

From Abroad Learning to Sustainability Impacts: A TCCM-Based Research Agenda for Sustainability Knowledge Acquisition

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ABSTRACT

Study-abroad experiences provide students with valuable opportunities to broaden their perspectives and cultivate sustainable behavior. Exposure to cultural, environmental, and social contexts fosters a deeper understanding of sustainability and encourages behavioral changes aligned with long-term sustainability goals. In response to the growing number of programs integrating sustainability into study-abroad initiatives, attempts to systematically review the literature development would uncover various experiences gained through the program, identify gaps, and propose future research direction. This study aims to explore existing literature related to knowledge gained from study abroad, particularly for sustainability behavior and management. A set of current literature addressing sustainability management and study abroad knowledge sharing was compiled and evaluated using a TCCM approach. Current topics discussed were proposed as research themes, and underexplored areas will be investigated to propose future research trajectories.

Keywords: Knowledge management, learning abroad, literature reviews, sustainability management, TCCM

DOI: <https://doi.org/10.64458/asbnc.v2.107>

INTRODUCTION

Sustainability knowledge and management have become an attention-grabbing issue in recent years. Massive industrialization and global business exploitation have made society focus on cash maximization with minimal consideration for society and the environmental impacts of business development (Ahmed et al. 2022; Spash 2022). The concept of sustainability and the triple-bottom-line model have been established in response to many negative impacts of business activities. The concept emphasizes the mutual integration of business objectives with social responsibility and environmental impact minimization, with the main objective of bringing a positive legacy for future generations (Elkington 2013; Klarin 2018). The idea of sustainability covers various aspects. Recognizing the complexity of sustainability, the United Nations has established Sustainable Development Goals (SDGs) that cover 17 agendas that provide a framework for strategies and implementation (United Nations 2016). These agendas cover various aspects, including the well-being of society, education quality

improvement, and affordable clean energy. It has become a key component of business models, research, and policy development, fostering a holistic approach across industries and disciplines.

Not only from a business point of view, sustainability also addresses and needs expertise from many fields, such as engineering, health, and nature, to foster and achieve the agenda's objective (Wan Alwi et al. 2014; Sherman et al. 2020). This makes sustainability a topic widely discussed in various fields, not to mention many interdisciplinary studies have been conducted to address the issue (Schoolman et al. 2012). A crucial aspect of sustainability is education, as equipping future generations with sustainability knowledge is essential for fostering ethical awareness and responsible decision-making (Shutaleva 2023; Kevin, Todd & Hélène 2024; Frisk & Larson 2011). Integrating sustainability into curricula helps students understand its principles and embed sustainable behavior in their daily lives. Integrating sustainability knowledge into learning curricula can be implemented in various ways (Wals & Jickling 2002). Higher education curricula in several countries have established courses related to sustainability, such as environmental management, indigenous studies, and sustainable engineering (Hailu & Tachine 2021; Leon-Fernandez & Domínguez-Vilches 2015; Wan Alwi et al. 2014). One increasingly adopted approach is study-abroad programs that immerse students in socio-environmental activities in different cultural and geographical settings (Zhang & Gibson 2021; Quesada-Pineda & Haviarova 2014; Wynveen, Kyle & Tarrant 2012).

Experiential learning through study-abroad programs offers a unique opportunity for students to apply theoretical knowledge in real-world contexts. The differences in economic, political, and social elements, such as norms, beliefs, and behavior, will foster global citizenship and awareness for students participating in the program (Perry 2013). They can also compare societal conditions and nurture social awareness about how global issues vary in different places on Earth (Zhao & Liu 2025; Perry 2013). These experiences contribute to personal growth, shaping students into future professionals capable of problem-solving, strong personal identity, and cultural sensitivity (Anderson et al. 2006).

Prior research has revealed that a stay-abroad education program would bring several benefits that cannot be achieved during conventional in-class sessions or study in the home country, particularly in nurturing sustainable behavior and knowledge. Among them is the new perspective of how differences in culture and society would let the students evaluate their views toward various societies and environmental-related norms (Trilokekar & Kukar 2011; Stone et al. 2017). Another research emphasizes the struggles of living in different societies that foster empathy (Marx & Pray 2011). Regarding knowledge development, study-abroad programs may allow students to integrate various sustainability-related cultures and practices. Several programs also allow students to do sustainable projects in the destination countries, where the implementation can directly impact and positively contribute to society (Terrón-López et al. 2017; Krishnan, Richards & Simpson 2016).

