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Januário Jose Monteiro

Embedding stakeholder pressure to enhance sustainable outcomes in hospitality industry: the effects of management controls

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O presente trabalho em nível de doutorado foi avaliado e aprovado pela banca examinadora composta pelos seguintes membros:

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Escuta, filho, os preceitos de mestre, e inclina o ouvido do teu coração;
recebe de boa vontade e executa eficazmente o conselho de um bom pai. (São Bento)

RESUMO

A demanda global por uma postura organizacional mais sustentáveis tem levado as organizações a adaptarem suas estruturas para atenderem às preferências dos stakeholders. Particularmente no setor de hospitalidade as demandas por uma postura mais sustentável se acentuam porque as atividades das organizações com maior representatividade nesse segmento (Hotéis e Restaurantes) geram consumo elevado de recursos escassos como água, energia e alimento, o que desperta maior atenção dos stakeholders. Baseado na Teoria dos Stakeholders, o objetivo geral deste estudo é analisar a influência da pressão dos stakeholders na sustentabilidade organizacional por meio de sistemas de controle gerencial. Esta tese é formada por três estudos interligados. O primeiro estudo analisou os efeitos da pressão dos stakeholder na estratégia sustentável proativa e no eco-controle em vista da melhoria do desempenho sustentável. Adicionalmente, o efeito moderador da ambidetria temporal foi avaliado. No segundo estudo, foram analisados os efeitos da pressão dos stakeholders na inovação ambiental ambidestra por meio do sistema de mensuração de desempenho ambiental. O terceiro estudo analisou os efeitos da pressão dos stakeholders (primário e secundário) e do controle baseado em valores éticos na responsabilidade social corporativa. Para testar as hipóteses foram desenvolvidas três *surveys* com empresas do setor de hospitalidade (Hotéis e Restaurantes). No primeiro estudo, a *survey* foi aplicada e 201 respostas válida de gestores de hotéis brasileiros foram obtidas. As hipóteses deste estudo foram testadas por meio de regressão baseada nos mínimos quadrados parciais (*Partial Least Square-PLS regression*) e complementarmente a *fuzzy set Qualitative Comparative Analysis* foi aplicada para ampliar o escopo dos resultados. No segundo estudo, a *survey* resultou em 196 respostas válidas de hotéis brasileiros que foram analisadas mediante regressão baseada nos mínimos quadrados parciais (*Partial Least Square-PLS*), onde abordagens complementares como a FIMIX e a análise de desempenho e importância (*importance performance map analysis* – IPMA) foram enfatizadas. O terceiro estudo aplicou *survey* com gestores de restaurantes e resultou em 190 respostas válidas. Para a análise dos resultados a modelagem de equações estruturais bem como *fuzzy set qualitative comparative analysis* foram utilizadas. De modo geral, os resultados demonstram (i) a importância de incorporar a pressão dos stakeholders no eco-controle e confirmam o papel mediador da estratégia sustentável proativa nessa relação. Além disso, os achados sugerem que a ambidextria temporal reforça o efeito do eco-controle no desempenho sustentável; (ii) os resultados confirmam que a pressão dos stakeholders influencia positivamente a inovação ambiental ambidestra por meio do sistema de mensuração de desempenho ambiental e (iii) que a influência da pressão dos stakeholders secundários na responsabilidade social corporativa é maior do que a exercida pelos stakeholders primários. Adicionalmente, demonstra-se que o controle baseado nos valores éticos é crucial para que os restaurantes se tornem cada vez mais socialmente responsáveis. As evidências apresentadas nessa tese geram implicações teóricas que ampliam a compreensão das pressões dos stakeholder no setor de hospitalidade e confirmam o papel fundamental do sistema de controle gerencial na previsão da sustentabilidade organizacional.

Palavras-chave: Teoria dos stakeholders. Controle gerencial. Sustentabilidade organizacional. Setor de hospitalidade.

RESUMO EXPANDIDO

Introdução

O atual cenário de mudanças climáticas revela que as questões sobre preservação do meio ambiente que vêm sendo debatidas a décadas ainda não atingiram o resultado final desejado. Para isso esforços conjuntos são necessários para que as metas de sustentabilidade estabelecidas por exemplo pela ONU sejam alcançadas. Sabe-se que as atividades empresariais envolvem a exploração de recursos naturais, a criação de produtos não recicláveis e não só, que inegavelmente afetam o meio ambiente e as condições sociais da comunidade local (Ligonie et al., 2021; Beusch et al., 2022). Entre os diversos campos de estudo na esfera organizacional, no que se refere a sustentabilidade o setor de hospitalidade desperta atenção devido a quantidade elevada de recursos naturais que são dispendidos durante as operações (Aboramadan & Karatepe, 2021). Esta tese explora as preocupações sobre sustentabilidade com particularidade nesse setor motivada pelas seguintes razões: (i) a elevada quantidade de água que as atividades das empresas de hospitalidade demandam têm contribuído para o estresse hídrico (Antonova et al., 2021), (ii) o uso de produtos químicos para manter o ambiente de hospedagem adequado aos turistas tendem a ser nocivos para o meio ambiente (iii) e o desperdício de alimentos são questões de crescente preocupação no segmento de hospitalidade (Rosa et al., 2021). Essas razões têm despertado o interesse dos diversos indivíduos e grupos com os quais as empresas mais representativas do segmento de hospitalidade (Hotéis e Restaurantes) estabelecem relação diretas ou indiretas (Wagner & Schewe, 2019). Esses indivíduos e grupos são classificados na literatura como stakeholders (Hörisch, Schaltegger & Freeman, 2020). Baseada na Teoria dos Stakeholders, essa tese identificou lacunas teóricas que visam compreender melhor: (i) as demandas dos diferentes stakeholder, de modo que seja criado valor para os mesmos, (ii) o papel do sistema de controle gerencial na sustentabilidade organizacional, frente às pressões dos stakeholders e, (iii) a conexão da ética e o *business decision* em direção a uma postura socialmente aceitáveis. Abordar sobre esses *gaps* é importante porque melhora a compreensão sobre o papel dos stakeholders na gestão da sustentabilidade e na legitimação das práticas organizacionais, na geração de inovações ambientais e no fomento da ética e de comportamentos socialmente responsáveis.

Objetivos

Para tanto, o objetivo geral desta tese é analisar a influência da pressão dos stakeholders na sustentabilidade organizacional por meio de sistemas de controle gerencial. Quanto aos objetivos específicos, este estudo visa (i) analisar os efeitos da pressão dos stakeholder na estratégia sustentável proativa e no eco-controle em vista da melhoria do desempenho sustentável, (ii) analisar os efeitos da pressão dos stakeholders na inovação ambiental ambidestra por meio do sistema de mensuração de desempenho ambiental (EPMS) e (iii) analisar os efeitos da pressão dos stakeholders (primário e secundário) e do controle baseado em valores éticos na reponsabilidade social corporativa (CSR). Para atender aos objetivos foram desenvolvidos três estudos interligados que formaram essa tese.

Metodologia

Os três estudos que formam essa tese foram aplicados no setor de hospitalidade pelas seguintes razões: (i) o atual contexto de mudanças climáticas geram preocupações ambientais que estão diretamente relacionadas às operações das empresas do segmento de hospitalidade, como o alto

consumo de água que tem causado estresse hídrico, o uso de produtos químicos nas operações que tem afetado o meio ambiente, além dos desperdícios de alimento e (ii) o segmento de hospitalidade é representativo para a economia brasileira, e pode servir de vitrine da cultura verde local. No primeiro estudo, a partir de uma *survey* foram obtidas 201 respostas completas de hotéis brasileiros e as hipóteses foram testadas por meio de regressão baseada nos mínimos quadrados parciais (*Partial Least Square-PLS regression*). Adicionalmente, a *fuzzy set Qualitative Comparative Analysis* foi aplicada para refinar os resultados do PLS. O segundo estudo foi operacionalizado com dados de *survey* coletados em 196 hotéis brasileiros e as hipóteses foram analisadas mediante regressão baseada nos mínimos quadrados parciais (*Partial Least Square-PLS*). Complementarmente, a abordagem FIMIX é usada para testar a heterogeneidade não observada e a análise de desempenho e importância (*importance performance map analysis* – IPMA) para sugerir implicações gerencias que melhoram a inovação nos hotéis. O terceiro estudo aplicou o método *survey* e obteve 190 respostas de restaurantes brasileiros. A modelagem de equações estruturais foi utilizada para testar as hipóteses. Complementarmente, a análise *fuzzy set qualitative comparative analysis* foi aplicada para refinar os achados.

Resultados e Discussão

Os resultados do primeiro estudo destacam a importância de incorporar a pressão dos stakeholders no eco-controle e confirmam o papel mediador da estratégia sustentável proativa nessa relação. Os resultados revelam que a relação positiva entre a pressão dos stakeholders e o desempenho sustentável é mediada pelo eco-controle. Além disso, o papel moderador da ambidestria temporal é confirmado, sugerindo que quanto mais ambidestra mais o eco-controle afeta positivamente o desempenho sustentável. A abordagem assimétrica reforça esses resultados ao revelar que a pressão dos stakeholders, a estratégia sustentável proativa, o eco-controle e a ambidestria temporal são soluções fundamentais para o aprimoramento dos resultados de sustentabilidade no setor de hospitalidade. Os resultados do segundo estudo demonstram que a pressão dos stakeholders influencia positivamente a inovação ambiental ambidestra por meio do sistema de mensuração de desempenho ambiental. Os resultados mostram também que a ambidestria contextual na indústria da hospitalidade facilita o efeito do sistema de mensuração de desempenho ambiental na inovação ambiental ambidestra. Os resultados do terceiro estudo mostram que a pressão dos stakeholders influencia positivamente a responsabilidade social corporativa, de forma que a pressão dos stakeholders secundários se destaca. Os resultados mostram que o alto nível de controle baseado em valores éticos intensifica mais o efeito positivo da pressão stakeholders secundários na responsabilidade social corporativa do que o efeito da pressão stakeholders primários. O controle baseado em valores éticos também influencia a decisão ética e, assim, facilita o alcance da responsabilidade social corporativa. Os resultados do fsQCA informam que quando a pressão dos stakeholder secundários, o controle baseado em valores éticos e a decisão ética são combinados, maior é a responsabilidade social corporativa.

Considerações Finais

No geral, esta tese contribui para a literatura de três formas. Em primeiro lugar, o estudo respondeu a questões que estavam abertas, ao sugerir a conexão da Teoria dos Stakeholders, do controle gerencial e a literatura sobre ambidestria como formas de melhorar a gestão da sustentabilidade no contexto da hospitalidade. Esses resultados sugerem que no segmento de hospitalidade, a implementação de eco-controle que leva em consideração as preferências dos stakeholders é um fator decisivo na melhoria do desempenho ambiental, econômico e social,

levando ao uso mais consciente dos recursos escassos e redução de custos. Adicionalmente os gestores são incentivados a conciliarem as tensões intertemporais (de curto e longo prazo) relacionados a busca pela sustentabilidade, dado que essa conciliação reforça a efetividade do sistema de controle e facilita a busca pela eficiência nas operações e redução de desperdícios recursos como água, energia entre outros. Em segundo lugar, ampliando o conhecimento sobre como as empresas de hospitalidade gerenciam a inovação ambiental para atingir metas sustentáveis, sugere-se a pressão dos stakeholders, PMS ambiental e ambidestria contextual como importantes preditores. A compreensão das demandas dos stakeholders impulsionam a busca de forma mais inovadoras de resolver problemas ambientais, fator que aumenta a qualidade dos serviços na área de hospitalidade, mediante melhorias contínuas e radicais balizadas na implementação de processos de reutilização e reciclagem de recursos, bem com fortalecimento da tecnologia verde. Aos gestores é recomendado que a adaptabilidade e flexibilidade sejam consideradas como capacidades organizacionais para que favoreçam simultaneamente a inovação radical e incremental de produtos e serviços. Em terceiro lugar, este estudo contribui para a literatura ao trazer o controle baseado em valores éticos como uma prática gerencial que os restaurantes podem adotar para apoiar seus objetivos de longo prazo relacionados à responsabilidade social corporativa. Recomenda-se ainda, maior atenção às pressões exercidas pelos stakeholder primários e secundários, porque levam a maior transparência e integridade na divulgação das ações organizacionais, fomentam maior responsabilidade social, e facilita indiretamente a adoção da ética como princípio organizacional fundamental.

Palavras-chave: Teoria dos stakeholders. Controle gerencial. Sustentabilidade organizacional. Setor de hospitalidade.

ABSTRACT

The global demand for a more sustainable organizational attitude has led organizations to adapt their structures to meet stakeholder preferences. The demands for a more sustainable attitude are accentuated in the hospitality industry since the activities of the most representative firms in this sector (hotels and restaurants) consume a large amount of scarce resources such as water, energy, and food, which attracts greater attention from stakeholders. Based on Stakeholder Theory, the general objective of this study is to analyze the influence of stakeholder pressure on organizational sustainability through management control systems. This dissertation consists of three interconnected studies. The first study analyzed the effects of stakeholder pressure on proactive sustainable strategy and eco-control in improving sustainable performance. Additionally, the moderating effect of temporal ambidexterity was evaluated. In the second study, the effects of stakeholder pressure on ambidextrous environmental innovation through the environmental performance measurement system were analyzed. The third study analyzed the effects of stakeholder pressure (primary and secondary) and control based on ethical values on corporate social responsibility. To test the hypotheses, three surveys were developed with hospitality firms (Hotels and Restaurants). In the first study, the survey was applied and 201 valid responses from Brazilian hotel managers were obtained. The hypotheses of this study were tested by through Partial Least Square-PLS regression and in addition, the fuzzy set Qualitative Comparative Analysis was applied to expand the scope of the results. In the second study, the survey resulted in 196 valid responses from Brazilian hotels that were analyzed using regression based on partial least squares estimation, where complementary approaches such as FIMIX and importance performance map analysis – IPMA were emphasized. The third study applied a survey with restaurant managers and resulted in 190 valid responses. For the analysis of the results, structural equation modeling as well as fuzzy set qualitative comparative analysis were used. Overall, the results demonstrate (i) the importance of incorporating stakeholder pressure into eco-control and confirm the mediating role of the proactive sustainable strategy in this relationship. Furthermore, the findings suggest that temporal ambidexterity reinforces the effect of eco-control on sustainable performance; (ii) the results confirm that stakeholder pressure positively influences ambidextrous environmental innovation through the environmental performance measurement system and (iii) that the influence of secondary stakeholder pressure on corporate social responsibility is stronger than that exerted by primary stakeholder. Additionally, it is demonstrated that ethical value-based control is crucial for restaurants to become increasingly socially responsible. The evidence presented in this dissertation generates theoretical implications that expand the understanding of stakeholder pressures in the hospitality industry and confirm the fundamental role of the management control system in predicting organizational sustainability.

Keywords: Stakeholder Theory. Management control. Organizational sustainability. Hospitality industry.

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ACRONYMS AND ABBREVIATIONS

AIC Akaike's information criterion

AIC3 Modified AIC with Factor 3

AIC4 Modified AIC with Factor 4

AVE Average Variance Extracted

BIC Bayesian information criterion

CAIC Consistent AIC

CR Composite Reliability

CA Cronbach Alpha

EN Entropy Statistic (Normed)

EPMS Environmental Performance measurement system

FIMIX Finite mixture

HQ Hannan Quinn Criterion

LNL Log likelihood

MCS Management control system

MDL5 Minimum Description Length with Factor 5

NEC Normalized Entropy Criterion

NFI Non-Fuzzy Index

NUPECON Núcleo de Estudos e Pesquisa em Controladoria

PLS Partial Least Square

ST Stakeholder Theory

SUMMARY

1. DISSERTATION INTRODUCTION

The current scenario marked by climate change reveals that the decades of debates on environmental protection have not yet reached the desired result. Joint efforts are still necessary to head in this direction, putting forward agendas such as the UN sustainable development goals (Kronenberg & Fuchs, 2021). It is common knowledge that business activities involve exploiting natural resources and creating non-recyclable products, undeniably affecting the environment and local communities (Ligonie et al., 2021; Beusch et al., 2022). Sustainability is among the many fields addressed in the organizational sphere. It is particularly important for the hospitality industry due to its high consumption of natural resources (Aboramadan & Karatepe, 2021). This dissertation explores the issue of sustainability in the hospitality sector, motivated by three issues. First, the high amount of water consumed in this sector has worsened water stress (Antonova et al., 2021). Second, using chemicals to maintain accommodations suitable for tourists tend to harm to the environment. Finally, the third reason is food waste, an issue of growing concern in this industry (Rosa et al., 2021). The elements around these three issues have caught the attention of many individuals and groups: stakeholders (Hörisch, Schaltegger & Freeman, 2020) that maintain business relationships with hospitality firms (Wagner & Schewe, 2019). Thus, this dissertation explores the issue of sustainability by adopting the stakeholder theory and explaining the theory's assumptions.

Globalization and the rapid pace of technological changes have induced the active participation of various agents in the business. This phenomenon increased the managers' perception that their actions can affect and are influenced by a range of individuals or groups with the power to condition the scope of organizational goals (Freeman & Reed, 1983; Clement, 2005; Parmar et al., 2010; Hörisch, Schaltegger & Freeman, 2020). In this vein, the Stakeholder Theory (ST) emerges to understand the process of creating value and solving social problems through greater interaction between the organization and its stakeholders (FreemanL & Reed, 1983).

Stakeholders are individuals or groups that can influence or be influenced by the organization (employees, government, suppliers, customers, and community, for example) (Freeman & Reed, 1983; Parmar et al., 2010; Hörisch, Schaltegger & Freeman, 2020). Value creation aligned with stakeholders' interests represents the core assumption of the ST (Freeman, Wicks & Parmar, 2004; Parmar et al., 2010), which emphasizes two main issues. The first is how the organization shares the values created and pays attention to stakeholders, and the second concerns the organization's responsibility to stakeholders and the type of relationship it seeks to build with them (Freeman, 1994; Freeman, Wicks & Parmar, 2004). Thus, it is possible

to argue that an organization's relationship with its stakeholders may become a key success factor if well managed.

The ST has been widely addressed in different fields of business research (Roberts, 1992; Ruf et al., 2001; Perego & Hartmann, 2009; Parmar et al., 2010; Rodrigue, Magnan & Boulianne, 2013; Lisi, 2015; Hörisch, Schaltegger & Freeman, 2020; Shahzad et al., 2020; Tran et al., 2020), due to its particular emphasis on strategic business management. However, new studies are needed in management accounting literature to build a robust body of studies seeking to understand new phenomena through ST (Freeman et al., 2010; Mitchell et al., 2015; Kaur & Lodhia, 2018; Hörisch, Schaltegger & Freeman, 2020), mainly in the management control area.

The concept of sustainability has often permeated the movement to incorporate the ST in the management accounting literature (Ex. Perego & Hartmann, 2009; Rodrigue, Magnan & Boulianne, 2013; Lisi, 2015; Herremans & Nazari, 2016; Joshi & Li, 2016), possibly because the concept refers to actions aligning environmental and socioeconomic feasibility, and assessing decisions (Starik & Kanashiro, 2013) that affect stakeholders. Thus, the ST is important when sustainability is the central issue in the management accounting debate (Hörisch, Schaltegger & Freeman, 2020; Hummel, Laun & Krauss, 2020; Brooks & Schopohl, 2021). In addition, based on previous studies this dissertation identified theoretical gaps, such as the need for a better understanding of the synergy between different stakeholders, the value creation process, and the integration of ethics into the business decision (Hörisch, Freeman & Schaltegger, 2014; Hörisch, Schaltegger & Freeman, 2020).

Previous studies demonstrate that stakeholder pressure plays an important role in maintaining organizational sustainability (Lisi, 2015; Hummel, Laun & Krauss, 2020; Brooks & Schopohl, 2021). Faced with a context of climate change, social inequality, and scarcity of resources, stakeholders pressure organizations to adopt ethical, socioeconomic, and ecologically correct positions (Hörisch, Freeman & Schaltegger, 2014; Helmig, Spraul & Ingenhoff, 2016; Hörisch, Schaltegger & Freeman, 2020). The organizations respond by implementing proactive strategies and providing structural arrangements that incorporate concerns about sustainability into the firm's agendas (Sarkis, Gonzalez-Torre, & Adenso-Diaz, 2010; Egels-Zandén & Rosén, 2015; Wijethilake, Munir & Appuhami, 2017). Incorporating stakeholders' preferences into the organizations' decision-making agendas shapes these actors' perceptions and increases the legitimacy of the firms' actions (Sharpe, Harwell & Jackson, 2021). For example, stakeholders increasingly prefer to establish relationships with organizations that demonstrate ethics as a corporate principle (Jamali, 2008; Olsen, 2017).

The literature suggests that stakeholder pressures for socially responsible behavior lead organizations to establish ethical programs (Weaver, Treviño & Cochran, 1999a). Ethics is inherent in the organizational structure and materializes beliefs, codes, ethics, and communication, also operating as a disciplinary mechanism (Weaver, Treviño & Cochran, 1999a; Chang, 2011; Guo, Wang, & Yang, 2020). The pressure for an ethical attitude is related to the value it generates for stakeholders (Freeman, 2010; Hörisch, Schaltegger & Freeman, 2020). However, questions regarding the interwoven effect of stakeholder pressure and ethical decision remain open in management accounting literature.

The literature points out that firms have adopted environmental management control systems to achieve organizational goals and meet stakeholder expectations while maintaining good sustainability management (Lisi, 2015; Hansen & Schaltegger, 2016; Wijehilake, Munir & Appuhami, 2017) since the environmental controls translated the organization's environmental strategy (Henri & Journeault, 2010; Journeault, 2016; Journeault, Ronge, & Henri, 2016; Abdel-Maksoud, Jabbour, & Abdel-Kader, 2020; Heggen & Sridharan, 2020). However, further research is needed to understand how environmental MCS translates proactive sustainable strategy into benefits for organizational sustainability (Arjaliès & Mundy, 2013; Wijethilake, Munir & Appuhami, 2017). Previous studies have shown that firms that realize the importance of stakeholders strengthen their management control systems for sustainability (Wijethilake, Munir & Appuhami, 2017; Abdel-Maksoud, Jabbour & Abdel-Kader, 2020), improve economic, environmental (Lisi, 2015; Wijethilake, Munir & Appuhami, 2017; Abdel-Maksoud, Jabbour & Abdel-Kader, 2020), and social performance (Wijethilake, Munir & Appuhami, 2017), and engage in environmental innovation (Veronica et al., 2020) and corporate social responsibility (CSR) (Farmaki, 2019). This dissertation considers that organizational sustainability encompasses sustainable performance, environmental innovation and CSR.

Achieving sustainability by using MCS may be conditioned to interveners that determine the intensity of the sustainability. For example, the ability to link resources to organizational demands – understood as ambidexterity (Gibson & Birkinshaw, 2004) – can facilitate the effect of the environmental MCS on organizational sustainability. The efforts considering temporal and contextual aspects can change the intensity of managerial information (Gibson & Birkinshaw, 2004; Slawinski & Bansal, 2015; Wang et al., 2019), so it is argued that such efforts intensify the effects of the MCS, which seeks to achieve the organizational goals.

Temporal ambidexterity concerns the organizational capability to commit to actions that have both short and long-term implications (Wang et al., 2019). Contextual ambidexterity refers to the alignment and adaptability of management systems, which simultaneously dedicates

attention to the organization's previously established goals and gives the necessary flexibility for a rapid response to changes in the market (Gibson & Birkinshow, 2004). In order to achieve sustainability goals, it is necessary not only to undertake short-term actions and system adaptability but also adopt long-term and flexible measures (Slawinski & Bansal, 2015; Khan & Mir, 2019).

The nuances involving the interface between stakeholder pressure, MCS, ambidexterity, and sustainability are relatively recent in the management accounting literature and require further research. Against this backdrop, the general objective of this study is to analyze the influence of stakeholder pressure on organizational sustainability through management control systems. As for specific objectives, this study aims (i) to analyze the effects of stakeholder pressure on proactive sustainable strategy and eco-control for the enhancement of sustainable performance, (ii) to analyze the effects of stakeholder pressure on ambidextrous environmental innovation through environmental performance measurement system (EPMS), and (iii) analyze the effects of stakeholder pressure (primary and secondary) and ethical value-based control on CSR. Figure 1 presents the theoretical model of this dissertation.

