

## Navigating the Opportunities and Challenges for Inclusive and Equitable Quality Education: A Systematic Review

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### Abstract:

Education is of immense importance for the multifaceted development of the individual, communities, nations and world. Therefore, it is given esteem importance in the sustainable development agenda 2030 as Sustainable Development Goal 4 (SDG4). The present study is aimed to explore the opportunities as well as challenges which can determine the attainability of SDG4. For this purpose, a systematic review was conducted on the 12 study results published in the different journal of SCOPUS, Web of Sciences, and ERIC data bases falling between the time range of 2017-2024. Through analyzing the data mentioned in the results section, this study highlights the opportunities which could smoothen the attainment of SDG4 and should be adopted by the masses. The study also brings into light the hurdles, the removal of which will strengthen the endeavours of providing inclusive and equitable quality and life-long education to all.

**Keywords:** Challenges, Inclusivity, Opportunities, Quality Education, Sustainable Development, Sustainable development Goal 4.

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### Introduction

In the 21<sup>st</sup> century, one of the most desirable objectives of different formal and non-formal organizations is to discuss and spread awareness regarding the notion of Sustainable Development (SD). Numerous studies and events took place in the last four decades which shaped the concept of SD in to what it is today. However, the concerns related to the equilibrium between the limited natural resources and swift increase in population can be can be figured out in Malthusian population theory in the early 1800s (Dixon and Fallon, 1989). At this time the ideas of sustainable forest management took place in Europe. However, the forest managers and administrators like John Evelyn, H.C. Carlowitz, A. V. Humboldt, Pinchot, Aldo Leopold etc. gave their valuable contributions for increasing awareness regarding the environmental threats and preventive measures to be taken (Semantic Portal, n. d.) in the 19<sup>th</sup> century. But, the concept of SD attained recognition at global level as a result of UN Conference on ‘Human Environment’ held in Stockholm in 1972 (Dernbach, 2003). The conference achieved great success in advocating the education as a prime way to promote sustainable development at global level.

In 1987, Brundtland Report known as ‘Our Common Future’ was published by World Commission on Environment and Development which emphasized on the integration of economic development, environmental protection, social justice and inclusion in sustainable development for the first time (Whitfield, 2015). The report paved a way for the organization of Earth Summit in Rio-de-Janeiro in

1992. In this Summit, 187 countries accepted the 27 principles for promoting and achieving SD. Agenda 21 was another significant contribution of the summit. It was a voluntary Sustainable development plan to be implemented by government of different nations on different levels. It included multiple programs oriented towards the social and economic development, environment conservation, enhancing the participation of various communities, NGOs for achieving the principles of SD (Whitfield, 2015). Here, the role of education in sustainable development was re-emphasized and it was proposed to integrate environmental and developmental concerns in all levels of education (Wade, 2007). In 2000, the Millennium Summit was organized in New York which presented a set of goals to be attained by 2015. The goals such as environment conservation, reduction of poverty, gender equality etc. were highly emphasized (Whitfield, 2015).

Another key step in context to the promotion of SD was the Johannesburg Plan of Implementation (JPOI) which was presented in the world Summit on Sustainable Development in Johannesburg in 2002. It is also known as Rio+10 and focused to collect sources for considering the challenges of environment, health and poverty by the collaborative efforts of governments of different countries, NGOs and industries (Paul, 2008). Besides this, the summit was oriented towards the development of economy and without compromising with the quality of environment (Asefa, 2005). In 2012, United Nations Conference on SD (UNCSD) or Rio +20 was organized. Here, the reaffirmation of commitment towards the SD was attained from the different states which is known as 'The Future We Want'. Rio +20 build the path for developing new Sustainable Development Goals (SDGs) in 2015. This is known as '2030 Agenda for Sustainable Development' wherein 17 SDGs were identified and it was adopted by the United Nations and all the member countries. The SDGs embrace the environmental, social and economic aspects with central focus on the development and sustainability of peace and prosperity for people and planet (Swain & Yang-Wallentin, 2020).

