were incomplete were rejected, and only 442 were retained. In this way, the response rate in the case of offline data collection comes out to be 29.46%. On the other hand, 4000 questionnaires in online form were spread, but the complete questionnaires received were only 196, which makes the response rate 4.9%. In this way, a total of 638 responses were collected for the study.

- **Time duration: The** survey was handed out to respondents through email and personal interviews, from the start of December 2022 up until the middle of February 2023.

- **Statistical Tools and Software Used for Data Analysis:** The researcher performed reliability data analysis, normality analysis, factor analysis, chi-square (c2) analysis, correlation analysis, and regression analysis using SPSS software version 25. Some other statistical tests, like frequency analysis, pie charts, bar Bar Charts, Histograms cross-tabulation analysis, were also used**.**

- **Chapter 4: Data Analysis and Interpretation**

- **4.1 Demographic profile of respondents**

- The demographic profile of the respondents is divided into basic demographic profiles of the students, like age, gender, social class, department, and type of university. It was seen that out of a total of 638 respondents, 33.1% were under 20 years of age, 48.0% were aged between 21 and 25 years, 15.4% were aged between 26 and 30 years, and 3.6% were above 30 years and old. It was seen that out of a total of 638 respondents, 49.8% were male, 49.1% were female, and 1.1% were others.

- Furthermore, 45.5% of the 638 respondents were from the general category, 25.9% were from the OBC category, 25.7% were from the SC category, and 3.0% were from the ST category. After analysing the academic program, it can be seen that out of a total of 638 respondents, 48.0% were doing graduation, 33.2% were post-graduation, 15.8% were doing a PhD, and 3.0% were others.

- After analysing the department, it was seen that out of a total of 638 respondents, 57.8% were from the Arts, Humanities, and Social Sciences department, 13.5% were from the Science department, 12.4% were from the Engineering and Computer Science department, 13.2% were from the Commerce and Management department, and 3.1% were from other departments. Further, it was seen that out of a total of 638 respondents, , 84.0% were from government universities 16.0% were from private universities, 84.0% were from government universities.

- **4.2 Results related to variables of the online educational program**

- It was found that out of a total of 638 respondents, 100% study online. After analysing which type of content respondents prefer, it was found that out of a total of 638 respondents, 18.0% prefer text, 3.0% prefer audio, and 79.0% prefer video.

- After analysing whether respondents accessed any online course or study material, it was seen that out of a total of 638 respondents, 68.0% had bought or accessed any online course or study material, and the rest, 32.0%, didn't. Further, it was found that out of a total of 638 respondents, only 434 respondents said yes to having bought or accessed any online course or study material. Out of these 434 respondents, 0.9% said that the course or study material was very poor, 2.3% said that the course or study material was poor, 23.5% said that the course or study material was average, 50.0% said that the course or study material was good, and 23.3% said that the course or study material was excellent.

- Further, it can be seen that out of a total of 638 respondents, 32.1% spend 0–2 hours on e-learning educational platforms; 37.5% spend 2-4 hours on e-learning educational platforms; 19.4% spend 4-6 hours on e-learning educational platforms; 8.0% spend 6–8 hours on e-learning educational platforms; and 3.0% spend more than 8 hours on e-learning educational platforms. It was also seen that out of a total of 638 respondents, 13.6% preferred the online mode to study, 19.3% preferred the traditional (physical) method to study, and 67.1% used both.

- Furthermore, it was discovered that 3.3% of the total 638 respondents use desktop, 27.7% use laptop, 64.7% use smartphone, and 4.2% use tablet for online research. It can also be seen that out of a total of 638 respondents, 28.1% have registered on SWAYAM, and 71.8% haven't registered on SWAYAM.

4.3 Results of Factor Analysis

Most Important Factors	
Awareness about SWAYAM MOOCs Platform for Registered & Non- Registered Learners of SWAYAM	
Registered Learner	**Non – Registered Learner**
Factor -1 includes following **10** variables 1. SWAYAM covers classrooms from Class 9 up-to post-graduation. 2. SWAYAM is a web and mobile-based MOOCs platform. 3. The courses hosted on SWAYAM are in 4 quadrants – (1) Video lectures, (2) Reading material that can be downloaded/printed (3) Self-assessment tests through tests and quizzes and (4) Online discussion forum for clearing the doubts. 4. The objective of the programme is to take the best teaching and learning resources to all, especially who have not been able to join the traditional educational institutions. 5. SWAYAM has a wide range of courses. 6. SWAYAM is a platform where quality education is affordably available and self-learning is possible. 7. SWAYAM stands for Study Webs of Active-learning for Young Aspiring Minds. 8. SWAYAM has a grievance-handling mechanism related to Credit Transfer.	**Factor -1** includes following **10** variables 1. SWAYAM is a platform where quality education is affordably available and self-learning is possible. 2. SWAYAM is a web and mobile-based MOOCs platform. 3. SWAYAM has a wide range of courses. 4. The courses hosted on SWAYAM are in 4 quadrants – (1) Video lectures, (2) Reading material that can be downloaded/printed (3) Self-assessment tests through tests and quizzes and (4) Online discussion forum for clearing the doubts. 5. The objective of the programme is to take the best teaching and learning resources to all, especially who have not been able to join the traditional educational institutions. 6. UGC has issued the regulation in 2016 (Credit Framework for online learning courses through SWAYAM) advising the

