Building a sustainable future: The intersection of SDGs and Social Entrepreneurship

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Building a sustainable future:
The intersection of SDGs and Social Entrepreneurship

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Foreword

It is with great pleasure and honour that I present this compendium of papers from the Global Research Network Conference, held in the vibrant city of Astana. The conference's theme, "Building a Sustainable Future: The Intersection of SDGs and Social Entrepreneurship," captures the essence of the critical discourse we must engage in as we navigate the complexities of sustainable development in our rapidly changing world.

This conference brought together an impressive array of scholars, practitioners, and thought leaders from 12 countries, each contributing unique perspectives and insights into the intersection of the United Nations' Sustainable Development Goals (SDGs) and social entrepreneurship. The breadth and depth of the discussions reflect the global nature of the challenges we face and the innovative solutions that are emerging from diverse contexts.
Out of numerous submissions, 27 outstanding papers were shortlisted for presentation at the conference. These papers represent a wide range of research topics, methodologies, and geographic focuses, all united by a common goal: to explore how social entrepreneurship can drive progress toward achieving the SDGs.

I would like to express my deep gratitude to the authors, whose research and insights have made this event a truly enriching experience. Your commitment to advancing the discourse on sustainability and social entrepreneurship is inspiring, and your contributions will undoubtedly influence future research and practice in this field.

I am also immensely grateful to our reviewers, whose careful and thoughtful evaluations ensured that the papers selected for presentation met the highest standards of academic rigor.
The insights generated during the conference were nothing short of remarkable. The discussions highlighted not only the challenges we face in building a sustainable future but also the innovative and entrepreneurial approaches that are being developed to address these challenges.

It is my hope that the ideas and insights captured in this compendium will serve as a valuable resource for researchers, practitioners, and policymakers alike, as we collectively strive to build a more sustainable and equitable world.

Dr Asha Bhatia

Enactus Global Research Network
Academic Conference Chair

Supporting Academic Excellence and Research at Enactus

Enactus is proud to support vibrant academic discourse as we work to educate, inspire, and empower young people to use innovation and entrepreneurship to address the world's most pressing challenges. This year's Enactus Global Research Network Conference exemplifies the important role that academia plays in advancing our collective impact. With 27 papers representing 12 countries, this conference not only showcases the diversity of research within the Enactus community but also highlights our commitment to fostering global collaboration. Academics within Enactus bring invaluable expertise, creating environments where students actively engage with real-world problems and develop sustainable, entrepreneurial solutions. By bridging theory and practice, they shape the next generation of leaders dedicated to driving progress toward the Sustainable Development Goals.

The research presented at this conference informs our current initiatives and lays the groundwork for future innovation. We extend special thanks to Selena Griffith, whose vision, dedication, and entrepreneurial spirit have been pivotal in making this conference a reality. Also Dr Asha Bhatia for her academic rigour and support through University of AI funding of best paper awards. Their leadership has brought together a diverse group of scholars, students, and practitioners, creating a platform for meaningful exchange and collaboration.
Our gratitude also goes to Enactus Kazakhstan for hosting this year's Enactus World Cup in Astana. Their hospitality and unwavering commitment to the Enactus mission provide an inspiring backdrop for our global community to unite. The World Cup is a celebration of the remarkable achievements of our students and a testament to the vital role of research and academic engagement in driving impactful entrepreneurial action.
The success of this conference and the breadth of research represented underscore the essential partnership between academia and Enactus. By fostering a culture of inquiry and innovation, we strengthen our capacity to drive meaningful change. Together, with the support of our academic partners, Enactus continues to push the boundaries of what is possible, ensuring that we remain at the forefront of social and environmental impact.

Ian Aiken

Enactus Global Board Chair

Fuelling youth-driven leadership, innovation, and impact

Enactus Global and Resolution Project wish to express our profound gratitude to all of the participants in the Enactus Global Research Network Conference and a special thank you to its organizers—Selena Griffith and Dr. Asha Bhatia—for their deep dedication to advancing the role of research in fuelling youth-driven leadership, innovation, and impact. In the space of youth social entrepreneurship (as in many other fields), research and knowledge-sharing play a fundamental role in understanding the impact of the work we are doing and show the value of that work. For years, traditional development organizations and business communities alike have dismissed social enterprise as generally unsustainable and unable to scale. At Enactus and at Resolution Project, we have a different experience, and it is this research network that continues to explore these and many other topics to make sure that we are asking the right questions and that we can prove to the rest of the world that the impacts our students create are sustainable and scalable, and that we can apply that learning to drive greater understanding, and impact.

For some of you, this may be the first you are hearing about Resolution Project. About a year ago, Resolution Project partnered with Enactus Global to strengthen the opportunities that are available to students. This collaboration has created a powerful synergy in the youth social entrepreneurship space, bringing together Enactus' 50-year legacy as the largest experiential learning platform developing entrepreneurial leadership with Resolution's 17-year history of providing mentorship, seed capital, and access to a global network for young social entrepreneurs.

Together, Resolution and Enactus now engage tens of thousands of young social entrepreneurs annually across nearly 100 countries. The nearly 700 Resolution Fellows have already impacted the lives of over 6.3 million people, demonstrating the impact amplification that youth-led entrepreneurship can achieve, especially when young people are given all the tools they need to start, grow, and succeed in solving tough problems like access to water, healthcare, and energy, to name a few.

Our work uniquely positions us to identify and support leaders who are proximate to the problems they are tackling in their communities. This proximity is a powerful asset in implementing evidence-based impact strategies as it enables an approach to impact measurement that puts the voice of the end-beneficiary/customer at the center. The young leaders we work with can gather real-time feedback efficiently, rapidly iterate on their solutions, and then report their findings, creating an expanding repository of ground-level data from diverse global contexts, allowing us to identify broader trends, sharing best practices across our network, and continuously refining our support strategies.

By empowering proximate leaders and emphasizing evidence-based impact, we enhance the effectiveness of individual ventures and contribute to the broader body of knowledge in social entrepreneurship, ensuring our global efforts are always grounded in local realities and needs. To that end, we want to underscore just how important the work you are doing here is—we appreciate both your commitment and your scholarship. We look forward to this year’s Enactus Global Research Network Conference and to many more in the future!

George Tsiatis	Lauren Horne
CEO	Acting CEO
Resolution Project	Enactus Global

Celebrating Impact Leadership and Knowledge Sharing

The Enactus community is a large, rich and diverse collection of Students, Academics, Industry, Alumni and Staff. I am very happy that authors from all of these parts of our community have contributed abstracts for our 2024 Enactus Global Research Network conference.
As Enactus (formally SIFE) heads into its 50th year of working with university students to create a better world through entrepreneurial action, it is fitting that we celebrate through knowledge sharing and documentation. I thank all 57 authors and presenters from 12 countries for taking time to prepare 27 excellent extended abstracts full of impact and insights. Thank you also to our reviewers for taking on the task of a double-blind peer review process whilst also managing to produce their own abstracts. I would like to highlight the hard work of Donella Caspersz for her assistance in forming a research call. Danial Saari for in-country support, Albina Yerzhanova and the Enactus Kazakhstan team for organising a fabulous venue and our conference keynotes and panellists. Whilst the Enactus Global Research Network has been operating for some time, this is the first academic conference with a compendium with an ISBN, thank you Dr Asha Bhatia for organising this and the AI University for their generous support of 4 paper prizes. It is an important milestone for our organisation in supporting our Faculty Advisors and Academics in creating recognised research outputs from Enactus related research and case study. It has been a pleasure to work alongside Dr Bhatia on this project.

I would also like to thank Dr Janani Akhil for her rigour and ground work in the revitalisation of the EGRN during her time at Enactus.

I hope that this is the first of many formal, annual, knowledge exchanges across our community and that the process enables the development of a significant collection of materials and a growth of deeper collegiate engagement within our academic community. We have included the call for 2025 papers.

Selena Griffith

CEO and Country Leader
Enactus Australia

Editor Enactus Global Research Network Compendium
Conference Co-Chair

Call for Abstracts Enactus Global Research Conference EWC 2024

The call for papers was developed by the Enactus Global Research Network Committee. We wish to acknowledge and thank Dr Donella Caspersz for suggesting the theme.

COVID brought to the fore the challenge of "sustainability" – not only of the environment, but also our societies and, relatedly, our decision making and governance frameworks. The imperative of innovation and business skills in addressing these challenges have increased in significance. Enactus has a key role to play in responding to this challenge. We recognise the importance of our community's own learning in this area and are thus supporting a symposium for scholars, practitioners, academics, researchers and students to submit social enterprise, impact, and Enactus-related original research work, work in progress, case studies or information about their innovations to foster the debate about how we can use innovation and business skills to ensure a sustainable world.

Key questions that may be addressed include:

- Do we need to think differently about how innovation and business skills are developed and applied to ensure sustainability?
- How does our work on the UN SDGs connect to using innovation and business skills to ensure sustainability?
- Does "place" or our different geographies create unique ways in how we tackle the challenge of sustainability using innovation and business skills?
- How can we engage with our Universities, Colleges, and / or students, and / or partners to ensure the preparation and training of innovation and business skills to respond to the challenge of sustainability?
- How do our activities engender peace and trust in society?

Thank you to all the members of our network who have responded to this call for papers and shared their research.

Research Note

Transformative Listening: an underlying mechanism of social change

Dr Donella Caspersz
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Enactus Australia Western Region Coordinator
Enactus Global Research Network Committee

COVID 19 brought to the fore the challenge of "sustainability" – not only of the environment, but also our societies and, relatedly, our decision making and governance frameworks. However, attaining "sustainability" not only requires solutions that respond to the "here and now" of these challenges; a pipeline of social change activism, knowledge and skills that will pivot and respond to challenges of the future is also needed. Collaborations between key societal stakeholders of government, industry, and education are key to fostering this pipeline. This is because the former establishes the policy settings, while the latter delivers the "pipeline" of social change activists.

The 2024 Enactus Global Research Conference collection of extended abstracts illustrate the various pathways that researchers identify to develop this pipeline. A bird's eye view of these uncovers emphasis a common theme - the importance of "transformative listening" as an underlying mechanism.

Transformative listening is distinguished from evaluative and interpretive listening. Whereas evaluative listening is listening that responds immediately to another's suggestion with a judgement that it is correct or incorrect, and interpretive listening engages a feedback-response cycle between listener and speaker; transformative listening is listening that "includes a willingness to alter ideas in a discussion, to engage in dialogue, to entertain other points of view, and hold them as valid, independent of whether they are accepted or not." (Coles, 2008, p 24): in other words, listening that engages thinking and – most importantly – listening that *changes* the status quo of knowledge, assumptions and even behavior to reflect new and innovative strategies (Caspersz & Stasinska, 2015).

Yet though University students spend more time listening than using any other communication form in learning (Emanuel, et al., 2008) there is little attention to teaching listening. Research (Caspersz & Stasinska, 2015) shows that to teach listening requires attention to how "listening filters" within external (eg noise) and internal (eg linguistic differences) environments (Thompson et al., 2010) influence the ability of students to care-fully listen (Shalif, 2005): not solely listen to the words to evaluate or interpret another's message but to the speaker's "coping and resilience skills, resistances to problems, exceptions to the problem-saturated story, and absent but implicit hopes, values, skills and knowledge" that are also implicit in the spoken word

but often not explicitly enunciated (Shalif, 2005, p 37) This approach to listening requires the listener to "plan" to receive, comprehend, interpret, evaluate and respond to what is being said and by so doing engage in collaboration with the speaker to listen to re-invent new action that can respond to a problem.

When approached in this way, listening becomes a transformative capability that enables the listener to gain insights they may not have otherwise gleaned but which can craft an authentic and collaborative response to a problem that may be more relevant and sustainable. As Palmer reflects, *'Much of the emending of history (e.g. to end slavery or apartheid) has been sparked by small circles of people talking and listening to each other respectfully, reflectively, and intentionally*' (2010, p.126).

The papers included in this compendium illustrate the many potential pathways that use "careful listening" (Shalif, 2005) to achieve social change. Falling into six key themes of social business, entrepreneurial skills, sustainability, the UN SDGs, education approaches and student-led research, the research highlights the importance and effectiveness of this underlying mechanism. Importantly, the compendium showcases the seriousness and intent of Enactus academics in their quest for the excellence that enables our Enactus students to themselves be excellent in their own work.

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Call for Papers Enactus Global Research Network Conference EWC 2025

"Empowering Graduates for a Sustainable Future: Integrating Social Entrepreneurship and Sustainability in Higher Education"

Submissions to this call may include work-in-progress case studies, teaching innovations, practice innovations, and other research.

Graduate attributes have long been the subject of debate for educators and stakeholders in higher education. While some resist the notion that universities are responsible for fostering attributes leading to employability, it remains a reality that the university experience is the "last stop" before students transition into their careers and the broader world. Today's graduates face unique challenges, particularly around global sustainability and social equity, making the development of attributes related to social entrepreneurship and sustainability essential.

Acceptance of this reality has further stimulated debate around how much universities should focus on "hard" versus "soft" skills. Soft skills, however, underpin effective problem-solving and are key to driving social change and social entrepreneurship. They empower students to engage with communities, practice ethical leadership, and contribute to building a sustainable future.

In this context, we invite submissions exploring how fostering graduate attributes, particularly those related to social entrepreneurship and sustainability, can drive positive change in society. Papers may address questions such as:

How can universities teach soft skills that empower graduates to become social entrepreneurs and sustainability champions?

In light of today's global challenges, should educational programs prioritize skills related to social impact and sustainable practices?

How significant are soft skills in fostering peace, trust, and community development in the context of sustainability?

We invite extended abstracts of 1,000 words that address these and related questions.

Abstracts are due by July 30 2025 and may be submitted here:

https://forms.gle/ag8XLvwU8yoF4Nb17

Track 1 – Social Business

1.1 Leveraging Indigenous Knowledge Systems for Sustainable Business Innovation: Insights from Great Zimbabwe Ruins

1.2 Meta-organizations and the strengthening of Social Business - insights from ENACTUS' experience in the Amazon rainforest

1.3 Role of Rabbit Farming in Enhancing Food Security in Rural Areas

1.4 The SMART Way to Skills Revolution:
The Tech Mahindra Foundation Story

Leveraging Indigenous Knowledge Systems for Sustainable Business Innovation: Insights from Great Zimbabwe Ruins

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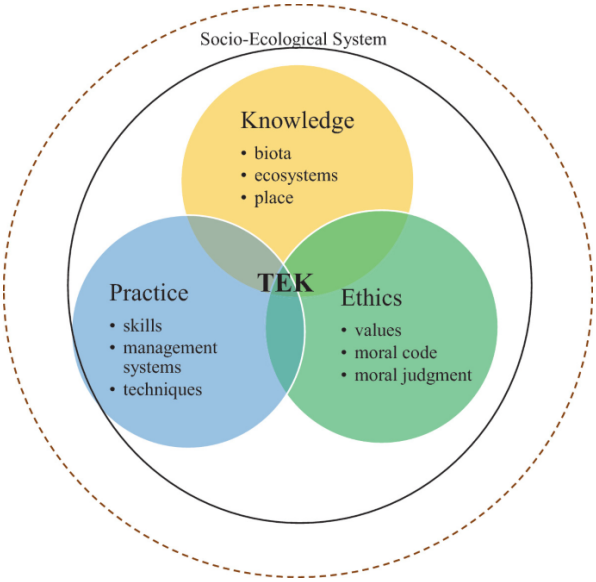
Introduction:
In the pursuit of economic growth, modern businesses often resort to practices that inadvertently harm the environment. However, the integration of Indigenous Knowledge Systems (IKS) provides a sustainable alternative for fostering innovation while nurturing ecological balance. Drawing insights from the historic Great Zimbabwe Ruins, this abstract explores how traditional knowledge can inspire contemporary business strategies that align with modern sustainability goals.

This paper explores the integration of Indigenous Knowledge Systems (IKS) into contemporary business practices to promote sustainable innovation and economic growth. The case study focuses on the Great Zimbabwe, a historical site represented by a rich tapestry of cultural heritage and ecological practices that provide valuable insights into sustainable management and innovation.
This abstract is positioned to provide a foundation for deeper exploration into how businesses can innovate by learning from indigenous methodologies, particularly those exemplified by the Great Zimbabwe Ruins, enhancing both ecological sustainability and economic growth.

Literature Review:
Literature on Indigenous Knowledge Systems underscores their relevance in sustainable resource management, emphasizing a holistic view of ecosystems. Historically, indigenous practices have demonstrated an intricate understanding of environmental stewardship, with case studies from Zimbabwe highlighting sustainable agriculture, water conservation, and architecture. Studies reveal that the Great Zimbabwe civilization successfully utilized stone architecture techniques that harmonized with their environment, promoting sustainability and resilience, which modern businesses can emulate to innovate responsibly.

According to the Great Zimbabwe.com “The Great Zimbabwe ruins are the largest collection of ruins in Africa south of the Sahara… they are testament to a culture of great wealth and great architectural skill.” It goes on to add, “The granite walls - embellished with turrets, towers, platforms and elegantly sculpted stairways - seem to have had no defensive function.” The website adds “…the huge chizelled walls of the Great Enclosure, with its soaring stone tower and complex chevron patterns, are a work of high engineering skill.”

W. K. N. C. Withanage and M. D. K. Lakmali Gunathilaka highlights a Socio-Ecological System that will be used as a model for this study. The model has three major arms. These are Knowledge, Practice and Ethic. Though several studies saw indigenous knowledge as the origins of people's
local knowledge, it is a collection of values as shown below. Indigenous people's wisdom is derived from a variety of philosophical systems.



Methodology:
The research employs a multidisciplinary approach, integrating qualitative analyses of historical records, interviews with local Zimbabwean elders, and case studies of organizations that have embraced IKS in their sustainability initiatives. Additionally, secondary data from archaeological and anthropological studies provides context on the socio-economic structures of Great Zimbabwe, offering insights into how traditional practices can inform modern business models.

Findings:
Findings indicate that Indigenous Knowledge Systems emphasize adaptability and resource conservation, principles that significantly contribute to sustainable business innovation. The architectural marvel of Great Zimbabwe, for instance, demonstrates an efficient use of locally available materials without compromising the environment. Businesses adopting similar frameworks report enhanced sustainability, reduced ecological footprints, and increased community involvement.

The findings can be used to enhance Enactus projects that are done in different areas. When the projects are being done it's important to take into consideration local knowledge systems to create businesses with locally available resources. This is key when it comes to sustainability.

Resource availability is key to the sustainability business and when they are found locally it helps cut costs. This makes businesses more viable as their costs are cut to a minimum.

Discussion:

The discussion pivots around the integration of IKS in developing business strategies that are not only sustainable but also culturally inclusive. Analyzing the structural ingenuity of Great Zimbabwe delineates a blueprint for resource-efficient business models. Moreover, the inclusion of indigenous perspectives in decision-making processes enriches innovation pipelines, offering novel solutions derived from centuries of ecological attunement. The engineering brilliance can inform the construction industry that uses local resources to create long lasting infrastructure that is environmentally friendly. The fruits in the area also give hints of agriculture that can be grown with little or no effort.

Contributions:

This study contributes to the ongoing discourse on sustainable business practices by highlighting the value of indigenous insights in driving growth. It advocates for a paradigm shift towards integrating traditional knowledge with contemporary technological advancements, fostering a hybridized approach to sustainability. The research underscores the potential of IKS to bridge cultural integrity with economic imperatives, providing a resilient framework for future business development. The core of this research was founded on an Enactus Project that was done by Enactus Midlands State University. Project CESIK – Community Engagement through Scientific and Indigenous Knowledge was established in 2012 and the project is still on going. This proved the concept that this paper is based on.

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Meta-organizations and the strengthening of Social Business - insights from ENACTUS' experience in the Amazon rainforest

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Introduction

The Amazon rainforest is a fundamental common good for life on the planet. However, despite its incontestable importance for the preservation of biodiversity and for combating climate change, it's undergoing an alarming process of destruction, which could lead the region to a tipping point (Lovejoy and Nobre, 2019). Therefore, scientists have been emphatic, warning that saving the Amazon is a race against the clock (Lapola et al., 2023).
There is no magic formula for face this challenge, but we know that it involves not only immediate action to protect against deforestation, but also the strengthening of an alternative development model, based on forms of sustainable entrepreneurship that produce financial, environmental and social gains (Shepherd and Patzelt, 2011), as usually operated the social businesses. By using market tools to solve socio-environmental problems, these ventures have been able to tackle numerous Amazonian problems, such as cleaning up rivers, developing sustainable value chains and access to quality water (Fernandes, Sousa-Filho and Viana, 2021). In this sense, it has become increasingly clear that it is important to promote the creation and management of social business in the Amazon, especially when it is observed that these ventures still suffer from various constrains. Whether due to aspects inherent to their hybrid nature (Pache and Santos, 2013) or due to regional particularities (e.g., continental dimensions, technological gaps, poor logistics, and scarcity of human capital), many ventures are still unable to advance in their missions and generate concrete social changes.

As a global organization of leaders committed to using business to generate positive socio-environmental impact, ENACTUS has been contributing to training entrepreneurs and developing social entrepreneurial intentions (Sousa-Filho, Granados and Fernandes, 2023). For more than a decade, this organization has been working in the Amazon. While it has significantly impacted thousands of lives through innovative projects, its influence on social business development in the region is not deeply understood.

By observing the ENACTUS structure it seems that an interesting way to understand its performance more deeply is to look at it as a meta-organization, focusing to the particularities that organizations composed by other organizations have in terms of activities and results (Arhne and Brunsson, 2005). Face to several knowledge gaps presents in the interfaces between this literature and our context, this research aimed to answer: how Enactus has contributed to strengthening social businesses in the Amazon?

