

SINGIDUNUM UNIVERSITY

Department for Postgraduate Studies
Danijelova 32, Belgrade

TO THE COUNCIL OF THE DEPARTMENT FOR POSTGRADUATE STUDIES

Based on the Decision of the Council of the Department for Postgraduate Studies, we were appointed as members of the Commission for evaluating the eligibility of the candidate and the proposed doctoral dissertation titled: "Enhancing the Human Development Index through Education for Sustainable Development in Emerging Economies" for which we submit the following

**REPORT ON EVALUATION OF
THE DOCTORAL DISSERTATION PROPOSAL AND CANDIDATE**

1. Biography of the PhD Candidate

The candidate, Aleksandra Minic (Student/Transcript book no. 2022470017), was born on June 06, 1977, in Knjazevac (Serbia). She completed primary school and high school in her hometown. She earned her Bachelor's and Master's degrees from the University of Nis (Serbia). Upon completing her studies, Aleksandra had the opportunity for an internship in Bursa, Turkey, as an English Language corporate trainer in a textile company, and later as an employee in the export department, where she communicated with the Northern European market. Her next career path was in South Korea where she worked on a Gyeonggi-do government project – English Village.

She gained academic and practical experience through teaching students of different ages, levels and academic background in Serbia, Turkey, South Korea and Oman; has been doing research, in collaboration with colleagues from different universities and backgrounds locally and internationally, as well as community service (running student societies, organizing humanitarian drives such as Turkey and Syria Earthquake Drive) and presented her papers in local and international conferences in Serbia and Oman.

Completing the Cambridge Judge School course in Sustainable Development and Circular Economy motivated her to pursue a PhD program and a career in sustainable development. Aleksandra currently lives in Muscat, Oman where she works as a senior faculty and sustainability specialist, with her notable contribution being designing a new course, Introduction to Sustainable Development offered as a three-credit elective to students of all majors.

Published papers:

The candidate has published the following paper classified as M22, thereby fulfilling the prescribed requirement for the defense of the doctoral dissertation:

Minić, A., Filipović, S., Naeem, M. (2026). Education for sustainable development as a driver of enhanced human development: a cross-country analysis. *Energy Sustainability and Society*, article in press. <https://doi.org/10.1186/s13705-026-00596-6>

Other papers:

1. M33, Minić, A., & Filipović, S. (2023). Underpinning sustainability paradigms: Circular economy and enhanced triple bottom line. In *FINIZ 2023 – Sustainable Development as a Measure of Modern Business Success* (pp. 66–73). Singidunum University. <https://doi.org/10.15308/finiz-2023-66-73> FINIZ
2. M51, Minić, A., & Filipović, S. (2024). On the path to sustainability in Gulf Cooperation Council states: Readiness for energy transition. *The European Journal of Applied Economics*, 21(1), 143–163. <https://doi.org/10.5937/EJAE21-49448> European Journal of Applied Economics
3. M13, Minić, A., Al Naamany, A. M., Al Naamany, K. A., & Filipović, S. (2025). Towards developing sustainability-driven strategic framework in ICT SMEs in Oman: Case study. In *AI and IoT: Driving Business Success and Sustainability in the Digital Age* (pp. 595–605). Springer. https://doi.org/10.1007/978-3-031-88874-8_52
Part of the book series: Studies in Systems, Decision and Control (SSDC, Vol. 590). The Springer volume and chapter details are confirmed here
4. M33, Minić, A., & Al Hinai, A. (2025). Development without growth: Circular economy, Doughnut Economics, and related models. In *FINIZ 2025 – The Importance of Business Agility in the Modern Business Environment* (pp. 121–130). Singidunum University. <https://doi.org/10.15308/finiz-2025-121-130> FINIZ
5. M22, Minić, A., Filipović, S., & Naeem, M. (2026). Education for sustainable development as a driver of enhanced human development: A cross-country analysis. *Energy, Sustainability and Society*. <https://doi.org/10.1186/s13705-026-00596-6>

The doctoral dissertation of the candidate, Aleksandra Minić, comprises a total of 172 pages, of which 61 pages constitute the appendices and the list of references. The bibliography comprises 132 references, including scientific articles, books, conference proceedings, legal and regulatory documents, as well as electronic sources. In addition to the main text, the dissertation contains 11 figures and 11 tables.

The doctoral dissertation of the candidate, Aleksandra Minić, was subjected to a similarity check using iThenticate Plagiarism Detection Software. The overall percentage of detected textual overlap amounts to 9% of the dissertation.

2. The subject and aim of research

The subject of the dissertation is the analysis of the gaps in measuring human development and how integrating Education for Sustainable Development into the Human Development Index can enhance its capacity to capture inclusive and sustainable growth.

