Higher Education Institutions, Centres of Cultural Change Towards Sustainable Development – Qatar University as a Case Study

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Abstract

The role of higher education institutions has significantly shifted towards deeper engagement with the local communities, especially when it comes to social and sustainable human development. The primary objectives of the strategic planning for Qatar University, as outlined in this mixed-method research case study, reflect the state's visions and aspirations for sustainable development, with higher education serving as a central pillar. Conducting high quality research on sustainable development, and providing the students with the skills they need, as well as supporting them in their transition from education into professional lives, are essential factors in building a sustainable society. The empirical analysis in this study highlights the need for further research on sustainable human development with a focus on the social and cultural dimensions of the process. Higher education institutions' involvement with the local community, local labor market, and the industrial sector are essential tools for them to cope with their new role and the rising socio-economic challenges.

Keywords: Sustainability; Higher education; Social sustainability; Qatar university

مؤسسـات التعليـم العالـي كمحـور للتغييـر الثقافـي نحـو التنميـة المسـتدامة – جامعـة قطـر كدراسـة حالـة

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ملخص

لقد تغير دور مؤسسـات التعليم العالي بشكل كبير نحو مزيد من الانخراط في المجتمعات المحلية، خاصة فيما يتعلق بالتنمية البشرية المسـتدامة. تسـتخدم هذه الدراسـة جامعة قطر كحالة دراسـية لبحث دور مؤسسـات التعليم العالي في تعزيز التنمية البشـرية والاجتماعية المسـتدامة، تماشـيًا مع طموحات الدولة. تعكس الأهداف الاسـتراتيجية الرئيسـة لجامعة قطر رؤى وتطلعات التنمية المسـتدامة لدولة قطر؛ حيث يعدّ التعليم العالي ركيزة أساسـية في التنمية. إن إجراء البحوث عالية الجودة التي تسـهم في تحقيق التنمية المسـتدامة، وتزويد الطلاب بالمهارات التي يحتاجونها، بالإضافة إلى دعمهم في مرحلة الانتقال من التعليم إلى حياتهم المهنية، كلها عوامل أساسـية في بناء مجتمع مسـتدام. أظهر تحليل البيانات في هذه الدراسـة التي اعتمدت منهجًا بحثيًا مختلطًا الحاجة الماسـة إلى المزيد من البحوث الجادة حول التنمية البشـرية المسـتدامة مع التركيز على الأبعاد الاجتماعية والثقافية للعملية. كما تعدّ الشـراكة بين مؤسسـات التعليم العالي مع المجتمع وسـوق العمل المحلي والقطاع الصناعي أدوات أساسـية للتعامل مع الدور الجديد والتأقلم مع التحديات الاقتصادية والاجتماعية المتزايدة.

الكلمات المفتاحية: الاستدامة، التعليم العالي، الاستدامة الاجتماعية، جامعة قطر

1. Introduction

Sustainable development got deeply rooted in almost every single academic discipline, including social sciences, the humanities, and higher education. The significance of the role that higher education plays in facilitating the transition into sustainable social and cultural modes cannot be overstated (Acosta Castellanos & Queiruga-Dios, 2022; Lozano et al., 2013; Shephard, 2015; Wiek et al., 2015). Aligned with that, the paper argues that higher education institutions can- and should – have a vital role in their local communities' transition process into cultural and social sustainable development through applicable strategies, most importantly producing credible research and educating qualified graduates. The paper utilizes Qatar University as a case study to examine the role and significance of higher education institutions in triggering societal transformations that promote sustainable development goals in local communities.

Arguably, no other term has invoked so much debate as the term *sustainability* has, be it in the context of public policies, media, environmental debates, or academia (Kuhlman & Farrington, 2010; Salas-Zapata & Ortiz-Muñoz, 2019). The term "Sustainability" itself first emerged in the late seventeenth century, yet its significance, context, and impact have recently reached unprecedented levels. This diversification of perspectives and approaches has so far made it impossible to agree on one single definition of the term. Jeremy C. Caradonna, a professor of history, defines sustainability in a very broad sense as "maintaining the human society over the long term." According to this definition, sustainability encompasses a wide range of activities, processes, and policies – it can be applied to every single aspect of everyday life. However, the traditional approach to sustainability often differentiates between three different perspectives: Environmental, economic, and social. Recently, a fourth approach has emerged focusing on sustainability from an individual-centered and cultural perspective (Dillard et al., 2008; Kristensen & Mosgaard, 2020; Seghezzo, 2009).