Although the growing number of study abroad programs related to sustainability have been implemented and supported by several publications such as journals, proceedings, and project reports, there is still no attempt to review the study development in this specific topic systematically. Most of the articles published were designed to report the implementation of the programs or to focus on the challenges and impacts of the programs from the student's point of view. As a result, there is a gap in understanding the broader academic landscape, including trends, theoretical foundations, and methodological approaches used in this research area. A comprehensive review is necessary to identify existing contributions, highlight key findings, and uncover areas for future exploration.

This study was implemented to respond to this gap by proposing a systematic literature review addressing articles published related to sustainability management studies by the stay-abroad programs. The aims of this study are to compile and elaborate on findings stated by current literature and propose potential gaps to be fulfilled in future research attempts. In order to achieve that, this study applied a TCCM (Theory, Context, Construct, Methods) approach to identify the recently proposed research elements by focusing on the theories, context of the research objects, or, in this context, the study abroad programs, the topic covered and findings from studies, and methods of the studies. By systematically

compiling these four elements, any gaps and missing points can be identified and proposed as gaps for future studies.

METHOD

Research Design

This research applied a qualitative approach, with a systematic literature review adopted as the main method for analysis. A systematic literature review is essential in synthesizing current knowledge for novelties seeking and theory building (Paul, Khatri & Kaur Duggal 2023). A TCCM was employed as the main framework for systematic literature review. This framework systematically structured the designated research database by highlighting the research's vital elements, which consist of theory (T), context (C), construct (C), and methods (M) (Bhardwaj & Kalro 2024). TCCM-based research approach provides a holistic understanding of literature by synthesizing theoretical and empirical aspects, hence covering a wider review area (Paul, Khatri & Kaur Duggal 2023). TCCM technique enables aid literature analysis on the overlooked area in each element. It eases the development of less explored themes in the context of each literature theory, context, construct of the study, and methods conducted. This is particularly useful for researchers to determine research gaps and propose future research to fill the gaps (Sharma et al. 2020). This study explored relevant published research articles to identify missing points and gaps that remain underexplored in every four research elements of the TCCM framework and propose several research trajectories.

The researcher compiled and selected a dataset of research publications using search tools and manual evaluation. This process was conducted in several phases. Phase one utilized Publish or Perish software to identify the relevant research publications and list the datasets based on title and keywords research queries (Jacsó 2009; Harzing 2007). The database source was set to Scopus to ensure the credibility of the source. Three search strings were proposed to acquire relevant publications. The first search was titled "learning from abroad" and "sustainability" as the keywords. However, the first attempt resulted in a group of articles that addressed a broad range of sustainability. The researcher then attempted a second search by changing "sustainability" to "management." For the final attempt, the researcher manually selected two more research publications from the Scopus Database with "sustainability management AND learning from abroad." search strings. The search resulted in two more articles in the analysis, as the article's scope contains topics aligned with this study. The researcher manually selected all the findings to eliminate irrelevant articles. This study also includes only selected top five ranked articles by Publish or Perish from the first two search attempts, plus two more articles from the third attempt. This balances the dataset's focus on sustainability and management equally and emphasizes articles with higher impacts to date. The lists of publication datasets included for analysis are presented in Table 1.

Table 1. Datasets of Publications Included in The Analysis

Attempt	Keywords	Title	Top articles	Authors	Publications Type
1	sustainability	Learning from abroad	Transformational learning through study abroad: US students' reflections on learning about sustainability in the South Pacific	Bell et al (2016)	Journal
			Outcomes of an International Audiology	Krishnan, Richards &	Journal