Literature review

Meta-organizations are defined as organizations which members are also organizations, a particular type of organization that differs both from "traditional" organizations (with individual membership) and from networks. Although this specific affiliation leads to aspects such as structural weakness, high dependence on its members, and the scarcity of its own resources, meta-organizations have been recognized for their ability to articulate collective efforts, deal with multilevel problems, and address complex sustainability issues (Berkowitz, 2018). By highlighting their roles in tackling challenges such as climate change (Chaudhury et al. 2016), the loss of marine biodiversity (Berkowitz and Grothe-Hammer 2022), and forest conservation (Fernandes and Lopes, 2022), the literature has increasingly identified them as an innovative governance mechanism (Berkowitz et al., 2022).

The debate around this organizational form based on collaboration has spawned a myriad of insightful works, however there is still a lack of knowledge about the role and functions of meta-organizations in the field of entrepreneurship (Berkowitz and Bor, 2018), specifically focused on social businesses.

Methodology

ENACTUS is an innovative initiative that improve social ventures projects in different countries and universities. Drawing on the experience of ENACTUS teams established in the Amazon region, we realized a qualitative case study, combining primary and secondary data of projects and student's trajectory. Primary data included 22 in-depth interviews with students and advisors, as well as observations from local events and challenges. Secondary data consisted of documents such as annual reports, videos, and social media, enabling a unique set of longitudinal data. These were analyzed through content analysis to gain insights into ENACTUS's impact on social businesses and how the characteristics of meta-organizations have affected the creation and development of social enterprises in the region.

Findings

The results demonstrate that ENACTUS has facilitated not only the establishment of social enterprises but also the training of leaders who play a pivotal role in their development. These leaders are equipped with the necessary skills to manage a diverse range of organizations, including third sector entities, incubators, accelerators, and even government agencies. The training obtained through mentoring offered in ENACTUS calls for proposals (in partnership with organizations that support this meta-organization in Brazil and around the world) and the exchange of information that this meta-organization fosters among its members has enabled students from teams in the Amazon to obtain knowledge that is not covered in their universities. This demonstrates a clear link between the multi-stakeholder composition of ENACTUS and the results provided to the social business ecosystem. In addition, is to observe possible this link on two aspects: (i) the involvement of multiple actors during the ENACTUS process enables the emergence of alternative solutions; (ii) this inter-institutional articulation (involving the universities, companies, and civil society) builds a favorable macro-environment for businesses engaged in tackling Amazon problems.

Discussion

By demonstrating that indirect influence is as relevant as direct influence in the creation of social businesses, the research reinforces that ENACTUS has fulfilled its mission of creating an impact on society through students and on students. Taken together, these results lend support to relevance of meta-organizations for social entrepreneurship ecosystems, as well as to the generation of value and impact associated with the three dimensions of sustainability in a wide sense - environment, social, and economic.

Contributions

This paper explores gaps in social entrepreneurship literature, focusing on meta-organizations within this ecosystem. It provides insights for leaders to enhance their programs and strategies by leveraging innovative, multi-stakeholder models like ENACTUS. The findings offer guidance on engaging universities and partners to advance social business, particularly in addressing challenges in the Amazon region.

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Role of Rabbit Farming in Enhancing Food Security in Rural Areas

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Introduction

Food security, as defined by the FAO (2023), is a situation where "all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life". While South Africa is food secure nationally, about 24% of households face food insecurity due to economic disparities (World Bank, 2021). SANHANES (2023) revealed that 20 million individuals in South Africa experience food insecurity, with around 27% of households reporting inadequate access to food.Communal areas in the country are particularly vulnerable, with high levels of food insecurity and youth unemployment, which stands at 62.1% for those aged 15-24. Rabbit farming offers a sustainable solution by providing both income and nutrition to rural communities, helping to alleviate food shortages and creating job opportunities.

Literature review

Agriculture remains a crucial sector for many households in developing countries, particularly those in rural areas (Kadzamira & Kazembe, 2015; Proctor & Lucchesi, 2012). Smith et al., (2022), indicate that Africa's food market will grow by over 200% between 2010 and 2030. In South Africa, meat demand is projected to increase by around 30% (Jones & Taylor, 2023). These trends highlight the growing concern regarding South Africa's capacity to meet the escalating protein needs of its population.

Rabbit Meat as a Solution

According to recent analyses, chicken remains a popular choice of meat even though; it is relatively expensive compared to alternative meats. Rabbit meat, on the other hand, offers a cost-effective and versatile substitute. It can efficiently replace chicken in meals, particularly for families of 4 to 6, as it can be consumed in one or two meals, reducing the need for refrigeration or preservation methods (Smith et al., 2022).Rabbit meat is known for its high protein content of approximately 21.0%, which surpasses that of other white meats (Hernandez & Dalle Zotte, 2023). It also has a lower fat content of about 4 % per kg, compared to 6.0% for chicken and 15% for beef. Additionally, rabbit meat is lower in moisture, calories, and cholesterol compared to chicken, making it a healthier option (Hoffman et al., 2024). Rabbit meat also recognized for its low cholesterol content compared to other types of meat. It contains approximately 73 mg of cholesterol per 100 grams, which is significantly lower than

beef or pork, making it a heart-healthy choice for those looking to manage cholesterol levels (Hsu et al., 2023). In addition to its low cholesterol and high selenium content, rabbit meat is rich in essential amino acids, vitamins, and minerals, contributing to a balanced diet (Smith et al., 2023). These attributes highlight the potential of rabbit farming as a viable and beneficial alternative to traditional meats, especially for improving food and nutrition security in South Africa.

Despite these benefits, rabbit meat consumption in South Africa remains low compared to regions such as Europe and Asia (Resurrection, 2023).

South Africa's rabbit meat exports have been growing steadily, although they still represent a niche segment of the overall meat export market. In 2022, South Africa exported approximately 150 tons of rabbit meat, a slight increase from previous years (Smith et al., 2023). This growth has been driven by an increasing global demand for healthy, sustainable meat options, as well as efforts by local producers to meet international quality standards. However, challenges remain, including the need to scale production and improve supply chain logistics to fully capitalize on these opportunities.

Mating and Reproduction of rabbits

Rabbits have a notably shorter gestation period, lasting just 28 to 31 days. This rapid gestation allows for quicker turnover and more frequent production cycles compared to any livestock. Rabbits can produce multiple litters each year, each consisting of 6 to 12 kits, leading to higher overall reproductive output within the same timeframe (Vohra et al., 2023; Reddy et al., 2022).

Secondly, rabbits' induced ovulation, allows them to conceive immediately after giving birth if re-mated. This feature contributes to their high reproductive efficiency, as does can be bred again without waiting for a specific cycle, maximizing their reproductive potential throughout the year (Reddy et al., 2022). This continuous breeding ability allows for consistent meat production, high turnover and efficient production (Vohra et al., 2023).

Rabbit Husbandry Practices and Land Requirements

The adaptability of rabbits to diverse environments, their minimal space requirements, and low feeding costs make them an ideal choice for small-scale farming in rural settings. Studies by Ozung and Oko (2019) suggest that rabbit farming has a low environmental footprint, which contributes to its sustainability in areas with limited resources. In South Africa, government initiatives such as the Agricultural Research Council's rabbit farming projects aim to promote the practice as a way of boosting rural income and enhancing food security (ARC, 2022). However, challenges such as a lack of technical support and market access continue to hinder widespread adoption (Modise & Sefoko, 2020).

Methodology

The research was conducted using a secondary data analysis approach. This involved gathering

existing data from various sources, including industry reports, academic publications, and government statistics, to understand the trends, challenges, and opportunities in the rabbit meat industry. The focus was on analyzing data related to rabbit producers and consumers, export and import statistics, and market dynamics

The data was analyzed using a combination of quantitative and qualitative methods:

- Quantitative Analysis: Statistical tools such as descriptive statistics were used to quantify the production volumes, export trends, and market share of rabbit meat.

- Qualitative Analysis: Content analysis was employed to interpret the qualitative data obtained.

By combining these methods, the research provided a holistic view of the rabbit meat industry, highlighting key trends, opportunities, and challenges based on the secondary data reviewed.

Findings

Markets
Food and Agricultural Organization Statistics (FAOSTAT, 2023) found that in the last 10 years a great reduction in rabbit meat production was observed in Europe (−41.2%), while increases occurred in Africa at an average of 23.5%.

South Africa has been the home of commercial rabbit farming for the past ten years (Lubinga, 2021). Furthermore, Thulo (2020) stated that South Africa exporters 80% of its rabbit meat produced, while 20% is consumed domestically. Between 2016 and 2020, the value of rabbit meat exports exponentially increased from R1.249 million to R2.306 million.

Traditional perspective
In context of rural areas, rabbit meat is associated and seen as a meal for inferior people in communities (Maria et al., 2017). A total of (71.3%) of the respondents who have consumed rabbit meat before were male and 28.7% were female. This is due to the fact that hunting is usually performed by males and rabbit's feet were once thought to be lucky charms (Paladan, 2022).

Religious perspective
There are beliefs that forbid the consumption of rabbit meat as it is classified as unclean (Hoffman et al., 2004).

Conclusion
Rabbit farming has demonstrated significant potential to enhance food security and livelihoods in rural areas. The study concludes that with proper support, including extension services, training, and market access, rabbit farming can play a critical role in combating food insecurity. The scalability of rabbit farming, coupled with its nutritional benefits and low production costs,

suggests that it should be promoted as part of broader rural development and food security initiatives.

Contribution of the Study

This study contributes to the growing body of literature on sustainable farming practices and their role in enhancing food security in rural areas. The research highlights an underutilized but promising agricultural practice. The findings provide practical insights for policymakers, extension workers, and rural development organizations aiming to implement strategies to alleviate food insecurity.

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The SMART Way to Skills Revolution: The Tech Mahindra Foundation Story

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Introduction

As India has reaped the benefits of its burgeoning human capital, investments in vocational training especially among the youth has increasingly gained prominence. Although practitioner reports and research studies exist, there is a need for extensive research in this area, especially on how vocational skills are provided to underprivileged populations. Specifically, it is critical to understand how such initiatives can be made *sustainable* so that it continues to benefit a large population of individuals. This research study seeks to address these important questions as we endeavour to document best practices to promote "… inclusive and sustainable economic growth, employment and decent work for all" (UN Sustainable Development Goal 8).

Literature review

While the global population continues to age, India has a unique advantage as more than 67% of the Indian population are in the age group of 15 – 64 years (O'Neill, 2024) with nearly half of the Indian population being below the age of 25 years (Rajvanshi, 2023). This "Demographic Dividend" (Sharma and Nagendra, 2016 p. 8) points to the availability of immense human resources for the foreseeable future (Malin and Tyagi, 2023). Although this is a unique advantage, such human resources would simply remain as a *potential*, unless they are educated and provisioned with appropriate skills. Further, these individuals may also belong to underprivileged backgrounds, which means that a concerted effort is needed to train them to participate in the workforce (NSDC Report, 2020). Successive Indian governments had established several organizational structures and framed policies specifically geared towards vocational training and skills development (Prasad et al. 2016).

Prior research shows that in India individuals acquire their vocational skills either through the *educational* route (i.e., universities, industrial training institutes etc.) or through the *experiential* route (i.e., on the job training, self-study etc.) (NSDC Report, 2020; Sharma and Nagendra, 2016). The educational route is standardized since the government sets standards for the curriculum and certification requirements. The experiential route is less standardized or non-

standardized, and the underprivileged population may find it hard to access either of these routes. Therefore, this study seeks to answer the following research questions:

- How do we offer vocational skills training to the underprivileged population who lack access to formal educational avenues?
- Importantly, how do we ensure that vocational skills training and development is sustainable?

We document the case of Tech Mahindra Foundation (TMF) which began its journey of setting up SMART Academies and Centers more than a decade ago to serve underprivileged individuals. This case study describes the remarkable efforts of TMF in various parts of India, to nurture and sustain skills development for underprivileged individuals.

Methodology

We followed a qualitative case study methodology to address the research questions in this study (Yin 2003). We developed semi-structured interview questions to understand the strategic, operational and functional aspects of these centers. We interviewed key stakeholders in several TMF SMART centers to collect information about these aspects. Based on the interviews, we identified core themes to address the research questions on how the vocational skills are provisioned to program participants and made to be sustainable.

Findings

Our study highlighted several core aspects of the functioning of the centers which contributed to their success. We highlight three interesting findings here. One of the interesting findings is with respect to the focus on soft skills development. Through its years of being in the field, TMF realized that for individuals to participate well in the workforce, it is not only important to focus on vocational skills but also to have equal emphasis on soft skills development. The focus on soft skills such as spoken English and presentation skills has helped underprivileged individuals greatly in terms of placement and long-term employment, contributing to the sustainability of the program.

The second interesting finding is related to partnerships. TMF centers are established in partnership with the local Non-Governmental Organization (NGO). NGOs facilitate the everyday functioning of the centers by providing employees and volunteers. TMF provides the financial and corporate infrastructure to facilitate the smooth functioning and sustainability of these centers. These NGO-private partnerships are critical in establishing a streamlined and well-structured center.

The third interesting finding is related to the human element. We found that individuals in NGOs matter a great deal since sustainability not only requires motivated individuals, but also service-minded individuals wanting to make a change in society. These employees and volunteers in the NGOs and TMF form a human resource capability which is critical to the success of the TMF centers.

Discussion

This study contributes to our understanding of how vocational skills can be successfully provisioned to underprivileged population in India. Most importantly, it provides insights into the factors which contribute to the sustainability of these initiatives. Our case study highlights that apart from vocational skills development, it is important for underprivileged individuals to be trained in soft skills to be successful. We also found that an effective NGO-TMF partnership contributes to the long-term sustainability and growth of the center. Further, we found that a dedicated employee and volunteer base is critical to the long-term sustainability of the center to continue to service the underprivileged population.

Contributions

Our study provides important academic and practical insights. Future research can delve into other important aspects of vocational training such as enrolment and retention strategies, reskilling and skills-mapping. Further, more research can also be conducted on marketing strategies for recruitment such as on word-of-mouth, social media and other aspects. From a practical standpoint, this research offers a credible pathway for companies striving to make a significant change in society, by offering such educational opportunities to individuals.

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Track 2 – Entrepreneurial Skills

2.1 Building Entrepreneurial Mindsets at King's College London: The Case Study of Enterprise Experience Award

2.2 Development of Entrepreneurial and Leadership Skills in the Perception of Participants of a Brazilian Enactus Team

2.3 Learning about Social Responsibility: the experience of teamwork

2.4 Model for the Development of Entrepreneurship Ecosystems in School Communities

2.5 The value of Enactus as an Entrepreneurial Extra Curricular Activity: student learnings and educator insights

Building Entrepreneurial Mindsets at King's College London: The Case Study of Enterprise Experience Award

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Introduction

There have been many attempts to define entrepreneurial mindsets. In 2019, King's Entrepreneurship Institute at King's College London developed Seven Skills of an Entrepreneurial Mindset framework – a comprehensive framework that aims to tangibly define entrepreneurial mindset and that informs all of the programmes delivered by King's Entrepreneurship Institute. The Framework – which combines seven transferable skills of disrupt, compel, commit to growth, think lean, validate, build teams, and get it done – has emerged as a result of our extensive work with entrepreneurs, vibrant King's College London community, and research. The skills included in the Framework are aimed to prepare individuals for any career path they might choose – from becoming entrepreneurs to acting intrapreneurial within organisations. For example, the skill of disrupt prepares students to think about how to identify and address some of the biggest challenges that we are collectively facing – e.g. challenges related to climate change.

King's Entrepreneurship Institute's rich programme aimed to improve entrepreneurial skills of our students, staff and alumni includes a range of curricular, co-curricular and extra-curricular programmes. Some of the programmes are: experience award – called Enterprise Award – which is included in official students' records, range of workshops related to specific skills as outlined above, internships aimed at breaking barriers to entrepreneurship for students from underrepresented backgrounds, etc. The focus of this paper will be on Enterprise Award – our year long programme aimed primarily at undergraduate and postgraduate students from King's College London. The Award is a co-curricular programme, that aims to develop all of the skills in the Framework through series of taught, interactive sessions; interactive activities; and reading materials.

Literature review

Skills such as team working, critical thinking and problem-solving, flexibility and adaptability, and more widely entrepreneurial skills have been identified as critical for employability (Chartered Management Institute, 2021). Previous research has shown that skills and mindsets of students can be developed by pedagogical interventions that are aimed to develop entrepreneurial mindsets (Lindberg et al., 2017). In addition, the literature suggests that entrepreneurial behaviour of students can influenced by entrepreneurial education activity (Cui and Bell, 2022). However, although some research spanning across entrepreneurial mindsets development and employability has been undertaken, there are still research gaps to be addressed. In our research project – which is still under development – we have been aiming to answer two research questions:

1. How has our year-long co-curricular pedagogical intervention developed entrepreneurial mindsets of students at King's College London?
2. Does the development of entrepreneurial mindsets contribute to employability and what are the mechanisms through which entrepreneurial skills and mindsets influence employability?

Methodology

To answer the first research question indicated in the section above, we have employed pre- and post-evaluations of students' confidence in the skills within Seven Skills of an Entrepreneurial Mindset framework. Using questionnaires, students were able to rank their confidence in relation to specific skills before the Enterprise Award started and once they have completed the content of the Enterprise Award. To answer the second research question – and this is still work in progress – semi-structured interviews with completers of the Enterprise Award will be undertaken. Semi-structured interviews will explore the skill development in more depth, as well as the impact of the skill development (i.e. entrepreneurial mindset development) on employability and mechanisms through which this occurs. Considering that a large number of students gets involved in a large number of other co-curricular and/or extra-curricular activities, alongside Enterprise Award, which are all likely to contribute to various skills development and potentially employability, qualitative methodology was chosen to highlight direct the direct perceived impact of Enterprise Award on skills development and employability.

Findings

Pre- and post- evaluations of students' confidence strongly suggest increase in confidence along all of Seven Skills of Entrepreneurial Mindset framework. The biggest increase has been when it comes to skill get it done, while the smallest increase has been noted in commit to growth. Semi-structured interviews are planned to take place in September-October 2024, so further findings will be presented at the conference.

Discussion

Entrepreneurial skills have received a lot of attention, as it is believed that they contribute not only to successful venture creation, but can influence employability. Previous research highlights that entrepreneurial education activity can contribute to development of

entrepreneurial mindsets and influence entrepreneurial behaviour. Our research highlights successful intervention aimed at the development of entrepreneurial mindsets, and highlights how entrepreneurial mindsets developed over a year-long intervention. In addition, our research sheds light on mechanisms through which entrepreneurial skills can increase employability.

Contributions

Our research highlights how co-curricular programme can successfully develop entrepreneurial mindsets of students. In addition, our research will shed some light on how entrepreneurial skills can impact employability. Conference participants will be able to learn about Seven Skills of an Entrepreneurial Mindset framework developed by King's Entrepreneurship Institute. In addition, the participants will be able to hear about successful delivery of King's Entrepreneurship Institute Enterprise Award programme, including motivations for programme development and practical aspects of programme delivery.

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Development of Entrepreneurial and Leadership Skills in the Perception of Participants of a Brazilian Enactus Team

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Introduction

This study explores the development of entrepreneurial and leadership skills among participants of a Brazilian Enactus team. Dyer et al. (2019) state that innovation is the lifeblood of the global economy and a strategic priority for CEOs, with creativity identified as the top leadership competency. Thus, developing leadership, innovation, creativity, and entrepreneurship-related competencies should be a priority in undergraduate courses. These competencies are interrelated, as effective leadership often drives innovation, and entrepreneurship inherently requires both leadership and innovative thinking (Drucker, 2016; Sarkar, 2014).

Literature review

An Enactus team learns to think and act quickly, replacing vertical hierarchy with collaborative relationships. Blanchard and Johnson (2015) argue that organizations must act quickly with fewer resources to keep up with technological changes. This model prepares students for agile environments, developing leadership and entrepreneurial skills. Oliveira and Marinho (2015) identify 14 leadership competencies, and Lenzi (2008) presents ten entrepreneurial competencies. Bessant and Tidd (2019), Carvalho and Ritto (2020), and Grando (2012) highlight that entrepreneurship and innovation are interconnected, with innovation being a specific function of the enterprise. Drucker (2016) and Sarkar (2014) emphasize the inseparability of these concepts, as entrepreneurship often requires innovative solutions, while leadership provides the necessary direction and vision. Oliveira and Marinho (2005) include implementing changes and innovating among leadership competencies.

Methodology

This is an exploratory research study (Lakatos and Marconi, 2017) conducted through a survey (Cooper and Schindler, 2003) targeted at participants of the PUC-SP team. The questions were created based on bibliographical references to be answered using a five-point Likert scale of agreement. The link to the electronic questionnaire was sent to team members who responded anonymously. For the analysis of the collected quantitative data, Google Forms© and Microsoft Excel© were used, extracting graphs and percentage data for analysis. However, the study's focus was primarily on a basic level of data analysis, which presents a limitation.

Findings

Responses were obtained from six female students and one male student, aged 18 to 24, all single and engaged in some form of paid activity. The sample size is small and skewed towards

one gender, which is a limitation of this study. Future research should aim to include a larger and more diverse sample to increase the validity and reliability of the results, as well as to ensure a more comprehensive understanding of the impact on a wider population. Table 1 presents the results on the development of leadership competencies, noting that responses in degrees 4 and 5 of the Likert scale express stronger degrees of agreement.