This study analyzes and assesses the role of higher education institutions in shaping a sustainability-oriented local society focusing on regenerative cultural structures and adaptivity to the individual needs and resources of students. Using Qatar University as a case study, the paper argues that higher education institutions have the potential to play a central role in shaping a sustainability-oriented local society and improving cultural and social development. However, the extent of the institutions' success in this mission and the potential for improvements are still open for debate. During the past decade, several academic studies have been done on education and sustainable development from different perspectives; firstly, from an integrative standpoint that seeks to find out ways to integrate sustainable development measures in the curricula, research, and management of educational institutions (Beringer & Adomßent, 2008; Figueiró & Raufflet, 2015; Tasdemir & Gazo, 2020a). Secondly, the social involvement perspective, where studies focus on the higher education's responsibility and ability to promote positive social change and human development (Tilbury, 2004,

2011; Žalėnienė & Pereira, 2021). Thirdly, there is the economic perspective that deals with how universities, through research, enhance the technological advancements and economic wellbeing of societies (Aver et al., 2021; Daniela et al., 2018; Menon & Suresh, 2020).

Meanwhile, the deployment of case studies and comparative analysis have methodologically dominated the field in addition to performance assessments, UN development goals, and green campus strategies (Al-Kuwari et al., 2021; Angelaki et al., 2024; Barth, 2014; Tasdemir & Gazo, 2020b). This mixed method study utilizes a multi-method approach to data collection, incorporating an analysis of pivotal official documents, such as the Qatar National Vision 2030 and the strategic plans of Qatar University. Additionally, quantitative data from the Scopus database on Qatar University's contributions to research on Sustainable Development Goals (SDGs) will be analyzed. The study will also employ content analysis to examine research projects, publications, and relevant information on the Qatar University website, thereby enriching the understanding of the subject matter.

In addition to research, modern higher education institutions aim to prepare their students to be productive members who contribute to their societies socially, culturally, and economically. This objective is an essential ingredient in creating sustainable societies. Though the visions are almost the same for all higher education institutions, it is the strategies and methods that make the difference (McCowan, 2019; Schneider & Preckel, 2017). Using Qatar University as a case study, this paper addresses the following questions: To what extent do Qatar University's strategies align with the state's strategic goals for sustainable development? How does the University's research contribute to social sustainability in comparison to other dimensions of sustainability? Additionally, what measures does Qatar University have in place to facilitate students' transition into the labor market, thereby maximizing the utilization of human capital for the benefit of society?

2. Methods

This study focuses on the logical systemization of the research process and scientific approach while also employing an interpretive knowledge paradigm lens. Using mixed research methods is a convenient tool in this concern (Creswell, 2009).

The nature of the study, the research question, the purpose of this study, and the theoretical framework make descriptive analysis, supported by quantitative data, a convenient approach. Since the study deploys the *case study approach,* the first and one of the most important steps in the case study is defining the case study that is under investigation by scientific inquiry, its boundaries, limitations, and scope. The study deploys the bounded system case study. Both time-framework and place are bound to Qatar University at the time being.

Mixed method research typically relies on a variety of data collection methods, and since the aim is to

provide an in-depth, detailed description of complex social and organizational relations and factors, the analysis should be grounded in sufficient empirical data (Yin, 2014). This mixed method study utilizes multiple sources, including document analysis of official reports and strategic plans, content analysis of literature and data from Qatar University's website, and quantitative analysis of Qatar University's SDG contribution using the Scopus database.

Firstly, an analysis of relevant documents has been conducted, including Qatar National Vision 2030 and Qatar University's strategic plans, in addition to official data available on the University's website. The focus has been on the publications and projects of the Center for Sustainable Development and Career Development Center. The reason behind the selection is that these two centers are most relevant to the indicators: research promoting sustainable development and labor market collaboration.

