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Faculdade de Ciências Aplicadas

FRANCISCO ELÍSEO FERNANDES SANCHES

INTEGRAÇÃO HOLÍSTICA DA SUSTENTABILIDADE AO PLANEJAMENTO ESTRATÉGICO DAS INSTITUIÇÕES DE ENSINO SUPERIOR

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INTEGRAÇÃO HOLÍSTICA DA SUSTENTABILIDADE AO PLANEJAMENTO ESTRATÉGICO DAS INSTITUIÇÕES DE ENSINO SUPERIOR

Tese apresentada à Faculdade de Ciências Aplicadas da Universidade Estadual de Campinas como parte dos requisitos exigidos para obtenção do título de Doutor em Administração, Área de Gestão e Estratégia.

Orientador: Prof. Dr. Luiz Eduardo Gaio

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.

BANCA EXAMINADORA:

Prof. Dr. Luiz Eduardo Gaio (orientador)
Faculdade de Ciências Aplicadas - FCA/Unicamp

Prof. Dr. Rosley Anholon (membro)
Faculdade de Ciências Aplicadas - FCA/Unicamp

Prof. Dr. Tiago Fonseca Albuquerque Cavalcanti Sigahi (membro)
Faculdade de Engenharia Mecânica - Unicamp

Profa. Dra. Adriana Cristina Ferreira Caldana (membro externo)
Faculdade de Economia, Administração e Contabilidade de Ribeirão Preto – FEARP/USP

Profa. Dra. Izabela Simon Rampasso (membro externo)
Universidad Católica del Norte (Chile)

A Ata da Defesa com as respectivas assinaturas dos membros encontra-se no SIGA/Sistema de Fluxo de Dissertação/Tese e na Secretaria do Programa da Unidade.

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“Todas as partes do sistema universitário são essenciais para alcançar uma mudança transformadora que só pode ocorrer conectando cabeça, coração e mão.”

Anthony Cortese

RESUMO

Alcançar o desenvolvimento sustentável (DS) é o grande desafio da humanidade. Para tanto, o engajamento das organizações é pré-condição. Pelo que representam para a sociedade, as instituições de ensino superior (IES) têm um papel crucial ante a este desafio. Porém, há sinais de que elas se movem a passos lentos nesta direção, enfrentando barreiras detectadas há muito tempo e ainda não superadas, como a falta de estruturas que possam auxiliá-las a integrar a sustentabilidade ao seu processo de planejamento estratégico. Diante do que IES representam para a sociedade, essa integração deve ser holística, ou seja, de modo a abranger todas as áreas em que atuam. Diante disso, o objetivo principal desta tese é desenvolver um método para incorporação holística da sustentabilidade ao processo de planejamento estratégico das IES. Porém, face às barreiras representadas pela falta de entendimento dos conceitos que relacionam a sustentabilidade às organizações e do significado de "universidade sustentável", foram estabelecidos os seguintes objetivos específicos: a) analisar os conceitos que relacionam a sustentabilidade com as organizações em geral e avaliar se, e como, eles podem ser aplicados ao ensino superior; b) desenvolver um *framework* que represente a incorporação holística da sustentabilidade pelas IES; c) desenvolver um método para integração holística da sustentabilidade ao processo de planejamento estratégico das IES; e d) testar o método citado no objetivo anterior em uma IES. Para cumprir o objetivo "a", um estudo conceitual foi realizado por meio da análise da literatura, onde mereceram destaque os seguintes conceitos: responsabilidade social corporativa (RSC), sustentabilidade corporativa (SC), *triple bottom line* (TBL), *environmental, social and governance* (ESG) e governança corporativa (GC) para a sustentabilidade. Para cumprir o objetivo "b", adaptou-se uma estrutura denominada "Arquétipos de Modelos de Negócio Sustentáveis" e, em complemento, foi realizada uma revisão sistemática da literatura (RSL). Para elaborar o método de planejamento e testá-lo (objetivos específicos "c" e "d"), partiu-se de uma RSL com foco em artigos relacionados ao planejamento estratégico das IES e ao planejamento estratégico da sustentabilidade das organizações em geral. Como resultados, esse estudo propõe (i) o uso conjunto dos conceitos de RSC e SC, representados, respectivamente, pelos Objetivos de Desenvolvimento Sustentável (ODS) e pelo TBL acrescido da governança (TBL-G) para serem aplicados, respectivamente, aos subsistemas acadêmico e administrativo das IES; (ii) um *framework*, denominado Arquétipos de Ações Sustentáveis para as IES, que demonstra a incorporação holística da sustentabilidade pelas universidades, e (iii) um método para incorporação holística da sustentabilidade ao planejamento estratégico das IES. Tem-se a convicção que esta tese, de modo original, auxilia os profissionais que compõem as IES a incorporar de modo holístico a sustentabilidade às ações que desenvolvem ao transpor a teoria para a prática de forma simples e aplicável. Ela também auxilia a enfrentar diversas barreiras à transformação sustentável das IES: a escassez de estudos com abordagem holística; a falta de entendimento dos conceitos relacionados à sustentabilidade corporativa; e do significado da incorporação holística da sustentabilidade pelas IES. Acredita-se que os resultados deste estudo possam ser adaptados para organizações de outras áreas.

ABSTRACT

Achieving sustainable development (SD) is a pressing concern for humanity. To this end, the engagement of organizations is a prerequisite. Due to what they represent to society, higher education institutions (HEIs) play a pivotal role in facing this challenge. However, there are evident indications that higher education is progressing slowly toward SD, encountering long-standing barriers, such as the lack of structures that can help them integrate sustainability into their strategic planning process. This integration, given what HEIs represent for society, must be holistic, that is, to cover all areas in which they operate. Therefore, the primary objective of this thesis is to develop a method for holistically integrating sustainability into the strategic planning process of HEIs. However, given the barriers represented by the lack of understanding of the concepts that relate sustainability to organizations and the meaning of "sustainable university", the following specific objectives were established: a) analyze the concepts that relate sustainability to organizations in general and evaluate whether, and how, they can be applied to higher education; b) develop a framework that represents the holistic incorporation of sustainability by HEIs; c) develop a method for holistic integration of sustainability into the strategic planning process of HEIs; and d) test the method mentioned in the previous objective in an HEI. To fulfill objective "a", a conceptual study was carried out through literature analysis, where the following concepts were highlighted: corporate social responsibility (CSR), corporate sustainability (SC), triple bottom line (TBL), environmental, social and governance (ESG) and corporate governance (CG) for sustainability. To achieve objective "b", a structure called "Sustainable Business Models Archetypes" was adapted. In addition, a systematic literature review (SLR) was carried out. To develop the planning method and test it (specific objectives "c" and "d"), an SLR focusing on articles related to the strategic planning of HEIs and the strategic planning of sustainability in organizations in general was carry out. As results, this study proposes (i) the joint use of CSR and SC, represented, respectively, by the Sustainable Development Goals (SDGs) and the TBL plus governance (TBL-G) to be applied, respectively, to the academic and administrative subsystems of HEIs; (ii) a framework, termed Sustainability Actions Archetypes for HEIs, which demonstrates the holistic incorporation of sustainability in universities, and (iii) a method for holistic incorporation of sustainability into the strategic planning of HEIs. Has been the conviction that this thesis, in an original way, helps HEIs professionals to holistically incorporate sustainability in their actions by transposing theory into practice in a simple and applicable way. It also aids in tackling several barriers to the sustainable transformation of HEIs: the scarcity of studies adopting a holistic approach; the lack of understanding of corporate sustainability related concepts; and the lack of comprehension of the holistic incorporation of sustainability by HEIs. It is believed that the results of this study can be adapted to organizations in other areas.

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1. Introdução

O ensino superior ainda está longe de assumir o papel que lhe cabe na busca por um futuro sustentável. As IES se movem a passos lentos na direção do DS, em desacordo com a necessária urgência de soluções para os problemas que decorrem da aceleração da degradação ambiental e das diferenças sociais e econômicas entre os países e as pessoas que os compõe. Estas afirmações estão fundamentadas em um evidente consenso dos estudos que avaliam a presença da sustentabilidade no ensino superior (Costa *et al.*, 2021; Fantauzzi *et al.*, 2021; Stoian *et al.*, 2021). Devido ao que representam para a sociedade, as IES têm a obrigação moral, não apenas de participar, mas de liderar o movimento em prol do DS (Leal Filho *et al.*, 2021).

O papel de destaque da educação e, por consequência, das IES, também está presente no marco atual do DS, delineado no documento da ONU intitulado "*Transforming Our World: The 2030 Agenda for Sustainable Development*" (United Nations, 2015). Este documento estabelece 17 objetivos de desenvolvimento sustentável (ODS) e 169 metas a serem alcançados até o ano de 2030. Diferentemente dos objetivos estabelecidos anteriormente – os Objetivos de Desenvolvimento do Milênio (ODM) - que foram concebidos por um grupo restrito, o estabelecimento dos ODS envolveu um amplo grupo de trabalho com representantes de 70 países (Leal Filho, Shiel, *et al.*, 2019). A educação mereceu destaque nos ODS. Além de compor pela primeira vez um objetivo específico (ODS 4 – Educação de Qualidade), ela é reconhecida como fator crítico para que os demais 16 objetivos possam ser alcançados (Kohl *et al.*, 2021). Desta forma, considera-se que sem o real comprometimento das IES com a sustentabilidade, os ODS não poderão ser alcançados (Leal Filho, Shiel, *et al.*, 2019).

Acompanhando a evolução dos conceitos relacionados à sustentabilidade e DS, a educação a eles relacionada evoluiu de educação ambiental para ser denominada educação para o desenvolvimento sustentável (EDS) (Borges and Benayas, 2019). Além de compor os currículos das IES, a EDS deve estar presente em todas as atividades que compõem os complexos sistemas universitários (Bernaldo and Fernández-Sánchez, 2017). Desta forma, não basta que as IES implementem ações sustentáveis de forma pontual e independente entre si; é necessário que a sustentabilidade esteja presente nas IES de modo holístico. O termo "holístico" não é empregado nesta tese como um conceito filosófico, mas relacionado à abrangência da orientação para o DS – não raro é constatar que as IES se concentram em uma ou outra dimensão da sustentabilidade (especialmente nas operações do *campus*) ao invés de adotar uma abordagem sistêmica (Bauer *et al.*, 2020).

Diante do amplo reconhecimento da importância das IES para o DS, naturalmente surge uma questão: o que impede as universidades de abraçar essa causa? A resposta é que,

para que isso ocorra, o ensino superior deve enfrentar e superar barreiras históricas. Aleixo *et al.* (2018, p. 1665) elencam diversas destas barreiras e citam, em primeiro lugar, "a ambiguidade e a complexidade do próprio conceito de sustentabilidade, visto como um tema abstrato e complexo". Aliás, há muito tempo Lozano (2006, p. 791) constatou que a "falta de informações relevantes e completas sobre DS, e como incorporá-las nas atividades individuais'' é uma das mais relevantes barreiras à sustentabilidade nas IES. Nessa mesma linha, Brandli *et al.* (2015) apontam que há uma falta de conhecimento sobre sustentabilidade e afirmam que, para superar essa barreira, as IES devem desenvolver um "entendimento institucional" sobre o tema. Aliás, o próprio conceito de "universidade sustentável" gera muita controvérsia sobre o seu significado e é comumente confundido como relacionado a questões de sobrevivência das IES ou limitado à dimensão ambiental (Aleixo *et al.*, 2018; Bien and Klußmann, 2022).

Talvez, muitas das demais barreiras recorrentemente citadas por diversos pesquisadores nas últimas décadas resultam dessa falta de conhecimento e entendimento. Entre tais barreiras, destacam-se: falta de interdisciplinaridade no ensino e na pesquisa, falta da presença da sustentabilidade nos currículos, falta de apoio da liderança das IES e falta de engajamento da comunidade universitária (Aleixo *et al.*, 2018; Hueske and Guenther, 2021; Larrán *et al.*, 2015; Singh and Segatto, 2020). Também, a resistência à mudança pelo corpo docente em relação à inclusão da sustentabilidade nos currículos resulta da má interpretação e falta de compreensão do conceito de EDS (Fiselier *et al.*, 2018). É de ressaltar que contribui para essa falta de entendimento o fato de que a maioria dos docentes nunca recebeu treinamento para compreender, praticar e ensinar sustentabilidade (Aleixo *et al.*, 2018). Diante destas constatações, é possível inferir que, para que a incorporação holística da sustentabilidade ocorra nas universidades, a barreira do desconhecimento sobre DS, EDS e conceitos relacionados deve ser quebrada.

Além do crucial envolvimento das IES, alcançar o DS no nível macro, representado pelos ODS, não é possível sem que ele esteja igualmente presente no "nível micro da sustentabilidade corporativa" (Tsalis *et al.*, 2020, p. 2). As empresas estão cada vez mais pressionadas a adotar um comportamento responsável, promovendo práticas sustentáveis e o "esverdeamento" de seus processos (Ritala *et al.*, 2018), considerando a sustentabilidade em todas as suas dimensões: "econômica, ambiental, social e temporal, bem como suas interconexões" (Lozano, 2018, p. 1159).

Ao longo do tempo, surgiram vários conceitos que fazem a conexão da sustentabilidade com o universo corporativo, como responsabilidade social corporativa (RSC), sustentabilidade corporativa (SC), *triple bottom line* (TBL), *environmental, social and*

governance (ESG), entre tantos outros. Diversos autores consideram esses conceitos como similares (Klettner *et al.*, 2014; Silvestre *et al.*, 2022), enquanto outros atribuem a eles diferentes significados (ver Bansal and Song, 2017). Porém, de modo similar ao que ocorre com as IES, as dificuldades no entendimento dos conceitos relacionados à sustentabilidade também se constituem em importantes barreiras à sustentabilidade das demais organizações: apesar dos termos parecerem familiares para a sociedade e os negócios em geral, "sustentabilidade" e DS "habitam significados complexos e contestados" (Hoover and Harder (2015, p. 175). Neste sentido, a falta de consenso sobre o significado da RSC e se ela deve ou não ser diferenciada de outros conceitos relacionados representa um ponto fraco para o desenvolvimento de sua prática (Leal Filho, Doni, *et al.*, 2019).

Outro aspecto cada vez mais reconhecido como crucial para a transformação das organizações rumo ao DS é a governança corporativa (GC) (Crifo *et al.*, 2019), especialmente para as IES (Leal Filho, Abubakar, *et al.*, 2023), que abrigam dois subsistemas – o acadêmico e o administrativo – com culturas e características distintas (Hernández-Diaz *et al.*, 2021). Quando trata-se do ensino superior, a governança acrescenta um maior grau de complexidade ao inerente ao próprio conceito (Leal Filho *et al.*, 2021). Por um lado, levando-se em conta suas missões, as IES se constituem em organizações singulares. Elas têm um papel diferenciado para o alcance dos ODS, pois formam os profissionais e líderes que irão atuar em governos, ONGs e empresas em todo o mundo (Caeiro and Azeiteiro, 2020; Leal Filho *et al.*, 2020; Lozano *et al.*, 2013). Por outro lado, estas instituições sofrem com a queda de matrículas e redução de apoio governamental, inseridas em um mercado cada vez mais competitivo em nível global (Del-Castillo-Feito *et al.*, 2020; Panda *et al.*, 2019). No Brasil, apesar deste fato afetar especialmente as IES privadas (que representam 78% do total de matrículas, segundo o Censo da Educação Superior de 2022), as IES públicas também sofrem com a escassez de recursos, o que eleva o grau de importância de uma eficaz gestão orçamentária nestas instituições. Essa nova realidade, em muitos aspectos, aproximam as IES das demais organizações e levanta a questão de se, e de que forma, os conceitos que relacionam a sustentabilidade às organizações em geral são também aplicáveis ao ensino superior.

Outro fator que impacta a sustentabilidade das IES é a escassez de estruturas que façam a transposição da teoria para a prática e que auxiliem estas instituições a planejar a incorporação holística da sustentabilidade. É necessário menos tecnicismo e mais ação para que a transformação sustentável do ensino superior ocorra, bem como boas práticas que possam ser replicadas pelas IES como *benchmarking* (Leal Filho *et al.*, 2015). Neste sentido, o ambiente do ensino superior necessita de modelos simplificados e eficazes de planejamento estratégico,

pois os modelos existentes são complexos e levam à frustração (Williams, 2021). Apesar do planejamento se constituir em aspecto chave para o sucesso na implementação do DS, a educação superior está falhando na compreensão das técnicas disponíveis, que têm origem na indústria. (Leal Filho, Skanavis, *et al.*, 2019).

1.1. Objetivos desta tese

Diante da realidade exposta nos parágrafos anteriores, esta tese tem como objetivo geral: *Promover a integração holística da sustentabilidade ao processo de planejamento estratégico das instituições de ensino superior*.

Porém, não há como esse processo ser eficaz sem que haja um entendimento institucional do que significa ser uma IES sustentável, numa abordagem holística, bem como do significado dos conceitos relacionados à sustentabilidade e sua aplicabilidade às organizações em geral e, em especial às IES. Isto posto, para que o objetivo geral seja alcançado, decidiu-se por ampliar o escopo desta tese com a inclusão dos seguintes objetivos específicos:

a) Analisar os conceitos que relacionam a sustentabilidade com as organizações em geral e avaliar se, e como, eles podem ser aplicados ao ensino superior;

b) Desenvolver um *framework* que represente a incorporação holística da sustentabilidade pelas IES;

c) Desenvolver um método para integração holística da sustentabilidade ao processo de planejamento estratégico das IES;

d) Testar o método citado no objetivo anterior em uma IES para verificar sua validade.

1.2. Contribuições desta tese

Esta tese traz várias contribuições para a literatura e prática. Em primeiro lugar, cabe ressaltar a originalidade presente no novo conceito proposto – TBL-G, que incorpora a governança ao conceito de *triple bottom line* – aqui considerado como o que melhor representa a SC das IES, auxiliando a evitar que o conceito de ESG seja erroneamente confundido com SC; no *framework* denominado “Arquétipos de Ações Sustentáveis para as IES”, que traduz o significado da incorporação holística da sustentabilidade pelo ensino superior; e no método para

integração da sustentabilidade ao planejamento estratégico das IES.

Além , esta tese auxilia o enfrentamento de diversas barreiras à transição das IES para a sustentabilidade ao: (i) favorecer o entendimento dos conceitos que fazem a conexão da sustentabilidade com as organizações e demonstrar de que forma eles podem ser aplicados ao ensino superior; (ii) apresentar um *framework* que facilita a compreensão do significado da incorporação holística da sustentabilidade pelas IES; (iii) apresentar e testar um método de fácil entendimento e aplicação, porém com forte embasamento teórico, para integração da sustentabilidade ao planejamento estratégico das IES; (iv) promover o engajamento de todos os colaboradores das IES, a partir de suas estruturas de liderança, na integração holística da sustentabilidade por meio da participação na elaboração do plano estratégico.

Tem-se a convicção de que os resultados dos estudos que compõem esta tese, apesar de terem sido desenvolvidos com foco nas IES, possam ser adaptados para aplicação em organizações das mais diversas áreas de atuação.

1.3. Estrutura desta tese

Seguindo a INSTRUÇÃO NORMATIVA CCPG Nº 002/2021, emitida pela Comissão Central de Pós-Graduação CCPG-PRPG da Universidade Estadual de Campinas – UNICAMP, optou-se pela elaboração desta tese em "formato alternativo", composto por um compêndio de três artigos:

- O primeiro artigo busca atender ao objetivo específico "a";
- O segundo artigo visa atender ao objetivo específico "b"; e
- O terceiro artigo pretende atender aos objetivos específicos "c" e "d".

O segundo e o terceiro artigos encontram-se publicados no *International Journal of Sustainability of Higher Education* (IJSHE), enquanto o primeiro artigo foi submetido ao mesmo periódico. O IJSHE, lançado em 2000, representa um marco para o campo da pesquisa sobre as práticas de sustentabilidade das IES: é o primeiro periódico revisado por pares com foco específico na "divulgação de pesquisas sobre temas de sustentabilidade em instituições de ensino superior" (Leal Filho *et al.*, 2015, p. 116). Por essa razão e pelo fato de o IJSHE agregar em seu corpo editorial vários dos principais pesquisadores do campo da sustentabilidade no ensino superior, escolheu-se este periódico para submissão dos artigos.

Essa tese, além desta Introdução, está estruturada da seguinte forma: a seção 2 apresenta os três artigos que compõem a tese; a seção 3 transcorre sobre as abordagens

metodológica utilizadas; a seção 4 realiza uma ampla discussão sobre os temas abordados e os resultados obtidos; a seção 5 apresenta a conclusão da tese; que é finalizada com a seção 6, que contém as referências utilizadas nas seções 1, 3, 4 e 5.

2. Artigos que compõem esta tese

2.1. Primeiro artigo:
Applying Corporate Sustainability to Higher Education: Embedding Governance in the Triple Bottom Line

Autores: Francisco Elíseo Fernandes Sanches e Luiz Eduardo Gaio

Observação: Artigo submetido ao *International Journal of Sustainability in Higher Education*

Abstract

Purpose: Higher education institutions (HEIs) are unique organizations, considering their missions and leadership role in sustainable development. However, they face challenges similar to those of other organizations, such as surviving in an increasingly competitive market. In this context, this study analyzes whether and how concepts related to corporate sustainability are suitable to be applied to HEIs.

Design/methodology/approach: Given the proliferation of concepts that connect organizations with sustainability and the controversies about their meanings, this study reviews the literature related to corporate social responsibility (CSR), corporate sustainability (CS), and, in particular, on the documents that gave rise to the triple bottom line (TBL) and to the environmental, social and governance (ESG).

Findings: CSR, represented by the Sustainable Development Goals (SDGs), and CS, represented by a TBL-G new concept, can be applied jointly by HEIs, respectively, to the academic and administrative subsystems.

Originality: The originality is present in the proposal indicated above. Taking into account the crucial role of governance in achieving SC, especially by HEIs, and considering TBL as the concept that best represents SC, this work proposes a new concept: TBL plus governance, which was called TBL- G.

Keywords: Higher education; Sustainable development; Triple bottom line; Corporate social responsibility; SDGs; ESG; Governance.

Paper type: Conceptual paper

1. Introduction

Currently, we are faced with a large set of concepts that connect sustainability with

organizations, as well as the acronyms that represent them: SDGs, CSR, CS, TBL, ESG, among others. These "bewildering range of options" can represent to business "an alibi for inaction" (Elkington, 2018, p. 4).

Another obstacle to the incorporation of sustainability by organizations is represented by the different interpretations and use of these concepts, in some situations, without the corresponding background. Several authors highlight the lack of understanding about concepts related to sustainability in general and those that link them to companies as a barrier to society advancing toward SD. Sustainability and SD, although seemingly familiar to society and business, "inhabit complex and contested meanings" (Hoover and Harder, (2015, p. 175). One of the oldest concepts in this category is CSR. Despite the fact that this concept has been applied for a long time, there is still no consensus on its meaning (Asrar-ul-Haq *et al.*, 2017; Rasoolimanesh *et al.*, 2021; Rodriguez-Gomez *et al.*, 2020) and whether CSR can be used interchangeably with CS (Silvestre *et al.*, 2022) or not (see Bansal and Song, 2017). The lack of consensus on the meaning of CSR and whether it should be differentiated from other similar concepts remains a significant barrier to its practice (Leal Filho, Doni, *et al.*, 2019). This situation also applies to HEIs. The meaning of "sustainable university" is commonly understood as related to issues of HEIs' survival or limited to the environmental dimension (Aleixo *et al.*, 2018).

The need to face challenges related to sustainable development (SD) resulted in the current Sustainable Development Goals (SDGs), which represent a global mobilization to achieve "the main goals relating to global social priorities such as poverty, education, disease, hunger, inequality and environmental degradation" (Griebeler *et al.*, 2022, p. 887). To this end, the engagement of all actors in society is urgent, as evidence casts doubt on the possibility that SDGs set for 2030 can be achieved (Leal Filho, Trevisan, *et al.*, 2023). For the SDGs achievement, a macro-level focus on sustainability-related issues and a micro-level focus on CSR must be equally prioritized (Tsalis *et al.*, 2020). In this scenario, the role of HEIs regarding SD is crucial, as professionals who will lead organizations of all kinds, capable of directing them toward SD, pass through these institutions (Griebeler *et al.*, 2022).

However, HEIs operate in an increasingly competitive market, which brings them closer to other organizations in many aspects. Higher education has become more competitive globally, and that reduction in government support has resulted in a drop in enrollment and reduced budgets (Del-Castillo-Feito *et al.*, 2020; Panda *et al.*, 2019), which raises the question of the applicability of corporate sustainability related concepts to HEIs.

Practices aimed at ethical and socially responsible performance by organizations are represented by CSR, a concept that can be understood as a "social contract between business and society" (Carroll and Shabana, 2010, p. 90). Several studies recognize that CSR practices provide advantages for organizations, including HEIs (Azizi and Sassen, 2023; Salvioni *et al.*, 2017). In this sense, companies should regard CSR as "a source of opportunity, innovation, and competitive advantage" as opposed to charity (Porter and Kramer, 2006, p. 2).

The TBL (Elkington, 1997) represents a milestone in the process of evolving concepts related to sustainability in organizations. According to Elkington (1997), companies must be encouraged to manage not only financial value but also the economic, social, and environmental aspects that are added or destroyed in their processes. However, despite the abundant references to TBL in the scientific literature, the concept is mentioned superficially,

which results in its use with different meanings. More recently, the concept of Environmental, Social and Governance (ESG) was launched, which emerged to assist investors and business analysts in investment decisions through the analysis of organizations' indicators in these three dimensions, in addition to the traditional economic- financial ones. As with TBL, it is easy to verify that the conceptual basis of ESG (The Global Compact, 2004) is rarely referred in the literature, which leads to the concept being overused with a wide range of meanings.

Another aspect that has been gaining prominence, both in the academic and corporate spheres, is corporate governance (CG), which is essential for incorporating sustainability into business strategy (Crifo *et al.*, 2019). CG is especially relevant for higher education, given the complexity of the university environment (Leal Filho *et al.*, 2021). The fact that universities comprise two subsystems - academic and administrative - with distinct cultures and characteristics (Hernández-Diaz *et al.*, 2021) is among the factors that hinder the advancement of HEIs towards SD. These issues justify the consideration of "good governance" as a prerequisite for the transition of HEIs toward sustainability in a whole institution approach (Robinson *et al.*, 2023).

Given the presented scenario, this study has to general objective: To analyze the concepts that connect sustainability to the corporate world and evaluate whether and how they are suitable to be applied to HEIs.

With this in mind, this study analyzed four of the most important and popular concepts that relate organizations with sustainability - CSR, SC, TBL and ESG - seeking to, as specific objectives:

(a) identify their meanings;
(b) whether they are suitable for use in higher education; and
(c) if so, what is the best way to apply them to HEIs.

For Batalha (2011), the jargon created by science helps the expression of new and complex ideas in a clear and succinct way. However, the author warns:

> In the absence of a clear definition, different users of the term can develop independent and even inconsistent definitions, causing, over time, the concept to bring with it so many meanings that it ends up becoming a "non-concept". [...] Scientific criticism encourages the operationalization of concepts, identifying the current capabilities, functions and limitations of existing concepts" (p. 22).

This Batalha's statement are quite relevant when considering the recognized controversy over the meaning of several concepts related to corporate sustainability and the lack of observation, in some cases, of the foundations that established them.

As result, this study proposes de joint use of CSR, represented by SDGs, and CS, represented by a new concept, the TBL-G, respectively, to the academic and to the administrative subsystems of HEIs. In the TBL-G proposal, governance is not considered a fourth bottom line since the economic, environmental, and social aspects are comprehensive and sufficient, but rather an essential factor for its reach in any organization, specially HEIs.

It has also been demonstrated that ESG is not suitable for representing SC. In addition to aiming to provide information to financial market actors to support their decisions - a reporting practice - it does not incorporate the economic dimension, essential for the sustainable survival of organizations.

The authors believe this study helps address several barriers to the transition of HEIs to sustainability, many of which originate from a lack of understanding of the concepts related to sustainability. It also meets the recommendation of Leal Filho *et al.* (2021) so that more studies that address the issues of the relationship between governance and SD can be developed. The authors are also convinced that, despite the focus on HEIs, the results of this study can be adapted for use by different kind of organizations.

This paper is structured as follows: Section 2 presents the methodology used for the objectives; Section 3 presents the results of concepts analysis; Section 4 discusses the abovementioned concepts; Section 5 presents the proposals for applying corporate sustainability to HEIs; and Section 6 presents the conclusions.

2. Methodology

This study is classified as a conceptual paper that expresses the authors' opinion on how each concept addressed should be interpreted and used. This opinion was based on previous studies and, related to the TBL and ESG concepts, especially in the documents that originated them.

Literature reviews were carried out, especially in the Scopus database, applying keywords related to the concepts covered (CSR, CS, TBL and ESG), selecting articles based on their titles, abstracts, publication dates, citation numbers, journals, authors, etc. Articles were also selected based in the authors' previous experiences.

Although some systematic searches have been carried out and indicated in some topics to demonstrate the presence of some concepts in the literature, we believe that this method would not be appropriate given the objectives of this study, which does not seek to analyze the state of the art in the literature in relation to these different concepts, but rather propose a way of interpreting and applying them to HEIs.

3. Results

3.1. Corporate social responsibility

The idea that companies have obligations to society is not new; it dates back centuries (Carroll and Shabana, 2010). Despite being a recurring theme in both business and academia, there is a lack of consensus on CSR definition (Asrar-ul-Haq *et al.*, 2017; Baumgartner, 2014; Rodriguez-Gomez *et al.*, 2020). The concern of balancing the interests of stakeholders, sometimes contradictory, results in definitions based on vague phrases (Dahlsrud, 2008).

Carroll and Shabana (2010, p. 89) point to a four-part definition of CSR: “the social responsibility of business encompasses the economic, legal, ethical, and discretionary [later referred to as philanthropic] expectations that society has of organizations at a given point in time.” They argue that economic responsibility implies the provision of goods and services that society needs and that, in return, the organization obtains profitability. Similarly, Dahlsrud (2008) points to the environmental, social, economic, stakeholder, voluntariness dimensions as the main components of CSR and indicates that the economic dimension involves “contribute to economic development” and ‘preserving the profitability’ (p. 4). In a different direction,

Asrar-ul-Haq *et al.* (2017) argue that CSR can be translated as the non-profit activities of organizations with a view to benefiting communities in addition to their economic interests.

Over time, several similar concepts related to CSR have emerged, such as SC, corporate citizenship, business ethics, and corporate philanthropy (Shayan *et al.*, 2022), "all vying to become the most accepted and widespread descriptor of the field" (Carroll and Shabana, 2010, p. 86). According to Setó-Pamies and Papaoikonomou (2020), these concepts are used interchangeably due to their similarities. They add that it is common for executives to adopt a term that is in vogue to appear at the forefront. In a different direction, Bansal and Song (2017, p. 106) claim that executives and researchers apply the words responsibility and sustainability "interchangeably, inconsistently and ambiguously". They add: "We take the opposing position. The blurring between responsibility and sustainability has caused confusion and stunted the growth of the field".

The increasing observation of sustainability issues by organizations has led to a convergence between SDGs and CSR. Shayan *et al.* (2022, p. 10) noted that SDGs represent "a reputable, comprehensive, and practical framework for CSR." Also, Setó-Pamies and Papaoikonomou (2020, p. 5) suggest that the SDGs be adopted as a suitable framework to represent the "social contract between the business sector and society."

With increasing intensity, CSR is seen from a strategic perspective and is considered a fundamental aspect to ensure the long-term sustainability of organizations (Rodriguez-Gomez *et al.*, 2020). CSR leads to a symbiotic relationship between the organization and society, generating shared value, which benefits both parties (Porter and Kramer, 2006).