9. UGC allows credit transfers into the academic record if a student is taking a course on the SWAYAM portal. 10. UGC has issued the regulation in 2016 (Credit Framework for online learning courses through SWAYAM) advising the Universities to identify courses where credits can be transferred on to the academic record of the students who have done courses.	Universities to identify courses where credits can be transferred on to the academic record of the students who have done courses o 7. UGC allows credit transfers into the academic record if a student is taking a course on the SWAYAM portal. 8. SWAYAM covers classrooms from Class 9 up-to post-graduation. 9. SWAYAM has a grievance-handling mechanism related to Credit Transfer. 10. SWAYAM stands for Study Webs of Active-learning for Young Aspiring Minds.

Most Important factors of Satisfaction level from SWAYAM MOOCs Platform for Registered Learners of SWAYAM
Factor -1 includes following **10** variables 1. Pedagogy (Teaching style) 2. Assessment Process through Short/Long Question-Answer & Quizzes 3. Video content 4. Self-instructional material (e-Books, illustrations, case studies & presentations) 5. Animation & Simulations 6. Number and Type of courses offered 7. Academic Content quality 8. Interaction with the MOOCs instructor 9. Cost of the course 10. Credit Transfer Mechanism

4.4: Result related to Level of Challenges, Awareness and Satisfaction regarding SWAYAM.

Researcher developed a scale to measure Dimensions - Challenges & Awareness for all students (Registered and Non-Registered Students) and Satisfaction only for Registered Learners of SWAYAM and after analysing the data It was found that-

- **Level of Challenges-** Out of total 638 respondents, 9.1% face a very low level, 24.9% face a low level, 35.0% face a moderate level, 25.9% face a high level and 5.2% face a very high level of challenges.
- **Level of Awareness –**Out of total 638 respondents, 2.4% have a very low level, 13.2% have a low level, 29.3% have a moderate level, 39.2% have a high level and 16.0% have a very high level of awareness.
- **Level of Satisfaction –**Out of total 274 respondents who were Registered Learners of SWAYAM, 2.9% have a very low level, 4.7% have a low level, 23.4% have a moderate level, 45.3% have a high level and 23.7% have a very high level of satisfaction.

4.5 Chi Square Analysis: Difference between respondents (registered and non-registered learners of SWAYAM) for the variables of awareness of MOOCs It was found that the value of the asymptotic significance was less than the 0.05 significance level in the case of all null hypotheses. It means that there was a difference between the two variables; hence, the null hypotheses were rejected.

4.6 Results: Correlations Analysis: Relationship between Awareness Level and Satisfaction Level of Registered Learners of SWAYAM - It was found that the value of r is positive at 0.350. Results also indicated that there was a significant and positive correlation; hence, it can be concluded that the null hypothesis is rejected.

4.7 Results: Regression Analysis: Impact of Awareness Level on the Satisfaction Level of Registered Learners of SWAYAM - It was found that the value of standardized coefficients (Beta) is **0.350,** which means that a 1-unit positive standard deviation change in the **dimension of awareness level** would result in an **increase** in the standard deviation of **satisfaction level** (a dependent variable) by **0.350** units. Since the value of the coefficient is significant, it can be concluded that **awareness level** has a **positive** and **significant** impact on **the satisfaction level of registered**

learners of SWAYAM (the dependent variable). Therefore, it can be said that **Alternate Hypothesis (H1)-1** is **accepted** and **Null Hypothesis (H0)-1** is **rejected.**

4.8 Results: Chi Square Analysis: Difference between respondents (registered and non-registered learners of SWAYAM) for the variables of 'Role of Universities in promoting SWAYAM'- It was found that the value of the asymptotic significance was more than the 0.05 significance level in the case of null hypotheses 2 and 5. It means that there was no association between the two variables; hence, the null hypotheses were accepted, whereas in the case of null hypotheses 1, 3, and 4, the asymptotic significance was less than the 0.05 significance level, which means that there was a difference between the two variables; hence, the null hypotheses were rejected.