Competency	**Percentage (4 and 5)**
Teamwork	85.80%
Navigating diversity	85.80%
Promoting organizational development	85.80%
Problem-solving and decision-making	85.80%
Entrepreneurship and management	85.80%
Planning and implementing projects	85.80%
Adopting ethical foundations and social responsibility	71.40%
Applying learning theories and strategies	71.40%
Valuing the development of people	71.40%
Developing relationships and interpersonal communication	71.40%
Implementing change, creating and innovating	71.40%
Understanding leadership foundations and theories	57.20%
Managing information and generating knowledge	57.20%
Researching and analysing data	42.90%

Table 1: Development of Leadership Competencies

Regarding entrepreneurial competencies, Table 2 presents the results, where it is possible to identify three competencies below 70% favourability.

Competency	**Percentage (4 and 5)**
Systematic planning and monitoring	95.23%
Commitment	85.70%
Goal setting	85.70%
Persuasion and networking	85.70%
Independence and self-confidence	80.93%
Persistence	80.60%
Quality and efficiency demand	71.40%
Taking calculated risks	66.73%
Information seeking	62.00%
Opportunity seeking and initiative	57.20%

Table 2: Entrepreneurial Competencies

In Table 2, only the competency of opportunity seeking and initiative was below 60% favourably, indicating that more attention may be required in developing this skill.

Discussion

The findings reveal significant development in leadership and entrepreneurial skills among Enactus participants, emphasizing the value of experiential learning. High scores in competencies such as teamwork, commitment, and systematic planning highlight the program's effectiveness. However, lower scores in information seeking and opportunity seeking suggest areas for enhancement. A deeper exploration of why these specific competencies received lower scores could provide valuable insights. It is possible that these competencies are not emphasized enough in the current structure of the Enactus program or may require more targeted activities to foster their development. Additionally, the small sample size, skewed towards one gender, and basic level of data analysis are clear limitations.

Contributions

This study highlights how Enactus programs improve leadership and entrepreneurial skills in university students, supporting their integration into curricula. It reinforces the link between entrepreneurship, leadership, and innovation (Dyer et al., 2019; Bessant and Tidd, 2019), providing insights for educators on strengths such as teamwork and planning, while identifying areas for improvement, such as information and opportunity seeking. Expanding the sample size and integrating more diverse data collection methods in future research will provide a more comprehensive understanding of these dynamics.

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Learning about Social Responsibility: the experience of teamwork

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Introduction

Social responsibility has become, perhaps unsurprisingly, a key graduate attribute of universities. A review of graduate attribute statements from 39 Australian universities (2012) found that *social and community responsibility* was included in 50% of universities' graduate attribute statements (Bosanquet et al, 2012). A further review that incorporated 41 (out of 42) Australian universities, found that all of them included a broader category of "Ethical and inclusive engagement with communities, cultures and nations" in their attributes — abbreviated to *Global citizenship*[1] — by 2015, becoming the top-ranked attribute amongst these institutions[2] (Oliver & Jorre de St Jorre, 2018, p. 825). This suggests that social responsibility, particularly its broader contexts glossed above as global citizenship, is of key importance to universities.

Yet, though there has emerged a corpus of research on teaching social responsibility in specific academic or discipline contexts (i.e., engineering, literature physical activity) in response to these trends, there remains a gap in understanding how to foster social responsibility more generally, or how it combines with other key graduate attributes. The aim of this paper is to present research that explores whether the graduate attribute of social responsibility can be fostered by harnessing the graduate attribute of teamwork in University students. We are interested in understanding the extent to which teamwork fosters a sense of social responsibility in students.

Research Question

How does teamwork foster social responsibility in students?

[1] This broadening of the contexts of social responsibility can perhaps be understood as incorporating universities own USR requirements in the context of the SDGs.
[2] It was ranked 2nd in 2011

Literature review

Social responsibility is a concept that has gained currency in recent decades, in particular corporate responsibility (CSR). CSR refers to the belief that corporations have a responsibility to a wider social good, often encompassing environmental sustainability and ethical practices with an aim of improving social justice as opposed to solely focusing on private economic gain (Crane, Matten, & Spence, 2019). CSR has strong resonance with the Sustainable Development Goals (SDGs), with research on CSR increasingly aligning CSR with the SDGs (ElAlfy et al., 2020).

Within the tertiary environment, corporate social responsibility takes on a particular aspect, leading to what has been called University Social Responsibility (USR). The USR highlights "the social dimension of universities and their important role in society as an educator of future leaders and policy makers", alongside the "need to integrate social responsibility principles into their teaching and research activities as well as into their management and community engagement activities" (Larran Jorge & Pena, 2017, p. 303).

Teamwork is a desirable employability skill (Department of Education, 2002; Suleman, 2016), which is highly valued by graduates and employers alike (Wickramasinghe & Perera, 2010). Still, QILT[3] surveys from 2016 show that students did not rate their degrees as highly for teaching them teamwork skills as for other key factors (e.g. knowledge, critical thinking, independent learning), and collaboration was also rated lower in QILT's 2016 Employer Satisfaction Survey (quoted in Oliver & Jorre de St Jorre, 2018, pp. 828–831).

There is academic evidence that teamwork is a skill that can be successfully taught within the tertiary environment (Caspersz et al., 2006b; Riebe et al., 2010), and also evidence that suggests that teamwork could be used to foster the development of an awareness of social injustice and the formation of social responsibility (Mitchell, 2007).

Enabling students to work effectively in teams has been the subject of much research, with attention paid to general factors influencing efficacy (Caspersz et al., 2003), alongside the impact of specific factors such as gender and country of origin (Caspersz et al., 2002) or cultural diversity (Caspersz et al., 2006a). Drawing on this background we propose that student teamwork has the potential to foster social responsibility in students.

Methodology

The work of Paulo Freire grounds the methodological approach of this study. Freire's seminal text *Pedagogy of the Oppressed (*1970*)* propounds the transformative potential of education to empower students to develop critical literacy, thereby enabling them to address social injustice and develop a commitment to social responsibility informs the research.

To conduct the study, we administered a survey to students completing undergraduate business-related studies. The survey was composed of three components, adapted from previous research on student teams (Caspersz et al., 2006b), social responsibility (Doolittle & Faul, 2013), and

[3] Quality Indicators for Learning and Teaching. A suite of Australian government endorsed surveys for higher education, https://www.qilt.edu.au/

critical consciousness (Diemer et al, 2017). Social responsibility items were drawn from the Civic Engagement Scale (CES), developed, and validated by Doolittle and Faul (2013). Teamwork was drawn from survey items developed from several validated surveys and utilised by Caspersz, Skene & Wu (2006b). Group trust, for instance, included questions about respect and integrity; the interpersonal group process included questions about the recognition of unique contributions of team members, valuing diversity and respecting others' opinions and feelings.

Surveys were administered online between 2023 and 2024. Questions were posed as statements with a 5-point Likert scale response (n=43). The number of usable survey returns was 511 (2023) and 315 (2024). The data was analysed using SPSS simple regression analysis. The research has University ethics approval.

Findings

We found a consistent correlation between teamwork and perceptions of social responsibility in both cohorts: 2023 (.263) and 2024 (.258). We found a smaller correlation between teamwork and socially responsible activity in 2023 (.179). The teamwork variables of most significance were trust (.268 (2023);.326 (2024), interpersonal work group processes (.255 (2023);.280 (2024)), and work group communications (.237(2023);.228 (2024).

These findings reinforce the argument that teamwork has a significant role in the development of social responsibility (Mitchell, 2007). More importantly, though, these findings suggest that group trust, workgroup communication and interpersonal group processes are the key teamwork variables to focus on when aiming to foster social responsibility among students.

VARIABLE	Group	Correlation	TRUST	SHARE	COMM	IPGP	TEAM
SR – PERCEPTIONS	2023	Pearson	.268	.143	.237	.255	.263
		Sig (2-tail)	<.001	.001	<.001	‹.001	‹.001
	2024	Pearson	.326	X	.228	.280	.258
		Sig (2-tail)	<.001	X	<.001	‹.001	‹.001
SR - ACTIVITY	2023	Pearson	.146	.129	.143	.180	.179
		Sig (2-tail)	‹.001	.004	.001	<.001	‹.001
	2024	Pearson	X	X	X	X	X
		Sig (2-tail)	X	X	X	X	X

Table 1: Correlations between social responsibility and teamwork variables

Discussion

The research shows that teamwork has significance for the development of social responsibility and socially responsible activity. In particular, group trust, workgroup communication, and interpersonal work group processes are significant in fostering in students a sense of social responsibility and activity. Gaining an understanding of how teamwork can foster social responsibility has clear benefits for students, the university and the wider society. Better knowledge about if and how teamwork interacts with the development of social responsibility will lead to better outcomes for students, both in terms of their collaboration skills and their

development of social responsibility, two key graduate attributes for almost all Australian universities. This knowledge would also benefit universities, influencing both staff practice and policy outcomes, and ensuring that universities can confidently meet their own social responsibilities. Finally, improving university practices around teaching both teamwork and social responsibility, will result in the production of more socially aware and socially competent graduates, which will benefit society as a whole.

Limitations

The key limitation is that this relies on self-reported data, which has an inherent bias. A further limitation is that the nature of the data set does not permit any investigation of causality between the variables.

Contributions

The research contributes to understanding the significance of teamwork in teaching social responsibility. In finding the significance of trust, workload sharing, and interpersonal work group processes the research contributes insights for the areas to focus on in using teamwork to teach social responsibility. By teaching social responsibility through teamwork, we are not only imparting values but also equipping students with the collaboration skills necessary to innovate for social good.

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Model for the Development of Entrepreneurship Ecosystems in School Communities

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Abstract
In this writing, a model for the development of entrepreneurship ecosystems in school communities, which is based on four pillars, is proposed. These four pillars are Empowerment, Action, Visibility and Sustainability. The model proposes to begin with an understanding of the school community's environment and its context to be able to personalize its approach and make way for effective entrepreneurial initiatives. Then, the mentioned four pillars are developed. The empowerment aspect recognizes the importance of instructing educators and students with the necessary knowledge and tools for the development of an entrepreneurial mentality and innovation skills. This gives way for action, guiding the participants to develop entrepreneurial initiatives. Visibility highlights the importance of divulging project accomplishments through different channels to obtain support, attract resources, and improve the community's esteem. Finally, sustainability reinforces the framework of the model, which goes further than economic sustainability.

Key words: entrepreneurship, business ecosystems, community development, empowerment

The recognition of entrepreneurial education as a vital component that promotes innovation, economic growth and social development in communities has been increasing. Particularly, the integration of entrepreneurial projects and initiatives in schools presents itself as a unique opportunity for cultivating innovation and empowerment in students and teachers.

The model for the development of entrepreneurship ecosystems in school communities that is proposed is based on four fundamental pillars: Empowerment, Action, Visibility, and Sustainability. The development of these pillars requires an understanding of the environment and the context being faced by the school community. Because of this, the model proposes analyzing the situation faced by the school community, considering both internal and external factors. This type of analysis is essential in social projects to be able to comprehend the nature and magnitude of social issues, identifying the subjacent causes, and determining the most

adequate and effective interventions to address them. (DiClemente, Crosby & Kegler 2019). It's important to highlight that the environment analysis in community projects, according to Cnaan and Milofsky (2018), doesn't just implicate comprehending the local geography and demography. It's also about recognizing power relations, cultural dynamics, and historical factors that have an influence in the community.

An environmental analysis is not only pertinent in the beginning of a community project, but also a dynamic process that should be integrated in each phase of the project life cycle to guarantee its success and sustainability (Kretzmann and McKnight, 2017). Similar arguments about environment analysis can be found in previous works, for example Weiss (1995), and Butterfoss, Goodman, and Wandersman (1996). These authors direct their arguments at long term sustainability, relevance, and effectiveness elements that can be derived from an exhaustive environment analysis.

Comprehending the internal factors of a community is crucial to be able to design effective social interventions (Putnam, 2016). Among the internal factors suggested for consideration in the situational analysis are organizational structure, distribution of power (formal and informal), leadership style, access to resources, and the differential factors of the school community. Additionally, factors from the three dimensions of organizational behavior are considered: the individual, the groups, and the social system (Robbins & Judge 2019). This analysis provides specific information about the strengths, areas of opportunity, and needs of the community.

The rigorous analysis of external factors in community projects allows a deep comprehension of intersectoral dynamics and the interconnection within the community, the institutions, and a broader environment, thus facilitating effective collaboration and the achievement of sustainable results (Minkler, 2020). Regarding the external factors that are considered as part of the situational analysis, demographic, social and economic factors are included. It's also recommended to review legal, regulatory, and compliance aspects that could positively or negatively impact the implementation of the model.

It is advised to evaluate the school's community's technological development and the use of technological tools in communication processes. This is due to the fact that technology can be a catalyst for community empowerment by providing tools and platforms that enable citizens to actively participate in solving local problems and decision-making (Benkler, 2017). With this analysis, the goal is to build a picture of the environment surrounding the school community and identify opportunities and/or risks that may arise in the development of the model's implementation.

The first pillar of the model is empowerment. Through different training initiatives, the teachers are equipped with the necessary tools to modify their perceptions about entrepreneurship, strengthen their entrepreneurial skills, and direct their attitudes toward a desire of protagonism as they take part in positive changes in the environments that surround them. According to Seelos and Mair (2005) and Falloye and Matlay (2021) modifying perspectives about social

entrepreneurship can be a contributor to the creation of more inclusive and collaborative ecosystems, fomenting local innovation and promoting sustainable economic development.

These training initiatives take into consideration the profile of the community that is developed with the information obtained in the situation analysis and based on it, the content of the empowerment efforts is adjusted and modified. These processes often take some time as they frequently require individuals to relearn or deconstruct concepts that may have different variations in other concepts. As Jorques (2015) explains, empowerment as a social process involves establishing relationships with other members of the community, making it a long and continuous process.

The workshops and seminars include content about entrepreneurial mindset, diverse entrepreneurship methodologies, and business tools like *business model canvas, design thinking, elevator pitch,* among others. Teaching Business Model Canvas in community projects provides the participants an effective tool to visualize and communicate their ideas in a clear and structured manner, facilitating the planning and execution of entrepreneurial initiatives (Osterwalder and Pigneur 2010). In the case of Design Thinking, it is highly useful for entrepreneurial purposes, as its objective is to generate solutions to problems by focusing on the user and being action oriented. Regarding the Elevator Pitch, its use has gained relevance in the development of entrepreneurial skills, communication, and in brand development and value creation.

Content related to the application of technologies and innovative tools in the classroom is also included. The training efforts are designed by specialists and aim to guide the participating teachers to embark on their teaching and learning processes, include entrepreneurship content within the various subjects they teach, motivate their students to become entrepreneurs, and help them lead their own entrepreneurial initiatives. As stated by Kickul & Lyons (2012) and Hockerts & Wüstenhagen (2010) the participation of the students in social entrepreneurship initiatives can empower them to generate a change in their communities by providing them with the opportunity to identify social issues, develop innovative solutions, and gain a more profound understanding of social and economic challenges they may encounter in their environments. Additionally, it can inspire a sense of purpose and empowerment among the youth, providing them with a platform to make a tangible difference in their environment and beyond (Mair, Robinson and Hockerts, 2016).

The model proposes the integration of the whole school community, which is why the workshops and seminars are also taught to the students. As proposed by Ceballos (2015), the integral development of a community can be strengthened by the active and leading participation of its members, taking community development supported by social empowerment as a starting point. In our model, the students are one of the main beneficiaries, as they represent the continuity of the entrepreneurial culture. The integration of the school community in community projects not only benefits the students and their families, but also contribute to the

socioeconomic and cultural development of the community as a whole (Epstein, Sanders, Simon, Salinas, Jansorn and Van Voorhis, 2019).

For these purposes, teachers select a group of students with the potential or interest in entrepreneurship, and training efforts are designed for the student community. The model stipulates that the workshops and seminars provided to students are complemented by extracurricular activities that promote entrepreneurship. Among these activities are field trips, entrepreneurship fairs, as well as the creation of student clubs and organizations.

In implementing the model in the community of the Manuel Martínez Dávila Secondary School in Vega Baja, 30 hours of seminars and workshops on entrepreneurship and modern technologies were designed to meet their need for a more dynamic and innovative educational program. Nineteen teachers from the school participated, committed to the goal of becoming agents of change for the benefit of their community. This group of teachers was named "Coalition of Entrepreneurial Teachers", and they play an important role as a driving force of change. The compromise the teachers have as agents of change in the community projects is crucial given that it can transform education into a powerful tool for social change (Cram and Chilisa, 2018). According to Sen (2000) agents of change in social communities are catalysts for innovation and transformation, as they challenge the status quo, mobilize resources, and lead collective efforts to generate a positive impact on society.

The second pillar of the model is *action*. Collective action in community projects is essential for promoting social cohesion and generating change among community members (Cnaan and Milofsky, 2018). Through different initiatives, the model surpasses the barrier of mere knowledge transfer and supports the application of new tools in entrepreneurial initiatives. It is important to highlight that, as indicated by Mintzberg & Waters (1985), these action elements in social projects are essential for translating the vision and mission of an initiative into concrete and measurable actions, setting clear goals and deadlines to achieve meaningful results in the social sphere. In other words, participants are not only taught about entrepreneurship but are also guided in identifying opportunities and in developing and integrating entrepreneurial initiatives in their classes and other areas of the school community. This identification of opportunities in social projects involves a deep understanding of the community's needs and dynamics, as well as the available resources and capacities, which facilitates the creation of innovative solutions that are tailored to the local context (Short, Moss, & Lumpkin, 2009). Meanwhile, developing and incorporating entrepreneurial initiatives in community projects strengthens local autonomy and resilience when faced with socioeconomic challenges (Ratten and Jones, 2020).

One of the practices proposed by the model is the coordination of *one-on-one* sessions with the workshop participants. According to Brown and Jones (2020) individualized sessions in social projects provide a safe and confidential space where the participants can explore their worries, strengths, and goals, promoting a greater sense of self efficacy and autonomy. Additionally, Colquitt, LePine, & Noe (2000) indicate that this personalization allows a better alignment between development goals and objectives, which results in a more significant impact on

performance. In these sessions, specific needs and opportunities of the teachers are identified to turn either a lesson or their courses into entrepreneurial courses. The identification of these needs provides a solid foundation to align the training objectives, thereby ensuring relevance and direct contribution (Swanson and Holton, 2001).

It is also suggested to provide teachers with support in the development of extracurricular activities that foster entrepreneurship in and out of school. Participation in extracurricular activities is related to a greater school satisfaction and emotional wellbeing since it provides the students with a sense of purpose, social connection, and personal achievements (Denault & Poulin 2009), while supporting the development of essential abilities for academic and professional success (Mahoney, Cairns, & Farmer, 2003). These activities also influence academic performance, school engagement, student retention, and they reinforce the learning that was acquired in the classroom according to Fredricks & Eccles (2006). More aligned to the purposes of the proposed model, participation in extracurricular activities in community projects promotes the development of soft skills like teamwork, leadership, and communication, which are essential for the personal and professional success of young people (Mahoney, Harris, and Eccles, 2020).

Another important element of the action pillar is the creation of a social enterprise administered by the school community. Social enterprises in school environments have the potential of promoting experiential learning and the development of entrepreneurial and leadership abilities among the students while addressing social and environmental problems that are relevant to the school community (Brown, Bull, and Cromie, 2018). Regarding the students, the participation in the creation and management of the social enterprise can empower them by providing them with a practical and meaningful experience in solving real problems (Irvine and Anderson, 2004). This social enterprise should be created based on the strengths and opportunities identified in the community situation analysis, considering the capacities, resources, and preferences of the teachers and students. The purpose of this social enterprise surpasses the objective of generating revenue for the school. This social enterprise should also serve as model of entrepreneurship and should be integrated into the school's teaching process.

It is worth noting that the model proposes the development of commercial initiatives and academic enterprises based on the areas of expertise and strengths of the school community. These initiatives generate a series of additional benefits, as presented by Pittaway & Cope (2007). These benefits include the reduction of juvenile unemployment by fostering the development of entrepreneurial skills and mindset among the students, preparing them to create their own job opportunities instead of relying on traditional employment.

As we have discussed, social entrepreneurship stands out as a driving force for social change by offering innovative and sustainable solutions to deeply rooted societal issues. These initiatives not only drive economic growth but also promote inclusion and social equity (Sánchez, C. & Martín, M., 2023). Entrepreneurial initiatives can include activities focused on art, agriculture, educational support services, and even non-profit organizations that address the needs of the

communities. This diversity of entrepreneurial opportunities is aligned with the findings of Gómez, Y. & Lebrón, A. (2021), who emphasize the importance of defining specific profiles of entrepreneurs. Additionally, according to Kickul & Gundry (2002) entrepreneurial initiatives in school education can encourage a proactive and action-oriented mentality between the students, empowering them to identify opportunities, take calculated risks, and follow their goals with determination and confidence.

The pillar of visibility aims to disseminate the achievements obtained from the implementation of the model and to give exposure to the various entrepreneurial initiatives. The visibility of the achievements of social projects is crucial for increasing recognition and legitimacy of social initiatives, which can attract more financial support, resources, and strategic collaborations for the sustainability and the continuous growth of the project (Phillips, Smith, 2011). Additionally, it can generate a positive impact on the public perception and the community image, promoting greater social cohesion and a sense of belonging among its members (Bornstein, 2007). The model proposes the use of different communication channels, among which are academic forums, social media, and the communication platforms used by the schools. For said purposes the model contemplates the creation of an integrated communication plan with the most suitable strategies and tactics for each community.