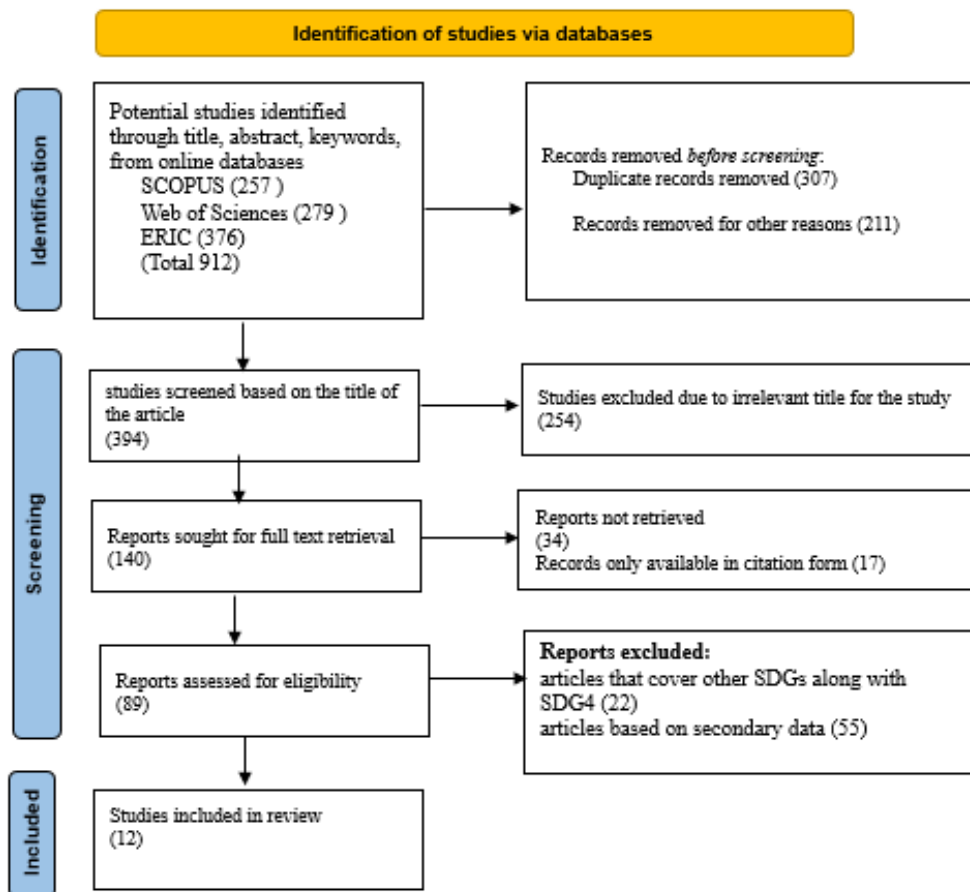
In order to promote SD in context to inclusive and equitable quality education the SDG 4 is mentioned in the agenda. The SDG 4 is of immense importance as it aims to ensure inclusive and equitable quality education as well as lifelong learning opportunities for learners of any age. It asserts that students at all levels of education should attain awareness, positive attitude, skills, values, etc. to ensure SD and contribute in the creation of sustainable future in terms of quality education, gender equality, good health & well-being, economic viability and environmental integrity (Mongkhonvanit et al., 2021). Although the sharp excel can be seen in the educational access and engagement of students in learning, research revealed that the majority of students still struggle to achieve the minimum standards of basic literacy and numeracy (UN Economic and Social Council, 2019). Due to such circumstances, the UN took continuous efforts to make education as a core component of SDGs agenda. In establishing this call to action, the UN has developed several targets associated with SDG 4.

The SDG4 includes seven targets i.e. (4.1) free, equitable and quality primary and secondary education for all; (4.2) quality early childhood development and pre-primary education for all; (4.3) access to quality technical, vocational and tertiary education for all; (4.4) developing relevant skills for employment for all; (4.5) the elimination of gender disparities in education and equal access to all levels of education training for the vulnerable, including indigenous people; (4.6) literacy and numeracy for all; (4.7) acquiring the necessary knowledge and skills for sustainable development and lifestyles, human rights, gender equality, promotion of peace and non-violence, global citizenship and

appreciation of cultural diversity. The main focus of all targets of SDG4 is to ensure quality education for all learners pursuing primary, secondary or higher education without discriminating on the basis of gender, age, ethnic background, socio-economic status etc. Here, the attainability of SDG4 is somewhat difficult for developing countries as compared to developed countries. Therefore, its is important to understand the opportunities and challenges with respect to SDG4 so that the opportunities can be maximized by minimizing the challenges.