Attempt	Keywords	Title	Top articles	Authors	Publications Type
2	management	Learning from abroad	Service-Learning Study-Abroad Program	Simpson (2016)	Journal
			Interprofessional Study Abroad: Enhancing Social Justice and Sustainability through Shared Experiential Learning	Harrison & Palmer (2019)	
			A project based learning experience using ngo projects and a volunteer program abroad	Terrón-López et al. (2017)	
			Incorporating Experiential Learning and Education for Sustainable Development into Study Abroad Programs	Quesada-Pineda & Haviarova (2014)	
			When do domestic alliances help ventures abroad? Direct and moderating effects from a learning perspective	Milanov & Fernhaber (2014)	
			Study abroad as a process of learning intercultural competence in nursing	Koskinen & Tossavainen (2004)	
			Measurement of transformative learning in study abroad: An application of the learning activities survey	Stone et al. (2017)	
			Learning from abroad: An interdisciplinary exploration of knowledge transfer in the transport domain	Glaser et al. (2021)	
3	sustainability and management	Learning from abroad	Exploring Learning Experience in Textile and Apparel Management: Study Abroad in El Salvador	Ha-Brookshire (2008)	Journal
			Study Abroad Experiences and Global Citizenship: Fostering Proenvironmental Behavior	Wynveen, Kyle & Tarrant (2012)	
			Long-Term Impact of Study Abroad on	Zhang & Gibson (2021)	

Attempt	Keywords	Title	Top articles	Authors	Publications Type
			Sustainability-Related Attitudes and Behaviors		

A TCCM framework was selected to elaborate the publications with the following scopes:

1. Theory (T): Focuses on theories or models implemented in the publications.
2. Context (C): Particularly in the context of the study abroad program addressed in the study. These include the program's design, subject of the study, learning focus, countries of students's origin, and destination countries.
3. Construct (C): Emphasize the research issues studied and findings delivered in the publications.
4. Method (M): Research methods conducted, including the research design, data collection acquired, and data collection methods.

The result of the TCCM analysis will then be analyzed thematically to identify the major overlooked areas of research for each element and present each element's findings in tables. The researcher then reflected on the findings to propose underexplored areas to propose gaps and future research direction.

RESULTS

The literature reviews conducted have compiled major themes for each TCCM element. Codifications of each element obtained the themes and then grouped similar or aligned codes to propose one theme. The specific findings from each element are reported in specific subsections.

Theory (T)

This section focused on the theories or framework models utilized by publications included in the analysis. A summary of findings in this section is presented in Table 2. Major theories used to identify behavioral impacts on the students after participating in abroad trip programs related to sustainability. This includes the Value-Belief-Norms theory (Wynveen, Kyle & Tarrant 2012; Zhang & Gibson 2021), Transformative Learning (Stone et al. 2017; Bell et al. 2016), and Experiential Learning ((Ha-Brookshire 2008; Quesada-Pineda & Haviarova 2014). The research focus of these theories majorly examined the impact of study abroad programs on developing sustainable behavior toward students. Another theory theme identified is related to the organizational learning theories and knowledge transfer focus, including Organizational Learning theory (Milanov & Fernhaber 2014; Glaser et al. 2021), Knowledge Transfer (Glaser et al. 2021), and Intercultural Competence (Koskinen & Tossavainen 2004). This shapes the study focus so far in terms of how the experience gained from the program can be transferred into personal or organizational knowledge.

Table 2. Findings on Theory (T) from Publication Datasets

Thematic Category			Theories Discussed
Behavioral Change & Sustainability Commitment			Value-Belief-Norm (VBN) Theory, Transformative Learning Theory, Experiential Learning Theory (Kolb's Learning Styles)
Knowledge Transfer & Learning in Organizations			Organizational Learning Theory, Knowledge Transfer Theory, Intercultural Competence Theory
Applied Learning & Experiential Education			Project-Based Learning, Service Learning Theory, Interprofessional Learning Theory

Thematic Category	Theories Discussed
Cultural Adaptation & Global Sustainability Engagement	Intercultural Competence Theory, Travel Study Theory

Several research focused on the applied programs by participating students in real-world applied cases. This made the research also focus on the report or impacts of the students to apply their acquired knowledge to solve sustainability problems in the destination countries. Among the theories adopted were Project-based Learning (Terrón-López et al. 2017), Service Learning (Krishnan, Richards & Simpson 2016), and Interprofessional Learning (Harrison & Palmer 2019). Most of the research on this theme addressed student engagement in real-world settings through active participation and problem-solving. One publication focuses on cultural analysis from programs that let the students experience cross-cultural immersion to foster sustainability awareness and knowledge. Among the theories adopted was the Intercultural Competence Theory (Koskinen & Tossavainen 2004).