The aim of this research is to examine the relationship between ESD-related indicators and human development in emerging economies and, based on the integrated quantitative and qualitative findings, develop a conceptual and empirically informed E-HDI framework that incorporates ESD within the education dimensions of HDI. The proposed framework seeks to address the limitations of the conventional education dimension by extending it beyond educational attainment to include educational quality, sustainability competencies, values and responsible actions.

To accomplish this, the study combines cross-country panel data analysis with qualitative stakeholder evidence from Oman in order to examine both the statistical relationship between education-related factors and HDI and practical conditions through which ESD may contribute to sustainable human development.

Building on the research problem explained and outlined in the previous section, the dissertation aims to examine if the HDI as it is currently, adequately reflects the role of education in enabling sustainable human development, and if ESD, added to the education dimension of HDI can enhance its explanatory and policy relevance.

Accordingly, this study is guided by the following research questions:

RQ1: Can there be found and measured a relationship between ESD-related indicators and the HDI across countries?

RQ2: Do education quality and sustainability-related proxies influence HDI outcomes and if yes, to what extent?

RQ3: How is ESD at present reflected in higher education policies and practices in Oman, as perceived by Omani key stakeholders in sustainability and academia?

RQ4: How can ESD be integrated, systematically and holistically, into the education dimension of the HDI in order to improve HDI's capacity to measure sustainable human development?

The first two questions are aimed to be answered through quantitative cross-country analysis (Panel Regression), with the third question explored through a qualitative focus group discussion with stakeholders in Oman. The last question synthesizes insights from both studies to inform the development of an E-HDI framework.

3. Hypothetical Research Framework

In order to address the research questions related to the relationship between education, sustainability, and human development, this thesis proposes a few testable hypotheses which stem directly from the research problem and are designed to be examined through quantitative cross-country panel data analysis while the qualitative focus group discussion complements the hypothesis testing through giving contextual and policy-relevant insights in the integration of ESD, particularly in the Omani context.

The hypotheses focus on assessing whether education-related sustainability proxies and enabling contextual factors are significantly associated with human development outcomes as measured by the HDI in 15 different economies.

H1: Countries with higher enrollment in education levels aligned with ESD show higher HDI scores.

H2: Political stability positively affects HDI and strengthens the effect of education indicators on HDI.

H3: Education expenditure, as a percentage of GDP, is significantly associated with HDI, i.e. it leads to higher HDI.

H4: Internet usage/availability is marginally associated with HDI

H5: Tertiary education enrollment demonstrates a positive association with HDI

All the hypotheses are a guide for the quantitative component and are tested through panel regression across a sample of selected countries. This quantitative method examines how education indicators and governance conditions relate to human development outcomes.

The qualitative focus group discussion conducted with key stakeholders in Oman does not test these hypotheses; it is only a complementary method whose role is to provide contextual insight into how ESD is understood, implemented and aligned with policy and institutional settings. The qualitative findings serve to interpret the quantitative results, explore causal mechanisms, and inform the development of the E-HDI framework.

4. Metodology of research

The research uses a mixed-methods approach—quantitative panel regression analysis (with HDI as a dependent and ESD proxies as independent variables) across 15 countries and qualitative focus group discussions with policymakers, educators, and sustainability experts in Oman.

The panel regression analysis uses a certain *quantitative econometric method* to test the relationship between Education for Sustainable Development indicators and Human Development Index outcomes in 15 developing countries (Oman, Georgia, Costa Rica, Serbia, Brazil, Ukraine, Sri Lanka, Vietnam, Jordan, Egypt, the Philippines, India, Kenya, Rwanda, and Pakistan) from 2010 to 2023. The model includes education, governance, and sustainability variables as independent predictors (ESD proxies) of HDI,

using fixed- and random-effects estimations to control for country-specific differences and temporal effects. This analysis tries to identify if and to which extent ESD integration might contribute to more meaningful (higher) human development, and provide an empirical foundation for the proposed Enhanced HDI (E-HDI) framework.

The focus group discussion (FGD) is a *qualitative, semi-structured method* that will gather expert insights on the integration of Education for Sustainable Development within human development policies and higher education frameworks. The participants that will be invited include associate deans, policymakers, curriculum designers, sustainability experts from academia, and industry representatives — approximately 10 to 12 participants selected through criterion-based sampling (non-random selection process). The objective of the discussion is to explore practical challenges, opportunities, and policy pathways for embedding ESD in HDI-related education strategies, and to provide qualitative evidence that complements the quantitative findings of the study.

The expected results are:

1. Empirical evidence that incorporating ESD enhances the accuracy and relevance of HDI in reflecting sustainable human development;
2. A framework for integrating ESD indicators into HDI calculations and
3. Policy recommendations for developing countries—particularly Oman—on embedding sustainability and ethical education in national strategies.

5. Brief Overview of the Content of the Doctoral Dissertation

This dissertation has 6 chapters in its structure and each one addresses a specific aspect of the research problem and aims to contribute to the development all of the E-HDI framework.

