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Investigating the sustainability of Open Universities: Models, opportunities, and challenges

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Abstract

With the increased interest towards lifelong learning and the need for a shift from traditional to open universities, several questions were raised about the sustainability of open universities in this rapidly changing technological era and the ongoing geopolitical tension worldwide. To address this research gap, this study conducts a focus group discussion with nine open university leaders on sustainability models, opportunities and challenges of open universities. The results reveal that most of the open universities rely on government funds, which is considered the

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most guaranteed yet fragile model, in addition to tuition fees. The results further reveal that open universities go beyond the financial dimension to also cover technological and pedagogical dimensions when sustaining themselves, where most open universities are relying on their own developed software, open-source software, and Open Educational Resources to reduce course development costs.

Introduction

Open universities (OUs) are higher education institutions that provide flexible, distance, open-access learning models, and registered-access learning models, removing traditional barriers to direct university entry (namely, age, prior qualifications, and geographic location). Today, they typically rely on technology-enhanced learning settings (namely, online learning portals, repositories, video-conferencing tools, Artificial Intelligence (AI)-based assistants, multimedia resources, etc.) and emphasize lifelong learning opportunities for diverse populations (Bozkurt et al., 2025; Peters, 2010; Tait, 2018).

To be sustainable means to be able to meet the needs of the present and continue to evolve with the changing needs in the future. Looking back at history, OUs managed to survive the suspicion and resistance from traditional, in-person universities in their early days because they were complementary to their campus-based counterparts. The mission of OUs was articulated by the far-sighted, clear-headed Lord Crowther, who was the first Chancellor of The Open University of the United Kingdom (personal communication, April 23, 1969): "The Open University is not the rival of the existing Universities. It is designed to take over where they are compelled to leave off". Even today, OUs are not in a position to compete with campus-based universities in some aspects, such as facilities (e.g., labs); however, in other aspects, such as access to remote learners and academic staff, traditional universities struggle to offer the flexibility of delivery offered by open and/or online universities.

The disruptions of the COVID-19 pandemic forced a rapid and widespread shift to online learning, compelling many traditional education providers to offer digital courses for the first time (Bozkurt & Sharma, 2020; Stracke et al., 2022). This emergency pivot expanded access to online education, normalizing virtual delivery across diverse institutions and blurring the traditional distinctions between conventional and distance learning. For open and online universities (previously distinguished by their expertise in digital pedagogy and flexible, remote access), their unique selling points were both validated and challenged. While their long-standing experience positioned them as leaders in the field, the broader adoption of online modes by mainstream institutions intensified competition and reduced their exclusivity in offering flexible, scalable learning experiences.

We are now in a period of adjustment to the "new normal". Several OUs remain successful at scale and can compete with conventional universities in many areas. However, globally speaking, this is not the norm. To be complementary means to be distinct. That is, OUs should not be modelled on their in-person-based counterparts if they want to survive; they should develop their unique advantages and give full play to these advantages.

Historically, Lord Crowther's four-open principles, which he outlined for the Open University, emphasize openness to people, places, methods and ideas (Crowther, 1969). These principles were intended to distinguish OUs from traditional universities and set out a vision where "every

new form of human communication will be examined to see how it can be used to raise and broaden the level of human understanding" (Ibid). These principles remain relevant today according to Xiao (2025) who argues that, guided by the four-open principles, OUs should look for new sources of enrolment while continuing to serve the disadvantaged (open to people), further reduce physical barriers to enhance access, openness, and flexibility (open to places), avoid over-technologizing pedagogy by taking a contextualized approach to methods (open to methods), and "accelerate curricular reforms, utilize new pedagogies or appropriate technologies, and produce new knowledge through research to enhance their image as a higher education institution" (Xiao, 2025, p. 14).