### Methodology

The aim of the present study was to find out the opportunities and challenges pertaining to ensuring inclusive and quality education in the existing educational practices. For this purpose, the procedure and checklist mentioned in PRISMA statement were employed. Here, the different research studies related to the opportunities and challenges for the achievement of inclusive and equitable quality education were selected, thoroughly reviewed and synthesized systematically.



**Figure 1: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram of selection process**

### Search Strategy

The systematic review of present study includes the research article published in reputed data bases in the areas of sustainable development Goal 4 (SDG4) specifically the opportunities and challenges. The research articles published within the duration of 2017 to 2024 were explored on the various data bases

namely SCOPUS, ERIC, Web of Sciences, Google Scholar. These databases were selected as the authenticity and relevancy of the article published in such databases is high. In order to find out the research results, the following search string were used. “Sustainable development goal 4” OR “Sustainable development goal 4” AND “Opportunities” OR Sustainable development goal 4” AND “challenges” OR “Sustainable development goal 4” AND “Teacher’s Perception” OR “SDG4” OR “SDG4” AND “Opportunities” OR SDG4” AND “challenges” OR “SDG4” AND “Teacher’s Perception”.

As mentioned in figure 1, in the first phase of the search i.e. identification, a total of 912 research results were found. Among which 257 articles were found from SCOPUS, 279 and 376 results were found from web of sciences and ERIC respectively. After the identification, a total of 307 duplicate articles were eliminated with the help of Mendeley software. Followed by this the other studies such as book chapters, conference papers, editorial, dissertation/thesis, and articles rather than peer reviewed were deliberately removed from the study. As a result, 211 study results were eliminated manually. Next screening phase was started wherein the title of all the study results were analysed and 254 found out of the scope of the present study. Out of 140 studies 34 were not found in open access and 17 studies found in citation form were excluded. Hence, a total of 51 studies were excluded due to unavailability of full article in online mode; in the library of institution and by requesting the corresponding authors. Hence, a total of 89 studies were assessed for eligibility. Followed by this, the final phase of the study selection was started, wherein all the articles were thoroughly studied with respect to the inclusion and exclusion criteria. For the present study inclusion criteria were a) sustainable development goal 4 only; b) research based on primary data and c) studies published in the time range of 2015-2024. In the whole process, a total of 78 study results were eliminated. Among which 18 articles that cover other SDGs along with SDG4 and 49 articles based on secondary data and review papers were eliminated. Hence, a total of 12 articles were included in the study.

## **Results:**

### **Overview of studies**

The analysis of 12 studies on sustainable development goal 4 (SDG4) which is dealing with ensuring inclusive and equitable quality education for all reported the opportunities and challenges for the achievement of the SDG4 till 2030. Among these studies, seven studies (sr. no. 1, 2, 3, 4, 5, 6, & 7 in table 1) are highlighting the various opportunities which can facilitate the achievement of SDG4 till 2030 and other five studies (8, 9, 10, 11, & 12) discussed the challenges which can hamper the achievement of SDG4. The six studies were conducted through qualitative method wherein different qualitative research techniques such mainly interview and observations and case study were used. A total of five studies employed survey method. Two studies employed mix-method approach. As most of the studies were qualitative in nature, the sample size of the studies was small that fall between the range of 30-150 participants. On the other hand, the sample size range for quantitative and mix-method research studies was between the range of 50-400 participants. The different educational stakeholders such as teachers, students, administrators, community members were mainly the participants of the studies. The description of all studies is presented in table 1.