Furthermore, the pillar of visibility requires a series of efforts in public relations. The establishment of partnerships with both governmental and private entities is proposed. Partnerships for social projects can facilitate access to new networks, audiences, and resources that might otherwise be beyond the reach of an individual organization (Peredo & McLean 2006). These alliances should be aimed at supporting training efforts, providing exposure to various entrepreneurial initiatives, and promoting the commercialization of products and services from the school community's social enterprise. In addition, the model proposes the presentation of good practices and results in forums. According to Bornstein (2007) the participation in academic forums about social projects facilitates the exchange of knowledge, experiences, and practices between researchers, professionals, and policymakers, thus promoting collaboration and cooperative learning in the field of social action.

Finally, the model for developing entrepreneurship ecosystems in school communities includes the element of sustainability, which according to Hopwood, Mellor, and O'Brien, G. (2005), in social projects, is closely linked to the ability to generate lasting and transformative impact in the community, promoting resilience and long-term well-being. Therefore, the initiatives carried out as part of the model's implementation must contribute to the sustainability of the community in which it is implemented. It is true that social enterprises are designed to generate income, which in itself contributes to the sustainability of the entrepreneurial community. However, the model includes the definition of sustainability from a broader perspective, going beyond the barrier of economic well-being.

One of the main strategies to ensure the sustainability of the initiative is through the development of human capital with an entrepreneurial mindset and good business practices. This

mindset, applied to social projects, can enhance the capacity for adaptation and resilience in the face of changes and challenges, empowering individuals and communities by fostering self-management, autonomy, and the ability to create positive and sustainable changes (Mair & Noboa, 2006), (Seelos and Mair, 2005).

The approach to educate and empower beneficiaries, along with the economic benefits derived from the social enterprise, generates the sustainability the project needs to prevail long-term. According to Elkington (1998), the incorporation of sustainability elements in social projects is crucial to ensure long-term viability by addressing current needs without compromising the ability of future generations to meet their own needs. This combination of efforts generates results that creates a sense of ownership, belonging, and motivation in the members of the school community, strengthening the commitment and participation and fostering a sense of shared responsibility towards project objectives, which can enhance their confidence and capacity to take positive actions (Haslam, Jetten, Postmes, and Haslam, 2009), (McMillan and Chavis, 1986).

In summary, the model considers sustainability form the economic aspect, the development of an entrepreneurial mindset, integration of entrepreneurship in academic initiatives, collaborations with various institutions, and the empowerment of the community regarding their own initiatives. All these outcomes are key to achieving real change in the community.

Conclusion

Making a change in society is not a transformation that happens overnight; rather, it requires the investment of time and effort directed towards initiatives that foster participation and collaboration. That is to say, a society must be transformed through the communities that compromise it and as a consequence of the changes that arise within them. This is why community projects are the foundation that alters the reality of society. With projects that educate, provide tools, drive change, and seek to create a legacy, resilient communities that are capable of responding to societal challenges can be built. Additionally, a structure like the one presented in this model is required to create a community capable of shaping its own changes and bringing entrepreneurship into its fullest expression.

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The value of Enactus as an Entrepreneurial Extra Curricular Activity: student learnings and educator insights

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Introduction

Entrepreneurship has long been recognised as an important enabler for the successful growth of economies and societies (Schumpeter, 1934). Considerable research has been devoted to the study of entrepreneurship and to the study of entrepreneurs (Shane and Venkataraman, 2000). However, entrepreneurship education (EE) research lags behind as it is not exposed to a similar level of scholarship, even though there is considerable evidence that entrepreneurship is teachable (Pittaway and Cope, 2007; Neck and Corbett, 2018).
Neck and Corbett (2018: 8) define EE as "developing the mindset, skill set and practice necessary for starting new ventures, yet acknowledging the outcomes of such education are far reaching". This study delves deep into how EE occurs by exploring the under-researched topic of extracurricular activities (ECAs) through a formal ECA initiative, namely Enactus, and why ECAs should matter for entrepreneurship educators. Enactus is a global network of leaders committed to using business as a catalyst for positive social and environmental impact. The research question we ask is – why should entrepreneurship education scholars care about what and how students learn outside the classroom?

Literature review

Entrepreneurship requires action (McMullen and Shepherd, 2006) and such action requires practice (Neck and Greene, 2011). Neck, Greene and Brush (2014: 9) noted, ''in order to learn entrepreneurship one must do entrepreneurship''. This 'doing' of entrepreneurship provides students with an experiential learning approach, which is defined as "the process whereby knowledge is created through the transformation of experience" (Kolb, 1984: 41). Experiential learning is essentially a 'learn as you go' process and thus, provides a deeper, more meaningful and tangible learning experience (Pittaway et al., 2011). Students are doing within a real as opposed to a simulated context and thus, are constantly reflecting on their learning (Hammoda, 2023). Entrepreneurship educators in the traditional classroom setting, struggle to achieve this doing for reasons including large class sizes, lack of a conducive class infrastructure and competing curriculum demands. Thus, there is an opportunity for entrepreneurship educators to explore more informal forms of learning i.e. extra-curricular activities (ECAs), to complement formal student learning.

ECAs are informal learning experiences, in contrast to the formal classroom-based learning, are typically led by students and complementary in nature to students' programme of study (Hammoda, 2023). Preedy et al., (2020) view ECAs as supportive instruments for students' personal development, employment prospects and their social and community engagement. There are many forms of entrepreneurship ECAs including clubs and societies which are defined as "a community engaged in the task of educating itself" (Brew 1943: 67 cited in Pittaway et al., 2011); community problem solving initiatives (Willis et al., 2024); incubators (Arranz et al., 2017) and entrepreneurship competitions (Pittaway et al., 2015). ECAs within the context of EE, have received scholarly interest in recent years (Debarliev et al., 2022). These informal learning activities have led meaningful change across many aspects in society (Pittaway et al., 2011) and thus are worthy of study.

Methodology

We employed a qualitative exploratory single case study design to add a "more complete, holistic, and contextual portrayal" (Jick, 1979: 603). Even though qualitative studies can be difficult to replicate (Eisenhardt, 1989), case studies are favoured when "'how' or 'why' questions are posed and when the focus is on a contemporary phenomenon within some real-life context" (Yin, 2009:1).

We conducted 22 semi-structured interviews with existing and past Enactus students across Ireland and the United Kingdom (UK). Case study interviewees are specifically selected for their potential to provide rich, in-depth information relevant to the phenomenon under investigation (Eisenhardt, 1989). We leveraged a semi-structured interview protocol for the interviews. To triangulate the results, secondary data was collected. Enactus (ENtrepreneurial ACTion US) educates, inspires, and supports third level students to use innovation and entrepreneurship to solve the world's great challenges (Enactus.org).

Findings

The findings highlight the powerful impact that the Enactus ECA has on the lives of the students who participate especially in terms of their reflective learning. Entrepreneurial action is not sufficient to enable effective education – action followed by reflection is where effective learning is most meaningful. We build on Cope's (2005) framework and identify four forms of student reflection:

1. Inward – reflection about oneself
2. Outward – how to manage and interact with others
3. Backward – project learning
4. Forward – what does this mean for me and my future?

Inward

At the heart of student's development is the development and learning of oneself. Enactus helps students to build confidence, self-efficacy, empathy, and gratitude. In addition, all students felt a contribution towards something bigger – "I think being part of Enactus has reaffirmed that for me that I have to do a job that is creating a difference in the world, I couldn't bear the thought of

walking away with a degree and then just doing the same nine to five every day." (Participant H).

Outward
One participant described the skills and learnings from managing a team – "working with a group of people is a skill. It's a very, very difficult skill to conquer, and I've made mistakes, but I feel like through that I've learned so much about what it takes to direct a group of people in the right direction. I have also learned to say no to things also."

Backward
Students were able to try something new, make a difference through their projects and develop new skills – "A lot of charity and volunteer work is standing outside in the cold with a bucket, hoping people will give you spare change. Yes, that works to a certain extent, but with Enactus, it brings a new way of doing things, bringing different skills and different people together to work towards a goal"

Forward
Enactus changes students in terms of their future career ambitions especially in terms of who they work with, as described in the following quotation – "I would investigate businesses a lot deeper in terms of like their investments, their values, their mission statements, who they work with and what they do would…this is definitely something that I would be looking into for sure".

Finally, by revealing insights into the Enactus ECA experience, we reveal how ECAs can contribute towards the formal classroom experience.

Discussion
The analysis attempted to make sense of the EE and ECA literatures whilst focusing on the single case study to aid entrepreneurship educators in their quest to create students who are future sustainable leaders with a 'start-up' ready mindset. Entrepreneurship educators must focus not only on what but on how entrepreneurship content is delivered (Neck, Greene and Brush, 2014). Students are engaging in entrepreneurship ECAs and other entrepreneurship endeavours – actively learning through such experiential means (Fayolle, Verzat and Wapshott, 2016).
This study centers on the learning and motivation for learning from the student perspective thus, speaking to a heutogogical approach i.e. the human agency in the learning process (Neck and Corbett, 2018; Hammoda, 2023). We take this student learning from ECAs and reorientate it towards the entrepreneurship educator.

Contributions
By sharing insights into ECAs, we advance the EE Scholarship of Teaching & Learning. For entrepreneurship education to work, it must have experiential elements (Cope, 2005). ECAs supporting student's capabilities and skillset development are proven to develop student's entrepreneurship ambitions and leadership skills. We share implications for entrepreneurship

educators and posit that entrepreneurship educators may benefit from adopting an "ECA orientation" in formal entrepreneurship teaching methods. We reveal why entrepreneurship education scholars should care about what and how students learn outside the classroom. All of which underscores the necessity of a conversation on ECAs and how ECAs can contribute towards the formal classroom experience. As entrepreneurship educators need to care about what happens outside the classroom to create sustainable leaders of tomorrow.

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Track 3 – Sustainability

3.1 Advancing a comprehensive skills framework to strengthen Circular Economy education and training for the manufacturing sector

3.2 Examining Drivers of Sustainable Consumption and Consumer Behaviour: The Mediating Role of Perceived Value Using Structural Equation Modelling Approach.

3.3 Enhancing Sustainability in Social Enterprises: Evaluating the Impact of AI through MCDM Approach

3.4 Integrating Sustainability into Agricultural Education and Practice: The Genesis Agroempresarial Project at the University of Puerto Rico at Utuado

Advancing a comprehensive skills framework to strengthen Circular Economy education and training for the manufacturing sector

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Introduction

The circular economy (CE) has gained attention as a way for manufacturing companies to achieve competitive advantages. It is defined as "*an industrial system that is restorative or regenerative by intention and design*" (The Ellen McArthur Foundation, 2013). Despite extensive research on the skills needed for circular manufacturing (CM), companies still struggle to transition from traditional to circular processes. Educational and training providers are crucial in preparing students for this shift, but there is currently no officially recognized skills framework to guide the development of CE courses, leading to educational gaps.

Therefore, this research seeks to contribute to the advancement of a skills framework that will facilitate the enhancement of individuals' circular-oriented skills, aiding educational providers in refining their formative programmes, both at Higher Education (HE) and Vocational Education and Training (VET) levels, thus contributing to answering the research question: "How can education providers identify the skills needed to implement CE in the manufacturing sector and improve current education and training offerings?".

This research aligns with the CERES European project, which aims to establish a Circular Economy Digital Innovation Hub, a dynamic and collaborative digital platform that fosters innovation and skills development for the CE by offering training and skills development services to support the twin transition (Sassanelli *et al.*, 2023).

Methodology

To identify the requisite CE skills, interviews with ten manufacturing companies adopting circular practices were carried out to investigate the state of practice, focusing on their perspectives on CE adoption and the key skills needed to support the transition and overcome the related challenges. The manufacturing companies interviewed come from the textile, agri-

food, automotive, and e-waste industries, which are major contributors to waste generation, presenting significant challenges in waste management and environmental pollution.

To understand if the requisite skills required by the state of practice are addressed by the CE courses, a market analysis was conducted into 3 main steps: *1.* Research of CE courses offered on the market and data collection, *2.* Analysis of the information gathered, *3.* Discussion of the results. The first step has been conducted by classifying the courses by educational level: dedicated queries were performed on the web browser to gather information related to the extant courses at HE level ("course circular economy" and "master degree course Circular Economy''), and at VET level (''course on circular economy for vocational and training education VET"). Thanks to these researches, 113 courses were found in total (27 at VET and 86 at HE level). The courses analysed are part of micro-credentials, degree programmes, and European projects, so in order to deal with the organizational differences between the courses, each one was then analysed and classified into macro-categories through the Sort, Label, Integrate, Prioritise (SLIP) method (Maeda John, 2006): after identifying the keywords for each educational programme, and considering courses' main topics and learning objectives, 3 main macro-categories linked to CE, sustainability and twin transition were detected. The identification of the topics and sub-topics addressed by the courses, along with their classification into macro-categories, enabled the most addressed basic skills to be identified.

Findings

The comparison between the skills addressed by educational courses (identified through the market analysis) and the requisite skills needed by the state of practice allowed for the systematization of the skills through the SLIP method (Figure 1) and the identification of skill gaps.

Categories	Transversal skills			Circular-technical skills	
Sub-categories	Business strategy skills	Resilience skills	Interpersonal skills	Lifecycle management skills	Digital Technology skills

Figure 1. Categories and sub-categories of skills.

In terms of circular-technical skills, HE and VET courses cover most of the required skills. However, it emerged that they do not adequately address the development of transversal skills. This finding also emerged from the interviews, since many companies affirmed that both hard and soft skills are crucial for the circular transition but *transversal skills* are almost of greater importance than technical ones for the development of a circular reality. This is due to the fact that the CE transition is still at an early stage of adoption and encompasses a multitude of disciplines, necessitating a shift in perspective from a narrow view to a more holistic one. In fact, many interviewed companies emphasized the necessity of an integrated perspective, a

systemic approach, and the capacity to critically evaluate data to successfully manage circular practices within the company's network of interactions.

Discussion

The success of the CE transition relies heavily on the development of transversal skills, which are vital but often dependent on how educational programmes are structured. Indeed, given the early stage of CE adoption and its multidisciplinary nature, prioritising transversal skills is crucial, as it requires a shift to a more comprehensive perspective (Mayer, 2020; Giannoccaro, Ceccarelli and Fraccascia, 2021). However, while some programmes naturally foster these skills, traditional disciplines such as chemical-materials engineering may not, due to their 'siloed' educational structure. Therefore, educational providers should improve CE programmes at HE and VET levels by integrating interdisciplinary activities and innovative teaching approaches to enhance the development of both transversal and technical skills, especially in traditional, theory-based courses. This is a major challenge as it will require a review of the current training programmes, but strategies such as collaboration between CE course providers will make it easier to fill the current market gap.

Contributions

This research offers a comprehensive approach to identifying the skills necessary for facilitating the CE transition in the manufacturing sector. It highlights the greater relevance of transversal skills over technical ones and the need for further focus on digital skills.

It serves as a valuable reference for both scholars and practitioners, guiding further investigation and helping educational providers align their offerings with market needs.

For course providers, the findings recommend adapting CE courses to different educational contexts, such as adding transversal skills modules in programmes based on theory-based teaching.

The research also has managerial implications, offering a guide for managers to select appropriate topics for reskilling and upskilling employees in line with the circular transition. Additionally, the findings may influence policy, highlighting gaps in current CE education that could inform new funding programmes.

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Examining Drivers of Sustainable Consumption and Consumer Behaviour: The Mediating Role of Perceived Value Using Structural Equation Modelling Approach

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Introduction

Environmental degradation and climate change represent a global crisis, with a 1.1°C increase in temperatures since pre-industrial times leading to severe ecological consequences. In India, a rapidly developing nation with over 1.4 billion people, consumption patterns significantly impact sustainability. The Global Footprint Network indicates that India has an ecological deficit, consuming resources faster than they can regenerate. Understanding the motivations behind sustainable consumer behaviour is crucial for promoting eco-friendly practices. A 2021 World Economic Forum survey revealed that 75% of Indian consumers are willing to change their purchasing habits to lessen their environmental impact.

Examining the mediating role of perceived value encompassing product quality, cost-benefit perceptions, and personal satisfaction provides insights into the mechanisms influencing sustainable behaviour. Addressing these issues is essential for mitigating environmental impacts and achieving ecological balance. This study aims to explore the dynamics between these drivers, perceived value, and consumer behaviour, ultimately informing policies and initiatives that promote the widespread adoption of sustainable practices in India and contribute to global sustainability goals.

Literature review

This study highlights the expectations surrounding the Drivers of Sustainable Consumption (DSC) and their potential impact, particularly through the mediating role of Perceived Value. Environmental Awareness significantly influences eco-friendly purchasing decisions by enhancing consumers' understanding of environmental issues (Heo & Muralidharan, 2019). Social Responsibility is also crucial, as individuals committed to ethical practices are more likely to engage in sustainable behaviours (Chuah et al., 2020). Additionally, External Influences, such as marketing and social norms, shape consumer choices by aligning them with societal trends (Nascimento & Loureiro, 2024). Technological Innovation provides new sustainable options, with consumers who adopt these technologies exhibiting higher levels of sustainable consumption (Sharma et al., 2024).

Hypothesized Relationships

- **H_1:** Drivers of Sustainable Consumption (DSC) positively influences Perceived Value (PV).
- **H_2:** Perceived Value (PV) mediates the relationship between Drivers of Sustainable Consumption (DSC) and Sustainable Consumer Behaviour (SCB).
- **H_3:** Drivers of Sustainable Consumption (DSC) positively influence Sustainable Consumer Behaviour (SCB) indirectly through Perceived Value (PV).

Methodology

This study employs a quantitative approach to examine the mediating role of Perceived Value (PV) between Drivers of Sustainable Consumption and Sustainable Consumer Behaviour. Using Structural Equation Modelling, we analyse the direct and indirect effects of Environmental Awareness, Social Responsibility, External Influences, and Technological Innovation on SCB, with PV as a mediator. Data was collected from 330 respondents via a structured survey using a Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