The quantitative data in this study is collected through Elsevier/SCOPUS database for SDGs contributions. Since 2018, Elsevier has initiated SDG search queries, aiming to support both researchers and institutions in tracing and exhibiting progress toward the SDG targets. Elsevier data science teams designed measurement queries in collaboration with Times Higher Education (THE), aiming to define SDG search queries for use in their University Impact Rankings by SDGs. These queries were subjected thereafter to several rounds of review and refinement. The final version was launched in 2022, where the Elsevier data science teams deployed extensive keyword query building, and a predictive machine learning element. This resulted in document mapping to SDGs with very high precision. In 2023, SCOPUS launched a new evaluation function that maps Sustainable Development Goals to a document by matching terms from a Scopus record against search queries (Bedard-Vallee, 2023).

There are two approaches to data analysis in case studies: holistic and embedded. The holistic approach depends on a comprehensive analysis of the entire case. This study employed embedded data analysis, which focused on analyzing certain issues (key issues/ analysis of themes) and not the whole case. In this concern, the analysis in this study will focus on Qatar University's strategies for promoting sustainable development as a key issue. Results from this case study can, to some extent, be generalized beyond the case, especially to other local universities in Qatar.

This study aims to fill an important gap in the literature on the role of higher education institutions in Qatar in promoting national objectives for sustainable human development. However, it also has its limitations, challenges, and ethical implications. Mixed-method case studies need special attention to the systemization of information and method coordination to arrive at sound conclusions. Sound inference and congruence between the research questions, methodology, and findings are vital elements in this study, also as a validation and reliability method.

On the methodological front, defining a case study and providing a good description of the context is not an easy task. It is vital to present a clear-cut description of the case study, its scope, and its limitations at the outset.

3. Results

This analysis has displayed a rising focus on sustainable development strategies as a higher goal for the state of Qatar and education as a central pillar in Qatar's strategic development plans. In this concern, Qatar National Vision 2030 stated that "the state aspires to be a hub for scientific research and intellectual endeavors" (General Secretariat for Development Planning, 2008). The vision also connects education to human development, emphasizing the significance of building modern educational institutions, efficient training, and a good response to the needs of the local labor market through graduating qualified students (General Secretariat for Development Planning, 2008). Development is mentioned several times in the QNV-2030 about social, economic, environmental, and human development. Meanwhile, "sustainability" is mentioned in the document mostly in the context of economic development. Several objectives and strategies are integral to sustainable development, especially education and the labor market.

Established in 1977, Qatar University stands as a pivotal institution within Qatar's higher education landscape, embodying the nation's vision and aspirations for sustainable development. The university serves over 34,000 students across eleven colleges and 18 research centers, offering 50 bachelor's degrees, 47 master's degrees, and 6 doctoral programs (Qatar University, 2024). The university has sought to reflect the national objectives of education and sustainable human development. This paper evaluates two key aspects of the University's mission in promoting sustainable development: generating research on social sustainability and facilitating students' transition into the labor market.

Qatar University initiated an ambitious development vision in 2003. Since 2006, the University has issued long term strategic plans, the first one covered the period from 2006 to 2009, and the second strategic plan covered the period from 2010 to 2013. These plans have mainly focused on elevating the quality of education and research, supporting the overall policies of the State of Qatar in national development and social prosperity (Qatar University, 2010). The strategic plan for the period 2013-2016 lists sustainable human development as one of the strategic objectives for Qatar University, aiming to elevate the prosperity of the Qatari society. Additionally, the plan emphasized the environmental changes as a serious challenge and stressed the significance of the institution's engagement in the cultural and social development of the local community (Qatar University, 2013). The last three strategic plans of Qatar University, which covered the periods from 2008 to 2013, 2013 to 2016, and 2018 to 2023, reflect the overall national policies and strategies for education and development.

The last strategic plan issued in 2018 displays a higher focus on sustainable development in several ways. The plan focuses on several axes, including society, labor market and employment, high-quality research, as well as innovation (Qatar University, 2018). The plan also systematically determines the operational procedures to achieve the objectives, such as continuous learning and engagement on

campus, and updated academic programs. These programs should be designed to reflect the labor market's needs within the frames of the overall vision to support the national development plans. Two of the initiatives mentioned in this plan about community involvement were the Qatar University Knowledge Group and the implementation of an efficient integrated communication strategy (Qatar University, 2018; See also Qatar University, 2014, 2015, 2017).