3.1.1. Corporate social responsibility in higher education

HEIs are delayed in relation to other organizations in the systemic integration of CSR and its dissemination (Costa *et al.*, 2021; Lattu and Cai, 2020). The way in which CSR should establish an effective relationship between HEIs and society "remains, at best, at an embryonic stage" (Mascarenhas *et al.*, 2020, p. 654). Defining this concept in the context of higher education is not an easy task. However, it can be said, in general, that "CSR represents HEIs' ongoing commitment toward the welfare of society, more than traditional compliance with legal issues" (Mascarenhas *et al.*, 2020, p. 656).

Some researchers defend the relationship between HEIs' CSR and SDGs. Adhikariparajuli *et al.* (2021) argue that the integration of CSR with ethics and sustainability by HEIs can assist society in achieving SDGs. Costa *et al.* (2021), within the scope of HEIs, conceive CSR and SDGs concepts as "overlapping and deeply correlated, and useful for comprehensively engaging in CSR activities" (p. 2).

Higher education is experiencing a period of great competition, especially due to globalization (Azizi and Sassen, 2023; Del-Castillo-Feito *et al.*, 2020). In this situation, corporate identity management has become a critical success factor for HEIs, differentiating them from their competitors (Hemsley-Brown *et al.*, 2016). The reputation of an HEI has been the main factor in its uniqueness, and in brand management, concepts such as meaning, image, and reputation assume a position of great importance (Hemsley-Brown *et al.*, 2016; Lee *et al.*, 2018). The practice of CSR generates a reputation increase for HEIs (Azizi and Sassen, 2023)

and, jointly with good governance and good working conditions, positively impact university legitimacy (Miotto *et al.*, 2020).

The internal stakeholders is consider the most valuable assets of an HEI for reputation management; their positive perceptions of the institution generate trust among external stakeholders (Lee *et al.*, 2018). With this in mind, universities must maintain good relationships with their employees. Therefore, CSR practices meet four basic psychological needs of employees: sense of security, self-esteem, feelings of belongingness, and existential meaning (Bauman and Skitka, 2012).

In relation to students, Azizi and Sassen (2023) apply signaling theory to evaluate how the practice of university social responsibility influences them. They conclude that students "capture the signals" that HEIs emit with the practice of university social responsibility (socially responsible organization, differentiated quality, commitment to SD, etc.) and respond by "emitting signals," such as loyalty and satisfaction, which impact the reputation of HEIs.

3.2. Corporate sustainability

SC is a concept that has been gaining ground in the literature in recent years. A study by de Oliveira *et al.* (2023) supports this statement. The authors conduct a literature review focusing on SC research with an emphasis on the environmental approach. Of the selected articles, 115 were published in the last 3 years, while 106 were published in the previous 7 years.

"Corporate sustainability management is about the effective improvement of environmental and social performance in line with economic success" (Baumgartner, 2014, p. 269). Similarly, CS can be defined as the integration of economic, environmental, and social aspects into business activities, seeking to promote SD and increase a company's value, including returns for shareholders (de Oliveira *et al.*, 2023).

Unlike CSR, the economic dimension of SC seems to reflect the profitability of businesses and related aspects. In this sense, de Oliveira *et al.* (2023) relate CS to the TBL concept, which, according to them, "brings together people, planet and profit, within the scope of its business plan." The authors add that the objective of CS is for the company to positively impact human development, economic growth, and social equity, and simultaneously obtain competitive advantages.

3.2.1. Corporate sustainability in higher education

There appears to be little interest in CS in the HEIs context. Search carried out by these authors in the Scopus database on 11/29/2023 that applied the string ("corporate sustainability" AND ("higher education" OR universit*)) in the title, abstract and keywords, without any restrictions, selected only 23 documents. Most of these studies superficially referred to the SC. A total of 276 documents were selected after replacing "corporate sustainability" with "corporate social responsibility".

However, several studies have argued that changes in HEIs' business environments have made higher education more competitive globally (Asrar-ul-Haq *et al.*, 2017; Rasoolimanesh *et al.*, 2021), which makes the SC concept suitable for HEIs. However, there are some limitations to this approach. The three dimensions of SD—ecological, social, and

economic—are constantly in conflict in organizations and that the tensions arising from this conflict are particularly useful for understanding HEIs (Lattu and Cai, 2020). Dealing with several aspects simultaneously constitutes a challenge for HEIs and can be interpreted as complex problems, as they require systemic approaches to their solution (Sigahi *et al.*, 2022).

Hernández-Diaz *et al.* (2021) present an interesting approach to address these tensions and complexities. These authors consider universities as systems composed of two subsystems: academic and administrative. For sustainability to be holistically included in HEIs, it is necessary to apply it both in the academic subsystem, through education for SD (ESD), and in the administrative subsystem, through SC. For these researchers, sustainability in the academic subsystem should address teaching, learning, research, and outreach, whereas the administrative subsystem should focus on incorporating sustainability into operations, leadership, reports, stakeholders, evaluation, and governance. Hernández-Diaz *et al.* (2021) emphasize that despite focusing on the administrative subsystem, as it serves academia, CS has the potential to improve the performance of both subsystems.

Also, when it comes to sustainability in HEIs, some studies refer to TBL. Hussain *et al.* (2019) develop a sustainability model for universities that incorporated the TBL elements. A literature review conducted by Menon and Suresh (2020) concluded that the holistic incorporation of sustainability in higher education has not yet been established, considering TBL, a concept that will be addressed in the next section.

3.3. The triple bottom line concept

In the mid-1990s, John Elkington coined the term "triple bottom line," which was disseminated in the book "Cannibals with forks: The triple bottom line of 21st century business" (Elkington, 1997). The concept is anchored in the author's conviction that to be sustainable, capitalism must address the gap between the rich and poor, either within societies or between countries. According to Elkington, focus on environmental issues is insufficient:

> We will also need to address radically new views of what is meant by social equity, environmental justice and business ethics. This will require a much better understanding not only of financial and physical forms of capital, but also of natural, human, and social capital (Elkington, 1997, p. 72).

In corporate parlance, the "bottom line" represents the bottom line of a results statement, that is, profit. The TBL maintains that organizations should seek balance and economic, environmental, and social results: "we think in terms of a 'triple bottom line,' focusing on economic prosperity, environmental quality and the element which business has tended to overlook—social justice" (Elkington, 1997, p. 2).

The "economic bottom line," according to Elkington (1997), is represented by profit in traditional accounting practice; however, in the economic dimension, when evaluating capital as the sum of assets minus the sum of liabilities, the author argues that it is not enough to consider only physical and financial capital, but also human capital, which is gradually gaining importance.

In relation to the "environmental bottom line," a distinction must be made between "'critical natural capital' and renewable, replaceable, or substitutable natural capital"

(Elkington, 1997, p. 79). The former comprises natural resources essential for life and ecosystems, and the latter comprises resources that can be renewed or recovered. The author claims that companies are challenged to identify how their actions affect natural capital and whether this is sustainable.

Elkington criticizes the SD community's tendency to value the environmental dimension more than the social one: "if we fail to address wider political, social and ethical issues, the backlash will inevitably undermine progress in the environmental area" (Elkington, 1997, p. 84). Therefore, sustainable organizations must dedicate attention to "social capital," which involves human capital in the form of "public health, skills and education," and broadly speaking, the influence on "society's health and wealth-creation potential" (Elkington, 1997, p. 85).

Throughout his book, the author emphasizes the importance of CG. According to him, CG, in addition to traditional issues, must address what business is for, who should have a say in how the business is run, how to strike a balance between the interests of shareholders and those of other stakeholders, and how to balance the TBL. Undoubtedly, one of the biggest challenges for CG in the 21st century will be the incorporation of TBL concepts into the DNA of companies.

In an article published 25 years after the launch of the TBL, Elkington (2018) proposes a recall for adjusting the concept. The author supports the original idea of provoking a deeper reflection on how capitalism should be modified, encouraging companies to manage not only financial value, but also the economic, social, and environmental aspects that are added or destroyed in their processes. The author, apparently disappointed, states that "the TBL was not designed to be just an accounting tool" (Elkington, 2018, p. 4).

Elkington (2018, p. 4-5) argues that the TBL represents a turning point. However, it was followed by a great wave of concepts, which he calls the "bewildering range of options," which can represent an "alibi for inaction." The author adds that "the TBL concept has been captured and diluted by accountants and reporting consultants".

Reviewing the literature, the authors of this study conclude that studies questioning the validity and pertinence of TBL are rare. Isil and Hernke (2017) aim to criticize this concept reach the same conclusion: "the results point to the continued and overwhelmingly uncritical acceptance of the TBL" (p. 1238). Elkington's excellent concept is widely referenced in academic studies, albeit to a small extent. Isil and Hernke (2017) do not carry out any analysis of Elkington's work, which perhaps lead the authors to state that "[...] the TBL model grows from a reporting tool to a ubiquitous metaphor for sustainability in business [...]" (p. 1238), which is the opposite of Elkington's claims.

3.4. The environmental, social, and governance concept

In 2004, Kofi Annan, the then UN Secretary-General invited 20 financial institutions to prepare and publish the report "Who Cares Wins - Connecting Financial Markets to a Changing World." The objective of this initiative, overseen by the UN Global Compact, was:

> To develop guidelines and recommendations on how to better integrate environmental, social and corporate governance issues in asset management, securities brokerage services and associated research functions (The Global

> Compact, 2004, p. I).

This is considered the "initial milestone" of the ESG concept (Gillan *et al.*, 2021) which appears 123 times in the report. The signatory institutions declared that the document seeks to raise the awareness of the various actors involved in the financial market and that they believe that the integration of ESG issues in investment decisions is a precondition for SD. The report's recommendations were directed at a wide range of stakeholders, including financial analysts; academic institutions, business schools; financial institutions; companies; investors; asset managers; and pension fund trustees.

An issue closely related to what this study will defend is the concern of the signatories to define the scope of the ESG concept, seeking not to confuse it with the other concepts related to SD and CS:

> Throughout this report we have refrained from using terms such as sustainability, corporate citizenship, etc., in order to avoid misunderstandings deriving from different interpretations of these terms. [...] This report focuses on issues which have or could have a material impact on investment value (The Global Compact, 2004, p. 1-2).

For the recommendations to be implemented, the authors highlight the fundamental role of CG, especially regarding transparency and disclosure. The signatories argue that the agents involved should consider longer timeframes in investment decisions and that ESG factors can generate greater value for shareholders through better risk management. The signatories also state that intangible assets, such as reputation and brand, are important components for the value of an organization representing more than two-thirds of the value of a listed company and add that these aspects can be strongly impacted by ESG issues.

Faced with this finding, the authors invite managers to assume a leadership role, seeking to generate more consistent and standardized reports, which would enable a "constructive dialogue" with financial market operators. Finally, the authors point out that investment decisions are made based on issues that the actors involved understand as relevant. They conclude that "change will happen if all market actors join in the effort to better understand and integrate ESG factors in investment" (The Global Compact, 2004, p. 37).

Financial market players and corporate managers are directing increased attention to ESG reports. S&P 500 organizations reporting sustainability increased from 20% in 2011 to 86% in 2018 (Gillan *et al.*, 2021). The Principles for Responsible Investment organization reported that, in 2019, 3,000 institutions managing around US$90 trillion endorsed these principles; in the same year, the Global Sustainable Investment Alliance estimated that more than US$30 trillion of assets were allocated in accordance with ESG standards (Barko *et al.*, 2021). According to Kiernan (2007), the ESG issues were boosted by the CG scandals including the "implosions" of Enron, WorldCom, Tyco and Parmalat, which irrevocably shook investor confidence in exclusively financial information:

> [...] if Universal Owners really want to pursue true social and environmental transformation and broad-based value maximization, they must raise their games to the next level. [...] ESG issues need to be consciously, visibly and systematically integrated into the nuts and bolts of investing: asset allocation, stock selection and portfolio construction (Kiernan, 2007, p. 482).

This author warns that the ability of traditional financial reports to capture the true value, risk and competitive potential of a company is becoming progressively less. He argues

that 80% of a company's real value cannot be explained by traditional accounting; among the most powerful drivers of the invisible part of the "value iceberg" are "four of the key pillars of ESG: Stakeholder Capital, Strategic Governance, Human Capital, and Environment" (Kiernan, 2007, p. 480).

When evaluating the growing number of published studies involving ESG and the evolution of values related to "responsible investment," Serafeim (2021) argues the more the stakeholders make their choices based on ESG criteria, the more companies will tend to change their behavior and will be incentivized to deliver better results in terms of sustainability.

3.5. Corporate governance and sustainability

Since the occurrence of major corporate scandals, "governance" has come to occupy the center of attention (Aras and Crowther, 2008). CG is connected to the organization's mission, transparency, and responsibilities, and can be defined as a set of rules and structures that form the basis for its correct functioning, including the decision-making processes, the definition of the path to follow, the means to achieve the objectives, and measure the results (Naciti *et al.*, 2022). In the search for good governance, companies must be aware of four principles: "(1) transparency; (2) accountability; (3) responsibility; and (4) justice" (Aras and Crowther, 2008, p. 440-441).

Sustainability has become part of the corporate agenda (Enciso-Alfaro and García-Sánchez, 2022; Hristov *et al.*, 2022). As a result, CG practices have become increasingly geared toward adapting to this new reality, seeking to ensure that organizations operate sustainably (Crifo *et al.*, 2019). In this way, companies should review the cross and complex connections between CG and SD agendas, which include issues such as business ethics, corruption and bribery, human rights, and climate change (Elkington, 2006).

The literature confirms the increasing presence of sustainability in CG practices. Naciti *et al.* (2022) review the literature on CG and sustainability published between 1999 and 2019 and found that approximately half of the 468 available studies were published in the last 3 years. This allows us to conclude that CG has been considered a critical success factor in the transformation of organizations toward SD.

3.5.1. Governance for sustainability in higher education

As agents of change, there is no contest that HEIs play a crucial role in supporting SDGs (Duarte *et al.*, 2023). However, there is a consensus that higher education is slowly advancing toward SD, facing barriers that have historically been identified and have not yet been overcome (Sanches *et al.*, 2023).

One of the additional difficulties of HEIs is due to the fact that universities encompass two subsystems, academic and administrative, each with a different culture (Hernández-Diaz *et al.*, 2021). For this reason, there is a need to build bridges between the cultures of academic and operational areas, without which the approach to sustainability throughout the institution may be unfeasible (Robinson *et al.*, 2023). The culture of criticism, an academic tradition, can profoundly impact change initiatives in HEIs, such as the incorporation of sustainability (Hoover and Harder, 2015).

Owing to these particularities, CG has gained a significant contour when it comes to holistically incorporating sustainability into university systems. In this sense, “in the higher education setting, governance presents additional complexity to the concept itself” (Leal Filho *et al.*, 2021, p. 6008). In this same direction, the high complexity results from the great diversity and multiple ways of interaction between the different stakeholders of HEIs (Priyadarshini and Abhilash, 2022) and the complex relationships between the multiple cultures that coexist in a university and are often in conflict (Robinson *et al.*, 2023). Given this reality, the success of SD policies in HEIs depends on effective management and good governance, for which the following are key factors: developing a common vision, commitment, and robust leadership support; promoting a culture of sustainability; effective communication; and feedback practices (Leal Filho, Abubakar, *et al.*, 2023).

HEIs’ sustainable governance requires participatory processes, that must be defined including all stakeholders instead of a top–down approach: “participation, dialogue and cooperation between stakeholders from different fields and sectors are key” (Bauer *et al.*, 2021, p. 2). For participatory governance, transparency is a critical success factor; it provides the necessary information to stakeholders and allows for accountability and evaluation (Roos *et al.*, 2023).

However, several studies emphasize the importance of a centralized approach, through strong leadership, which promotes, at the same time, the decentralization of decisions and the redistribution of influence (Robinson *et al.*, 2023). In this sense, the importance of participation in decision-making is recognized; however, for the effectiveness of governance for sustainability, the support of top management is fundamental (Sacchi *et al.*, 2023).

It is evident that the challenges of transforming HEIs toward sustainability are significant. James March and Herbert Simon, two exponents of behavioral theory, summarize their work:

> *Organizations* [the book] is about the theory of formal organizations, systems of coordinated action among individuals and groups whose preferences, information, interests, and knowledge differ. Organization theories describe the delicate conversion of conflict into cooperation, the mobilization of resources, and the coordination of effort that facilitate the joint survival of an organization and its members (March and Simon, 1993, p. 300).

This synthesis seems to perfectly describe the role of CG in HEIs, so that the objective of holistic integration of sustainability in these institutions can be achieved.

4. Discussion

The literature review indicates that a fundamental issue to be addressed is the different meanings of the economic dimension present in all concepts related to SD, both at the macro and micro levels, except in the ESG. In the SDGs, the economic dimension is related to reducing inequality between rich and poor nations and individuals, both directly, as in SDG 10 (Reduced inequalities), and indirectly, in several other objectives. Despite the lack of consensus among researchers, it is believed that in the CSR concept, the economic dimension is related to how organizations contribute to the economic development of a society. Furthermore, the denomination itself, "corporate social responsibility" does not lead to the conclusion that the

organization's profit is one of its components. This is in line with the SDGs, which encompass the so-called 5 Ps of the 2030 Agenda: “people, planet, prosperity, peace and partnerships” (Caiado *et al.*, 2018, p. 1277).

Differently, in the TBL, the economic dimension must be understood as the economic results obtained by organizations, that is, profit; the TBL “brings together people, planet and profit” (de Oliveira *et al.*, 2023, p. 3). According to Drucker (1958), profitability is an absolute requirement of survival. For him, even if archangels ran businesses, they would still have to seek profits to guarantee the survival of organizations. Even in sustainable business models, the importance of profitability is recognized: “sustainable organizations must make a profit to exist but they don’t just exist to make a profit” (Stubbs and Cocklin, 2008, p. 121). Therefore, in the opinion of the authors of this study, the CS concept must necessarily involve the issues of economic results achieved by organizations that are present in the TBL. A “visualization” of this concept can be a three-pronged scale—environmental, social, and economic objectives—which must be kept in balance. We believe that TBL is the concept that best “translates” SC into corporate objectives.

However, the use of the TBL is commonly identified as a synonymous of sustainability, as a basis for SD and as an accounting and reporting concept; all these meanings different to which it was original conceived. Due to the issues discussed above, and for what can be conclude by the analysis on the document that gave raise do the concept, the TBL could indeed be considered synonymous with CS.

From the stakeholder point of view, it is essential that the information made available by managers enables a solid and faithful view of how the organization is managed, what its economic, environmental, and social results are and how they are achieved (Naciti *et al.*, 2022). This accountability, obtained through the ESG practice, is essential both for investors and risk analysts (Barko *et al.*, 2021; Gillan *et al.*, 2021), as well as for all other stakeholders (Serafeim, 2021). However, why are economic aspects not present in this concept, like in all others sustainability ones? The answer is that the reports containing these aspects are mandatory and standardized. In many situations, the economic-financial statements are the only mandatory ones. The ESG practice adds other reports, aimed at policies and results related to social, environmental, and governance issues.

Despite the importance of ESG practices, this concept has expanded significantly and sometimes mistakenly. Even studies of recognized quality have applied the concept with a different meaning from the one it was conceived: “[...] the US manufacturing sector is overusing the ESG by 4.75 times the level it can serve and regenerate for sustainable development [...]” (Bhandari et al., 2021, p. 1526); “ESG includes governance explicitly and CSR includes governance issues indirectly [...] Thus, ESG tends to be a more expansive terminology than CSR.” (Gillan et al., 2021, p. 2); “the three new pillars of organizational sustainability (environmental, social, and governance) form the ESG factors […]” (Markopoulos *et al.*, 2020). It seems that the concept also generates different interpretations in the corporate world: The Washington Post (Kishan, 2022) also published that “sorting out the differences between ESG and similar, sometimes overlapping approaches is harder, in part because ESG has come to mean different things to different people.” It is evident that the excellent and useful ESG concept has been overloaded to the point of mistakenly being used for a wide diversity of meanings, ranging from natural resources, through CSR and up to CS, even though it does not

encompass the economic dimension. Taking into account Batalha´s (2011) statements, referred to in the Introduction of this study, the different meanings of ESG use make it closer to a "non-concept".

5. Proposal for applying sustainability concepts to higher education

As a result of this study, relying on diverse researchers, several interpretations and applications of concepts were bringing together to the reality of higher education. Figure 1 presents how the authors of this study propose their application to HEIs.

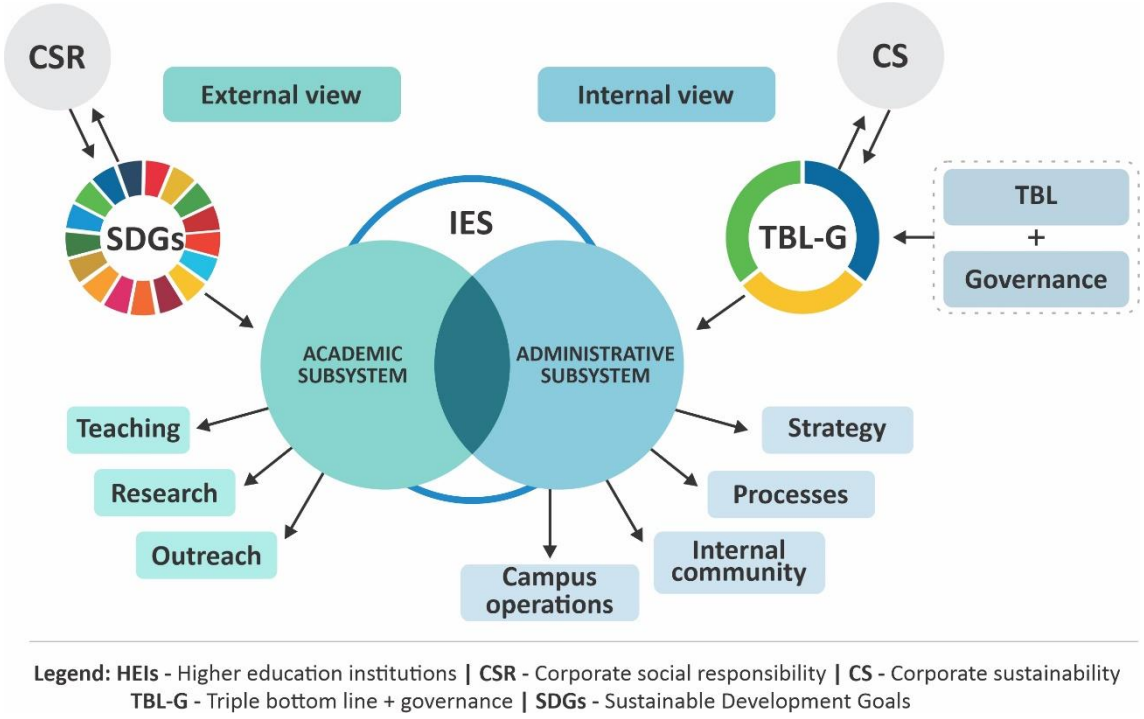

Figure 1. Applying sustainability concepts to HEIs.

A study that was particularly useful in composing this proposal was carried out by Hernández-Diaz *et al.* (2021). The authors defined HEIs as systems formed by two large subsystems: academic and administrative. They defended applying the EDS to the academic subsystem and CS to the administrative subsystem, where they argue that campus operations and governance must be present. Shayan *et al.* (2022) argue that the SDGs represent a practical framework for CSR, while de Oliveira *et al.* (2023) relate SC to TBL.

The coexistence of these two subsystems increases the difficulties of the whole institution approach to sustainability by HEIs, which grants a greater degree of importance to the GC structure and practices (Leal Filho *et al.*, 2021). Governance must deal with the delicate balance between the leadership's firm commitment to sustainability (the top-down approach) and encouraging participation and decentralization of decisions (the bottom-up approach). Thus, it can be concluded that CG plays a crucial role in the sustainability of HEIs. Therefore, this study proposes its incorporation into the TBL not as a fourth objective because the economic, environmental, and social ones are comprehensive and sufficient, but as a critical

factor for its achievement. Thus, the new concept is represented by the acronym TBL-G, which maintains the original concept and highlights the importance of CG in the sustainable transformation of HEIs.

For the authors of this study, CSR, represented by the SDGs, is primarily an object of dissemination and practice in the academic subsystem, whose results are present in teaching, research and outreach activities. From this point of view, the perspective is more external, seeking to contribute to the SD of society, in general, and the surrounding communities.

On the other hand, according this proposal, SC, represented by the new TBL-G concept, is related to the administrative subsystem, with an internal focus on the HEIs, as sustainable organizations. Taking into account that the administrative subsystem serves the academic, CS has the capacity to improves both subsystems (Hernández-Diaz *et al.*, 2021). Therefore, the environmental dimension of TBL-G must have as its main focus the sustainability of campus operations. The internal community must be the focus of the social dimension, which must seek the development and well-being of students, staff and teachers. In relation to the economic dimension, the results of the IES depend on effective strategic planning and the improvement of its processes, combined with the engagement of its stakeholders. Another contribution that the adoption of TBL-G provides is to avoid using the ESG concept as a synonym for SC. Perhaps the fact that ESG is the only concept that incorporates, through the letter "G", governance, was a factor that contribute to its improper application in this context.

Evidently, there are many intersections between the application of these concepts in both subsystems. Several researchers characterize HEIs as complex systems, among other issues, due to the large number of interactions between the components of their internal systems and between them and external stakeholders (Priyadarshini and Abhilash, 2022; Sigahi *et al.*, 2022; Weber *et al.*, 2021). However, the solution to the problems faced by universities in incorporating sustainability requires that the complexity involved be reduced to simpler and more understandable forms (Sigahi *et al.*, 2022). Therefore, when proceeding this simplification, in the words of Prof. Sigahi, "something is lost". However, the authors of this study are convinced that the way of applying the concepts presented covers all the HEIs activities, helping them to holistic incorporate sustainability.

6. Conclusion

In recent years, the urgency of facing problems related to sustainability at a global level has been recognized. This confrontation cannot succeed without the engagement of organizations. Therefore, CSR and SC matters have become key parts of organizations' agendas. The role of HEIs has also been recognized as crucial for the SDGs to be achieved; leaders with responsibility for meeting the current needs of society and allowing them to be met in the future will pass through their corridors.

At the same time that universities have an important mission to fulfill, they face growing competition that puts their survival at risk. Another challenge faced by higher education is that sustainability must permeate all HEI activities, both in the academic and administrative spheres. However, several studies point out flaws in the sustainability approach for HEIs and converge in listing the various barriers they face in this task.

In several authors' opinions, a lack of understanding of the concepts that connect organizations with sustainability is a significant barrier to their advancement toward SD. In line with this, we set out to analyze these concepts and verify whether and how they can be applied specifically by HEIs. Another contribution of this study is its analysis of the TBL and ESG concepts through the original documents that launched them (Elkington, 1997; The Global Compact, 2004), which is rare in the literature. Thus, we intend to facilitate the understanding of its meaning and collaboration so that it is not used inappropriately.

Given the relevance of governance has gained recently, this study addresses the relationship between CG and sustainability. Considering the peculiar characteristics of HEIs, it was recognized that both the degree of complexity of CG and its vital aspects allow HEIs to incorporate sustainability into a whole institution approach. We also address the competitive advantages that CSR provides to HEIs.

Thus, the authors of this study propose the incorporation of governance into the TBL, generating a new concept to better represent the SC of HEIs that was called TBL-G. This extended concept recognizes that quality of governance is a prerequisite for achieving the three traditional TBL objectives—social, environmental, and economic—in these institutions.

Based on the analyses of the related literature and relying on other researchers, this study proposes the joint use of CSR, represented by SDGs in the academic subsystem, and SC, represented by TBL-G, in the administrative subsystem. Despite the clear intersections, this way of applying makes them complementary concepts, and favoring the transformation of the university system as a whole.

The authors believe that this study helps to understand the different meanings of CSR and SC, many times considered similar and interchangeable concepts. It is worth highlighting the applicability of SC in HEIs, represented by the TBL-G, as an essential concept for their survival as sustainable organizations. The objective of seeking profits from HEIs, even if not as an end, but as a means, is not always well regarded in academia.

Finally, it should be noted that this study seeks to provoke a debate on how each concept related to sustainability should be understood and applied by HEIs. The real transformation of organizations and advancement of scientific knowledge necessarily involve understanding and improving these concepts.

The limitations of this study are inherent to a conceptual paper, reflecting the authors' opinion, which involves a degree of subjectivity. Future studies could discuss the concepts presented, eventually proposing new ways of defining or applying them.

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2.2. Segundo artigo:

Proposal for sustainability action archetypes for higher education institutions

Francisco Elíseo Fernandes Sanches
School of Applied Sciences, University of Campinas – Unicamp, Limeira, Brazil
Matheus Leite Campos
Institute of Geosciences, InSySPo, University of Campinas – Unicamp, Campinas, Brazil, and
Luiz Eduardo Gaio and Marcio Marcelo Belli
School of Applied Sciences, University of Campinas – Unicamp, Limeira, Brazil

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Abstract

Purpose – Higher education institutions (HEIs) should assume their role as leaders in the search for a sustainable future. Consequently, such institutions need to incorporate sustainability into their activities. However, this needs to be done holistically and not with isolated and independent actions. Therefore, this study aims to develop a structure of sustainability action archetypes to help HEIs holistically incorporate sustainability in their strategies.
Design/methodology/approach – A systematic review of the literature was conducted focusing on the subject of sustainability in HEIs.
Findings – A structure of sustainability action archetypes for HEIs was proposed. Further, based on scientific literature, examples of actions were presented within each archetype.
Practical implications – This study provides HEI administrators and other organizations with a practical structure to enable the systemic incorporation of sustainability objectives and actions into institutional activities.
Originality/value – This study adapts the tool "sustainable business model archetypes" for a new purpose. This tool was initially developed to classify innovations of sustainable business models.
Keywords: Higher education, Sustainability, Archetypes, Systematic literature review, Sustainable development
Paper type: Research paper

1. Introduction

Owing to the visible growth in environmental, social and economic problems, sustainable development (SD) is, undoubtedly, humanity's greatest challenge (Caiado *et al.*, 2018; Grosseck *et al.*, 2019). Recently, the COVID-19 pandemic has exponentially increased sustainability barriers, slowing the SD progress (Ranjbari *et al.*, 2021) and especially affecting people from low and middle income economies (Barbier and Burgess, 2020). The pandemic has resulted in new challenges for education professionals and higher education institutions (HEIs) leaders and requires a quick response, related to financial issues as well as sustainability approaches (Anholon *et al.*, 2020; Leal Filho, 2020a).

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Since the 1970s, the United Nations (UN) has assumed a leadership role in the movement for international cooperation for SD (Salvia *et al.*, 2019). In 2015, the UN launched the current milestone of the movement for sustainability. It consists of the 17 Sustainable Development Goals (SDGs), which compose the document "Transforming our world: the 2030 Agenda for Sustainable Development." Education is gaining significant importance in the context of SD; moreover, in addition to composing a specific objective (SDG 4), it is recognized as a fundamental means to achieve the remaining 16 objectives: "SDGs will not be attained without these institutions" (Leal Filho *et al.*, 2019b, p. 287).

Given their history and mission, HEIs have a moral obligation to assume a leadership role in the movement for SD (Caeiro and Azeiteiro, 2020; Lozano *et al.*, 2013b; Rieckmann, 2012), as well as to attain SDGs (Albareda-Tiana *et al.*, 2018; Leal Filho, 2020b). Therefore, many authors argue that HEIs should adopt sustainable practices in a holistic and integrated way in all their actions (Cortese, 2003; Leal Filho *et al.*, 2019f; Lozano, 2006). Universities must replace mechanistic and reductionist behaviors and views (Lozano *et al.*, 2013b), which are based on individualism and compartmentalization, with new ones that involve interdisciplinarity and cooperation (Cebrián, 2018; Lozano *et al.*, 2017). Moreover, barriers must be addressed to incorporate these changes (Blanco-Portela *et al.*, 2017; Velazquez *et al.*, 2005). Among the most important barriers, there is a lack of awareness and knowledge regarding the meaning of holistic integration of sustainability in the context of HEI actions (Larrán *et al.*, 2015; Singh and Segatto, 2020), which prevents these institutions from embracing SD as a strategic value.