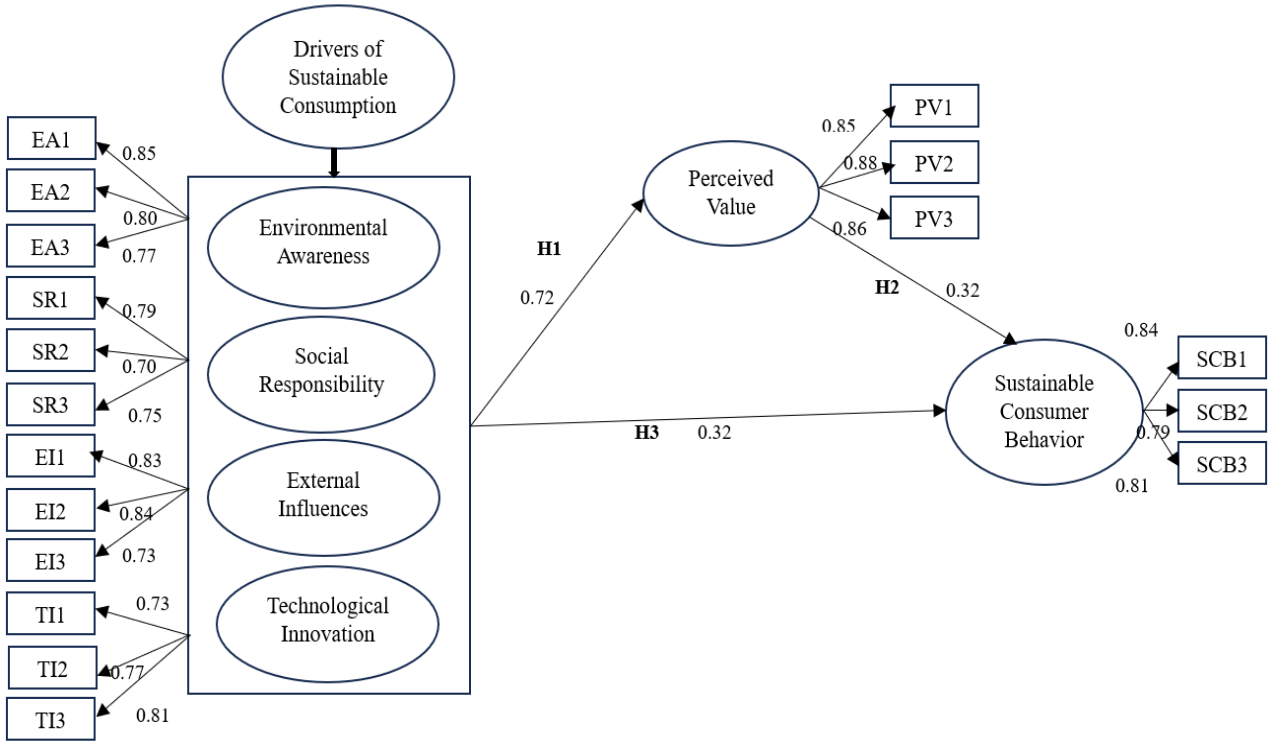

Figure 1: Conceptual Model

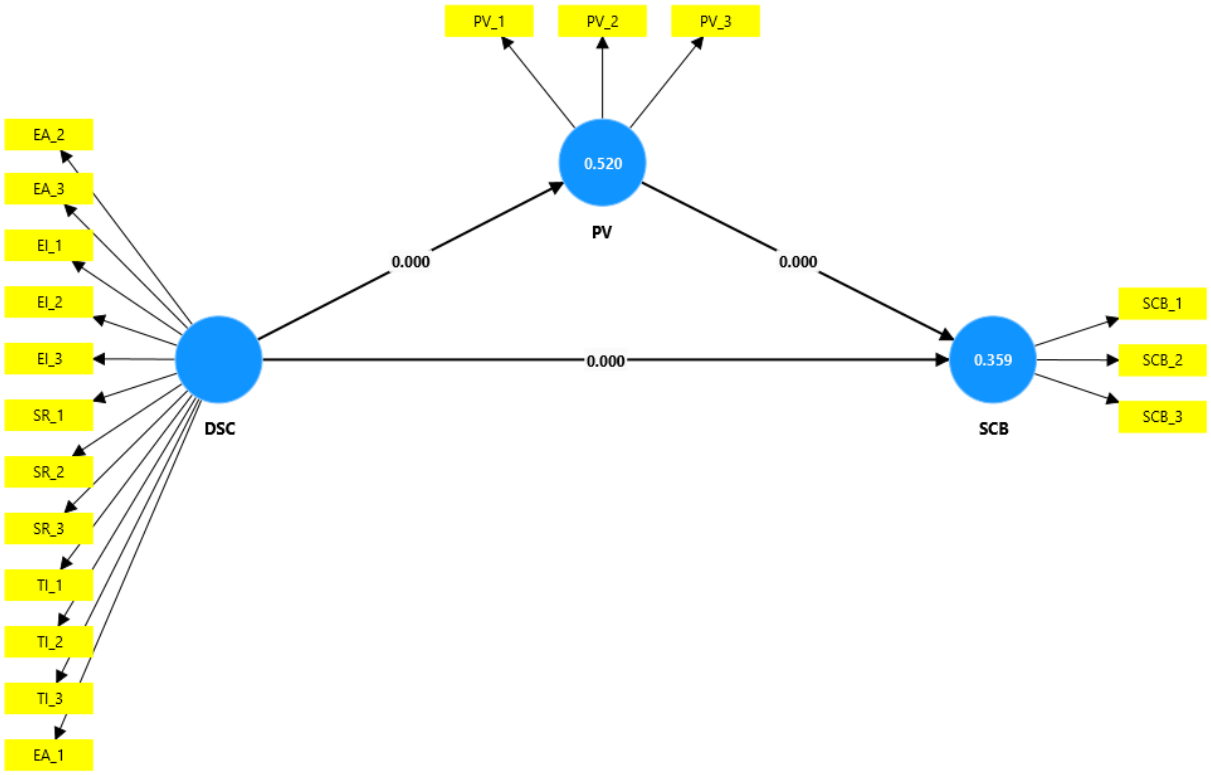

Figure 2: Structural model results

Findings

Figure 1 and 2 presents the path coefficients and relevant parameters for evaluating the relationships within this model. The statistical results indicate significant influence coefficients and p-values; all relationships in the model were found to be both statistically significant and positive. The model explores the primary relationships in greater depth. The findings reveal that Drivers of Sustainable Consumption (H1, $\beta = 0.721$, p-value = 0.000) have a significant positive effect on Perceived Value. Moreover, Perceived Value mediates the relationship (H2, $\beta = 0.324$, p-value = 0.000) between Drivers of Sustainable Consumption and Sustainable Consumer Behaviour, demonstrating a significant positive mediation effect. Furthermore, the results indicate that Drivers of Sustainable Consumption (H3, $\beta = 0.322$, p-value = 0.000) also have a significant positive effect on Sustainable Consumer Behaviour, indirectly through Perceived Value. In terms of the coefficient of determination, the model shows that Drivers of Sustainable Consumption—comprising Environmental Awareness, Social Responsibility, External Influences, and Technological Innovation—explain 52.0% of the variance in Perceived Value ($R^2 = 0.520$). Additionally, Sustainable Consumer Behaviour is explained by Drivers of Sustainable Consumption and Perceived Value, accounting for 35.9% of the variance ($R^2 = 0.359$), highlighting the model's predictive power.

Discussion

This study reveals key dynamics between Drivers of Sustainable Consumption, Perceived Value, and Sustainable Consumer Behaviour. The findings confirm that DSC including Environmental Awareness, Social Responsibility, External Influences, and Technological Innovation

significantly influences consumer perceptions of value. This perceived value strongly mediates the relationship between these drivers and actual consumer behaviour, highlighting its critical role in promoting sustainable choices. Consumers who are aware of environmental issues and influenced by societal norms tend to perceive higher value in eco-friendly products, driving behaviours such as purchasing sustainable goods and engaging in recycling. The mediating role of PV emphasizes the need to not only promote sustainable practices but also enhance the value consumers associate with them.

Contributions

This study contributes to both theory and practice by positioning Perceived Value (PV) as a key mediator between DSC and SCB. Theoretically, it enriches frameworks like the Theory of Planned Behaviour and the Value-Belief-Norm (VBN) Theory, illustrating how perceived value connects sustainable drivers to consumer actions. Practically, the findings offer insights for businesses, policymakers, and marketers, suggesting that improving the perceived value of sustainable products through quality, cost-benefit perceptions, or personal satisfaction can drive consumer adoption of eco-friendly behaviours. Strategies that emphasize these value aspects are more likely to resonate with consumers, while policymakers can use these insights to craft campaigns that highlight the benefits of sustainable consumption, fostering broader societal engagement in sustainability efforts.

Keywords

Sustainable Consumption, Consumer Behaviour, Environmental Awareness, Technological Innovation, Structural Equation Modelling (SEM)

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Enhancing Sustainability in Social Enterprises: Evaluating the Impact of AI through MCDM Approach

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Introduction

The integration of artificial intelligence (AI) into social enterprises has the potential to revolutionize traditional business models, leading to more sustainable and impactful solutions. Sustainability has become a crucial concern in today's global landscape, with enterprises across sectors seeking to balance economic growth with social and environmental responsibility. Social enterprises, in particular, are at the forefront of this effort as they aim to address societal challenges such as poverty, healthcare, and environmental degradation while maintaining financial sustainability. AI's ability to process vast amounts of data, optimize decision-making, and improve operational efficiency presents significant opportunities for enhancing sustainability practices. It has been widely applied in various fields such as energy management, waste reduction, and environmental monitoring, demonstrating its potential to drive sustainability outcomes (Floridi et al., 2018). However, despite the growing recognition of AI's capabilities, its application in social enterprises remains limited. Moreover, while AI offers powerful tools for improving sustainability, the complex nature of social enterprises requires a structured decision-making framework that can prioritize sustainability objectives. MCDM methods, such as AHP and TOPSIS, have been widely used in evaluating sustainability across sectors (Cinelli et al., 2014). By integrating AI with MCDM approaches, social enterprises can make more informed, data-driven decisions that enhance their sustainability impact.

Literature review

This study examines how AI can improve sustainability practices in social enterprises. The literature review highlights that social enterprises often struggle to balance social, environmental, and financial goals. AI offers potential solutions by optimizing decision-making and resource management. However, its application in social enterprises remains underexplored. The need for innovative strategies to enhance the sustainability of social enterprises has been recognized in the literature, though there remains a gap in understanding how emerging technologies such as AI can address these challenges (Moss et al., 2015). AI's potential to improve operational efficiency and facilitate data-driven decision-making makes it a valuable resource for organizations seeking to enhance sustainability outcomes. Few studies have explored the use of AI to enhance sustainability in social enterprises, as identified in the existing

research literature. This study aims to provide valuable insights into the limited body of research on AI implementation for social sustainability. Additionally, this is the first time the AHP-Fuzzy TOPSIS approach is being applied to assess sustainability in AI implementation. Therefore, it is essential to address the following research questions:

Q1. To identify the key AI enablers that can enhance sustainability in social enterprises.
Q2. To prioritize these enablers by evaluating their impact from both AI and sustainability perspectives.

Methodology

The study utilized a multi-criteria decision-making approach, namely the Analytic Hierarchy Process (AHP) and the Fuzzy Technique for Order of Preference by Similarity to the Ideal Solution (Fuzzy TOPSIS). The AHP approach has been employed to estimate the weight of the criteria, while the fuzzy TOPSIS approach has been employed to prioritize the various alternatives.

Findings

The study revealed five enablers and five criteria that can help the social enterprise to adopt AI to support sustainable development goals. The findings of the study indicate that "data integration and analytics" has the highest priority out of all the major enablers while stakeholder engagement enabler has the least priority. The key factors include Data Quality and Availability, conformance to Standards, and the potential for scalability of solutions when applying AI to support improvements in the sustainability of social enterprises. Furthermore, these enablers enhance the effectiveness and efficiency of SE by the evaluation of different criterion like operational efficiency, social impact, and environmental sustainability. The study has revealed that adoption of the AI system can make a positive and massive impact on sustainability of the social entrepreneurship by enhancing monitoring and reporting, improving resource productivity as well as enhancing predictive analyses.

Discussion

Previous research has highlighted the potential of AI in enhancing sustainability across various industries, with researchers such as Vinuesa et al. (2020) demonstrating how AI can drive operational efficiency and improve sustainability outcomes in fields like energy management and environmental monitoring. This aligns with the findings of this study, where AI enablers were identified as critical in enhancing sustainability within social enterprises. The study's results echo the views of Floridi et al. (2018), who have emphasized AI's capacity to optimize decision-making and resource management, which are crucial for organizations striving to balance social, environmental, and financial goals. However, this study extends the existing literature by specifically focusing on the role of AI in social enterprises, a sector that has received limited attention in terms of AI application. Unlike broader discussions in the literature, which typically address AI's sustainability contributions in corporate and industrial contexts, this study provides targeted evidence on how AI can support social enterprises in addressing challenges such as resource constraints and operational scalability

Contributions

The findings demonstrate that AI can optimize decision-making, resource management, and operational efficiency, helping social enterprises overcome challenges like resource constraints and scalability. The study fills a gap in the literature by focusing on AI's application in social enterprises and offers practical solutions for improving their sustainability outcomes. The results of the study may provide valuable insights for academicians and practitioners seeking to leverage AI to advance sustainable social enterprise practices.

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Integrating Sustainability into Agricultural Education and Practice: The Genesis Agroempresarial Project at the University of Puerto Rico at Utuado

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Introduction

With 85% of Puerto Rico's food imported and agriculture accounting for only 0.7% of the GDP, Gracia (2020), the Genesis Agroempresarial Project (GAP) at UPR Utuado tackles a pressing challenge: revitalizing the island's agricultural sector through sustainable practices and entrepreneurship.

Literature review

The integration of SCAMPER, Design Thinking, Shared Value, and the Theory of Planned Behaviour has been explored across various fields, including business innovation, entrepreneurship and sustainability.

SCAMPER

The SCAMPER technique, introduced by Eberle (1972), is a well-established method for stimulating creativity and generating ideas. It involves seven strategies: Substitute, Combine, Adapt, Modify, Put to Another use, Eliminate and Reverse. SCAMPER has been widely adopted in both education and corporate settings to enhance problem solving and innovation, particularly in product and process development.

Design Thinking

Design Thinking is a human-centered approach to innovation that emphasizes empathy, ideation, and experimentation Brown (2009). This process has been influential in product design and business strategy. Research has shown that Design Thinking can lead to more user-friendly and innovative solutions by focusing on the real needs of users and involving them in the design process (Brown & Katz, 2011).

Shared Value

The Shared Value concept, introduced by Porter and Kramer (2011), has redefined the relationship between business and society. It argues that companies can generate economic value by addressing societal challenges, thereby creating a positive impact on both business performance and social well-being. Shared Value has been particularly influential in discussions on sustainable business practices, highlighting the potential for businesses to contribute to societal progress while also achieving financial success.

Theory of Planned Behavior

Ajzen's (1991) Theory of Planned Behavior is a psychological model that explains human behavior through the lens of intention, shaped by attitude, subjective norms, and perceived behavioral control. This theory has been extensively validated in predicting a wide range of behaviors, including entrepreneurial intentions (Kautonen, van Gelderen, & Fink, 2015). It has been particularly useful in understanding the factors that motivate individuals to start new ventures and persist in entrepreneurial activities offering valuable insights for entrepreneurship education and support programs.

The integration of SCAMPER, Design Thinking, Shared Value, and the Theory of Planned Behavior provides a comprehensive framework for fostering innovation, user-centered development, and sustainable entrepreneurship. Each of these concepts contributes to the process of developing socially responsible businesses, particularly in sectors like agriculture where creativity, empathy and sustainability are key to long-term success.

Methodology

GAP creates new sustainable agricultural entrepreneurs by integrating the SCAMPER technique with Design Thinking, Shared Value philosophy, and Ajzen's Theory of Planned Behaviour. SCAMPER stimulates creativity by encouraging innovative modifications to existing agricultural practices, while Design Thinking, ensures solutions are user-centered and practical. The Shared Value approach aligns business goals with social and environmental impact, and the Theory of Planned Behaviour helps shape positive entrepreneurial intentions. Together, these methodologies empower participants to develop sustainable and socially responsible agricultural enterprises.

Findings

Last semester, GAP provided entrepreneurship training to 67 students, equipping them with the skills needed to launch and manage sustainable agribusiness. Through GAP's connections with Enactus Puerto Rico, 40 students were paired with experienced mentors for guidance during their internships. Additionally, 20 students participated in four local and national entrepreneurship competitions, while 40 students engaged in nine media presentations. GAP also impacted 150 community members through five training events and generated 35 new sustainable agricultural projects, which achieved over $5,000.00 in sales. Between 2002 and 2024, GAP has facilitated the development of over 900 product prototypes, totalling approximately $55,000 in sales, with around 1,500 students involved in creating new value propositions.

Alignment with UN SDGs

GAP's mission aligns closely with several UN SDGs, particularly zero hunger (SDG 2), decent work and economic growth (SDG 8), and sustainable cities and communities (SDG 11). By fostering innovative agricultural enterprises, GAP contributes to increased agricultural

production, job creation, and community development, thus supporting global goals of poverty reduction and sustainable development.

Discussion

The findings from the Genesis Agroempresarial Project (GAP) underscore its effectiveness in fostering sustainable agribusiness entrepreneurship. GAP has successfully trained and mentored a significant number of students, leading to the creation of innovative and sustainable agricultural projects with tangible benefits. The project's impact is evident in the number of new value propositions developed, the strong mentorship connections established with EnactusPR and the active participation of students in entrepreneurship and promotional events. With over 900 product prototypes and $55,000 in sales generated since 2002. GAP not only contributes to the economic empowerment of students but also supports community development and sustainability. These results highlight the project's role as a catalyst for sustainable agricultural entrepreneurship, driving both education and economic growth.

Contributions

GAP fosters sustainable agriculture by training students in agribusiness, driving innovation and boosting local economies. It creates a supportive ecosystem through mentorship and real-world experience, leading to sustainable projects that strengthen community resilience and local food systems.

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Track 4 – The UN Sustainable Development Goals (SDGs)

4.1 A Proposal for Using the UN's Global Indicator Network to Verify Real Progress on the SDGs

4.2 Metaverse-Based Technologies in E-commerce: Revolutionizing Accessibility and Inclusivity through Co-Creation of Products and Services with differently-abled consumers

4.3 Monitoring, Evaluation, Accountability and Learning (MEAL) For Scalability and Replication

4.4 Statistical methods for students mobility.
The propensity of students to sustainable mobility

A Proposal for Using the UN's Global Indicator Framework to Verify ENACTUS Teams' Real Progress on the SDGs

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Introduction

In this paper I propose a new way for ENACTUS teams to demonstrate the real impact of their projects on the SDGs. I lay out a problem and rationale for change, and then I provide a simple methodology based on the UN's Global Indicator Network, or GIF. At the end, I suggest a path forward.

In ENACTUS we are devoted to achieving the SDGs, but what does this mean? Every team presents a list of SDGs they claim to support, but did the team really advance all those goals? Right now, we have no way to evaluate those claims. Indeed, impact reporting by ENACTUS Global (ENACTUS, 2023) is unable to claim real progress toward achieving any of the SDGs.

Our lax approach to the Goals does our students a disservice. In today's economy, we see many claims at "greenness" that are without substance. In the same way, we encourage our students to present claims without substance. If their project seems related to a given Goal, they claim to support it, even if no real progress is being achieved. ENACTUS teams would benefit from a framework for measuring real progress.

Literature Review

Does such a measurement framework exist? Just as the United Nations has adopted the Global Goals (United Nations, 2015), the UN also regularly updates a 2030 Global Indicator Framework (GIF) that identifies Targets and Indicators for each Goal (United Nations, 2024). Member countries use these Targets and Indicators, at a national scale, to measure real progress toward achieving the goals. Many of these Targets and Indicators also would be suitable for use by ENACTUS projects. While we should not require teams to use this approach, we should provide guidance and incentives, encouraging them to do so on a voluntary basis.

Methodology

How would project impact reporting change when using the GIF? Would the GIF be difficult to use? A review of available videos for the top 4 ENACTUS World Cup presentations for the years 2014 - 2023 showed that 50 out of 56 projects cited Goals 1, 2 or 12, so these are used here as illustrative examples to explore these questions.

- *Goal 1 – End poverty in all its forms everywhere*

Many ENACTUS projects that create employment for low-income people report number of jobs and amount of income created. But the GIF for Goal 1 focuses on the **proportion of the**

population that is below the poverty line. To use the GIF, ENACTUS teams would have to determine the proportion of the village, city or region of their project that is below the poverty line, both before and after their project.

The GIF for Goal 1 also is concerned with **proportion of the population living in households with access to basic services** like water, sanitation or education. So teams working to provide basic services would report these before-and-after percentages for a village or region, not just numbers of people served.

- *Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture*

Many teams that use innovation to improve food production systems report the amount of food or fertilizer produced by their project, and they claim to support Goal 2. But the GIF for Goal 2 would ask for more specifics such as changes in the **prevalence of undernourishment**, the **income or production volume for small farmers**, or the **proportion of land area under sustainable production**, for the entire village or region of interest, not just for the project's beneficiaries.

- *Goal 12. Ensure sustainable consumption and production patterns*

Teams often find profitable uses for waste material, and they report the volume of the waste material reused or recycled. But, again, the GIF would ask more probing questions such as whether the overall **material footprint** (that is, that amount consumed per person) or the **rate of recycling** for a specific material has changed in the location (village or region) of the team's project.

In most of the examples I have cited it would not be too difficult to find out these numbers. If teams determine these values for the village or region where they are working, they will more deeply understand the Goal, as well as their project's real progress toward reaching it.

Findings

Findings are not yet available, since no ENACTUS teams have yet attempted to determine real progress toward the SDGs by use of the GIF.

Discussion

I propose the following steps for the ENACTUS Network:

1. We should organize a task group to examine how the GIF could be used in the ENACTUS context, across all the goals.
2. After evaluating data collection challenges, the task group should identify a set of Targets and Indicators from the GIF, similar to those given in boldface type above, that are most suitable for use by ENACTUS teams.
3. The task group should then recruit, and provide data analytic support to, ENACTUS teams who are willing to test the use of the selected Targets and Indicators.

4. Once feasibility has been proven, the task group should propose incentives in the ENACTUS judging system, so that teams taking the extra step of using the GIF to report real progress will receive due credit for their achievements.

Contributions

The work of tens or hundreds of ENACTUS teams, on diverse continents, to document project-related changes in SDG Targets and Indicators could add significantly to the body of knowledge on sustainable development. More importantly, it would produce a cadre of business leaders with deep understanding of what is required to create real progress toward the SDGs.

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Metaverse-Based Technologies in E-commerce: Enhancing Accessibility and Inclusivity through Co-Creation with Differently-Abled Consumers

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Introduction

The rise of Metaverse-Based Technologies (MBTs) offers transformative potential in e-commerce, particularly for differently-abled individuals. While traditional e-commerce has catered to the general population, the unique requirements of differently-abled consumers often remain overlooked. MBTs have the potential to revolutionize this space by enabling immersive, interactive, and inclusive experiences (Koohang et al., 2023). This research focuses on how MBTs facilitate the co-creation of products and services with differently-abled consumers, transforming accessibility in sectors like fashion, healthcare, and education. It addresses the critical need to democratize digital commerce, ensuring that inclusivity becomes a cornerstone of the evolving e-commerce landscape (Zallio & Clarkson, 2022).

Literature Review

The literature on MBTs emphasizes the immersive experiences and technological prowess they bring to e-commerce, offering significant opportunities for user engagement and personalization (Dwivedi et al., 2022). However, there is limited exploration of how MBTs can empower differently-abled individuals to actively co-create products and services within these platforms. This gap highlights the need for a comprehensive understanding of how inclusivity and accessibility can be enhanced through co-creation (Bertoni, 2023). The primary research question guiding this study is: In what ways do MBTs facilitate the co-creation of products and services with differently-abled consumers, and how does this contribute to more inclusive e-commerce? We hypothesize that MBTs can bridge the accessibility gap by fostering participatory and emotional engagement in the co-creation process, transforming digital commerce for marginalized groups.

Methodology

A mixed-methods approach was employed to explore how MBTs foster co-creation with differently-abled consumers. The study included qualitative interviews with industry experts and case studies from companies like Zoho, Annie, and Tommy Hilfiger Adaptive, which are integrating MBTs to enhance inclusivity (Kerim & Borrell, 2023). Quantitative data were drawn from surveys of differently-abled consumers to measure the effectiveness of these technologies in improving their shopping experiences. This methodology allowed for both a deep exploration

of the lived experiences of differently-abled consumers and an empirical assessment of MBTs' impact on inclusivity.

Findings

The findings reveal that MBTs, particularly Virtual Reality (VR) and Augmented Reality (AR), play a significant role in enabling co-creation with differently-abled consumers by offering immersive and personalized experiences (De Felice et al., 2023). Companies like Invacare and Nike have utilized these technologies to provide virtual testing of assistive devices and adaptive sportswear, allowing consumers to interact with products before purchase (Baskaran, 2023). Differently-abled consumers reported increased emotional connectivity and satisfaction with these platforms, as they were able to actively participate in the design process of products tailored to their needs.