Several scholars have advocated the shift from traditional universities towards OUs as they are more cost-effective for governments compared to traditional universities and they offer the opportunity to broaden access to university education for a larger population (Laidlaw & Layard, 1974; MacKeogh & Fox, 2009). However, OUs still undergo various challenges to sustain their structure and function. They usually rely on a business model which describes how an organization creates, delivers, and captures value (Osterwalder & Pigneur, 2010). As highlighted by Rafi and Abdullah (2024), a comprehensive business model framework for Open Universities should include revenue generation (e.g., tuition fees, government subsidies), cost management (e.g., course development, infrastructure), and value propositions (e.g., accessibility, employability-focused curricula). OUs traditionally relied on government funding and low tuition fees to uphold accessibility. However, austerity measures, reduced public spending, competitive advantage, and innovation have pressured institutions to diversify income streams (Orr et al., 2019). Teece (2018) highlights that dynamic capabilities—such as adapting to technological shifts—are critical for business model resilience. Tait (2018) identifies three dominant revenue models for OUs: (1) Public Funding-Dependent: Common in Europe, where state subsidies cover operational costs, enabling low student fees; (2) Hybrid Models: Combining government support, tuition fees, and ancillary services (e.g., consulting, certification programs); and (3) Market-Driven Models: Institutions in emerging economies increasingly partner with private firms to offer vocational training, often at a certain fee (Unterhalter et al., 2019).

Elaboration of different strategic approaches is reflective of both differences in context and the iteration of delivery mechanisms in response to new (particularly digital) technologies in search of a competitive edge. Olcott (2024) argues that "the unique innovations of scaling, massification and social access, whilst still essential and important for open universities, may not in themselves be sufficient to preserve and reposition open universities as major leaders in the emerging higher education ecosystem" (p. 1). To this end, he maintains that OUs should have "a renewed and/or new focus on" the following six areas: leadership, development of mega-universities and global consortia, repositioning themselves within the mainstream higher education landscape, new streamlined models of OUs, focus on national mission and renewed partnerships, and tracking development of cutting-edge technologies such as artificial

intelligence (AI) (Olcott, 2024, p. 1).

Several studies were conducted to discuss the sustainability of universities generally (Xu et al., 2024) or the sustainability of open education approaches, including Open Educational Resources (Tlili et al., 2023) or open textbooks (Cox et al., 2022). However, no research, to the best of our knowledge, has directly compared the sustainability models of various OUs worldwide. To address this research gap, the present study builds on a two-day hybrid workshop co-organized by two OUs in China and Canada, where several leaders and researchers from various OUs worldwide discussed the sustainability models adopted in their context, among other topics beyond the focus of this study. Specifically, the following two research questions (RQs) guided our study:

RQ1. What are the sustainability models adopted by open universities to sustain their working mechanism?

RQ2. What are the challenges faced by open universities in their adopted sustainability models?

Methodology

Research context and participants

An international two-day hybrid workshop jointly organized by two OUs in China (Open University of China) and Canada (Athabasca University) was hosted in March 2025 to discuss different topics related to open universities, including sustainability models, the focus of this study. Nine open university presidents and researchers participated in this workshop. Each of them had to present case studies and sustainability models applied by their university. Their insights were then gathered and analyzed.

Data collection and analysis

This study follows a qualitative research approach. Particularly, focus group discussions were conducted to collect data. They are considered the most commonly widespread technique in social sciences (Akyildiz & Ahmed, 2021). Focus group discussions provide authentic environments since participants influence one another and are influenced (Casey & Krueger, 1994). Such influence and interaction among participants can create some synergy which could reveal more insights (Stewart & Shamdasani, 2014). All participants involved in the focus group discussions gave their explicit consent for the data collection process. Each participant has been fully informed about the nature, purpose, and scope of the data collection and has agreed to participate under these terms.

In line with the aforementioned research questions, the nine panelists (representatives of the nine OUs) were asked to: (1) elaborate on the sustainability models applied in their OUs and (2) identify the different challenges faced in terms of sustainability. In addition to the documents (presentations, case studies) provided by the participants

during the workshop, their interactions (for two hours) were also recorded and analyzed. Accordingly, thematic analysis was conducted where all inputs were analyzed according to two themes, namely: (1) applied sustainability models by each open university; and (2) the different challenges faced by open universities when sustaining themselves. Finally, the outputs from each theme were then summarized and presented, as discussed in the next section.