Confronted with the need to pursue SD, many authors argue that businesses, in general, should incorporate sustainability into their strategy. To that end, a sustainable business model (SBM) concept for incorporating sustainability into each phase of "business as usual" model has emerged (Stubbs and Cocklin, 2008). To classify innovations in SBMs and provide examples to help organizations develop new business models or transform existing ones, Bocken *et al.* (2014) developed the sustainable business model archetypes (SBMAs), which is a framework comprising eight archetypes and business examples that are divided into three groups. This idea can enable the inclusion of sustainability in other kinds of businesses, such as higher education, as is shown below.

Fissi *et al.* (2021) highlighted that only a few studies simultaneously investigate the incorporation of sustainability in all the HEIs' main dimensions. A study carried out by Findler *et al.* (2019) reached a similar conclusion; the literature that deals with the impacts of HEIs on SD focuses on specific case studies, indicating a lack of studies that approach HEIs in a more holistic way.

To deal with this issue, the academic community needs to focus on converting theory into practical structures that can aid universities in the process of holistically integrating sustainability (Amaral *et al.*, 2020; Leal Filho *et al.*, 2018) and identifying sustainability actions that can be adopted in each of the HEIs' activity areas. In this sense, Leal Filho *et al.* (2019c, p. 680) emphasized the advantages of a holistic approach in planning practices for the incorporation of sustainability by HEIs; moreover, they also highlighted the importance of using appropriate processes and instruments: "tools and techniques from strategic management and planning may be adopted and built upon."

In light of the above, the authors believe that, once adapted, the concept of SBMAs can help to fill these gaps, thus assisting HEIs to overcome various barriers and facilitating the incorporation of sustainability. Therefore, this study aimed to develop a sustainability action archetype structure for HEIs and identify examples of actions within the scope of each archetype to help these institutions holistically integrate SD into all their activities.

The originality of this research stems from its adaptation of SBMAs for a new purpose, which is to identify the main sustainability objectives and actions that should be specifically incorporated by HEIs. This structure can be used in the planning processes for the incorporation of sustainability by HEIs; moreover, it can help the university community understand the meaning of systemic incorporation of sustainability. The authors referred to this new framework as "HEIs sustainability action archetypes."

This paper is structured in the following sections. Section 2 provides the theoretical framework, Section 3 presents the methodological procedures, Section 4 demonstrates the results – the HEI sustainability archetypes , Section 5 offers a comprehensive discussion and finally, Section 6 presents the conclusions.

2. Theoretical framework

According to Cortese (2003), sustainability must permeate all HEIs' activities and cover four areas – education, research, operations and community relations. As measuring HEIs' sustainability incorporation is also relevant, Lozano (2006) suggests adding "assessment and reporting" as a fifth area. More recently, Leal Filho *et al.* (2019f) presented "institutional framework" as a sixth area, in which internal procedures and environmental management systems should be included.

Based on these concepts, this study will consider four main groups to approach sustainability in HEIs: organizational, which included assessment and reporting; academic, composed of education and research; campus operations; and community, composed of both external and internal community.

2.1 Organizational group

To direct universities towards SD, leadership as well as structural and financial support are necessary conditions (Aleixo *et al.*, 2018; Barth, 2013). University leaders must assume greater responsibility and encourage all staff to recognize social responsibility and sustainability as a common goal (Leal Filho *et al.*, 2019a). To achieve this objective, they must incorporate sustainability into their mission and vision statements, which in turn creates a favorable environment for sustainability and encourages stakeholder engagement (Barth, 2013; Lozano *et al.*, 2015). The formalization of institutional policies for SD and the commitment of the HEIs' leaders through their adherence to global declarations are also very important steps to ensure sustainability's systemic implementation (Amaral *et al.*, 2015; Farinha *et al.*, 2019; Lozano *et al.*, 2015). In this direction, the inclusion of SD in the institution's codes of ethics demonstrates the HEI's commitment to SD and, as a consequence, to the SDGs (Mion *et al.*, 2019).

The authors have also highlighted the need for an appropriate structure to manage campus transformation, commonly called "green office" (Adomßent *et al.*, 2019) or "sustainability office" (Amaral *et al.*, 2020). With staff and student participation, these structures are effective in supporting the implementation of sustainable practices and in promoting the university community's awareness of SD (Leal Filho *et al.*, 2019f).

In addition, the inclusion of sustainability in strategic and action plans is another critical factor for the success of HEIs' transformation (Leal Filho *et al.*, 2019c). For the success of these plans, using management systems to monitor sustainability incorporation and evaluate progress is necessary (Amaral *et al.*, 2015; Awuzie and Abuzeinab, 2019). Furthermore, the practice of sustainability assessment and reporting favors a holistic approach, promotes participation and awareness, clarifies the impact of HEIs' actions on all their stakeholders, strengthens their image and facilitates organizational change (Blasco *et al.*, 2019; Klußmann *et al.*, 2019).

The use of an effective communication system can provide a competitive advantage by positioning the organization as sustainable, thus obtaining greater satisfaction from students and greater commitment from faculty and staff (Asrar-ul-Haq *et al.*, 2017). In addition, a good communication strategy can improve image, legitimacy and management reputation, thus contributing to universities' success (Del-Castillo-Feito *et al.*, 2020; Salvioni *et al.*, 2017).

Other suggested institutional actions include collaborative benchmarking, establishing a network with other sustainable HEIs (Cebrián, 2018; Wolff and Ehrström, 2020) and obtaining international certifications, such as ISO 14001, which is related to environmental management systems (Amaral *et al.*, 2015) and ISO 26000, which deals with social responsibility (Madzík *et al.*, 2018).

2.2 Academic group

2.2.1 Sustainability in education. To foster sustainability in HEIs and achieve a sustainable future, a radical change in education must occur by shifting the current focus from prioritizing profit and depletion of resources to promoting students' behavioral change (Leal Filho *et al.*, 2018; Lozano, 2006). To achieve this change, a transformation of the traditional paradigm of education – fragmented learning organized into highly specialized areas and traditional disciplines – into one that adopts a systemic perspective and interdisciplinary collaboration is needed (Cortese, 2003). In fact, an analysis of sustainability-related literature in teaching revealed that the words "interdisciplinary" and "transdisciplinary" predominate (Lozano *et al.*, 2017; Rieckmann, 2012).

The integration of education for sustainable development (ESD) into curricula basically occurs in two ways: horizontally, with specific courses or modules for all degrees and levels, and vertically, featuring sustainability-related issues as part of each discipline throughout the student's education (Aleixo *et al.*, 2020; Ceulemans and De Prins, 2010; Sánchez- Carracedo *et al.*, 2020). Several studies have highlighted pedagogical bases for sustainability learning (Lozano *et al.*, 2017; Shephard, 2008; Sipos *et al.*, 2008) as well as methodological issues regarding the inclusion of sustainability into curricula, where active methodologies are prominent (Hedden *et al.*, 2017; MacVaugh and Norton, 2012). These active methodologies include project-based learning and problem-based learning (Rampasso *et al.*, 2020), service-learning (Barth *et al.*, 2014), flipped classrooms (Buil-Fabregá *et al.*, 2019) and real-world labs (Müller *et al.*, 2020) among many others. Leal Filho *et al.* (2019e, p. 1006) posit that the "co-creation of curricula" is an important procedure to make HEIs more effective as change agents in society. In this procedure, universities and the community jointly build educational programs to meet local and regional needs.

The incorporation of e-learning solutions has been gaining relevance in recent years; however, the COVID-19 pandemic has accelerated this process in an unprecedented manner, imposing a shift to digital and opens up new opportunities for digital innovation (Agasisti *et al.*, 2020). For financial and sustainability challenges that COVID-19 poses to them (Leal Filho, 2020a), e-learning solutions are fundamental components for HEIs. The inclusion of technology in education helps these institutions to reduce their carbon footprint, while also assisting them in decreasing their material consumption and waste generation, saving financial resources. Moreover, technology also enables institutions to bridge the social gap through inclusive and equitable education, which covers subgroups of people with disabilities (Jarillo *et al.*, 2019).

In addition to the inclusion of sustainability in the curricular content, optional disciplines and courses (Cebrián, 2018) and the incentive to participate in internal and external events,

such as congresses, seminars and workshops (Berchin *et al.*, 2018), complement learning, awareness and engagement among students.

Further, faculty training in methods and mechanisms for teaching sustainability is a key factor for the genuine inclusion of SD into curricula (Muñoz-Rodríguez *et al.*, 2020; Velazquez *et al.*, 2005). Lozano (2006, p. 795) refers to this action as "educating the educators" for sustainability.

2.1.1 Sustainability in research. To tackle the urgent problems related to environmental degradation and human health, sustainability research should aim at modifying existing compartmentalized mental models to create interdisciplinary research groups that can address practical problems (Cebrián, 2018; Stephens *et al.*, 2008). In this sense, the field of "sustainability science," which emerged in the 2000s, should be defined by the problems it faces and not by the subjects that make up the field (Aricò, 2014; Disterheft *et al.*, 2013). In this regard, a new HEI model should emerge from launching multidisciplinary or transdisciplinary research institutes focused on sustainability, comprising teachers, students and professionals from diverse areas (Beynaghi *et al.*, 2016; Farinha *et al.*, 2020).

Regarding education, the words "interdisciplinary" and "transdisciplinary," often present in sustainability research, emphasize actions and solutions to real problems (Hugé *et al.*, 2016; Karatzoglou, 2013; Waas *et al.*, 2010; Wiek *et al.*, 2011). For this, research methodologies such as action research, which promotes collaboration between professionals and researchers in interdisciplinary research projects, are recommended to favor university- community integration (Wooltorton *et al.*, 2015).

A study carried out by Hugé *et al.* (2016) highlights that financial resources are a fundamental aspect of promoting sustainability research. Such resources can come from different sources, such as the HEI itself (extra-funding), government agencies and research- funding organizations. The authors also suggest offering PhD and master's scholarships in interdisciplinary areas. Another action to improve research in SD is the establishment of partnerships with other HEIs for knowledge sharing, developing joint research activities and sharing infrastructure and interdisciplinary SD networks (Lozano *et al.*, 2015; Sonetti *et al.*, 2020).

Although research on sustainability has grown over the years, actions can still be implemented to promote young researchers' interests in this topic. One way to promote sustainability research is by creating competitions and awards for undergraduate work and master's and doctoral research proposals and theses on the topic (Cebrián, 2018; Hugé *et al.*, 2016).

2.2 Campus operation group

With the engagement of students, faculty and staff, the university campuses can become authentic "living laboratories" with the capacity to complement the training of future professionals and serve as examples for the community (Amaral *et al.*, 2020; Barth, 2013; Purcell *et al.*, 2019). Several authors sought to identify the most frequent practices in HEIs operations. Velazquez *et al.* (2006) showed that the most recurrent initiatives were energy and water conservation and recycling of organic and inorganic materials. In this direction, Amaral *et al.* (2020, p. 1) widely reviewed the literature to identify sustainable initiatives in campus operations and concluded that increased power generation and reduced energy consumption "are by far the main policies adopted" by HEIs.

Therefore, energy efficiency is a central aspect of HEIs and includes reducing energy consumption and its costs by initiatives such as changing fluorescent lamps to LED lamps, controlling and monitoring consumption, automating artificial lighting systems and adjusting the temperatures of air conditioning units (Amaral *et al.*, 2020; Rebelatto *et al.*, 2019).

This also includes the production of clean energy, such as solar energy (photovoltaic panels), eolic energy and biogas energy, which reflects in the environment and population health (Amaral *et al.*, 2020; Rebelatto *et al.*, 2019).

In relation to water, decentralizing consumption monitoring, using water-saving devices, improving the quality of hydraulic and sanitation piping systems and their proper maintenance facilitate the reduction of consumption and losses (Marinho *et al.*, 2014). Additionally, a program to optimize water consumption may include capturing and using rainwater, reusing gray water and adopting low water consumption landscaping (Marinho *et al.*, 2014).

Regarding waste treatment, studies carried out by Moqbel *et al.* (2020) and Owojori *et al.* (2020) in universities in Jordan and South Africa, respectively, presented several similar studies that arrived at homogeneous conclusions: the percentages of recycling waste in HEIs reached more than 70% in several of the empirical studies cited. The waste generated by HEIs consists of organic material (students housing, cafeterias, restaurants and gardening), paper (administrative and academic departments and packaging), plastic (disposable cups, beverage and general packaging) and chemical waste (laboratories).

Especially in recent studies, many practices for the treatment of such waste are addressed. Tangwanichagapong *et al.* (2017) state that so-called 3 R programs – reduce, reuse and recycle – are effective alternatives in managing campus solid waste. A simple and effective action for this aim is the distribution of garbage bins across the campus for waste selective collection (Moqbel *et al.*, 2020). The effectiveness of this initiative requires some care through reallocation of bins, regular emptying, information provision to the university community and the involvement of operational staff (Moqbel *et al.*, 2020). Paper consumption is another aspect that significantly affects the sustainability of HEIs. This problem can be addressed through the use of electronic documents and digital communication processes, even for student projects (Owojori *et al.*, 2020). Electronic waste, especially composed of computers, is another aspect that causes important environmental impact by HEIs. One way to mitigate this problem was presented in Wang *et al.* (2019): a program from an Australian university in which volunteer students and donors collected, refurbished and donated computers to people from socially disadvantaged groups.

Regarding organic waste, Ebrahimi and North (2017) assert that the collection and treatment of this kind of waste through composting, vermicomposting and anaerobic digestion result in reuse and savings in transportation and prevent the overload of landfills. The results of these processes can be used as organic fertilizers on campus (Owojori *et al.*, 2020). Other important actions are the installation of sewage treatment plants on campus (Moura *et al.*, 2019) and the treatment and correct disposal of chemical residues generated by laboratory activities, which are among the most polluting ones in HEIs, as cautioned by Drahein *et al.* (2019).

HEIs can adopt other actions and procedures to reduce greenhouse gas emissions. An important strategy is represented by "low carbon transport" programs, which include encouraging students and staff to practice walking, using bicycles and public transport and sharing the use of vehicles for commuting to the university (Hancock and Nuttman, 2014). Furthermore, the importance of using bicycles to reduce universities' ecological footprints was emphasized by Genta *et al.* (2019). Further, the insertion of bicycle lanes, safe streets in and around the campus and the existence of bike racks facilitate bicycle use in the university community.

A green construction system for new buildings and renovations is another effective procedure to minimize the use of construction materials and reduce energy and water consumption in buildings, thus applying creativity and technical innovation (Amaral *et al.*, 2020;

Berker and Woods, 2020; Beynaghi *et al.*, 2016). Leal Filho, *et al.* (2019d) also highlighted the need to implement procurement policies regarding the purchase of all products and services required by universities as a significant way to reduce the adverse impact of HEI operations. Thus, Ebrahimi and North (2017) emphasized that a policy for sustainable purchases seeks to prioritize products that cause less impact on the environment as well as human health

2.3 Community group

For SD to occur, efforts must increasingly be focused outside the campus (Beynaghi *et al.*, 2016). HEIs' close involvement with surrounding communities leads to tangible regional- level benefits, including population growth, employment opportunities, increased housing demand and the improvement of the local economy (Karatzoglou, 2013). Leal Filho *et al.* (2019b, p. 288) argued that HEIs have a "moral duty to contribute to the society in which they thrive" and that, in return, society "reciprocates with benefits to the institution, staff and students."

However, in addition to these intrinsic contributions to HEIs' own activities, HEIs can intensify exchanges with society through partnerships with clear benefits for both parties. These partnerships could involve technology and knowledge transfer activities, including consulting, contracts with companies and assistance to local government agencies (Nölting *et al.*, 2020). Practical-university partnerships can bring teaching closer to the community and develop skills in students (Nölting *et al.*, 2020), through job and internship offers (Ferrer- Balas *et al.*, 2008) and the formation of university business incubators (Krstić *et al.*, 2020).

Studies have indicated that the lack of knowledge among basic education teachers is a barrier to the development of SD (Borges and Benayas, 2019). Therefore, a deeper connection between HEIs and local schools can promote ESD, improve public education and facilitate effective mobilization of resources (Franco and Tracey, 2019). Another action that frequently appears in studies on the relationship between HEIs and local communities is the organization of joint events by HEIs, focused on sustainability-related themes, to provide open access to the community (Leal Filho *et al.*, 2019e; Lozano *et al.*, 2015).

Particularly in Latin American countries, where great social inequalities prevail, universities can play a fundamental role by adhering to their mission statement for university outreach (Stephens *et al.*, 2008). In this context, universities cannot practice social justice if they only welcome students from the financial elite; it is essential that they promote access to higher education for students of lower social and economic classes as well (Disterheft *et al.*, 2013; Stephens *et al.*, 2008). Examples of effective actions focused on this objective were presented by Ramísio *et al.* (2019) in a study that analyzed the experiences of the University of Minho, Portugal. This institution awarded a significant number of scholarships, provided thousands of subsidized meals, made a large number of beds available in university residences and provided financial support, in partnership with other institutions, for students at risk of dropping out of university.

Moreover, issues related to diversity, equality and accessibility have deserved a great deal of attention in HEIs. Along these lines, Lozano *et al.* (2015) listed important actions taken by universities, such as implementing specific policies and the designation of employees to work with diversity, to provide equal opportunities irrespective of gender, ethnic group and disability. This issue has also been addressed in curricula contents. Ares- Pernas *et al.* (2020) pointed out that several students, especially designers and engineers, are aware of their role in the design and creation of products that can be easily accessed by people with disabilities.

As HEIs' sustainability activities are closely interconnected, education and research are also reflected in the community, which makes social sustainability education inseparable

from other types of education (Wolff and Ehrström, 2020). To ensure social sustainability in school, Rampasso *et al.* (2020) underlined the importance of active methodologies, such as in- service learning projects, where students are involved in solving real social problems. They also assert that HEIs must provide students with opportunities for voluntary engagement in extracurricular social projects. Other mechanisms, such as partnerships with local authorities to implement ecological and sustainable cities projects (Amaral *et al.*, 2015; Ramísio *et al.*, 2019) and the participation of HEIs professionals in advisory councils for SD issues (Lozano *et al.*, 2015), can also promote the university–community relationship.

Regarding the practice of corporate social responsibility (CSR), Asrar-ul-Haq *et al.* (2017) argued that students and employees are the primary stakeholders of HEIs. Programs that aim at the well-being of students, which reflect on your academic performance, can include health services, mental support, field activities and access to sports facilities (Iordache- Platis, 2020). Delgado-Lobete *et al.* (2020) argued that, because of the identification of worrying low levels of cognitive and affective subjective well-being of students in the last decade, studies in this field have intensified. These initiatives have intensified during the current pandemic, as counseling-based services, and have become essential (Iordache-Platis, 2020).

According to Asrar-ul-Haq *et al.* (2017), the activities that benefit the other stakeholders begin with the employees; therefore, "without a focus on employees, universities may not be able to effectively implement CSR activities, policies and practices for other stakeholders" (Asrar-ul-Haq *et al.*, 2017, p. 2353). In the same direction, Munar *et al.* (2020) highlighted the importance of paying attention to issues that involve HEI employees, especially with regard to their professional and personal development. The authors highlight the ethical responsibility of these institutions to afford the development and growth of their employees by providing them with a work environment equipped with occupational health prevention policies. They refer that prior studies have revealed that job stability, opportunities for professional growth, continuous training, health and safety, an excellent work environment, autonomy, recognition and meaning and purpose with the function affect job satisfaction and happiness.

3. Methodological procedures

To define the structure of HEIs' sustainable action archetypes and identify examples of significant actions within the scope of each archetype, the systematic review approach was chosen (Tranfield *et al.*, 2003). The initial exploratory search extracted a grand total of 6,246 documents (in the last update of the survey, held on 4 April 2021), which was considered a too large sample. Therefore, several criteria for a smaller and more manageable sample were applied as well as for a consistent number of papers. It is worth mentioning that the initial planning was adapted during the study to meet its objectives. This procedure was recommended by Tranfield *et al.* (2003), according to whom the initial approach must be flexible enough to accept modifications during the course of the study as the results are evaluated. Our seven-step approach is explained in detail below:

(1) Stage 1: The Scopus digital database was selected, which is similar to Hallinger and Chatpinyakoop (2019, p. 3), for whom it "offers a wide coverage of disciplines that were deemed relevant to higher education for sustainable development (HESD)." The search parameters encompassed studies from 2000 to 2020 and applied the Boolean search algorithm "("higher education") AND (sustainability OR sustainable)" to the title, abstract and keywords fields. The search was limited only to scientific articles and to three relevant journals on the topic, which hold the largest number of publications on this subject: *International Journal of*

Sustainability in Higher Education (*IJSHJ*), *Journal of Cleaner Production* (*JCP*) and *Sustainability*. By applying this restriction, the initial sample was narrowed to 1,006 articles (*Sustainability*: 430; *IJSHJ*: 391; *JCP*: 185) and guaranteed the quality of the selected articles.

(2) Stage 2: Citations limits were applied, according to the year of publication, to search for the most relevant studies. Thus, 293 articles were eliminated and 713 remained. The selection criteria applied at this stage were as follows:

- Articles published between 2000 and 2010: minimum of 50 citations;
- Articles published between 2011 and 2016: minimum of 20 citations;
- Articles published in the years 2017 and 2018: minimum of 10 citations; and
- Articles published in 2019 and 2020: no limit has been established.

(3) Stage 3: After the first evaluation of the sample, an uneven distribution of the papers regarding the themes related to HEIs' sustainability was verified. Therefore, for a balanced final sample, the authors decided, from this stage, to segregate the selected articles in the following groups:

- *General*: holistic approach to sustainability in HEIs; case studies of specific HEIs or groups of institutions from countries or regions; application of the SDGs, etc.
- *Organizational*: policies; commitment; management tools; communication, assessment and reporting; operational structures, etc.
- *Operations*: campus as a "living lab"; aspects related to energy, water, waste, purchases, carbon footprint, transportation, etc.
- *Education*: pedagogical bases; teaching-learning methodologies; teacher training, etc.
- *Research*: science of sustainability, multi and transdisciplinary; network; local partnerships, etc.
- *Community*: partnerships with government agencies, schools and companies; outreach actions; volunteer work; access to higher education; well-being and development of the external and internal community, etc.

To implement this sorting, the titles and abstracts of the articles were read (the latter on a need basis). The articles that were not aimed at sustainability in higher education, despite appearing in the search string, were eliminated. In this stage, only 35 articles were removed and left a total of 678 studies.

(4) Stage 4: At this stage, the abstracts of all articles were read and, eventually, the full text was analyzed. Articles that best suited the purpose of the work were selected. It was sought to choose articles that could serve as references for the theoretical grounding of each group of actions as well as those that dealt with specific and practical actions. This stage resulted in 444 eliminated and 234 selected articles for the next stage.

(5) Stage 5: In this stage, a preview of the archetypes structure was elaborated by listing the actions that could compose the examples to be included in the framework. This procedure was implemented by selecting articles from each group that best suited this purpose through the analysis of their full texts. Thus, 66 articles were selected.

(6) Stage 6: Based on the references cited by the selected articles as well as on previous authors' works, 13 articles were included in this stage.

(7) Stage 7: The final sample with a total of 79 articles was obtained by adding the studies that made up Stages 5 and 6.

Tranfield *et al.* (2003) indicated that, as selection decisions are relatively subjective in qualitative research, document selection could be conducted by more than one researcher; therefore, each stage was carried out in pairs.

Okoli (2015) outlines three applications for systematic reviews as follows:

(1) "standalone systematic literature review," which constitutes the central focus of a study and aims to select the main studies in a field;

(2) reviews that make up a section of a dissertation or thesis; and

(3) reviews aiming to support a research question, which is composed of the introductory sections of an article – this application was followed through in this study; the authors believe that this objective was achieved.

The final sample of the selected articles, comprising the entire section of the theoretical framework, supports each example of an action that is part of the framework of the archetypes presented in Section 4. Figure 1 presents the flowchart of the selection process.

4. Results: higher education institutions sustainability action archetypes

Figure 2 compares the framework of Bocken *et al.* (2014) with the HEIs sustainability actions archetypes developed in this study, which is based on higher education sustainability literature. Figure 3 presents the final framework, which includes examples of sustainable actions found in the literature review.

5. Discussion

This study adapted the structure of the SBMAs, developed by Bocken *et al.* (2014), for a new purpose, that is, to thoroughly represent the incorporation of sustainability in each group of actions developed by HEIs. The authors believe that the results of this study demonstrate that this adaptation proved to be effective, thus achieving the proposed objectives.

First, it should be noted that the original archetypes of the technological group fit perfectly for the new purpose. By simply adapting the group's name to "campus operations," the terminology unanimously that was used in the literature on sustainability in HEIs (Amaral *et al.*, 2020), and with minor adjustments to the nomenclature, the three archetypes presented in this group seem to be adequate to incorporate sustainability into universities' operations. The authors believe that even for other suitable organizations, sustainability depends on minimizing the number of resources used in material and energy processes (Ramísio *et al.*, 2019). However, even by reducing consumption, an inevitable waste is generated by these processes, which should be correctly treated (Ebrahimi and North, 2017). Once consumption is reduced and waste is treated, it is necessary to replace processes and products with substitutes that are natural or those that have less impact on the environment and human health (Beynaghi *et al.*, 2016; Leal Filho *et al.*, 2019d).

Regarding the academic group, it is easy to deduce the need for its incorporation into the structure of archetypes in relation to university institutions, focused on the incorporation of sustainability in education and research activities, which make up the core of the objectives of the HEIs. This may be the only group that aims at incorporating sustainability in a specific area of field perspective.

Another group that must be present in structures that aim to incorporate sustainability in any kind of activity is called "community," which was referred to by Bocken *et al.* (2014) as a "social" group. The name was changed because the three dimensions of sustainability –

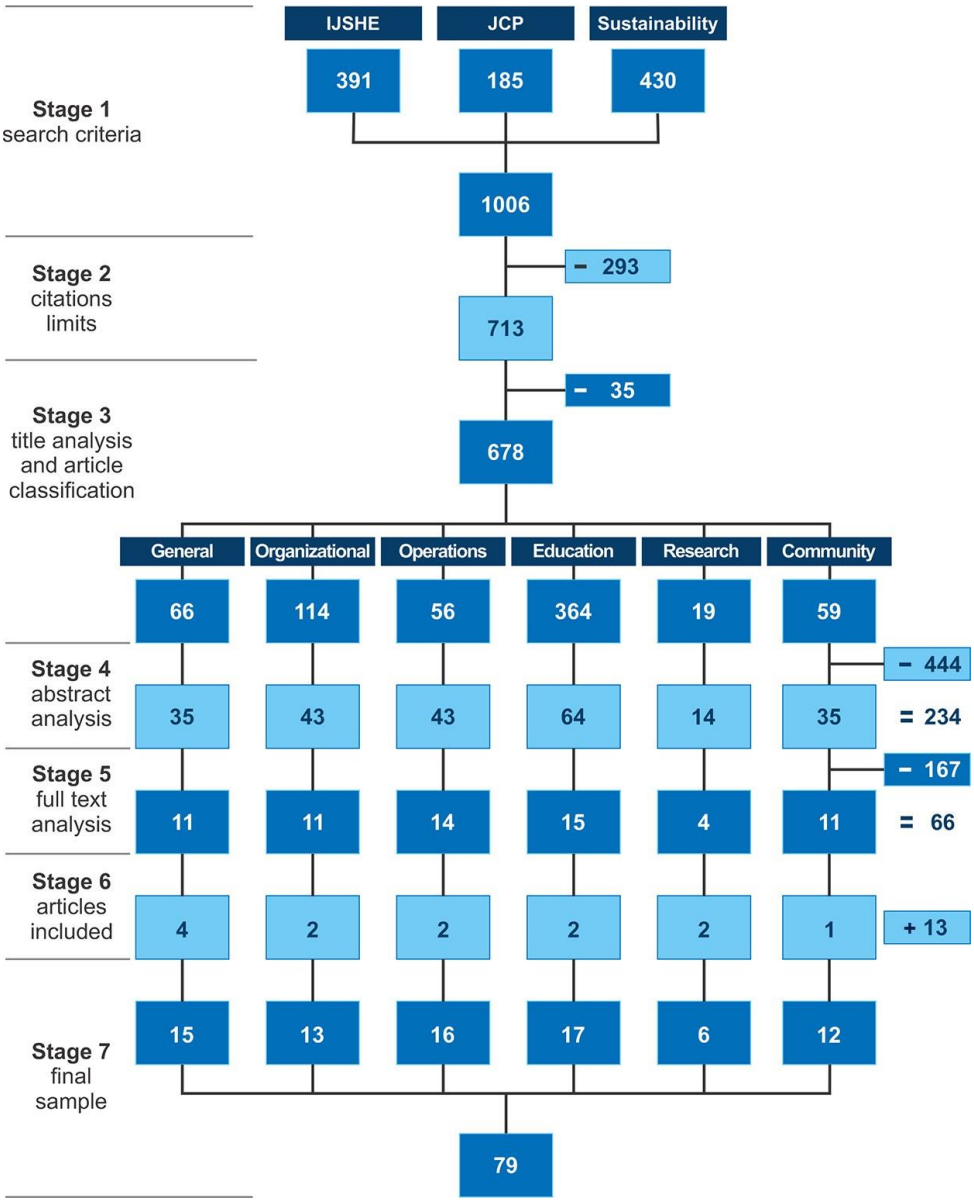

Figure 1.
Flowchart of the selection process

social, environmental and economic – are present not only in this specific one, but in all other groups. This new terminology is also consistent with the academic literature. An important aspect to be highlighted in this study is the allocation of two archetypes in this group, one aimed at the external community and another at the internal community. In fact, the social dimension of sustainability has received little attention in relation to the other dimensions (Wolff and Ehrström, 2020) and is "far from being completely incorporated into the central actions performed by HEIs" (Rampasso *et al.*, 2020, p. 200). However, while transforming the external community must be the objective of a sustainable HEI, actions aimed at the development and well-being of the internal community also deserve constant concern from educational leaders (Delgado-Lobete *et al.*, 2020; Munar *et al.*, 2020). Our study contributes to the literature by addressing this aspect, as it is rare in literature on sustainability in HEIs.