Discussion

These findings suggest that MBTs offer a significant opportunity for the e-commerce sector to move beyond accessibility as an afterthought and embrace a co-creative approach that involves differently-abled consumers in product and service development (Rach, 2023). Emotional connectivity emerged as a critical factor, as differently-abled consumers felt more valued and understood by brands using MBTs to involve them in the co-creation process. Additionally, the evolutionary capability of MBTs allows for ongoing adaptation based on user feedback, ensuring that these platforms continue to meet the needs of diverse consumers (Sinha, 2023). The research aims to enhance business-customer relationships through interactive experiences, emphasizing the Metaverse's potential for innovating business models collaboration with consumers

Contributions

This research contributes to the empirical understanding of how MBTs can enhance inclusivity in e-commerce through co-creation with differently-abled consumers. It advances the theoretical discourse by linking the principles of design thinking and MBTs to the concept of co-creation, demonstrating that inclusivity can be operationalized through technology. Practically, the findings offer valuable insights for e-commerce businesses looking to integrate MBTs to foster a more inclusive and diverse marketplace, positioning themselves as leaders in corporate social responsibility (Zallio & Clarkson, 2022). This study encourages further exploration into the potential of MBTs in promoting accessibility and engagement for all consumers. In terms of future research, there is scope to delve deeper into consumer behaviour within digital metaverses, building on the exploration of digital marketing in the metaverse. Moreover, exploring the interplay between corporate social responsibility and value co-creation in the metaverse offers a rich avenue for academic inquiry. In conclusion, the integration of Metaverse-Based Technologies into e-commerce, with a focus on inclusivity, opens up a frontier of possibilities. The implications range from technological considerations to societal impact, marking a significant juncture in the evolution of online commerce. Managers, researchers, and practitioners are invited to explore and leverage this transformative landscape for a more inclusive and engaging e-commerce future.

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Monitoring, Evaluation, Accountability and Learning (MEAL) For Scalability and Replication

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Introduction

Development initiatives are established to bring positive change in people's lives, sadly, a few have been scaled up and replicated for the maximization of impact. Most initiatives lack the key characteristics for successful scaling, the nonexistence of results-based monitoring and evaluation systems makes it extremely difficult to learn from experience. Monitoring and Evaluation Frameworks generate information on what works and what does not work, clearly articulating why?. This information is critical for knowledge sharing and replication. Lack of empirical data on the effectiveness of projects' strategies for scaling up accounts for most project failures and the inefficient use of resources.

Monitoring and Evaluation (M&E) Systems are vital for proffering relevant, timely, adequate and sustainable solutions to the communities' glaring needs. These Systems create scientific frameworks for:

i. Identification, analysis and characterization of the problem (Establishes if "a real-world problem" exists).
ii. Creates enabling environments for participatory development which sets the necessary pre-conditions for the formulation of goal-oriented solutions which are equitable and acceptable to stakeholders.
iii. Sets a solid foundation for project planning which in-turn demarcates the scope and the implementation arrangements.
iv. Clearly articulates the project's theory of Change and the logical framework which is vital for sustainability and replication.
v. Project implementation is focused on the project logic (Inputs, outputs, outcomes), in relation to the incremental chain of results (short-term and long term positive/negative, intended/unintended results).
vi. Accountability and learning: As the project progresses monitoring systems create information gathering mechanisms that are vital for scalability and replicability
vii. Evaluations (formative, process, outcome and summative) provides evidence-based findings on what works and what does not (answering the what? Why? And how? Questions) these answers are the blueprint to current and future projects' scalability and replicability.
viii. Impact assessments provides counterfactuals that establish the long-term impact of projects on lives and livelihoods.

Literature Review

According to the Sustainable Development Goals Report (2023). The impacts of the climate crisis, the war in Ukraine, a weak global economy, and the lingering effects of the COVID-19 pandemic have revealed weaknesses and hindered progress towards the Goals. The report further warns that while lack of progress is universal, it is the world's poorest and most vulnerable who are experiencing the worst effects of these unprecedented global challenges. It also points out areas that need urgent action to rescue the Sustainable Development Goals (SDGs) and deliver meaningful progress for people and the planet by 2030. António Guterres, the United Nations (UN) Secretary General further remarks that, "Unless we act now, the 2030 Agenda will become an epitaph for a world that might have been.

Social entrepreneurship is pivotal in the fulfillment of the agenda 2030, Lubberink et al (2019) points out that social entrepreneurship has emerged as a powerful force for addressing pressing social and environmental challenges around the world. These social entrepreneurs leverage entrepreneurial skills to build sustainable enterprises, both for-profit and non-profit, in order to drive positive change at the local and global level. However, a key challenge faced by social enterprises is the ability to scale up their operations and replicate their models in order to achieve greater impact. (Narang et al, 2014).The challenge of scalability and replicability is not a new phenomenon, according to UNDP (2013), one constraint that needs to be overcome is that development interventions—projects, programs, policies are all too often like small pebbles thrown into a big pond: they are limited in scale, short-lived, and therefore have little lasting impact. Confronted with the challenge of meeting the MDGs, the development community has recently begun to focus on the need to scale up interventions. According to the UNDP Scaling up Development programmes (2017) Scaling up is a learning process. Monitoring and evaluation (M&E) are critical for scaling up both at the stage of innovation/piloting and during the process of scaling up. M&E is critical in informing the vision, strategies and risk management of scaling up.

The gap that the research will address

Will provide evidence based analysis on how to enhance the contribution of Students led enterprises with global networks in achieving UN SDGs vision 2030

Research question

How can ENACTUS projects enhance their capacity for scalability and replicability?

Research Proposition

The integration of results based monitoring and evaluation systems will enhance the global impact of ENACTUS projects. M&E provides scientific and systematics frameworks for

1. Participatory characterization of the problem and projects designs,
2. Effective and efficient Evaluability assessments.
3 Clear articulation and analysis of plausible and probable project theory of change.
4. Alignment of project result chain with the intended results enhances ENACTUS projects' contribution to UN SDGs.

5. Establishes projects' intended/ unintended positive or negative long term impacts.

Methodology and Justification of the selected methods

Mixed methods involves the gathering of data and aggregating it to information which is responsive to the information needs of the users and can also be easily reported in a clear and concise manner. (Creswell, 2007). In order to enhance the validity and reliability of the results, the mixed methods approach was selected as the hallmark of the research, to appropriately and effectively collect data during the research, survey design 's utility made it probable to select the design.

Findings

- Evaluability assessments for ENACTUS projects are not properly done, resultantly the goals are not feasible and clearly aligned to the expected results.
- Lack of directly measurable indicators in project design.
- Lack of clearly articulated and probable theories of change.
- Capacity building trainings are not informed by the students' skills gap and the needs at the grassroots.

Discussion

Commitment to building standardized and robust M&E systems can enhance the scalability and replicability of ENACTUS projects, resultantly enlarging the contribution of ENACTUS in the fulfillment of the UN SDGs

Contribution

Contributes to the practice of project identification, design, implementation, monitoring and evaluation. That capacitates projects to maximize on impact driven by the key attributes of relevance, coherence, efficiency, effectiveness, and sustainability.

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Statistical methods for students mobility. The propensity of students to sustainable mobility

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In this work we present the first results from a survey on the propensity of students to adopt sustainable mobility behaviours in the metropolitan area of Rome, including the measurement of the level of risk perceived by vulnerable road users (pedestrians and bikers) in urban routes.

The survey is aimed at the population of 18-35 aged people in the metropolitan city of Rome, who commute for study reasons at least once a week. Data collection is managed through a CATI system. It involves a sample of 1000 students, balanced by the means of transportation they mainly use to reach their study place. The structure of the questionnaire was inspired by the well-known Technology Acceptance Model (TAM) (1), based on a latent variable model, adapted and integrated with some typical constructs borrowed from the main literature on the consumer propensity to product purchase (2, 3), i.e. perceived risk, perceived usefulness, ease of use, push and pull factors, intention to use, use behaviour, where the "use" refers to the adoption of sustainable behaviours in urban mobility routes.

The research is part of a wider study on social sustainability in transportation aiming at define guidelines and recommendations for agencies, policymakers, urban planners and other stakeholders involved in the design and forthcoming construction of the Tecnnopole building of Sapienza University of Rome, that will be located in the Pietralata area of Rome. The study aims to contribute valuable insights to help urban planners and other players to create an efficient mobility systems in the whole area. Among the main expected results we underline the definition of users' profiles; the identification of the different degrees and dimensions of risk perception by the vulnerable users; the identification of the main causes of insecurity arising from routes characteristics, weather conditions, traffic conditions, etc.; the identification of the motivations that encourage or discourage users to adopt sustainable mobility behaviours.

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Track 5 – Education Approaches

5.1 Applying Drama-based Learning to Enhance Emotional Intelligence of Students Aged 14-16 in the UK

5.2 Enactus-focused research: A bibliometric mapping using VOSviewer and Biblioshiny

5.3 How can Enactus engage with its entrepreneurial community in universities and colleges (i.e. students, researchers and academics) to embed sustainability in research funding applications in a post-Covid world? A best practice framework

5.4 Student Perceptions of Enactus in Advancing Human Development in Higher Education

Applying Drama-based Learning to Enhance Emotional Intelligence of Students Aged 14-16 in the UK

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Introduction

Emotional intelligence emphasises soft skills such as self-management and social awareness, which are essential in encouraging young people to develop innovative solutions towards social issues. Advanced technology including artificial intelligence took the spotlight among new businesses in 2024. Despite providing revolutionary solutions, the growing reliance on digital data and electronic gadgets arguably fosters personal isolation. Research shows soft skills play an important role in developing entrepreneurial capability (Tem, Kuroda and Tang, 2020). However, Cheng et al. (2022) highlight that UK higher education institutions generally prioritise the development of technical skills, often overlooking the inclusion of soft skills in curriculums. As an Enactus social enterprise initiative, Daybreak Theatre Project ('Daybreak') emphasises the collaboration between technology-based solutions and business activities with a person-centred approach. It suggests that soft skills training should be incorporated in young people's education, alongside subject-specific knowledge.

Daybreak is a pilot study that explores an innovative approach to enhance young people's emotional intelligence development using drama-based learning. The programmes will be delivered in the 2024/25 academic year.

Literature Review

Emotional intelligence is 'the ability to perceive and express emotion, assimilate emotion in thought, understand and reason with emotion, and regulate emotion in the self and others' (Mayer et al., 2000, p.396). It encapsulates key soft skills such as communication, critical thinking and empathy. Goleman (2020) identified four domains in emotional intelligence: self-awareness, self-management, social awareness, and relationship management. They outline the social aspects required for young people to enact entrepreneurship. By understanding their ability and managing resources, they can connect with other partners to deliver solutions that answer customer needs.

According to Goleman (2011), constant practising can lead to lasting change in one's behaviour and emotional intelligence by forming new habits. Drama-based learning offers a safe environment for participants to practise realistic scenarios. They encounter narratives inspired by everyday situations, allowing them to immerse in the characters' roles and explore how choices

lead to alternative outcomes. Previous research has demonstrated that the practical element of drama-based learning is beneficial for soft skills training, with studies conducted in early childhood and higher education contexts (Hytti and Nieminen, 2013; Kettula and Berghäll, 2013; Usakli, 2018). However, the approach is rarely applied to secondary school students. This study aims to assess the effectiveness of drama-based learning in enhancing the emotional intelligence of students aged 14 to 16 in the UK.

Methodology

90 participants in Years 10 and 11 (ages 14-16) across three state-funded schools, from under-represented groups, will be invited to participate in a series of workshops in the 2024/25 academic year, on a self-nomination basis. Under-represented groups include individuals who identify as part of the global majority, those from low-income backgrounds, families with no history of Higher Education participation, or reside in areas with lower socioeconomic status.

The workshop design reflects Goleman's four domains of emotional intelligence, where participants will engage in drama activities with corresponding focuses. To formulate self-awareness, participants will discuss physical and psychological changes that occur during stressful situations. This will be followed by role-play designed to facilitate participants to discover tools to regulate their emotions. They will also engage in scenarios in school contexts to practice communicating their emotions and reasoning in conflicts, developing teamwork and problem-solving skills.

A questionnaire will be designed to collect participants' feedback before and after the programme, to evaluate its effectiveness in enhancing their emotional intelligence. The questionnaire consists of two parts. The first section includes questions with 6-point Likert scales to measure participants' self-confidence to regulate their own and other's emotions. The second section contains open-ended questions to understand participants' attitudes towards the topic. Staff members will also be invited to provide feedback on the participants' engagement in drama-based learning through a structured interview after the programme.

Findings

The programme will be implemented in the 2024/25 academic year during the spring and summer term. Based on an initial review of relevant literature and workshop design, participants will likely show a development in their teamwork and communication skills. They may also display an enhanced awareness of their own and others' emotions, and more creativity when problem-solving.

Discussion

The findings of this pilot study will reveal the effectiveness of applying drama-based learning in young people's soft skills training. The strengths and limitations of the method demonstrated in this study will inform further research to adjust their design.

If drama-based learning is shown to be beneficial in enhancing participants' emotional intelligence, implementation of the approach in secondary school curriculums could be suggested. The programmes focus on emotional management and community, which align with the personal, social, health and economic (PSHE) education in the UK. Drama-based learning provides a method for participants to practise the learnt content of these key social topics in realistic everyday scenarios. This facilitates young people to make connections between the theory and application, increasing the information retention of the taught materials.

The target group of this study consists of participants aged 14-16 in the UK, who are from underrepresented groups. Future research can extend the study to participants of different ages and from diverse backgrounds to further evaluate the effectiveness of the drama-based learning method. Participants in other cultures who may show different levels of engagement in the topic and the workshop activities will inform the development of a more inclusive practice.

Contributions

This study is expected to contribute to the empirical understanding of applying drama-based learning for emotional intelligence development, providing new insights into the appropriateness of targeting participants aged 14-16 from underrepresented groups. The findings will also add practical value to the entrepreneurship training for young people. Aside from vocational skills, soft skills development holds a significant role in this preparation process. Drama-based learning proposes a new method to incorporate this training in secondary school curriculums, equipping emerging young entrepreneurs with the communication and leadership skills required to innovate solutions towards complex social issues.

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Enactus-focused research: A bibliometric mapping using VOSviewer and Biblioshiny

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Enactus-focused research: A bibliometric mapping using VOSviewer and Biblioshiny

Introduction

The purpose of this paper is to conduct a bibliometric analysis of Enactus-related research since the renaming of SIFE to ENACTUS in 2012. The study systematically reviews the development of Enactus-related research, examining intellectual contributions, key themes, and collaboration patterns in terms of its contribution to sustainable development and providing a conclusive remark. By analyzing the existing literature, the review aims to map the global efforts and partnerships that have emerged in this context and to identify gaps for future research.

Literature review

The theoretical framework guiding this study is the Triple Bottom Line (TBL) theory of sustainable development, coined by John Elkington in 1994 and further developed in his book Cannibals with Forks: the Triple Bottom Line of 21st Century Business (Khan et al., 2021). The TBL theory underscores the need to balance three critical aspects—environmental preservation, social equity, and economic growth—to achieve long-term sustainable development. This framework is particularly relevant to Enactus projects, which inherently aim to address multiple dimensions of sustainability through student-led initiatives. The TBL perspective enhances our understanding of the interconnectedness between economic, social, and environmental components in Enactus activities. As identified in the literature (Dube & Nhamo, 2021), the TBL approach is crucial in academic circles for shaping discussions on sustainability.
Enactus, as a private organization with a multi-stakeholder approach, exemplifies the practical application of TBL by significantly influencing the achievement of the SDGs through social entrepreneurship. This aspect will be reflected in the co-authorship, country collaboration maps generated using VOSviewer and Biblioshiny, illustrating the global efforts and partnerships that align with the TBL framework. This study looks at the developments of ENACTUS-related research from the past decade (since 2012). We consider the intellectual contributions, keywords

used, most productive journals, annual average production co-occurrence of keywords and network mapping from the past twelve years.

Methodology

Bibliometric analysis is a key imperative measure for evaluating scientific production (Singh & Bashar, 2023). The bibliographic data is produced by scientists working in the field who express their opinions through citations, collaboration and writing. It systematically analyzes published bibliographic literature (Donthu et al., 2021). Bibliometric analyses are used for many different reasons, usually one of three: 1. Evaluating the performance of journals or authors 2. Analyzing and mapping a specific scientific field, and 3. Informing and identifying potential areas of research or gaps in the literature.

The bibliometric data has been collected from the Scopus database to provide more significant insights and development of Enactus-related research. The data was first extracted using the following search syntax: TITLE ("ENACTUS" and “INNOVATION” OR BUSINESS SKILLS). A total of 9 documents were extracted. After that, the search criteria were redefined to include more relevant studies. The authors expanded the years of publication to include from September 2012 (SIFE name change to ENACTUS) until August 2024. The data was not limited to final research articles in journals and written in English only.

Findings

Descriptive Analysis of the Bibliometric Data

The consideration period of 2012–2024 and the total number of documents extracted for bibliometric analysis were 130. The average year from publication is 3.63; the annual growth rate is 28%; the average citations per document are 13,8. There are altogether 422 authors; out of them, 13 are single-authored articles. The average co-authorship per document is 3.74.

Key Contributors Of enactus -related Research From 2012 - 2024 By Research Articles.

The cluster analysis was conducted to determine the key contributing research articles. Through a cluster analysis, the VOSviewer output divides the total research article citations into three Clusters, having 15 items, 90 links and a total link strength of 201. The most cited reference is Tshikovhi and Shambare (2015) in cluster 1 (green-coloured cluster) followed by Linan and Chen (2009) in cluster 2 (red-coloured cluster).

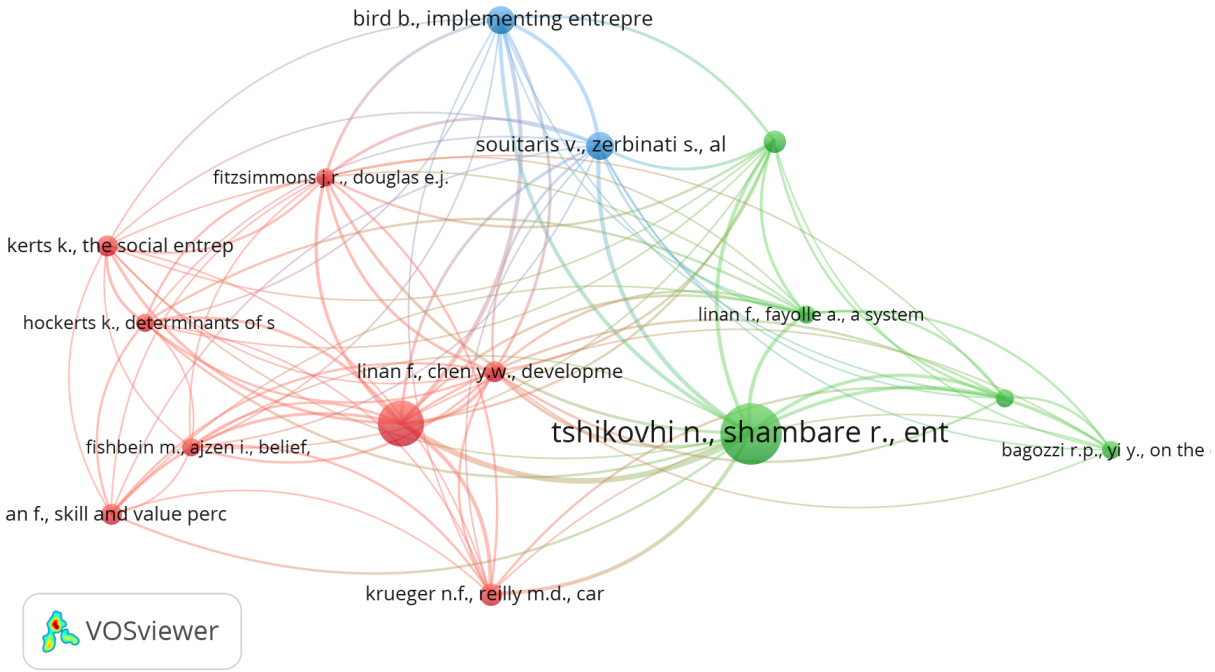

Figure 1: Cluster map of most cited references from research articles in the bibliometric sample

Main Keywords Used In ENACTUS-related Research From 2012 - 2024

In order to determine the most co-occurring keywords given by authors in enactus-related research, a minimum threshold of 5 occurrences of a keyword was considered. Seventeen keywords met the threshold for the keywords cluster analysis (see Figure 7). VOS viewer output for keyword co-occurrence divided the total keywords into three clusters with 56 links and a total link strength of 74. Cluster 1 (red coloured) had 6 keywords such as sustainable development, sustainability, higher education, innovation, entrepreneur and education. Cluster 2 (green-coloured cluster) had 6 keywords, containing items such as students, entrepreneurship education, entrepreneurial intention, entrepreneurial knowledge and self-efficacy. Cluster 3 (dark-blue-coloured cluster) has 5 items and includes keywords such as Enactus, social entrepreneurship and South Africa.