**Table 1 Description of Studies on Opportunities and Challenges with respect to SDG4**

Sr. No.	Title	Author and Year	Design of the study	Participants	Findings
1	Achieving Sustainable Development Goal (SDG) 4 on Quality in Education Challenges and Opportunities, Experiences from Southern African (SADC) Universities	Shava et al., (2021)	Qualitative research approach with an interpretive epistemological and constructivist ontological perspective.	Deans (9) Lecturers (12) Administrators (4)	Capacity building programs for teachers need to be intensified by UNESCO, SARUA, SIDA, SWEDD and SADC Education sector Constructive pedagogies Curriculum enrichment in accordance with teacher education and Technical Vocational Education and Training (TVET) policy in light of recent trends towards emphasis on 21st century demands.
2	Expanded corporate social responsibility framework: companies' role in improving higher education institutions infrastructure to Sustainable Development Goal 4	Ebekozie n et al., (2023)	Qualitative research method (Interview)	The 26 participants directors/ senior officers in the physical planning department of selected polytechnics and universities, heads of CSR units or management staff of selected companies and policymakers from government agencies.	By incorporating the expanded corporate social responsibility (ECSR) the private investors should encouraged to invest in the infrastructure development in higher education institutions. As ECSR is tax free approach it can help the HEIs of developed countries to establish quality infrastructure to cater the diverse needs of the students.
3	Promoting Education for Sustainable Development Goal 4: A Collaborative	Dina, et al., (2022).	Mixed methodology with a qualitative and interpretativ	63 teachers	Collaborative projects where the faculty of higher education institutes and schools get indulged in various activities could enhance their knowledge,

	Project Between a Higher Education Institution and the Surrounding School Community.		e approach that includes participant observation and also questionnaires		confidence to introduce the SDG contents to their students and sense of responsibility towards SDGs.
4	Teachers' attitude towards education for sustainable development Goal 4: A descriptive research	Peedikayil, et al., (2023)	Descriptive research using a normative survey method	150 high school teachers from nine different schools of Kerala 48% (72) of high school teachers are male and 52% (78) are female.	The school teachers possess positive attitude towards not only the beneficial results of SDGs awareness for the various stakeholders but they also show favourable attitude towards their role and responsibilities for ensuring and promoting quality and equity in education.
5	Sustainable Development Goal 4: Enriching Teacher Education Curriculum for Quality Education and Lifelong Learning.	Offorma, & Nosike, (2017)	Descriptive survey design	120 teachers and 420 students	Lifelong learning and quality education can be achieved by enriching the teacher education curriculum with respect to providing exposure to entrepreneurial skills, mentoring programs, constructive pedagogies which could boost higher order thinking skills, 21 <sup>st</sup> century skills
6.	Artificial Intelligence for Quality Education: Successes and Challenges for AI in Meeting SDG4	Kabudi, (2022)	Qualitative (Interview)	Twenty-two interviews were conducted with AI experts	The advanced level digital technologies such as artificial intelligence-based teaching learning techniques could be utilized for providing quality education exposure to students. It is not only beneficial for enhancing higher order thinking skills among the students but also

					efficacious enough for promoting inclusive education one of the important aspects of SDG4.
7.	Promoting Sustainable Development Goal 4: The Role of Academic Libraries in Ghana.	Atta-Obenga & Dadzieb, (2020)	Qualitative research approach (case studies and interview, non-participatory observation and documentary evidence)	The study consisted of three academic universities. (Three university head librarians and their deputies in the three universities)	For promoting lifelong education among students, the lecturers should give challenging assignments which would require searching critically through a collection of library materials before solving a problem. Besides this community must be involved through the contribution of money to finance projects that will enhance lifelong learning activities as lifelong learning is not limited to only students and that the community formed part of the vision, their involvement is necessary.
<b>Challenges</b>					
8.	Assessing the Capacity of Public and School Libraries toward the Attainment of Sustainable Development Goal 4.	Omar, et al., (2024).	Cross-sectional design, whereas a mixed approach.	100 library staff 42 Interviews 18 library staff were involved in focus group discussions.	The functioning of school libraries is not up to the mark. The issues such as inadequate budget and a lack of policy and strategies are persistently present which creates barriers for the implementation of lifelong learning targets.
9.	Promoting Sustainable Development Goal 4: The Role of Academic	Atta-Obenga & Dadzieb, (2020)	Qualitative research approach (case studies, interview,	The study consisted of three academic universities. (Three university head	Libraries of higher education institutes, other common issues such as poor internet connectivity, untrained staff, poor