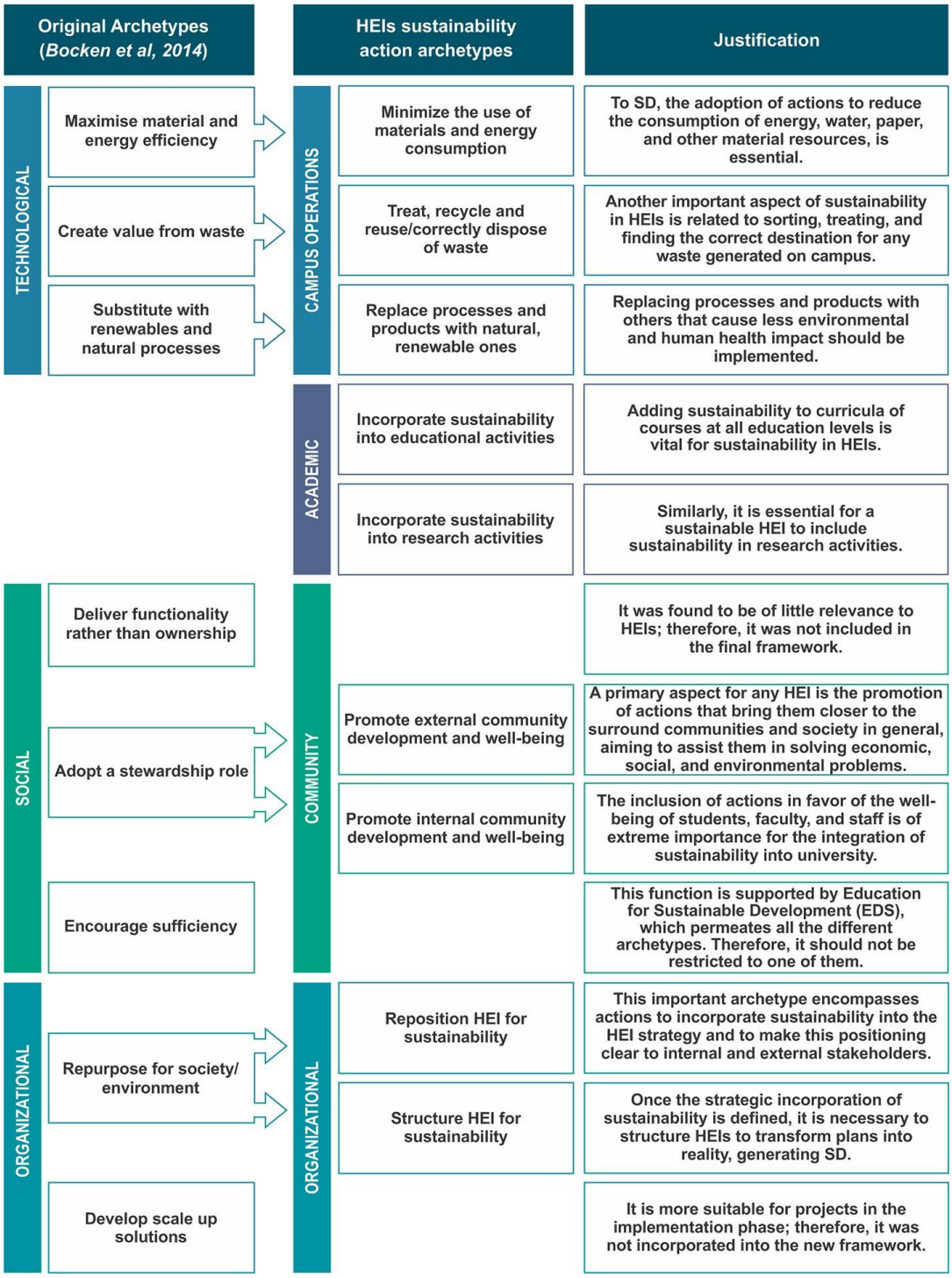

Figure 2.
Comparing Bocken *et al.*'s (2014) archetypes with HEIs sustainability action archetypes

Completing the structure of the archetypes, the organizational group was maintained, which holds the same name as the original structure. The authors believe that it is also suitable for any type of organization. The archetype aimed at repositioning for sustainability was maintained, with a minor adjustment of nomenclature. This aspect is of utmost importance

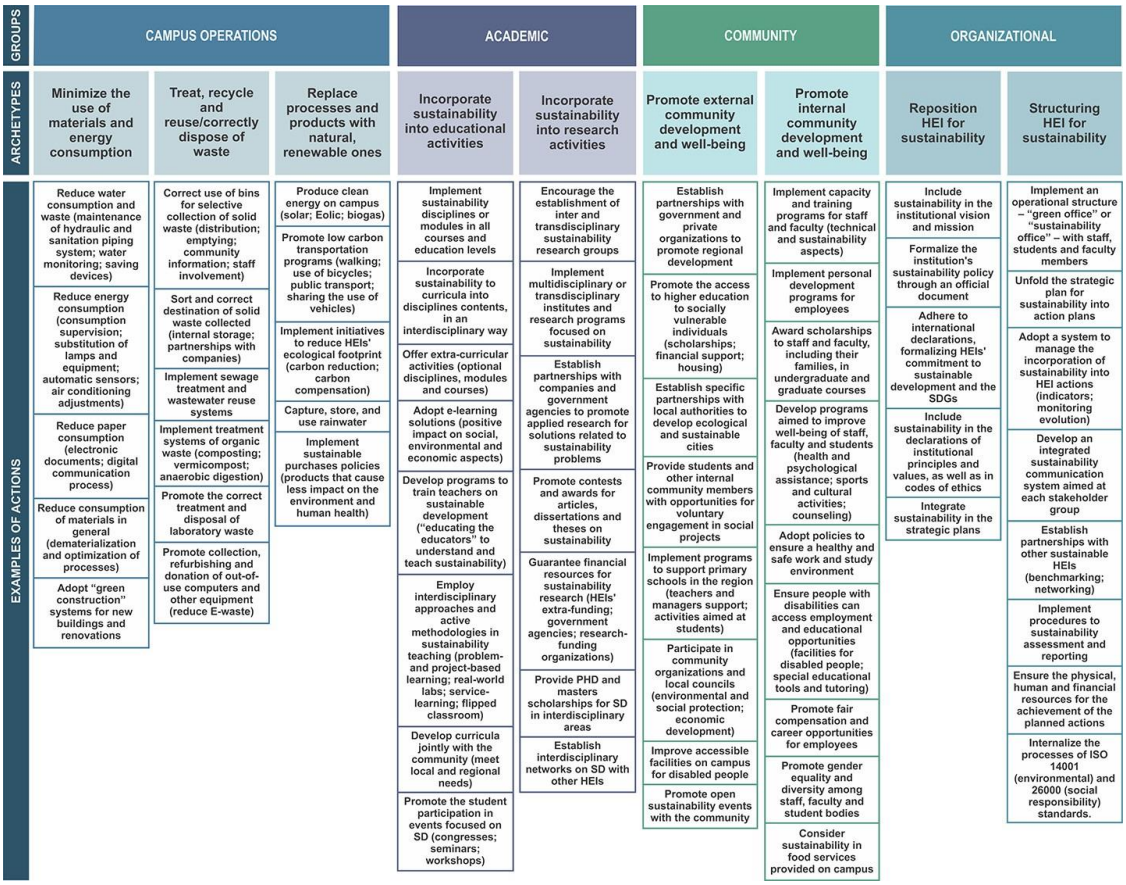

Figure 3. HEIs sustainability action archetypes, based on Bocken *et al.* (2014)

for an HEI, as it aggregates actions that demonstrate the unwavering institutional commitment to SD to all stakeholders, thus favoring the thorough inclusion of sustainability by the HEI (Farinha *et al.*, 2020; Lozano *et al.*, 2015). However, for the consolidation of sustainability in institutional actions it is equally important that the universities are provided with the necessary structures and processes to convert intentions into real actions (Adomßent *et al.*, 2019; Leal Filho *et al.*, 2019c). Therefore, a new archetype was included in this group to demonstrate the importance of not only positioning but also structuring the HEIs for sustainability.

The core of this study is related to how sustainability should be present in higher education. Similar to several studies, the authors believe that sustainability should be incorporated into universities in a systemic and integrated manner by encompassing all areas of operation (Cortese, 2003; Leal Filho *et al.*, 2019f; Lozano, 2006). The authors understand, as Lozano and von Haartman (2018, p. 509) do, that organizations, in a general perspective, "must address sustainability in a holistic way, considering internal, connecting, and external drivers, and how the drivers in each group relate to drivers in the same group and in other groups." Similarly, Disterheft *et al.* (2015) assert that HEIs need to adopt holistic and participatory approaches in their sustainability measurement and implementation processes.

The term "holism" was coined by Jan Christian Smuts in the 1920s, as opposed to the rigidity of mechanism. For Foster and Clark (2008), Smuts sought a universal principle that was able to explain both nature and society. For him, "the world comprised an ongoing, evolving series of wholes, which are constantly interacting," with intense correlation among

the parts, which was subordinate to the whole to support a dynamic balance (Foster and Clark, 2008, p. 329). At the organizational level, this concept can be translated as the global view of all the elements that comprise an organization, including its strategies and activities, thus forming an organic whole, in a metaphor that resembles the other "living organisms" (Morgan, 1996). In line with this concept, holistic transdisciplinary approaches in HEIs, as opposed to disciplinary fragmentation, adopt a comprehensive view of the world and life in all its complexity (Sonetti *et al.*, 2020), as all HEIs' activities are not independent of each other, but make up an "interconnected network" (Cortese, 2003). Similarly, in defense of this view, Leal Filho *et al.* (2020, p. 3) state that sustainability problems "cannot be reduced to manageable parts separate from the seamless web they are part of," and observe that, regarding sustainability, "Newtonian and mechanistic approaches to problems solving are expected to fail."

In accordance with this view, the authors believe that the effect of integrated sustainability actions on HEIs is considerably amplified; moreover, the actions of one area enhance those of others. A clear example of this aspect is when actions aimed at campus sustainability involve technical and administrative employees as well as teachers and students, as in the sustainability offices (Leal Filho *et al.*, 2019f); they complement learning and serve as example to society. However, when sustainability is present in one area and not in another, the beneficial effects are at risk of being reduced. Thus, if students observe that their classroom learnings are not applied by the university in which they study, this contradiction may result in uncertainty about the applicability of what they were taught. The opposite is also true: the positive effects of actions aimed at campus sustainability can be reduced if what is taught to students in the courses is not in line with the implemented actions.

However, when the full integration of sustainability occurs in an HEI, the multiplier effect is evident. For instance, a waste treatment plant, installed on campus, can be used by students and teachers for complementary teaching activities and for research activities. Such a place could also be visited by the surrounding community, in the "open university" model. This example shows the extent to which the effects of a single action can be significantly amplified. Such an initiative can simultaneously impact the sustainability of the campus, teaching, research and the community, thus demonstrating that, in the holistic approach, the whole is greater than the sum of the isolated parts.

Nevertheless, the pace of the incorporation of sustainability by universities is still far from being holistically integrated, which constitutes a barrier for HEIs and society to become more sustainable (Larrán *et al.*, 2015). Despite the visible progress of the HEIs towards greater incorporation of sustainability, the integrated and systemic approaches in these institutions are still in the initial stages (Kapituľcinová *et al.*, 2018; Lozano *et al.*, 2015). The path to the sustainable transformation of HEIs is not an easy one. The faculty and staff of universities still view sustainability as a peripheral function (Sammalisto *et al.*, 2015). Moreover, the lack of knowledge is one of the main barriers to the effective incorporation of SD into university actions (Larrán *et al.*, 2015; Singh and Segatto, 2020). The concepts of sustainability and SD – integration of environmental, social and economic aspects – are not comprehensively understood by the university community, which hinders the transition to healthier practices (Aleixo *et al.*, 2018; Stephens *et al.*, 2008).

Therefore, the main objective of the HEIs sustainability actions archetypes, developed by this study, is to favor a cultural change that promotes organizational awareness and learning and overcomes human barriers, which, according to Farinha *et al.* (2020, p. 488), "is one of the most challenging obstacles that can stop or slow down change at universities." Therefore, it is imperative that all components of a university, including its leaders,

professors, and students, "must be empowered to catalyze and implement new paradigms by introducing SD into all courses and curricula and throughout all other elements of university and college activities" (Lozano *et al.*, 2013a, p. 8). Second, archetypes can be used in strategic planning processes and while preparing short-, medium- or long-term action plans that aim to incorporate sustainability into the entire university system (Lozano *et al.*, 2015).

In this sense, the importance of planning the incorporation of sustainability in the actions of the HEI was also emphasized by Leal Filho *et al.* (2019c). According to them, in the process of developing a strategic vision, it is important to articulate action plans for continuous improvement of the organization, the advantages of which are greater with a holistic and balanced approach. The authors highlight two critical factors when planning the incorporation of sustainability by HEIs: the provision of an interrelated "'whole systems' perspective to the planning and implementation of sustainable development" and the awareness and communication of SD to encourage engagement at all institutional levels (Leal Filho *et al.*, 2019c, p. 686).

Findler *et al.* (2019) carried out a wide systematic review of the literature aimed at identifying the impacts of HEIs in the SD, from 2005 to 2017. They found that the selected articles placed great emphasis on case studies, with approaches on specific aspects. However, none of the studies they select addressed the organizational structure. They concluded that "there remains a lack of whole institution and holistic approaches and perspectives" (Findler *et al.*, 2019, p. 30). From the review that composes this work, it can be concluded that this framework was maintained over the past few years.

The authors believe that the HEIs sustainability action archetypes can help fill this gap and play a significant role in the planning processes for the inclusion of sustainability in HEIs in a holistic manner. The examples of actions presented in the framework can serve as a benchmark for good practices (Leal Filho *et al.*, 2015). This objective can be applied while conducting workshops based on archetypes, with the aim of adapting them to the unique reality of each HEI (Moqbel *et al.*, 2020). In fact, the use of workshops and brainstorming was suggested by Bocken *et al.* (2014) for the application of SBMA. The authors also believe that although the purpose is slightly different, these practices are equally valid for the planning process while discussing the incorporation of sustainability by HEIs.

The originality of this study lies in adapting the archetypes by Bocken *et al.* (2014) for a new purpose. In the search for keywords related to SBMA, the practical applications of this structure are rare. Moreover, none of the identified studies used this structure for the same purpose as this one, which is, to incorporate sustainability in the actions of an organization with an established business model. Thus, it is believed that this study fills important gaps in the literature related to the union of theory and practice by developing a structure that can help universities apply a holistic approach to incorporate sustainability (Amaral *et al.*, 2020; Leal Filho *et al.*, 2015, 2018).

The main limitation of this study is that the sustainability archetypes proposed for HEIs were developed exclusively through bibliographic research. Future studies should examine its application in HEI to complement our findings. Owing to a scarcity in such studies, studies that address the social aspects of sustainability actions in HEIs are needed, especially those aimed at the internal community and, mainly, focused on the well-being and development of employees.

3. Conclusions

HEIs need to assume a greater role in the search for SD by embracing the SDGs and working towards their dissemination. Therefore, it is necessary that the HEIs incorporate

sustainability in all areas they operate. However, the literature highlights the importance of a "whole institution" approach, where sustainability is holistically incorporated into HEIs through an integrated and organic network, encompassing all its areas of activity. In this context, the interdisciplinary approach, as opposed to the departmentalized and static view, plays an essential role.

However, as the incorporation of sustainability progresses, HEIs encounter several problems, such as the lack of knowledge regarding the meaning of holistic incorporation of sustainability and mechanisms through which it can be translated into practical examples. Higher education still confuses the concepts of sustainability and SD, privileging the environmental aspects and relegating the other dimensions to a secondary level. In addition, the literature points to the scarcity of practical structures that are needed to assist HEIs in the holistic incorporation of sustainability.

To assist HEIs in addressing these problems, this study aimed to develop a structure of HEIs sustainability action archetypes that includes examples of actions that can be implemented by these institutions. To this end, an original structure was developed, inspired by SBMAs (Bocken *et al.*, 2014), to identify the main sustainability objectives for HEIs. The structure developed involves 09 archetypes, subdivided into the following four groups:

(1) Campus operations:
- minimize the use of materials and energy consumption;
- treat, recycle and reuse/correctly dispose of waste; and
- replace processes and products with natural, renewable ones.

(2) Academic:
- incorporate sustainability into educational activities; and
- incorporate sustainability into research activities.

(3) Community:
- promote external community development and well-being; and
- promote internal community development and well-being.

(4) Organizational:
- reposition HEI for sustainability; and
- structure HEI for sustainability.

For each archetype, or sustainability objective, examples of actions were identified based on a broad systematic review of the literature. However, the review did not intend to identify the main articles produced in the field, as in the studies classified as "standalone systematic literature review," but rather to support the definition of the structure of the archetypes and to select significant examples of actions that can be implemented to insert sustainability within the scope of each one of them. The authors are convinced that researchers, who adopt the same steps and procedures to carry out their review, will arrive at examples of actions that are quite similar to those listed in this study.

The HEIs sustainability actions archetypes developed in this study, which was elaborated within a solid theoretical basis, constitutes a simple and easily applicable tool with significant reach. The authors believe that it can assist HEIs in the SD path especially in the following two ways:

(1) supporting the training processes of students, staff and professors, favoring an understanding of the meaning of the holistic incorporation of sustainability into higher education and promoting cultural change towards SD; and

(2) as a support tool in the processes of elaborating strategies and action plans, which can be used independently of the current stage at which the HEI may be, as long as the HEI aims at progressing towards the adoption of SD as a strategic value.

While HEIs are essential organizations that can contribute to the achievement of the SDGs, they are not responding as they should to the challenges presented to them. The HEIs sustainability actions archetypes, developed in this study, can facilitate the incorporation of sustainability in a systemic and integrative manner, which is eventually an essential aspect for universities to assume a leadership role in the search for a sustainable world.

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About the authors

Francisco Elíseo Fernandes Sanches holds a master's degree in business administration from School of Applied Sciences of the State University of Campinas (Unicamp), Limeira, SP, Brazil, and is currently a doctoral student in business administration at the same institution. He has worked professionally at the University Center of the Hermínio Ometto Foundation (FHO) since 2003, where he currently occupies the chair of Financial-Administrative Director. His area of research interest is in the incorporation of sustainability into organization management, especially in higher education institutions. Francisco Elíseo Fernandes Sanches is the corresponding author and can be contacted at: kiko@fho.edu.br

Matheus Leite Campos holds a PhD in business administration and an MSc in production and manufacturing engineering, both from the State University of Campinas (Unicamp), Campinas, SP, Brazil. He is currently a post-doctoral fellow at InSySPo (System Innovation: Organizational Strategy, Research and Innovation Policy Governance), part of SPEC (São Paulo Excellence Chair), from FAPESP. His areas of research interest are innovation, knowledge transfer, entrepreneurship and sustainability.

Luiz Eduardo Gaio holds a PhD in business administration from the University of São Paulo. He is Assistant Professor at the School of Applied Sciences at the State University of Campinas (Unicamp), Limeira, SP, Brazil. His research focuses on the relationship between firm performance and its corporate sustainability.

Márcio Marcelo Belli holds a master's degree and a PhD in accounting sciences from the University of São Paulo. He is a professor of accounting and finance in undergraduate and graduate courses at the School of Applied Sciences of the State University of Campinas (Unicamp), Limeira, SP, Brazil. His teaching and research focus is finance and accounting in organizations, value and sustainability relationship and controllership of organizations.

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2.3. Terceiro artigo:

Developing a method for incorporating sustainability into the strategic planning of higher education institutions

Francisco Elíseo Fernandes Sanches
School of Applied Sciences, University of Campinas – Unicamp, Limeira, Brazil
Marco Antonio Alves de Souza Junior
Faculty of Economics, Administration and Accounting, University of São Paulo, São Paulo, Brazil
Flavio Rubens Massaro Junior
School of Technology, University of Campinas – Unicamp, Limeira, Brazil, and
Rafael Povedano and Luiz Eduardo Gaio
School of Applied Sciences, University of Campinas – Unicamp, Limeira, Brazil

Abstract

Purpose – Higher education institutions (HEIs) must take on a leadership role in building a sustainable world, given their responsibility for preparing future professionals and leaders worldwide and considering the role they provide to society. To accomplish this goal, HEIs need to holistically embody sustainability in everything they develop. This study aims to help HEIs in this purpose by developing a method to integrate sustainability into the strategic planning process in these institutions.

Design/methodology/approach – In the first stage, the method was developed based on papers selected through a systematic literature review. The proposed method was then applied in a Brazilian HEI to validate and adjust it.

Findings – A method that adopts a participatory process to integrate sustainability into HEIs' strategic planning was proposed.

Practical implications – This study provides university leaders with a simple and practical method to aid with elaborating on strategic plans for holistic sustainability integration.

Originality/value – This study uniquely applied a framework called "HEIs sustainability action archetypes" as the foundation for selecting sustainable objectives, goals and actions to be integrated into these institutions' strategic planning.

Keywords Sustainability, Strategic plan, Strategic planning, Strategic management, Higher education, Systematic literature review

Paper type: Research paper

1. Introduction

Since the 1970s, when the United Nations took over the movement toward sustainable development (SD), education has been gradually recognized as an essential element to accomplish this goal (Pizzutilo and Venezia, 2021).

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As sustainability approaches and the related education have progressed, the role of HEIs in SD has increased, and the moral obligation that these institutions have in taking the lead in this movement has been acknowledged (Leal Filho *et al.*, 2021).

Initially, with a clear environmental connotation (Leal Filho *et al.*, 2015) in an evolutionary process, education aimed at building a sustainable future was called Education for Sustainable Development (ESD). ESD incorporates social and economic aspects with environmental ones, including overcoming poverty, gender equality, promoting well-being, cultural diversity, peace and human security, among other issues (Kopnina and Meijers, 2014). ESD should not be restricted to the curriculum; rather, it must be present in all activities that comprise the complex systems that HEIs accommodate (Bernaldo and Fernandez-Sanchez, 2017).

The current framework for the sustainability movement, represented by the 17 Sustainable Development Goals (SDGs) that compose the 2030 Agenda, places education at the forefront of SD. These objectives make it clear that education is a critical factor for a socially, environmentally and economically fairer world. In this context, education is not only present in the 2030 Agenda through a specific goal (SDG 4) but also is considered a means to accomplishing all 16 other goals (Kohl *et al.*, 2021; Leal Filho *et al.*, 2019b).

Thus, considering what HEIs represent to society, they need to embrace the SDGs and take the lead in the process toward SD (Hueske and Guenther, 2021; Leal Filho *et al.*, 2019a). Therefore, university institutions need to holistically incorporate sustainability into all of their actions: teaching, research, campus operations, community relations and organizational structures (Lozano and von Haartman, 2018; Sanches *et al.*, 2022).

However, despite important breakthroughs in the last decades, HEIs' approach to sustainability remains in its early stages, far from what could be considered desirable (Fantauzzi *et al.*, 2021). In general, sustainability is present in HEIs in a fragmented manner, in isolated points, and not holistically, as it should be (Leal Filho *et al.*, 2019a). There is a shortcoming in the university students related to SDG awareness (Manolis and Manoli, 2021), which must be addressed because "there is a need to intensify efforts with a view to make the SDGs a reality" (Leal Filho, 2020, p. 510).

The challenges that HEIs face regarding integrating sustainability are historically and frequently mentioned, indicating that such challenges have yet to be overcome. Among them are the lack of knowledge and training for faculty and staff; lack of support from university administrators; communication and information failures; lack of resources; and absence of performance measurement systems, resistance to change and a conservative structure (Hueske and Guenther, 2021; Larrán *et al.*, 2015).

To overcome these barriers, they must be considered in HEIs' strategic planning processes and are converted into factors that drive SD (Leal Filho *et al.*, 2019c; Di Nauta *et al.*, 2020). Once included in the university planning system and not in parallel processes, sustainability can achieve broader goals and integrate institutional priorities (Semeraro and Boyd, 2017). Critical restrictions are added to these challenges, represented by administrative and management failures that result in the absence of an appropriate structure for sustainability planning and management (Leal Filho *et al.*, 2021). However, sustainability is still absent or is not suitably addressed in most HEIs' strategic plans (Bieler and McKenzie, 2017), administrative structures (Leal Filho *et al.*, 2019c) and even in their missions (Fantauzzi *et al.*, 2021).

Despite the evident importance of these themes, researchers pointed out that studies that adopt the concept of "whole institution" during the processes of integrating sustainability into HEIs are lacking (Hernández-Diaz *et al.*, 2021; Kohl *et al.*, 2021), gaps exist regarding the

approach to sustainability in the strategic planning of these institutions (Bieler and McKenzie, 2017; Semeraro and Boyd, 2017) and studies that propose less complex and more effective tools, facilitating the strategic planning of these universities, are lacking (Williams, 2021).

To aid in filling these gaps and assisting HEIs in transposing theory into practice, this study aims to *develop a method for integrating sustainability into the strategic planning of HEIs to assist them in overcoming existing barriers to the effective holistic consideration of sustainability.*

This study is unique in its use of "HEIs sustainability action archetypes" (Sanches *et al.*, 2022) as a basis for developing strategic plans for HEIs. The proposed method overcomes the main barriers and implements SD in HEIs in a holistic manner. Furthermore, the review carried out in this research found only one study that presented a practical method – an experiment developed by Sisto *et al.* (2020) – for incorporating sustainability into the HEI strategy process, leading the authors to believe in the originality of the study in applying a method for this objective in a real case. This strategic planning process was carried out at a Brazilian HEI with the aim to improve and test the effectiveness and practicality of the method.

2. Theoretical background

This section is composed of the following subsections: Section 2.1, which discusses the sustainability strategic planning (SSP) processes in organizations in general; Section 2.2, which addresses strategic planning processes in HEIs: traditional (Section 2.2.1) and incorporating sustainability (Section 2.2.2); Section 2.3, which addresses methods to strategically plan sustainability in HEIs and other types of organizations; and Section 2.4, which introduces the HEIs' sustainability action archetypes.

2.1 Incorporation of sustainability into organizations' strategic planning

The evolutionary process of organizational strategy occurs in an ascending spiral that involves four stages: business policy, strategic planning, strategic management and sustainable strategic management (SSM) (Stead and Stead, 2013). This eco-evolution process occurred over 50 years and culminated in the sustainability challenge.

In recent decades, given the recrudescence of environmental and social problems and the economic imbalance between nations and among the people who compose them, companies have come to suffer increasing pressure to adopt sustainable practices (Engert and Baumgartner, 2016). This situation led to sustainability being considered on the corporate agenda through the convergence of two fields: corporate sustainability and strategy (Egels- Zandén and Rosén, 2015). Currently, the question has become how sustainability will be implemented in organizations instead of discussing whether or not this should be done (Galleli and Hourneaux Junior, 2021).

A crucial issue is that sustainability must be part of the organization's core values – its mission, principles and policies – in a holistic manner (Engert *et al.*, 2016); otherwise, practices considered sustainable can be viewed as greenwashing or false social responsibility (Galleli and Hourneaux Junior, 2021; Gond *et al.*, 2012). In contrast, if the intentions, even authentic, are not accompanied by effective actions, the risk is that they compose an empty discourse (Beusch *et al.*, 2022). In this sense, Borland *et al.* (2016, p. 297) argued that "attempting to incorporate ecological sustainability thinking into management theory and practice is a complex, multifaceted exercise." In this context, the integration of corporate social responsibility into organizations' management is a gradual and continuous

process that begins with a sustainable mission, which must serve as an inspiration for all of its stakeholders (Maas and Reniers, 2014).

Three levels are identified in the strategic sustainability process:

(1) normative (culture, governance, vision and policies);

(2) strategic management (search for achievement of objectives); and

(3) operational (efficient implementation of the strategy) (Engert *et al.*, 2016).

Linnenluecke *et al.* (2017) used four classifications for the planning approach on a scale that starts from the most traditional to the most audacious in the search for SD: predictive, adaptive, visionary and transformational. In the same sense, Egels-Zandén and Rosén (2015) classified strategic activities aimed at sustainability into four types:

(1) visionary activities (strategy intentions);

(2) prescribed activities (implementation of intentions);

(3) autonomous activities; and

(4) evaluative activities.

Various studies have pointed out the competitive advantages that the practice of sustainability provides to organizations, among others, increasing their image and reputation; reducing risk; developing corporate competences; increasing employee loyalty and productivity; reducing costs; and differentiating markets (Engert *et al.*, 2016; Galleli and Hourneaux Junior, 2021). In summary:

> The main reason for choosing a sustainability approach is to reduce the negative environmental and social impacts of corporate activities while improving (or at least not reducing) the economic performance of the corporation (Baumgartner and Rauter, 2017, p. 83).

The analysis of the literature clarifies that strategic planning is not an end in itself but is part of a larger process of "strategic management." Maas and Reniers (2014) developed a structure named "Sus5" that involves five business characteristics that embody sustainability: management knowledge and commitment; stakeholder knowledge and commitment; strategic planning; workplace knowledge and commitment; and operational execution and monitoring. Little attention is devoted to control systems, an important aspect for the successful implementation of the strategy (Gond *et al.*, 2012). The balanced scorecard (BSC) can fill this gap if it involves an intense dialogue between the strategic and operational levels and can represent an effective system for innovation control, such as sustainability incorporation (Beusch *et al.*, 2022). These systems incorporating measurable key performance indicators (KPIs) that make it possible to compare performance with established goals (Beusch *et al.*, 2022; Engert and Baumgartner, 2016).

However, human resources and human competences, both at an organizational and an individual level, stand out as fundamental aspects for the effectiveness of SSP and implementation (Galleli and Hourneaux Junior, 2021). In participatory approaches, "those responsible for implementing the strategy must also participate in its development and design" (Engert and Baumgartner, 2016, p. 831). To make this possible, employees must be sensitized to undertake actions that materialize the strategy, in addition to being trained (Maas and Reniers, 2014).

During the complex task of inserting sustainability into the strategy, some factors can constitute strong barriers; however, once treated properly, they have the potential to become drivers for sustainability: deficiencies in organizational structure; organizational culture and management system; employee knowledge and behavior; leadership; and manager attitude

(Engert *et al.*, 2016). Among others, the most relevant "context factors" for sustainability integration and management by organizations are commitment; communication; information; engagement; and trust (Fonseca *et al.*, 2021). Additionally, integration, change management (Sroufe, 2017), employee motivation and communication (Engert and Baumgartner, 2016) were pointed out as critical factors that influence the incorporation of sustainability into organizational strategy.

When analyzing the literature, it is easy to conclude that the effective planning and implementation of sustainable actions in any organization requires shared leadership, capacity building, participation and engagement. In other words, human and cultural aspects constitute the main critical success factors of a sustainable strategy.

2.2 Strategic planning for sustainability in higher education

2.2.1 Strategic planning in higher education institutions. HEIs have faced marketing difficulties – increased competition, and the need to seek new forms of financial resources – that have placed them, on many levels, as commercial organizations (Conway *et al.*, 1994; Han and Zhong, 2015; Sayed, 2013). The survival of these institutions in this environment of extreme competition depends on their capacity for renewal and change (Navarro and Gallardo, 2003), including the use of management instruments similar to those of organizations in other areas (Han and Zhong, 2015).

Therefore, HEIs began to adopt strategic planning, recognizing its importance as an essential element to help it adapt to the changes imposed by the new scenario (Alashloo *et al.*, 2005; Dooris *et al.*, 2002). Strategic planning helps these institutions identify opportunities and acts as a preventive alert to the threats to which they are exposed (Kotler and Murphy, 1981), providing them with the promptness necessary for their survival. The difficult task of managing change requires HEIs to address paradoxes and dilemmas, balance stability and change and look inwards and outwards in the search for new ideas and solutions (Howes, 2018).

However, traditional strategic planning has received severe criticism from both studies aimed at organizations in general and at HEIs (Dooris *et al.*, 2002). The models still used by many HEIs are based on the adoption of a rational approach for corporate change and are not suited for the current environment of continuous change and, sometimes, unpredictability (Doyle and Brady, 2018). This reality is especially observed in Latin American countries, for which change processes address resistance, deficiencies in the implementation of strategies, ineffective communication, weak leadership and little attention to stakeholders' interests (Falqueto *et al.*, 2020). In this sense, decades of research have shown that "directive, coercive and authoritarian leadership behaviors do not build cultures of trust and are counterproductive to organizational productivity" (Howes, 2018, p. 453). Top-down plans that analyze the past to design the future tend to be of no practical use and remain shelved; therefore, HEIs must replace complex, inefficient processes with simpler, more flexible models (Williams, 2021). The Dooris *et al.* (2002, p. 8) statement seems to remain valid: "more and more administrators are asserting that the purpose of planning is not to make a plan but to make a change."

However, strategic planning is part of a larger process of "strategic management" that involves three stages: strategy formulation, strategy implementation and strategy evaluation (Alashloo *et al.*, 2005). Strategy implementation addresses issues related to "how" to put into practice what was designed and takes into account the issues of deadlines, availability of human and financial resources and organizational capabilities (Alashloo *et al.*, 2005). Completing the process, strategy evaluation requires the use of adequate systems to monitor the implementation and evaluate the results. To attend to this objective, the BSC

emerges as an effective tool for HEIs strategic management (Rahimnia and Kargozar, 2016; Sayed, 2013). BSC implementation involves the adoption of KPIs that may face resistance from academia related to the quantitative assessment of HEIs performance: "unless universities are able to demonstrate significant commitment toward implementation [...] BSC can be of little value" (Sayed, 2013, p. 215).