Chapter 1 introduces the context by outlining the history and evolution of sustainability and human development thinking, with the focus on HDI, identifies the research problem, and defines objectives and scope of the study.

Chapter 2 reviews the available relevant literature on sustainability, human development, education quality and ESD. It examines existing concepts, approaches and indicators critically and finds gaps in the contemporary research in terms of HDI dimension metrics.

Chapter 3 presents research methodology (mixed-method approach used), gives details on data sources, variables selection, econometric techniques, as well as qualitative research design used in this study. It also explains limitations in sourcing data.

Chapter 4 reports and discusses the results/findings of quantitative panel data analysis— it examines the relationship between HDI and sustainability related education indicators across the selected countries. This is followed by a qualitative focus group discussion with policymakers, educators, and sustainability experts in Oman, which provides contextual depths and policy relevant interpretation of the quantitative results. All these findings, especially the qualitative ones from the case study Oman, introduce the E-HDI framework, integrating insights from both quantitative and qualitative analyses.

Chapter 5, interprets the main findings of the study with regards to research aim, problem and objectives, hypotheses, theoretical framework and existing literature.

Chapter 6 concludes this dissertation through summarizing the key findings; it then outlines theoretical and policy contributions of this study, discusses limitations and finally offers recommendations for further research and policy development.

6. Achieved Results and Scientific Contribution of the Doctoral Dissertation

This study examined the role of ESD in advancing human development in emerging economies. An explanatory sequential mixed-methods design was applied, combining panel data analysis across fifteen emerging economies from 2000 to 2023 with a qualitative FGD involving thirteen stakeholders in Oman. This design enabled the study to identify statistical relationships between education-related factors and HDI and subsequently examine how these relationships are understood and implemented within a specific national context.

The quantitative findings confirmed that education remains a central determinant of human development. Adult literacy and pre-primary, secondary and tertiary enrolment were positively and significantly associated with HDI. Internet access and government effectiveness also demonstrated positive relationships with HDI. In contrast, government education expenditure was negatively associated with HDI, indicating that expenditure levels alone do not necessarily translate into improved human development outcomes. Political stability was not statistically significant as a direct predictor in the preferred model.

Accordingly, H1 and H5 were supported, as educational enrolment and tertiary education enrolment were positively associated with HDI. H4 was also supported, with internet access demonstrating a positive and statistically significant relationship with HDI. H3 was not supported in the expected direction because education expenditure was significantly but negatively associated with HDI. H2 was not supported with respect to the proposed direct positive relationship between political stability and HDI.

The qualitative findings demonstrated that access to education, although essential, is insufficient without corresponding attention to educational quality, relevance and implementation. Participants emphasised the integration of ESD across curricula and disciplines, experiential and competency-based learning, teacher development, multidisciplinary education, digital and AI literacy, sustainability values, effective governance and stronger collaboration between education, government, industry and civil society.

The integrated findings therefore indicate that education contributes to human development through both participation and capability development. Literacy, enrolment and digital access provide important foundations, while the quality and sustainability orientation of education determine whether individuals are able to apply knowledge, respond to complex challenges and contribute responsibly to society. These conclusions support the development of the proposed E-HDI framework, which seeks to complement conventional measures of educational attainment with dimensions reflecting competencies, values, educational quality and the transformative contribution of ESD.

The scientific contributions of the dissertation are:

1. Introducing a novel conceptual framework that integrates ESD into HDI, as well as creating an Enhanced HDI (E-HDI) model that would tackle current HDI limitations.
2. Combining quantitative (panel regression) and qualitative (focus group discussion) methods in order to ascertain how sustainability-oriented education influences HDI and its outcomes.
3. Expanding empirical understanding of the ESD–HDI relationship by employing a comparative analysis of 15 countries over two decades and following it with the case study in Oman.

Designing and proposing a policy-relevant model that supports evidence-based reforms in education and human development strategies in developing economies.

7. Conclusion

Based on the foregoing, the Committee considers that the doctoral dissertation submitted by Aleksandra Minić, in terms of its subject matter, research approach, structure and content, quality and clarity of presentation, research methodology, use of relevant literature, as well as the relevance and quality of the research conducted and the validity of the conclusions reached, meets the requirements prescribed for a doctoral dissertation and is therefore suitable for public defense.

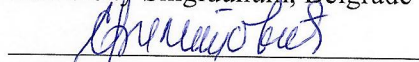
Having considered the doctoral dissertation entitled “Enhancing the Human Development Index through Education for Sustainable Development in Emerging Economies” and taking into account the Committee’s overall assessment, the Committee recommends that the Department Council for Postgraduate Studies and the Senate of Singidunum University accept the dissertation and approve its public defense.

Belgrade, 7 October 2026

Members of the Council:

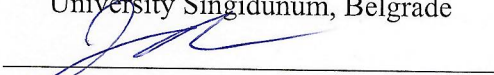
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