4.9 Results: Chi Square Analysis: Difference between respondents [(I) Arts, Humanities and Social Sciences (II) Science (III) Engineering and Computer Science (IV) Commerce and Management and (V) Others] for the variables of academic effectiveness of SWAYAM - It was found that the value of the asymptotic significance was more than the 0.05 significance level in the case of null hypotheses 1 and 4. It means that there was no association between the two variables; hence, the null hypotheses were accepted, whereas in the case of null hypotheses 2 and 3, whose asymptotic significance was less than the 0.05 significance level, it means that there was a difference between the two variables; hence, the null hypotheses were rejected.

4.10 Results: Chi Square Analysis: Difference between respondents (Government and Private) for the variables of academic effectiveness of SWAYAM - It was found that the value of the asymptotic significance was more than the 0.05 significance level in the case of all null hypotheses 1, 2, 3, and 4. It means that there was no association between the two variables; hence, the null hypotheses were accepted.

4.11 Results: Chi Square Analysis: Difference between respondents (registered and non-registered learners of SWAYAM) for the variables of preferred language of content used in an online educational platform It was found that the value of the asymptotic significance was more than the 0.05 significance level in the case of null hypotheses 2, 3, and 4. It means that there was no association between the

two variables; hence, the null hypotheses were accepted, whereas in the case of null hypotheses 1, the asymptotic significance level was less than 0.05. This means that there was a difference between the two variables; hence, the null hypotheses were rejected.

4.12 Results: Chi Square Analysis: Difference between respondents (Arts, Humanities & Social Sciences, Science, Engineering, and Computer Science, Commerce, Management, and Other) for the variables of the credit transfer mechanism adopted by universities for SWAYAM - It was found that the value of the asymptotic significance was more than the 0.05 significance level in the case of null hypotheses 2, 3, and 4. It means that there was no association between the two variables; hence, the null hypotheses were accepted, whereas in the case of null hypotheses 1, whose asymptotic significance was less than 0.05, it means that there was a difference between the two variables; hence, the null hypotheses were rejected.

4.13 Results: Chi Square Analysis: Difference between respondents [(I) Arts, Humanities and Social Sciences (II) Science (III) Engineering and Computer Science (IV) Commerce and Management and (V) Others] for the variables of accessibility and connectivity of SWAYAM - It was found that the value of the asymptotic significance was more than the 0.05 significance level in the case of null hypotheses 1 and 3. It means that there was no association between the two variables; hence, the null hypotheses were accepted, whereas in the case of null hypotheses 2 and 4, if the asymptotic significance was less than 0.05, it means that there was a difference between the two variables; hence, the null hypotheses were rejected.

4.14 Results: Chi Square Analysis: Difference between respondents (registered and non-registered learners of SWAYAM) for the variables of challenges faced in online study

It was found that the value of the asymptotic significance was more than the 0.05 significance level in the case of null hypotheses 2, 3, 4, 5, 6, and 7. It means that there was no association between the two variables; hence, the null hypotheses were accepted, whereas in the case of the null hypothesis, if the asymptotic significance was less than 0.05, it means that there was a difference between the two variables; hence, the null hypotheses were rejected.

4.15 Results: Chi Square Analysis: Difference between respondents [(I) Arts, Humanities and Social Sciences (II) Science (III) Engineering and Computer Science (IV) Commerce and Management and (V) Others] for the variables of Expectations to Join SWAYAM

It was found that the value of the asymptotic significance was more than the 0.05 significance level in the case of null hypotheses 2 and 3. It means that there was no association between the two variables; hence, the null hypotheses were accepted, whereas in the case of the null hypothesis, if the asymptotic significance was less than 0.05, it means that there was a difference between the two variables; hence, the null hypothesis was rejected.

4.16 Results: Chi Square Analysis: Difference between respondents (registered and non-registered learners of SWAYAM) for the variables of most preferred mass communication medium for promoting SWAYAM MOOCs platform among higher education students It was found that the value of the asymptotic significance was less than the 0.05 significance level in the case of all null hypotheses. It means that there was a difference between the two variables; hence, the null hypothesis was rejected.

Chapter 5: Conclusion and SUGGESTIONS

- **Conclusion**

Based on the survey of 638 respondents, a significant portion faces moderate to high levels of challenges and has moderate to high level of awareness, while among the 274 registered SWAYAM learners, a majority express a high level of satisfaction with the platform.

Further the results of the factor analysis revealed the most important factors influencing the awareness and satisfaction levels of registered and non-registered learners of the SWAYAM e-learning platform. The key factors for both groups included the platform's wide range of courses, its web- and mobile-based nature, and its objective to provide quality and affordable education to all. Moreover, credit

transfer mechanisms and the availability of courses from 9th grade to post-graduation were also significant factors influencing awareness.