When examined in depth, the impediments found to an effective strategic management system in HEIs are related to at least one of the following issues: organizational structure, system, culture, power and conflict (Alashloo *et al.*, 2005). In this sense, HEIs constantly deal with tensions arising from divergent internal cultures and different personal and intrapersonal interests (Howes, 2018). Therefore, the biggest challenge for HEI leadership is the adoption of a proactive and integrated governance system that considers the interests of the university and its stakeholders (Falqueto *et al.*, 2020; Navarro and Gallardo, 2003). For this reason, HEIs' leaders must focus on "establish[ing] a shared vision to guide the planning process that is aligned with the core values of the organization," with the aim that everyone who makes up the university community engages in "thinking or planning as one" (Howes, 2018, p. 443).

In fact, the involvement of the university community in strategic processes is a vital aspect. Navarro and Gallardo (2003) argued that the transformation of HEIs requires a receptive internal climate for change, which takes time to achieve because it occurs incrementally. They list the attributes developed in this trajectory: "a proactive approach, the development of existing capabilities, an orientation towards teamwork, the ability to resolve conflicts, and the capacity for learning" (p. 201). For this reason, the strategic management restricted to the top of the HEIs places the "planners" as responsible for the strategic processes, and the executive-chief as the strategy "architect" becomes questioned (Mintzberg and Rose, 2003). Under this view, the concept of leadership is related to the change processes and becomes a quality distributed throughout the institution and not concentrated in one or a few individuals (Doyle and Brady, 2018).

In particular, HEIs must deal with different, often conflicting, interests of different stakeholders (Falqueto *et al.*, 2020). In this sense, a unique feature of universities is that students are simultaneously customers and products, resulting in a higher degree of complexity (Conway *et al.*, 1994). Thus, the success of HEIs depends on how they meet the demands of various stakeholders in addition to the students, such as organizations that employ graduates; society in general; and the government. The concept of sustainability considers stakeholders' interests and must be present in HEIs' strategic planning processes.

2.2.2 Incorporation of sustainability in strategic planning of higher education institutions. Given the role that they play in society, HEIs have a responsibility to spread a culture of sustainability in the training of new generations (Di Nauta *et al.*, 2020). In this regard, SD can be viewed as an innovation in the university system because it involves transformative learning, which implies a great challenge of facing the complexity of implementing systemic thinking and the barrier of disciplinary division (Ferrer-Balas *et al.*, 2009). In recent decades, university institutions have been called on to rethink their models, adopting a more responsive position in relation to society's needs and assuming the role of change agents (Costa *et al.*, 2021).

From this perspective, the concept of a sustainable university emerges (Stoian *et al.*, 2021). In the proposal by Velazquez *et al.* (2006), a sustainable HEI model involves four phases:

(1) development of a sustainability vision;
(2) development of a sustainable mission;

(3) implementation of a sustainability committee; and
(4) adoption of sustainability strategies.

Regarding that last item, Di Nauta *et al.* (2020) claimed that SD in universities should not be restricted to the definition of policies and declarations of intent – it should be accompanied by real initiatives. However, despite some exceptions, the field of sustainability in HEIs has been slow to address the connection between strategic planning and sustainability – a need exists to adopt a "progressive" and holistic character in the observation of sustainability in strategic processes (Bieler and McKenzie, 2017).

With that in mind, Leal Filho *et al.*(2019a, 2019b, 2019c) defended the strategic planning of sustainability by HEIs as a key factor for the success of effective SD integration by these organizations. According to them, the benefits of this practice are evident, such as management guidance; efficient operation; and continuous improvement of the organizational processes, including those related to sustainability. They also pointed out that a need exists for HEIs to create the structural conditions for planning to be successful, such as the implementation of sustainability offices (SOs), resource allocation, support from top management, qualifications for the academic community and its engagement in the process. Along these lines, an HEI's sustainability management process must involve practices and instruments that enable the monitoring, analysis and control of the implementation of sustainability initiatives (Velazquez *et al.*, 2006). For this purpose to succeed, it is important to define a set of KPIs that can support strategic control and reporting activities (Costa *et al.*, 2021). This process of measuring and monitoring sustainability goals enables the plan-do-check-act (PDCA) cycle defined by W. Edwards Deming, which is a management philosophy based on a continuous improvement process (Velazquez *et al.*, 2006).

Effective SSP must be anchored in the institutional mission statement. The mission is a key document of any HEI because it synthesizes its objectives, values and essential activities, constituting a source of inspiration for all of its stakeholders (Fantauzzi *et al.*, 2021). However, several recent studies indicated that, to analyze the real sustainable positioning of an HEI, in addition to verifying the presence of sustainability in mission and policy statements, the content of their respective strategic plans must be evaluated (Di Nauta *et al.*, 2020; Ş imon *et al.*, 2020; Stoian *et al.*, 2021). Only by reading and analyzing their strategic plans can the intentions declared by the universities be verified as being echoed in practical actions (Stoian *et al.*, 2021).

Some studies were dedicated to verifying the holistic integration of sustainability in university strategy. Paletta and Bonoli (2019) presented several initiatives developed by the University of Bologna in Italy, leading researchers to conclude that evidence exists that indicates a strong commitment to SD and SDGs. Another example of the integration of sustainability into a university's strategy was presented by Ramísio *et al.* (2019) in a case study involving the University of Minho, a Portuguese HEI, to assess its successful nine- year trajectory toward SD.

However, successful cases in the literature seem rare. In one pioneering study that analyzed HEIs' strategic plans, Larrán *et al.* (2015) evaluated 45 Spanish HEIs and detected a low presence of sustainability in the plans studied. They concluded that Spanish universities need to make a greater commitment to sustainability. Bieler and McKenzie (2017) analyzed the strategic plans of 50 Canadian universities and concluded that a stronger focus on sustainability in the country's HEIs is needed. Semeraro and Boyd (2017) evaluated the strategic plan of 284 HEIs registered to use the AASHE's STARS reporting tool and showed that climate action was predominant, with an environmental focus.

More recent studies reached similar conclusions. Various authors evaluated the presence of sustainability in universities in Italy. Costa *et al.* (2021) evaluated 67 universities in this

country to verify the presence of SDGs in their official documents and found that, out of 67 HEIs, only 11 (16%) had institutionalized these objectives. According to the authors, "the pilot study highlight that CSR practices and challenges of SD are not systematically addressed in the strategic planning of Italian universities" (p. 11). Nardo *et al.* (2021) also analyzed documents relating to the medium- and long-term plans of 20 large Italian universities and concluded that, in general, these institutions show little concern for issues related to the SD and low compliance with the SDGs.

Additionally, Fantauzzi *et al.* (2021) analyzed missions from universities in the same country and found that, of 98 Italian HEIs, 21 did not disclose an official mission statement and only three included sustainability goals in these statements. These researchers concluded that the country's universities are still in the preliminary stages on the path to SD. Di Nauta *et al.* (2020) can be considered an exception. These researchers evaluated 13 Italian HEIs that had their strategic plans and sustainability reports published and that participated in at least one of two world rankings. The researchers concluded that the HEIs analyzed showed awareness of the commitment to the dissemination of SDGs throughout society and the inclusion of these objectives in the university system.

Şimon *et al.* (2020) studied the 2016–2020 strategic plans of the top 12 Romanian universities and found that the word sustainability was predominantly present related to financial issues and that, surprisingly, none of the plans addressed the issue of accessibility to higher education. Stoian *et al.* (2021) compared the 2016–2020 strategic plan with that related to the 2020–2024 period of universities in Romania. The advances detected were punctual, leading the authors to conclude that sustainability is not yet a priority for HEIs of that country. Despite the small sample size of studies, in general, HEIs seem not to have yet incorporated sustainability objectives into their strategic plans, as they would be expected to do. During the past few years, several researchers highlighted the barriers faced by HEIs to change this reality. Among them, resistance to change, lack of faculty training and failures in university management leadership stand out (Larrán *et al.*, 2015). In this sense, Bieler and McKenzie (2017, p. 17) argued that transformative change involves facing "significant personal, institutional, and political resistance because it entails real challenges to existing paradigms and purposes of higher education." The statement made by Velazquez *et al.* (2006) still seems quite pertinent: "cultural awareness seems [to] be one of the best strategies for catalyzing the implementation of sustainability initiatives."

2.3 Methods for strategic sustainability planning

The literature review carried out by this study and reported in Section 3 found only one work that addressed a sustainability planning method aimed at HEIs: Sisto *et al.* (2020) used a participative approach called backcasting in an experiment carried out with the purpose of listing actions to be implemented at an HEI in pursuit of the goals established in the 2030 Agenda. This technique involves three steps:

(1) discussions carried out by a preliminary focus group;
(2) a workshop with the participation of stakeholders; and
(3) validation of the methodology and actions listed in the workshop.

Additionally, the review carried out in this article found that not much literature exists on studies or empirical works that address the methods related to sustainability planning and implementation by organizations in general – only five articles were selected. Hahn (2013) proposed a method for SSM, based on the ISO 26000 standard, which involves 04 steps: environmental scanning, strategy formulation, strategy implementation and strategy

evaluation. In the other four studies, the sustainability balanced scorecard (SBSC) emerged as an effective tool for the strategic management of corporate sustainability. Leon-Soriano *et al.* (2010) presented a methodology for the development of an SBSC to favor sustainability planning and management, which they called "sustainability strategic planning and management." This methodology was applied in a company and involved nine phases: planning the project; defining the enterprise mission statement; analyzing stakeholders; defining the strategy; defining the strategy implementation plan; designing indicators and targets; validating; implementing SBSC; and monitoring. Similarly, research by Chalmeta and Palomero (2011) developed a strategic management method they called "sustainable business scorecard." The method was applied in 16 organizations and involves nine phases: preliminary; project planning; designing the business framework; designing the strategic BSC; process design and improvement; deployment of the scorecard by business units; validation of the scorecard; implementation of the scorecard; and control and follow-up.

More recent studies followed the same path. Falle *et al.* (2016) developed a method for including sustainability objectives in small- and medium-sized companies and applied it to an Austrian brewery. Their method comprised six steps: initial project meeting; identification of the corporate strategy; assessment of environmental and social exposure; identification of strategic corporate objectives and strategically relevant environmental and social factors; definition of performance indicators; and elaboration of the strategy map of a SBSC. Barbosa *et al.* (2020) developed a model called GES based on the concepts of strategic management, triple bottom line and BSC, composed by six stages: internal diagnosis; external diagnosis; strategic positioning; strategic alignment of the specific objectives; strategic map; and strategic control.

The few studies selected enable the conclusion that the incorporation of sustainability as a strategic aspect in institutions is a complex task. The task requires effort from managers to both design and implement the strategies.

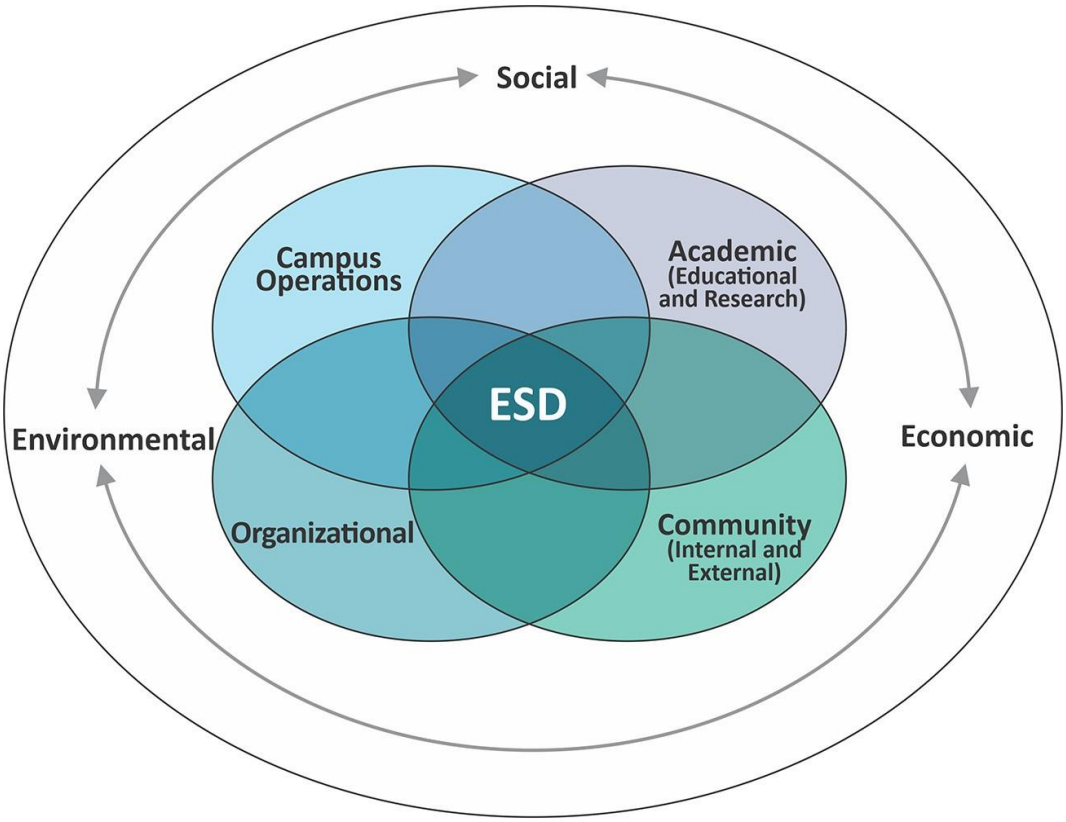
2.4 Higher education institutions sustainability action archetypes

Faced with a lack of practical tools that may help HEIs address the challenges of integrating sustainability holistically into their actions, Sanches *et al.* (2022) published a study that proposes a framework called "HEIs sustainability action archetypes." Starting from concepts present in previous studies on sustainability incorporation by HEIs and Bocken *et al.* (2014), the authors proposed a structure composed of four groups that aggregate eight subgroups called "archetypes" to demonstrate the holistic incorporation of sustainability in HEIs. Figure 1 represents the concepts addressed in Sanches *et al.* (2022).

The authors emphasized that the social, environmental and economic aspects, which constitute the bases of SD, are not present in only one or another group but all of them. Analogous to what Lozano *et al.* (2013) argued regarding the role of the SD in HEIs, the EDS can be said to be "the golden thread" that connects the four groups. Through a systematic literature review (SLR) of sustainability in HEIs, the researchers sought to identify the most significant actions of each group based on the selected articles. The result is shown in Figure 2. Letters (columns) and numbers were added to the original figure, which is used in Section 4 to identify each action.

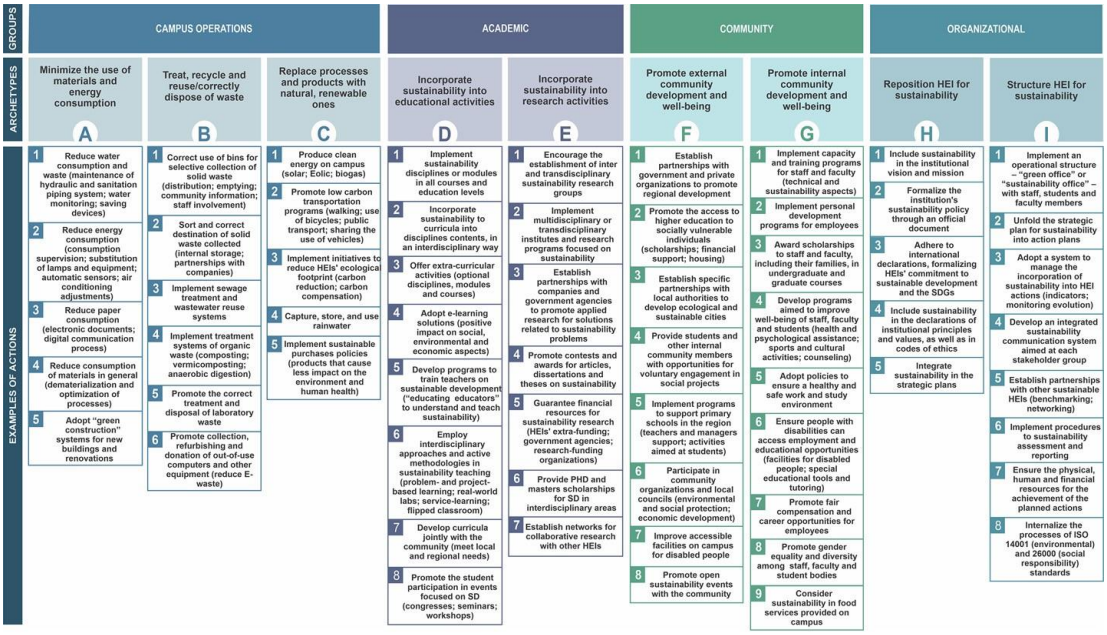
The researchers indicated that this framework:

- assists with understanding the meaning of the holistic incorporation of sustainability by HEIs; and
- supports the development of strategic plans for sustainability in these institutions.



Source: Based on the concepts of Sanches *et al*. (2022)

Figure 1. Holistic incorporation of sustainability in higher education



Source: Adapted from Sanches *et al*. (2022)

Figure 2. HEIs sustainability action archetypes

3. Methodology

The methodology of this study comprised two phases:

(1) development of the method for SSP for HEIs based on a SLR; and

(2) validation of its effectiveness and identification of adjustments through an application in an HEI.

3.1 Systematic literature review

Studies that addressed the following topics were sought to support the proposed method:

- incorporation of sustainability into the strategic processes of organizations in general (except for HEIs); and
- processes related to the strategic planning of HEIs with or without the sustainability approach.

A SLR was chosen to provide greater methodological rigor and to minimize research bias (Tranfield *et al.*, 2003). However, this rigor should not be restricted to process development – it must be witnessed by the text that describes it (Okoli, 2015). The authors seek to follow this recommendation in the description of the review process in sequence. The selection was made by at least two researchers (Tranfield *et al.*, 2003).

Stage 1 – search criteria: because this research simultaneously addresses the fields of corporate sustainability and strategic planning, the Scopus database was chosen given its consideration as the most appropriate for these subjects. "Broad search strings" were chosen – even knowing that the number of works initially selected would be large in relation to the final sample – to minimize the possibility of relevant works not being selected. Two search strings were applied:

for organizations in general: the string [("strateg* plan*" OR "strateg* manag*" OR "strateg* proces*") AND sustainab*] was applied to the title and keywords. Given this decision, it was select a sample that was both significant and manageable (Okoli, 2015). The term "AND NOT ("higher education" OR universit*)" was applied. The field was restricted to "Business."

for HEIs: the string [("strateg* plan*" OR "strateg* manag*" OR "strateg* proces*") AND ("higher education" OR universit*)] was also applied to the title and keywords. The field was restricted to "Business" and "Social Sciences," which compose the main fields of sustainability in HEIs.

The asterisk (*) applied to the end of certain words indicates different endings in their sequences. The search was limited to papers or literature reviews published between 2003 and 2022, in English, and peer-reviewed. The initial searches selected 946 papers (612 through the "a" and 334 through the "b" criterion).

Stage 2 – applying citation limits: minimum citation limits were established to adopt an initial quality rule. To this end, several limits were tested to properly "calibrate" the adopted numbers. Applying the limits indicated as follows, 230 articles were excluded (127 "a" + 103 "b") and 716 remained (485 "a" + 231 "b"):

- Minimum of 10 citations for articles published between 2003 and 2007;
- Minimum of 7 citations for articles published between 2008 and 2012;
- Minimum of 5 citations for articles published between 2013 and 2017;
- Minimum of 2 citations for articles published in 2018 or 2019; and

- No limit was established for articles published in 2020, 2021 and 2022.

Stage 3 – selection by abstract: in this stage, all abstracts were read, and articles were selected using the following rules:

> *for organizations in general*: first, articles not related to sustainability were excluded – the words were used in other senses, such as business feasibility (157). Subsequently, articles related to sustainability but not to the strategic processes of organizations as a whole were excluded (265), leaving 63 selected works; and
> *for HEIs*: articles not related to strategic processes of the entire institution but of a specific sector, such as libraries, university hospitals, courses and others, were excluded (172), leaving 59 selected works.

Stage 4 – selection by text: in this stage, the entire article was analyzed and selected if, in fact, it focused on strategic planning or other related strategic processes. Articles were also excluded if they dealt with these topics tangentially, if they were not available in Scopus or Google Scholar or if they were considered to be of inadequate quality for the purpose of this research. Eighty-six articles were excluded (47 "a" þ 39 "b"). Additionally, in this stage, the articles related to HEIs were segregated into two classifications: address sustainability (11) or not address sustainability (9). In total, 36 studies remained.

Stage 5 – articles added: based on the experience of the authors, ten articles were manually included.

Stage 6 – final sample: the final sample is composed of 46 articles: 18 related to the strategic sustainability process in organizations in general, 13 that approached conventional strategic processes in HEIs and 15 that considered sustainability in HEIs' strategic process.

These 46 selected articles comprise Sections 2.1, 2.2 and 2.3. Figure 3 presents the flowchart of the review process described in this section.

3.2 Application of the method in a higher education institutions

The developed method was applied in a Brazilian nonprofit HEI – Fundação Hermínio Ometto's University Center (FHO), located in the city of Araras, São Paulo State – to test its effectiveness and to identify the need for any adjustments. The strategic planning practice is currently implemented in the institution, which had approximately 12,000 students enrolled in 23 courses during the study period. In 2019, the HEI decided to change its position regarding sustainability by incorporating it holistically. Some punctual actions have been implemented since then, including changing its mission to reflect the SD position. The new stated mission became:

> Promote learning, generation and dissemination of knowledge, forming competent professionals and citizens committed to building a socially, environmentally and economically sustainable world

In 2021, the first strategic planning process that holistically incorporated sustainability was carried out when the method presented in this study was applied. The results are provided in the next section.

4. Results

The results of this study are shown in Section 4.1 – the developed method – and Section 4.2 – the application of the method in an HEI.

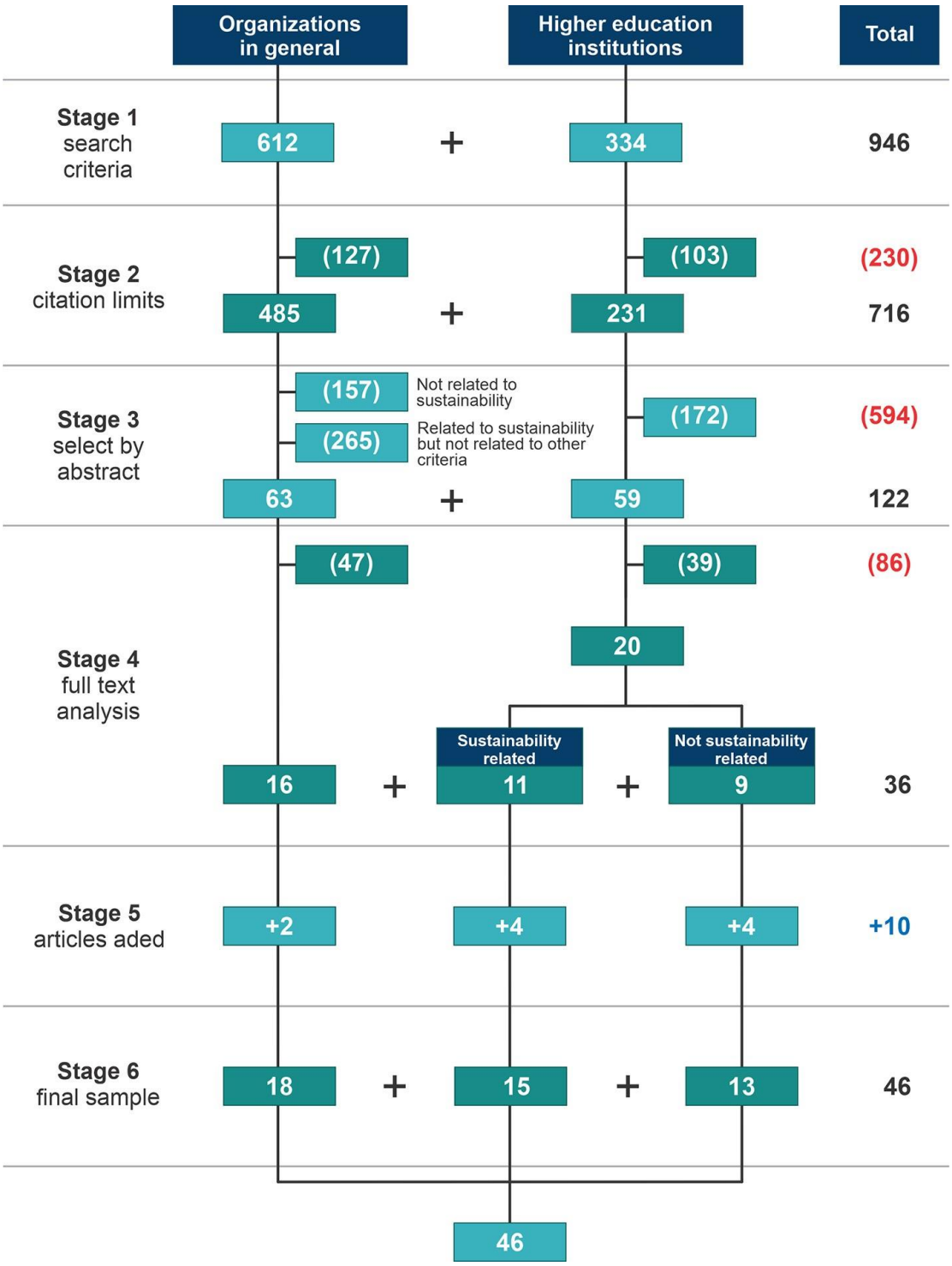


Figure 3.
Flowchart of the review process

4.1. Method for strategic planning for sustainability in higher education institutions
Strategic planning composes a larger strategic management process. Thus, it was decided to propose, in macro phases, the entire process in which the SSP is inserted. The SSP process (Phase 2) – the main objective of this article – was divided into eight stages. The entire method was developed based on the literature review and the authors' experience.

According to Leon-Soriano *et al.* (2010, p. 266), "dividing the complexity of the project into stages produces more manageable sub-stages." Figure 4 describes the phases and steps as follows.

Phase 1 – positioning regarding sustainability: the choice of the most suitable strategy that should be in harmony with the reality of the HEI is at the discretion of the HEI's leaders (Engert and Baumgartner, 2016). Holistic integration is recommended; however, on the path toward this condition, different stages can be adopted through a gradual and continuous process (Linnenluecke *et al.*, 2017; Maas and Reniers, 2014). In alignment with the positioning, the mission statement, sustainability policies and other institutional documents should be reviewed (Barbosa *et al.*, 2020; Fantauzzi *et al.*, 2021).

Phase 2 – SSP: the internal and external environments are analyzed, and the opportunities and threats that arise from them are identified (Kotler and Murphy, 1981) to define the objectives, goals and practices, including those related to sustainability (Leon- Soriano *et al.*, 2010), according to HEI's positioning. It is important that the competitive advantages provided by the practice of sustainability by the HEI are identified (Engert *et al.*, 2016; Galleli and Hourneaux Junior, 2021).

Phase 3 – design of action plans: the strategic plan needs to be broken down into action plans to ensure its effectiveness (Hahn, 2013). These plans should define the responsibilities, steps and respective deadlines (Barbosa *et al.*, 2020).

Phase 4 – selection of indicators and development of measurement systems: the indicators for measuring the effectiveness of sustainability actions (Costa *et al.*, 2021; Sroufe, 2017) and the systems that enable the monitoring of their evolution (Hahn, 2013) must be defined. The SBSC stands out as an effective system for this purpose (Barbosa *et al.*, 2020; Chalmeta and Palomero, 2011; Falle *et al.*, 2016).

Phase 5 – implementation and monitoring: once the action plans are implemented, their continuous monitoring and the establishment of routines for periodic evaluation are critical factors (Engert *et al.*, 2016). To this end, a need exists to provide the HEI with a compatible structure (Leal Filho, Skanavis, *et al.*, 2019c). At the end of a period, the successful actions and failures must be identified, closing the Deming PDCA cycle (Velazquez *et al.*, 2006). A new process begins based on the new positioning adopted by top management in an "ascending spiral" of virtuous cycles toward the complete integration of sustainability (Stead and Stead, 2013).

The unfolding of *Phase 2 – sustainability strategic planning*:

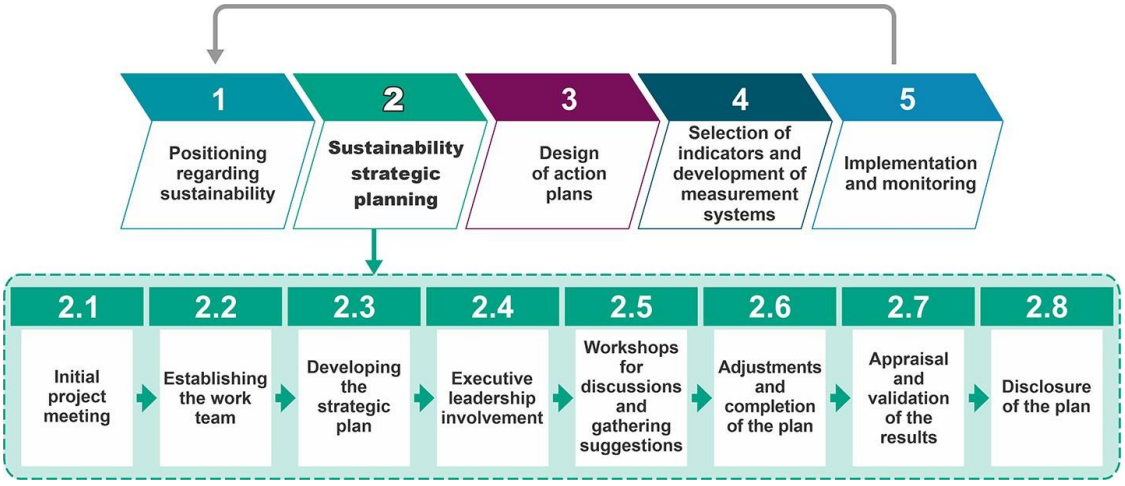


Figure 4. Strategic management method for the incorporation of sustainability in higher education institutions with sustainability strategic planning highlighted

4.1.1 Step 2.1 – initial project meeting. In this stage, which must involve the HEI's top management, the process must be planned, including defining those responsible for each stage, seminars and workshops; setting deadlines; and addressing other operational aspects (Falle *et al.*, 2016; Leon-Soriano *et al.*, 2010). External consultants and the HEI's specialist collaborators may participate in this meeting.

4.1.2 Step 2.2 – establishing the work team. The method proposes the establishment of a work team (Chalmeta and Palomero, 2011; Falle *et al.*, 2016) composed of staff and faculty members with experience and/or knowledge of strategic planning and sustainability. External consultants may be incorporated. Top management, indicating a commitment to the project, must promote a seminar to define the team's attributions in which the planned method, deadlines and HEIs sustainability action archetypes are presented. A project manager must be appointed (Falle *et al.*, 2016).

4.1.3 Step 2.3 – developing the strategic plan. Given the stance determined by top management and the HEIs' sustainability action archetypes (Sanches *et al.*, 2022) as a benchmarking, the work team must prepare the first version of the plan, listing the objectives, goals and actions most suitable for the HEI (Engert *et al.*, 2016). This version of the plan should be refined and approved in specific meetings with top management.

4.1.4 Step 2.4 – executive leadership involvement. A mix of approaches – top-down and bottom-up – is recommended for the success of the sustainability planning (Leon-Soriano *et al.*, 2010; Sroufe, 2017). Thus, the involvement of top management and executive leadership – course coordinators and heads of academic and administrative sectors, among others – is a fundamental aspect of sharing the strategic vision and its objectives (Fonseca *et al.*, 2021). To this end, an initial seminar should introduce the HEIs' sustainability actions' archetypes and the concept of the holistic incorporation of sustainability. Next, the archetypes and initial version of the plan should be forwarded to the leaders, who should be instructed to promote discussions with and collect suggestions from their respective teams for composing the plan.