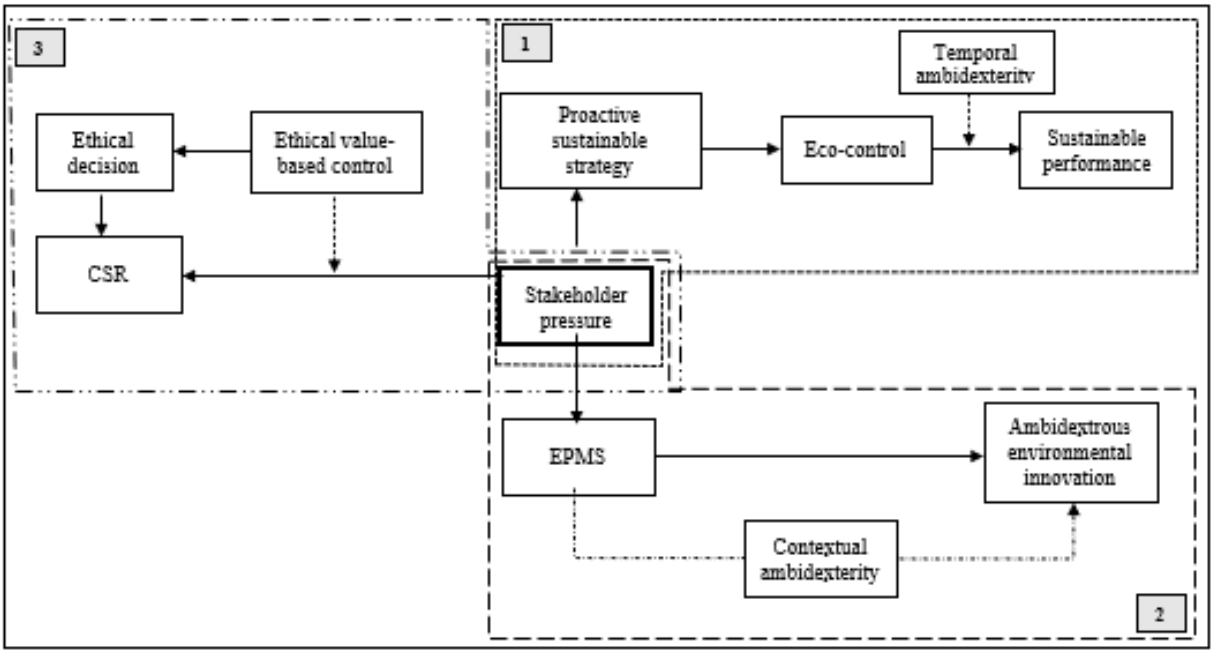

Figure 1. Dissertation's theoretical model

The ST is the basis for the three studies presented in this dissertation. They seek to understand organizational sustainability through sustainable strategy, ambidexterity, ethical decision, and MCS focused on sustainable issues. In the first study, ST is represented by stakeholder pressure and is adopted to explain sustainable performance. The study suggests that stakeholder pressure can affect sustainable performance if the organization adopts a proactive

sustainable strategy and eco-control. Also, it explores the literature on ambidexterity, defined as the organization's ability to deal simultaneously with multiple objectives. Specifically, the first study examines how temporal ambidexterity can enhance the effect of eco-control on sustainable performance.

The second study explores the effects of stakeholder pressure on ambidextrous environmental innovation, arguing that value creation needs to meet stakeholders' demands, which requires organizations to seek innovation. Management accounting literature has reported that the MCS fosters innovation within firms (Henri, 2006; Naranjo-Gil & Hartmann, 2007; Widener, 2007; Bisbe & Malagueño, 2009; Cugueró-Escofet & Rosanas, 2013; Bisbe & Malagueño, 2015; De Harlez & Malagueño, 2016; Lopez-Valeiras et al., 2016; Bedford et al., 2019). However, the relationship between environmental MCS and environmental innovation is still little known. Thus, organizations are expected to adopt the environmental PMS to promote ambidextrous environmental innovation in the face of stakeholder pressures. Additionally, the mediating role of contextual ambidexterity is explored, considering it consists of the organization's ability to strategically align its goals and be flexible in the face of adversities, leading to greater ambidextrous environmental innovation.

In the third study, considering the ST demands for a better understanding of the interconnection between ethics and business decisions, the impacts of stakeholder pressure and Ethical value-based control on CSR are analyzed. Pressures for a socially acceptable attitude lead organizations to establish ethical programs and controls based on ethical values, which results in a higher degree of CSR.

The three studies were conducted in the hospitality industry because this sector requires high consumption of natural resources, making it an appropriate segment to explore sustainability issues. The first and second studies were conducted in Brazilian hotels, and the third in Brazilian restaurants. They are based on quantitative research and adopt the analytical lens of the ST. The gaps observed in the ST can be considered opportunities for further research contributing to the literature on MCS seeking to explain organizational sustainability. This dissertation assumes that stakeholder pressure affects sustainable performance, ambidextrous environmental innovation, and CSR, and the response to such pressure is supported by management control systems (Eco-control, environmental PMS, Ethical value-based control) (Dissertation's assumption).

The relevance of this dissertation lies in the understanding that the synergy of pressures from different stakeholders influences organizational sustainability through environmental MCS. Exploring the interfaces of the ST in the context of emerging economies such as Brazil

allows deepening the nuances of the theory and comprehending how firms in this context manage stakeholders' demands to improve performance (Boaventura et al., 2020). In the context of hospitality, such a theoretical approach is relevant since the day-to-day operations of the organizations have a direct impact on natural resources (e.g., water, energy) and increasingly attract the stakeholders' attention (Jones et al., 2016; Guix et al., 2018; Gerdt, Wagner & Schewe, 2019).

The theoretical contribution of this work consists of bringing together four approaches that have gained the interest of researchers in the business area, namely, stakeholder pressure, MCS, organizational ambidexterity, and organizational sustainability. The originality of this set of studies lies in the limited knowledge accumulated on management accounting and hospitality literature regarding organizational sustainability (Lisi, 2015; Wijethilake, Munir & Appuhami, 2017; Guix et al., 2018; Gerdt, Wagner & Schewe, 2019; Abdel-Maksoud, Jabbour & Abdel-Kader, 2020; Brooks & Schopohl, 2021). Research in this area has emphasized economic and environmental aspects (e.g., Henri & Journeault, 2010; Lisi, 2015; Journeault, 2016; Journeault, Ronge, & Henri, 2016; Kim et al., 2020). However, there seems to be space to incorporate other aspects (the social dimension, for example) in an interconnected way. Furthermore, the understanding of the connection between environmental MCS and sustainability under the lens of the ST is inconclusive.

This dissertation offers several contributions to advance theoretical and practical knowledge linked to the interface between stakeholder pressures, MCS, and organizational sustainability. Firstly, the theoretical contributions are that stakeholder pressure allows organizations to achieve greater sustainable performance, highlighting stakeholder preferences during decision-making agendas, proactively adopting sustainable strategies, and translating them into eco-control. Specifically, this dissertation recommends that the pressure from main hospitality stakeholders should be balanced, such that the preference of both primary (e.g. employees, customers and suppliers) and secondary stakeholders (e.g. community, government and social media) can be addressed during the decision-making process. Also, the study highlights eco-control as an important driver that embeds stakeholder pressure to create sustainable value (e.g., sustainable performance). Furthermore, it introduces temporal ambidexterity in management accounting literature as a key factor that reinforces the influence of eco-control on sustainable performance. Secondly, it contributes to a better understanding of ambidextrous environmental innovation by suggesting that, in the face of stakeholder pressures, the environmental PMS impacts contextual ambidexterity, leading to greater ambidextrous environmental innovation. This dissertation contributes to the literature that has recognized the

pivotal role of EPMS in creating value for stakeholders (e.g ambidextrous environmental innovation). Also, hospitality firms are encouraged to simultaneously foster alignment and adaptability capabilities to facilitate environmental innovation. Thirdly, it contributes to filling the theoretical gap inherent in the connection between ethical issues and business decision to create value for the organization and its stakeholders. Stakeholders' demands for a socially responsible attitude demonstrate their importance for sustainability management, embodied in CSR. Specifically, this dissertation brings novelty by suggesting that in the prediction of CSR the impact of secondary stakeholder pressure (e.g community, government and social media) is more effective than those of primary stakeholders (e.g employees, customers and suppliers). Furthermore, it contributes to the proposal that ethical value-based control intensifies the influence of stakeholder pressure on CSR.

These studies help fill the gaps on the ST, particularly about the comprehension of the synergy between the different stakeholders and the value creation process. Thus, it helps to advance the research on management accounting (Henri & Journeault, 2010; Lisi, 2015; Journeault, 2016; Journeault, Ronge & Henri, 2016; Hummel, Laun & Krauss, 2020), focusing on social aspects inherent in sustainability, which has received little attention in the literature (Wijethilake, Munir & Appuhami, 2017; Hummel, Laun & Krauss, 2020), besides environmental and economic aspects. The literature exploring the MCS's role in fostering environmental innovation and ethical decisions is also expanded (Rosanas & Velilla, 2005; Chang, 2011; Wijethilake, Munir & Appuhami, 2018) under the lens of the ST.

In terms of practice, the evidence from these studies supports sustainability management in the hospitality sector. First, the research suggests to managers that the value creation process should consider stakeholders' preferences, so the relationship between organizations and their partners is increasingly strengthened. Thus, resources availability and replacement occur promptly, resulting in better decision-making. Second, it contributes by suggesting greater attention to the services that hospitality firms provide to stakeholders. Hospitality firms are increasingly subject to Online reviews and environmental certifications that inform the organization's position on the issue, directly reflecting the occupancy rate (revenue). Third, environmental innovation management allows managers to optimize processes, reduce expenses, and delineate new ways of acting in the market, contributing to improving hospitality firms' practices.

In methodological terms, this dissertation followed the recommendations of Burrel and Morgan (1979). Therefore, it adopts functionalist and objectivist paradigms based on the objectivity of social phenomena. Also, it is a positivist and realist research regarding the

epistemological and ontological dimensions since the research seeks to observe social reality from real and predictable structures. The work is nomothetical, i.e., it uses technical resources and follows systematic outlines.

This work is associated with the line of research on MCS at the Controllership Research Center (*Núcleo de Pesquisa em Controladoria* – NUPECON) of the Federal University of Santa Catarina (UFSC) and aims to highlight the importance of the MCS in fostering organizational sustainability considering stakeholder pressures. By expanding the discussions around the search for sustainable performance and CSR as values for stakeholders supported by the strengthening MCS aligned with sustainability, this set of studies contributes to the research developed so far at NUPECON. Additionally, the search for ambidextrous environmental innovation is instigated, opening avenues for new research to meet the demands of contemporary businesses.

The dissertation presents three articles and is divided into five parts. The first part is this introduction, followed by the studies (each consists of one part of the dissertation). The initial study addresses the effect of stakeholder pressure on proactive sustainable strategy and Eco-control for the enhancement of sustainable performance. The second study investigates the effect of stakeholder pressures on ambidextrous environmental innovation, through EPMS. The final study explores the effect of stakeholder pressure (primary and secondary) and ethical value-based control on CSR. The fifth part of this dissertation presents the conclusions, followed by the references and appendix.

The first study was submitted to Management Accounting Research Group Conference.

2. Effects of stakeholder pressure on eco-control to improve sustainable performance: the role of temporality

Abstract:

The purpose of the study is to analyze the effects of stakeholder pressure on proactive sustainable strategy and eco-control for the enhancement of sustainable performance. Additionally, the moderation role of temporal ambidexterity is analyzed. This study relies on survey data obtained from Brazilian Hotels and partial least square regression was used to test the hypotheses and fuzzy set Qualitative Comparative Analysis was applied to refine de results. The results highlight the importance of embedding stakeholder pressure into eco-control and confirm the mediation role of proactive sustainable strategy in that relationship. The findings reveal that the positive relationship between stakeholder pressure and sustainable performance is mediated by eco-control. In addition, the moderation role of temporal ambidexterity is confirmed, suggesting that high levels of temporal ambidexterity intensify the positive effect of eco-control on sustainable performance. The fsQCA reinforces these results by revealing that stakeholder pressure, proactive sustainable strategy, eco-control, and temporal ambidexterity are core solutions to enhance sustainability outcomes in the hospitality industry. This study contributes to the literature by suggesting the connection of Stakeholder Theory, management control theory, and ambidexterity literature to manager sustainability in the hospitality context.

Keywords: Stakeholder pressure, Proactive sustainable strategy, Eco-control, Temporal ambidexterity, Sustainable performance.

2.1 INTRODUCTION

Concerns about the organizations' search for sustainable development are continually growing (Wang, Font & Liu, 2020), and stakeholders expect them to improve management to create sustainable values (Robinson, Kleffner & Bertels, 2011; Hörisch, Schaltegger & Freeman, 2020). Sustainability encompasses economic, environmental, and social concerns. It has become a key factor for firms' success and competitive advantage (Dans & González, 2019; Kim et al., 2020; Amatulli, Angelis & Stoppani, 2020), particularly in the field of hospitality (Su & Chen, 2020). Organizations have used eco-control to manage sustainable issues better and respond to stakeholders' demands (Abdel-Maksoud, Kamel & Elbanna, 2016). Eco-control consists of formal financial and strategic control systems that firms use to meet sustainability goals (Henri & Journeault, 2010). Eco-control influences employees, allows decisions to be

aligned with the organization's sustainable goals (Heggen & Sridharan, 2021) and its sustainability strategy (Wijethilake, Munir & Appuhami, 2017). In recent decades, researchers have observed that stakeholder pressure plays an important role in the development of environmental strategies (e.g., Sarkis, Gonzalez-Torre, & Adenso-Diaz, 2010; Egels-Zandén & Rosén, 2015) and in the use of eco-control (Lisi, 2015; Abdel-Maksoud, Kamel & Elbanna, 2016; Abdel-Maksoud, Jabbour & Abdel-Kader, 2021). However, the role of proactive sustainable strategy in responding to stakeholder pressures requires further research in the field of hospitality. Also, new studies are needed on how proactive strategic actions are translated into eco-control to generate better sustainable performance (economic, environmental and social)

Incorporating the demands of different stakeholders (local community, employees, customers, governmental and regulatory agencies, suppliers, and social media) in eco-control by adopting proactive sustainable strategies is particularly important for hotel management. Notwithstanding, the literature has been relatively silent on this issue, which is surprising for three reasons. First, there is substantial evidence of the importance of stakeholder pressure in managing sustainability and recognizing the legitimacy of organizational actions (Sharpe, Harwell & Jackson, 2021), and the lack of these pressures can lead to management misalignment (Kolk & Pinkse, 2006). Second, the proactive sustainable strategy leads the organization to consciously use resources, improving its social reputation (Sharma & Vredenburg, 1998; Wijethilake, Munir & Appuhami, 2017). Third, anticipating stakeholders' preferences allows organizations to adapt their environmental control systems to achieve better sustainable performance (Wijethilake, Munir & Appuhami, 2017; Abdel-Maksoud, Jabbour & Abdel-Kader, 2021). This study recognizes these opportunities and seeks to fill the gap in the literature on management accounting and hospitality, analyzing the effects of stakeholder pressure on proactive sustainable strategy and eco-control for the enhancement of sustainable performance (objective1).

In addition to analyzing the effects of stakeholder pressure, proactive sustainable strategy, and eco-control, it is important to understand the organization's ability to balance temporal stresses to achieve sustainable performance. Regarding sustainability, the organization's ability to dedicate efforts both in the short and long-term is essential so that the pursuit of efficiency in the short term does not compromise the organization's prosperity in the long term (Slawinski & Bansal, 2015; Ortiz-de -Mandojana & Bansal, 2016). However, although the balance between present actions (short-term) with future actions (long-term) is at the heart of organizational sustainability (Slawinski & Bansal, 2015) and the time balance is

vital so that operation activities do not compromise the future (Bansal, 2005), studies have tended to ignore the importance of temporality in managing organizational sustainability (Ortiz-de-Mandojana & Bansal, 2016). Based on the literature that recognizes temporal ambidexterity as the simultaneous dedication of short and long-term efforts to actions that generate organizational implications (Slawinski & Bansal, 2015; Wang et al., 2019), this study explores its moderating role. Thus, the benefits of temporal ambidexterity are also analyzed as an enhancer of the eco-control effect on sustainable performance (objective2).

This research used survey data of 201 hotels in Brazil, employing the PLS regression technique to analyze the hypotheses. Complementarily, a fuzzy set qualitative comparative analysis (fsQCA) was applied to identify combination patterns by refining the PLS-SEM results. The results demonstrate the positive effects of stakeholder pressure on proactive sustainable strategy and the effects of eco-control on sustainable performance. The mediating role of the proactive sustainable strategy in the relationship between stakeholder pressures and eco-control was confirmed. The positive mediation effect of eco-control on the relationship between stakeholder pressure and sustainable performance was also supported. The results show that the more the hotel's temporal ambidexterity increases, the more positive the effects of eco-control on sustainable performance. FsQCA reinforces this evidence by suggesting specific solutions where the combination of stakeholder pressure, proactive sustainable strategy, and temporal ambidexterity enhances the hotels' sustainable performance.

This research offers several contributions to the literature on management accounting and hospitality by building on previous research that explored the effects of eco-control in the context of hospitality through the lens of stakeholder theory (ST) (Abdel-Maksoud, Kamel & Elbanna, 2016). First, we demonstrate that hotels' proactivity under stakeholder pressures allows for implementing sustainable strategies translated into eco-control. Additionally, it reveals that in terms of sustainability issues, the pressure of stakeholders in hospitality firms is balanced, such that the preference of both primary (e.g., employees, customers and suppliers) and secondary stakeholders (e.g., community, government and social media) are considered during the top management team decision-process. Second, the study expands the knowledge by suggesting that the effects of eco-control impact sustainable performance (economic, environmental, and social), going beyond previous research regarding the social dimension of performance. It also reinforces the effectiveness of eco-control in seeking better sustainable outcomes. Third, temporal ambidexterity is a key factor for the management of sustainability in the hospitality industry because it reinforces the influence of eco-control on hotels' sustainable performance, yet it has been little explored in the literature. Thus, firms are

recommended to conciliate short- and long-term capabilities to enhance sustainable performance. Fourth, hotels create value not only to meet their objectives but also to foster ties with stakeholders, who play an important role in the firms' success. Fifth, the study responds to recent calls for a better understanding of the role of ST in the context of research on environmental accounting (Hörisch, Schaltegger & Freeman, 2020). Finally, this research suggests hotel managers pay more attention to stakeholder demands and build firm bonds so that the hotel's activities have the expected success. It is recommended that hotels focus on how sustainable strategies are implemented and the eco-control used to generate high sustainable performance.

2.2 THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

2.2.1 Stakeholder pressure, proactive sustainable strategy, and eco-control

The ST defines stakeholders as individuals or groups that influence or are influenced by the organization (Parmar et al., 2010; Hörisch, Schaltegger & Freeman, 2020). They have been categorized in different ways (Mitchell et al., 1997) depending on the degree of formalization of the relationships with the organization (Clarkson, 1995; Pondeville et al., 2013; Todd, Leask, & Ensor, 2017), with a predominance of individuals or groups classified as primary and secondary stakeholders. Primary stakeholders are suppliers, customers, employees, and others, who can directly influence organizational resources or be directly affected by the organization's actions (Clarkson, 1995; Pondeville et al., 2013). Attention and engagement with the demands of primary stakeholders are essential to achieving organizational goals (Todd, Leask, & Ensor, 2017). Secondary stakeholders indirectly influence the organization (or are indirectly influenced) and involve social media, non-governmental bodies, and the community (Clarkson, 1995; Abdel-Maksoud, Kamel & Elbanna, 2016). In this classification, there is no consensus regarding governmental agencies. Therefore, the literature suggests that analysis considering such classification should consider governmental agencies as a separate group (Su & Tsang, 2015).

This study analyzes the different stakeholders in an integrated manner, responding to recent calls to better understand how multiple stakeholders, collectively, influence the firms' sustainability management (Hörisch, Schaltegger & Freeman, 2020). In this context, stakeholder pressures converge when seeking environmental responsiveness, economic balance, and social equality, which corroborate the importance of integrated analysis. For example, (i) customers are increasingly demanding greener products and services, (ii) employees demand a safer and healthier work environment and adequate remuneration, (iii)

governments are adopting new environmental legislation and monitoring compliance with standards, iv) the community is asking for a reduction of environmental impacts arising from organizational operations, (v) shareholders and managers seek to reduce environmental risk and improve organizational performance, and (vi) non-governmental organizations and the media disclose positive and negative environmental impact and the organizations' social responsibility (Henri & Journeault, 2018).

In the current context of climate change and resource scarcity, stakeholder concerns are centered not only on economic benefits but also on environmental and social benefits (Hörisch, Schaltegger, & Freeman, 2020). Sustainability is based on a set of actions that create sustainable organizational values given an economically and socio-environmentally correct attitude (Hörisch, Schaltegger & Freeman, 2020) and has become a competitive differential (Dans & González, 2019; Kim et al. al., 2020; Amatulli, Angelis & Stoppani, 2021), especially for organizations that anticipate meeting stakeholders' demands for greater sustainability. This study focuses on understanding stakeholder's impacts on organizations, such as the influence on strategies and systems used to meet sustainable goals.

Previous studies have shown that stakeholder pressure leads organizations to adopt strategies to meet sustainability-related expectations and establish ties with partners (Buysse & Verbeke, 2003; Sarkis, Gonzalez-Torre & Adenso-Diaz, 2010; Henri & Journeault, 2010; Henri & Journeault, 2010; Journeault et al., 2016; Abdel-Maksoud, Jabbour & Abdel-Kader, 2021). For example, organizations may design proactive environmental strategies to meet stakeholder demands (Buysse & Verbeke, 2003; Darnall, Henriques & Sadorsky, 2010; Rodrigue, Magnan & Boulianne, 2013; Egels-Zandén & Rosén, 2015), demonstrating their commitment to sustainability (Darnall, Henriques & Sadorsky, 2010) through conscious and environmentally responsible actions (Mak & Chang, 2019). Managers play an important role in establishing a green organizational culture (Tzschentke, Kirk & Lynch, 2008), shaping sustainable organizational behavior through actions that ensure and encourage respect for the environment and social equality (Koch, Gerdt & Schewe, 2020). Therefore, the managers' perception of stakeholders' needs is crucial for successful sustainable management (Lisi, 2015).

According to the literature, organizations successfully implement sustainable practices when incorporating stakeholder concerns into environmental strategies (Rodrigue, Magnan, & Boulianne, 2013; Betts, Wiengarten & Tadisina, 2015). Studies have expanded this understanding, suggesting that the importance an organization gives to its main stakeholders influences the implementation of a proactive environmental strategy (Murillo-Luna, Garce's-Ayerbe & Rivera-Torres, 2008; Gadenne, Kennedy & McKeiver, 2009; Darnall, Henriques &

Sadorsky, 2010; Alt, Díez-de-Castro & Lloréns-Montes, 2015; Seroka-Stolka & Fijorek, 2020). However, evidence on the role of stakeholder pressure in implementing a proactive sustainable strategy that incorporates environmental, economic, and social aspects is unclear. This research argues that, when managers perceive barriers to implement sustainable actions, the involvement of stakeholders – through regulation, environmental reporting, and direct pressure (from customers and suppliers, for example) – helps implement proactive sustainable strategies (Delgado-Ceballos et al., 2012; Seroka-Stolka & Fijorek, 2020). In dynamic environments such as the hospitality sector (Tajeddini, Martin & Ali, 2020), the degree of stakeholder approximation tends to be greater (Betts, Wiengarten & Tadisina, 2015; Tajeddini, Martin & Ali, 2020), which encourages greater concern for the environment (Delgado-Ceballos, Aragón-Correa, Ortiz-de-Mandojana & Rueda-Manzanares, 2012; Moscardo, 2019) and for the economic and social dimensions declared in the sustainable strategy. Based on the evidence presented, hypothesis H1 states that:

H1. Stakeholder pressure has a positive influence on proactive sustainable strategy.

The sustainable strategy encompasses values and policies designed to meet internal and external expectations for a better sustainable attitude (Lloret, 2016). It is formed of strategic, economic, environmental, and social dimensions and aims to create values that allow the continuity of organizational operations (Bansal, 2005; Lloret, 2016). The strategy implementation seeks social equity and reduces environmental impacts and costs (Torugsa et al., 2013; Wijethilake, Munir & Appuhami, 2017). Plans and actions to address environmental issues demand the organizations' proactivity (Rodrigue, Magnan & Boulianne, 2013; Egels-Zandén, & Rosén, 2015) and rely on implementing a proactive sustainable strategy. Such a strategy can motivate managers to define the organizational priorities, considering eco-control (Wijethilake, Munir & Appuhami, 2017). Eco-control is the set of financial and strategic information the organizations use to address sustainable issues (Henri & Journeault, 2010; Wijethilake, Munir & Appuhami, 2017).

Research on eco-control showed important advances for the consolidation of the theme (Henri & Journeault, 2010; Journeault et al., 2016; Abdel-Maksoud, Kamel & Elbanna, 2016; Wijethilake, Munir & Appuhami, 2017; Heggen, 2019; Abdel-Maksoud, Jabbour & Abdel-Kader, 2021; Heggen & Sridharan, 2021). While a prominent line of research presented three essential elements – environmental performance indicators, reward system, and budget (Henri & Journeault, 2010; Abdel-Maksoud, Kamel & Elbanna, 2016; Abdel-Maksoud, Jabbour &

Abdel-Kader, 2021) – other studies were concerned with adapting Simons' levers of control framework (Journeault et al., 2016; Bastini, Getzin & Lachmann, 2021) and using control packages in the environmental context (Journeault, 2016; Rehman et al., 2021). This research focuses on the first approach since hotels often use performance indicators, reward systems, and budgets as management controls (Abdel-Maksoud, Kamel & Elbanna, 2016). Furthermore, this research is concerned with understanding how the strategy is translated into eco-control.