Results and discussions

The results are presented and discussed according to each of the aforementioned research questions.

Sustainability models adopted by open universities

Tuition Fees and International Students and Global Expansion: Tuition fees remain the primary revenue source for most OUs. For instance, both the Open University of the UK (OUUK) and the University of South Africa (UNISA) maintain their operations by charging tuition fees. In the University of the Philippines Open University (UPOU), undergraduate programs remain tuition-free by virtue of a law (RA10931), while graduate programs, which constitute more than 80% of degree program offerings, charge tuition fees.

Additionally, many OUs are expanding their reach by offering programs to international students. This not only diversifies their revenue streams but also develops their global reputation. International students constitute about two percent of enrollment at Athabasca, and the number has shrunk somewhat in recent years. This may be due to a tuition freeze in Alberta, Athabasca's home province, persuading the university to raise fees for international students. At OUUK, international students constitute about five percent of enrolments. Universidad Internacional de La Rioja (UNIR, Spain) is the largest and more de-centralized university in Spanish, worldwide, with over 155,000 enrolled students, from over 120 countries. It is also the university with the largest academic offer in the world, in-person or online-based, with over 700 academic programs. UNIR gets no official subsidy and it is fully operational thanks to, exclusively, tuition fees. Part of that tuition goes directly to open-access learning programs and Open Educational Resources (OERs), such as UNIR OpenEd, TV UNIR, and policy development (on Open Education, on Ethical Artificial Intelligence) (UNIR 2023a, 2023b).

Government Funding and Subsidies: Many OUs receive significant funding from the government to sustain their operations. The UPOU is a prominent example of how government subsidies can significantly influence the affordability and accessibility of higher education. This financial support allows the UPOU to maintain its mission of providing open and flexible education to a wide range of students, including non-traditional learners and those from disadvantaged backgrounds. The government subsidies not only reduce the financial burden on students but also ensure the university's ability to deliver high-quality education at scale (Garrett, 2016; Lu & Gao, 2022). In addition, Anadolu University can be given as an example of a university that

continues its activities with government funding. Anadolu University can be considered a different case in that it generates its own income sources in addition to government funding, thereby creating a sustainable business model (Bozkurt, 2025). However, while this was the case for OUUK in the past, it is not any more.

Funding from scientific research institutions/organizations: The OUUK distinguishes itself as a higher education institution through its diversified research funding ecosystem. This system operates across two primary dimensions: national-level funding bodies and supranational project-based investments. At the national level, the university receives institutional support from sources such as Quality-related Research (QR) funding, which sustains core academic activities, and the UK Research Partnership Investment Fund (UKRPIF), which facilitates infrastructure development. Concurrently, scholars actively engage in competitive grant-seeking by submitting proposals to UK Research and Innovation (UKRI), the European Research Council (ERC, even when OUUK is not part of the European Union), and philanthropic or commercial entities (Lu & Gao, 2022). Further, Universidad Internacional de La Rioja (UNIR) provides a combined funding structure where research projects are usually co-funded by external sources (i.e., European Commission, ministries of education or innovation, private contractors, etc.) and the university itself. The UPOU also follows this model by receiving additional funding from various agencies like the Department of Science and Technology.

Institutional Network and Membership: There are many university networks, worldwide. For instance, Open Education Resource universitas (OERu) collaborates with a diverse range of universities and higher education institutions, including both open and distance learning (ODL) specialists and conventional institutions. Notable partners include the OUUK, Open University of Catalonia, Southern New Hampshire University, University of Southern Queensland, and Athabasca University. Membership in OERu is divided into two levels: (1) Gold Membership costs USD 5,000 annually (or USD 4,000 with a three-year commitment) and requires 0.2 FTE of staff time. Gold members can bid to develop new courses using surplus OERu funds; and (2) Silver Membership costs USD 8,000 annually with no staff commitment. All member institutions are required to contribute at least two OER courses, fostering a collaborative environment for course development and sharing (Garrett, 2016). Further, the International Council for Open and Distance Education (ICDE) follows a similar approach with a membership. However, many other networks work as invisible colleges (Webster, 1974), de facto, with no membership fee, such as the Knowledge Equity Network (KEN), Global OER Graduate Network (GO-GN), and the Network on Artificial Intelligence and Ethics. They complement the open access approach with a free access vision, thanks to the self-funded work of their members.