4.1.5 Step 2.5 – workshops for discussions and gathering suggestions. Workshops must be held with leaders to discuss practices and collect suggestions (Falle *et al.*, 2016). Effective participation in the process generates "sensemaking" concerning planning. As an integrative approach, this practice "fosters drivers and enablers of change, while cultivating strategies to overcome barriers" (Sroufe, 2017, p. 34). Additionally, this type of workshop allows participants to better know the HEIs' positioning for sustainability and understand the complexity of its incorporation (Sisto *et al.*, 2020).

4.1.6 Step 2.6 – adjustments to and completion of the plan. The suggestions collected must be evaluated by the project team and top management in specific meetings and, when pertinent, incorporated into the strategic plan, creating its definitive version.

4.1.7 Step 2.7 – appraisal and validation of the results. The leaders should be invited to fill out a questionnaire to evaluate their perceptions of the applied method and resulting plan (Sisto *et al.*, 2020). This practice can provide important subsidies to managers for evaluating and validating the process and identifying possible improvements to be adopted in a new cycle (Barbosa *et al.*, 2020).

4.1.8 Step 2.8 – disclosure of the plan. The strategic plan should not be restricted to managers – it should be shared with the entire academic community, a practice that favors its engagement in the established objectives (Leal Filho *et al.*, 2019c). Thus, communication strategies must be established and implemented. Broad dissemination of the plan and the archetypes framework adapted to HEI in the university community is suggested.

The presence of the most important "context factors" is identified in the proposed method – commitment, engagement, information, communication and trust (Fonseca *et al.*, 2021).

4.2 Results of method application in the higher education institutions

The results are presented in three items: subsection 4.2.1 – the description of the method application process; subsection 4.2.2 – the sustainability plan resulted; and subsection 4.2.3 – results of questionnaire applied to the participants.

4.2.1 Process of applying the method at the higher education institutions. Phase 1 – positioning regarding sustainability: In 2019, the decision was made to holistically incorporate sustainability into the HEI. The mission was reformulated, a SO was created and punctual actions were implemented. In 2021, sustainability was integrated into the strategic planning process addressed in this study. Thus, the application of the proposed method included, essentially, Phase 2.

Phase 2 – sustainability strategic planning.

4.2.1.1 Step 2.1 – initial project meeting. All four members of top management, the responsible for SO and the responsible for Department of Management Excellence (DME), were involved in this stage. Operationally, a virtual meeting was held to define schedules, meeting dates and other aspects of the process.

4.2.1.2 Step 2.2 – establishing the work team. The determination was made that the team would be composed of members from the DME (six individuals) and SO (five individuals), and the SO coordinator was appointed project manager. Members of the DME and SO were linked to the most diverse areas of the institution, including faculty and staff, to ensure a plurality of views and to cover everything from pedagogical aspects to the management of campus waste.

4.2.1.3 Step 2.3 – developing the strategic plan. The work team analyzed each action of the HEIs' sustainability action archetypes, listing the priorities and constraints collected at several moments. In sequence, the proposal of the actions composing the strategic planning was discussed with HEIs' top managements in two virtual meetings, resulting in the first version of the strategic planning of the sustainability of the FHO.

4.2.1.4 Step 2.4 – executive leadership involvement. From the first version of the strategic plan, 51 executive leaders from the HEI were involved in this step. A seminar was held on all previous strategic planning; therefore, the sustainability plan and the archetypes were sent to the leaders, who were instructed to promote discussions with their teams separate from the strategic actions of other areas.

4.2.1.5 Step 2.5 – workshops for discussions and gathering suggestions. Four workshops were held to discuss the general strategic plan. Two of them addressed sustainability issues. The first covered the analysis of scenarios and general institutional guidelines, which included the subject of sustainability. The second focused specifically on sustainability objectives, goals and actions and the archetypes' structure. Several suggestions were collected by the work team.

Figure 5 illustrates the virtual meetings (because of the pandemic) held during the method application process.

4.2.1.6 Step 2.6 – adjustments and completion of the plan. In this phase, the SO coordinator discussed with the work team the suggestions collected in the previous step. The ones considered pertinent were incorporated into the plan after validation by HEI's top management, resulting in the final version of the strategic plan.

4.2.1.7 Step 2.7 – appraisal and validation of the results. After the plan was completed, the work team sent to leaders a questionnaire using Google Forms and without the

identification of the respondent to evaluate and validate the process and the results of the strategic sustainability planning.

4.2.1.8 Step 2.8 – disclosure of the plan. After the final elaboration of the strategic plan and validation by the leaders, the HEI's top managers sent the document to the leaders to present to their teams. This stage sought to communicate the institution's objectives and allowed leaders to direct with their teams on the actions to be taken in the coming years. The HEIs' sustainability action archetypes, adapted with the actions included in the strategic plan, were exposed in tables in the various sectors of the institution.

4.2.2 Sustainability strategic plan resulting from application of method. The structure of the HEI's strategic plan is formed by six sections: Introduction (description of the process); Private higher education scenario (macroenvironment); Microenvironment – the Institution; Microenvironment – competitors; Analysis of the presented scenario; General guidelines; and Objectives, targets and actions. A discussion of sustainability issues is present in all of these sections. The following single, general guideline related to sustainability was chosen:

Holistic incorporation of sustainability into the activities developed by FHO:

- Alignment with the institution's philosophy and compatible with the role of HEIs for SD; and
- Integrated incorporation of sustainability into teaching, research and campus operations in the relationship with internal and external communities and in organizational aspects, according with the positioning adopted by the HEI.

Another decision was made: the adoption of a specific group for sustainability in Section 7 – Objectives, targets and actions. The inclusion of sustainability in each of the sections that traditionally comprise the plan could be adopted; however, because this is the first time that sustainability is holistically present in the document, this format is believed to provide greater visibility to this aspect. Another decision was not to establish quantitative targets, which will be done in the next versions after the adoption of KPIs.

Figures 6 to 9 present actions selected according to the strategic plan's objectives based on the structure of the archetypes. The actions adopted before the strategic planning were also included in each group to compare with the archetype's framework. The last column indicates the corresponding action according to the letters and numbers in Figure 2. Green indicates the development of the procedures phase.

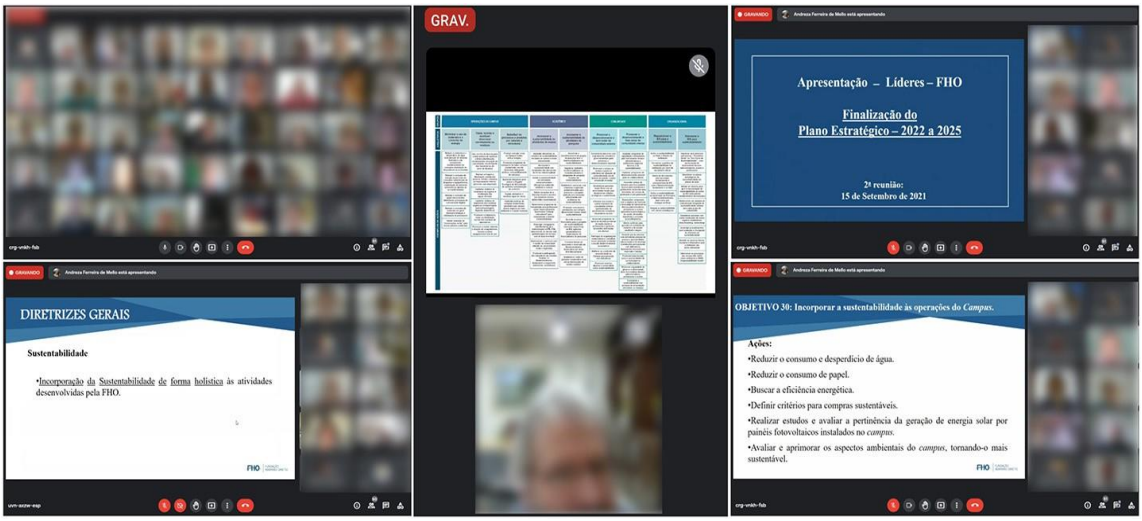


Figure 5. Record of the events that took place during the application of the method

Item	Actions	Schedule				Related Archetypes
		2022	2023	2024	2025	
1.1	Seek to include the participation of the university community on the actions, under the supervision of the Sustainability Office.					I1; D3; D8
1.2	Provide the correct treatment of the organic waste generated by gardening and food supply.					B4
1.3	Provide the correct treatment of solid waste.					B1; B2
1.4	Promote the social reuse of computers, equipment, and furniture.					B6
1.5	Provide the correct treatment of liquid waste (drains sewage and laboratories).					B3; B5
1.6	Neutralize carbon emissions from institutional events.					C3
1.7	Reduce the consumption and waste of water.					A1
1.8	Reduce paper consumption.					A3
1.9	Seek energy efficiency.					A2
1.10	Define criteria for sustainable purchase.					C5
1.11	Design a project and implement the generation of solar energy on campus.					C1
1.12	Adopt sustainable criteria for buildings and landscaping.					A5

Figure 6. Actions planned – Objective 30: incorporate sustainability into campus operations

Item	Actions	Schedule				Related Archetypes
		2022	2023	2024	2025	
2.1	Include disciplines and modules for teaching sustainability in all courses and levels of education.					D1
2.2	Incorporate sustainability into the discipline contents in all courses and levels of education.					D2
2.3	Provide research financial assistance to support projects of sustainability subjects.					E5
2.4	Establish contests and awards for studies carried out by students, which are related to sustainability.					E4
2.5	Implement the thematic area on sustainability in the institutional scientific congress.					E4
2.6	Implement inter and transdisciplinary research groups focused on sustainability.					E1
2.7	Adoption of e-learn solutions, active metodologies and e-book development (action in progress).	Implemented				D4; D6
2.8	Involviment of local organizations in the definition of the graduate's profile.	Implemented				D7

Figure 7. Actions planned – Objective 31: incorporate sustainability into teaching activities; and Objective 32: incorporate sustainability into research activities

4.2.3 Results of questionnaire applied to process participants. Table 1 presents the results of the questionnaire applied to the leaders who were involved in the project, a total of 47 respondents.

The questionnaire also included the possibility for an optional manifestation of the participants related to each block. In sequence, some of these manifestations are as follows.

Block 1:

The integration of leadership in the strategic process will result in the improvement of the plan, aiming at the process of a collective construction that will have repercussions on the other members of the FHO [...] sincere congratulations on the strategy adopted;

The incorporation of sustainability into the strategic plan will allow the development of sustainability actions (economic, social and environmental) that are fundamental for an academic institution. I am very proud to participate in this process.

Item	Actions	Schedule				Related Archetypes
		2022	2023	2024	2025	
3.1	Implement outreach programs in partnership with AEHDA (local community), using the entity's facilities, which is located in the poorest neighborhood of the city.					F1
3.2	Implement programs to support public schools of basic and technical education in the city and region.					F5
3.3	Implement new outreach programs and actions that benefit the communities of Araras (local city) and region.					F1; F6
3.4	Develop a training program and events aimed at micro-entrepreneurs and other managers in the municipality and region for the incorporation of sustainability on their business.					F8
3.5	Develop a training program for personal and professional sustainability consideration for faculty and staff.					G1; G2; D5
3.6	Improve accessibility to all campus facilities and improve ergonomic conditions in work and study areas.					F7; G6
3.7	Provide new campus living spaces for students and employees.					G5
3.8	Implement a continuous suggestion program in the internal community for new sustainability projects.					I1
3.9	Promote access to higher education for students of lower social and economic classes (action implemented and ongoing).	Implemented				F2
3.10	Participation in municipal councils and community organizations (in progress).	Implemented				F6
3.11	Grant scholarships to employees and their families (action implemented and in progress).	Implemented				G3
3.12	Offering psychological and psychopedagogical support to students (in progress).	Implemented				G4

Figure 8.
Actions planned – Objective 33: incorporate sustainability into activities related to the external community; and Objective 34 – incorporate sustainability into activities related to the internal community

Block 2:

The organization of the archetypes allows us to verify in an integrated way the main points for the implementation of sustainability in FHO […] I agree with the formulation of the suggested archetypes;

Through the proposed archetypes, the community, in addition to understanding the strategies, will certainly commit to and spread them.

Block 3:

I fully agree that the strategic plan is feasible, mainly due to the involvement of the top management and other leaders. […]. There is no doubt that the University Center of Fundação Hermínio Ometto, with this initiative, is indeed heading for the 21st century and will be recognized as an educational institution that has innovative proposals [...]. The result will be the consolidation of an institutional image differentiated among the other HEIs;

The incorporation of sustainability will certainly result in competitive advantages for FHO. The strategic plan contemplates in the short, medium and long term (period of the strategic plan) the implementation and development of the actions foreseen for each goal.

Block 4:

I shared the material with my team of professors. Most were aware of the material, some gave a good feedback on the content, without specific reference, but the discussions are not possible to be carried out at this time. [...] everyone is involved in this context, not only as collaborating members of the FHO but as citizens responsible for environmental health, social and economic life of our planet;

Item	Actions	Schedule								Related Archetypes
		2022		2023		2024		2025		
4.1	Unfold the sustainability strategic plan into action plans.									I2
4.2	Promote, in accordance to the sustainability positioning, discussions aiming at the update of the Principles and Values and Institutional Code of Conduct.									H4
4.3	Develop action plans for the implementation of ISO 14,000 and 26,000 Standards.									I8
4.4	Affiliate the Institution with the national and international sustainable HEI networks which are considered the most suitable ones.									I5
4.5	Provide the institution's adherence to the main international declarations of commitment to sustainable development.									H3
4.6	Provide resources in the annual budgets for investments and actions aimed at sustainability as designed in the strategic plan.									E5; I7
4.7	Redesign the SBSC's strategy map, select indicators related to sustainability and develop the scorecard system to monitor them.									I3
4.8	Adopt the practice of annual sustainability reporting.									I6
4.9	Develop the English and Spanish versions of the institution website, especially for items related to sustainability.									I6
4.10	Participate in international events and rankings focused on sustainability.									H3
4.11	Inclusion of sustainability in the Institution's Mission.	Implemented								H1
4.12	Formalization of the Institution's Sustainability Policy.	Implemented								H2
4.13	Institution's adhesion to Green Metrics.	Implemented								H3
4.14	Creation of the Sustainability Committee and the Sustainability Office.	Implemented								I1

Figure 9.
Actions planned – Objective 35: incorporate sustainability into the organizational structure

> With the involvement of the university community, FHO is always considering the best for the institution, its employees and students, with a commitment to protecting the environment.

These results can be used to validate the method's efficacy. The responses obtained through questionnaires support this finding: questions that comprised the first two blocks reached a minimum of 93.6% of "totally agree" answers, except for the statement that leaders evaluated their involvement (87.3% completely agreed that they participated actively). Block 3 also had in the three questions presented 93.6%, 87.2% and 93.6% of "totally agree" answers. Block 4 (teamwork evaluation) even contained positive answers (minimum of 63.9% full agreement), pointing out that this aspect must be improved in future planning cycles.

5 Discussion

For a problem to be solved, the first step is to acknowledge it as such. The consensus is clear that HEIs are not properly fulfilling their crucial role for SD (Bieler and McKenzie, 2017; Manolis and Manoli, 2021; Pizzutilo and Venezia, 2021). Without HEIs, achieving the goals set for the SDGs is almost impossible (Leal Filho *et al.*, 2019b). Once the problem is identified, the second step is the correct diagnosis of its causes. Opinions seem to be converging regarding the barriers that prevent HEIs from advancing in the incorporation of sustainability (Hueske and Guenther, 2021; Larrán *et al.*, 2015). Thus, the third and decisive step is to search for solutions. In this sense, works aimed at helping HEIs take action by

Items for evaluation	TA (%)	PA (%)	IN (%)	PD (%)	TD (%)
Block 1 – Evaluation of the process as a whole					
1 – The adopted process (stages, workshops and discussions) was effective in obtaining a solid strategic plan	95.7	4.3	0.0	0,0	0,0
2 – The incorporation of sustainability into the strategic plan, including the emphasis on actions, was important and relevant for the institution	97.9	2.1	0.0	0.0	0.0
3 – I was actively engaged in strategic planning – discussions and other activities	87.3	10.6	0.0	2.1	0.0
Block 2 – Evaluation of the use of the archetypes in strategic planning					
4 – The HEIs sustainability action archetypes were useful to understand the meaning of holistic implementation of sustainability at FHO	95.7	4.3	0.0	0.0	0.0
– The HEIs sustainability action archetypes were fundamental in designing the strategic plan for sustainability - aided in designing objectives, goals and practices	95.7	4.3	0.0	0.0	0.0
6 – The archetypes, once adapted to FHO, will be suitable to demonstrate to the academic community the strategic actions related to sustainability that will be implemented in the following years	93.6	6.4	0.0	0.0	0.0
Block 3 – Evaluation of the resulting strategic plan 7 – The final strategic plan is adequate to FHO's reality and will make it possible for the Institution to remain competitive in the higher education market	93.6	6.4	0.0	0.0	0.0
8 – It is feasible to implement the final strategic plan - objectives, goals and practices	87.2	12.8	0.0	0.0	0.0
9 – The sustainability strategic incorporation will result in competitive advantages to FHO, including improvements in its image and reputation	93.6	6.4	0.0	0.0	0.0
Block 4 – Teamwork evaluation					
10 – There was an active participation of the team I lead - both in sector-specific discussions and in the general strategic planning	70.3	25.5	2.1	2.1	0.0
11 – The HEIs sustainability action archetypes aided my team in understanding the importance of integrating sustainability in higher education and at FHO	80.9	14.9	2.1	2.1	0.0
12 – My team participated actively in discussions, with comments and suggestions for improvement	63.9	31.9	2.1	0.0	2.1

Table 1.
Percentage distribution of opinions collected after the application of the method in an HEI

providing them with practical structures take on an essential role (Leal Filho *et al.*, 2019b; Williams, 2021).

This study presented a method for incorporating sustainability into the strategic planning of HEIs that contributes to overcoming several barriers. This study departs from the involvement of the top leadership of these institutions, who participate in the entire process, displaying vigorous purpose to the other participants (Leon-Soriano *et al.*, 2010). Another relevant aspect is the involvement of the HEI's entire executive leadership in planning. In addition to training the team to understand concepts related to sustainability, an aspect highlighted by Baumgartner and Rauter (2017), this initiative aims at team commitment to the proposal – a factor considered critical to the effectiveness of any strategic organizational change (Doyle and Brady, 2018; Fonseca *et al.*, 2021).

The strength of the method is its simplicity. The method is very easy to understand and apply but of great depth. This aspect is highlighted by Hubbard (2009), who stated that simplicity is essential, even though complex, social and environmental issues need to be accessible to and understood by all. Falle *et al.* (2016, p. 10) also highlighted that "the process of creating an SBSC in SME [small- and medium-sized enterprises] has to be designed and conducted as simply and understandably as possible."

Identifying the main socioenvironmental goals and actions are among the main issues that affect the success of the strategic planning. The method addresses these issues by using a simple and useful tool – the archetypes by Sanches *et al.* (2022) – to benchmark for sustainability objectives and the selection of actions. Additionally, the involvement of HEIs' executive leaders in the planning process is expected to result in coresponsibility during its implementation. Therefore, a university's main opinion leaders may spread concepts related to sustainability throughout the institution. Implementing any new idea in an organization involves risks inherent to the process itself, which may be minimized through dedicated support from top management and adopting a wide and open communication process involving every level of the organization (Engert and Baumgartner, 2016; Fonseca *et al.*, 2021).

Other barriers are ruptured by establishing a multidisciplinary work team during the strategic plan's design. The segregation between administrative and academic functions that have little or no intersection is a characteristic constantly found in HEIs. Even faculty include professors with specific qualifications and a profound understanding of business management, such expertise is often ignored by the institution's management. In academia, disregarding executive experience is also common. The implemented method mixes such competencies on behalf of sustainability.

The method's efficacy was validated through its real application in a Brazilian HEI, similar to Falle *et al.* (2016) and Chalmeta and Palomero (2011). The high degree of positive responses obtained through questionnaires applied to the participants corroborates this finding. The process also resulted in validating HEIs' sustainability action archetypes as a useful tool to promote organizational learning regarding the holistic implementation of sustainability and as a support tool for its integration into HEIs' strategic planning. To be noted is that 100% of the planned actions are related to an action that composes the framework of the archetypes.

Another contribution of this study is represented by the SLR that it evolved. In addition to providing theoretical support for the developed method, this methodology identified relevant articles specifically focused on strategic sustainability management processes for both HEIs and organizations in general. The review also showed a scarcity of works focused on sustainability incorporation in strategic processes, especially those presenting methods that help plan and implement sustainability into organizations' overall strategy. Studies

addressing the incorporation of sustainability in specific sectors of HEIs were identified (libraries, hospitals, courses and others). However, as Leal Filho *et al.* (2019c, p. 684) argued, tools for sustainability must be developed and applied to "a centre, course or process and in the university curriculum"; however, that is not enough. "They need to be owned, valorized and consequently supported by the whole institution."

This study aids in filling other gaps in the literature, such as the need to transpose theory into practical structures (Fonseca *et al.*, 2021; Williams, 2021). Leal Filho *et al.* (2015) also warned of the need to more strongly emphasize the necessary actions to make SD happen. In that sense, this work translates theory into a practical, action-oriented method.

6 Conclusion

It is increasingly evident that HEIs have a leading role in achieving the SDGs. These institutions must be the main vectors toward a sustainable future. An increasingly consolidated consensus is that to assume this role, HEIs must modify themselves and incorporate sustainability into their strategy in a holistic manner. This objective can only be achieved if sustainability is treated as a strategic focus and incorporated into universities' planning processes, not through punctual actions or parallel processes.

Therefore, more studies that present models and practical solutions are needed that can help universities understand the meaning of sustainability and incorporate it systemically into their strategic planning. In this sense, this study sought to contribute to filling this gap and presenting a simple and easy-to-apply method – but with a solid theoretical basis. The application of the method in an HEI demonstrated its effectiveness, and the results presented can serve as a reference for other institutions.

Unfortunately, recent studies showed that, even with the identification of advances toward SD, the analysis of HEIs' strategic plans show that these institutions are slowly moving in that direction. There is no more time to waste – this process needs to gain more speed. Therefore, greater attention must be directed by both researchers and educational leaders to the effective incorporation of sustainability into university institutions' strategic processes.

A limitation of this study is that the method proposed was tested in a single HEI. Another limitation is regarding the SLR applied in this research. Even by adopting a rigorous selection process, a degree of subjectivity is inherent to this methodology. Furthermore, the search criteria adopted may have failed to locate some relevant articles. However, to be noted that the purpose of applying a SLR in this study was to support the method developed and not to list the most relevant works in the researched fields, as in a "standalone systematic literature review" (Okoli, 2015). Future projects may test the applicability of the method in other HEIs. Additionally, the development of empirical studies that present methods for the subsequent sustainability strategic management phases, such as its implementation and monitoring by HEIs, is indicated.

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About the authors

Marco Antonio Alves de Souza Junior holds a master's degree in Business Administration from the Faculty of Economics, Administration and Accounting of the São Paulo University (USP), Ribeirão Preto, SP, Brazil, and is currently a doctoral student in business administration at the same institution. He works professionally at the University Center of The Hermínio Ometto Foundation (FHO) as Coordinator of the Sustainability Office and teacher of an Administration course. His area of research interest is in the management in education.

Flavio Rubens Massaro Junior holds a PhD in Technology in the area of information systems and communications from the School of Technology of the University of Campinas (Unicamp), Limeira,

SP, Brazil. He is an IT Manager and Professor at the University Center of the Hermínio Ometto Foundation (FHO), Araras, SP, Brazil. His research focuses on real-time systems, prediction algorithms and bio-inspired computation.

Francisco Elíseo Fernandes Sanches holds a master's degree in Business Administration from the School of Applied Sciences of the State University of Campinas (Unicamp), Limeira, SP, Brazil, and is currently a doctoral student in business administration at the same institution. He has worked professionally at the University Center of the Hermínio Ometto Foundation (FHO) since 2003, where he currently occupies the chair of Financial-Administrative Director. His area of research interest is in the incorporation of sustainability into organization management, especially in higher education institutions. Francisco Elíseo Fernandes Sanches is the corresponding author and can be contacted at: kiko@fho.edu.br

Rafael Povedano holds a master's degree in business administration from the School of Economics, Business Administration and Accounting at Ribeirão Preto University of São Paulo, Ribeirão Preto, SP, Brazil. Currently is a doctoral student in business administration at School of Applied Sciences of the State University of Campinas (Unicamp), Limeira, SP, Brazil. His areas of research interest are management in education and entrepreneurship.

Luiz Eduardo Gaio holds a PhD in Business Administration from the University of São Paulo. He is an Assistant Professor at the School of Applied Sciences at the State University of Campinas (Unicamp), Limeira, SP, Brazil. His research focuses on the relationship between firm performance and its corporate sustainability.

3. Abordagens metodológicas utilizadas nesta tese

Além dos métodos utilizados, especialmente a revisão sistemática de literatura, outra importante abordagem metodológica presente nesta tese é definida como "análise de conteúdo qualitativa". Segundo Elo and Kyngäs (2008), este método, também conhecido como método de análise de documentos, objetiva descrever e quantificar fenômenos de forma sistemática. Os autores argumentam que "supõe-se que, quando classificadas nas mesmas categorias, palavras, frases e similares compartilham o mesmo significado" (p. 108).

Ainda de acordo com Elo and Kyngäs (2008), este processo abrange três fases principais: preparação, organização e relatório e pode ser realizado de forma indutiva ou dedutiva. Neste sentido, quando se trata do estudo dos fenômenos administrativos e organizacionais, além das questões que evolvem as epistemologias, métodos qualitativos e quantitativos e rigor científico, mais um elemento deve ser acrescentado: a utilização da indução ou da dedução (De Benedicto *et al.*, 2012). A importância da aplicação da indução e da dedução como método se deve a diversas razões, entre elas: "(i) porque podem contribuir para a geração de novas ideias; (ii) porque se transformam em processos discursivos e modos de raciocínio, e; (iii) porque permitem guiar a pesquisa e expor rigorosamente seus resultados" (De Benedicto *et al.*, 2012, p. 9).

Hall *et al.* (2023) argumentam que a escolha entre as duas abordagens é essencial, pois determina a forma de raciocínio, ou inferência, que será utilizada na pesquisa. Para estes pesquisadores, a inferência indutiva parte de observações específicas e, a partir delas, faz generalizações mais amplas. Desta forma, na inferência indutiva os pesquisadores conduzem inicialmente uma investigação sistemática e, na sequência, desenvolvem uma estrutura baseada em suas descobertas. Já na inferência dedutiva ocorre o oposto: ela começa com uma generalização e utiliza as observações para verificar se estas se enquadram no quadro inicial proposto. Em outras palavras, De Benedicto *et al.* (2012, p. 17) explicam as diferenças entre as duas abordagens: "na pesquisa indutiva a teoria geral (ampla) é criada (inferida) a partir de situações particulares enquanto que na pesquisa dedutiva as situações particulares são deduzidas a partir da teoria geral (ampla)."

Retomando o estudo de Elo and Kyngäs (2008), o processo da análise de conteúdo se inicia na fase de preparação. Nela é selecionada a unidade de análise (uma palavra ou um tema), aspecto importante que é definido após a decisão do que analisar e qual o grau de detalhe. Outra questão relevante, conforme os autores, é que a amostra a ser considerada seja representativa do universo da qual foi extraída. Elo and Kyngäs (2008) ressaltam que a fase de preparação deve ser seguida fase de organização dos dados, na qual, entre outros fatores,

destacam-se, respectivamente, nas análises indutivas e dedutivas:

Análise de conteúdo indutiva

- A codificação aberta e a criação de categorias;
- O agrupamento de listas de categorias em títulos de ordem superior;
- A realização do agrupamento de dados para redução do número de categorias;
- A utilização de abstração: esse processo gera subcategorias com eventos/conteúdos semelhantes, que são agrupados em categorias e estas, por sua vez, são reunidas em categorias principais. O processo continua até que se chegue a um resultado razoável.

Análise de conteúdo dedutiva

- O primeiro passo: desenvolver uma matriz de categorização;
- Os dados devem ser codificados de acordo com as várias categorias;
- A codificação dos dados deve ser revista após a elaboração da matriz de categorização para correspondência ou exemplificação das categorias pré-identificadas;
- O processo tem com base trabalhos anteriores, como teorias, modelos e revisões de literatura;

Na fase final, o processo realizado deve ser descrito de forma que possibilite ao leitor uma compreensão clara de como a análise foi realizada e como foram obtidos os resultados. Estes referem-se aos conteúdos das categorias, que devem ser descritos de modo a deixar evidente seus significados, refletindo de forma confiável o objeto do estudo. "É importante fazer inferências defensáveis com base na coleta de dados válidos e confiáveis" (Elo and Kyngäs, 2008, p. 112).

Com base nesses conceitos, buscaremos identificar as abordagens que foram utilizadas em cada um dos três artigos que compõem esta tese.

O primeiro artigo não se utiliza de análise de conteúdo. Sendo um artigo conceitual, o estudo seleciona artigos específicos, por meios diversos, para análise da definição de conceitos e suporte à proposta apresentada. Em relação às abordagens, ele se utiliza de ambas, dedutiva e indutiva. Como exemplo, em relação aos conceitos de RSC e SC, a abordagem utilizada é dedutiva, pois são avaliadas diversas definições destes conceitos para se chegar à proposta das concepções mais adequadas para as IES. Também, tanto a inferência de que a RSC

pode ser representada pelos ODS e aplicada ao subsistema acadêmico como de que o TBL é o conceito que melhor representada a SC e deve ser aplicado ao subsistema administrativo são classificadas como dedutivas, pois partem da combinação de conclusões de estudos anteriores. Já em relação ao novo conceito que é proposto (TBL-G), tem-se a convicção de que a sua concepção é realizada por inferência indutiva. Com base na conclusão de que o TBL é o conceito que melhor representa a SC e da constatação da relevância da governança para que as IES possam incorporar, de modo holístico, a sustentabilidade às suas ações, concluiu-se pela pertinência da junção destes conceitos, dando origem a um novo.

Para o alcance de seus objetivos, o segundo artigo (Arquétipos) utilizou-se de análise de conteúdo dedutiva. Ele parte de três estudos anteriores para definir os 04 grupos que foram utilizados para integração da sustentabilidade nas IES numa "abordagem de instituição como um todo". Na sequência, com base no estudo de Bocken *et al.* (2014), foram definidos os 09 arquétipos de ações sustentáveis que compuseram os grupos. A partir daí, foi realizada uma revisão sistemática da literatura para selecionar exemplos de ações no âmbito de cada arquétipo. A partir da Fase 3, "Análise do título e classificação do artigo", a análise de conteúdo foi realizada nos moldes apontados por Elo and Kyngäs (2008). Nas fases subsequentes, a partir da análise dos textos dos resumos (Fase 4) e do artigo completo (Fase 5), as ações identificadas foram classificadas de acordo com a estrutura dos arquétipos. Estas foram agrupadas de acordo com suas semelhanças, escolhendo os artigos que melhor as representavam e eliminando os demais. Apenas a título de exemplo, se, ao analisar o conteúdo dos artigos e identificar as ações fosse concluído pela pertinência da alteração da estrutura dos grupos e/ou dos arquétipos, a abordagem utilizada combinaria as abordagens dedutiva e indutiva. Essa combinação é apontada por De Benedicto *et al.* (2012) como uma alternativa elaborada por Karl Popper que a denominou "método hipotético-dedutivo".