According to the literature, organizations adopting eco-control to translate their strategy into sustainability actions (Henri & Journeault, 2010; Journeault et al., 2016) seek the efficient use of resources, cost and waste reduction, and improve social reputation (Wijethilake, Munir & Appuhami, 2017; Heggen, 2019; Abdel-Maksoud, Jabbour & Abdel-Kader, 2021; Heggen & Sridharan, 2021). The type of sustainable strategy may determine the scope of eco-control when responding to demands for sustainability (Joshi & Li, 2016). It is possible to argue that as the organization implements proactive sustainable strategies (environmental, economic, and social), eco-control tends to be greater because managers understand the benefits they can obtain from this choice (e.g., better results and rewards). Therefore, a positive relationship between the proactive implementation of sustainable strategies (environmental, economic, and social) and the use of eco-control is expected, as suggested in hypothesis H2:

H2. Proactive sustainable strategy has a positive influence on eco-control.

As already shown, stakeholder pressure makes organizations consider economic and environmental values (Abdel-Maksoud, Jabbour & Abdel-Kader, 2021), as well as social values as priorities. The degree of proactivity in implementing sustainable strategies allows for incorporating stakeholder demands into organizational agendas (Delgado-Ceballos et al., 2012; Seroka-Stolka & Fijorek, 2020). The literature recognizes that stakeholders show interest in participating in the decision-making processes, especially when the issue at hand is sustainability (Pondeville, Swaen & Ronge, 2013; Abdel-Maksoud, Jabbour & Abdel-Kader, 2021). They have the power to influence the process of designing and adjusting sustainable strategies (Alt, Díez-de-Castro & Lloréns-Montes, 2015; Seroka-Stolka & Fijorek, 2020) and reward or punish the organization for its activities (Abdel-Maksoud, Jabbour & Abdel-Kader, 2021). Therefore, the literature recognizes stakeholders as key drivers in sustainability management (Abdel-Maksoud, Kamel & Elbanna, 2016; Henri & Journeault, 2018; Abdel-Maksoud, Jabbour & Abdel-Kader, 2021).

Organizations that promptly understand stakeholder pressures are more agile in shaping their management control systems (Lisi, 2015). The literature on eco-control has recognized that stakeholder pressures lead to more effective use of such control (Abdel-Maksoud, Kamel & Elbanna, 2016; Abdel-Maksoud, Jabbour & Abdel-Kader, 2021), protecting the environment and reducing costs (Henri & Journeault, 2010; Lisi, 2015; Journeault et al., 2016; Heggen & Sridharan, 2021). Depending on the organization's strategy, stakeholder pressures can change the breadth of the control system to support sustainability more accurately. For example, evidence has shown that stakeholder pressures increase the likelihood of adopting a proactive environmental strategy, and the larger the organization, the greater the likelihood that this relationship intensifies (Seroka-Stolka & Fijorek, 2020). In turn, eco-control enables the implementation of the environmental strategy (Journeault, 2016). Although important, this evidence only shows the direct effects of the environmental strategy. Thus, this study explores the proactive sustainable strategy and its intervening role, expecting that it will facilitate the effect of stakeholder pressures on eco-control. In this sense, the more proactive the organization's sustainable strategy, the greater the likelihood that stakeholder pressures will be incorporated into eco-control, leading to hypothesis H3.

H3. Stakeholder pressure has a positive influence on eco-control through proactive sustainable strategy.

2.2.2 Proactive sustainable strategy, eco-control, and sustainable performance

According to the literature, eco-control consists of financial and strategic information that leads organizations to address sustainability challenges (Henri & Journeault, 2010; Wijehilake, Munir & Appuhami, 2017), which are tackled considering the organization's priorities (Albertini, 2019). Eco-control encompasses environmental performance measures, rewards, and budgets focused on sustainable goals. It is a system that incorporates the organization's sustainable values, as defined in its strategy (Henri & Journeault, 2010; Wijehilake, Munir & Appuhami, 2017; Abdel -Maksoud, Jabbour & Abdel-Kader, 2021). Among the main benefits of eco-control in the literature, economic and environmental performance stands out (Henri & Journeault, 2010; Journeault et al., 2016; Heggen, 2019; Abdel-Maksoud, Jabbour & Abdel-Kader, 2021; Heggen & Sridharan, 2021).

For example, studies have shown that eco-control positively influences environmental performance and indirectly influences economic performance, suggesting that the benefits of eco-control reach the economic dimension as organizations achieve good environmental

performance, demonstrate environmental concern, and gain broader visibility in society (Henri & Journeault, 2010; Heggen, 2019). Furthermore, research has reported that eco-control enhances environmental performance, especially when it allows debating assumptions and plans related to meeting sustainable goals (Henri & Journeault, 2010; Heggen & Sridharan, 2021). The use of environmental performance indicators allows the implementation of environmentally correct actions, such as reducing waste, recycling, and reusing products (Journeault et al., 2016). A recent study observed that among eco-control dimensions, only incentives led to greater environmental performance (Abdel-Maksoud, Jabbour & Abdel-Kader, 2021). Empirical studies on eco-control have shown divergent results, mainly regarding its impact on economic and environmental performance. For example, Henri and Journeault (2010) found a positive relationship between eco-control and environmental performance. However, the authors did not find a positive relationship with economic performance. Likewise, Abdel-Maksoud, Kamel, and Elbanna (2016) did not find a positive relationship between eco-control and hotel performance. The study by Abdel-Maksoud, Jabbour, and Abdel-Kader (2021) showed a positive relationship between eco-control incentives and operational environmental performance. However, the relationships between the other elements of eco-control (use of performance indicators and budget) and economic, environmental, operational, and non-operational performance were not significant. These studies show inconclusive results, indicating the need for further research (Heggen & Sridharan, 2021).

Furthermore, it is surprising that the literature has not addressed social performance as a consequence of eco-control. Considering sustainability as a tripod that involves economic, environmental, and social aspects, it is necessary to broaden its understanding, involving the three aspects to capture sustainable performance. It is expected that eco-control using the budget to detail environmental expenditures, incentives to direct efforts towards sustainable actions, and adopting performance measures, results in better sustainable performance. Therefore, hypothesis H4 is:

H4. Eco-control has a positive influence on sustainable performance.

The literature points out that eco-control aligns the behavior of managers with organizational goals aimed at environmental objectives (Henri & Journeault, 2010; Heggen & Sridharan, 2021), encourages the involvement of managers in defining environmental performance indicators, leads to greater eco-efficiency (Journeault et al., 2016) and better reputation. These benefits result from the sustainable strategy implemented by organizations

(Torugsa et al., 2013; Wijethilake, Munir, & Appuhami, 2017). As eco-control reflects the organization's sustainable strategy (Henri & Journeault, 2010; Journeault et al., 2016), and therefore aims to increase sustainable performance (Wijethilake, Munir, & Appuhami, 2017), an indirect effect is expected. Studies have shown that the sustainable strategy induces greater use of eco-control (Journeault et al., 2016; Wijethilake, Munir, & Appuhami, 2017), leading to environmental performance (Heggen & Sridharan, 2021).

Eco-control supports environmental capabilities by fostering eco-learning and continuous improvement (Journeault, 2016). It also supports strategic priorities allowing organizations to implement strategic environmental planning to foster environmental initiatives (Heggen, 2019), and economic and social endeavors. This evidence suggests that the relationship between sustainable strategy and sustainable performance can occur through eco-control. For example, Wijethilake, Munir, and Appuhami (2017) observed a relationship between sustainable strategy and sustainable performance through control systems related to sustainability. In the same vein, Laguir, Stekelorum, and El Baz (2021) confirmed the mediating role of eco-control in the relationship between environmental strategy and environmental performance. Therefore, eco-control is expected to reflect a proactive sustainable strategy and allow the organization to set aside resources and efforts to improve sustainable performance. Thus, the hypothesis H5 is:

H5. The proactive sustainable strategy has a positive influence on sustainable performance through eco-control.

2.2.3 Eco-control, temporal ambidexterity, and sustainable performance

The relationship between eco-control and sustainable performance is subjected to intervenient actors (Journeault, 2016; Heggen, 2019). Studies have reported that capabilities such as eco-learning and environmental guidance reinforce eco-control actions to improve performance (Journeault, 2016; Heggen, 2019) in a win-win perspective. Despite this evidence, the organization's ability to devote short and long-term efforts to understand sustainability better has been little explored (Ortiz-de-Mandojana & Bansal, 2016). This organizational capacity, conceptualized as temporal ambidexterity, consists of simultaneously directing short and long term efforts to delineate goals and distribute resources more efficiently (Wang et al., 2019).

The lack of temporal ambidexterity can be alleviated when the organization's management conciliates short- and long-term tensions (Wang et al., 2019). In this case,

temporal ambidexterity is expected to reinforce the organizational commitment, which is observed through concrete sustainable initiatives. This means that organizational actions to achieve operational efficiency (short-term) are concomitant with the strategic development of processes and design of more sustainable products (long-term) (Slawinski & Bansal, 2015; Ortiz-de-Mandojana & Bansal, 2016). Therefore, it is expected that the organization's ability to combine resources necessary to meet the demands of sustainability (Journeault, 2016; Heggen, 2019), considering temporality (short- and long-term), increases the effect of eco-control on sustainable performance, leading to hypothesis H6:

H6. Temporal ambidexterity intensifies the positive influence of eco-control on sustainable performance.

Figure 2 presents the research's theoretical model1, with the hypotheses developed from the literature discussing stakeholder pressure, proactive sustainable strategy, eco-control, temporal ambidexterity, and sustainable performance.

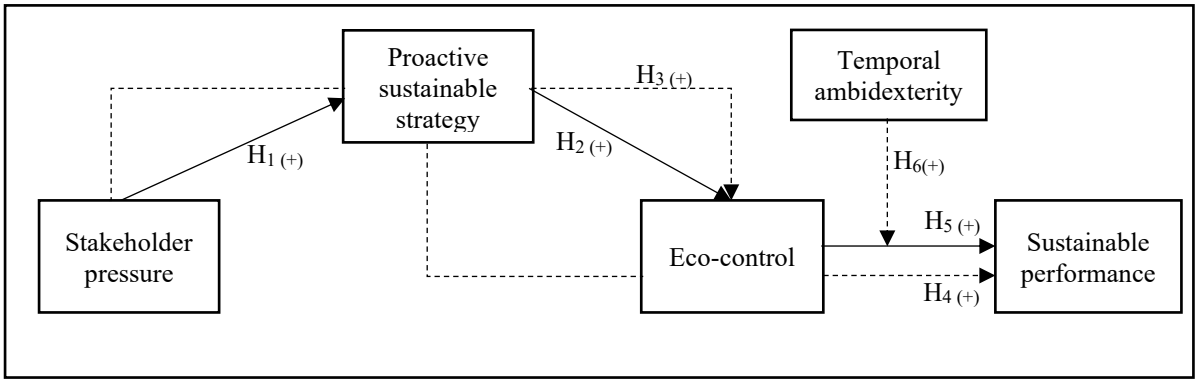

Figure 2. Theoretical model 1

2.3 METHODOLOGICAL PROCEDURES

2.3.1 Population and sample

The research population consists of 1,423 medium and large hotels registered in the national system of companies in the hospitality sector, linked to the Brazilian Ministry of Tourism (Ministério do Turismo, 2021). The selection of medium and large hotels is justified as organizations of this size are more likely to have formal management control structures (Gomez-Conde et al., 2019) and formalized eco-control (Heggen & Sridharan, 2021). The criteria to define the size was the number of rooms, hotels with 50 to 100 rooms were considered medium and more than 100 rooms were large as in Bastakis, Buhalis and Butler (2004) and Bortoluzzi et al. (2020).

This research adopted the survey method (Dillman et al., 2014), and data was collected through a questionnaire. The questions regarding the constructs were faithful to the original version whenever possible. The constructs' psychometric properties were maintained (Bellora-Bienengräber, Radtke & Widener, 2021) first by using the back-translation process (Portuguese-English) and submitting the translated instrument to scholars from the field for revision. Second, by conducting a pre-test with five hotel managers and three academics experienced on sustainability and management control field. The suggestions obtained from the pre-test helped to improve the questions and adjust the questionnaire's size. The research followed the recommendations of Dillman et al. (2014) about surveys. An e-mail was sent to the research population formed of senior and mid-level hotel managers (CEO, CFO, general manager, coordinators), with a link to access the questionnaire and a cover letter with the researchers' information (logo of the university and department), informing the study's objective. Telephone calls were made to the managers approached by a professional survey firm, in order to encourage their participation and ensure a higher response rate (Graham et al., 2014; Heggen & Sridharan, 2021), and the respondents were informed they would receive a summary of the research findings at the end of the study (Bedford et al., 2019). Data collection occurred between July and September 2021 and resulted in 209 responses. Eight responses were excluded due to missing values or revenue information (the respondent was not allowed to disclose the data). Thus, the final sample contained 201 valid responses (14.1% response rate), which is acceptable according to previous studies on environmental management accounting (Pondeville et al., 2013; Lisi, 2015; Heggen & Sridharan, 2021; Bastini, Getzin & Lachmann, 2021). The investigated hotels are distributed geographically across the Brazilian states and have on average operated for 20 years. The independent hotels of the sample are 53 while chain hotels are 148. Regarding ownership, 63 hotels are family-owned, whereas 138 are non-family hotels.

2.3.2 Common method bias and non-response bias

Preliminary tests were carried out to assess biases, starting with the mean comparison t-test to assess non-response bias. There was no significant difference between the responses from early respondents (10% of participants that first responded to the questionnaire) and those from late respondents (10% of last respondents), except for the constructs "stakeholder pressure" and "proactive sustainable strategy" ($p<0.05$) (see De Harlez & Malagueno, 2016; Müller-Stewens et al., 2020). Two procedures were used to assess the common method bias, the single Harman factor and the marker variable (Bisbe & Malagueño, 2015). The Harman

factor presented an average explained variance below 50% (31.16%), which indicates no common bias. As for the other procedure to assess bias, the marker variable was if the hotel offered personal protective equipment (PPE) to employees due to the COVID-19 pandemic (PPE to employees). The correlation of the marker variable with stakeholder pressure was 0.121, with the proactive sustainable strategy 0.061, with eco-control the correlation 0.086, with temporal ambidexterity 0.004, and the correlation with the sustainable performance was 0.093. All of them were low as the squared average of the correlations was 0.007, indicating no bias (Lindell & Whitney, 2001; Kim et al., 2020).

Table 1. Test of early and late response and demographic data of the sample (N = 201)

Panel A. Comparison of main constructs for early and late respondents			
Construct	*Mean of early respondents (first 10%)*	*Mean of last respondents (last 10%)*	*F-Levene*
1.Stakeholder pressure	4.83*	5.74*	3.604 (p = 0.065)
2.Proactive sustainable strategy	6.16*	6.61*	7.612 (p =0.009)
3.Eco-control	6.09	6.21	1.962 (p = 0.169)
4.Temporal ambidexterity	6.18	6.21	0.926 (p = 0.342)
5.Sustainable performance	6.00	6.08	0.254 (p = 0.617)
Panel B. Control variables		Mean	SD
Revenue (Covid-19)		66.29	15.23
Size (log of room)		1.256	0.248
Hotel type (0=independent hotel; 1=hotel chain)		0.736	0.441

Note: Size= natural logarithm of the number of rooms. *significant mean difference at 1%. or 5%

2.3.3 Measurement of variables

Stakeholder pressure was measured based on six items. The construct was based on the literature on stakeholder pressure on organizational performance (Murillo-Luna et al., 2008; Sarkis et al., 2010; Park & Kim, 2014; Abdel-Maksoud, Kamel, & Elbanna, 2016). Through a 7-point Likert scale, managers were asked to point out the degree of influence that stakeholder pressure has on the hotel's sustainable actions (1 = no influence; 7 = very strong influence). The items of the construct "stakeholder pressure" are particularly relevant in discussions on sustainability in the hospitality sector: employees, suppliers, customers, community, government agencies, and social media (Abdel-Maksoud, Kamel & Elbanna, 2016).

The proactive sustainable strategy was measured with 12 items and based on Wijethilake, Munir, and Appuhami (2017), who refined instruments previously tested (Bansal, 2005; Steurer et al. 2005; Torugsa et al., 2013). The degree of agreement regarding the

implementation of environmental, economic, and social strategies was assessed through a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree). For example, one of the items was assessed by asking if the hotel promotes sustainable resource management (e.g., water and energy).

Eco-control was evaluated with ten items involving performance measures, reward system, and budget. These items were measured using a 7-point Likert scale based on Henri and Journeault (2010). Four items were used to capture the environmental performance indicators, and managers were asked the extent to which the hotel uses such indicators (1 = not used at all; 7 = used extensively). The reward system was assessed with three items, verifying to what extent the hotel uses the system (1 = not used at all; 7 = used extensively). The budget was assessed with three items (the 7-point Likert-type scale indicated 1 = not detailed at all; 7 = very detailed).

Temporal ambidexterity was evaluated with eight items that assessed the hotel's focus on sustainability issues in the short- and long-term (Slawinski & Bansal., 2015; Wang et al., 2019). A 7-point Likert scale was adopted to assess the level of the managers' agreement with statements such as whether the hotel was able to implement short and long-term sustainable goals (1 = strongly disagree; 7 = strongly agree).

Sustainable performance was captured with 13 items that assessed environmental, economic, and social performance in the context of hospitality (Asadi et al., 2020). The construct was delineated based on the literature (Bansal, 2005; Li, 2014; Lisi, 2015; Ramanathan, 2018; Cheah, Amran & Yahya, 2019). A 7-point Likert scale measured the degree of agreement regarding the items (1 = strongly disagree; 7 = strongly agree). For example, the manager was asked the level of agreement on whether the hotel's overall environmental performance has improved over the past three years.

For the control variables, those of organizational level were selected according to the research objective. Variables included size and whether the hotel belongs to a chain or is an independent firm (Claver-Cortés et al., 2007; Pelsmacker et al., 2018). Furthermore, to control the effect of the crisis, the level of revenue during the COVID-19 pandemic was measured (Salem et al., 2021).

2.3.4 Analysis procedures

Data were analyzed using partial least square structural equation modeling (PLS-SEM) (Hair et al., 2017). The technique was chosen due to its ability to control measurement error and to understand complex relationships between constructs (Henri & Wouters, 2020). PLS-

SEM is frequently used in management control, sustainability, and hospitality research (Bönte & Dienes, 2013; Wijethilake et al., 2017; Latan et al., 2018; Abdel-Maksoud, Jabbour, & Abdel-Kader, 2020). The application of PLS-SEM involves the steps of measurement evaluation and structural model, assessing the constructs' reliability and validity. The structural model seeks to examine the relationships between variables according to the proposed theory (Hair et al., 2017). Additionally, a fuzzy set qualitative comparative analysis (fsQCA) (Ragin, 2009) was performed to complement and refine the PLS-SEM analysis (Kaya et al., 2020; Rasoolimanesh et al., 2021). The fsQCA is one of the main tools in asymmetric analyses (Rasoolimanesh et al., 2021) to determine which sets result in an outcome of interest (Bedford et al., 2016).

2.4ANALYSIS OF RESULTS

2.4.1 Measurement model

The first step of the PLS regression consisted of evaluating the measurement model regarding the constructs' reliability and validity. Reliability is confirmed when the constructs present CA and CR above 0.7 and validity when the variables' average variance extracted (AVE) is greater than 0.50 (Hair et al., 2017). Table 2 shows the results confirming the reliability of the research constructs (CA and CR > 0.70) and the convergent and discriminant validity since the AVE of all the constructs presents indices above 0.50 and the AVE square roots are greater than the other correlations. In addition, discriminant validity was reinforced by the HTMT (heterotrait-monotrait) criterion because the indices were below the 0.85 threshold (Henseler, Hubona & Ray, 2016). The study shows no collinearity problems (less than 5.00) (Hair et al., 2017).

Table 2. Reliability, validity, and correlation

Construct	CA	CR	AVE	1	2	3	4	5	6	7	8
1. Stakeholder pressure	0.829	0.881	0.599	**0.774**	0.529	0.625	0.388	0.556	0.158	0.464	0.199
2. Proactive sustainable strategy	0.872	0.856	0.672	0,465	**0.820**	0.822	0.664	0.790	0.120	0.259	0.178
3. Eco-control	0.838	0.767	0.530	0,495	0,681	**0.728**	0.750	0.834	0.072	0.390	0.353
4. Temporal ambidexterity	0.877	0.941	0.888	0,303	0,619	0,653	**0.942**	0.665	0.081	0.195	0.194
5. Sustainable performance	0.887	0.906	0.762	0,445	0,693	0,693	0,620	**0.873**	0.129	0.393	0.239
6. Revenue (Covid-19)	-	-	-	-0,070	-0,063	-0,055	-0,034	-0,086	-	0.071	0.141
7. Size	-	-	-	0,304	-0,003	0,150	-0,045	0,166	-0,081	-	0.176
8. Hotel type	-	-	-	0,193	0,191	0,330	0,182	0,210	-0,148	0,169	-

Note: Fornell-Larcker criterion below the Square root of AVE in bold and HTMT ratios above the diagonal. Although some correlations are relatively high, they do not consist of major concern as previous studies on

environmental management accounting showed correlations above 0,7 (Bastini et al., 2021; Heggen & Sridharan, 2021).

2.4.2 Structural model

The structural model followed the recommendations in the literature on PLS-SEM, applying the bootstrap technique with a resample of 5,000 (Hair et al., 2017). The results in Table 3 (model 1) show that the effects of stakeholder pressure on proactive sustainable strategy are positive and significant, which supports H1($\beta = 0.481$, $p < 0.01$) and indicates that hotels implement environmental, economic, and social strategies in a proactive way to meet the demands of multiple direct and indirect stakeholders. Hypothesis 2 predicts that a proactive sustainable strategy positively influences eco-control. Model 1 (Table 3) shows a significant effect of proactive sustainable strategy on eco-control ($\beta = 0.625$, $p < 0.01$), demonstrating that hotel strategies implemented to deal with sustainable issues are incorporated in eco-control.

The research assessed the mediation role of the proactive sustainable strategy (H3). The empirical evidence supports the expected facilitating effect of proactive sustainable strategy in the relationship between stakeholder pressure and eco-control (partial mediation, see Hair et al., 2019), which confirms H3 ($\beta = 0.301$, $p < 0.01$). As for H4, the results show that the adoption of eco-control leads to high sustainable performance ($\beta = 0.302$, $p < 0.01$), broadening the scarce evidence related to how hotels ensure their sustainable goals (environmental, economic, and social performance). This study also assessed the mediation effect of eco-control, and the results show that the influence of proactive sustainable strategy on sustainable performance is more pronounced when eco-control is implemented ($\beta = 0.189$, $p < 0.01$), supporting H5. In addition, the facilitating role of eco-control allows hotels to meet stakeholder pressures by achieving high sustainable performance ($\beta = 0.067$, $P < 0.01$). The moderation role of temporal ambidexterity was assessed, and the results (model 2) show that the effect of eco-control on sustainable performance is higher when hotels focus on short- and long-term efforts simultaneously to achieve sustainable goals, as predicted in H6.