Service providers: OUs can also integrate diverse social educational resources to establish a new business model that combines educational service provision, learning platform operation, digital resource development, and resource distribution channels. Through the integrated and

diversified operation of “universities, educational groups, e-commerce, and financial services,” open universities can adopt either a retailer model or a supplier model. High-profit products/services are at the core of transforming the revenue model for OUs. Offerings such as professional qualification certifications, innovative e-learning tools, and lectures by renowned educators, due to their uniqueness and high added value, can significantly alter profit margins (Zhang & Nan, 2015). These products are not only widely praised and sought after by learners but can also generate substantial income for OUs. For instance, professional qualification certifications, closely aligned with industry demands, meet the career development needs of learners. Innovative e-learning tools can enhance the learning experience through technological advancements, while lectures by star teachers can attract a large user base through the appeal of renowned educators. Another example is from the Open University of Malaysia which provides, as part of its services, the renting of classrooms or the Amphi for organizing scientific events, such as conferences. As service providers, UPOU conducts training programs to contribute to financial sustainability, but the training fee is balanced with the public service function of the university to make those training programs still accessible to the universities that need them.

Donation: Philanthropic donations have long served as a critical supplementary funding source in global higher education systems. A prominent example is the OUUK, where trust companies and corporate partners emerge as major donor groups. These entities contribute significantly to the institution's financial ecosystem, complementing traditional funding streams such as government grants and research contracts (Lu & Gao, 2022).

Consortium: Several universities are part of a larger consortium that handles the university's OER-related activities. For instance, the Open University of Malaysia is part of a consortium of eleven public and private universities that share courses and revenues (Garrett, 2016).

Brand building: It has become an essential strategy for OUs to navigate market competition by developing and selling their own solutions. Three key factors drive this process, namely competition and efficiency, choice and diversity, and the promotion of managerial principles. These elements collectively form the core logic of brand building for OUs. The Open University of Malaysia, for instance, has developed its own educational resources and learning management systems that are not only used at the university level but also sold at a national level. Another key insight has to do with outreach and recruitment strategies. Most of the students who joined Al-Quds Open University (QOU) learned about it through family networks (32.2%) or their own visits (19.6%). Thus, community-based marketing is still highly effective. OUs should strengthen such localized, trust-based outreach approaches as part of their broader digital and international recruitment efforts.

Sponsorship and partnership with industry: The PPP (Public-Private Partnership) model, as an innovative business framework, has been widely adopted in the education sector. At the same time, the PPP model has strong practical

significance for the development of OUs, which can share the cost of running schools by introducing social capital through the PPP model. Among the OUs PPP models, the BOT (Build-Operate-Transfer) approach is particularly prevalent and is often referred to as a “concession agreement.” In higher education institutions, the BOT model is primarily applied in new campus construction and training base development, with a few cases extending to information technology infrastructure and comprehensive operational management. For example, the UPOU adopts this sponsorship and partnership sustainability model by working with various agencies/organizations like the Asian Development Bank for the development of courses that will help the Business Process Outsourcing industry in the Philippines. It also works with UNICEF-Philippines for the development of course on child rights promotion and protection. The Open University of China (OUC) collaborates with various industry partners, such as iFLYTEK and Huawei, to advance digital education.

Freemium and subscription: The OpenLearn platform exemplifies a business model in the OUUK through its strategic integration of free foundational content and value-added service conversion, achieving financial sustainability without direct subscription fees. Over 1,000 free courses, interactive activities, and multimedia resources significantly lower entry barriers for learners. High-quality free resources act as a funnel to attract potential users, indirectly driving enrollment in paid programs at the OUUK. For instance, 10% of its 9 million annual visitors (2018–2019) clicked through to explore fee-based courses, demonstrating a “free-to-paid conversion” strategy that builds institutional trust through open content. OpenLearn’s success highlights the viability of a hybrid model of “freemium subscriptions” in OER (Garrett, 2016).