Já o terceiro artigo (Método) aplicou a análise de conteúdo indutiva. Ele não parte de qualquer estrutura pré-existente. É realizada, inicialmente, uma revisão sistemática da literatura para selecionar estudos relacionados ao planejamento estratégico da sustentabilidade, tanto de IES quanto das demais organizações. Num segundo momento, são identificados nos trabalhos selecionados elementos que foram utilizados para elaborar tanto o método de gerenciamento estratégico (macro fases) quanto o de planejamento estratégico (micro fases). Para tanto, a sequência seguida foi similar à indicada por Elo and Kyngäs (2008). Para a seleção dos artigos, uma análise preliminar dos resumos (Fase 3) e dos textos completos (Fase 4) foi realizada. A partir da amostra final (46 estudos), cada elemento que pudesse contribuir para determinação das fases do planejamento estratégico das IES, com a inclusão da

sustentabilidade, foi identificado e classificado. Estes elementos, ou fases, foram então agrupados conforme suas semelhanças. O processo de abstração foi amplamente utilizado: a criação de subcategorias e estas agrupadas em categorias principais até chegar-se ao desenho final do método. Cabe ressaltar que, durante este processo, o objetivo inicial de elencar as etapas do planejamento estratégico foi ampliando para a inclusão de “categorias superiores”, ou seja, as etapas do gerenciamento estratégico, onde uma delas refere-se ao planejamento.

4. Discussão

A questão que está presente na essência dos três artigos que compõem esta tese é a necessidade de as IES incorporarem holisticamente a sustentabilidade às ações que desenvolvem a fim de cumprir o papel que lhes cabe na busca pelo DS. Além das contribuições e aspectos que estão presentes na discussão de cada um dos artigos, procurou-se, nesta discussão final, ampliar a abordagem sob o pano de fundo da teoria da complexidade e da gestão da transição/mudança, que são claramente aplicáveis aos objetivos desta tese. Assim, ao final desta seção, buscar-se-á identificar os principais fatores que afetam a incorporação da sustentabilidade ao ensino superior e o gerenciamento da transição de um modelo de IES tradicional para o alcance do estágio de universidade sustentável, bem como de que modo os resultados desta pesquisa favorecem esses fatores.

Nesta direção, ao analisar a literatura voltada ao tema da incorporação da sustentabilidade pelas IES, é fácil constatar que palavras relacionadas a "complexidade" estão constantemente presentes. O fato de as IES serem formadas por dois grandes subsistemas, o acadêmico e o administrativo, com características diversas (Hernández-Diaz *et al.*, 2021) que, por sua vez, se dividem em diversos outros subsistemas, somado ao convívio com diferentes categorias de *stakeholders*, as caracterizam como sistemas complexos (Priyadarshini and Abhilash, 2022). Essa visão das IES é particularmente importante para entender e enfrentar as barreiras que estas instituições encontram na incorporação da sustentabilidade, o que exige o entendimento da complexidade, imprecisão e a interdisciplinaridade presentes neste processo (Weber *et al.*, 2021).

Assim, a solução dos problemas que as IES enfrentam para a incorporação holística da sustentabilidade, objetivo central desta tese, passa pela compreensão do que é complexidade, no sentido organizacional. Segundo Morin (2005), a própria palavra "complexidade" traz a ideia de incerteza, confusão, desordem. Para o autor, por um lado, a complexidade é um fenômeno quantitativo, ou seja, está relacionada a uma grande quantidade de unidades que, por sua vez, envolvem grandes quantidades de interações e interferências entre si. Porém, por outro lado, reconhece que ela também representa incertezas, indeterminações e mesmo fenômenos aleatórios. Assim, argumenta, ela pode ser entendida como uma mistura de ordem e desordem: "a organização, noção decisiva, apenas vislumbrada, não é ainda, se ouso dizer, um conceito organizado" (Morin, 2005, p. 27).

Com base em Morin (2010, 2011, 2015, 2016), Sigahi *et al.* (2022) explicam que o pensamento cartesiano, que tem origem na ciência clássica, rejeita qualquer subjetividade e incerteza. De acordo com a forma cartesiana de pensar, a solução de um problema passa pela

sua divisão em partes, que são analisadas isoladamente – a solução do problema como um todo é obtida pela soma das soluções de cada parte. Também, a visão holística, como um "todo único", não se adequa à consideração de sistemas complexos. Entretanto, Sigahi *et al.* (2022) enfatizam que as abordagens baseadas na teoria da complexidade não buscam eliminar os pensamentos reducionista e holístico, mas sim completá-los. A ideia principal, argumentam, é que os sistemas não são constituídos por partes isoladas, mas pelas interações entre elas e entre as partes e o todo. Os autores fazem uma analogia dos sistemas complexos com os organismos vivos, que não são formados por células isoladas, mas pelas interações entre elas; desta forma, as interações entre as células constituem a organização de todo o sistema (organismo). De modo a reconhecer que o entendimento da complexidade envolve tanto a visão reducionista quanto a holística, simultaneamente, Morin (2005, p. 103) faz referência a Pascal: "considero impossível conhecer as partes enquanto partes sem conhecer o todo, mas não considero menos impossível a possibilidade de conhecer o todo sem conhecer singularmente as partes".

Em estudo que buscou identificar e categorizar os atributos críticos da sustentabilidade no ensino superior, Viegas *et al.* (2016, p. 267) denominaram de "ativos integrativos" aqueles que "estão por trás, entre e além dos demais" e incluem: "construtivismo, complexidade e pensamento holístico". De modo resumido, para estes autores:

> - Construtivismo: É uma forma de estruturar o conhecimento que considera que a realidade somente pode ser acessada por meio da mediação da consciência humana e, portanto, nega a possibilidade de conhecimento apenas a partir da realidade externa. A construção compartilhada de valores e aprendizagem autodirigida derivam da epistemologia, por meio do pensamento crítico. Esta construção favorece a criatividade, a colaboração e a maturidade.
>
> - Complexidade: É decorrente da rede de inter-relações típicas dos problemas da vida real, presentes nas demandas de sustentabilidade. É de se supor que o ensino superior forneça os meios para lidar com essa complexidade, uma vez que as IES detêm conhecimento plural e potencial para práticas transdisciplinares. Porém, a realidade tem demonstrado que a maioria das iniciativas das universidades se mostram ineficazes ao lidar com problemas complexos, o que compromete a capacidade das futuras gerações de lidar com esses problemas. Mudanças rápidas são características dos sistemas complexos. Dominar esse tipo de mudança não é possível com aprendizagem passiva ou focada em conteúdos teóricos. A complexidade é, ao mesmo tempo, um pensamento reflexivo e individual sobre as práticas e uma expressão reflexiva de relações intrincadas entre indivíduos e sistemas sociais. A

consciência dos princípios da complexidade, como emergência, exposição ao risco, ciclos de *feedback* e auto-organização de sistemas, permite melhores práticas de aprendizagem coproduzida.

- Pensamento holístico: É o resultado de abordagens construtivas e complexas como orientação, integração, capacidade de conhecimento e intuição, tudo ao mesmo tempo. Ele favorece a alteração da estrutura dos currículos, de hierárquicas para um conjunto transdisciplinar de programas de estudos, e estabelece fortes relações entre o realismo crítico como pensamento epistemológico que combina empirismo e construtivismo. Visões holísticas ou pensamento sistêmico requerem uma epistemologia muito bem estruturada para criar consciência das complexidades envolvidas nas práticas da vida real. É muito difícil alcançar o pensamento holístico nas IES porque as estruturas educativas são resistentes à abertura à sociedade e os professores estão habituados a dar e receber dos alunos conhecimentos disciplinares que consideram melhor cumprir os requisitos profissionais no âmbito dos currículos formais.

Com relação ao ensino, Howlett *et al.* (2016) argumentam que os desafios do século XXI são complexos e interdependentes, o que implica na necessidade de abordagens educacionais capazes de preparar os alunos a enfrentar os problemas econômicos, sociais, científicos, políticos e éticos, não de modo independente mas interligado, o que é necessário para a transição para a sustentabilidade. Assim, complementam, é necessário preparar os alunos para desenvolver formas criativas e inovadoras de enfrentar o desafio da sustentabilidade, para o que abordagens interdisciplinares são necessárias.

Quando refere-se à pesquisa, Van Kerkhoff and Lebel (2006) apontam para uma desconexão entre a investigação e a ação em prol do DS. Segundo estes autores, essa situação resulta do descompasso entre o conhecimento gerado pelos pesquisadores e as necessidades da realidade profissional. Eles completam que o DS é caraterizado por inter-relações complexas que abrangem os domínios social e natural, enquanto a pesquisa científica é caracterizada por áreas de investigação fragmentadas e especializadas. “Sob tais circunstâncias, é provável que as incompatibilidades sejam a norma e não a exceção” (p. 453).

Mas a sustentabilidade no ensino superior não se restringe a cada área isolada. Além da sala de aula e das atividades de investigação, ela envolve, entre outros, processos decisórios, estruturas organizacionais, estruturas de liderança, planejamento estratégico e visão de futuro compartilhada, o que torna o processo de transformação das IES em prol do DS particularmente complexo (Hoover and Harder, 2015). Em consonância com essa afirmação, os envolvidos

nesses processos normalmente os caracterizam como “longos, progressivos, desafiadores, múltiplos e caracterizados por resistência, barreiras e contestação” (Hoover and Harder, 2015, p. 176).

Resta evidente que a transformação das IES para a sustentabilidade passa pelo entendimento do alto grau de complexidade envolvido, especialmente devido às inúmeras interações entre os diferentes elementos componentes das IES e destes com o ambiente externo. Assim, a passagem do estágio inicial de IES tradicional (“*business-as-usual university*”) para o estágio “aspiracional” de universidade sustentável, envolve gerenciar uma complexa fase de transição (Kapitulčinová et al., 2018). A gestão de mudanças organizacionais pode ser definida como uma abordagem de gestão voltada a conduzir uma organização do estado atual para um estado futuro desejável (Verhulst and Lambrechts, 2015). As teorias da transição, ou mudança, que estudam a capacidade de as organizações modificarem seus processos, estruturas e estratégias são compatíveis com o modelo de mudança de três estágios de Lewin (1947): descongelamento, mudança e recongelamento (Hussain *et al.*, 2018).

Quando envolve sustentabilidade, a observação da teoria da “gestão da transição” assume maior relevância (Hoover and Harder, 2015). Neste sentido, a “gestão da mudança organizacional para a sustentabilidade”, campo emergente no ensino superior, “examina o contexto, o conteúdo e os processos da mudança, com especial atenção aos fatores humanos” com o objetivo de “mover as organizações do *status quo* para um estado futuro mais desejado” (Rieg *et al.*, 2021, p. 1). Em relação a esta transformação, Loorbach (2010, p. 172) elencou quatro fases do que denominou “ciclo de gestão de transição”: (i) estruturar o problema em questão, desenvolver uma visão de sustentabilidade a longo prazo e estabelecer e organizar a arena de transição; (ii) desenvolver imagens futuras, uma agenda de transição e derivar os caminhos de transição necessários; (iii) estabelecer e realizar experiências de transição e mobilizar as redes de transição resultantes; (iv) monitorar, avaliar e aprender lições das experiências de transição e, com base nelas, fazer ajustes na visão, na agenda e nas coligações”.

A mudança do estágio inicial, de equilíbrio quase estacionário, envolve o aumento das forças pró-mudança, diminuição das forças que lutam para manter o *status quo*, ou uma combinação de ambas (Hussain *et al.*, 2018). Isso pode ser obtido por meio de compartilhamento, vontade individual e liderança para a mudança. Bien and Klußmann (2022) argumentam que para uma gestão eficaz da mudança é fundamental a compreensão da ambiguidade que o conceito de sustentabilidade envolve junto às culturas acadêmicas e aos modelos universitários. Estes pesquisadores explicam que o processo denominado “transição para a sustentabilidade” envolve ambiguidade por duas razões principais: (i) implica em

mudanças emergentes e a mudança nas universidades é um processo ambíguo e inconsistente, porém, proposital e significativo, e (ii) apesar da relevância dos conceitos de sustentabilidade e DS, o que eles significam não é claro e gera controvérsias.

Ao estudar o processo de transição das IES para a sustentabilidade, Blanco-Portela *et al.* (2018, p. 13) elencaram o que denominaram "valiosos fatores de sucesso": "(i) apoio firme dos líderes universitários; (ii) disponibilidade de recursos dedicados; (iii) gestão interna eficiente da mudança; e (iv) pessoal comprometido que possa ajudar na transição". De modo similar, Hagl *et al.* (2024) denominam de "intervenções de gestão de mudança" as atividades que os gerentes utilizam para gerar uma mudança organizacional planejada. Na revisão da literatura que realizaram, os autores classificaram em seis tipos estas atividades: " (1) comunicação (informação, enquadramento, dialógica), (2) apoio (formação, *coaching*, apoio à mudança organizacional), (3) envolvimento (consultoria, cocriação, codecisão), (4) reforço (recompensas e estabelecimento de metas), (5) influência social (modelagem de papéis e troca entre pares) e (6) coerção" (p.1).

Porém, as IES enfrentam importantes barreiras em seus processos de transição rumo à sustentabilidade. Uma destas barreiras, reconhecida por diversos estudiosos do tema, é representada pela falta de compreensão do significado de sustentabilidade no meio acadêmico, o que resulta na falta de consenso; "universidade sustentável" é um conceito controverso que gera intensa discussão sobre conteúdo, significado e teoria (Bien and Klußmann, 2022). Nesta mesma linha, a ambiguidade e complexidade do próprio conceito de sustentabilidade resultam em "falta de compreensão partilhada e de linguagem comum" (Verhulst and Lambrechts, 2015, p. 192).

Outra relevante barreira, sobre a qual parece haver consenso na literatura, refere-se ao alto grau de autonomia do corpo docente. Dessa autonomia, tanto nas atividades de ensino quanto de pesquisa, resulta uma certa desconexão dos objetivos individuais em relação aos objetivos institucionais (Bien and Klußmann, 2022). Essa independência e autonomia do corpo docente, associada à rigidez dos conteúdos disciplinares, pode representar uma forte barreira à transição das IES em prol do DS (Stephens and Graham, 2010). Como consequência, essa transição não pode ser "forçada" – ela impõe o entendimento e convívio com a complexa distribuição de poder entre os líderes universitários, docentes e administrativos (Bauer *et al.*, 2018).

A gestão da mudança nas IES envolve tanto fatores de sucesso quanto barreiras, porém, o mesmo fator pode representar um apoio ou obstáculo, dependendo da circunstância; portanto, é mais indicada a referência a "fatores" que influenciam a mudança, ao invés de

impulsionadores e barreiras (Verhulst and Lambrechts, 2015).

Nesse sentido, os fatores humanos e culturais são os que mais têm influência na gestão da mudança nas IES. As culturas existentes no *campus*, sejam elas temporárias ou profundamente enraizadas, impactam dramaticamente as iniciativas, em especial as relacionadas à sustentabilidade (Hoover and Harder, 2015). Para reconhecer e reconciliar estas diferentes culturas é necessária uma governança eficaz que estabeleça estruturas de responsabilização divergentes e coordenação distribuída, levando em conta as diferentes características das atividades operacionais e acadêmicas (Robinson *et al.*, 2023).

Em relação à cultura de um grupo, Baumgartner (2009) argumenta que ela evolui e muda ao longo do tempo em razão de alterações no ambiente de negócios, liderança, práticas de gestão e processos formais e informais de socialização. Este autor defende que, do ponto de vista positivista, a cultura organizacional pode ser gerenciada. Porém, alerta que na visão construtivista, ao contrário, ela não pode ser diretamente gerenciada; a mudança cultural apenas ocorre de modo indireto, por meio de mudanças nas interações sociais que a definem.

Quando trata-se do ensino superior, a diversidade dos aspectos culturais é intensificada, pois as IES convivem com dois grandes subsistemas, o acadêmico e o administrativo, com culturas bastante distintas (Hernández-Diaz *et al.*, 2021). Essa diferenças são reconhecidas por Robinson *et al.* (2023). Esses autores afirmam que o que denominam de "unidades acadêmicas", devido ao alto grau de independência, seguem um modelo de agência distribuída, característica do trabalho acadêmico, onde a participação é predominantemente voluntária. Ao contrário, segundo eles, as "unidades operacionais" adotam uma estrutura *top-down*, onde as políticas são definidas pela gestão de topo e seguidas pelas unidades posicionadas hierarquicamente abaixo delas. Dessa dualidade resulta um alto grau de complexidade que a governança para a sustentabilidade das IES enfrenta, o qual exige uma abordagem analítica que possibilite a redução dessa complexidade inerente (Stephens and Graham, 2010).

Buscando compreender as diferenças da governança da sustentabilidade nas áreas acadêmica e operacional com a finalidade da construção de confiança mútua entre elas, Robinson *et al.* (2023) sugeriram alguns princípios para o que nomearam "multigovernança": (i) assumir um papel facilitador para incorporar a sustentabilidade em toda a instituição; (ii) criar uma narrativa coletiva e inclusiva sobre sustentabilidade; (iii) integrar a sustentabilidade nas áreas acadêmica e operacional; (iv) aproveitar o envolvimento da comunidade para a investigação transdisciplinar; e (v) dedicar mais trabalho para incorporar a sustentabilidade aos currículos universitários.

Apesar do alto grau de complexidade dos processos de transição das IES, sobremaneira dos relacionados à incorporação da sustentabilidade, a solução dos problemas enfrentados passa por "reduzir a complexidade a um ponto em que o mundo se torne inteligível para nós", ou seja, "aplicar o pensamento complexo exige que estabeleçamos limites" (Sigahi et al., 2022, p. 7). Assim, a efetividade da incorporação da sustentabilidade de modo holístico pelas IES exige a compreensão da complexidade envolvida, porém, ao mesmo tempo, que ela seja reduzida por meio do uso de ferramentas práticas que possam auxiliar as universidades nessa tarefa (Leal Filho *et al.*, 2015; Williams, 2021), o que pode ser obtido com um maior foco na pesquisa aplicada (Leal Filho, Frankenberger, *et al.*, 2023). Portanto, a pesquisa precisa focar o uso e a mudança social, o ensino necessita conectar o aluno com a prática e com os complexos desafios do mundo real; para o que a interdisciplinaridade é fundamental (Stephens *et al.*, 2008). Por mais paradoxal que possa parecer, as soluções da complexa incorporação da sustentabilidade pelas organizações passam pela simplicidade – as questões subjacentes ao desempenho social e ambiental necessitam ser acessíveis e compreendidas pela ampla gama de *stakeholders* da organização (Hubbard, 2009), exatamente o que se buscou como resultados desta tese.

Como os fatores mais críticos do desafio da transição das IES para a sustentabilidade são os humanos e culturais, a solução envolve, necessariamente, o favorecimento do engajamento dos componentes da comunidade universitária. Assim, a governança eficaz das IES na gestão da mudança exige processos participativos que envolvam todos os *stakeholders* da universidade ao invés de uma abordagem unicamente *top-down* (Bauer *et al.*, 2021). Nesses processos, a transparência constitui-se em fator crítico. Ela exige o compartilhamento das informações, possibilita a responsabilidade partilhada e o envolvimento nos processos de avaliação do desempenho (Roos *et al.*, 2023). Desta forma, quando os colaboradores têm autoridade e responsabilidade, sua participação é mais eficaz e resulta em mudanças de maior qualidade, que prevalecem sobre a resistência. "Para superar a resistência à mudança organizacional, o envolvimento dos colaboradores é a estratégia mais antiga e eficaz" (Hussain *et al.*, 2018, p. 124).

Diante do que foi exposto, é possível concluir que a transição das IES rumo ao DS, em apoio aos ODS, envolve um alto grau de complexidade. Nessa trajetória, pode-se identificar fatores críticos que impactam, positiva ou negativamente, essa transição, alguns dos quais estão elencados abaixo:

- *Entendimento dos conceitos relacionados à sustentabilidade*: Esse fator constitui-se em pré-requisito para uma transição sustentável. Porém, há uma grande diversidade de entendimentos dos conceitos relacionados à

sustentabilidade no mundo acadêmico, muitos deles conflitantes, o que impede as IES de avançarem na incorporação da sustentabilidade numa abordagem da instituição como um todo;

- *Significado de universidade sustentável*: A incorporação holística da sustentabilidade pelas IES passa, necessariamente, pelo entendimento do que isso significa. Porém, há uma evidente falta de consenso. Muitos ainda restringem o significado de IES sustentável aos aspectos ambientais, relacionados às operações do *campus*, não considerando, por exemplo, entre outros, a inserção da sustentabilidade nos currículos, talvez a principal ação para que uma universidade possa ser considerada sustentável;

- *Comprometimento dos gestores da IES com a incorporação da sustentabilidade*: O firme propósito dos dirigentes da instituição com a incorporação holística da sustentabilidade é condição *sine qua non* para a real transformação das IES rumo à sustentabilidade. Esse propósito deve estar explicitado nas atitudes dos dirigentes e em declarações de missão e visão, nas políticas e em outros documentos institucionais;

- *Estrutura e práticas de governança para o gerenciamento da transição sustentável das IES*: Outra condição essencial para a transição efetiva destas instituições para a sustentabilidade é contar com estruturas e práticas de governança eficazes. Para tanto, é necessário o entendimento das diversas culturas que convivem no ambiente universitário e muita dedicação aos processos de capacitação dos colaboradores, em especial dos docentes, para que possam entender, praticar e ensinar a sustentabilidade;

- *Participação e engajamento dos componentes da comunidade universitária nos processos de transição para a sustentabilidade*: Ninguém se engaja em algo que não conhece e não participa. Assim, um aspecto de grande importância para uma governança eficaz é a transparência e ampla comunicação dos objetivos institucionais a todos os seus *stakeholders*. Um misto de abordagem *top-down* e *bottom-up* deve ser promovido na incorporação da sustentabilidade. Esta última favorece a participação, a descentralização das decisões e o engajamento nos objetivos comuns;

- *Planejamento da transição para a sustentabilidade*: Partir do estágio inicial (em alguns casos, de IES tradicional) para o estágio de universidade sustentável exige um planejamento cuidadoso. Como todo processo de mudança

organizacional, especialmente quando envolve mudança cultural, a incorporação holística da sustentabilidade pelas universidades demanda muitos esforços e um tempo razoável para que seja totalmente implementada. Devido à sua importância estratégica, o planejamento da sustentabilidade deve ser incorporado ao próprio processo de planejamento estratégico das IES e não ser considerado de maneira isolada;

- "*Simplificação da complexidade"*: Apesar da complexidade envolvida, os processos de incorporação da sustentabilidade às ações das IES devem ser simples e passíveis de serem compreendidos e aceitos pela comunidade universitária. Isso envolve a transição da teoria para a prática por meio do desenvolvimento de processos e ferramentas que foquem a ação.

Esta tese teve como objetivo principal *promover a integração holística da sustentabilidade ao processo de planejamento estratégico das instituições de ensino superior.* Porém, diante dos fatores que influenciam este processo, buscou-se ampliar a abordagem deste estudo. Ele buscou auxiliar a enfrentar as barreiras existentes para que esta integração ocorra, atuando sob os fatores acima elencados da forma como segue:

- *Entendimento dos conceitos relacionados à sustentabilidade*: O primeiro artigo focou, inicialmente, a análise dos conceitos que relacionam as organizações com a sustentabilidade, concluindo pela diferenciação entre RSC e SC, bem como do real significado do TBL e do ESG, conceitos que geram controvérsias na literatura e no universo empresarial, além da abordagem da governança corporativa (GC) para a sustentabilidade. Na sequência, foi proposta uma forma pela qual estes conceitos podem ser combinados e aplicados às IES. Diante da relevância da governança para a sustentabilidade, especialmente no ensino superior, foi proposto um novo conceito: o TBL-G. Esse conceito reconhece que uma governança eficaz é fator crucial para que os objetivos do TBL possam ser alcançados. Tem-se a convicção que os resultados deste primeiro artigo prestam importante contribuição para o entendimento destes conceitos e da forma como podem ser aplicados às IES;

- *Significado de universidade sustentável*: O foco do segundo artigo foi exatamente favorecer o entendimento de como se dá a incorporação holística da sustentabilidade pelas universidades. Para tanto, desenvolveu-se uma estrutura que foi denominada de "Arquétipos de Ações Sustentáveis para as IES"

(Arquétipos). Esse *framework* é constituído por nove arquétipos, divididos em quatro grupos: operações do campus; acadêmico; comunidade; e organizacional. Por meio de revisão sistemática da literatura, foram selecionados exemplos de ações sustentáveis para cada arquétipo. Além de auxiliar programas de treinamento dos diversos componentes da comunidade universitária para o entendimento do que é uma universidade sustentável, a estrutura desenvolvida tem a finalidade de apoiar os processos de planejamento estratégico da sustentabilidade nas IES.

- *Comprometimento dos gestores da IES com a incorporação da sustentabilidade*: O método desenvolvido no terceiro artigo impacta este relevante aspecto. Ele parte do envolvimento direto dos principais dirigentes da instituição, que participam de todas as etapas do processo;

- *Estrutura e práticas de governança para o gerenciamento da transição sustentável das IES*: O próprio processo de planejamento estratégico participativo, com a atuação conjunta dos líderes acadêmicos e administrativos, auxilia a quebrar barreiras entre estas duas áreas e a promover a capacitação dos colaboradores de ambas. Também os arquétipos do Grupo Organizacional agregam ações que impactam tanto a estrutura quanto as práticas de governança da IES em sua transição para a sustentabilidade;

- *Participação e engajamento dos componentes da comunidade universitária nos processos de transição para a sustentabilidade*: O método desenvolvido impacta vários fatores críticos de sucesso para o processo de transição das IES para a sustentabilidade. Entre eles, ele promove engajamento dos principais líderes da IES, que participam das discussões e propostas para o planejamento estratégico e, a partir deles, envolve todos os colaboradores, docentes e administrativos, no desafio da incorporação holística da sustentabilidade.

- *Planejamento da transição para a sustentabilidade*: O método desenvolvido possibilita, em cada ciclo de planejamento, a determinação de como se dará a incorporação da sustentabilidade, de acordo com o estágio em que a IES se encontra. Assim, metas mais audaciosas podem ser estabelecidas em cada ciclo, de modo similar ao PDCA, resultando numa "espiral ascendente" em direção à incorporação plena da sustentabilidade.

- "S*implificação da complexidade"*: Acredita-se que os três artigos colaboram para que a complexidade inerente ao processo de incorporação da

> sustentabilidade pelas IES seja “simplificada”. O primeiro artigo demonstra de modo simples como os conceitos relacionados à sustentabilidade corporativa podem ser compreendidos e aplicados pelas IES. A estrutura dos Arquétipos, desenvolvida no segundo artigo, por si só demonstra o significado de “universidade sustentável” numa visão holística. Também, o método apresentado no terceiro artigo simplifica o processo de planejamento estratégico da sustentabilidade, tornando-o fácil de ser compreendido e promovendo a participação da comunidade universitária no processo. Assim, ele se constitui, adicionalmente, em uma prática de aprendizagem coletiva sobre sustentabilidade.

Acredita-se que, pelo exposto, esta tese possa auxiliar as IES na abordagem desses diversos fatores críticos para a sua transição em direção à sustentabilidade, favorecendo para que se tornem impulsionadores da sustentabilidade ao invés de constituírem em barreiras a ela.

5. Conclusão

Ao analisar a literatura relacionada à sustentabilidade no ensino superior é fácil constatar: (i) devido à sua missão e papel na sociedade, as IES têm a obrigação moral de estar na linha de frente do movimento em direção ao DS; (ii) para que desempenhem esse papel e sirvam de exemplo à sociedade, elas devem incorporar a sustentabilidade às suas ações de maneira holística, ou seja, adotando uma "abordagem de instituição inteira"; (iii) apesar de apresentarem alguns avanços recentes, as universidades ainda estão longe de cumprir o papel que lhes cabe diante do desafio do DS.

Apesar de há muito tempo a ONU, por meio da Comissão Brundtland, ter definido o DS (WCED, 1987) e do tempo decorrido desde o lançamento dos ODS (United Nations, 2015), a sustentabilidade e o DS, nesta tese considerados como conceitos intercambiáveis, ainda são pouco entendidos no âmbito do ensino superior. Muitos consideram que estes conceitos se restringem à dimensão ambiental, relegando a um segundo plano ou não considerando as dimensões sociais e econômicas. Exemplo disso são os diversos instrumentos de medição e os *rankings* que classificam as IES em relação à sustentabilidade. Estes evidentemente privilegiam as questões ambientais, relacionadas às operações do *campus*; são consideradas como as universidades mais sustentáveis aquelas que apresentam melhor desempenho nesta dimensão. Essa visão reducionista da sustentabilidade do ensino superior não condiz com as metas estabelecidas pelos ODS.

Ainda em relação a este aspecto, como foi defendido nessa tese, as operações do *campus* estão relacionadas ao subsistema administrativo das universidades. Portanto, é possível alcançar a sustentabilidade das operações das IES sem qualquer envolvimento da área acadêmica, como ocorre com qualquer organização sustentável, embora este envolvimento seja importante e desejável. Entretanto, como instituições de ensino superior, é de se esperar que a inserção da sustentabilidade seja objeto das demais áreas, em especial das atividades acadêmicas. Porém, parece estar aí uma grande falha das IES. Como também defendido nesta tese, a RSC, representada pelos ODS, deveria ter como foco principal o subsistema acadêmico, ao qual caberia disseminar e praticar estes objetivos nas atividades de ensino, pesquisa e extensão universitária. Talvez a grande complexidade que essa ação envolve desencoraje as IES de enfrentar esse desafio. Não se constitui em tarefa simples quebrar as milenares e rígidas estruturas acadêmicas, extremamente departamentalizadas e autônomas. A sustentabilidade no ensino, na investigação científica e nas relações IES-comunidade exige significativas mudanças no *status quo* ao requerer diferentes métodos de ensino-aprendizagem, que promovam o ensino experiencial, por meio do uso de metodologias ativas. Também é essencial que a

interdisciplinaridade esteja presente tanto no ensino quanto na pesquisa e na extensão. Desnecessário afirmar que estas mudanças encontram fortes resistências na academia. Porém, essa barreira precisa ser enfrentada, caso contrário, continuaremos a considerar como sustentáveis as IES que tratam seus resíduos, adotam ações para redução do consumo de energia e implementam práticas de baixa emissão de carbono. É evidente que estas ações são relevantes, pois possibilitam às IES se posicionarem como organizações sustentáveis, complementam o aprendizado dos alunos e servem de exemplo para a sociedade. Mas uma IES sustentável não se restringe a esta dimensão.

Um mito é que a inclusão holística da sustentabilidade pelas IES envolve altos custos. Na realidade eles são extremamente baixos quando comparados aos relacionados a outras atividades, as industriais, por exemplo. Quando observadas as vantagens que a prática da sustentabilidade proporciona às IES, como incremento de imagem e reputação; fidelização dos alunos e funcionários; e redução dos custos de materiais de consumo e energia, entre outras, a relação custo-benefício é extremamente vantajosa. Aliás, a inserção da sustentabilidade aos currículos, atividades de pesquisa e extensão envolve baixo volume de recursos. O investimento se restringe a atividades de capacitação e treinamento e algumas atribuições de horas de trabalho para docentes e funcionários administrativos. Os esforços necessários estão mais presentes na esfera intelectual, voltados à reorganização de disciplinas, currículos e programas de pesquisa e extensão.

Diante do agravamento das questões relacionadas ao DS, as IES têm apenas dois caminhos a escolher: se acomodar com a situação atual ou enfrentar a complexidade e buscar a incorporação da sustentabilidade de modo holístico em todas as áreas em que atuam.

Essa tese teve como finalidade auxiliar as IES a adotarem o segundo caminho. Para tanto, ela buscou, inicialmente, discutir a pertinência da aplicação dos conceitos relacionados à sustentabilidade corporativa ao ensino superior e, caso positivo, em que condições eles seriam aplicados. Do estudo resultou a proposta do uso conjunto da RSC, representada pelos ODS, e da SC, melhor traduzida pelo TBL, respectivamente para os subsistemas acadêmico e administrativo. Diante da constatação da relevância da governança para a transição sustentável das IES, foi proposto em novo conceito, o TBL-G, que mantém os três objetivos originais e destaca a governança como aspecto fundamental para o alcance dos três "*bottom lines*" originais do TBL: ambiental, social e econômico.