This analysis showed that on the strategic level, Qatar University's long-term visions, policies, and strategies enhance sustainable human development through the focus on several axes: academic, administrative, and social. The important question here is whether the procedures and practices also comply with the visions and strategies – the next section will give answers to this question. This paper examines the role of two primary research centers at Qatar University that are relevant to the research question: The Center for Sustainable Development and the Career Development Center.

The Center for Sustainable Development at Qatar University states that its mission is "to develop sustainable and integrated solutions which address many contemporary and significant challenges posed by the rapid economic and demographic changes of the State of Qatar" (Center for Sustainable Development, 2023). The objective is to conduct interdisciplinary and innovative research that would enhance sustainable development, raising the quality of life in Qatar. The focus research areas include renewable energy, food and water security, natural resource governance, algal technologies, and waste management. According to the center's webpage, the center has human sustainable development as one of its focus research areas, including but not limited to sustainability transition, economic diversification and decarbonization, economic reforms and incentives for efficient resource allocation, policy integration, and awareness and public engagement (Center for Sustainable Development, 2023). Notably, the center collaborates with local and international industrial and academic partners and has a total of five projects funded by the industrial sector. This comes as a reflection of the need for higher education institutions to engage with the local community and labor market.

The center has had a total of forty-nine research projects, among which five projects were funded by the industrial sector. Most of the projects focus on biotechnology and food, water, energy, and waste sustainability (FEWWS). Additionally, the center has published a long list of academic works yearly. Except for a few publications, the focus is largely on biotechnology and FEWWS. For example, in 2023, the center published 29 academic works until June, which overwhelmingly handled biotechnological research (Center for Sustainable Development, 2023). The analysis of the center's projects and publications demonstrates a significant focus on biotechnology and FEWWS programs. However, the University's other research centers and faculties for social sciences and humanities have produced significant research on sustainable human development, as the quantitative data has shown.

The following figure shows the results from the Scopus database on Qatar University's contributions to the implementation of SDGs in Qatar.
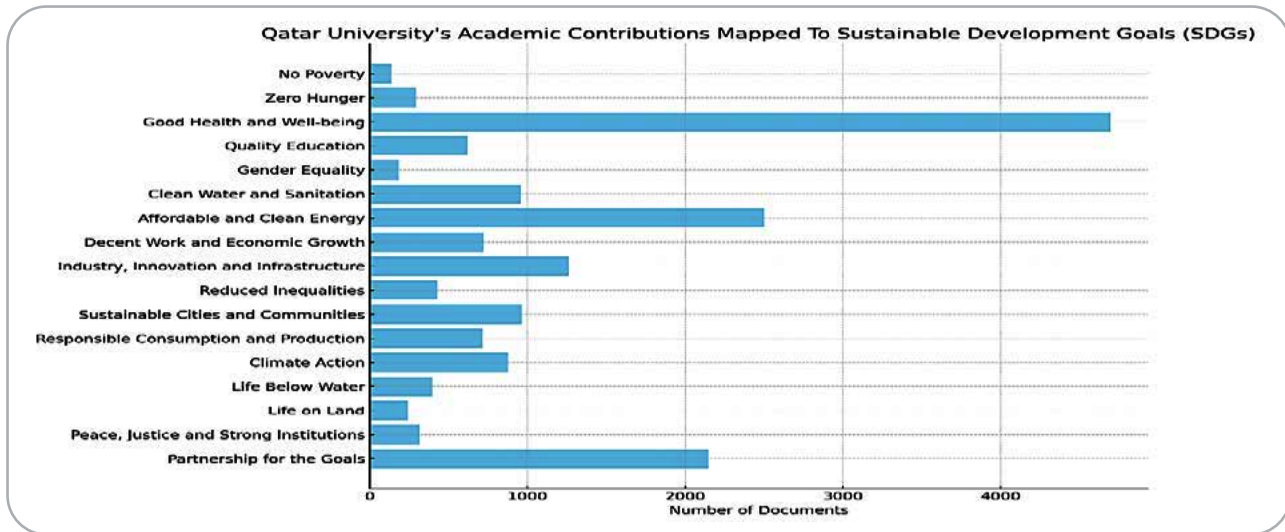
Fig. 1: Data retrieved from Scopus.com