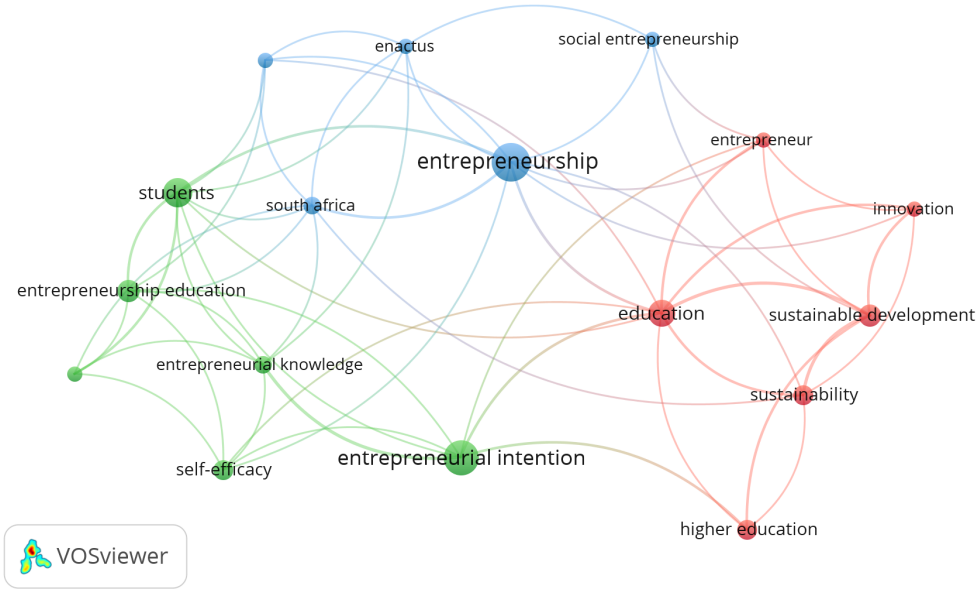

Figure 2: Cluster map of most used keywords from research articles in the bibliometric sample

Discussion

The findings of this study point out the collaborative nature of Enactus research, as reflected in the co-authorship patterns and country collaboration maps. This suggests a global effort to address the United Nations' Sustainable Development Goals (SDGs) through academic and practical contributions within the Enactus framework. Moreover, the findings indicate that while there has been a significant increase in publications and citations, certain areas, such as integrating business skills with innovation in Enactus initiatives, remain underexplored.

More research is needed on the integration of innovation with business skills in Enactus projects. Studies could examine how innovative practices are being taught and applied within Enactus teams and how these practices contribute to the success of projects to achieve the SDGs.

Future studies could focus on long-term impact assessments of Enactus projects to understand their sustained effects on communities and participants. Longitudinal studies tracking the progress of projects and their outcomes over time would provide valuable insights into the lasting benefits and challenges of these initiatives.

With the increasing importance of digital tools and technologies in social entrepreneurship, future research could explore how technology is being leveraged in Enactus projects. This could include studies on the use of digital platforms for project management, fundraising, and outreach, as well as the role of technology in scaling Enactus initiatives.

Further research could examine the diversity and inclusiveness of Enactus teams and projects. Studies could investigate how gender, ethnicity, and socio-economic background influence participation in Enactus and the outcomes of projects. This line of research could also explore strategies for fostering greater inclusivity within Enactus initiatives.

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How can Enactus engage with its entrepreneurial community in universities and colleges (i.e. students, researchers and academics) to embed sustainability in research funding applications in a post-Covid world? A best practice framework

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Introduction

The onset of Covid-19 saw the topic of sustainability slightly relegated to the background and till date, much of the conversations around sustainability are still linked to post-Covid issues, despite the obvious challenges of sustainability for the environment, decision-making and governance frameworks. Nudzor (2020) outlined that it is critical for higher education organisations to not only focus on addressing sustainability at the implementation stage, but it must be built into research funding applications. Many universities rely on external research funding to conduct research investigations, hire researchers and for the procurement of research infrastructure, however, the subject of sustainability is often an afterthought (Gupta & Singhal, 2017). While much research investigation has been carried out into embedding sustainability in curriculum, outreach and collaboration, campus operations and experience, academic reporting etc, there is not much evidence of the process undertaken to embed same in the research funding application process. Mcmanners (2019) outlined that unless there is a conscious effort to engage researchers with sustainability from an early stage, it will be difficult to engage them as catalysts for change to respond to the challenge of sustainability.

Therefore, this research investigation aims to develop a best practice framework for Enactus and similar organisations to engage with its entrepreneurial community in universities and colleges (i.e. students, researchers and academics) to harness innovation and business skills for embedding sustainability in research funding applications in a post-Covid world. The central research question is this:

"How can Enactus engage with engage with its entrepreneurial community in universities and colleges (i.e. students, researchers and academics) to embed sustainability in research funding applications given the significantly changed post-Covid world?"

This research investigation will have three main objectives. The first objective is to conduct a systematic literature review of the essential components required for the preparation and training of innovation and business skills to respond to the challenge of sustainability. The second objective is to critically examine whether the training requirements have changed three time periods i.e. pre-covid (2017-2019), during Covid (2020-2022) and post-Covid (2023 till date). The third objective will be to synthesise the findings into a best practice framework for use suggested for use by

Enactus and related organisations in training researchers in particular to rise to the challenge of sustainability in a post-Covid world.

Literature review

Much of the studies that abound within the literature today are around how to embed sustainability within curriculum and training of students within universities and colleges, with very little attention paid to doing the same for research practitioners and policymakers (Holt & Whelan, 2021). Funding agencies are beginning to prioritize sustainability-related research and require its integration into project proposals (Guerra, 2020). This shift reflects the growing awareness of the need to balance as well as go beyond economic, social, and environmental factors in research endeavors (Montenegro de Lima et al., 2020). To enhance the impact of sustainability research, new methodologies and active engagement from researchers are necessary (McManners, 2019), highlighting the importance of this study. However, challenges remain, such as balancing sustainability goals with funding constraints and stakeholder expectations (Bamuturaki, 2022)

The main research problem to be addressed in this paper is that it is rare to find programs, training or activities that facilitate embedding sustainability in research funding applications even within organisations such as Enactus. Seeing that many funding agencies now prioritise sustainability and may require applicants to demonstrate how their research align with sustainable practices (Rose et al., 2015), embedding sustainability holds the potential to enhance the chances of receiving funding. While much of the work of Enactus has been focused on encouraging social enterprise and equipping students to consider the environmental impact of their work and incorporate sustainable approaches in project design and execution (Clegg & Town-Andrews, 2021), there is not much emphasis on preparing and training of researchers in innovation and business skills to respond to the challenge of sustainability.

Therefore, the main research gap that this study will address is to develop a best practice framework for Enactus and related organisations to equip its entrepreneurial community on how to leverage innovation and business skills for sustainability within research funding applications in a post-Covid world.

Methodology

We will utilize the PRISMA (Preselected Reporting Items for Systematic Reviews and Meta-Analyses) framework put forward by (Moher et al., 2009) in systematically reviewing literature regarding preparing and educating individuals on innovation and business skills to address sustainability challenges. This methodology is considered qualitative in nature, and will not involve any statistical analysis. Based on the objectives of the research, there will be three main sections of the methodology. First, we will conduct a thorough search of peer-reviewed articles and conference papers published between 2017 and 2023 related to embedding sustainability in researcher training. This will involve reviewing online databases such as Scopus, Web of Science, and Google Scholar due to their comprehensive coverage, search quality and credibility (Stevenson et al., 2017). Key inclusion criteria will be to focus only on peer-reviewed research, while exclusion criteria will be the dates of publication i.e. any studies that does not fall within the specified dates will be excluded.

The second aspect of the methods will be to categorise sustainability embedding requirements into three time periods: pre-COVID (2017-2019), during COVID (2020-2022), and post-COVID (2023). Across these phases, a comparative analysis will be conducted to assess changes in training needs, pedagogical approaches, and prevailing challenges of embedding sustainability in engaging with researchers. The synthesis will involve thematic analysis to highlight major trends and transformations in training requirements over time (Braun & Clarke, 2006). Finally, a best practice framework will be formulated based on the systematic review and critical examination. The framework will be tailored for Enactus, emphasizing strategies for effectively training researchers to tackle sustainability challenges in a post-COVID era. A stakeholder validation process will be implemented to ensure practical applicability and relevance (Patton, 2014).

Findings

This study is ongoing and however, preliminary evidence suggests that stakeholder expectations for research embedding sustainability are increasing (Bamuturaki, 2021). As a result, the proposed model will be critical for Enactus to update its training model to also focus more on student researchers (e.g. M.Sc and PhD students) and academics supporting them.

Contributions

By analysing the changes in requirements for embedding sustainability in research before, during, and after the COVID-19 pandemic, the study will provide insight into how external challenges influence sustainable practices education especially within the research field. Furthermore, an empirically informed best practice framework will support training methodologies within Enactus and beyond, enhancing the capacity of researchers and practitioners to address sustainability challenges post-COVID.

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Student Perceptions of Enactus in Advancing Human Development in Higher Education

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Introduction

The role of higher education in promoting human development has gained widespread recognition, with universities increasingly playing a pivotal role through both curricula and extracurricular initiatives (Fia, Ghasemzadeh, & Paletta, 2023). Initiatives such as Enactus have the potential to enable students to make significant contributions to their institution's strategic goals, particularly in terms of social and community impact (Tomasella, Wylie, & Gill, 2023). However, there is limited understanding of how initiatives like Enactus—a nonprofit social entrepreneurship organisation that fosters collaboration among students, business leaders, and academic staff to address global challenges such as poverty, unemployment, and climate change (Enactus, 2023)—expand students' skills and capabilities beyond academic qualifications. Drawing on Amartya Sen's concept of development as freedom (Sen, 1989), this paper explores the diverse and valued skills graduates acquire and enhance through participation in Enactus and how these may contribute to tackling global issues like poverty and inequality (DeJaeghere, 2017). Anchored in the Human Development Framework's five pillars, empowerment, sustainability, productivity and efficiency, equality and equity, and participation, human development is seen as a multi-dimensional approach to creating an environment where people can live meaningful lives (Haq, 1995; Soleimani, Fahim, Naghshineh, & Soleimani, 2023). This approach is crucial for navigating an ever-evolving world that demands more than just economic and financial expertise. The COVID-19 pandemic highlighted the need for contributors to societal development who possess a wide range of capabilities beyond financial resilience (Bergami, Corsino, Daood, & Giuri, 2022). This paper, therefore, seeks to examine whether programs such as Enactus equip students with these critical skills and attributes.

Literature Review

Social entrepreneurship (SE) is increasingly recognised for its role in fostering human development by equipping students with critical skills and promoting social responsibility

(DeJaeghere, 2017). Jorre de St Jorre and Oliver (2018) highlight how students often engage in community initiatives for the "common good," reflecting principles of justice, equity, and social responsibility. These values are central to SE and Enactus initiatives, which focus, for instance, on food security, climate change, and poverty alleviation (Enactus, 2023). However, the impact of extracurricular SE programs like Enactus on individual skill development remains underexplored, especially in the global south, where SE education is less prevalent (Amundam, 2019).

Institutions like Ashoka and the Skoll Foundation have established strong SE ecosystems in the global north, providing resources and support to social entrepreneurs (Ashoka, 2022; Shekhawat, 2022). While SE is recognised as a catalyst for innovation and economic growth in HEIs, as shown by Al-Qudah et al. (2022), there is limited understanding of how Enactus specifically contributes to students' personal and professional development, particularly in contexts like South Africa, where high graduate unemployment and educational inequalities persist (O'Neill, 2023; Walker, McLean, Mathebula, & Mukwambo, 2022). This study addresses this gap using qualitative methods to explore student perceptions of Enactus at selected two universities.

Methodology

The study employed a qualitative research methodology, using focus group discussions (FGDs) and in-depth interviews with Enactus students from the University of the Free State (UFS) and the Central University of Technology, Free State (CUT). These two institutions were purposively selected due to their unique contributions to Enactus South Africa. UFS, as the country's pioneering institution for Enactus, offers valuable historical insights into students' motivations and learning experiences. CUT was chosen for its two consecutive wins as Enactus South Africa's national champions, representing a model of entrepreneurial success (Enactus, 2023). The study involved 34 male and female students, using one-on-one interviews (16 participants) and gamified FGDs (18 participants). In the FGDs, participants used the “Enactus Mosaic Pizza” to visually prioritise five Human Development Framework pillars, reflecting the significance of each pillar (pizza slice) in their Enactus experiences. The “River of life” concept was applied to metaphorically capture their skills, such as resilience and strategic thinking, through reflecting on how river creatures (Enactus members) survive the turbulence of stormy waters (Enactus challenging experiences) while a sport-based activity connected valued player skills to individual Enactus roles. These interactive methods explored students' perceptions of Enactus' contribution to personal and professional development, emphasising the program's impact on human development beyond academic settings.

Preliminary Findings

The findings from the study highlight several key aspects of student initiatives, such as enterprises that focus on *local economic developmen*t, *education*, *environmental stewardship*, and *agriculture*. Participants in the FGDs partitioned the HDF pillars through an “Enactus Mosaic pizza” model, where each slice represented participation, empowerment, sustainability, equality and equity, and productivity and efficiency. Participation emerged as the most crucial component of these five slices, with 22.67%. This highlights the importance of active engagement, decision-making, and student collaboration. Empowerment followed closely at

21.33%, with students acknowledging Enactus as a platform that enhances autonomy, decision-making skills, and self-confidence. Enactus contributes to productivity and efficiency, which got a share of 20.67% by improving time management, organisational skills, and strategic planning. While equity, equality, and sustainability received equal recognition of 17.67% each. This emphasises the importance of inclusivity and long-term impact. Enactus stands out from traditional educational models by integrating experiential learning through engaging students in localised real-world initiatives and fostering professional and personal growth.

Participants in one-on-one interviews reported increased self-reliance, leadership, and strategic thinking skills, benefiting from hands-on experiences that bridge theory and practice. These skills resulted from their community-engaged enterprises that saw the team's training over 300 (including high school learners, youth, and women) in worm farming. The findings show that the Enactus approach provides valuable learning for students and community impact to address multifaceted faces of poverty. Promoting such student networks will create resilient students who graduate not only with degrees but also become community development champions. Challenges such as balancing academic commitments with Enactus responsibilities, lack of academic credit, resource limitations, and team dynamics often lead to burnout and reduced motivation. Despite these obstacles, students view these challenges as opportunities to build resilience. Participation in Enactus is a transformative experience that fosters servant leadership and prepares students for professional success and meaningful societal contributions.

Discussion

Previous research has established that SE fosters critical skills and social responsibility. Jorre de St Jorre and Oliver (2018), highlighted the role of student community initiatives in promoting the "common good". This aligns with this study's findings, where Enactus empowers students by fostering leadership, critical thinking, and innovation, echoing the views of Ghazzawi, Lee, and Jagannathan (2020) and De Jager et al. (2017).

However, the study extends the literature by providing specific evidence of how Enactus initiatives contribute to developing these skills through experiential learning. Unlike the broader discussions in the literature, which often focus on SE in a general sense, this study sheds light on the unique role of Enactus in the South African context, particularly in addressing the challenges of graduate attributes which contribute to unemployability and educational inequalities (Walker, McLean, Mathebula, & Mukwambo, 2022; O'Neill, 2023). This adds a new dimension to the understanding of SE, particularly in the global south, where SE education and its contributions to student development have been less explored (Othman, Mohammad, Siti, Radin, & Rahman, 2017; Amundam, 2019).

Contributions

In this paper, we demonstrate Enactus' contribution to empirical understanding of such initiatives' role in advancing human development in higher education through participation, empowerment, and real-world application. Theoretically, it could help us understand the value of higher education beyond the economic contribution of graduates in society (the instrumental

value), which is often the societal expectation of an education that one should be able to get a job. Yet, using a human development framework helps see beyond this instrumentality, which Sen argues (Sen, 2014), to see what human beings/graduates value for their well-being. Also, it helps identify ways (attributes) that are necessary to respond to societal challenges. For example, innovation, critical thinking, and creativity are some of the capabilities/graduate attributes that can be utilised to identify and solve community problems. Enactus' innovative approach offers valuable lessons for educators and policymakers, emphasising experiential learning as a vital component of modern education that prepares students for complex socio-economic challenges.

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Track 6 – Student Research

6.1 Creating the First Student Run Start-up Incubator in Melbourne: Fostering Entrepreneurship and Validating Ideas.

6.2 Hacking Impact: A Proof of Concept for advancing SDGs through Cross Collaborative Student-Led Innovation Challenges.

6.3 How to foster a culture that equips a student team with innovation and business skills to empower them to create a more sustainable world? A case study of the Enactus Team at the University of the Sunshine Coast (Australia).

6.4 Indian Handicraft Industry: Challenges and Opportunities for Sustainable Development through Youth-Led Social Entrepreneurship.

Creating the First Student Run Start-up Incubator in Melbourne: Fostering Entrepreneurship and Validating Ideas.

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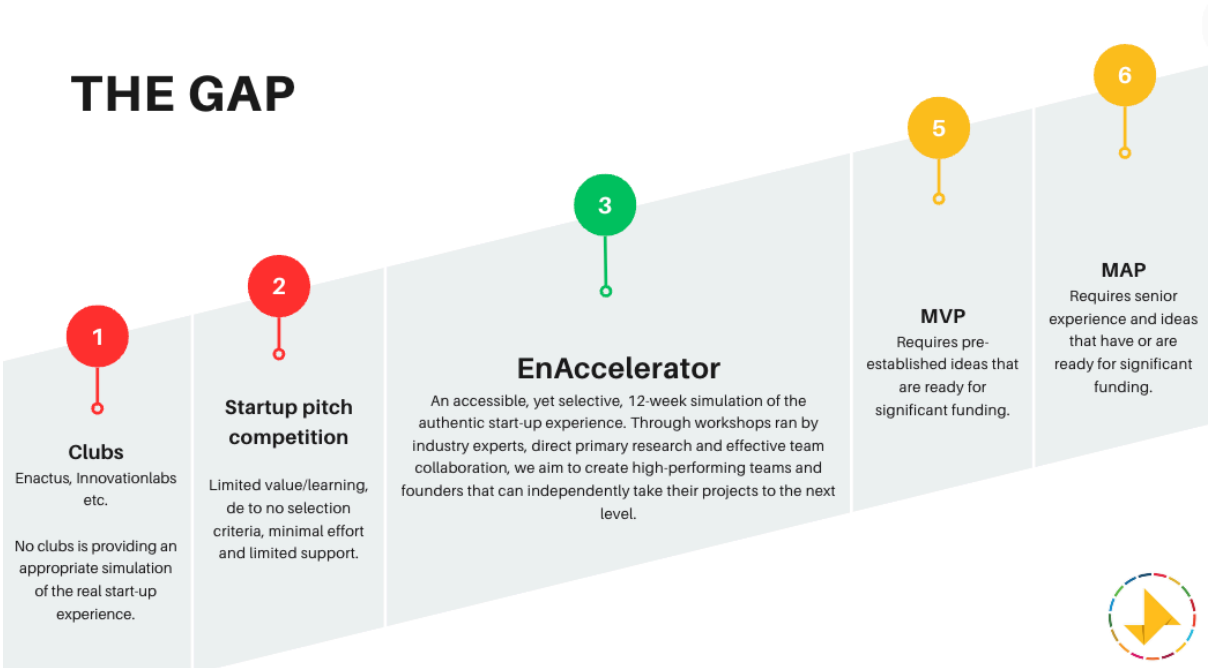
Introduction

Over just the last year, student demand for start-up experiences has risen dramatically. For example, the startup pitch competition went from 300 applicants in 2023 to over 700 in 2024. Additionally, new clubs are taking the lead and beginning to bring more realistic start-up experiences to students. The growing demand for start-ups doesn't just stop at tertiary education. 'Startup Year 2024', an initiative from the Australian government's department of education, has pledged $40 million in funding for students in start-up incubators across the University landscape.

Enactus Melbourne once had its own incubator, which ran during weekly full committee meetings (FCMs). What we found was that forcing all members to participate in start-ups was not the way to go. Lack of motivation, unvalidated problem spaces and in-tangible outputs were some of the core problems. In response, we shifted to a smaller and more selective Research and Development (R&D) team to supply the project pipeline. However, this took away the learning opportunity for many people who were not in that more selective team. Of our 73 members, a significant proportion have expressed an interest in learning more about start-ups and projects. Currently, this opportunity is only available for a select few.

Furthermore, the current R&D process was suboptimal - both in terms of learning for officers and the ideas that come out of it. We realised that we must provide a learning opportunity to our entire committee and the new talent that we onboarded, otherwise, students would leave for better opportunities elsewhere.



The problem for students was the gap in the undergraduate start-up ecosystem. Melbourne Accelerator Program (MAP), one of the largest start-up accelerators in Australia, is only accessible to industry professionals and graduates, with established ideas that are ready for significant funding. Melbourne Velocity Program (MVP) requires students to have pre-established initiatives to be competitive for entry. The start-up pitch competition provides little value, due to no selection criteria and minimal support provided during the ideation process.

We aimed to fill this gap by building the first student-run start-up incubator in Melbourne. The learning outcomes for students were to get an authentic start-up experience, develop the entrepreneurial values of a great founder and build a validated start-up. By the end of the program, we hypothesise that students would be better founders and have solved problems that customers care about.

Literature review

In developing our incubator methodology, we incorporated the structure of the most successful start-up programs in the world and co-designed with the program designers of Australia's most successful start-up accelerators. These included Y Combinator, Harvard Innovation Labs, Monash FastTrack and the Melbourne Accelerator and Velocity programs. In addition, we looked at the success, shortcomings and feedback from previous R&D programs that Enactus Melbourne had run. After creating our initial design, we realised that it focused too heavily on creating high-growth ventures and less on developing the student's attributes as founders. To do this, we took inspiration from Stanford's Behaviour Change Lab and Organisational Psychology principles.