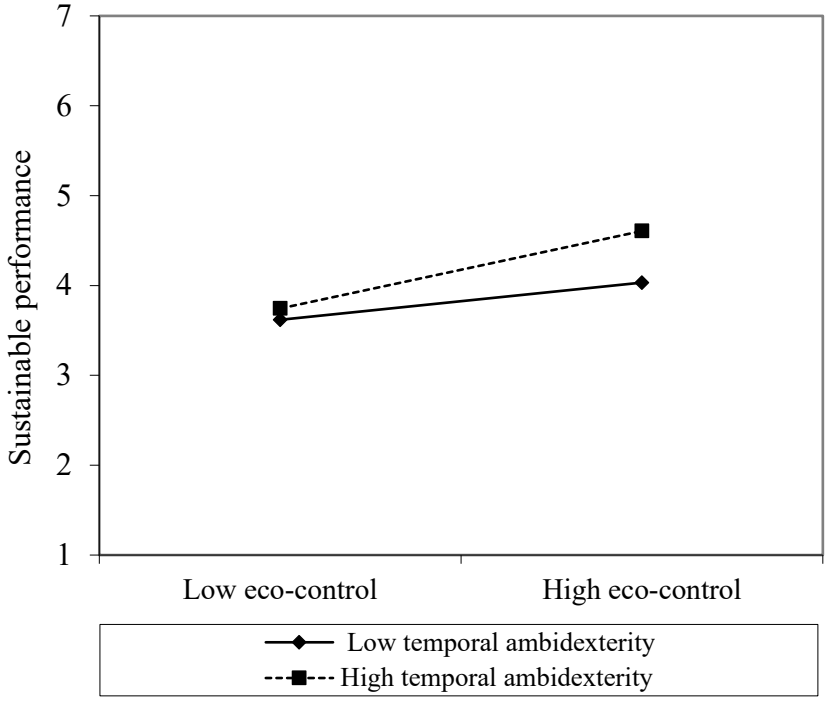

Figure 3. Moderation role of temporal ambidexterity

Hence, H6 is supported (β = 0.122, P < 0.01), demonstrating the importance of considering temporality in the debate on sustainability to improve management of natural resources by avoiding waste, for example. Also, when hotel revenues decrease, sustainability tends to be negative, although the effect is not significant (β = -0.032, p > 0.10). Otherwise, the bigger the hotel, the better the sustainability performance (β = 0.140, p < 0.010). In addition, the non-hypothesized moderation effect of size on the relationship between stakeholder pressures and eco-control revealed that in large-sized hotels, the impact of stakeholder pressures on eco-control is lower than in small-sized hotels (β = -0.073, p < 0,10). Also, the hypothesized association was evaluated in the multigroup analysis comparing the predicted relationships in chain hotels versus independent hotels. The non-tabulated results demonstrate a significant difference in the relationship between stakeholder pressure and proactive sustainable strategy (Chain: β = 0.402, P < 0.01; independent: β = 0.613; P < 0.01; MGA: 0.961). This result reveals that the effect of the stakeholder on strategy is higher in independent hotels. However, other associations were not statistically different, which demonstrates that other hypothesized links remain similar. At the same time, robustness tests evaluated the consistency of the results. Considering only the large hotels (those that have 100 rooms or more) of the sample (N=197), the hypothesized associations did not change when compared with the full model, which includes middle-sized hotels (N=201), supporting the consistency of the results. Moreover, the development of stakeholder pressure occurs in two parts: primary (employees, customers, and

suppliers) and secondary (local community, social media, and government), and the association remained significant. It is revealed that the effect of primary stakeholders' pressure on sustainable strategy is higher than that of secondary stakeholders. Also, the impact of primary stakeholders on eco-control through sustainable strategy is more pronounced than that of secondary stakeholders (see Appendix A).

Table 3. Structural model

	Model 1			Model 2			Model 3		
	Proactive sustainable strategy	Eco-control	Sustainable performance	Proactive sustainable strategy	Eco-control	Sustainable performance	Proactive sustainable strategy	Eco-control	Sustainable performance
Stakeholder pressure	0.481 (7.054***)	0.220 (3.688***)	0.085 (1.761**)	0.481 (6.904***)	0.220 (3.758***)	0.087 (1.856**)	0.481 (7.017***)	0.220 (3.731***)	0.037 (0.737)
Proactive sustainable strategy	-	0.625 (10.993***)	0.393 (4.718***)	-	0.625 (10.847***)	0.397 (4.924***)	-	0.624 (10.852***)	0.426 (5.154***)
Stakeholder pressure → Proactive sustainable strategy	-	0.301 (5.630***)	0.189 (3.946***)	-	0.301 (5.509***)	0.191 (3.955***)	-	0.300 (5.546***)	0.205 (4.123***)
Eco-control	-	-	0.302 (3.043***)	-	-	0.344 (3.939***)	-	-	0.319 (3.595***)
Stakeholder pressure → Eco-control	-	-	0.067 (2.396***)	-	-	0.076 (2.852***)	-	-	0.070 (2.690***)
Proactive sustainable strategy → Eco-control	-	-	0.189 (2.832***)	-	-	0.215 (3.530***)	-	-	0.199 (3.240***)
Temporal ambidexterity	-	-	0.131 (1.681**)	-	-	0.158 (2.321***)	-	-	0.175 (2.505**)
Eco-control X Temporal ambidexterity	-	-	-	-	-	0.122 (1.811**)	-	-	0.112 (1.660*)
Revenue (Covid-19)	-	-	-	-	-	-	-	-	-0.032 (0.735)
Size	-	-	-	-	-	-	-	-	0.140 (2.863***)
Hotel type	-	-	-	-	-	-	-	-	-0.015 (0.297)
R^2	0.232	0.571	0.621	0.232	0.571	0.635	0.232	0.571	0.652
Adjusted R^2	0.228	0.566	0.613	0.228	0.566	0.626	0.228	0.566	0.637
Q^2	0.094	0.215	0.257	0.094	0.215	0.254	0.094	0.215	0.264
Max. VIF		2.857			2.857			3.113	

Note: Standardized coefficients are presented. ***, **, and * indicate 1%, 5%, and 10% significance levels (one-tailed for predicted signal and two-tailed otherwise). Size = natural logarithm of the number of rooms. The structural path is reported with their coefficient and t-value. Cells with (-) indicate no-tested relationships.

2.4.3 Fuzzy set qualitative comparative analysis

2.4.3.1. Calibration and necessary condition analysis

fsQCA was applied to understand whether combinations of antecedents may predict better hotel sustainable performance. The calibration was the first step and consisted of rescaling the constructs in a ranking from 0 to 1 (Ragin, 2009). The calibration process used the following anchor: full non-membership, crossover point (3), and full membership (4). All constructs were calibrated with 5th, 50th, and 95th defined as full non-membership, crossover point, and full membership, respectively (Kraus et al., 2016). The continuous control variables (size and revenue) followed these anchors. Hotel type is a dummy variable calibrated with (0) for full non-membership, (0,5) crossover point, and (1) for full membership. The next step involved necessary condition analysis (NCA) to identify each condition's predictive power. The results (Table 4) show that proactive sustainable strategy, eco-control, and temporal ambidexterity are "almost always" necessary for firms that aim to achieve greater sustainable performance. In addition, the NCA reveals that each combination: (1) "stakeholder pressure + proactive sustainable strategy", (2) "proactive sustainable strategy +eco-control" and (3) "stakeholder pressure +eco-control" is "always necessary" as the observed consistencies are above 0.90 (Table 4).

Table 4. Necessary analysis for sustainable performance prediction

Conditions	**CC**	**CV**	Calibration anchors		
			FNM	**CP**	**FM**
Stakeholder pressure	0.785	0.773	3.2	5.2	6.6
~Stakeholder pressure	0.530	0.584			
Proactive sustainable strategy	**0.871**	**0.804**	5.3	6.5	7
~ Proactive sustainable strategy	0.432	0.515			
Stakeholder pressure → Proactive sustainable strategy*	**0.935**	0.736			
~ Stakeholder pressure → ~Proactive sustainable strategy*	0.608	0.555			
Eco-control	**0.842**	**0.830**	4.7	6.3	7
~ Eco-control	0.470	0.518			
Proactive sustainable strategy → Eco-control*	**0.948**	**0.757**			
~ Proactive sustainable strategy → ~Eco-control*	0.568	0.527			
Stakeholder pressure → Eco-control*	**0.922**	**0.748**			
~ Stakeholder pressure → ~Eco-control*	0.628	0.557			
Temporal ambidexterity	**0.801**	**0.803**	5.25	6.25	7
~ Temporal ambidexterity	0.484	0.523			
Size	0.587	0.733	2.08	2.39	2.81
~Size	0.660	0.588			

Hotel type	**0.823**	**0.600**	0	0.5	1
~ Hotel type	0.270	0.488			
Revenue (Covid-19)	0.601	0.665	40	70	90
~ Revenue (Covid-19)	0.698	0.684			

Note: CC = Consistency; CV = Coverage; FNM = Full non-membership; CP = Crossover point; FM = Full membership. *Indirect effect tested (Kaya et al., 2020). Size = Natural logarithm of the number of rooms.

2.4.3.2 Sufficiency analysis

As pointed out in the literature, sufficiency analysis is required after the Necessary Condition Analysis to ensure the presence, absence, or redundancy of a condition, assessing how the combination of the antecedents may lead to higher performance (Ragin, 2009). The results show four effective configurations leading to high sustainable performance (Table 5).

Table 5. Configurations for high sustainable performance

Panel A- Aggregated model				
Conditions	1	2	3	4
Stakeholder pressure	●	●	●	
Proactive sustainable strategy	●	•		•
Eco-control	●		•	•
Temporal ambidexterity		●	●	•
Consistency	0.924	0.918	0.938	0.942
Raw Coverage	0.660	0.615	0.606	0.674
Unique Coverage	0.082	0.037	0.028	0.096
Overall Coverage	0.821			
Overall Consistency	0.893			

Panel B. Stakeholder pressure disaggregated item by item

Conditions	1	2
Local community	●	●
Employees	●	
Customers		●
Suppliers	●	●
Social medias	●	●
Proactive sustainable strategy	●	●
Eco-control	●	●

Temporal ambidexterity	●	●
Consistency	0.895	0.901
Raw Coverage	0.446	0.448
Unique Coverage	0.078	0.079
Overall Coverage	0.526	
Overall Consistency	0.887	

Note: Black circles indicate the presence of a specific condition. Blank spaces indicate that the condition has no effect. Larger circles represent that the condition has a relevant role in the configuration, whereas small circles indicate a peripheral role.

The presence of stakeholder pressure, proactive sustainable strategy, and eco-control form the first configuration, and stakeholder pressure, proactive sustainable strategy, and temporal ambidexterity form the second. The third configuration suggests that the hotel should pay more attention to stakeholder pressure, eco-control, and temporal ambidexterity, considering that these conditions effectively increase sustainable performance, and, finally, the combination of proactive sustainable strategy, eco-control, and temporal ambidexterity helps hotels to achieve sustainable performance. These configurations are effective as the consistency observed was above 0.8 (and overall coverage was also above 0.8) (Ragin, 2009).

Moreover, the element of the stakeholder pressure was divided to deeply understand the stand-alone impact of each element. The results demonstrated two solutions for predicting high sustainable performance, (1) local community *employees*suppliers*social media*proactive sustainable strategy *Eco-control* temporal ambidexterity and (2) local community*customers *suppliers*social media*proactive sustainable strategy *Eco-control *Temporal ambidexterity. This result reveals that pressure from employees and customers are substitute (replace each other), for instance, when there is employee's pressure, customers' demands become a redundant solution (vis-à-vis). Additionally, the nontabulated results of fsQCA show that in predicting proactive strategy, two solutions with stakeholder theory elements arise: First (presence of local community, employees, customers and suppliers) and second (presence of local community, employees, suppliers, and social media). Also, two solutions were observed in the prediction of high eco-control adoption: First (presence of local community, employees, suppliers, and social media) and second (presence of local community, customers, suppliers, and social media). Furthermore, control variables were included in fsQCA analysis (Appendix A), and the result offers a specific solution for large and small-sized hotels, hotel chains, and independent hotels and in cases of reduced revenue due to the COVID-19 pandemic.

2.5 DISCUSSION OF RESULTS

The study emphasizes the issue of sustainability in hotel management, using survey data to examine the effect of stakeholder pressures on eco-control and sustainable performance and the mediation role of proactive sustainable strategy, followed by the analysis of the moderation role of temporal ambidexterity. The results represent an advance compared to previous studies that scantly addressed sustainability management to respond to stakeholder pressure (Pondeville, Swaen & De Rongé, 2013; Abdel-Maksoud, Kamel, & Elbanna, 2016). Also, the element of temporal ambidexterity is introduced as a growing research avenue yet to be explored in management accounting and hospitality. This study encourages hospitality firms to implement proactive sustainable strategies as a response to stakeholder pressure. The current context of climate change and resource scarcity leads to increasing pressure from customers, suppliers, community, employees, and other stakeholders (Hörisch, Schaltegger & Freeman, 2020) due to the skepticism about firms' behavior toward the use of natural resources. Organizational sustainable values have been considered an important resource for hotels to become more competitive (Dans & González, 2019; Amatulli, Angelis & Stoppani, 2021), reinforcing the need to implement proactive sustainable strategies. The anticipated action of firms by considering stakeholder demands leads to proactively building environmental, economic, and social strategies, benefiting stakeholders and the business itself. As firms implement proactive sustainable strategies, high commitment to sustainability is perceived (Darnall, Henriques & Sadorsky, 2010), and more responsible action is taken (Mak & Chang, 2019).

These organizational actions are incorporated into eco-controls to generate benefits as proactive sustainable strategy can lead managers to establish sustainable priorities (Wijethilake, Munir & Appuhami, 2017). The findings confirm this dynamic and corroborate previous studies (Henri & Journeault, 2010; Journeault et al., 2016), showing a positive relationship between proactive sustainable strategy and eco-control. Previous studies usually focused on proactive environmental strategies (Lloréns-Montes, 2015; Seroka-Stolka & Fijorek, 2020), contributing to a better understanding of the firms' environmental goals. Research works exploring proactive environmental, economic, and social strategies together as second-order construction are scarce (Wijethilake, Munir & Appuhami, 2017), and this study contributes by expanding the literature that argues that sustainable strategy may determine the scope of eco-control in achieving sustainable goals (Joshi & Li, 2016). The findings obtained in this study reinforce this argument and recommend the proactive implementation of sustainable strategies to expand the scope of eco-control and improve sustainable decision-making processes.

This study shows the positive impact of stakeholder pressure on eco-control, supporting the previous discussions that depicted the importance of hotels' relationships with stakeholders (Tajeddini, Martin & Ali, 2020) to encourage environmental awareness (Delgado-Ceballos et al., 2012) and improve eco-control (Lisi, 2015). These relationships recognize the interwoven effect of proactive sustainable strategy, which operates as a facilitator element. The results confirm that a proactive sustainable strategy mediates the effect of stakeholder pressure on eco-control. As green culture shapes sustainable organizational behavior through actions that ensure environmental respect and social equality (Koch, Gerdt & Schewe, 2020), it is crucial to promote the alignment of goals, connecting organizations, managers, and stakeholders to achieve eco-control effectiveness. The fsQCA results show the relevant conditions in the different configurations, reinforcing the argument that highlights the interwoven effect of stakeholder pressure and sustainable strategy.

The literature acknowledges the positive impact of eco-control on environmental performance (Henri & Journeault, 2010; Journeault, 2016; Abdel-Maksoud, Jabbour & Abdel-Kader, 2021). However, the comprehension of how eco-control may benefit sustainable performance rather than environmental performance is still little researched. This study demonstrates that eco-control leads to high sustainable performance and presents a broad impact, improving environmental, economic, and social performance. In organizations with high committed managers, the adoption of sustainable management controls tends to be more successful, as managers are more sensitive to stakeholder concerns (Lisi, 2015). Eco-control allows firms to detail budgets considering sustainable action, use performance measures to evaluate sustainable organizational behavior, and encourage managers to accomplish sustainable goals. These eco-controls reflect waste reduction, recycling, and reusing (Journeault et al., 2016) and are relevant in a contemporary context where sustainable agendas have been frequently discussed. The results reinforce the pivotal role of eco-control since it is a facilitator of the relationship between conditions (such as stakeholder pressure or proactive sustainable strategy) and sustainable performance. The mediation role of eco-control was confirmed, as observed in previous research, which corroborates the eco-control's role in supporting continuous improvement (Journeault, 2016), environmental initiatives (Heggen, 2019), eco-efficiency (Heggen & Sridharan, 2021), and environmental performance (Laguir, Stekelorum & El Baz, 2021). This research shows the relevance of eco-control for managing sustainable goals and demonstrates that eco-control is a central condition to achieving better sustainable performance, mainly when combined with stakeholder pressure and proactive sustainable performance.

The research explored the moderating role of temporal ambidexterity in the relationship between eco-control and sustainable performance, following the previous studies that had emphasized temporal ambidexterity when sustainability was a central topic in organizations (Slawinski & Bansal, 2015). The more hotels conciliate short and long-term capability, the more eco-control influences sustainable performance. This evidence underpins the literature by connecting environmental management controls and ambidexterity, which is a relation little explored in the literature. Organizations in the hospitality field are encouraged to consider temporal ambidexterity as a key factor to increase sustainable performance. Hotels reduce resource waste and increase eco-efficiency by reinforcing organizational environmental commitment through more concrete initiatives that simultaneously enhance operational and strategic sustainable actions. This result supports prior studies that demonstrated how important it is to direct effort toward organizational goals in the short- and long-term (Wang et al., 2019). Among the conditions examined, temporal ambidexterity stands out for its predictive capacity regarding sustainable performance, revealing the essential role of temporality in organizations that aim to maintain strong ties with stakeholders and create sustainable value.

2.6 CONCLUSION

The results demonstrated the importance of embedding stakeholder pressure into eco-control to enhance sustainable performance and confirmed the mediation role of proactive sustainable strategy in that relationship. The findings reveal that the positive relationship between stakeholder pressure and sustainable performance is mediated by eco-control. In addition, the moderation role of temporal ambidexterity is confirmed, suggesting that the more temporal ambidexterity, the more eco-control positively affects sustainable performance. The fsQCA approach reinforces these results by revealing that stakeholder pressure, proactive sustainable strategy, eco-control, and temporal ambidexterity are core solutions for enhancing sustainability outcomes in the hospitality industry.

2.6.1 Theoretical implications

This study highlights the importance of stakeholder theory in the debate surrounding sustainability. The interconnection of stakeholder theory and eco-control, understood as a building block of sustainability management control, stands out as a grounded contribution to the theory and practice. In terms of theoretical contributions, this study shows that the pressure of stakeholders more interested in organizational action (e.g. employees, suppliers, customers,

local community, and social media) motivates hospitality firms to become more eco-friendly and thus generate value for both. It contributes to the Stakeholder Theory by revealing that in the hospitality environment two different combinations of stakeholder pressure are equifinal where the pressure from employees and customers are substitute as in the first combination, local community, employees, suppliers, and social media are present solutions (customers appears as redundant) while in the second combination, local community, customers, suppliers, social media are present (employees appears as a redundant solution). This research suggests that under positive pressure, by implementing a proactive sustainable strategy, hospitality firms reinforce the eco-control system that facilitates daily routine monitoring and the accomplishment of environmental goals. This evidence underpins previous research by suggesting that hotels have to focus on economic, environmental, and social strategies to achieve sustainability outcomes. This study adds to the previous research related to eco-control (Heggen, 2019; Heggen & Sridharan, 2021) by acknowledging the usefulness of environmental management control in social performance prediction, besides economic and environmental performance which have been supported by previous eco-control researchers. Also, this study adds to the literature by announcing the conciliation of intertemporal tensions as a key factor that intensifies the impact of environmental management control on sustainability outcomes. It is recommended that hotels give more attention to short and long-term capabilities to demonstrate their commitment to stakeholder aims. The economic, environmental, and social needs are met by reconciling short- and long-term tensions. This result stands out as a novelty and contributes to the environmental management accounting literature by opening an avenue for future research to understand temporality's role in organizational behavior prediction. Overall, this research contributes to the literature by demonstrating the importance of jointly exploring stakeholder theory, management control, and temporal ambidexterity in response to new questions related to sustainability.

2.6.2 Managerial implications

In terms of practical contributions, this study recommends that hotel managers should be aware of the sustainability principle and consider, for example, a triple-bottom-line perspective as a pillar that supports the organizational action toward the expansion of hospitality activities. By adopting the stakeholder approach in the sustainability field this study's contributions reach the dimension of eco-tourism, which appears to be an essential activity that impacts the economic-system and, consequently, regional growth. As hospitality chain activities foster economic growth, it is increasingly necessary for tourism to be fostered in an

emerging economy, so hospitality firms play an important role because they enable exchanges between the local community and tourists, fostering the consumption of local products. When implementing eco-control, companies consider environmental issues, pass on stakeholder expectations (e.g., Local Community) related to sustainability, and contribute to environmental awareness. The research results motivate managers to shape their strategies and managerial practices in view of sustainable growth.

2.6.3 Limitations and future research

The study presents a few limitations. First, the theoretical approach of stakeholder theory focused on multiple pressure. Thus, future studies should seek to understand how specific types of stakeholder pressure (e.g., internal versus external) impact organizational management practice and financial results. The study sample considered medium and large hospitality firms. Future studies should explore how small businesses deal with sustainability issues. The study explored the effectiveness of eco-control and although it is one of the most known management control practices used in sustainability research, other approaches such as the enabling and coercive forms of control should be employed to improve the comprehension of how firms design management control to deal with sustainability issues. Third, other outcomes besides sustainable performance should be more explored, for instance, a green reputation could bring new answers on the motivation that lead firms to engage on sustainability issues.

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APPENDIX A

1. Descriptive statistics

Items	First-order loading	Second-order loading	Mean	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
STAKEHOLDER PRESSURE (Reflexive)								
STP1	0.883		4.960	1.000	7.000	1.345	0.092	-0.508
STP2	0.711		5.468	1.000	7.000	1.133	1.252	-0.808
STP3	0.639		5.592	1.000	7.000	1.071	2.350	-1.062
STP5	0.874		4.259	1.000	7.000	1.332	-0.330	-0.191
STP6	0.734		5.333	1.000	7.000	1.740	-0.389	-0.825
STP4*								
PROACTIVE SUSTAINABLE STRATEGY (reflexive-reflexive second-order construct)								
1PST_ENVI1	0.785		5.821	1.000	7.000	1.319	1.826	-1.331
1PST_ENVI2	0.764	0.924	6.284	3.000	7.000	0.837	1.309	-1.140
1PST_ENVI3	0.835		6.318	1.000	7.000	0.971	4.779	-1.858
1PST_ENVI4	0.808		6.368	1.000	7.000	0.831	8.321	-2.091
2PST_ECON1	0.905		5.950	1.000	7.000	1.179	3.256	-1.645
2PST_ECON2	0.898	0.887	6.259	4.000	7.000	0.824	0.666	-1.052
2PST_ECON3	0.872		6.015	1.000	7.000	1.104	3.610	-1.572
3PST_SOC2	0.776		6.786	4.000	7.000	0.488	7.193	-2.522
3PST_SOC3	0.809	0.613	6.900	5.000	7.000	0.346	14.244	-3.720
3PST_SOC4	0.790		6.910	3.000	7.000	0.389	53.957	-6.454
3PST_SOC5	0.815		6.881	4.000	7.000	0.418	18.114	-4.052
3PST_SOC1*								
ECO-CONTROL (reflexive-reflexive second-order construct)								
1ECOC_EPI1	0.771		6.388	1.000	7.000	0.846	7.183	-1.932
1ECOC_EPI2	0.904	0.861	6.522	1.000	7.000	0.754	14.056	-2.747
1ECOC_EPI3	0.779		6.627	2.000	7.000	0.673	11.366	-2.643
1ECOC_EPI4	0.879		6.682	4.000	7.000	0.597	4.105	-2.005
2ECOC_RS1	0.962		4.975	1.000	7.000	1.838	-0.947	-0.515
2ECOC_RS2	0.983	0.582	5.229	1.000	7.000	1.775	-0.426	-0.765
2ECOC_RS3	0.965		5.542	1.000	7.000	1.633	0.499	-1.129
3ECOC_BG1	0.833		6.463	4.000	7.000	0.705	0.048	-1.024
3ECOC_BG2	0.893	0.712	6.483	2.000	7.000	0.780	5.074	-1.845
3ECOC_BG3	0.827		6.502	4.000	7.000	0.754	0.834	-1.342
TEMPORAL AMBIDEXTERITY (reflexive-reflexive second-order construct)								
1TAB_ST1	0.810	0.938	5.557	3.000	7.000	1.073	-0.338	-0.454
1TAB_ST2	0.812		6.174	3.000	7.000	0.763	1.934	-0.985

1TAB_ST3	0.755		6.323	4.000	7.000	0.676	-0.293	-0.600
1TAB_ST4	0.700		6.209	4.000	7.000	0.717	-0.355	-0.498
2TAB_LT1	0.831		6.353	4.000	7.000	0.676	-0.232	-0.669
2TAB_LT2	0.765	0.947	6.408	4.000	7.000	0.656	0.011	-0.773
2TAB_LT3	0.719		6.279	5.000	7.000	0.640	-0.690	-0.329
2TAB_LT4	0.827		6.294	4.000	7.000	0.697	-0.459	-0.564
SUSTAINABLE PERFORMANCE (reflexive-reflexive second-order construct)								
1SP_ENVI1	0.682		4.736	1.000	7.000	2.033	-0.808	-0.636
1SP_ENVI2	0.825		5.896	1.000	7.000	0.979	2.424	-1.069
1SP_ENVI3	0.638	0.932	5.567	1.000	7.000	1.228	1.772	-1.203
1SP_ENVI4	0.831		5.925	2.000	7.000	0.982	0.934	-0.897
1SP_ENVI5	0.615		6.567	1.000	7.000	0.777	14.785	-3.047
2SP_ECO1	0.820		5.746	3.000	7.000	0.875	-0.066	-0.556
2SP_ECO2	0.887	0.846	6.239	1.000	7.000	0.854	7.552	-1.930
2SP_ECO3	0.784		6.373	2.000	7.000	0.990	4.375	-1.983
3SP_SOC1	0.798		6.333	4.000	7.000	0.708	0.376	-0.836
3SP_SOC2	0.751	0.838	5.607	1.000	7.000	1.323	1.108	-1.194
3SP_SOC3	0.859		6.159	3.000	7.000	0.801	0.872	-0.882
3SP_SOC4	0.710		6.219	3.000	7.000	0.799	0.704	-0.888
2SP_ECO4*								
CONTROL VARIABLE								
Size (log room)			2.356	1.890	3.300	0.251	0.239	0.731
Hotel type			0.736	0.000	1.000	0.441	-0.840	-1.081
Revenue (Covid-19)			66.289	0.000	96.000	15.234	1.767	-0.760

Note: *dropped duo to low loading.