Coursera, a for-profit company with an initial \$22 million investment from venture capital firms such as Kleiner Perkins (Yuan & Powell, 2013), is one of the leading massive open online course (MOOC) platforms that has developed a diversified business model to sustain its operations and expand its offerings. Coursera’s core revenue stream comes from certification fees: free learning courses, paid certificates (such as completion certificates or specialization certificates) designed to provide learners with in-depth knowledge and practical skills in a specific area, and a fee to complete the specialization, usually a few hundred dollars. The model has proven to be very popular among learners seeking a career-oriented education, and the Open University can also refer to the case studies to offer free subscription-based courses (Bralić & Divjak, 2018).

The sustainability model for subscription of e-resources also plays a very important role in OUs and is explored in detail in the case of IGNOU. The main business models of publishers are annual subscription and ownership (purchase) models. Under the annual subscription model, libraries pay a fixed annual fee for access to the content, which is similar to the subscription renewal of journals; under the purchase model, libraries pay a one-time fee to own the content in perpetuity, and some publishers also charge annual server maintenance and access fees. Pricing, content coverage, and access rights vary by publisher; for example, Springer offers perpetual access, and the 2007 package includes the 2005 and 2006

books at no cost, but the entire subject package must be purchased; Wiley offers two licensing options, an annual subscription with the ability to add content, perpetual ownership with archival rights, and a minimum subscription of twenty e-books (Tripathi & Jeevan, 2008).

Table 1 summarizes the revenue models of the OUs participating in this study (see Appendix).

Challenges faced by open universities

OUs confront multifaceted challenges in sustaining their business models, driven by financial, technological, and competitive pressures. Four themes have been identified below as the key challenges that surfaced in the workshop discussion:

Over-reliance on public and traditional funding: Many OUs depend heavily on government subsidies and tuition fees, making them vulnerable to policy shifts. For example, the OUUK faced budget cuts amid reduced public funding, forcing it to downsize staff and programs. Similarly, Athabasca University in Canada struggled to balance costs after provincial funding reductions (Latchem, 2019). Additionally, while OUs aim to promote lifelong learning, they are strongly influenced by the mainstream political perspectives. For instance, the Ministry of Education (MOE) approved the Open University of China’s (OUC) reform package in 2020. This allows OUC to become a main platform of lifelong education, a main platform of online education, a platform of flexible education, and a platform for international cooperation (MOE, 2020). Xiao et al. (2025, p. 188) stated that “the Lifelong Education Platform (<https://le.ouchn.cn/home>) was open to the public in 2022, the same year when OUC launched the Seniors University of China (SUC) (<https://lndx.edu.cn/>) as part of the national strategy to cope with the aging society.”

Policy regulations and geopolitical tension: The ongoing geopolitical tension worldwide is affecting the sustainability and business models of universities generally and OUs particularly. For instance, the OUUK has been dropped from EU project funds due to the politics of Brexit. Also, QOU suffered from limited international funds due to the ongoing wars in Palestine. Cross-border accreditation hurdles limit open universities’ global expansion. For instance, African OUs like UNISA face regulatory challenges in offering programs across continents (Mays, 2020).

Competition and Efficiency: Compared to traditional universities, the educational market for OUs is more open and faces fiercer competition. The primary goal of this competition is to attract more students, as their revenue models rely on tuition fees. Therefore, to enhance their market competitiveness, OUs must focus on improving educational quality and service standards. This approach not only strengthens their market position but also ensures long-term sustainability in a highly competitive environment.