Methodology

Our resulting program was based on 4 key stints: Problem Space, Key Customers, Prototyping and Pitching. Once students were recruited into the committee, they had 3 chances to interact with each other in different settings. These included 2 social situations and 1 workplace simulation. As a result, students were able to understand each other's values and working styles before self-selecting their project teams. After team selection, we ran the program over 9 weeks with 4 teams of 3 students from 4 diverse faculties. In addition, we brought founders, venture capitalists and program designers into each workshop to provide students with tailored and practical learning seminars.

Findings

As of writing, our students have completed 25% of the program, which means that data-based validation of the program's efficacy is currently limited. However, current feedback from students and industry experts has been overwhelmingly positive. Students have appreciated and found value in the speaker seminars and behaviour change activities. Furthermore, program designers from the largest accelerators in our region have validated our design and are excited to see its effects over the coming months. One of the largest makers of our current success is that students have had a 100% task completion rate and a 92% attendance rate to our sessions. In future, we would like to see how these engagement rates change. Furthermore, we are looking to compare before and after measures of entrepreneurial values to see if the behaviour change initiatives have been effective. Finally, we hope to scale this program out to other universities and receive funding to provide more tangible support for the ideas that students create.

Hacking Impact: A Proof of Concept for advancing SDGs through Cross Collaborative Student-Led Innovation Challenges.

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Introduction

Enactus has an active student body of 42,450 annual members spanning over 30 nations in the world (Enactus, 2023), creating a diverse network with the potential for global impact through student run social enterprises.

The organization's incubator-like operations have successfully facilitated numerous local initiatives, yet there traditionally remains a gap in cross-collaborative opportunities between its numerous universities. This fragmentation limits the full potential of student-led projects and reduces the likelihood of collective problem-solving.

Student-run innovation challenges represent a unique opportunity to bridge this gap by harnessing the creativity and technical skills of student innovators. These events bring together diverse teams to develop innovative technological solutions and strategies that address pressing social issues, whilst simultaneously providing a practical learning opportunity for participants and organisers alike.

Therefore, this pilot study aims to highlight some considerations of running a successful student led innovation challenge to provide a working template for future endeavours towards enhancing cross-collaboration and further advancing the SDGs.

Literature review

Hackathons

Hackathons are the prototypical innovation challenge that has been primarily investigated in prior literature. Notably, they are commonly seen as short sprints of 1-3 days to create software solutions to a particular problem (Briscoe, 2014) (Nolte et al., 2020), with the benefits spanning from technical and non-technical artefacts such as software, to personal outcomes such as learning and networking (Medina & Nolte, 2020).

Moreover, it has been noted that a considerable number of projects are continued even after the formal hackathon has ended (Nandi & Mandernach, 2016), highlighting the potential to create lasting social enterprises.

Student Led Entrepreneurship

Student led entrepreneurship has played an essential role in creating new knowledge and employment opportunities in the market (Ferrante et al., 2018), especially when you consider the inceptions of Facebook, Dell, Yahoo and Google, all stemming from university level ventures (Passavanti et al., 2023). Thus, the importance of investigating new methodologies of creating

opportunities for student led innovation becomes crucial to solve the increasing number of pressing societal issues.

Research Gap
Notably, a gap arises within the student led activities, especially within innovation challenges and in integrating broader frameworks such as the SDGs. Thus, this study serves to detail the methodology and findings from a student designed program to provide insights about the viability for other students and organizers alike.

Methodology
A case study approach was adopted, allowing for an in-depth exploration of the practical issues faced by student organisations and the potential solutions that could enhance collaboration and impact.

Design:
The design of the competition was shaped through co-design with a team of Presidents from various Enactus branches throughout Australia and in consultation with the Enactus Australia CEO. This collaborative process ensured that the research design was aligned with the needs and perspectives of key stakeholders, incorporating their insights into the challenges and opportunities specific to their branches.
The topic of the challenge was to “Hack for Peace” in line with UN SDG16 to promote positive peace through technological innovation.

Physical Delivery:
Ultimately, a mixed delivery method was used to administer the innovation challenge. Both traditional hackathon style challenges (2 days in length) and longer innovation jams (2 weeks in length) were employed depending on the capacity of each state to host their own challenge. Selected teams were then brought back for a national final together to evaluate the viability and efficacy.

Outreach:
Marketing materials were generally standardized and sent to the respective teams from the organizing team in Melbourne, and a list of potential advertising locations were provided to increase the reach nationally. A small budget was allocated to social media marketing.

Reward structure:
The reward structure incentivised different Enactus teams by providing funding to allocate to organize the challenge, with increasing amounts depending on the number of branches involved. The students were incentivized with cash prizes for the most innovative idea, judged based on criteria including; problem solution fit, clarity, feasibility, innovation & creativity and adherence to SDG goals.

Timings:
There was a ~7-month period between idea inception and final execution, with the challenge running over a 2-month period towards the end of the university semester.

Findings

Promotional Timing and Quantity had a direct impact on registrations
Teams that promoted the event over 3 weeks in advanced received more registrations. The University of Melbourne provided the highest number of participants out of the 7 universities partaking in the pilot program, with 65 students participating.
The quantity of marketing materials spread such as flyers, social media posts, university notice boards posts and university newsletters had a direct impact on the total number of registrants.

Diverse Teams generally performed better
The participants within the competition stemmed from all disciplines. At the national competition, the top teams were consistently the most diverse, with blended perspectives coming from law, science, commerce and arts.

The Organization Committee size doesn't have to be big
A lean team of 7 students with varying roles and commitment levels (including creating promotional materials, judging materials, timeline) were involved in the execution of the event. At any given time, there were probably 4 students working in parallel, so the team size could be decreased even further. This is despite all students concurrently studying a full-time load at university whilst serving as committee members to organize other events and run separate marketing campaigns in parallel with organizing the event.

There was a higher completion rate for the two-week delivery method
Amongst a busy university schedule, the two-week long innovation challenge group received more submissions and a higher percentage of initial registrations converting to submission.

Discussion

The long-term goal of this case study is to provide a viable pilot case study and tool that can be adapted by subsequent organizers, including even more universities in Australia, New Zealand and surrounding island nations that are being contacted to further expand on the pilot.
Ultimately, this study seeks to provide more opportunities for student participants and student-leaders to learn and gain experience in a practical setting, and potentially for ground-breaking innovations to sprout from it.
Interestingly, the most common feedback from student organizers was that: although elements of organizing the event may be stressful, it eventually was a better learning experience than they've gained from their university courses.

Acknowledgements
A massive thank you to PAXHAX for providing financial assistance to make this event possible, without their kind sponsorship, this competition would not have run as smoothly or as successfully as it did. To all the Australian Enactus Presidents, for being so receptive to the idea and helping bring it to life in multiple states. To Selena for helping find partnerships and helping assist the organizational process. And finally, to the Enactus Melbourne team, who made sure everything ran smoothly and for providing many of the template resources.
For anyone looking to conduct a similar event or competition, please reach out to Jack(jackhhu1@gmail.com) to request the pack of resources used as a template for reference.

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How to foster a culture that equips a student team with innovation and business skills to empower them to create a more sustainable world? A case study of the Enactus Team at the University of the Sunshine Coast (Australia).

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Introduction

The triple environmental crisis and geopolitical tensions creates feelings of eco-anxiety, overwhelm, and distrust in institutions and society. This increases disengagement in a time when engagement of citizens is necessary to tackle the global challenges. However, to undertake action, it is often not the absence of the desire to do so, nor the knowledge about the issue at hand, but the lacking capability and ability. While Enactus aims to fill in these gaps and provides university students a framework to increase their capabilities and abilities beyond knowledge and desire (motivation), this specific case study of the Sunshine Coast University demonstrates the importance of fostering a specific culture driven by the Enactus values to equip a student group effectively with innovation and business skills to create a more sustainable world.

Literature review

The limited research that exists on Enactus confirms the key success factors of 'desire' and values of the students to contribute to change (Otache, Akubo & David 2024; Tshikovhi & Shambare 2015), and the development of adequate skills or capability (Omotosho 2024) to effectively contribute to the global United Nations' Sustainable Development Goals (SDGs) (Dalibozhko & Krakovetskaya 2018; Omotosho, AO et al. 2023). However, most of this research is focused on Africa and Asia, while little to no research focuses on organisational culture as a critical factor to effectively equip students with these skills, creating a safe learning space to empower them to create change.

Methodology

The intangible and subtle nature of culture requires a qualitative research method. The study opted for a three (3) year observational study of the Enactus Club of the University of the Sunshine Coast. From its launch in 2022 to succession planning of the leadership in 2024. This research method enables to distil how the specific culture has been fostered to equip students with innovation and business skills and empower them to create meaningful change.

Findings

Over the 3 years, the study identified the following consistent elements that contributed to the organisational culture of the Enactus team. (1) Consistency: the team met every week for two hours. While not all team members made were always present, there was consistently a

dedicated space and time. Team members were gently encouraged to attend as often as possible and return even after longer periods of absence, e.g. one team member returned after 2 years. (2) Communication: during the meetings there was open and non-hierarchical communication whereby team members where kindly encouraged to participate. After every meeting a report and/or slide pack was distributed to all members. (3) Collaboration: unlike other Enactus teams where many members are business students, the Sunshine Coast team contains various disciplines. From their first participation onwards, students were actively and repeatedly encouraged that all their skills are complementary and equally valuable, which led to fruitful collaboration where the whole was more than the sum of the parts. (4) Competence: a strength-based approach was applied by encouraging the students to contribute their strengths (skills, knowledge, …), learn new skills and teach others. Where competence was lacking, specific workshops and participation to events were organised to upskill students, such as the Silicon Cost Startup Weekend. To these events, students were invited as a form of team building and capacity expansion rather than 'competition'. One alumnus indicated how his Enactus experience had been critical to obtain and feel confident in his job after graduation. (5) Community: during the meetings, Enactus competitions, and events, such as the Enactus Queensland new year's gathering, trivia nights and fund raisings events, a sense of community was actively fostered. This safe space motivated students to join, return, and contribute in the way they felt comfortable with. Many members indicated that Enactus enabled them to create friendships beyond impact. As one member said: 'Some meetings I feel like being quiet and mostly listen, I don't feel pressured and am happy to be here'. Finally, this sense of culture was noticed by the outsider's environment, in the high social and symbolic capital that this Enactus group receives in the local university community, and by receiving the *Spirit of Enactus Award* in the 3 consecutive years they participated at the Australian National Enactus Competition (2022, 2023, 2024).

Discussion

The case study confirms the importance of fostering a specific organisational culture in line with the Enactus' values to equip students with specific skills and empower them to create sustainability in their communities.

Contributions

As such, it contributes to the limited research available on Enactus and showcases the importance of organisational culture to equip and empower group members to effectively create change. The findings can be used to create a framework to foster the specific Enactus' culture that can equip and empower groups of people to undertake social entrepreneurial action to create a better world for all of us (Enactus).

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Indian Handicraft Industry: Challenges and Opportunities for Sustainable Development through Youth-Led Social Entrepreneurship

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Introduction

India is a land of richness in terms of different types of artistic achievements and craftsmanship. Many handicraft products are specifically associated with any specific State and their artisans. The rising consumer demand for machine-made products has consequently reduced the demand for traditional arts, crafts, and handicrafts. The relatively suboptimal performance of India on most factors of competitiveness, like basic infrastructure and intellectual property rights, results in reduced income for the artists and consumer confidence in their products. According to the latest data, approximately 7 million people are currently employed in the sector, with the majority in rural areas and about 56% being women, who continue to face wage gaps and limited decision-making power (*India Brand Equity Foundation - IBEF*, Jun, 2024). The problems only increased with the onset of the COVID-19 pandemic, which caused a deterioration in employment and reduced market opportunities (Yadav *et al.*, 2023). In light of these challenges, innovation coupled with an entrepreneurial spirit is vital for sustainable development.

Enactus MPSTME, a social entrepreneurial student-led organization, has generated impact in various domains across the Indian states of Maharashtra, Gujarat, and Goa through its student-led ventures and has worked extensively with artisans in its recent projects giving the student members a sense of empathy and responsibility towards the community. Project Shilpkaar, under Enactus MPSTME, was established to bridge the market gap between artisans in Bhuj, Gujarat, working on plarn (plastic yarn) products and the consumer market. The primary objective of the project is to connect the artisans with broader market opportunities, enabling economic growth for them.

Literature review

The Indian handicrafts industry has faced many challenges in regard to market demand, infrastructure, and innovation. Previous literature highlights the lack of modernization and digital accessibility (Khan, 2022). The role of youth-led social entrepreneurship in addressing challenges in the Indian handicraft industry remains underexplored in current literature (Rana, Siddhant, and Rajpal, 2024). Therefore the current study attempts to fill this gap.

Artisan-led social entrepreneurship projects in Kutch, Gujarat were called 'collective resilience' in another study. KNNA and KHAMIR helped local artisans start Ajrakh and Kala cotton businesses (Pathak and Mukherjee, 2020).
Table 1 lists some of the Indian government's programs that cover risks and provide financial aid to unorganized sector and handicraft workers.

Table 1: Various initiatives taken by government of India

Policy Name	**Eligibility**	**Benefits**
PRADHAN MANTRI SURKASHA BIMA YOJANA (PMSBY)	- All 18-50-year-old handicraft craftsmen with valid cards.	- Risk coverage throughout policy term is Rs. 2 Lakh for accidental death and permanent whole disability and Rs. 1 Lakh for partial disability valid for one year.
PRADHAN MANTRI JEEVAN JYOTI BIMA YOJANA (PMJJBY)	- All 18-50-year-old handicraft craftsmen with valid cards.	- Rs. 2 Lakh is payable on beneficiary's death due to any cause during policy term valid for one year and renewable.
AAM ADMI BIMA YOJANA (AABY)	- Workers in the unorganized sector, such as agricultural laborers, fishermen, beedi workers, etc. and other categories of workers in unorganized sectors are covered.	- ₹30,000 to the nominee in case of natural death. ₹75,000 to the nominee if the insured dies in an accident. ₹75,000 in case of total permanent disability. ₹37,500 in case of partial disability.

Source: Ministry of Micro, Small and Medium Enterprises, 2023; West Bengal Khadi and Village Industries Board, 2022; Press Information Bureau, 2022

Methodology

The study uses mixed approaches. Personal interviews with two beneficiary bases from Gujarat and Maharashtra were used to assess their socioeconomic position. Secondary research examines the Indian Handicraft Sector, socially leading young companies, and sustainable entrepreneurship. This research used mixed methods to analyze the qualitative and quantitative outcomes of youth-led entrepreneurship and Project Shilpkaar.

Findings

Primary research indicated that most artisans begin operating informally, often on a part-time basis, where family support is instrumental in their sustenance. While the demand is high, the artisans struggle to manage wholesale and retail aspects of their businesses, often supplementing their income from other ventures. Social entrepreneurial models, such as Project Shilpkaar, have opened up sustainable market avenues for artisans, particularly women. The findings are that youth-driven entrepreneurship could provide sustainable economic opportunities to artisans, especially in a region like Gujarat. Initiatives such as Shilpkaar have indeed used digital technologies and modern methods of doing business to enhance market access and reduce income inequality for the sustainable development of the handicraft industry (Anil, Misra and Bal, 2023). Such findings align with Sustainable Development Goals 8, 10, and 12, recognizing the role of social enterprises in contributing to broader economic goals.

Discussion

Project Shilpkaar created work opportunities for more than 23 women artisans. To support the initiative, several ICT initiatives were launched, like building an e-commerce portal and using modernised tools (Excel sheets and dashboards) to keep track of orders. The project also aims at connecting various beneficiary groups by developing an app with artificial intelligence-based language translation that will bridge the communication gap between the beneficiaries catering to the diverse Indian landscape. The first beneficiary to join Project Shilpkaar in 2020 was Rajiben from Kutch where the weaving center was established. In the year 2022, Pratibha Gurnath Berde joined Shilpkaar. Pratibha Berde assisted the Project in establishing its second stitching center. With a mixed approach of sales trips and exhibitions for sales channels, a collective revenue of about 1.2 Lakh Rupees was achieved alongside recycling of over 40 kilos of plastic, and the empowerment of about 25 artisans across the states of Gujarat and Maharashtra, with an average increase in profit margins of up to 50%.

Contributions

This makes the research contribution unique in theoretical understanding and practical applications, as it has portrayed the effectiveness of youthful social entrepreneurship in the handicraft sector in India. The findings have shown tangible evidence concerning challenges faced by artisans and how digital resources and modern methodological approaches can be used to overcome some of these problems. This further calls for a more nuanced approach to exploring and acknowledging the diverse craft forms of various cultures to make sustainable business practices that are locally relevant in combination with economies.

In practice, the study becomes more useful in guiding student-led social entrepreneurial ventures and other initiatives for the artisans.

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October 2

20 years of Impact in Kazakhstan

It is with great honour that I introduce this work, which reflects two decades of dedication to Enactus Kazakhstan, an organization that has been a cornerstone for fostering social entrepreneurship and sustainable development in our nation.
My journey with Enactus began when we were still known as SIFE, and I served as a Faculty Advisor. Today, I have the privilege of witnessing how Enactus Kazakhstan has grown, impacting the lives of countless students and communities.

Since 2008, when I became Country Leader, Enactus Kazakhstan has evolved into a platform that unlocks the potential of young minds, empowering them to develop projects that address real social and environmental challenges. Our growth from just 7-8 universities in 2006 to more than 200 institutions across Kazakhstan today, including universities, colleges, and schools, speaks to the belief in the power of entrepreneurial action for the common good.

The student-led projects within Enactus do more than inspire—they create real impact. These initiatives help generate employment, solve pressing environmental issues, and improve living conditions across communities. They represent our commitment to sustainability, both in terms of long-term results and in cultivating responsible leaders. These projects have become catalysts for economic development, enhanced education, healthcare, and environmental innovations throughout Kazakhstan.

As we look to the future, Enactus Kazakhstan continues to face new challenges and opportunities, but with each, we strengthen our resolve. We are expanding partnerships and nurturing a generation of changemakers who will contribute to building a sustainable and prosperous future for our country.

I would like to extend my deepest gratitude to our partners, students, educators, and colleagues. Your commitment and support have been instrumental in achieving our shared goals, and I am confident that together we will continue to shape a socially responsible future for Kazakhstan.

Albina Yerzhanova
Enactus Kazakhstan

School Entrepreneurship in Service of Sustainability - Examples of Enactus Kazakhstan Projects

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Abstract
This article explores how school entrepreneurship initiatives in Kazakhstan, under the Enactus program, contribute to advancing the United Nations' Sustainable Development Goals (SDGs). Through student-led projects, high school teams have developed innovative solutions to critical challenges such as climate change, poverty, inequality, and environmental sustainability. Guided by faculty advisors and Enactus coaches, these projects focus on areas such as responsible consumption, clean energy, quality education, and inclusive economic growth. Highlighted examples include initiatives like the NIS Aktobe project, which utilizes biological waste for eco-friendly products, and the DNA Team's app for promoting food transparency. These projects demonstrate the potential of youth entrepreneurship in creating real-world solutions that contribute to both local and global sustainability goals. The article analyzes the social, economic, and environmental impact of the projects, showcasing how mentorship, creativity, and innovation can drive significant progress toward achieving the SDGs.

The Path to Sustainable Development: How Enactus Kazakhstan Student Projects are Changing the World

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Abstract
This article explores the significant contributions of Enactus Kazakhstan student projects toward achieving the United Nations' Sustainable Development Goals (SDGs). By harnessing entrepreneurship and innovation, Enactus students across Kazakhstan have developed initiatives that address pressing social, economic, and environmental challenges. These projects focus on various SDG areas, including environmental sustainability, healthcare access, responsible consumption, and inclusive economic growth. The article evaluates several student-led projects such as GreenWool Cups, which recycles organic waste for water conservation, and BIOAU, which transforms plastic waste into eco-friendly paint. Through qualitative and quantitative analysis, the article assesses the impact of these initiatives on local communities, emphasizing their scalability and alignment with global sustainability objectives. The findings suggest that Enactus Kazakhstan projects provide practical solutions with measurable outcomes in waste reduction, resource conservation, and economic development, positioning the program as a key driver of sustainable change both nationally and globally. The article concludes with recommendations for expanding partnerships and integrating digital technologies to further enhance the projects' effectiveness and impact.

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Oct 1 Schedule

9 am	Registration and Networking
9.30 - 9.40 9.40 - 9.50	Opening address from conference and EGRN Chair Dr Bhatia Tursyngul Gumarova will share her experience as a Faculty Advisor on the topic of implementing the Enactus Minor.
9.50 - 10.15	Keynote Speaker : George Tsiatis CEO Resolution Project
10.15 - 11.15	**Paper Tracks 1 and 2** Track 1 Link: **Join the meeting now** Meeting ID: 217 984 294 83 Passcode: 7YMBT6 Track 2 Link: https://meet.google.com/nic-aruh-gwp
11.15 – 11.45	morning tea
11.45– 12.45	**Paper Tracks 3 and 4** Track 3 Link: **Join the meeting now** Meeting ID: 272 292 362 850 Passcode: wbNRnX Track 4 Link: https://meet.google.com/nic-aruh-gwp
12.45 - 1.45	**Paper Tracks 5 and 6** Track 5 Link: **Join the meeting now** Meeting ID: 230 501 156 732 Passcode: LNzL6C Track 6 Link: https://meet.google.com/nic-aruh-gwp
1.45 - 2.30	Lunch and Networking
2.30 - 3.00	Panel discussion 'Youth Led Impact through Enterprise' Facilitated by Selena Griffith Panelists : Ms Catherine Fowler, Mr Alan Jones, Mr Roberto Macina, Dr Rody Rivera

3.00 – 3.15 pm	Closing remarks and Awards Selena Griffith and Ian Aitken
3.15 - 4.30	Afternoon tea and networking