Na sequência, foi desenvolvido um *framework* denominado "Arquétipos de Ações Sustentáveis paras IES". Composto por 09 arquétipos, subdivididos em 04 grupos, essa estrutura também apresenta exemplos de ações no âmbito de cada arquétipo. A intenção foi

demonstrar de uma forma prática e simples de ser entendida o significado de uma universidade sustentável, numa visão holística. Os Arquétipos podem ser utilizados em programas de treinamento dos componentes da comunidade universitária e como apoio aos processos de planejamento estratégico da sustentabilidade das IES.

Por fim, foi desenvolvido um método para a integração do planejamento da sustentabilidade ao planejamento estratégico das IES que aplica o *framework* dos Arquétipos. O estudo partiu do desenvolvimento de uma estrutura "macro" de gerenciamento estratégico (05 fases) e, dessa estrutura, desdobrou a fase de planejamento estratégico em 08 subfases. O método, que envolve a participação ativa dos dirigentes da IES e de seus principais líderes, teve sua eficácia comprovada por meio da aplicação em uma instituição brasileira.

Tem-se a expectativa de que esta tese possa contribuir para a transição do ensino superior em direção ao DS. Diante do desafio que está posto às IES, não é possível nos contentarmos com avanços pontuais e esporádicos. É necessário que a complexidade da incorporação da sustentabilidade pelas universidades seja entendida e enfrentada, contando com uma governança eficaz que saiba equilibrar o firme propósito institucional com uma abordagem descentralizada e participativa. Caso contrário, as IES continuarão a reclamar dos governantes e do empresariado sem que elas mesmas cumpram a parte que lhes cabe em prol de um futuro sustentável.

6. Referências

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C) Posting e-reserves, course management systems, e-coursepacks or other academic distribution for audiovisual content, which grants not only the authorizations described in Section 14(b)(i)(A) above, but also the following authorizations: (i) to include the requested material in course materials for use consistent with Section 14(b)(i)(A) above; (ii) to display and perform the requested material to such members of such class in the physical classroom or remotely by means of streaming media or other video formats; and (iii) to "clip" or reformat the requested material for purposes of time or content management or ease of delivery, provided that such "clipping" or reformatting does not alter the underlying editorial content or meaning of the requested material and that the resulting material is used solely within the scope of, and in a manner consistent with, the particular authorization described in the Order Confirmation and the Terms. Unless expressly set forth in the relevant Order Conformation, the License does not authorize any other form of manipulation, alteration or editing of the requested material.

ii) Unless expressly set forth in the relevant Order Confirmation, no License granted shall in any way: (i) include any right by User to create a substantively non-identical copy of the Work or to edit or in any other way modify the Work (except by means of deleting material immediately preceding or following the entire portion of the Work copied or, in the case of Works subject to Sections 14(b)(1)(B) or (C) above, as described in such Sections) (ii) permit "publishing ventures" where any particular course materials would be systematically marketed at multiple institutions.

iii) Subject to any further limitations determined in the Rightsholder Terms (and notwithstanding any apparent contradiction in the Order Confirmation arising from data provided by User), any use authorized under the electronic course content pay-per-use service is limited as follows:

A) any License granted shall apply to only one class (bearing a unique identifier as assigned by the institution, and thereby including all sections or other subparts of the class) at one institution;

B) use is limited to not more than 25% of the text of a book or of the items in a published collection of essays, poems or articles;

C) use is limited to not more than the greater of (a) 25% of the text of an issue of a journal or other periodical or (b) two articles from such an issue;

D) no User may sell or distribute any particular materials, whether photocopied or electronic, at more

than one institution of learning;

E) electronic access to material which is the subject of an electronic-use permission must be limited by means of electronic password, student identification or other control permitting access solely to students and instructors in the class;

F) User must ensure (through use of an electronic cover page or other appropriate means) that any person, upon gaining electronic access to the material, which is the subject of a permission, shall see:

- a proper copyright notice, identifying the Rightsholder in whose name CCC has granted permission,
- a statement to the effect that such copy was made pursuant to permission,
- a statement identifying the class to which the material applies and notifying the reader that the material has been made available electronically solely for use in the class, and
- a statement to the effect that the material may not be further distributed to any person outside the class, whether by copying or by transmission and whether electronically or in paper form, and User must also

  ensure that such cover page or other means will print out in the event that the person accessing the material chooses to print out the material or any part thereof.

G) any permission granted shall expire at the end of the class and, absent some other form of authorization, User is thereupon required to delete the applicable material from any electronic storage or to block electronic access to the applicable material.

iv) Uses of separate portions of a Work, even if they are to be included in the same course material or the same university or college class, require separate permissions under the electronic course content pay-per-use Service. Unless otherwise provided in the Order Confirmation, any grant of rights to User is limited to use completed no later than the end of the academic term (or analogous period) as to which any particular permission is granted.

v) Books and Records; Right to Audit. As to each permission granted under the electronic course content Service, User shall maintain for at least four full calendar years books and records suffcient for CCC to determine the numbers of copies made by User under such permission. CCC and any representatives it may designate shall have the right to audit such books and records at any time during User's ordinary business hours, upon two days' prior notice. If any such audit shall determine that User shall have underpaid for, or underreported, any electronic copies used by three percent (3%) or more, then User shall bear all the costs of any such audit; otherwise, CCC shall bear the costs of any such audit. Any amount determined by such audit to have been underpaid by User shall immediately be paid to CCC by User, together with interest thereon at the rate of 10% per annum from the date such amount was originally due. The provisions of this paragraph shall survive the termination of this license for any reason.

c) *Pay-Per-Use Permissions for Certain Reproductions (Academic photocopies for library reserves and interlibrary loan reporting) (Non-academic internal/external business uses and commercial document delivery).* The License expressly excludes the uses listed in Section (c)(i)-(v) below (which must be subject to separate license from the applicable Rightsholder) for: academic photocopies for library reserves and interlibrary loan reporting; and non- academic internal/external business uses and commercial document delivery.

i) electronic storage of any reproduction (whether in plain-text, PDF, or any other format) other than on a transitory basis;

ii) the input of Works or reproductions thereof into any computerized database;

iii) reproduction of an entire Work (cover-to-cover copying) except where the Work is a single article;

iv) reproduction for resale to anyone other than a specific customer of User;

v) republication in any different form. Please obtain authorizations for these uses through other CCC services or directly from the rightsholder.

Any license granted is further limited as set forth in any restrictions included in the Order Confirmation and/or in these Terms.

d) *Electronic Reproductions in Online Environments (Non-Academic-email, intranet, internet and extranet).* For "electronic reproductions", which generally includes e-mail use (including instant messaging or other electronic transmission to a defined group of recipients) or posting on an intranet, extranet or Intranet site (including any display or performance incidental thereto), the following additional terms apply:

i) Unless otherwise set forth in the Order Confirmation, the License is limited to use completed within 30 days for any use on the Internet, 60 days for any use on an intranet or extranet and one year for any other use, all as measured from the "republication date" as identified in the Order Confirmation, if any, and otherwise from the date of the Order Confirmation.

ii) User may not make or permit any alterations to the Work, unless expressly set forth in the Order Confirmation (after request by User and approval by Rightsholder); provided, however, that a Work consisting of photographs or other still images not embedded in text may, if necessary, be resized, reformatted or have its resolution modified without additional express permission, and a Work consisting of audiovisual content may, if necessary, be "clipped" or reformatted for purposes of time or content management or ease of delivery (provided that any such resizing, reformatting, resolution modification or "clipping" does not alter the underlying editorial content or meaning of the Work used, and that the resulting material is used solely within the scope of, and in a manner consistent with, the particular License described in the Order Confirmation and the Terms.

15) Miscellaneous.

a) User acknowledges that CCC may, from time to time, make changes or additions to the Service or to the Terms, and that Rightsholder may make changes or additions to the Rightsholder Terms. Such updated Terms will replace the prior terms and conditions in the order workflow and shall be effective as to any subsequent Licenses but shall not apply to Licenses already granted and paid for under a prior set of terms.

b) Use of User-related information collected through the Service is governed by CCC's privacy policy, available online at www.copyright.com/about/privacy-policy/.

c) The License is personal to User. Therefore, User may not assign or transfer to any other person (whether a natural person or an organization of any kind) the License or any rights granted thereunder; provided, however, that, where applicable, User may assign such License in its entirety on written notice to CCC in the event of a transfer of all or substantially all of User's rights in any new material which includes the Work(s) licensed under this Service.

d) No amendment or waiver of any Terms is binding unless set forth in writing and signed by the appropriate parties, including, where applicable, the Rightsholder. The Rightsholder and CCC hereby object to any terms contained in any writing prepared by or on behalf of the User or its principals, employees, agents or affliates and purporting to govern or otherwise relate to the License described in the Order Confirmation, which terms are in any way inconsistent with any Terms set forth in the Order Confirmation, and/or in CCC's standard operating procedures, whether such writing is prepared prior to, simultaneously with or subsequent to the Order Confirmation, and whether such writing appears on a copy of the Order Confirmation or in a separate instrument.

e) The License described in the Order Confirmation shall be governed by and construed under the law of the State of New York, USA, without regard to the principles thereof of conflicts of law. Any case, controversy, suit, action, or proceeding arising out of, in connection with, or related to such License shall be brought, at CCC's sole discretion, in any federal or state court located in the County of New York, State of New York, USA, or in any federal or state court whose geographical jurisdiction covers the location of the Rightsholder set forth in the Order Confirmation. The parties expressly submit to the personal jurisdiction and venue of each such federal or state court.

Last updated October 2022

ANEXO 2 - Licença editorial para a utilização do artigo "*Developing a method for incorporating sustainability into the strategic planning of higher education institutions" nesta tese.*

Type of Use	Republish in a thesis/dissertation
Publisher	EMERALD GROUP

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Order Date	04-Jul-2023		PUBLISHING LIMITED
Order License ID	1372003-1	Portion	Chapter/article
ISSN	1467-6370		

6 LICENSED CONTENT

Publication Title	International journal of sustainability in higher education	Rightsholder	Emerald Publishing Limited
Article Title	Developing a method for incorporating sustainability into the strategic planning of higher education institutions	Publication Type	Journal
		Start Page	812
		End Page	839
		Issue	4
		Volume	24
Author/Editor	University Leaders for a Sustainable Future.		
Date	01/01/2000		
Language	English		
Country	United Kingdom of Great Britain and Northern Ireland		

7 REQUEST DETAILS

Portion Type	Chapter/article	Rights Requested	Main product
Page Range(s)	812-839	Distribution	Worldwide
Total Number of Pages	28	Translation	Original language of publication
Format (select all that apply)	Electronic	Copies for the Disabled?	No
Who Will Republish the Content?	Author of requested content	Minor Editing Privileges?	No
		Incidental Promotional Use?	No
Duration of Use	Life of current edition		
Lifetime Unit Quantity	Up to 499	Currency	USD

8 NEW WORK DETAILS

Title HOLISTIC INCORPORATION OF SUSTAINABILITY BY HIGHER EDUCATION INSTITUTIONS

Institution Name Unicamp

Instructor Name Luiz Eduardo Gaio

Expected Presentation Date 2023-12-15

9 ADDITIONAL DETAILS

Order Reference Number

N/A

The Requesting Person/Organization to Appear on the License

10 REQUESTED CONTENT DETAILS

Title, Description or Numeric Reference of the Portion(s)	Developing a method for incorporating sustainability into the strategic planning of higher education institutions	Title of the Article/Chapter the Portion Is From	Developing a method for incorporating sustainability into the strategic planning of higher education institutions
Editor of Portion(s)	Sanches, Francisco Elíseo Fernandes; Souza Junior, Marco Antonio Alves de; Massaro Junior, Flavio Rubens; Povedano, Rafael; Gaio, Luiz Eduardo	Author of Portion(s)	Sanches, Francisco Elíseo Fernandes; Souza Junior, Marco Antonio Alves de; Massaro Junior, Flavio Rubens; Povedano, Rafael; Gaio, Luiz Eduardo
Volume / Edition	24	Issue, if Republishing an Article From a Serial	4
Page or Page Range of Portion	812-839	Publication Date of Portion	2023-03-15

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1) Definitions. For purposes of these General Terms, the following definitions apply:

"License" is the licensed use the User obtains via the Marketplace platform in a particular licensing transaction, as set forth in the Order Confirmation.

"Order Confirmation" is the confirmation CCC provides to the User at the conclusion of each Marketplace transaction. "Order Confirmation Terms" are additional terms set forth on specific Order Confirmations not set forth in the General Terms that can include terms applicable to a particular CCC transactional licensing service and/or any Rightsholder- specific terms.

"Rightsholder(s)" are the holders of copyright rights in the Works for which a User obtains licenses via the Marketplace platform, which are displayed on specific Order Confirmations.

"Terms" means the terms and conditions set forth in these General Terms and any additional Order Confirmation Terms collectively.

"User" or "you" is the person or entity making the use granted under the relevant License. Where the person accepting the Terms on behalf of a User is a freelancer or other third party who the User authorized to accept the General Terms on the User's behalf, such person shall be deemed jointly a User for purposes of such Terms.

"Work(s)" are the copyright protected works described in relevant Order Confirmations.

2) Description of Service. CCC's Marketplace enables Users to obtain Licenses to use one or more Works in accordance with all relevant Terms. CCC grants Licenses as an agent on behalf of the copyright rightsholder identified in the relevant Order Confirmation.

3) Applicability of Terms. The Terms govern User's use of Works in connection with the relevant License. In the event of any conflict between General Terms and Order Confirmation Terms, the latter shall govern. User acknowledges that Rightsholders have complete discretion whether to grant any permission, and whether to place any limitations on any grant, and that CCC has no right to supersede or to modify any such discretionary act by a Rightsholder.

4) Representations; Acceptance. By using the Service, User represents and warrants that User has been duly authorized by the User to accept, and hereby does accept, all Terms.

5) Scope of License; Limitations and Obligations. All Works and all rights therein, including copyright rights, remain the sole and exclusive property of the Rightsholder. The License provides only those rights expressly set forth in the terms and conveys no other rights in any Works

6) General Payment Terms. User may pay at time of checkout by credit card or choose to be invoiced. If the User chooses to be invoiced, the User shall: (i) remit payments in the manner identified on specific invoices, (ii) unless otherwise specifically stated in an Order Confirmation or separate written agreement, Users shall remit payments upon receipt of the relevant invoice from CCC, either by delivery or notification of availability of the invoice via the Marketplace platform, and (iii) if the User does not pay the invoice within 30 days of receipt, the User may incur a service charge of 1.5% per month or the maximum rate allowed by applicable law, whichever is less. While User may exercise the rights in the License immediately upon receiving the Order Confirmation, the License is automatically revoked and is null and void, as if it had never been issued, if CCC does not receive complete payment on a timely basis.

7) General Limits on Use. Unless otherwise provided in the Order Confirmation, any grant of rights to User (i) involves only the rights set forth in the Terms and does not include subsequent or additional uses, (ii) is non-exclusive and non- transferable, and (iii) is subject to any and all limitations and restrictions (such as, but not limited to, limitations on duration of use or circulation) included in the Terms. Upon completion of the licensed use as set forth in the Order Confirmation, User shall either secure a new permission for further use of the Work(s) or immediately cease any new use of the Work(s) and shall render inaccessible (such as by deleting or by removing or severing links or other locators) any further copies of the Work. User may only make alterations to the Work if and as expressly set forth in the Order Confirmation. No Work may be used in any way that is unlawful, including without limitation if such use would violate applicable sanctions laws or regulations, would be defamatory, violate the rights of third parties (including such third parties' rights of copyright, privacy, publicity, or other tangible or intangible property), or is otherwise illegal, sexually explicit, or obscene. In addition, User may not conjoin a Work with any other material that may result in damage to the reputation of the Rightsholder. Any unlawful use will render any licenses hereunder null and void. User agrees to inform CCC if it becomes aware of any infringement of any rights in a Work and to cooperate with any reasonable request of CCC or the Rightsholder in connection therewith.

8) Third Party Materials. In the event that the material for which a License is sought includes third party materials (such as photographs, illustrations, graphs, inserts and similar materials) that are identified in such material as having been used by permission (or a similar indicator), User is responsible for identifying, and seeking separate licenses (under this Service, if available, or otherwise) for any of such third party materials; without a separate license, User may not use such third party materials via the License.

9) Copyright Notice. Use of proper copyright notice for a Work is required as a condition of any License granted under the Service. Unless otherwise provided in the Order Confirmation, a proper copyright notice will read substantially as follows: "Used with permission of [Rightsholder's name], from [Work's title, author, volume, edition number and year of copyright]; permission conveyed through Copyright Clearance Center, Inc." Such notice must be provided in a reasonably legible font size and must be placed either on a cover page or in another location that any person, upon gaining access to the material which is the subject of a permission, shall see, or in the case of republication Licenses, immediately adjacent to the Work as used (for example, as part of a by-line or footnote) or in the place where substantially all other credits or notices for the new work containing the republished Work are located. Failure to include the required notice results in loss to the Rightsholder and CCC, and the User shall be liable to pay liquidated damages for each such failure equal to twice the use fee specified in the Order Confirmation, in addition to the use fee itself and any other fees and charges specified.

10) Indemnity. User hereby indemnifies and agrees to defend the Rightsholder and CCC, and their respective employees and directors, against all claims, liability, damages, costs, and expenses, including legal fees and expenses, arising out of any use of a Work beyond the scope of the rights granted herein and in the Order Confirmation, or any use of a Work which has been altered in any unauthorized way by User, including claims of defamation or infringement of rights of copyright, publicity, privacy, or other tangible or intangible property.

11) Limitation of Liability. UNDER NO CIRCUMSTANCES WILL CCC OR THE RIGHTSHOLDER BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, OR INCIDENTAL DAMAGES (INCLUDING WITHOUT LIMITATION DAMAGES FOR LOSS OF BUSINESS PROFITS OR INFORMATION, OR FOR BUSINESS INTERRUPTION) ARISING OUT OF THE USE OR INABILITY TO USE A WORK, EVEN IF ONE OR BOTH OF THEM HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. In any event, the
total liability of the Rightsholder and CCC (including their respective employees and directors) shall not exceed the total amount actually paid by User for the relevant License. User assumes full liability for the actions and omissions of its principals, employees, agents, affliates, successors, and assigns.

12) Limited Warranties. THE WORK(S) AND RIGHT(S) ARE PROVIDED "AS IS." CCC HAS THE RIGHT TO GRANT TO USER THE RIGHTS GRANTED IN THE ORDER CONFIRMATION DOCUMENT. CCC AND THE RIGHTSHOLDER DISCLAIM ALL OTHER WARRANTIES RELATING TO THE WORK(S) AND RIGHT(S), EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ADDITIONAL RIGHTS MAY BE REQUIRED TO USE ILLUSTRATIONS, GRAPHS, PHOTOGRAPHS, ABSTRACTS, INSERTS, OR OTHER PORTIONS OF THE WORK (AS OPPOSED TO THE ENTIRE WORK) IN A MANNER CONTEMPLATED BY USER; USER UNDERSTANDS AND AGREES THAT NEITHER CCC NOR THE RIGHTSHOLDER MAY HAVE SUCH ADDITIONAL RIGHTS TO GRANT.

13) Efect of Breach. Any failure by User to pay any amount when due, or any use by User of a Work beyond the scope of the License set forth in the Order Confirmation and/or the Terms, shall be a material breach of such License. Any breach not cured within 10 days of written notice thereof shall result in immediate termination of such License without further notice. Any unauthorized (but licensable) use of a Work that is terminated immediately upon notice thereof may be liquidated by payment of the Rightsholder's ordinary license price therefor; any unauthorized (and unlicensable) use that is not terminated immediately for any reason (including, for example, because materials containing the Work cannot reasonably be recalled) will be subject to all remedies available at law or in equity, but in no event to a payment of less than three times the Rightsholder's ordinary license price for the most closely analogous licensable use plus Rightsholder's and/or CCC's costs and expenses incurred in collecting such payment.

14) Additional Terms for Specific Products and Services. If a User is making one of the uses described in this Section 14, the additional terms and conditions apply:

a) *Print Uses of Academic Course Content and Materials (photocopies for academic coursepacks or classroom handouts).* For photocopies for academic coursepacks or classroom handouts the following additional terms apply:

i) The copies and anthologies created under this License may be made and assembled by faculty members individually or at their request by on-campus bookstores or copy centers, or by off-campus copy shops and other similar entities.

ii) No License granted shall in any way: (i) include any right by User to create a substantively non-identical copy of the Work or to edit or in any other way modify the Work (except by means of deleting material immediately preceding or following the entire portion of the Work copied) (ii) permit "publishing ventures" where any particular anthology would be systematically marketed at multiple institutions.

iii) Subject to any Publisher Terms (and notwithstanding any apparent contradiction in the Order Confirmation arising from data provided by User), any use authorized under the academic pay-per-use service is limited as follows:

A) any License granted shall apply to only one class (bearing a unique identifier as assigned by the institution, and thereby including all sections or other subparts of the class) at one institution;

B) use is limited to not more than 25% of the text of a book or of the items in a published collection of essays, poems or articles;

C) use is limited to no more than the greater of (a) 25% of the text of an issue of a journal or other periodical or (b) two articles from such an issue;

D) no User may sell or distribute any particular anthology, whether photocopied or electronic, at more than one institution of learning;

E) in the case of a photocopy permission, no materials may be entered into electronic memory by User except in order to produce an identical copy of a Work before or during the academic term (or analogous period) as to which any particular permission is granted. In the event that User shall choose to retain materials that are the subject of a photocopy permission in electronic memory for purposes of producing identical copies more than one day after such retention (but still within the scope of any permission granted), User must notify CCC of such fact in the applicable permission request and such retention shall constitute one copy actually sold for purposes of calculating permission fees due; and

F) any permission granted shall expire at the end of the class. No permission granted shall in any way include any right by User to create a substantively non-identical copy of the Work or to edit or in any other way modify the Work (except by means of deleting material immediately preceding or following the entire portion of the Work copied).

b) Books and Records; Right to Audit. As to each permission granted under the academic pay-per-use Service, User shall maintain for at least four full calendar years books and records suffcient for CCC to determine the numbers of copies made by User under such permission. CCC and any representatives it may designate shall have the right to audit such books and records at any time during User's ordinary business hours, upon two days' prior notice. If any such audit shall determine that User shall have underpaid for, or underreported, any photocopies sold or by three percent (3%) or more, then User shall bear all the costs of any such audit; otherwise, CCC shall bear the costs of any such audit. Any amount determined by such audit to have been underpaid by User shall immediately be paid to CCC by User, together with interest thereon at the rate of 10% per annum from the date such amount was originally due. The provisions of this paragraph shall survive the termination of this License for any reason.

c) Digital Pay-Per-Uses of Academic Course Content and Materials (e-coursepacks, electronic reserves, learning management systems, academic institution intranets). For uses in e-coursepacks, posts in electronic reserves, posts in learning management systems, or posts on academic institution intranets, the following additional terms apply:

i) The pay-per-uses subject to this Section 14(b) include:

A) Posting e-reserves, course management systems, e-coursepacks for text-based content, which grants authorizations to import requested material in electronic format, and allows electronic access to this material to members of a designated college or university class, under the direction of an instructor designated by the college or university, accessible only under appropriate electronic controls (e.g., password);

B) Posting e-reserves, course management systems, e-coursepacks for material consisting of photographs or other still images not embedded in text, which grants not only the authorizations described in Section 14(b)(i)(A) above, but also the following authorization: to include the requested material in course materials for use consistent with Section 14(b)(i)(A) above, including any necessary resizing, reformatting or modification of the resolution of such requested material (provided that such modification does not alter the underlying editorial content or meaning of the requested material, and provided that the resulting modified content is used solely within the scope of, and in a manner consistent with, the particular authorization described in the Order Confirmation and the Terms), but not including any other form of manipulation, alteration or editing of the requested material;

C) Posting e-reserves, course management systems, e-coursepacks or other academic distribution for audiovisual content, which grants not only the authorizations described in Section 14(b)(i)(A) above, but also the following authorizations: (i) to include the requested material in course materials for use consistent with Section 14(b)(i)(A) above; (ii) to display and perform the requested material to such members of such class in the physical classroom or remotely by means of streaming media or other video formats; and (iii) to "clip" or reformat the requested material for purposes of time or content management or ease of delivery, provided that such “clipping” or reformatting does not alter the underlying editorial content or meaning of the requested material and that the resulting material is used solely within the scope of, and in a manner consistent with, the particular authorization described in the Order Confirmation and the Terms. Unless expressly set forth in the relevant Order Conformation, the License does not authorize any other form of manipulation, alteration or editing of the requested material.

ii) Unless expressly set forth in the relevant Order Confirmation, no License granted shall in any way: (i) include any right by User to create a substantively non-identical copy of the Work or to edit or in any other way modify the Work (except by means of deleting material immediately preceding or following the entire portion of the Work copied or, in the case of Works subject to Sections 14(b)(1)(B) or (C) above, as described in such Sections) (ii) permit "publishing ventures" where any particular course materials would be systematically marketed at multiple institutions.

iii) Subject to any further limitations determined in the Rightsholder Terms (and notwithstanding any apparent contradiction in the Order Confirmation arising from data provided by User), any use authorized under the electronic course content pay-per-use service is limited as follows:

A) any License granted shall apply to only one class (bearing a unique identifier as assigned by the institution, and thereby including all sections or other subparts of the class) at one institution;

B) use is limited to not more than 25% of the text of a book or of the items in a published collection of essays, poems or articles;

C) use is limited to not more than the greater of (a) 25% of the text of an issue of a journal or other periodical or (b) two articles from such an issue;

D) no User may sell or distribute any particular materials, whether photocopied or electronic, at more than one institution of learning;

E) electronic access to material which is the subject of an electronic-use permission must be limited by means of electronic password, student identification or other control permitting access solely to students and instructors in the class;

F) User must ensure (through use of an electronic cover page or other appropriate means) that any person, upon gaining electronic access to the material, which is the subject of a permission, shall see:

a proper copyright notice, identifying the Rightsholder in whose name CCC has granted permission,

a statement to the effect that such copy was made pursuant to permission, a statement identifying the class to which the material applies and notifying the reader that the material has been made available electronically solely for use in the class, and

a statement to the effect that the material may not be further distributed to any person outside the class, whether by copying or by transmission and whether electronically or in paper form, and User must also ensure that such cover page or other means will print out in the event that the person accessing the material chooses to print out the material or any part thereof.

G) any permission granted shall expire at the end of the class and, absent some other form of authorization, User is thereupon required to delete the applicable material from any electronic storage or to block electronic access to the applicable material.

iv) Uses of separate portions of a Work, even if they are to be included in the same course material or the same university or college class, require separate permissions under the electronic course content pay-per-use Service. Unless otherwise provided in the Order Confirmation, any grant of rights to User is limited to use completed no later than the end of the academic term (or analogous period) as to which any particular permission is granted.

v) Books and Records; Right to Audit. As to each permission granted under the electronic course content Service, User shall maintain for at least four full calendar years books and records suffcient for CCC to determine the numbers of copies made by User under such permission. CCC and any representatives it may designate shall have the right to audit such books and records at any time during User's ordinary business hours, upon two days' prior notice. If any such audit shall determine that User shall have underpaid for, or underreported, any electronic copies used by three percent (3%) or more, then User shall bear all the costs of any such audit; otherwise, CCC shall bear the costs of any such audit. Any amount determined by such audit to have been underpaid by User shall immediately be paid to CCC by User, together with interest thereon at the rate of 10% per annum from the date such amount was originally due. The provisions of this paragraph shall survive the termination of this license for any reason.

d) *Pay-Per-Use Permissions for Certain Reproductions (Academic photocopies for library reserves and interlibrary loan reporting) (Non-academic internal/external business uses and commercial document delivery).* The License expressly excludes the uses listed in Section (c)(i)-(v) below (which must be subject to separate license from the applicable Rightsholder) for: academic photocopies for library reserves and interlibrary loan reporting; and non- academic internal/external business uses and commercial document delivery.

i) electronic storage of any reproduction (whether in plain-text, PDF, or any other format) other than on a transitory basis;

ii) the input of Works or reproductions thereof into any computerized database;

iii) reproduction of an entire Work (cover-to-cover copying) except where the Work is a single article;

iv) reproduction for resale to anyone other than a specific customer of User;

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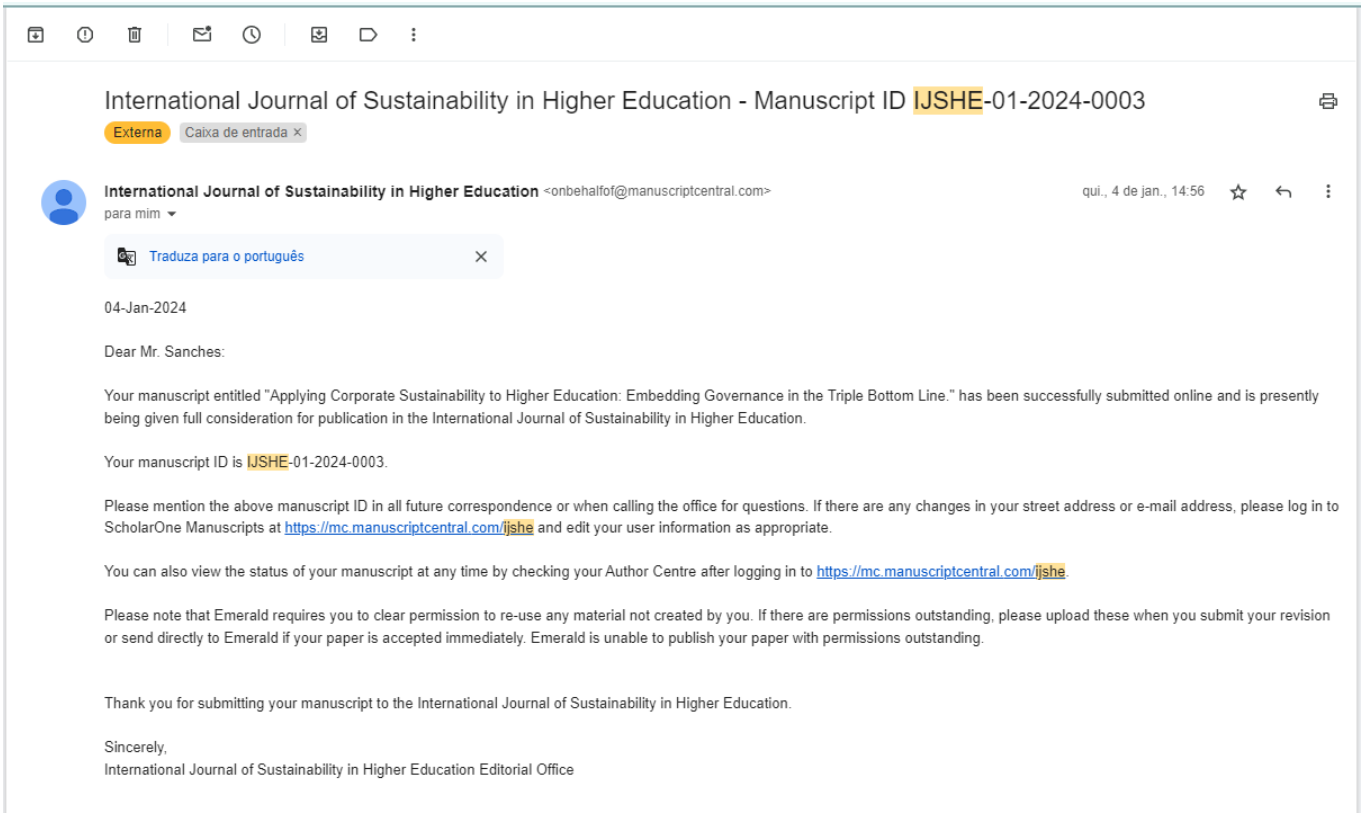
Last updated October 2022

ANEXO 3 – Comprovante da submissão do artigo "*Applying Corporate Governance to Higher Education: Embedding Governance in the Triple Bottom Line*"



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