Context (C)

In this section, research subjects were identified and grouped. This covered the profile of the study abroad program addressed in the publications. Four main themes, including program types, academic level or subjects of students, sustainability focus areas, and geographical context, were proposed and summarized in Table 3.

Table 3. Findings on Context (C) from Publication Datasets

Thematic Category	Key Findings
Study-Abroad Program Types	Short-term study abroad experiences Exchange Programs Study Tours
Academic & Disciplinary Subjects	Students (Engineering, Nursing, Business, Textile, Audiology) City officials Business Firm's Staffs
Sustainability Focus Areas	Environmental conservation (waste management, eco-friendly behavior), social sustainability (justice & sustainability, community engagement), and professional sustainability learning (engineering for sustainability, business and corporate strategies). Environmental focus (Eco-Friendly behavior, environmental awareness) Socialcultural (Justice and sustainability, community engagement, cultural studies) Sustainable business (Sustainable strategies, company internationalization) Applied Projects (Engineering, audiology, textile and apparel, intercultural nursing)
Geographical Scope: Study-Abroad Learning Flow	Developed to Emerging Countries Developed to Developed Countries

All the study programs included were short-term study abroad programs, with duration varied from a week to several months (Wynveen, Kyle & Tarrant 2012; Zhang & Gibson 2021; Stone et al. 2017; Ha-Brookshire 2008; Bell et al. 2016; Krishnan, Richards & Simpson 2016; Harrison & Palmer 2019; Terrón-López et al. 2017; Quesada-Pineda & Haviarova 2014). One research reported the short-term program manifested as a student exchange program (Koskinen & Tossavainen 2004). Another study addressed a business firm's strategy to internationalize the company, which is outside the scope of educational institution programs, even though the sustainability knowledge context is addressed in this

publication (Milanov & Fernhaber 2014). The last program identified provided a study tour (Glaser et al. 2021).

Students in higher education levels were majorly selected as the research subjects. The disciplines of studies were varied; among them were nursing (Koskinen & Tossavainen 2004), engineering (Terrón-López et al. 2017), textile (Ha-Brookshire 2008), and audiology (Krishnan, Richards & Simpson 2016). One research stated the involvement of graduate students in the program (Harrison & Palmer 2019). Two publications identified the subjects of city officials (Glaser et al. 2021) and company staff (Milanov & Fernhaber 2014), which broadened the datasets to include findings outside students' perspectives. The program's focus on the sustainability context was varied, including environmental conservation contexts such as eco-friendly awareness or behavior (Wynveen, Kyle & Tarrant 2012; Quesada-Pineda & Haviarova 2014), socio-cultural studies (Zhang & Gibson 2021; Koskinen & Tossavainen 2004; Ha-Brookshire 2008; Bell et al. 2016), sustainable business (Milanov & Fernhaber 2014; Stone et al. 2017; Harrison & Palmer 2019), and applied projects to foster sustainability (Terrón-López et al. 2017; Krishnan, Richards & Simpson 2016).

Geographical context also reveals an interesting finding in the datasets. All the publications were programs that originated from developed countries or research subjects that came from developed countries. The United States is the most countries of origin (Wynveen, Kyle & Tarrant 2012; Zhang & Gibson 2021; Milanov & Fernhaber 2014; Glaser et al. 2021; Ha-Brookshire 2008; Bell et al. 2016; Krishnan, Richards & Simpson 2016; Harrison & Palmer 2019; Quesada-Pineda & Haviarova 2014), followed by Finland (Koskinen & Tossavainen 2004), Spain (Terrón-López et al. 2017), and several Northwestern countries (Stone et al. 2017). Whereas the countries of destinations were reported to be addressing emerging countries such as Fiji (Zhang & Gibson 2021; Bell et al. 2016), Honduras and Kenya (Terrón-López et al. 2017), Costa Rica (Quesada-Pineda & Haviarova 2014), Zambia (Krishnan, Richards & Simpson 2016), El Salvador (Ha-Brookshire 2008), and India (Harrison & Palmer 2019). Several studies addressed programs that designed the subjects to travel from developed countries to developed countries, such as Australia and New Zealand (Wynveen, Kyle & Tarrant 2012; Zhang & Gibson 2021; Bell et al. 2016), United Kingdom (Koskinen & Tossavainen 2004), and Netherland, Denmark, and Spain (Glaser et al. 2021).