2.1Considered only large hotel

Large hotel (number of Rooms equal or above 100) N=197			
Relationship	**B**	**T-value**	**P-value**
direct effects			
Stakeholder pressure → Proactive sustainable strategy	0.468	6.648	0.000***
Stakeholder pressure → Eco-control	0.213	3.645	0.000***
Stakeholder pressure → Sustainable performance	0.075	1.497	0.067*
Proactive sustainable strategy → Eco-control	0.633	10.954	0.000***
Proactive sustainable strategy → Sustainable performance	0.403	4.742	0.000***
Eco-control → Sustainable performance	0.332	3.524	0.000***
Temporal ambidexterity → Sustainable performance	0.167	2.226	0.013**
Eco-control X temporal ambidexterity →Sustainable performance	0.121	1.687	0.046**
indirect effects			

Stakeholder pressure → Proactive sustainable strategy → Eco-control	0.296	5.311	0.000***
Stakeholder pressure → Proactive sustainable strategy → Sustainable performance	0.188	3.829	0.000***
Proactive sustainable strategy → Eco-control → Sustainable performance	0.210	3.191	0.001***
Stakeholder pressure → .Eco-control→ sustainable performance	0.071	2.647	0.004***

Note: Standardized coefficients are presented. ***, **, and * indicate 1%, 5%, and 10% significance levels (one-tailed for predicted signal and two-tailed otherwise). Considering only large hotels (N=197) the hypothesized links are unchangeable if compared with the full model where middle-sized hotels are included (4 hotels).

2.2 The result are present when the stakeholder variable is segregated into primary (employees, customers and suppliers) and secondary (local community, social media and government).

Relationship	**B**	**T-value**	**P-Value**
Primary stakeholder pressure →Sustainable strategy	0.316	2.481	0.007***
Secondary stakeholder pressure → Sustainable strategy	0.211	1.833	0.033**
Primary stakeholder pressure → Sustainable strategy → .Eco-control	0.196	2.445	0.007***
Secondary stakeholder pressure → Sustainable strategy →Eco-control	0.131	1.772	0.038**

Note: Standardized coefficients are presented. ***, **, and * indicate 1%, 5%, and 10% significance levels (one-tailed for predicted signal and two-tailed otherwise).

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2.3 FsQCA solution controlled by control variables

Panel A- Model controlled by hotel size.				
Solutions	1	2	3	4
Stakeholder pressure		●	•	●
Proactive sustainable strategy	•	•	●	
Eco-control	●			•
Temporal ambidexterity	●	●	⊗	●
Hotel size		⊗	●	•
Consistency	0.942	0.901	0.927	0.928
Raw Coverage	0.674	0.440	0.310	0.439
Unique Coverage	0.125	0.033	0.059	0.023
Overall Coverage		0.790		
Overall Consistency		0.905		

Panel B-Model controlled by hotel type				
Solutions	1	2	3	4
Stakeholder pressure	•	•	•	•
Proactive sustainable strategy	•			
Eco-control	•			•

Temporal ambidexterity		●	⊗	●
Hotel type		●	⊗	●
Consistency	0.924	0.905	0.901	0.946
Raw Coverage	0.660	0.625	0.154	0.528
Unique Coverage	0.097	0.121	0.002	0.029
Overall Coverage		0.812		
Overall Consistency		0.876		

Panel C- Model controlled by hotel Revenue in the covid-19 pandemic.

Solutions	1	2	3	4	5
Stakeholder pressure	●	•	●	●	
Proactive sustainable strategy	●	●	•		•
Eco-control		●		•	•
Temporal ambidexterity			●	●	•
Revenue (covid-19)	⊗				
Consistency	0.919	0.924	0.918	0.938	0.942
Raw Coverage	0.541	0.660	0.615	0.606	0.674
Unique Coverage	0.009	0.031	0.021	0.028	0.096
Overall Coverage		0.829			
Overall Consistency		0.886			

Note: Black circles indicate the presence of a condition and blank spaces indicate "indifferent". Larger circles represent core solutions and small peripheral solutions.

3. QUESTIONNAIRE

3.1STAKEHOLDER PRESSURE

Indicate the extent to which your hotel feels pressure from the following stakeholders on decisions related to sustainable actions. The following scale items ranged from 1 (no influence) to 7 (very strong influence).

STP1	Local community
STP2	Employees
STP3	Customers
STP4	Government regulatory agencies (legislative bodies)
STP5	Suppliers
STP6	Social medias

3.2PROACTIVE SUSTAINABLE STRATEGY

Please rate the extent to which you agree or disagree with the following statements related to your hotel's proactive sustainable strategy on a 7-point Likert scale (1=strongly disagree; 7=strongly agree)

Environmental strategy

PST1_ENVI1	Promoting sustainable resources management (e.g., energy and water)
PST2_ENVI2	Reducing the use of chemicals materials and products
PST3_ENVI3	Promoting and preserving biodiversity
PST4_ENVI4	Minimizing the environmental consequences of products and services

Economic strategy

PST5_ECON1	Promoting sustainability innovations
PST6_ECON2	Engaging in sustainability learning and knowledge management
PST7_ECON3	Developing sustainability business processes

Social strategy

PST8_SOC2	Investing in human capital development (eg. training)
PST9_SOC3	Promoting ethical behavior and protecting human rights
PST10_SOC4	Avoiding controversial, corrupt, or cartel activities
PST11_SOC5	Promoting corporate citizenship
PST12_SOC1*	Ensuring health and safety of employees

3.3ECO-CONTROL

Performance measures

Indicate the extent to which your hotel uses environmental performance indicators to:

The following scale items ranged from 1 (not used at all) to 5 (extreme use)

ECOC1_EPI1	Monitor internal compliance with environmental policies and regulations
ECOC2_EPI2	Provide data for internal decision-making
ECOC3_EPI3	Motivate continuous improvement
ECOC4_EPI4	Provide data for external reporting

Reward

Concerning your hotel's rewarding system, please indicate: The following scale items ranged from 1 (not at all) to 5 (extreme extent)

ECOC5_RS1	Environmental indicators are important in reward systems
ECOC6_RS2	Environmental performance indicators are weighted on par with economic performance indicators
ECOC7_RS3	Environmental performance objectives are included in the planning systems

Budgeting

Rate the extent to which the following items are detailed in the budget of your hotel:

The following scale items ranged from 1 (not detailed at all) to 5 (extreme details).

ECOC8_BG1	Environmental expenses
ECOC9_BG2	Environmental investment
ECOC10_BG3	Incomes from material scrap or recycled wastes

3.4 TEMPORAL AMBIDEXTERITY

Please rate the extent to which you agree or disagree with the following statements related to your hotel's capability to conciliate short and long-term sustainable actions on a 7-point Likert scale (1=strongly disagree; 7=strongly agree)

Short term

TAB1_ST1	Our hotel is capable of establishing specific short-term sustainable objectives (e.g., control cash flow, deliver monthly or quarterly sales)

TAB2_ST2	Our hotel is capable of improving the utilization of existing resources (e.g., human and financial resources)
TAB3_ST3	Our hotel is capable of responding to customers' immediate needs to maintain market share
TAB4_ST4	Our hotel is capable of analysing existing uncertainty and minimizing the adverse impact
Long term	
TAB5_LT1	Our hotel is capable of establishing long-term sustainable objectivities (e.g., relationship building, growth potential, organizational learning)
TAB6_LT2	Our hotel is capable of discovering new resources (e.g., human and financial resources)
TAB7_LT3	Our hotel is capable of uncovering unmet customer needs to capture future trends
TAB8_LT4	Our hotel is capable of predicting future uncertainty and seizing new opportunities

3.5 SUSTAINABLE PERFORMANCE

Please rate the extent to which you agree or disagree with the following statements related to your hotel's sustainable performance on a 7-point Likert scale (1=strongly disagree; 7=strongly agree).

Environmental performance	
SP1_ENVI1	Our hotel has achieved important environment-related certifications.
SP2_ENVI2	On average, the overall environmental performance of our hotel has improved over the past 3 years.
SP3_ENVI3	The resource consumption has decreased during the last 3 years (e.g. water, energy, and gas)
SP4_ENVI4	Improvement of environmental compliance.
SP5_ENVI5	Complying with environmental regulations (i.e., emissions)
Economic performance	
SP6_ECO1	Our hotel decrease of cost for energy consumption.
SP7_ECO2	Our hotel improved capacity utilization.
SP8_ECO3	Our hotel decrease of fee for waste treatment.
SP9_ECO4*	Our hotel Decrease/did not have penalty costs for nonfulfillment of environmental legislation.

Social performance

SP10_SOC1 Our customers' satisfaction has increased during the last 3 years.

SP11_SOC2 Our customers' motivation has increased during the last 3 years.

SP12_SOC3 Our hotel industry solving social/environmental issues.

SP13_SOC4 Our hotel industry provides more social/environmental-friendly services in the community.

3.6 DEMOGRAPHIC VARIABLES

- Age (years): .....
- Gender: ( ) Male ( ) Female ( ) Prefer not to say.
- City / State of the country in which the hotel is located: .....
- How many years has the hotel been offering its services? .....
- How many housing units/rooms does the Hotel have?
- Does your hotel make part of a chain?
  ( ) Yes ( ) No
- During the COVID-19 pandemic, what was the average percentage drop in hotel revenues?
- Hotel supplies materials for protection against coronavirus (e.g., protective masks, protective gloves). Consider the scale from 1 to 5 (1=Strongly disagree; 5= strongly agree). *

**-Marker variable*

Some remedies were taken to reduce possible bias

1. The participants were selected carefully to ensure suitable knowledge of the questions.
2. The questionnaire was pretested with managers. Contributions related to the wording of the questions and adequate duration time of the survey improved the final version.
3. Some constructs were labeled in general terms.

4. The instructions did not suggest the relationships of interest.
5. The participants were informed in the instructions that there were no right or wrong answers as the study was only interested in their opinion.
6. We ensured the anonymity of responses and their firms.
7. We mixed the variables of interest within the questionnaire.

3. Effects of stakeholder pressure on environmental performance measurement system and ambidextrous environmental innovation

Abstract

This study aims to analyze the effects of stakeholder pressure on ambidextrous environmental innovation through environmental performance measurement system. Additionally, the mediation role of contextual ambidexterity in the relationship between the environmental performance measurement system and ambidextrous environmental innovation is analyzed. This research relies on survey data gathered from 196 Brazilian hotels and the hypotheses were analyzed through PLS regression. Complementarily, the FIMIX approach is used to test unobserved heterogeneity and Importance performance map analysis to suggest more managerial-actionable practices that improve hotel innovations. The results demonstrate that stakeholder pressure positively influences ambidextrous environmental innovation through the environmental performance measurement system. The findings show that contextual ambidexterity in the hospitality industry amplifies the effect of environmental performance measurement on ambidextrous environmental innovation. This evidence highlights the importance of connecting the multiple stakeholder approach with environmental management control literature and ambidexterity to broaden the knowledge on how hospitality firms manage environmental innovation to accomplish sustainable goals.

Keywords: Stakeholder pressure; Environmental performance measurement system; Contextual ambidexterity; Ambidextrous environmental innovation.

3.1 INTRODUCTION

Market dynamism and rapid changes increasingly bring a variety of stakeholders that influence the organization's results and, therefore, deserve attention from managers (Clement, 2005; Hörisch, Freeman & Schaltegger, 2014; Hörisch, Schaltegger & Freeman, 2020). Stakeholder pressures make organizations adopt coherent attitudes that generate values for society (Hörisch, Schaltegger & Freeman, 2020), among which sustainability stands out. The search for sustainability among organizations in the hospitality industry has become a priority (Su & Chen, 2020; Wang, Font & Liu, 2020) because operations in the service industry imply the consumption of large amounts of resources such as water, energy, and food (Bohdanowicz,

2006; Aboelmaged, 2018; Aboramadan & Karatepe, 2021). This consumption can be rationalized by implementing innovative ideas that improve processes and products, reducing the negative impacts on the environment (Wang, Font & Liu, 2020).

In the last decade, the literature on hospitality literature sought to understand environmental innovation (Reyes-Santiago, Sánchez-Medina & Díaz-Pichardo, 2017; Wang, Font & Liu, 2020), finding that stakeholder pressure (Wang, Font & Liu, 2020) and the environmental performance measurement system (EPMS) (Razumova, Ibáñez & Palmer, 2015) are important predictive conditions. However, ambidextrous environmental innovation is still little known in the hospitality industry. This type of innovation refers to the organizational capacity to simultaneously enable incremental and radical innovation, improving environmental processes and products and creating new environmentally correct products and services (Wang, Xue, Sun & Yang, 2020).

The literature recognizes that stakeholder pressures impact the EPMS (Lisi, 2015; Abdel-Maksoud, Kamel & Elbanna, 2016) and, consequently, facilitate environmental innovation, generating cost reduction and higher quality of services (Razumova, Ibáñez & Palmer, 2015). However, research on performance management systems in the hospitality industry failed to assess the environmental and social aspects demanded by stakeholders regarding sustainability (Sainaghi, Phillips & Zavarrone, 2017; Guix & Font, 2020). Furthermore, the literature addressed the relationship between stakeholder pressure, EPMS, and ambidextrous environmental innovation in a fragmented way and offered limited evidence on ambidextrous environmental innovation to reflect the service industry's concern with sustainability. This is surprising, first because studies related to EPMS in hospitality (Chung, & Parker, 2006; Parker & Chung, 2018; Wang, Font & Liu, 2020) have tried to improve the understanding of this phenomenon (exploring stakeholder pressure, EPMS, and environmental innovation). Second, the search for ambidextrous environmental innovation reflects both the radical and incremental improvement of products and services (Wang, Xue, Sun & Yang, 2020), a factor that favors competitiveness (Fraj, Matute & Melero, 2015). This research addresses the gaps in the literature by analyzing the effects of stakeholder pressure on ambidextrous environmental innovation through environmental performance measurement system (objective 1).

Additionally, the role of contextual ambidexterity in facilitating the effects of EPMS in achieving innovation is analyzed. Prior research recognized contextual ambidexterity as an organizational capability that facilitates the achievement of organizational goals (Khan & Mir, 2019). Therefore, this study explores contextual ambidexterity to improve the understanding of

ambidextrous environmental innovation in the hospitality industry. Contextual ambidexterity is the alignment and flexibility of management information simultaneously, given the achievement of organizational goals and the timely response to changes in the environment (Gibson & Birkinshow, 2004). It is argued that the simultaneous search for incremental and radical innovation (Wang et al., 2020) is facilitated by the organization's ability to operate in pluralistic contexts that demand focus on operational efficiency while searching for new solutions. Therefore, the intervening effect of contextual ambidexterity in the relationship between the environmental performance measurement system and ambidextrous environmental innovation is analyzed (objective 2).

A survey was conducted with 196 hotel managers, and data was analyzed using PLS regression and FIMIX. The results revealed that stakeholder pressure positively affects the use of EPMS in hotels, which consequently leverages ambidextrous environmental innovation (suggesting that EPMS mediates the relationship between stakeholder pressure and ambidextrous environmental innovation). The positive effect of contextual ambidexterity on the relationship between EPMS and ambidextrous environmental innovation was supported, illustrating the facilitating role of ambidexterity in achieving high innovation outcomes. The FIMIX segmentation method demonstrated differences between the group related to the effect of stakeholder pressure on ambidextrous environmental innovation and the impact of EPMS on ambidextrous environmental innovation, supporting categorical moderations effect in an unobserved heterogeneity analysis.

These findings bring at least four contributions. First, they demonstrate that stakeholder pressures are key drivers for firms that simultaneously pursue incremental and radical environmental innovation. As given to the local community, customers and social media, this study also recommends special attention to the demands of employees and suppliers stakeholders by increasing the importance given to them meanly during the implementation of sustainability performance metrics. Second, this study suggests that EPMS plays a pivotal role in ambidextrous environmental innovation in the hotel industry, particularly in the face of stakeholders' demand for overall value creation. Although further research is needed, this evidence suggests the importance of connecting the stakeholder theory (ST) and the EPMS as a building block of the environmental management control literature to understand better how hotel managers reach ambidextrous environmental innovation. Third, by simultaneously fostering the alignment and adaptability of hotel capabilities, contextual ambidexterity becomes a relevant (and facilitating) piece of the hotel ambidextrous environmental innovation puzzle, which promotes the impact of EPMS on hotel outcomes. This evidence builds on previous

management accounting and hospitality studies, which devoted little attention to environmental innovation (Ferreira et al., 2010; Rosario & René, 2017). Forth, this study contributes to improve practices in the hotel industry when suggesting that by achieving high ambidextrous environmental innovation, the hotel reduces cost, demonstrates sustainable concern, and obtains positive evaluation from stakeholders such as customers and employees.

3.2 THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

3.2.1 Stakeholder pressure, environmental performance measurement system, and ambidextrous environmental innovation

The environmental performance measurement system (EPMS) is effective when organizational actions are supported by performance measures and managers' sensitivity, in line with the environmental strategy (Perego & Hartmann, 2009). The EPMS is important for organizations because it allows them to manage sustainable issues and identify opportunities that generate competitive advantage (Arjaliès & Mundy, 2013; Journeault, Ronge & Henri, 2016). The environmental information disclosed to stakeholders corresponds to the organization's reality if the EPMS is composed of financial and environmental measures that represent operational and strategic actions (Perego & Hartmann, 2009; Gunarathne & Lee, 2015).

Organizations are increasingly under pressure to guide their activities by an environmentally responsible attitude (Pérez, Ruiz & Fenech, 2007; Lisi, 2015; Abdel-Maksoud et al., 2021). These pressures from both primary and secondary stakeholders encourage the use of the EPMS (Pérez, Ruiz, & Fenech, 2007; Rodrigue, Magnan & Boulianne, 2013; Wijethilake, Munir & Appuhami, 2017a). Thus, managers play an important role because they defend the stakeholder's interests in EPMS during the decision-making process (Rodrigue, Magnan & Boulianne, 2013).

Studies in this direction have demonstrated the influence of stakeholder pressures on EPMS (e.g., Perego & Hartmann, 2009; Rodrigue, Magnan & Boulianne, 2013; Lisi, 2015). Furthermore, they suggested that the way managers perceive stakeholder pressures determines the choices of EPMS metrics, depending on the degree of approximation with the stakeholders and the legitimacy of the organization's sustainable actions (Rodrigue, Magnan & Boulianne, 2013). Firms are concerned about their reputation, so they increasingly seek to dialogue with the main stakeholders, generating trust, experience sharing, and value creation (Arjaliès & Mundy, 2013; Abdel-Maksoud et al., 2021). Thus, incorporating stakeholders' interests in a

balanced way in the firm's sustainable strategy seems crucial, so both stakeholders and the firm benefit from the values generated.

Internal and external pressures motivate sustainable proactivity and the adoption of different environmental control systems (Pondeville, Swaeh & Rongé, 2013). These systems encourage sustainable initiatives, which increase transparency and accountability (Phan & Baird, 2015; Wijethilake, Munir & Appuhami, 2017). The organizational ability to adopt the EPMS in response to institutional pressures is beneficial to operations in the short term and generates value for the organization and its stakeholders in the long term (Perego & Hartmann, 2009; Wijethilake, Munir & Appuhami, 2017a). Integrating sustainable issues into the decision-making process via EPMS reinforces environmental values, allows monitoring of compliance measures, facilitates continuous improvement, and generates greater environmental learning (Journeault, 2016; Heggen, Sridharan & Subramaniam, 2018; Heggen, 2019). Thus, the adoption of environmental management controls is conditioned by economic interests and regulatory and reputational pressure (Kumarasiri & Gunasekarage, 2017). Therefore, the growing internal and external pressures lead organizations to use EPMS to incorporate stakeholders' interests into performance measures, fostering closer relationships with partners and creating sustainable values. Based on the studies mentioned above, hypothesis H1 explored in this study is:

H1. Stakeholder pressure positively influences the environmental performance measurement system.

The implementation of environmental management systems enhances organizational learning and environmental innovation (Wagner, 2007; Kasim, 2015), improving environmental and economic performance. For example, hotels that implement LED lamps, solar panels, water reuse systems, and other measures demonstrate sustainable initiatives that explain environmental innovation capacity (Wyngaard & De Lange, 2013; Wang, Font, & Liu, 2020). Organizational efforts focused on strategic measures for environmental innovation encourage managers to increasingly adopt environmental management control (Wijethilake, Munir & Appuhami, 2018a).

Empirical studies have offered evidence that EPMS leads to greater efficiency in organizational operations related to environmental issues (Lisi, 2015), encouraging product development and improvement in existing processes, reducing environmental impacts (Ferreira, Moulang & Hendro, 2010; Heggen & Sridharan, 2021). One reason hotels should implement

environmental management systems is the flexibility of their sophistication level and dynamism, capable of producing organizational learning (Kasim, 2015). The use of EPMS leads to concrete actions that meet the environmental plans in sustainability agendas, such as investment in improving products and services that enhance environmental innovation (Journeault, 2016; Heggen & Sridharan, 2021).

Although studies have contributed to expanding environmental innovation comprehension, knowledge on ambidextrous environmental innovation – where incremental and radical environmental innovation is encouraged – is still scarce (Wang et al., 2020). It is possible to say that the scope of ambidextrous environmental innovation depends on the use of the EPMS. This is because dynamic environments such as the hospitality industry increasingly require multiple PMS metrics to make assertive decisions considering the organization's reputation with stakeholders (Sainaghi, Phillips & Zavarrone, 2017). Due to the need to reduce environmental impacts, organizations are expected to adopt the EPMS aiming simultaneously at eco-efficiency of operations (Ferreira, Moulang & Hendro, 2010; Lisi, 2015) and radical changes in environmental knowledge and skills to create green products or services (Chen et al., 2014; Wang et al., 2020). Against this backdrop, hypothesis H2 is:

H2. The environmental performance measurement system positively influences ambidextrous environmental innovation.

Responding to stakeholder pressure implies changes in attitude, both in day-to-day operations and in the strategic management of organizational resources (Sainaghi, Phillips, & Zavarrone, 2017). Therefore, given the pressures leading to the implementation of EPMS, it is crucial to comply with organizational plans related to sustainability, improving communication, identifying opportunities, and seeking environmental innovation (Arjaliès & Mundy, 2013; Journeault, 2016). Stakeholder pressure plays an important role in adopting practices that drive environmental innovation (Wang, Font & Liu, 2020) both incrementally and radically.

In a context of high pressure, EPMS plays a facilitating role, encouraging the reduction of activities with a high environmental impact through improvements to products and services (Perego & Hartmann, 2009; Lisi, 2015; Journeault, 2016). This system allows the organization to increase productivity and innovation processes and improve the quality of products and services (Heggen & Sridharan, 2021). Despite this evidence, empirical research testing the intervening role of the EPMS in achieving ambidextrous environmental innovation is limited, which is surprising for at least two reasons. First, it is recognized that these environmental

performance measures facilitate accurate decision-making and encourage continuous improvement (Laguir et al., 2021), increasing the potential for incremental environmental innovation. Second, environmental performance measures can facilitate the search for new and greener solutions and the inclusion of green products and services (Ferreira, Moulang & Hendro, 2010; Phan & Baird, 2015). For example, radical environmental innovation is observed in hotels when these organizations invest in new equipment to use solar energy (Rosario & René, 2017).

Hotels can encourage ambidextrous environmental innovation both through small actions, such as the use of digital platforms to encourage ecological consumption (Green marketing) (Stangl et al., 2016) and through embracing ecotourism, which requires substantial changes in the business model (Gurung & Seeland, 2008; Rosario & René, 2017). The success of environmental innovation depends not only on organizational involvement but also on stakeholder collaboration (Wondirad, Tolkach & King, 2020). Therefore, we suggest that in an environment where organizations are under constant pressure, the implementation of EPMS facilitates the simultaneous search for continuous improvement in products and services and radical changes so that there is synergy between the organization and its stakeholders for common benefit. Thus, hypothesis H3 states that:

H3. Stakeholder pressure positively influences ambidextrous environmental innovation through the environmental performance measurement system.