Qatar University has a total of 25,347 research documents on Scopus and 4,797 researchers. These documents were analyzed to assess their contributions to the Sustainable Development Goals (SDGs). The results show that Qatar University has a significant contribution to research on SDGs in Qatar **(Figure 1)**. However, the contributions to each SDG varied dramatically. Medical and health research led the way with 4,695 research papers, while Peace, Justice, and Strong Institutions (SDG 16) ranked last with only 317 documents (SCPOUS, 2024). The University is making praiseworthy efforts for better progress in implementing the human development-related SDGs.

The second key element in this analysis is the University's role in graduating qualified students and meeting the needs of the local labor market for skilled employees. There are two main indicators in this concern: first, the quality of academic programs, and second, preparing the students for their professional lives. Aligned with the vision and objectives, the University has a system where existing academic programs are subjected to continuous upgrading and evaluation. New academic programs are launched as a response to both new global technological advancements and the needs of the local community, especially in the fields of healthcare, engineering, and IT (Qatar University Annual Reports, 2014, 2015, 2017).

To support its students in transitioning into their professional life roles, Qatar University has launched the Career Development Center, which works directly with career counseling, training, and professional development services, as well as establishing connections with the labor market. The center provides employment opportunities for students during their study years, and it also helps them with obtaining sponsorships, internships, and full-time job opportunities (Career Development Center, 2023).

Career Development Center has a separate section for employer relations, which, according to the

center's webpage, aspires to open channels of communication for Qatar University students and graduates by connecting them to the local labor market. The center collaborates with the Qatari labor market to serve the University and its alumni as well as the employers. The section also invites employers and entrepreneurs of different sectors to be present on campus for a variety of arrangements and activities. In recent years, the center has attracted more students seeking career consulting and employment opportunities. This was a result of the rising number of events, most notably the Qatar University Career Fair, which attracted 60 employers to participate in the last fair held in 2023 (Career Development Center, 2023).

Analysis of the existing literature shows that several studies have examined higher education and sustainability goals in Qatar and the other GCC states, focusing on the operational level, smart campuses, and teaching and learning strategies. Analyzing the content of these studies demonstrates a significant focus on technological innovation and green energy solutions, with little attention given to cultural and human sustainable development (Mogra & Furlan, 2017; Moini et al., 2009; Zaidan et al., 2023). There is also a growing body of academic literature on the challenges facing higher education in Qatar and the other GCC states, several studies offer comparative case studies among the GCC states, especially between Qatar and the UAE. An interesting finding of one of the studies mentions that the GCC states seek to internationalize their higher education, but the strategic level often deviates from practice, concluding that "the GCC countries embrace specific ranking systems as indicators to meet their respective strategic plans; this has placed intense pressure to achieve "excellence" without building a proper infrastructure, culture, and local capacities" (Arar et al., 2023, p 186; Ibrahim et al., 2023; Shah et al., 2015).

Finally, the overall analysis displays an awareness and systematic efforts to continually improve the academic programs at Qatar University through continuous evaluation and updating. In addition, the University highlights professional networking with the local labor market and the significance of a good transition for students into their professional roles (Qatar University Annual Reports, 2014, 2015, 2017). However, there is always room for improvement.

Policy Recommendations

The role of higher education institutions in enhancing social and cultural sustainable development in local societies has acquired significant attention within several academic fields, be it education science, public policies, sociology, or environmental studies. This ongoing debate has reshaped the traditional role of education from only teaching and learning into more social and cultural engagement, aiming at shaping collective social patterns and habits, while helping implement state visions in local communities. Entrepreneurial universities have obtained a third mission, in addition to research and teaching, namely transferring knowledge to the community and thus contributing to local and regional developments (Nawaz & Koç, 2020).