Construct (C)

The research themes, focus, and findings were identified and grouped in this section and presented in Table 4. The identifications revealed four main thematic research focuses on the datasets. Studies addressing the programs' impacts on shaping sustainability awareness and behavior were undertaken by several researchers, including ecologically conscious behavior (Wynveen, Kyle & Tarrant 2012) and attitudes related to sustainability (Zhang & Gibson 2021). Another research theme focused on how the programs can foster or evaluate the sustainability competencies of the students. This includes intercultural competencies (Koskinen & Tossavainen 2004), ethical leadership (Krishnan, Richards & Simpson 2016), and adaptation capabilities to deal with a new culture or society (Ha-Brookshire 2008). Several publications also studied knowledge transfer and organizational learning as the focus. An attempt to identify the impact of the program on fostering business firms' staffs to learn global alliances through internationalization study was selected by one publication (Milanov & Fernhaber 2014). Similar research addressed knowledge transfer regarding transport policy through a study tour program (Glaser et al. 2021). Sustainability learning has become the focus of the datasets, with several research studies addressing the impacts of sustainable learning and the experiences gained from studying abroad (Bell et al. 2016; Quesada-Pineda & Haviarova 2014; Harrison & Palmer 2019). This also included the process of sustainability learning through applied expertise programs (Terrón-López et al. 2017; Krishnan, Richards & Simpson 2016; Koskinen & Tossavainen 2004).

Table 4. Findings on Construct (C) from Publication Datasets

Thematic Category	Key Findings
Sustainability Awareness & Behavioral Change	Students develop stronger pro-environmental behaviors through engagement in waste management, sustainability programs, and environmental conservation projects.
Intercultural & Social Competence	Intercultural experiences improve global awareness, ethical leadership, and cultural adaptability, particularly in service-learning and community engagement projects.
Knowledge Transfer & Organizational Learning	Sustainability knowledge transfer is enhanced through corporate sustainability programs, business internationalization projects, and academic policy integration.
Experiential Learning & Applied Sustainability Skills	Students benefit from project-based learning, interprofessional collaboration, and applied sustainability practices, leading to long-term skills development and professional engagement in sustainability sectors.

The research datasets revealed most of the program's positive impact, particularly for sustainability learning and knowledge transfer objectives. The study abroad programs were confirmed to give participants new insights into sustainability. Several publications mentioned sustainability awareness as one competency gained after participating in the study abroad programs (Terrón-López et al. 2017; Bell et al. 2016; Ha-Brookshire 2008). The programs confirmed to help students foster their personal development (Zhang & Gibson 2021; Harrison & Palmer 2019), intercultural works (Milanov & Fernhaber 2014; Krishnan, Richards & Simpson 2016), and leadership (Krishnan, Richards & Simpson 2016). Sustainability experiences gained from the programs also enable to change the norms and habits of the students toward a more sustainable way of life (Quesada-Pineda & Haviarova 2014; Bell et al. 2016; Zhang & Gibson 2021; Wynveen, Kyle & Tarrant 2012). On the other hand, one finding also revealed important suggestions for future programs, such as better preparation and pre-training before traveling (Koskinen & Tossavainen 2004).

Method (M)

Methods to conduct research in the designated datasets were evaluated, covering the research design and analysis attempt, data collected, and data sources. As presented in Table 5, the majority of the studies took a qualitative research approach, with analysis ranging from grounded theory (Zhang & Gibson 2021), inductive content (Koskinen & Tossavainen 2004), and reflexive thematic attempts (Ha-Brookshire 2008; Bell et al. 2016; Harrison & Palmer 2019). The quantitative approach is also included, majorly utilizing surveys for descriptive statistics (Stone et al. 2017; Quesada-Pineda & Haviarova 2014), pre and post-test (Wynveen, Kyle & Tarrant 2012; Krishnan, Richards & Simpson 2016), and comparative analysis (Krishnan, Richards & Simpson 2016). Whereas three studies were designed to be conducted by mixed-methods approaches, combining interviews, researcher notes, and students' reflection papers with surveys to be triangulated (Glaser et al. 2021; Krishnan, Richards & Simpson 2016; Terrón-López et al. 2017).