3.2.2 Environmental performance measurement system, contextual ambidexterity, and ambidextrous environmental innovation.

As already presented, the EPMS generates benefits for organizations, among which performance and environmental innovation have been recurrently recommended (Lisi, 2015; Heggen & Sridharan, 2021). Despite this substantial evidence, many studies suggest a better understanding of the organization's ability to adapt to changes in the context in which it operates due to its direct impact on innovation capacity (Khan & Mir, 2019). The capability for organizational alignment and adaptability is defined in the literature as contextual (or harmonic) ambidexterity, as it consists of the complementarity of exploration and exploitation activities within a single organization (business unit) (Gibson & Birkinshaw, 2004; Simsek et al., 2009).

Positive results such as better performance and innovation can be achieved from systems that, as observed with performance management systems, involve many actors and accentuate the organizational capability to align departments to common goals and adapt to changes

(Gibson & Birkinshaw, 2004). Organizations with contextual ambidexterity focus on innovation – short-term effect – while working on radical innovation – long-term effect (Wang & Rafiq, 2014; Wang et al., 2020). This is particularly important for the context in which organizations are pressured to operate responsibly (Wang, Font & Liu, 2020).

The literature has suggested that contextual ambidexterity plays a facilitating role. For example, in the context of adopting performance management systems, organizations that become increasingly ambidextrous tend to improve performance (Gibson & Birkinshaw, 2004). This ambidexterity points to the prominence of collective goals over the preference of individuals (Clercq, Thongpapanl & Dimov, 2013) and generates benefits such as greater radical innovation (Khan & Mir, 2019). These characteristics of ambidexterity are linked to EPMS's role, as both emphasize the focus on organizational goals.

Despite the evidence, there is still little comprehension of these phenomena in the context of sustainability. Therefore, EPMS may enhance ambidextrous environmental innovation due to the organizational capability to bring together exploration and exploitation competencies. The literature suggests that a sustainability-oriented culture leads to greater ambidextrous environmental innovation (Wang et al., 2020). It is reasonable to expect that the interest in a greener organization will reflect a more effective use of the EPMS. The use of this system is reinforced by the alignment of organizational activities with established goals and with the firm's adaptability to new demands for sustainability. Simultaneously the use of EPMS leads to greater incremental and radical innovation. Thus, hypothesis H4 is:

H4. The environmental performance measurement system positively influences ambidextrous environmental innovation through contextual ambidexterity.

Based on the literature dealing with the relationship between stakeholder pressure, EPMS, contextual ambidexterity, and ambidextrous environmental innovation, Figure 4 presents the theoretical model 2 and the research hypotheses.

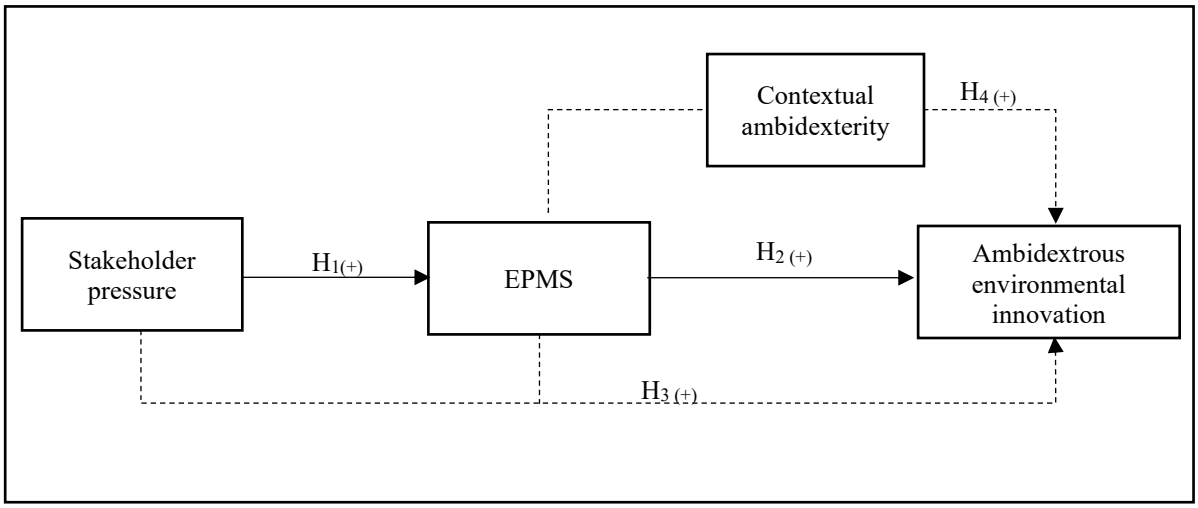

Figure 4. Theoretical model 2

3.3 METHODOLOGICAL PROCEDURES

3.3.1Population and sample

The system of individuals and firms operating in the tourism and hospitality industry (a registry managed by the Ministry of Tourism) was accessed to select the population. This system has registered 1,120 organizations (hotels, resorts, and historic hotels) considered as large-sized (at least 100 rooms) (Bortoluzzi et al., 2020). Large-sized firms were selected because they are more likely to have formal environmental management systems (Heggen & Sridharan, 2021).

The questionnaire used in the survey was prepared based on the literature that explored environmental management systems. As the objective of the research was to understand the effects of stakeholder pressure on the EPMS to increase ambidextrous environmental innovation, the constructs used in this study were based on the literature on stakeholder theory (ST) (Murillo-Luna et al., 2008; Sarkis et al., 2010; Park & Kim, 2014; Abdel-Maksoud, Kamel, & Elbanna, 2016), environmental management control (Lisi, 2015; Journeault, 2016), and environmental innovation (Jansen et al., 2006; He & Wong, 2004; Rosario & René, 2017; Wang et al., 2020). The literature on ambidexterity was also used to understand the degree of adaptability and alignment with the hotel's objectives in the study context (Khan & Mir, 2019). During the questionnaire construction, the constructs were back-translated (Portuguese-English) and then revised by scholars experts in the field investigated. Before applying the survey, pre-tests were carried out with five (5) hotel managers and three academics, who contributed to improving the wording of the constructs. The respondents were encouraged to

participate by using strategies suggested by Dillman et al. (2014), such as sending the questionnaire with a cover letter presenting the research objective, direct contact from researchers, using the university logo in the material sent. Middle and top managers were invited to participate in the survey (CEO, CFO, managers, and supervisors). They were informed they would have access to a summary of the survey results (Bedford et al., 2019), and phone calls were made by a professional survey firm employed to remind them, encouraging participation and seeking to increase the response rate (Graham et al., 2014; Heggen & Sridharan, 2021). Data were collected between July and September 2021, and 205 responses were obtained. Nine incomplete responses were excluded, resulting in a sample of 196 complete responses received and analyzed – a response rate of 17.5 %, agreeing with previous studies (Pondeville et al., 2013; Bastini, Getzin & Lachmann, 2021). The hotels of the sample are distributed across the Brazilian states. On average, the manager's age is 41 years old and the hotel size is 175 rooms (average). Regarding the hotel type, most of the hotels in the sample make part of a chain (130 chain hotels).

3.3.2 Measurement of variables

We used six items to assess stakeholder pressure referring to specific types of stakeholders. The extent to which these stakeholders influenced the hotels to adopt sustainable actions was evaluated, based on previous studies that explored this construct in the management and hospitality field (Murillo-Luna et al., 2008; Sarkis et al., 2010; Park & Kim, 2014; Abdel-Maksoud, Kamel, & Elbanna, 2016). The items were measured using a 7-point Likert scale (1 = no influence; 7 = very strong influence) to assess the pressure the hotel received from employees, suppliers, customers, community, social media, and government agencies for sustainable actions. These six types of stakeholders were selected because they are considered the main ones in the hospitality industry (Abdel-Maksoud, Kamel & Elbanna, 2016).

The EPMS is defined as a set of quantifiable metrics that reflect the environmental performance when pursuing broader goals and objectives (Lisi, 2015). This construct is composed of nine items based on previous studies that investigated the extent of using the EPMS (Perego & Hartman, 2009; Henri & Journeault, 2010; Lisi, 2015; Journeault, 2016). Managers were asked to indicate the extent to which the hotel uses the environmental performance measurement system to assess performance, encourage and reward, make decisions and report information, among others. A 7-point Likert scale was used (1 = not used; 7 = used constantly).

Contextual ambidexterity is defined as the organization's ability to align goals and adapt to the market (Gibson & Birkinshaw, 2004). Consisting of six items that were based on previous studies on ambidexterity (Gibson & Birkinshaw, 2004; Khan & Mir, 2019), this construct assessed whether hotel management systems work coherently to support goals, prevent waste of resources on unproductive activities, encourage challenging outdated practices, among others. These items were measured on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree) and the anchors of ambidexterity were combined and balanced.

The study examined the hotel's ability to simultaneously promote incremental and radical environmental innovation to assess ambidextrous environmental innovation (Jansen et al., 2006; He & Wong, 2004; Rosario & René, 2017; Wang et al., 2020). Ten items related to this construct were measured using a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree) and the ambidexterity was ensured by balancing both innovation anchors through the relative difference between incremental and radical dimensions (first step) and by the combination of incremental and radical dimension through multiplication. Finally, the results from balancing and combination were multiplicated and thus included in structural modelling (Bedford et al., 2019). The items explored whether the hotel had improved its ecological processes and services in the last three years, adopted methods of reuse and recycling of resources, strengthened its green technology, introduced new green processes, new ways to support environmental actions, new eco-labels, and other actions.

The study adopted the continuous variable hotel size as control variables, based on the number of rooms (Claver-Cortés et al., 2007). Another control variable was hotel ownership, a dummy variable indicating whether the hotels were family-owned and managed (1 = family; 0 = non-family) (Powell & Eddleston, 2017). In addition, government support offered during the COVID-19 pandemic to firms was measured through a 5-point-Likert scale (1 = strongly disagree; 7 = strongly agree) to measure whether government support helped the hotel continue offering its services (Salem et al., 2021).

3.3.3 Data analysis

The analysis was conducted using PLS-SEM and bootstrapping technique (Hair. et al., 2017), complemented with the application of advanced techniques such as the FIMIX (finite mixture) approach, multigroup analysis, and importance performance map analysis (IPMA), as recommended by the PLS-SEM literature (Hair et al., 2017; Groß, 2018; Hair Jr., et al., 2016; Sarstedt et al., 2020). The use of these techniques is possible since PLS-SEM allows understanding complex relationships, even with a relatively small sample size (Hair et al.,

2017), controlling the error (Henri & Wouters, 2020), and extracting segments from data through unobserved heterogeneity treatment (Sarstedt et al., 2020). The FIMIX approach suggests that there may be heterogeneity in the data, which cannot be observed through the use of control variables (Groß, 2018; Hair et al., 2016), and these effects need to be controlled through segmentation. The task of assigning segments allowed identifying the optimal segment size and segregating the sample into groups, which were later analyzed in the MGA so that it was possible to assess whether the differences between groups were significant (Hair Jr. et al., 2016). After this step, the IPMA aimed to assess the degree of importance-performance attributed to the constructs in predicting the outcome (Mikulić, Prebežac & Dabić, 2016). The results observed in the IPMA suggest improvement and priority attention to each variable, according to the quadrant it is found (Ringle & Sarstedt, 2016).

3.3.4 Common method bias and non-response bias

Research using the survey method has to be tested for possible sampling bias. Therefore, a T-test for the independent variable was adopted to identify non-response bias. When comparing the 32% of first and last respondents, the results showed no response bias, except for EPMS and ambidextrous environmental innovation (Table 6). The same was observed in previous studies (De Harlez & Malagueño, 2016; Müller-Stewens et al., 2020). As for the common method bias, a test was performed using the marker variable (Bisbe & Malagueño, 2015; Kim et al., 2020). After including the marker variable (strategic planning) in the structural model, the average of the squared correlations was 0.71%, (stakeholder pressure = 0.155, EPMS = 0.035; Contextual ambidexterity = 0.093; and ambidextrous environmental innovation = 0.093). The average correlation squared was 0.71%, and the common method bias was not considered a potential threat in the study (Lindell & Whitney, 2001; Kim et al., 2020).

Table 6. Test of early and late response and demographic data of the sample (N = 196)

Panel A. Comparison of main constructs for early and late respondents			
Construct	*Mean of early respondents (first 32%)*	*Mean of last respondents (last 32%)*	***t-value***
1.Stakeholder pressure	5.11	4.88	1.130
2. EPMS	5.53*	3.82*	4.840
3.Contextual ambidexterity	6.19	6.17	0.100
4.Ambidextrous environmental innovation	5.47*	4.68*	3.517

Panel B. Control variables	Mean	SD
Size (log of room)	2.217	0.15
Government support (Covid-19)	3.495	1.252
Ownership (0=non-family; 1= family)	0.388	0.487

Note: Size = natural logarithm of the number of rooms.

3.4 ANALYSIS OF RESULTS

3.4.1 Measurement evaluation

The PLS algorithm technique was applied to measure the constructs, observing validity and reliability. The convergence validity criteria were evaluated through the AVE and the discriminant validity by the Fornell-Larcker and HTMT criteria. The reliability criteria were assessed through the Cronbach alpha and composite reliability. As shown in Table 7, the constructs meet the validity criteria because the AVEs of the constructs are greater than 0.50, and the Fornell-Larcker and HTMT criteria follow what is recommended in the literature on PLS-SEM (HTMT < 0.85) (Hair et al., 2017; Henseler, Hubona & Ray, 2016). The reliability criterion was also met since CR and CA were above 0.70.

Table 7. Measurement model

	CA	CR	AVE	1	2	3	4	5	6	7
1.Stakeholder pressure	0.893	0.921	0.707	**0.841**	0.696	0.472	0.753	0.068	0.146	0.284
2.EPMS	0.969	0.975	0.868	0.695	**0.931**	0.292	0.822	0.036	0.228	0.409
3. Contextual ambidexterity	-	-	-	0.383	0.272	**0.853**	0.450	0.064	0.077	0.161
4. Ambidextrous environmental innovation	-	-	-	0.714	0.777	0.400	**0.855**	0.060	0.155	0.393
5.Size	-	-	-	-0.045	0.015	-0.018	0.056	-	0.031	0.039
6.Government Support (covid-19)	-	-	-	-0.092	-0.224	-0.064	-0.153	0.031	-	0.039
7.Ownership	-	-	-	-0.295	-0.402	-0.156	-0.374	0.039	-0.039	-
	R^2	R^2Adj	Q^2							
2.EPMS	0.484	0.481	0.417							
3. Contextual ambidexterity	0.074	0.069	0.047							
4. Ambidextrous environmental innovation	0.687	0.677	0.487							

Note: Lower than the diagonal are reported Fornell-Larcker, and higher the diagonal are HTMT ratio. Some correlations are relatively high, but this is not major concern as previous studies on environmental management accounting showed correlations above 0,7 (Bastini et al., 2021; Heggen & Sridharan, 2021).

3.4.2 Structural model

The structural model was evaluated using the bootstrapping technique with resampling of 5,000. The results in Table 8 indicate that stakeholder pressure positively influences the environmental performance measurement system ($\beta = 0.695$, $p < 0.01$), supporting H1. The more stakeholders pressure hotels toward more sustainable behavior, the more the EPMS are used to respond to such demands. Thus, hypothesis H2 was confirmed since the effect of EPMS on ambidextrous environmental innovation was positive ($\beta = 0.508$, $p < 0.01$). This result demonstrates that the effectiveness of EPMS benefits incremental and radical green innovation simultaneously.

Table 8. Structural Model

Relationship	B	t-value	p-value	[5.0%	95.0%]
Stakeholder pressure → EPMS	0.695	18.883	0.000***	[0.624	0.748]
Stakeholder pressure →Ambidextrous environmental innovation	0.289	4.636	0.000***	[0.186	0.390]
EPMS →Contextual ambidexterity	0.272	4.172	0.000***	[0.153	0.370]
EPMS → Ambidextrous environmental innovation	0.508	8.227	0.000***	[0.403	0.606]
Contextual ambidexterity →Ambidextrous environmental innovation	0.141	2.975	0.003***	[0.064	0.220]
Stakeholder pressure →EPMS → Contextual ambidexterity	0.189	3.821	0.000***	[0.104	0.267]
Stakeholder pressure →.EPMS → Ambidextrous environmental innovation	0.353	7.510	0.000***	[0.278	0.432]
EPMS → Contextual ambidexterity → Ambidextrous environmental innovation	0.038	2.541	0.011**	[0.017	0.067]
Size → Ambidextrous environmental innovation	0.067	1.684	0.092*	[0.001	0.131]
Government Support (covid-19) →Ambidextrous environmental innovation	-0.008	0.178	0.859	[-0.088	0.062]
Ownership →. Ambidextrous environmental innovation	-0.066	1.428	0.153	[-0.143	0.010]

Note: Standardized coefficients are presented. ***, ** and *denote 1%, 5% and 10% significance levels (two-tailed), respectively. Size= natural logarithm of the number of rooms. The structural paths are reported with their coefficient, t-value, P-value, and interval confidence.

The findings also confirm that stakeholder pressure positively influences ambidextrous environmental innovation, complementary mediated by EPMS ($\beta = 0.353$, $p < 0.01$), confirming hypothesis H3. The mediation effect of EPMS suggests that management control stands out as a facilitator of the relationship between stakeholder demands and the value firms offer to them. Hypothesis H4 stated that the influence of EPMS on ambidextrous environmental

innovation is facilitated by contextual ambidexterity. The finding confirms the hypothesis, revealing that the more the hotel demonstrates the capacity to adapt, the higher the effect of EPMS on ambidextrous environmental innovation ($\beta = 0.038$, $p < 0.05$). It also shows that the higher the hotel size the higher the likelihood of the conciliation incremental and radical environmental innovation.

3.4.3 FIMIX for heterogeneity analysis and IPMA

The FIMIX approach was used to assess unobserved heterogeneity, assuming the possibility of identifying segments or groups within a sample or population (McLachlan & Peel, 2000; Matthews et al., 2016b). FIMIX is based on the latent class technique and calculates the probability of participation of each observation in the segments (Sarstedt, Becker, Ringle & Schwaiger, 2011). The first step of this approach consists of identifying the optimal segment number, which had as parameter 1 · 10^-10 with 5,000 maximum iterations (Hair Jr. et al., 2016a). This procedure was performed six times as recommended in the literature. The information and classification criteria are presented in Table 9.

Table 9. FIMIX segmentation

	K=1	**K=2**	**K=3**	**K=4**	**K=5**	**K=6**
AIC (Akaike's Information Criterion)	1,791.805	1,618.314	1,530.489	1,490.170	1,418.055	1,358.353
AIC3 (Modified AIC with Factor 3)	1,810.805	1,657.314	1,589.489	1,569.170	1,517.055	1,477.353
AIC4 (Modified AIC with Factor 4)	1,829.805	1,696.314	1,648.489	1,648.170	1,616.055	1,596.353
BIC (Bayesian Information Criteria)	1,854.089	1,746.161	1,723.897	1,749.141	1,742.589	1,748.449
CAIC (Consistent AIC)	1,873.089	1,785.161	1,782.897	1,828.141	1,841.589	1,867.449
HQ (Hannan Quinn Criterion)	1,817.021	1,670.072	1,608.790	1,595.014	1,549.442	1,516.282
MDL5 (Minimum Description Length with Factor 5)	2,255.226	2,569.546	2,969.532	3,417.025	3,832.722	4,260.831
LnL (LogLikelihood)	-876.903	**-770.157**	-706.244	-666.085	-610.028	-560.176
EN (Entropy Statistic (Normed)		0.668	0.745	0.787	0.811	0.845
NFI (Non-Fuzzy Index)		0.724	0.757	0.779	0.792	0.809
NEC (Normalized Entropy Criterion)		65.079	50.065	41.667	37.129	30.449

Segment	**P1**	**P2**	**P3**	**P4**	**P5**	**Σk pk**
2	**0.628**	**0.372**				1
3	0.432	0.309	0.258			1
4	0.403	0.223	0.201	0.172		1
5	0.243	0.240	0.213	0.166	0.139	1

Note: Segment 2, P1 and P2 were reported according to the segment assigned. Segment n=2 was selected as the optimal segment size. P = segment probability; Σk pk = sum of probabilities; K = segment.

It was necessary to interpret the indicators in a combined way or to assess the proportion of probabilities in order to choose the appropriate number for each segment. The combinatorial analysis of the information and classification criteria did not show equal values (AIC 3 and CAIC; AIC 3 and BIC, AIC 4 and BIC or AIC4 and HQ), while the evaluation of the proportion of probabilities pointed to two optimal segments. In the process of choosing the optimal segment size, the minimum sample size was considered (Ringle, Sarstedt & Mooi, 2010; Sarstedt et al., 2011; Hair et al., 2016a). The MGA model was applied to assess the differences between the optimal segments identified in the FIMIX approach. The criteria for measuring by segment were met, and a bootstrap resampling of 5,000 iterations was performed for structural analysis. The results indicate a significant difference in the two main effects groups evaluated in this study.

Table 10. MGA analysis for segments

Relationship	**Segment1 (n=123)**			**Segment 2 (n=73)**			**MGA Diff**
	B	t-Value	p-Value	B	t-value	p-Value	B[p-Value new (SEG1 vs SEG2)]
Stakeholder pressure à EPMS	0.692	13.241	0.000***	0.680	13.006	0.000***	0.012 (0.861)
Stakeholder pressure àAmbidextrous environmental innovation	0.192	2.796	0.005***	0.487	4.158	0.000***	-0.295 (0.032**)
EPMS à Contextual ambidexterity	0.289	3.431	0.001***	0.186	1.631	0.103	0.103 (0.458)
EPMS à Ambidextrous environmental innovation	0.694	11.043	0.000***	0.230	2.252	0.024**	0.464 (0.001***)
Contextual ambidexterity à Ambidextrous environmental innovation	0.059	1.039	0.299	0.189	1.886	0.059*	-0.130 (0.258)
Size à Ambidextrous environmental innovation	0.088	1.831	0.067*	0.038	0.547	0.584	0.050 (0.555)
Government Support (Covid-19) à Ambidextrous environmental innovation	0.036	0.782	0.434	-0.087	0.977	0.328	0.123 (0.219)
Ownership à Ambidextrous environmental innovation	-0.045	0.844	0.399	-0.035	0.400	0.689	-0.010 (0.931)

Note: Standardized coefficients are presented. ***, ** and * for 1%, 5% and 10% significance levels (two-tailed).

Table 10 shows that stakeholder pressure positively influences EPMS in both groups, but no significant difference was observed. However, the difference between the groups related

to the effect of stakeholder pressure on ambidextrous environmental innovation was confirmed (β=-0.295, p= 0.032). Although stakeholder pressure influence on ambidextrous environmental innovation is positive and significant in both groups, this relationship is higher in segment 2. The relationship between EPMS and contextual ambidexterity is more positive in segment 1. However, the MGA difference was not found. The effect of EPMS on ambidextrous environmental innovation was positive and significant in the subsample analysis, and the MGA difference was found (β = 0.464, p = 0.001). This evidence suggests a high probability of simultaneous incremental and radical environmental innovation through EPMS in hotels of segment 1.

MGA results reveal that the explored constructs may behavior differently according to the segment. Thus, importance performance map analysis (IPMA) was conducted to identify firms' actions to achieve the desired environmental innovation. As reported in Appendix B, the IPMA suggests that hotels in segment 1 perceive stakeholder pressure and EPMS as highly important and vital factors in achieving environmental innovation, as these were found in quadrant I in IPMA. However, in segment 2, EPMS and contextual ambidexterity appear in quadrant IV, meaning low importance. This evidence may explain the observed MGA difference related to the impact of EPMS on ambidextrous environmental innovation. Moreover, deepening the stakeholder theory, this study reveals that the local community, customers and social media perform better and are highly important since they appear in quadrant I. However, other stakeholders such as suppliers show high importance but low performance (quadrant II) and employees demonstrate high performance but low importance (quadrant IV). Thus, this study suggests to hotels give special attention to suppliers, customers, and EPMS so that sustainable goals can be achieved (e.g., environmental innovation).

3.5 DISCUSSION OF RESULTS

This research aimed to contribute to the literature on management accounting and environmental innovation in the hospitality industry by examining the influence of stakeholder pressure on EPMS and ambidexterity for the improvement of ambidextrous environmental innovation. Additionally, the mediation effect of contextual ambidexterity was analyzed. The results confirm that stakeholder pressure positively influences the use of EPMS and suggest that when discussions focus on alternatives to maximize the benefits of environmentally correct behavior, using financial and environmental measures is essential. As customers, suppliers, and employees inform the hotels of their environmental demands, environmental metrics, and decisions related to the price and mix of products and services become part of the managers'

performance assessment process. Hotel operations directly impact the consumption of increasingly scarce resources, such as water, energy, and food (Aboelmaged, 2018). Therefore, stakeholders are pushing for greater transparency regarding these resources. Hotels respond to these pressures through the EPMS, enabling environmental reports that inform the actions taken to reduce consumption and waste of resources. Actions to incorporate stakeholder demands in the EPMS are (i) making employees and guests aware of the responsible consumption of energy and food (Aboramadan & Karatepe, 2021), (ii) the use of water reuse systems, rainwater capture systems for secondary activities (water for non-potable purposes) such as garden irrigation (Wyngaard & De Lange, 2013), and (iii) the hotel's active participation in the community encouraging ecotourism. The importance of EPMS in the face of stakeholder pressures was recognized in the literature on environmental management accounting (Lisi, 2015), but the literature addressing these issues in the hospitality industry is still scarce. The results of this study reinforce the role of the EPMS in responding to pressure from multiple stakeholders, helping to understand the reality in the hospitality industry. The benefits of using EPMS that reflect the demands of stakeholders reinforce the hotel's environmental values, monitor environmental actions, and facilitate continuous improvement.