	Libraries in Ghana.		non-participatory observation and documentary evidence)	librarians and their deputies in the three universities)	support from the teachers are persistent
10.	Teacher Educators and Teacher Trainees Perspective on Teacher Training for Sustainable Development Goal 4	Nketsia et al., (2020)	Quantitative descriptive survey	167 final-year trainees and 13 teacher educators drawn from three of the 45 public colleges of education in Ghana.	The scarcity of human and physical resources is much related to specialized courses as compared to common courses or programmes. The students of Special Education Needs (SEN) program possess lower level of satisfaction regarding the programe due to lack of specific resources, assistive technology and learning material; less concern towards practical knowledge; poor level of knowledge of teachers; and much emphasis given on the medical model of disability.
11.	Teachers and Teacher Education: Limitations and Possibilities of Attaining SDG 4 in South Africa	Nakidien, et al., (2021)	Qualitative data were analysed using thematic analysis.	18 teachers	Some teachers possess biased attitude towards the students who belongs to lower castes or lower socioeconomic status. Teachers tend to bully such students by addressing them with caste specific names. This abuse of power cause poor social cohesion at the schools and hampers the democratic values. Teachers in this instance demonstrate poor

					citizenship practices and are not mirroring the kind of schooling environment that enables the realisation of SDG 4 and quality education.
12	A Human Rights-Based Approach in Implementing Sustainable Development Goal 4 (Quality Education) for Ethnic Minorities in Vietnam	Do et al., (2020)	A survey was also conducted using questionnaires	300 participants 160 students 70 lecturers 70 officers	The students who belong to marginalized group face double disadvantage. Firstly, they are poorly treated by their teachers and secondly, they face lots of personal issues due to low socio-economic status. Although the government has provided adequate political–legal conditions which involves legislation, policy and strategy system, to improve education for ethnic minorities still the issues such as language difficulties, gender inequality, child labour is persistent to greater extent and hampering their access to inclusive and quality education

### Analysis of the results pertaining to opportunities

In the view points of various educational stakeholders, the SDG 4 of sustainable development agenda 2030 could be achieved if the higher education institutions focus on strengthening the capacity building programmes by collaborating with the world level organizations such as UNESCO, SARUA, SIDA, SWEDED and SADC. It will enhance the exposure and knowledge of the higher education teachers in context to the utilization of global level strategies and methods for the promotion of SDG4. It will assist the teachers to learn constructive teaching learning methods which enable their learners to adopt higher order thinking skills. Besides this, the curriculum should be framed and modified in light of recent trends towards emphasis on 21st century demands (Shava et al., 2021). In addition, it is well known that for achieving the goal of quality education it is mandate to ensure the accessibility of students, teachers and other staff to infrastructure facilities. The lack of infrastructural resources is one of the primary issues of developing countries. In this context the study conducted by Ebekozien, et al.,

2023 revealed that by incorporating the expanded corporate social responsibility (ECSR) the private investors should be encouraged to invest in the infrastructure development in higher education institutions. As ECSR is a tax-free approach it can help the HEIs of developed countries to establish quality infrastructure to cater the diverse needs of the students.

One of the important targets of SDG 4 is to aware the different stakeholders regarding the sustainable development agenda so that they become conscious regarding their duties and responsibilities and play a more active role in the achievement of the agenda. Spreading awareness can be seen as an important opportunity which could enhance the likelihood of successful achievement of the goals. In this regard, Dina et al. (2022) revealed that collaborative projects where the faculty of higher education institutes and schools get indulged in various activities could enhance their knowledge, confidence to introduce the SDG contents to their students and sense of responsibility towards SDGs. Besides awareness, it is also important to explore the attitude of teachers and students towards the achievement of quality education and other SDGs so that the negative attitude if exists could be converted into positive and utilized as an opportunity. In this regard, Peedikayil et al., 2023 found that the school teachers possess a positive attitude towards not only the beneficial results of SDGs awareness for the various stakeholders but they also show a favourable attitude towards their role and responsibilities for ensuring and promoting quality and equity in education. Another opportunity for facilitating lifelong learning and quality education can be figured out in enriching the teacher education curriculum with respect to providing exposure to entrepreneurial skills, mentoring programs, constructive pedagogies which could boost higher order thinking skills, 21<sup>st</sup> century skills, etc. (Offorma & Chukwuma-Nosike, 2017). As nowadays advancements in digital technologies are leading to benefits in every field it is also contributing a lot for enhancing the parameters of quality education. The advanced level digital technologies such as artificial intelligence based teaching learning techniques could be utilized for providing quality education exposure to students. It is not only beneficial for enhancing higher order thinking skills among the students but also efficacious enough for promoting inclusive education one of the important aspects of SDG4 (Kabudi, 2022). One of the targets of SDG4 is to promote life-long learning among students, wherein the active participation of the libraries can play an effective role. For promoting lifelong education among students, the lecturers should give challenging assignments which would require searching critically through a collection of library materials before solving a problem. Besides this the community must be involved through the contribution of money to finance projects that will enhance lifelong learning activities as lifelong learning is not limited to only students and that the community formed part of the vision, their involvement is necessary (Atta-Obenga & Dadzieb, 2020).