Table 5. Findings on Method (M) from Publication Datasets

Thematic Category	Key Findings
Quantitative Research Approaches	Pre and post-evaluations, surveys, and questionnaires are commonly used to assess sustainability behavior change and program effectiveness.
Qualitative Research Approaches	Reflection papers, interviews, and program reports provide deep insights into student experiences and intercultural learning outcomes.
Mixed-Methods Research	Triangulation of methods enhances research validity, integrating quantitative impact assessment with qualitative reflections on sustainability learning.

Data collection techniques were applied mainly using either interviews or qualitative surveys for quantitative. Several publications also utilize student reflection papers as data for analysis (Bell et al. 2016; Krishnan, Richards & Simpson 2016; Harrison & Palmer 2019; Terrón-López et al. 2017). Another qualitative data used is researcher-self notes, which directly observe or experience the program (Krishnan, Richards & Simpson 2016; Koskinen & Tossavainen 2004; Harrison & Palmer 2019). One quantitative publication is identified to use secondary data from the Securities Data Corp (SDC) Global New Issues database (Milanov & Fernhaber 2014). Participated students become the main data sources, mainly for interviews and surveys.

Discussion

The TCCM technique was contributed to identify and categorize existing literature to evaluate current trends in this topic. While the analysis has identified various categories in terms of theory, characteristic, construct, and method, the research conducted so far has also been revealed to be saturated with specific similarities that may limit the discussion to narrow topics. This creates underexplored areas of study and gaps that are essential to be investigated further. This research reflected findings on TCCM analysis to propose several research gaps and future research studies that can be conducted in future research attempts related to sustainability study abroad programs.

Linking Learning Theories with Sustainability Theories

Most of the studies in the datasets used theories that align with the Learning and Knowledge field of study, such as transformative learning (Stone et al. 2017; Bell et al. 2016), experiential learning (Quesada-Pineda & Haviarova 2014; Ha-Brookshire 2008), and organizational learning (Milanov & Fernhaber 2014; Glaser et al. 2021). Although sustainability management keywords have been selected to search the publications datasets, studies that focus on sustainability-related theories are still lacking in number. However, despite the inclusion of sustainability management keywords in the search criteria, there is a noticeable lack of studies grounded in sustainability-related theories. This suggests that research in this area predominantly focuses on learning and knowledge while sustainability-specific theoretical frameworks remain underutilized.

Future research attempts could take these gaps to link learning and knowledge study with theories in sustainability and management areas, such as sustainability transition theory, to identify the change in sustainable behavior and students' actions post-program period (Loorbach, Frantzeskaki & Avelino 2017; Markard, Raven & Truffer 2012; Peter & Swilling 2014). Additionally, the research could explore students' sustainability competencies post-program or after graduation. Research in sustainability-related competencies, such as green operations or circular economics (Korhonen, Honkasalo & Seppälä 2018; Kleindorfer et al. 2005), can be adopted to help determine whether study-abroad experiences influence students' decision-making processes in sustainability-related fields.

Focus on Long-Term Programs

The TCCM analysis of the characteristics dimension revealed that all included studies focused on short-term study-abroad programs lasting less than a year. These programs primarily serve as supplementary learning experiences to main subjects and take various forms, such as course-based studies, applied projects, student exchanges, or study tours. This raises an important discussion about whether the duration of stay influences students' sustainability competencies and behavior. Future research could explore long-term study-abroad programs, particularly those involving students pursuing full-degree programs in foreign countries for more than a year.

Extended stays abroad may lead to more impactful behavioral and perceptual shifts toward sustainability as students gradually adapt to the sustainability culture of the host country and integrate with local communities (Iskhakova & Bradly 2022). Additionally, factors such as cultural shock, the

adaptation process, exposure to different policies and norms, and trial-and-error experiences could further shape their sustainability perspectives and practices. The impact of such long-term exposure on sustainability-related norms and behaviors could be more profound than short-term programs that focus on specific sustainability topics.