The literature has shown that the benefits of using EPMS encompass the eco-learning capability (Journeault, 2016; Kasim, 2015), which may increase environmental innovation. The findings of this study reveal that the use of EPMS positively influences hotels' ambidextrous environmental innovation, broadening the scant knowledge on environmental management control in hospitality literature. The use of EPMS allows hotels to adopt innovative practices that reduce excessive consumption of resources, such as the implementation of LED lamps and solar panels (Wang, Font & Liu, 2020). In addition to EPMS contributing to the effectiveness of the firm's operations (Lisi, 2015), they also encourage continuous improvement of existing processes and the insertion of new ecological practices that generate radical changes (Ferreira, Moulang, & Hendro, 2010; Wang et al., 2020). Understanding that the reach of ambidextrous environmental innovation may be conditioned on the extent of use of the EPMS is important for hotel management, particularly in dynamic environments such as hospitality, where purpose-built performance measures (e.g., environmental performance metrics) are required to achieve assertive decision-making.

The mediating role of EPMS in the relationship between stakeholder pressures and ambidextrous environmental innovation is recognized in this study. The results reveal that EPMS translates stakeholder pressures into sustainable values (e.g., ambidextrous environmental innovation), reducing activities that negatively impact the environment.

Indications from previous studies regarding the potential of environmental performance measurement as a mediator (Laguir et al., 2021; Phan & Baird, 2015) are underpinned in this study, as it has been confirmed that EPMS allow more accurate decision-making regarding environmental issues and drive environmental improvements while enabling investment in new greener practices, products, and services. For example, the extent to which hotels strive for (i) green marketing, encouraging consumers to reduce waste through the use of digital technologies (Stangl et al., 2016), and (ii) investment in new solar energy equipment (Rosario & René, 2017), are beneficial both for the organization and stakeholders. This study recognizes the importance of stakeholder pressure, particularly in the current context where climate change is accelerating, suggesting that using EPMS encourages collaboration between employees, customers, suppliers, and the organization to pursue radical and incremental improvements.

This research also analyzed contextual ambidexterity due to the benefits pointed out in the literature and considering the limited empirical evidence reported in management accounting and hospitality. The results demonstrate that contextual ambidexterity mediates the relationship between EPMS and ambidextrous environmental innovation. As previous studies suggested a better understanding of the reflexes of contextual ambidexterity on organizational outcomes (Khan & Mir, 2019), this study fills the gap and confirms that the hotel's adaptability facilitates the impact of EPMS on ambidextrous environmental innovation. As the firm enables systems to operate consistently with organizational goals while being flexible enough to respond quickly to change (Gibson & Birkinshaw, 2004; Khan & Mir, 2019), environmental performance measures gain space in the debates at the top management level on incremental and radical improvements in ecological products and processes. Thus, the top management team's decisions cascade through operational levels, where actions are taken toward high ambidextrous environmental innovation. Despite this evidence, IPMA suggests that hotels in segment 2 should give more attention to increasing the importance of decisions on environmental innovation.

3.6 CONCLUSION

The results demonstrate that stakeholder pressure positively influences ambidextrous environmental innovation through the environmental performance measurement system. The findings show that contextual ambidexterity in the hospitality industry amplifies the effect of environmental performance measurement on ambidextrous environmental innovation. This evidence highlights the importance of connecting the Stakeholder Theory, environmental

management control literature, and ambidexterity to broaden the knowledge of how hospitality firms manage environmental innovation to accomplish sustainable goals.

5.1Theoretical implications

The findings contribute to the management control and hospitality literature by confirming that stakeholder pressure is important in fostering hospitality environmental innovation practices and creating value for firms' partners through strengthening ties. This study contributes to the stakeholder theory by informing that in the hospitality industry, the importance given to employees is lower and the performance of suppliers is also lower when compared with other stakeholders (local community, customers, and social media). Thus, hospitality firms are recommended to balance the expectation of stakeholders to improve the sustainability performance metrics. Also, this study contributes to the literature by revealing management control practice as a facilitator of value creation for stakeholders. While the pressure from diverse business partners is embedded into EPMS hotels' sustainable concerns arise. Therefore, the results of this study broaden previous evidence (Lisi, 2015; Heggen, 2019), demonstrating that firms prioritize stakeholder-environmental demands by implementing cybernetic environmental control to support incremental and radical environmental innovation. Primarily, the study responds to the question of the existence of management practice capable of managing sustainable issues (Beusch et al.,2021), bringing up EPMS as an essential practice for sustainability management. This evidence contributes to the management control and hospitality literature, reinforcing the necessity of implementing environmental measures to foster ambidextrous environmental innovation. In a dynamic sector, such as hospitality, EPMS establishes strategic goals, incentivizes employees, and assists managers in daily decisions, enriching the knowledge of the role that control mechanisms play in environmental management. Instead, the simultaneous focus on hotels' alignment and adaptability capabilities become differential attributes of ambidextrous environmental innovation, especially when interacting with EPMS. These findings contribute to the recent and growing body of management control studies incorporating ambidexterity theory to better comprehend ambidextrous innovation (Bedford et al., 2019).

5.2Managerial implications

This study promotes practical implications since firms are suggested to implement management controls that facilitate the effectiveness of incremental and radical environmental

innovation. Hospitality firms can find in this study support to manage organizational innovation and guide employees to accomplish the goal creatively, such as guidelines to manage the firm's relationship with stakeholders. By bringing the concerns of customers, supplies, community, and others into firms' strategic decisions, the performance measuring system becomes more useful, focusing not only on the incremental tool but also on radical environmental innovation. Thus, firms are encouraged to give special attention to their main stakeholders and design performance measurement systems in a way that provides supportive information to managers for better decision-making. Firms are encouraged to build alignment capability to bring individuals into the line of the collective goal. This suggestion may facilitate a short-term action highly connected to incremental environmental innovation. Likewise, the capability of adapting firm operations to market demands is important for radical environmental innovation. Thus, firms improve their green product and process by conciliating alignment and adaptability capabilities, decreasing cost and increasing efficiency.

5.3Limitation and future directions

Although the robustness of the results and the most used survey method in management control and hospitality literature, some limitations must be pointed out. As this study relies on survey data, the results must be interpreted cautiously since the respondent's opinions should be limited, even after the common method and response biases are controlled. Thus, future research should explore the potential of environmental innovation based on archival data indicators, such as R&D investment in resources and materials with less negative environmental impact. Future studies should adopt interactive and diagnostic EPMS and analyze their complementary effects to broaden the comprehension of environmental innovation drivers. As in Bedford et al. (2019), the balance and debate of performance measures seem to be a prominent research agenda. EPMS can be amplified in future research by including new outcomes such as environmentally friendly, environmental commitment, and others. This study explored the multiple stakeholder approach; however, future studies should explore the salience approach of ST to allow the identification level of influence of specifics stakeholder in sustainability innovation prediction. Also, news ecosystems innovation models have been explored in the literature, such as Quintuple Helix Innovation Model that may be useful for future studies that seek analyze the integrative management controls in fostering business model innovation.

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APPENDIX B

1-Descriptive statistics

Item	Mean	Min	Max	Standard Deviation	Excess Kurtosis	Skewness	Loading
STAKEHOLDER PRESSURE (reflexive construct)							
ST1	4.857	1.000	7.000	1.355	-0.462	-0.296	0.915
ST2	5.219	2.000	7.000	0.978	0.118	-0.321	0.557
ST3	5.607	2.000	7.000	1.080	-0.407	-0.414	0.925
ST5	3.827	1.000	7.000	1.588	-0.995	-0.236	0.863
ST6	5.821	1.000	7.000	1.426	0.546	-1.181	0.886
ST4*							
ENVIRONMENTAL PERFORMANCE MEASUREMENT SYSTEM (reflexive construct)							
EPMS1	4.699	1.000	7.000	2.436	-1.477	-0.454	0.944
EPMS2	4.000	1.000	7.000	2.188	-1.469	-0.186	0.914
EPMS5	4.699	1.000	7.000	2.312	-1.261	-0.600	0.955
EPMS6	4.352	1.000	7.000	2.342	-1.440	-0.430	0.947
EPMS8	5.122	1.000	7.000	2.123	-0.496	-1.004	0.904
EPMS9	4.964	1.000	7.000	2.230	-0.960	-0.781	0.923
EPMS3**							
EPMS4**							
EPMS7**							
CONTEXTUAL AMBIDEXTERITY (reflexive-reflexive second-order construct)							
CAMB_ALIGN1	6.526	2.000	7.000	0.779	7.078	-2.208	-
CAMB_ALIGN2	6.403	1.000	7.000	0.866	10.008	-2.448	-
CAMB_ALIGN3	6.469	1.000	7.000	0.955	9.721	-2.797	-
CAMB_ADAPT1	5.781	1.000	7.000	1.014	2.705	-1.204	-
CAMB_ADAPT2	6.056	2.000	7.000	0.834	2.446	-1.010	-
CAMB_ADAPT3	6.209	2.000	7.000	0.809	2.791	-1.157	-
AMBIDEXTROUS ENVIRONMENTAL INNOVATION (reflexive-reflexive second-order construct)							
AEINO_INCR1	5.367	1.000	7.000	1.265	0.824	-0.826	-
AEINO_INCR2	5.658	2.000	7.000	1.195	-0.092	-0.650	-
AEINO_INCR3	5.638	1.000	7.000	1.483	0.034	-0.966	-
AEINO_INCR4	4.526	1.000	7.000	2.221	-1.183	-0.556	-
AEINO_INCR5	5.526	1.000	7.000	1.145	3.216	-1.194	-
AEINO_RADI1	4.709	1.000	7.000	1.519	-0.247	-0.685	-
AEINO_RADI2	4.954	1.000	7.000	1.368	0.203	-0.688	-
AEINO_RADI3	4.974	1.000	7.000	1.833	-0.667	-0.643	-
AEINO_RADI4	5.056	1.000	7.000	1.419	0.364	-0.921	-
AEINO_RADI5	3.888	1.000	7.000	1.935	-1.232	-0.002	-
CONTROL VARIABLES							

Size (log room)	2.217	2.010	2.610	0.153	-0.672	0.331	-
Government support (Covid-19)	3.495	1.000	5.000	1.252	-0.985	-0.374	-
Ownership (1=Family; 0=non-family)	0.388	0.000	1.000	0.487	-1.803	0.464	-

Note: * dropped duo to low loading and ** deleted duo to outer-VIF above (10).

2.1Measurement evaluation for FIMIX segments

Segment 1									
Constructs	CR	AVE	1	2	3	4	5	6	7
1.Stakeholder pressure	0.920	0.703	0.839						
2.EPMS	0.975	0.867	0.692	0.931					
3.Contextual ambidexterity	-	-	0.357	0.289	0.832				
4.Ambidextrous environmental innovation	-	-	0.698	0.856	0.340	0.862			
5.Size	-	-	-0.063	-0.015	0.021	0.071			
6.Government Support (COVID-19)	-	-	-0.025	-0.157	0.056	-0.063	0.064		
7.Ownership	-	-	-0.238	-0.426	-0.160	-0.404	-0.037	-0.121	
Segment 2									
Constructs	CR	AVE	1	2	3	4	5	6	7
1.Stakeholder pressure	0.919	0.699	0.836						
2.EPMS	0.973	0.858	0.680	0.927					
3. Contextual ambidexterity	-	-	0.368	0.186	0.831				
4. Ambidextrous environmental innovation	-	-	0.741	0.638	0.435	0.806			
5.Size	-	-	0.011	0.101	0.004	0.065			
6.Government Support (COVID-19)	-	-	-0.177	-0.299	-0.229	-0.289	-0.045		
7.Ownership	-	-	-0.341	-0.335	-0.094	-0.295	0.173	0.066	

Note: Fornell-Larcker criterion (below the diagonal)

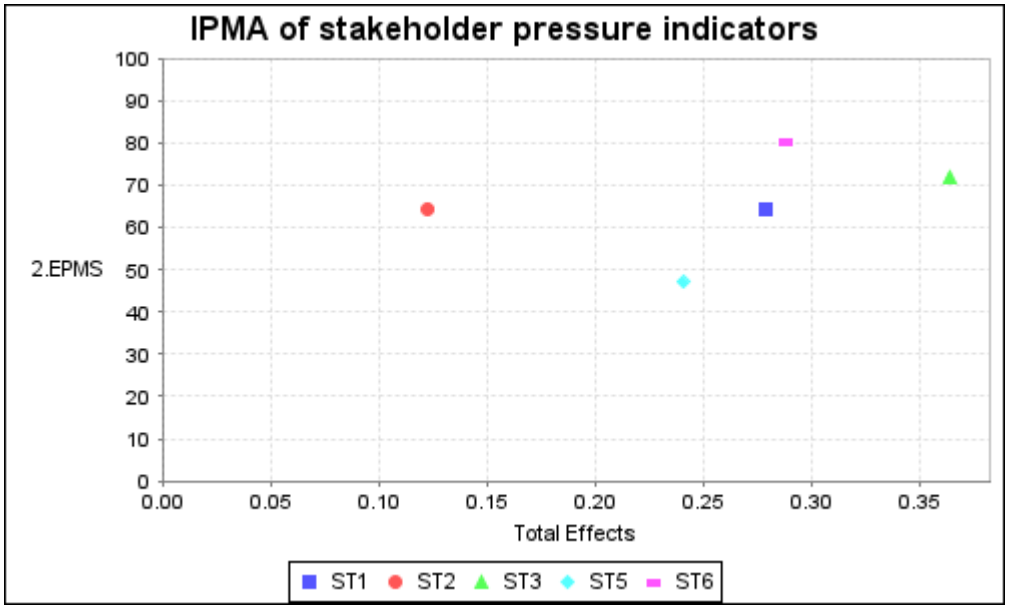
2.3 The results are present when the stakeholder variable is segregated into primary (employees, customers, and suppliers) and secondary (local community, social media, and government).

Relationship	**B**	**T-value**	**P-value**
Primary Stakeholder pressure → EPMS	0.276	2.709	0.007***
Secondary stakeholder pressure →EPMS	0.443	4.182	0.000***
Primary Stakeholder pressure → EPMS → Ambidextrous environmental innovation	0.237	3.851	0.000***

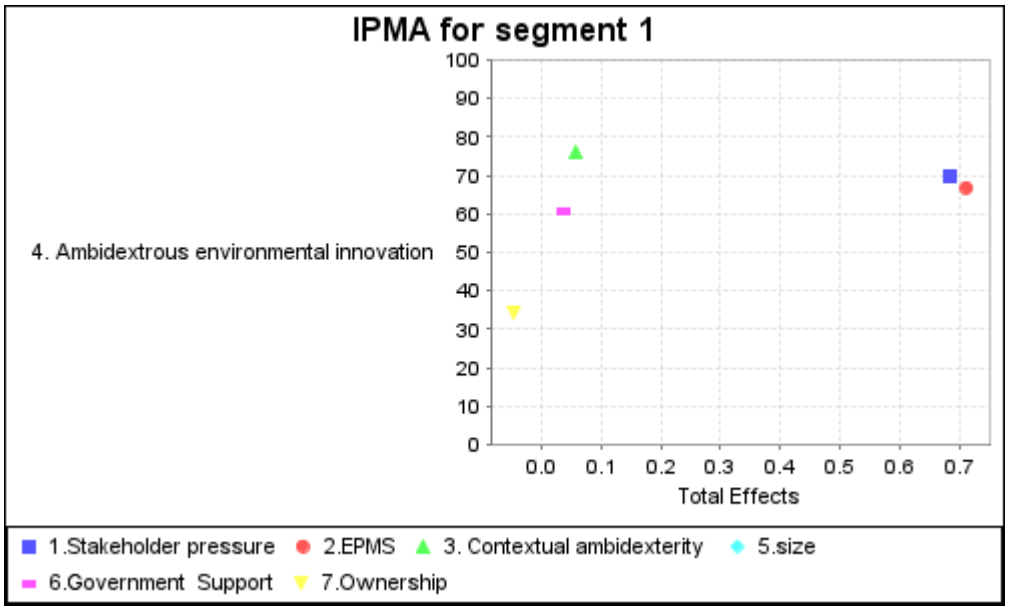
Secondary stakeholder pressure → EPMS →Ambidextrous environmental innovation	0.148	2.591	0.010***

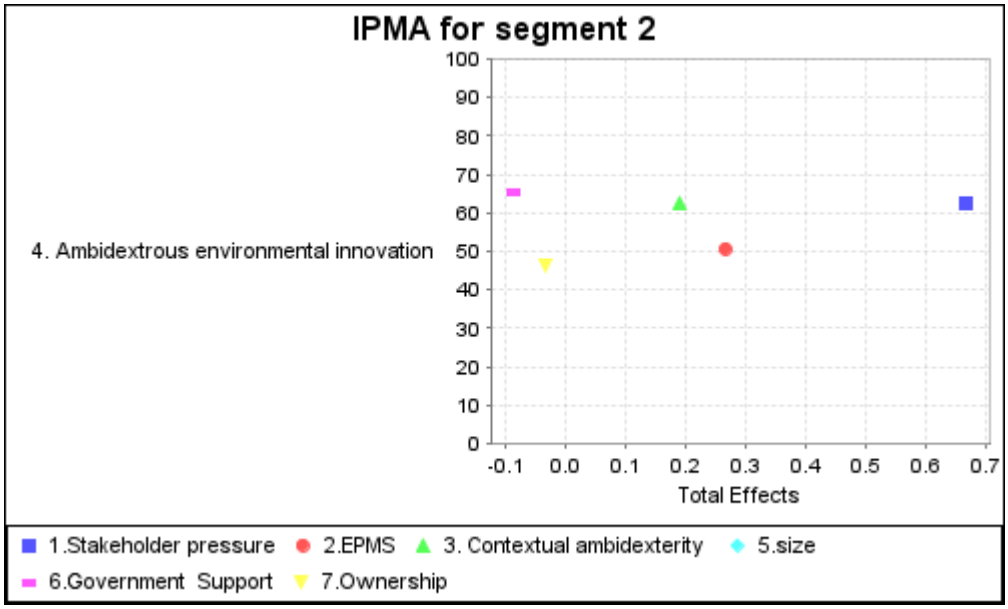
Note: Standardized coefficients are presented. ***, **, and * indicate 1%, 5%, and 10% significance levels (one-tailed for predicted signal and two-tailed otherwise).

3.1Importance performance map analysis for each stakeholder pressure indicator



3.2Importance performance map analysis for each segment




IPMA for segment 2
4. Ambidextrous environmental innovation
100
90
80
70
60
50
40
30
20
10
0
-0.1
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
Total Effects
1.Stakeholder pressure
2.EPMS
3. Contextual ambidexterity
5.size
6.Government Support
7.Ownership

4-QUESTIONNAIRE

4.1 STAKEHOLDER PRESSURE

Indicate the extent to which your hotel feels pressure from the following stakeholders on decisions related to environmental management. The following scale items ranged from 1 (no influence) to 7 (very strong influence).

STP1...Local community
STP2...Employees
STP3...Customers
STP4...Government regulatory agencies (legislative bodies)
STP5...Suppliers
STP6...Social media

4.2ENVIRONMENTAL PERFORMANCE MEASUREMENT SYSTEM

“Environmental performance indicators are quantifiable metrics that reflect the hotel's environmental performance in achieving broader goals and objectives.” Indicate the extent to which your hotel uses environmental performance measurement system for the following items/purposes: Use the following scale: 1 (not used) to 7 (used constantly).

EPMS1....Evaluate managers’ performance
EPMS2....Incentivize and reward managers (e.g., setting salary increases, setting annual bonuses and/or career advancements)
EPMS3....Establish formal strategic objectives
EPMS4....Evaluate and approve capital expenditures
EPMS5....Make service decisions (e.g., daily price, mix of services, offering of new service packages).
EPMS6....Select/assess external suppliers
EPMS7....The daily management and operational decisions (e.g.: assess make-or-buy alternatives).
EPMS8…. Monitor internal compliance with environmental policies and regulations
EPMS9… Provide data for external reporting

4.3 CONTEXTUAL AMBIDEXTERITY

Please rate the extent to which you agree or disagree with the following statements related to your hotel capability to align objectives into the firm and adapt to the market on a 7-point Likert scale (1=strongly disagree; 7=strongly agree)

Alignment

CAMB_ALIGN1… The management systems work in this hotel coherently to support the overall objectives

CAMB_ALIGN2…The management systems in this hotel prevent us from wasting resources on unproductive activities"

CAMB_ALIGN3…People in this hotel work toward the same purposes because our management systems avoid conflicting objectives

Adaptability

CAMB_ADAPT1… The management systems in this hotel encourage people to challenge outmoded traditions/practices

CAMB_ADAPT2… The management systems in this hotel are flexible enough to allow us to respond quickly to changes in our markets

CAMB_ADAPT3… The management systems in this hotel evolve rapidly in response to shifts in our business priorities

4.4 AMBIDEXTROUS ENVIRONMENTAL INNOVATION

Please rate the extent to which you agree or disagree with the following statements related to your hotel's capability to conciliate incremental and radical environmental innovation in the last three years, on a 7-point Likert scale (1=strongly disagree; 7=strongly agree). Our hotel...

Incremental

AEINO_INCR1…Actively improves green processes and services

AEINO_INCR2…Actively strengthens current green technology.

AEINO_INCR3…Improves methods and devices for resource reuse (e.g., water, material)

AEINO_INCR4... Increased use of clean energy (e.g., solar energy)

AEINO_INCR5…...Uses more eco-friendly cleaning supplies

Radical

AEINO_RADICAL1…Encourages the consumption of organic and local products

AEINO_RADICAL2…Actively adopts new green processes and services;

AEINO_RADICAL3…Actively enters new green technology (e.g., equipment for water reuse and/or recycling).

AEINO_RADICAL4…Develops new ways to support environmental actions

AEINO_RADICAL5....Introduced new eco-labels for materials and/or products

4.5 CONTROL VARIABLES

a) Age (years): .....

b) Gender: ( ) Male ( ) Female ( ) Prefer not to say.

c) City / State of the country in which the hotel is located: .....

d) How many housing units/rooms does the Hotel have?

e) During the pandemic, the government provided support that was important to the hotel's continued operations (eg. tax postponement, expansion of loan programs). Consider the scale from 1 to 5 (1=strongly disagree; 7= strongly agree).

f) Is your hotel familiar? In other words, managed and owned by one (or more) family(ies)? Yes ( ) No ( )

g) How many years has the hotel been offering its services? .....

h) Is the hotel a franchise /member of a hotel chain? ( ) yes, ( ) no.

i) To what extent does your hotel rely on strategic planning metrics to monitor results? (7-point Likert scale)*

**-Marker variable*

Some remedies were taken to reduce possible bias

1. The participants were selected carefully to ensure suitable knowledge of the questions.
2. The questionnaire was pretested with managers. Contributions related to the wording of the questions and adequate duration time of the survey improved the final version.
3. Some constructs were labeled in general terms.
4. The instructions did not suggest the relationships of interest.
5. The participants were informed in the instructions that there were no right or wrong answers as the study was only interested in their opinion.
6. We ensured the anonymity of responses and their firms.
7. We mixed the variables of interest within the questionnaire.

4. Secondary stakeholder salience in corporate social responsibility prediction: the moderation role of ethical value-based control

Abstract

This study analyzes the effects of stakeholder pressure (primary and secondary) and ethical value-based control on corporate social responsibility. This study applied a survey method and obtained 190 responses from Brazilian restaurants. Structural equation modeling was used to test the hypothesis and fuzzy set qualitative comparative analysis was applied to refine the finding. The results show that the stakeholder pressure positively influences corporate social responsibility, such that the secondary stakeholder pressure stands out. The findings show that high levels of ethical value-based control intensify the positive effect of secondary stakeholder pressure on corporate social responsibility more than that of primary stakeholder pressure. Ethical value-based control also influences ethical decisions and thus facilitates corporate social responsibility achievement. The results from fsQCA reinforce the PLS regression by informing that when secondary stakeholder pressure, ethical value-based control and ethical decision are essential conditions that, when combined, lead to high corporate social responsibility. This study contributes to the literature by bringing ethical value-based control as a core management practice that restaurants may use to support their long-term aims related to corporate social responsibility.

Keywords: Primary stakeholder pressure; Secondary stakeholder pressure, Ethical value-based control, ethical decision; corporate social responsibility.