### **Analysis of the results pertaining to Challenges**

As the achievement of SDG4 is highly dependent on the availability of human capital as well as other socio-economic resources, it faces various challenges specifically in developing countries. There is a dearth of infrastructure in schools and higher educational institutes in developing countries. Omar et al., (2024) found that the functioning of school libraries is not up to the mark. The issues such as inadequate budget and a lack of policy and strategies are persistently present which creates barriers for the implementation of lifelong learning targets. Besides this in context to the libraries of higher education institutes, other common issues such as poor internet connectivity, untrained staff, poor

support from the teachers are persistent (Atta-Obenga & Dadzieb, 2020). The scarcity of human and physical resources is much related to specialized courses as compared to common courses or programmes. Nketsia et al. (2020) found that the students of Special Education Needs (SEN) program possess lower level of satisfaction regarding the programme due to lack of specific resources, assistive technology and learning material; less concern towards practical knowledge; poor level of knowledge of teachers; and much emphasis given on the medical model of disability.

Another major challenge of ensuring inclusive and quality education to all is a poor teaching efficacy and value system of teachers. Some teachers possess biased attitude towards the students who belongs to lower castes or lower socioeconomic status. Teachers tend to bully such students by addressing them with caste specific names. This abuse of power cause poor social cohesion at the schools and hampers the democratic values. Teachers in this instance demonstrate poor citizenship practices and are not mirroring the kind of schooling environment that enables the realisation of SDG 4 and quality education (Nakidien et al., 2021). The students who belong to marginalized group face double disadvantage. Firstly, they are poorly treated by their teachers and secondly, they face lots of personal issues due to low socio-economic status. Although the government has provided adequate political–legal conditions which involves legislation, policy and strategy system, to improve education for ethnic minorities still the issues such as language difficulties, gender inequality, child labour is persistent to greater extent and hampering their access to inclusive and quality education (Do et al., 2020).

## **Conclusion**

The SDG4, that is dealing with ensuring inclusive and quality education for all learners till the end of 2030 is one of the major fields of consideration of most of the counties. For its effective implementation it is important to explore the determinants which facilitate or hampers the attainability of SDG4. The present study was aimed to explore the opportunities and challenges that the educational stakeholders are facing with regard to the attainment of SDG4. The different educational practices such as collaboration of global organizations for the organization of training programmes for the teachers; curriculum enrichment in context to 21<sup>st</sup> century skills, constructive pedagogies; easy access of students and teachers to learning material, ICT, assistive technologies, other hardware infrastructure; encouraging the share of private investors in the infrastructure development in higher education institutions through expanded corporate social responsibility (ECSR); favourable attitude of teachers towards the attainment of SDG4; and utilization of digital technology specifically artificial intelligence for providing greater exposure to students could be considered as opportunities. On the other hand, poor working of labs, libraries, scarcity of human capital and other resources can be considered as major challenges in developing countries. Besides this, the poor working of the special education programmes, low socio-economic status of students and the biased attitude of teaches towards such students are the key issues to be solved out. On the basis of the results, it can be suggested that, the present efforts and resources are not sufficient for attainment of SDG4 in developing countries. The challenges are deeper rooted and difficult to work upon as compared to opportunities. Therefore, there is need to develop consciousness among the government and all educational stakeholders to understand and perform their duties in right manners.

## **Limitations:**

As most of the studies included in this systematic review analysis are of qualitative nature the sample size of the studies is small which represents the particular state of country. Therefore, certain findings are valuable in context to the particular country only and cannot be generalized. The review of literature reflects that most of the studies have only been conducted on exploring the challenges whereas examination of opportunities is less focused. The role of educational policies or government which could be one important determinant is not explored in context to the opportunities and challenges. As most of such exploration was done only on the basis of review studies.

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