The chi-square analysis demonstrated a significant difference between registered and non-registered learners in terms of their awareness of MOOCs, indicating that efforts are needed to improve awareness among potential users. Additionally, the correlation analysis revealed a positive relationship between awareness and satisfaction levels, suggesting that enhancing awareness could lead to increased satisfaction among registered learners.

Furthermore, the study found that the role of universities in promoting SWAYAM varies, and there are differences in perceptions among learners from different disciplines and institutions. This highlights the need for universities to actively support and encourage their students to participate in SWAYAM courses to ensure their successful integration into mainstream education. The study also identified challenges faced by learners, such as accessibility and connectivity issues and the preferred language of content, which may affect the overall user experience. Addressing these challenges can contribute to a more seamless and inclusive learning environment.

Importantly, the research demonstrated the positive impact of SWAYAM on the academic effectiveness of registered learners, emphasizing its potential to enhance learning outcomes and skill development. Moreover, the study recognized the role of SWAYAM in bridging the gap between demand and educational quality, particularly in low and middle-income countries. The findings of the most preferred mass communication medium for promoting the SWAYAM MOOCs platform among students highlight the importance of effective communication to increase awareness and engagement among learners. Refining promotional efforts can lead to a broader reach and greater participation in SWAYAM courses.

In conclusion, this comprehensive study on the SWAYAM MOOCs platform has provided valuable insights into various aspects of the platform, including awareness, satisfaction, academic effectiveness, credit transfer mechanisms, accessibility, connectivity and student expectations. The research sheds light on the potential of MOOCs to address educational deficiencies and expand opportunities for learners,

especially in the Global South. By understanding these factors, policymakers, educators, and administrators can make informed decisions to enhance the platform's effectiveness and accessibility, ultimately contributing to the advancement of online education in India and beyond. As the world embraces digital transformation, SWAYAM stands as a pioneering example of innovation and empowerment in the realm of e-learning, and its continued development holds great promise for shaping the future of higher education in the 21st century.

- **Suggestion**
  - **The following suggestions can be put forth as per the results and discussion of the study:**

  - More and more awareness programs should be aimed at making each and every student aware of the presence, functioning, and benefits of such SWAYAM MOOCs platform.
  - As students face the problem of the high cost of Internet data, these challenges can negatively impact their academic performance and hinder their ability to fully engage in online learning. It is important for the government and educational institutes to find solutions to these obstacles, such as seeking help from peers or utilizing resources provided by the school or community.
  - E-learning platforms need reliable internet connectivity to ensure continuity in learning.
  - Higher educational institutions should allow for other forms of communication, such as online messages, emails, and video conferencing, to reduce the sense of isolation in e-learning.
  - SWAYAM can provide students with access to online tutorials and technical support. Additionally, SWAYAM can conduct workshops to improve digital literacy and emphasize the importance of punctuality and discipline in online learning.
  - It is important to seek assistance from IT support or online resources to improve digital literacy. Additionally, developing a personal schedule and setting reminders can help with punctuality and discipline.
  - Efforts must be made to ensure that students have a basic understanding of using digital forms of learning.

- Also, necessary resources and tools should be provided to students for better and easier accessibility to e-learning platforms.
- Higher educational institutions should invest in providing training to teachers and students with the latest technology updates.
- SWAYAM MOOCs learning materials should be such that they drive the increasing popularity of e-learning platforms, which offer learners the flexibility to learn at their own pace and convenience.

- **Limitations of the research**

The present study is a thorough investigation of the SWAYAM MOOCs platform 'awareness, satisfaction, challenges, academic effectiveness, preferred language, expectations, role of universities, credit transfer system mechanism, etc. from the perspective of the registered and non-registered learners of SWAYAM in pursuing higher education in universities in Lucknow. Despite the various significant contributions of this study, there are certain limitations to the present research. The first and foremost limitation of the research is that this study is only focused on a single city and university students alone and has excluded college students. Another limitation is that this study has based its research on data collected at one point in time only; therefore, longitudinal research can be done to further understand the research problem in detail.

- **Future Scope of the Study**

The future scope of study in this field includes exploring new technologies and methodologies to improve the efficiency and effectiveness of e-learning. Additionally, there is a need to focus on interdisciplinary collaborations to address complex problems and find innovative solutions for the challenges faced by students in accessing and connecting to e-learning platforms. Moreover, future research can be done using the same methodology but in a wider area, covering more cities or across different states. In addition, a comparative study can also be done on the effectiveness of different course content based on the department or language of the content. Lastly, research can also be done on the role of students in the growth and development of their own selves through online and offline learning.