Mobilization of resources, the integration of students' services, and the collaboration and networking with the local labor market and community are essential tools in higher education. No wonder that new models have been developed to display a new collaboration nexus. One of these models is the Industry-University-Government partnership approach (IUGP), which has been adopted as a main pillar in innovation and development strategies (Nawaz & Koç, 2020). Nonetheless, this approach is most notable in new technological fields such as IT, AI, and biotechnology (Perkmann et al., 2013). Yet again, this model needs to be socially integrated. Carlsson and Fridh (2002) confirm that to secure the success and flow of this influence from the higher education institutions to the industry and business arena depends also on embarking this influence through the social structures and the culture of the society (Carlsson & Fridh, 2002).

To sum up, the need for adopting sustainability measures is rising, especially in the Gulf states, where oil and gas are the main sources of state income. Richard Heinberg, a leading expert on peak oil and a fellow in residence at Post-Carbon Institute has written several academic works on Peak oil and the Gulf region, goes as far as stating that it has become a self-evident truth that "any society that continues to use critical resources unsustainably will collapse. Population growth and/or growth in the rates of consumption of resources cannot be sustained (Heinberg, 2005a, 2005b). Economic diversification and the shift to clean energy are vital elements, but not enough, social structures and perceptions also need to be modified. This is only possible through sustainable human development, with a focus on the cultural and social processes of unlearning and relearning. In these processes, higher education institutions have a vital role to play, both in the field of research and in graduating qualified students who possess the necessary skills to adapt to the rising challenges of modern society.

4. Conclusion

Qatar University, being the first national university in Qatar and a state-owned institution, exhibits a good case study on the transformations of higher education institutions to cope with the rising socio-economic challenges.

This study focused on two main key indicators: research on sustainable development, and engagement with the local community through graduating skilled students and assisting students in the transition process into their professional lives. The findings of the study are as follows:

The long-term strategies of Qatar University, since it initiated an ambitious development program in 2003, have largely reflected the overall national objectives and visions of the State of Qatar when it comes to sustainable development and the role of higher education. This is evident from the clear concurrence between the strategic objectives of the University and the state objectives for education under the Qatar National Vision 2030. While the state vision stated that education is a key element in

the national development plans in Qatar, the University determined its long-term objectives around improving the quality of education, research, students' experiences on campus, and most importantly resource-mobilization, efficiency, and network building with the local community and labor market. This harmony in strategic planning is demonstrated through the analysis.

The second result of this study is that Qatar University has a substantial focus on sustainable development research, and it has produced a significant body of literature on sustainable development. The research projects conducted by the Center for Sustainability are overwhelmingly focused on issues that handle biotechnology and FEWWS. The quantitative data from the Scopus database on SDGs contributions showed that the largest number of documents that had to do with SDGs implementation were on health and wellbeing, and renewable energy. While SDGs like gender equality, peace, and justice received the lowest scores. There are several reasons for these tendencies, which are not exclusive to Qatar University but can be traced generally in the academic literature. Firstly, examining sustainability from the social and cultural dimensions of human development is a new approach that is still taking shape and forming within sustainability theory. Secondly, looking at sustainable development through the lens of the biosystem and efficient medical and industrial technologies was the entrance gate to sustainable development; it is precise, straightforward, and logical, while the nexus of sustainability and collective culture, social behavioral patterns, perceptions, and habits are not easy to grasp, measure, or demonstrate. Thirdly, technological improvements will normally have immediate effects, and their reliability can easily be scientifically proven. While the change of social patterns and human behavior in issues like gender equality, for example, needs a long time to give results, it is more complicated to be empirically proven or tested. Meanwhile, social and human sustainable development are crucial for building a sustainable society. It is not enough with technological advancements only; society also needs sustainable developmental structures and social dynamics to function in the best possible way.

Despite the change in the perception of the higher education institutions' role, graduating skilled students and meeting the needs of the local labor market is still considered the most important objective of higher education – also from a sustainable development perspective. For a society to function, it needs to fully use its human resources, and there will not be a sustainable society without a skilled workforce that keeps the wheel moving in all aspects of life. The analysis has demonstrated that Qatar University, both on the strategic planning and procedural levels, prioritizes the quality of education and the individual learning experience of students, aiming at providing students with the qualifications they need in their professional lives. The quality of the academic programs and the continuous evaluation and updating are essential for realizing these objectives.

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