Loss of technological advantage: Traditionally, the success of OUs owed a lot to the innovative use of technologies, technologies which were accessible and affordable both to OUs as institutions and their individual students and which were not used to deliver instruction at a large scale by conventional universities. Therefore, OUs could serve those when campus-based universities could not or would not. Sustainable technology-based education is predicated on two conditions: quality assurance and cost effectiveness/affordability, which OUs were able to meet in the early years. In other words, technology gained OUs an advantage over their campus-based counterparts. Nevertheless, OUs have lost this technological advantage in the digital age. Digital technologies including AI are expensive. Are these technologies equally accessible and affordable to OUs around the world and, no less importantly, to individual students of OUs? The cost-effectiveness of digital education for OUs has yet to be empirically verified. What is more, as argued by Xiao (2024), the affordances of digital technology for OU education “are hardly distinguishable from those for campus-based higher education” (p. 18). If they can enhance the openness of OU education or improve the quality of OU education, they will work equally well for campus-based education. In this case, two key challenges become evident: What are the advantages of OUs? In what ways are OUs complementary to conventional universities today?

Conclusions, implications, and future directions

This study explores the sustainability models of OUs and the challenges they face. With the rapid development of digital technology and the trend of marketization in higher education, OUs, as important institutions providing flexible education, are facing multiple pressures such as intensified market competition, technological innovation, and financial sustainability in terms of their revenue structure and business model. Tuition fees and government subsidies are the core sources of revenue, while scientific research funds and donations serve as supplements. In addition, OUs further diversify their sources of revenue through international students and global expansion. It is also evident that sustainability models of OUs call on institutions to go beyond the financial dimension to also cover technological and pedagogical dimensions, where most OUs are relying on their own developed software, open-source software, and OER to reduce course development. Furthermore, OUs can sustain themselves through not only financial and technological dimensions but also socio-cultural and community dimensions.

However, when implementing these sustainability models, OUs also face many challenges, including the diversification of revenue sources, geopolitical tensions, and the instability of policies. To address these challenges, OUs need to adopt diversified strategies, including strengthening technological investment, expanding international cooperation, and developing high-value-added educational products and services. There is also a need to develop policies that will assist OUs in conflict-affected societies (e.g., QOU). In the future, OUs should continue to explore innovative sustainability models, combine technological progress with market changes, and ensure their competitiveness and sustainable

development capabilities in the global education market. By continuously optimizing their sustainability models, OUs can better fulfil their mission of providing high-quality, flexible, and affordable educational opportunities for non-traditional student groups.

The findings of this study contribute to the literature from a theoretical and practical perspective. Theoretically, it not only enriches the business model theory of open education by validating the educational-economic value of “freemium-to-premium conversion” models, but also advances institutional complementarity theory by demonstrating the necessity for differentiated complementary relationships between OUs and traditional higher education institutions. Furthermore, it refines the dynamic capabilities framework by revealing how core competencies like technological adaptation and resource integration are crucial for institutional sustainability. Practically, the research proposes concrete optimization solutions such as “free-to-paid conversion funnels” and develops a technology roadmap encompassing intelligent analytics systems, blockchain credentialing, and educational metaverse platforms.

Future research should explore longitudinal case studies, comparative analyses across regions, and the impact of emerging technologies (e.g., generative AI) on pedagogical and economic models. By addressing these gaps, scholars and practitioners can better navigate the evolving landscape of open higher education.

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Appendix

Table 1. Sustainability models of open universities.

Open Universities Sustainability models	Athabasca Univ, Canada (<i>public Univ</i>)	Open Univ of China (<i>public Univ</i>)	Tianjin Open University, China (<i>public Univ</i>)	Open Univ of Malaysia (<i>privately owned by the gov</i>)	Al-Quds Open Univ, Palestine (<i>public Univ</i>)	Open Univ of the Philippines (<i>public Univ</i>)	UNIR, Spain (<i>private Univ</i>)	Anadolu Univ, Türkiye (<i>public Univ</i>)	Open Univ of the UK (<i>public Univ</i>)
Government fund	X	X	X	X	X (before but not anymore)	X		X	X (Research funding only)
Tuition fee	X	X	X	X		X (graduate)	X		X
National/international grants and projects		X			X	X	X		X
Freemium and subscription	X								
Provide services (consultancy, training, course development, LMS, renting facilities, etc.)				X	X	X (Training programs; renting facilities; consultancy)			X
Sponsorship and Partnership with industry		X	X	X	X	X (to implement special projects/programs)	X		X
Donations					X				X
Consortium approach				X					
Brand building				X	X				

Note: The universities are ordered alphabetically by country.