From Emerging Countries to Developed Countries

The programs analyzed primarily involved students from developed countries traveling to either emerging countries or other developed nations. As a result, the findings of these studies largely reflect the perspectives of students from developed societies. While such programs offer significant and impactful outcomes, they also present a limitation in that they do not capture the experiences of students from emerging countries who study in developed nations. Since developed countries often have more advanced sustainability policies and norms, students from emerging countries could benefit from exposure to these frameworks, gaining valuable knowledge and insights into sustainability practices (Berkhout et al. 2010). Additionally, the experiences they acquire may contribute to sustainability initiatives in their home countries upon their return. Future research could address this gap by focusing on students from emerging countries participating in study-abroad programs in developed nations, examining how their experiences shape their sustainability perspectives and potential contributions to their home nations.

Professionals and Business Point-of-Views

Among the twelve publications in the dataset, only two studies focused on professionals and firm employees as research subjects (Glaser et al. 2021; Milanov & Fernhaber 2014), while the remaining ten examined students as the focus. Future research should also consider the impact of study-abroad programs on professionals and business employees, particularly in developing sustainability competencies. This could be explored through human resource training programs or leadership development initiatives that involve international experiences (Bennett, Aston & Colquhon 2000; Hermond, Varied, Jr. & Tanne 2018). Additionally, many companies provide scholarship programs for their staff to study abroad as part of human resources development efforts, which opens the opportunity to take these professionals as the research subject.

Addressing this research issue solely through student-focused studies may not fully capture the practical implications of sustainability education in professional settings. While student-focused programs primarily contribute to sustainability education and knowledge development, research on professionals could provide insights into business sustainability strategies and corporate sustainability initiatives. Such an approach would shift the research focus from the cognitive-level impact commonly studied in education to the implementation-level impact, assessing how sustainability knowledge is applied in real-world business contexts. Furthermore, professionals with first-hand experience dealing with workplace sustainability challenges could offer valuable insights by comparing their practical experiences with the knowledge gained from studying abroad.

CONCLUSION

Despite the growing interest in sustainability issues, nurturing future generations to engage in positive sustainability initiatives remains a significant challenge. Integrating internationalization and cross-cultural exposure into sustainability education within learning curricula has been shown to positively impact students. Such initiatives facilitate sustainability knowledge transfer through specialized courses, cultural adaptation, and experiential reflection. Learning from other countries provides students with diverse perspectives on how societies across the world approach sustainability, offering valuable insights that shape their understanding and commitment to sustainability practices.

This study was conducted to systematically review existing research in this area and identify gaps for future research. The analysis revealed that while current publications cover a wide range of sustainability-related topics, indicating a strong academic response to the sustainability agenda, certain gaps remain unaddressed. Specifically, study-abroad programs and research subjects tend to follow similar patterns, with limited diversity in study focus. This study highlights the need for future research to prioritize sustainability theories and explore how they can be effectively integrated with learning and knowledge-sharing frameworks. Additionally, long-term study-abroad programs and programs involving business professionals remain underexplored, representing opportunities to broaden the scope of research in this field. Another key gap identified is the predominance of studies focusing on students from developed countries traveling to emerging countries, while research on students from emerging countries gaining experience in developed nations is lacking. Investigating the reverse perspective could provide a more comprehensive understanding of how different backgrounds influence sustainability learning and adaptation.

While this study successfully achieves its objectives, several limitations must be acknowledged to define the scope of its findings and highlight areas for further research. First, the dataset includes only twelve articles from Scopus, which, while sufficient for a TCCM-based analysis, may not fully capture the breadth of research available on this topic. Expanding the dataset to include publications from other research databases could provide additional insights not identified in this review. Furthermore, employing bibliographic analysis tools such as VOSviewer could offer a descriptive profile of selected studies, enabling a more in-depth statistical analysis of research trends, author networks, and thematic developments that complement TCCM analysis result.

As sustainability remains a global priority, advancing research in this field is essential to strengthening the role of education in shaping future generations. Studies in this context must continue to refine and expand these educational strategies, ensuring that sustainability education remains dynamic, inclusive, and impactful in preparing future leaders for a more sustainable world. By continuously exploring innovative approaches, interdisciplinary collaborations, and diverse learning experiences, sustainability education can move beyond theoretical knowledge to instill lasting behavioral change.

ACKNOWLEDGEMENTS OR NOTES

This research was supported by a grant from Pusat Pengembangan Manajemen (PPM), Universitas Islam Indonesia, providing financial assistance and institutional support that made this study possible.

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