4.1 INTRODUCTION

In the context of climate change and social inequality, stakeholders have pressured organizations to adopt ethical behaviors (Hörisch, Freeman & Schaltegger, 2014; Hörisch, Schaltegger & Freeman, 2020). Particularly in the hospitality sector, concerns about ethical issues have increased (Schwepker & Dimitriou, 2021), gaining attention from stakeholders (Su & Chen, 2020). Despite stakeholder groups' concerns over the economic, environmental, and social impacts of the hospitality activity being concrete (Hultman & Säwe, 2016, Ruiz-Lozano, De-los-Ríos-Berjillos & Millán-Lara, 2018), the level of pressure may vary according to the contractual relationship between the firm and its partners (Clarkson, 1995). The stakeholder researchers informed that the pressure from groups with formal contractual relations, such as

suppliers, customers, and employees (hereafter primary stakeholders) is different from other pressure from the government, community, and social media (hereafter secondary stakeholders) (Clarkson, 1995; Rodrigue et al., 2013; Hörisch et al., 2020). The literature advocated that when the priorities are more focused on long-term aims such as socio-environmental, the level of secondary stakeholder pressure is higher than primary stakeholder pressure (Thijssens et al., 2015; Rhee et al., 2021;). Approaching the salience of one group over another seems to be interesting to understand how the search for more social responsibility and ethical behavior draws more attention to secondary stakeholders.

The Stakeholder Theory (ST) proposes that ethics should be adopted as a corporate value as it generates benefits beyond profits (Hörisch, Schaltegger, & Freeman, 2020). A good ethical image is crucial in the service industry, as it demonstrates responsibility in firms' daily operations (Lee, Choi, Moon & Babin, 2014) and helps them meet stakeholders' demands. In recent decades, the hospitality literature has considerably broadened the understanding of corporate ethical behavior (Huimin & Ryan, 2011; Lee, Choi, Moon & Babin, 2014; Schwepker & Dimitriou, 2021). Scholars have noted that formalizing ethical programs leads hospitality firms to foster ethical leadership, reduce work stress, improve performance (Schwepker & Dimitriou, 2021), and engage more deeply in sustainable practices (Ruiz-Lozano, De-los-Ríos-Berjillos, & Millán-Lara, 2018).

However, previous research has scarcely addressed ethical decision-making in the context of stakeholders' demands and the search for greater corporate social responsibility (CSR) (Farmaki, 2019). Additionally, in terms of debating ethical issues and CSR, the pressure from primary stakeholders can differ from that of secondary stakeholders. Moreover, the literature has provided less evidence on how ethical value-based control produces greater transparency, integrity, and other organizational benefits. This study understands ethical value-based control as the control system that establishes ethical standards, seeks compliance to such standards, and leads individuals to share organizational ethical values (see. Weaver, Trevino, & Cochran, 1999a, b). It is possible to argue that ethical value-based control reinforces the ethical decisions into concrete organizational actions that leverage CSR. However, the management accounting and hospitality literature are silent on the role of ethical value-based control in maintaining organizational goals. This silence is quite surprising since a) it is well known that value-based controls are effective forms of control (Bellora-Bienengräber, Radtke & Widener, 2021), especially in the service industry (Lee et al., 2014); b) ethical decision legitimizes organizational actions toward stakeholders (Waheed & Zhang, 2020) – for example, contact with the community is common in the service industry, and customers constantly

evaluate the services through instruments such as online reviews, in which ethical aspects are considered; and c) an adequate governance structure that allows for the implementation of a code of ethics, and take decisions that promotes CSR (Mak & Chang, 2019) and generates trust among stakeholders, in addition to several other benefits. This research intends to fill the gap in the literature, analyzing the effects of stakeholder pressure (primary and secondary) and ethical value-based control on corporate social responsibility. The sample of this study was 190 responses from Brazilian restaurants and structural equation modelling was applied for hypothesis testing. The choice of restaurants as the population of this study was made for at least two reasons: i) Restaurants constitute a representative portion of the hospitality industry and recent studies have drawn attention to a particular look at the posture of these organizations in the context of ethics and green practices implementation (Cho, &Yoo, 2021) and ii) it allows to broaden our comprehension on how firms in hospitality sector behavior, besides previous evidence from hotel firms. The findings demonstrate that the influence of secondary stakeholder pressure on corporate social responsibility is stronger than those of primary stakeholders. Also, the results show that high levels of ethical value-based control amplify the positive impact of secondary stakeholder pressure on corporate social responsibility. Moreover, the results suggest that ethical decision facilitates the impact of ethical value-based control on corporate social responsibility. The FsQCA approach recommends that restaurant managers consider the combination of secondary stakeholder pressure, ethical value-based control and ethical decision as essential conditions for high corporate social responsibility.

This research contributes to the literature in different ways. First, the study highlights the importance of stakeholder salience theory when the point of debate is the comprehension of firms' social responsibility and its benefits for service industry management. Specifically, it demonstrates that the influence of secondary stakeholder pressure on CSR is more effective than those of primary stakeholders. Second, by suggesting that, in the service industry, ethics is a central and decisive factor in meeting stakeholder demands. Third, by pointing out that when firms adopt ethics as a differentiation factor, their actions become more responsible, increasing the degree of CSR. Fourth, this study introduces ethical value-based control as a moderator in the relationship between stakeholder pressure and CSR, building on a previous study that recognized the importance of focusing on ethical issues when exploring management control (Bellora-Bienengräber, Radtke & Widener, 2021). It especially shows that the moderation role of ethical value-based control in the relationship between stakeholder pressure and CSR is higher when the pressure stems from the secondary stakeholders. As for the practical contributions, this research intends to show that the benefits from stakeholder management go beyond profit-

making. It seeks to demonstrate that firms in the service industry are aware of the surrounding community, environmental issues, ethical organizational behavior, and social issues.

4.2 THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

4.2.1 Stakeholder pressure and corporate social responsibility

Initially, the Stakeholder Theory (ST) assumptions were based on ethical concerns at the corporate level (Hörisch, Freeman & Schaltegger, 2014). How organizations manage their ethical behavior determines the degree of attention they pay to their partners, thus creating value for both parties (Hörisch, Schaltegger & Freeman, 2020). The management of stakeholder demands becomes a tool that incorporates ethics into management practices (Fassin, 2009; Lee, 2011; Majoch, Hoepner & Hebb, 2017). Currently, firms need to meet stakeholder demands more than watch over their expectations (Khan, Bose & Johns, 2020). As managers strive for morally correct behavior, a virtuous circle is generated that fosters greater information transparency, positively evaluated by stakeholders (Ruiz-Lozano, De-los-Ríos-Berjillos & Millán-Lara, 2018). This attitude involves organizational resources with a purpose that goes beyond profit-making, alleviating primary and secondary pressures (Hörisch, Schaltegger & Freeman, 2020).

Corporate social responsibility (CSR) has been defined as the firm's contribution to meet sustainability, i.e, to meet the present needs without harming future generations' ability to do the same (Dahlsrud, 2008). It is considered an effective response to pressures from multiple stakeholders (Khojastehpour & Shams, 2020). CSR integrates environmental, social, legal, and economic issues that generate value for firms and those players related to the organization (Theodoulidis et al., 2017). Therefore, more than meeting shareholders' expectations, the firm must address different stakeholders' demands (Theodoulidis et al., 2017). The interaction between stakeholders' pressure and ethical issues creates synergy between firms and society, bringing organizational benefits such as high-performance regarding CSR.

Previous studies have pointed out that pressure from primary and secondary stakeholders is responded to through ethics, policies, values, and responsible organizational culture, which induce the implementation of governance mechanisms (Singh et al., 2019). The greater the pressure from stakeholders, the more the managers integrate the code of ethics into strategic decisions, and social values and thus create a culture that promotes a positive reputation (Stevens et al., 2005). Firms must understand stakeholder pressure because it determines how organizational actions are designed and directed to effectively respond to demands (Jollands, Akroyd & Sawabe, 2018). There are clear benefits observed from the

implementation of corporate values and ethics, particularly when encouraging managers to engage in sustainable actions (Singh et al., 2019). Among them, promoting an ethical culture that reduces unethical behavior and improves the firm's corporate social reputation stands out as a form of reinforcing the moral dimension of organizational actions (Stevens et al., 2005). However, stakeholder involvement can promote sustainable behavior only if the firm secures its partners' loyalty and commitment (Helmig, Spraul & Ingenhoff, 2016). For example, by establishing the code of ethics, corporate social value, firms outline how resources should be used and improve the way managers work when they are focused on meeting stakeholder demands (Davidson & Stevens, 2013). Pressures lead to a more significant commitment to sustainable actions, reflecting greater internalization of values, volunteerism, and dedication to organizational purposes (Hyatt & Berente, 2017). In this vein, this study recognizes the importance of stakeholder pressure and advances this knowledge by arguing that, in terms of intensity, secondary stakeholder pressure for more responsible behavior tends to be higher than primary stakeholder pressure when the aims are related to CSR. To support this argumentation, this study discusses the fact that the interests of primary stakeholders lie more in financial aims than in socio-environmental ones (Garcia-Castro & Francoeur, 2016). Studies have suggested that primary stakeholders such as employees, customers and suppliers are more interested in short-term returns (Rhee et al., 2021). For example, suppliers expect firms to honor their commitments, making payments at the appropriate time. Additionally, they expect the relationship between the parties to be lasting and generate economic benefits. On the other hand, secondary stakeholders are more concerned with socio-environmental goals, as they state in a large portion of their opinions about organizational socio-environmental actions, legitimizing the firms' CSR behavior (Rodrigues et al., 2013). For instance, the community is increasingly concerned with organizational actions related to the quality of life, such as reducing spillovers (e.g., pollution), poverty, and also the waste of resources. These stakeholders encourage responsible investment and CSR practices (Clune & O'Dwyer, 2020). Therefore, it is expected that, when faced with secondary stakeholder pressure, the organization adopt mechanisms to respond to demands to increase their corporate social responsibility. Hypothesis H1 addresses this influence:

H1. In the service industry, the positive influence of secondary stakeholder pressure no corporate social responsibility is higher than the primary stakeholder

4.2.2 Moderating role of Ethical value-based control

Value-based control consists of managers' procedures and practices to formulate strategic plans and establish the behavioral domain (Bisbe & Malagueño, 2015). These values are the central point of organizational management (Widener, 2007) and can facilitate communication, make the work environment stable, strive for continuity of operations (Ferry, Coombs, & Eckersley, 2017; Heggen, 2019), and ensure adequate operation of the other controls. Value-based control effectiveness has been recognized in an environmental research context (e.g., Heggen, 2019) and studies related to ethics (Merchant & White, 2017; Bellora-Bienengräber, Radtke, & Widener, 2021). The literature recognizes that studies exploring management control over the focus of their content are scarce, although they constitute a thriving line of research in management control systems (MCS) (Bellora-Bienengräber, Radtke, & Widener, 2021). Furthermore, the understanding of the role of ethically focused organizational controls in reducing counterproductive behaviors is still limited (Treviño et al., 2014; Jannat et al., 2021). This study considers ethical aspects related to value-based control, adopting the notion of ethical value-based control. Ethical value-based control is defined as "the set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic ethical values, ethical purpose, and ethical direction for the organization" (Bellora-Bienengräber, Radtke & Widener, 2021, p.4).

Organizations are currently concerned with the content of management information, so they implement controls that focus on economic and ethical decisions (Endenich & Trapp, 2020). This ethical value-based control can provide a better understanding of the decision-making process during the organization's operational activities (Lin et al., 2018), influencing the intention and behavior of employees toward the firm's wants (Merchant & White, 2017). Despite limited evidence on the intervening effect of ethic-based controls, studies have suggested that these controls play a central role in organizational management (Merchant & White, 2017; Endenich & Trapp, 2020; Bellora-Bienengräber, Radtke & Widener, 2021), increasing the sense of organizational responsibility (Arjaliès & Mundy, 2013). For example, the literature recognizes that ethic-focused controls have the magnitude of reinforcing the organization's ethical policies (Endenich & Trapp, 2020), leading to greater corporate social responsibility (Hosoda & Suzuki, 2015), especially as stakeholder pressures increase (Khojastehpour & Shams, 2020). Moreover, this study argues that the intensity of stakeholder influence on CSR may differ depending on the type of stakeholder pressure. The literature suggests that the impact of secondary stakeholder-related CSR practices is more effective than that caused by primary stakeholders (Garcia-Castro and Francoeur, 2016; Rhee et al., 2021). As

the presence of secondary stakeholder pressure increases, firms adopt management practices that satisfy their social and environmental concerns regarding long-term actions (Rodrigues et al., 2013). This research argues that ethical value-based control stands out as a management control practice that facilitates the achievement of these goals, reinforcing the effect of secondary stakeholder pressure on corporate social responsibility more than what occurs with the primary stakeholders. For example, when employees notice the presence of ethical controls, their concerns tend to decrease because they perceive the effectiveness of these controls. Thus, the interaction between primary stakeholders and ethical value-based control differs from that of secondary stakeholders. Therefore, managers must understand the demands of stakeholders, differentiate the type of pressure and strengthen ethical decisions (Hosoda & Suzuki, 2015) because they determine the direction of organizational responses (Pondeville et al., 2013; Jollands et al., 2018). Thus, ethical value-based control is expected to help firms meet stakeholder demands, reinforcing the firms' level of CSR, especially for pressures stemming from secondary stakeholders. Hypothesis H2 aims to examine this dynamic:

H2. In the service industry, a high level of ethical value-based control intensifies the positive effect of secondary stakeholder pressure on corporate social responsibility more than that of primary stakeholder pressure.

4.2.3 Ethical value-based control, ethical decision, and corporate social responsibility

As pointed out above, corporate ethics consists of organizational values and beliefs that indicate the firm's ethical responsibility, which can generate long-term economic benefits (Singh et al., 2019). As companies implement corporate ethics, their values and expectations regarding the employees' ethical behavior are formalized (Chang, 2011; Singh et al., 2019). Stakeholder pressures play an important role because they lead companies to implement ethical practices (Lee, Kim & Kim, 2018), making employees adopt such practices and behave following ethical principles. Ethical decision-making can be established as an organizational philosophy to properly manage human, financial, and strategic resources (Singh et al., 2019). Thus, the implementation of ethical value-based control stands out as a necessary condition that leads to better ethical decision-making (Bellora-Bienengräber, Radtke & Widener, 2021). Previous studies state that ethical decisions can be fostered by organizational practices that monitor the lack of ethical commitment (Pullen & Rhodes, 2014). Merchant and White (2017) suggested the adoption of management control focused on ethics to facilitate ethical decisions and the achievement of organizational goals. Adopting management controls focused on ethics

reduces unproductive tasks, which are tied to ethical decisions (Bellora-Bienengräber, Radtke & Widener, 2021). This study argues that ethical value-based control promotes a better ethical environment and encourages managers and employees to adhere to ethics programs, improve decision-making processes and exhibit coherent behavior (Merchant and White (2017). By incorporating ethical issues into firms' missions, values, hiring processes and training, the individual behaviors will be congruent with organizational goals related to ethics (Bellora-Bienengräber, Radtke & Widener, 2021). Thus, it is expected that the more ethical value-based control is used, the more ethical decision-making happens in accordance with organizational values. Hypothesis H3a seeks to explore this influence.

H3a. In the service industry, a high level of ethical value-based control positively influences ethical decision-making.

As previously discussed, inserting ethics into corporate values and the top management decision agendas is vital for operational effectiveness, especially when managers recognize the ethical decision as a driver of CSR practices (Godos-Díez, Fernández-Gago & Martínez-Campillo, 2011). However, the literature differentiating attitudes toward ethical decisions and CSR is limited (Ferrell, Harrison, Ferrell, & Hair, 2019), which means that the association between ethical decision and CSR and how organizations and stakeholders perceive these two elements are little explored phenomena.

Previous studies showed that ethical decisions could lead to more responsible organizational actions (Munro & Thanem, 2018; Singh et al., 2019; Jannat et al., 2021). Managers concerned with ethics lead employees to adhere to morally correct standards, making the work environment more transparent, honest, and complete (Munro & Thanem, 2018). The implementation of ethical mechanisms, and their maintenance through training, leads to a greater understanding of organizational values, reduction of unethical behavior (Warren, Gaspar & Laufer, 2014), and consequently, an increase in environmental performance. It also inhibits retaliatory measures, increases employee performance and compliance with internal rules, working as an organizational support mechanism, especially in situations of ethical tension (Jannat et al., 2021). These actions reflect the increase in the organization's social responsibility, indicating that implementing ethical mechanisms helps focus the managers' attention on environmental, economic, legal, and ethical aspects. Thus, it is expected that the implementation of a code of ethical conduct emphasizes the organization's social responsibility actions. Hypothesis H3b seeks to explore this influence.

H3b. In the service industry, high level of ethical decision positively influences corporate social responsibility.

This research presents a theoretical model based on the literature addressing the relationship between stakeholder pressure, ethical value-based control, ethical decision and CSR. Figure 5 shows the model and the hypotheses.

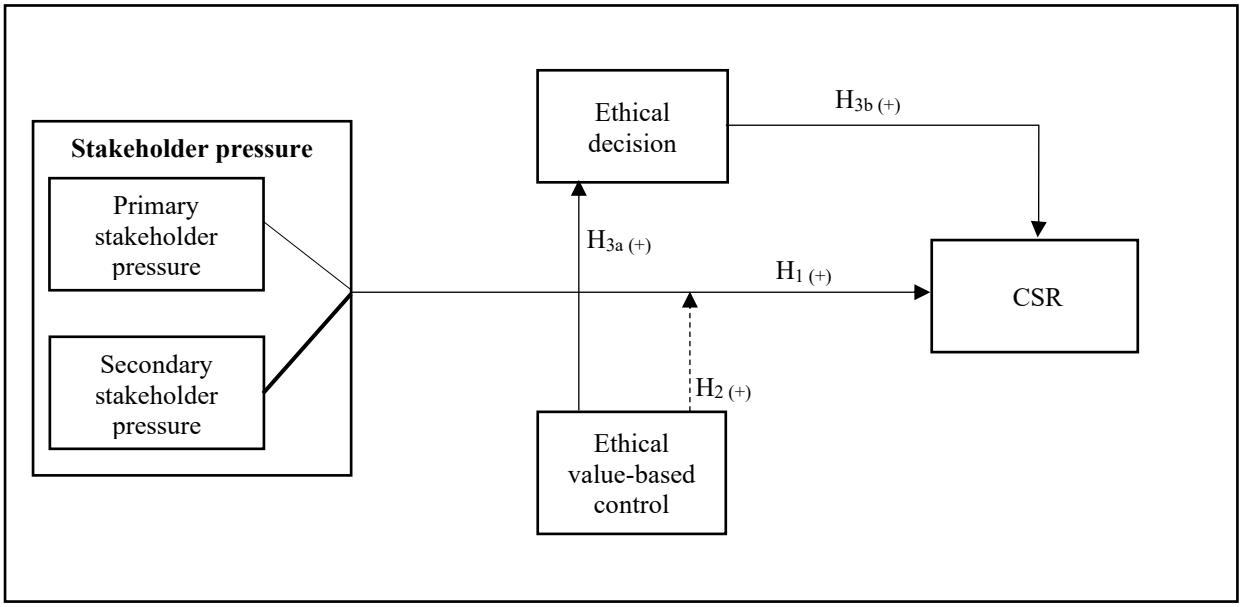


Figure 5. Theoretical model 3

4.3 METHODOLOGICAL PROCEDURES

4.3.1 Population and sample

The population was selected by accessing the system of individuals and firms working in the tourism sector, managed by the Brazilian Ministry of Tourism. In this system, 2,002 large restaurants have been registered. The choice of large restaurants is primarily due to the tendency to have (i) formal management systems (Rosa et al., 2021) and (ii) the need to maintain a good ethical reputation. In addition, the restaurant segment is an important generator of income and employment and moved approximately BRL 140 billion in 2020 (USD 28 billion), representing a relevant share of the Brazilian GDP (Rosa et al., 2021).

The research questionnaire was built based on the literature on management control systems (MCS), emphasizing ethical aspects and the effect on corporate social responsibility (CSR) from the perspective of the stakeholder theory (ST). The adopted constructs were

translated from English into Portuguese and reviewed by academics in the field of management control and hospitality, as the back-translation process recommends (Dillman et al., 2014). Pre-tests were applied with three restaurant managers to ensure the questions were straightforward. Suggestions and comments improved the wording. Following the typical survey procedures described by Dillman et al. (2014), the link of the questionnaires was sent by email to restaurant managers (CEO, CFO, general manager, coordinators) including the cover letter with information such as the research objective, the identification of the researchers, and the university logo (institution logo and department). A survey firm was hired to make the telephone calls to ensure a suitable responses rate (Graham et al., 2014; Heggen & Sridharan, 2021). The data collection occurred between January and March of 2022 and the final sample total is 190, representing 9,49% of the population. The investigated restaurants were distributed across Brazilian states. On average the restaurant operates for 26 years and the managers' age 42 years old. The most of restaurants in the sample do not make part of a chain as 164 are independent restaurants. Regarding ownership, most of the restaurants in the sample are family-owned (140 restaurants).

4.3.2 Measurement of variables

The first research construct refers to stakeholder pressure. It was evaluated with six items that captured the degree to which stakeholder pressures were present in restaurants for more responsible behavior. Based on the ethics literature examining the role of stakeholder pressure, this construct assessed the extent to which employees, community, suppliers, and others, influence the organization's decisions (Park & Kim, 2014; Abdel- Maksoud, Kamel, & Elbanna, 2016), measured on a 7-point Likert scale (1 = no influence; 7 = very strong influence). The stakeholder pressure was divided by primary and secondary stakeholders, based on the contractual relationship, according to previous literature (Rodrigues et al., 2013; Pondeville et al., 2013). Thus, primary stakeholders included customers, suppliers, and employees, while secondary stakeholders comprise the community, government agencies, and social media.

To capture ethical decision, we asked how helpful the restaurant's ethical code is to making financial and personnel decisions, disseminating information, responding to organizational actions and supporting the organization's planning process (Stevens et al., 2005). This construct was evaluated with five items and measured on a 7-point Likert scale (1 = not useful; 7 = very useful).

Ethical value-based controls were grounded on the literature that recognized the essential role of value controls for the management of organizations (Bisbe & Malagueño, 2015;

Gerdin, Johansson, & Wennblom, 2019). Just like Gerdin, Johansson, and Wennblom (2019), who consider the belief system to be a specific type of value-based control, this research adopts the construct "belief system" with a focus on ethics developed by Bellora-Bienengräber, Radtke, and Widener (2021), calling ethical value-based control. This construct assessed the degree of agreement to which belief systems communicate ethical values and motivate employees to act according to these values, measured on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree). For example, one of the items asked whether the restaurant's mission statement clearly communicates ethical values to employees.

The construct corporate social responsibility assessed the degree of agreement to which the restaurant is dedicated to environmental, economic, ethical, social aspects, and actions aimed at the community, among others (Dahlsrud, 2008; Su et al., 2017; Su & Swanson, 2019). Items were measured using a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree). For example, one of the items asked whether the restaurant operations were environmentally responsible.

For the control variables, the study adopted the restaurant type, restaurant ownership and gender following previous studies in the hospitality field (Powell & Eddleston, 2017; Claver-Cortés et al., 2007; Rosa et al., 2021). A dummy variable with two anchors indicating whether the restaurant was family-owned and managed (1 = family) or not (0 = non-family) was established to measure restaurant ownership (Powell & Eddleston, 2017). The restaurant type indicated whether the restaurants were independent (0) or made part of a chain (1). In addition, the variable gender was included as a control variable due to the focus on ethical issues (female=0; male=1).

4.3.3 Analysis procedures

This study uses a quantitative approach and partial least squares structural equation modeling (PLS-SEM). PLS regression was conducted in two steps: first, the PLS algorithm assesses the constructs' measurement criteria and then checks the path significance in bootstrapping (Hair et al., 2017). Previous research used PLS-SEM to understand the antecedents and consequences of ethics in the organizational context (Ferrell et al., 2019; Waheed & Zhang, 2020; Lussier et al., 2021). In this research, preliminary tests were applied to assess common method bias and non-response bias. For non-response bias, the t-test of independent samples was performed comparing early respondents (50 participants that first responded to the questionnaire) to late respondents (50 last respondents). The results suggested the absence of non-response bias since the difference between the observed variables were not

significant (except for primary stakeholders). Also, the common method bias is not a threat in this study as the Hartman test revealed lower explained variance (27.29%) and when social desirability variable was included, the results became unchangeable. Additionally, techniques such as fsQCA were used to deepen the research findings to explore combinations of predictive conditions that explain the outcome (Ragin, 2009), providing specific solutions (Bedford et al., 2016).

4.4 ANALYSIS

4.4.1 Measurement model

The measurement model was performed with the PLS algorithm technique, considering 300 iterations and a confidence interval with a 10% significance in a Bca method. The results supported the PLS-SEM assumptions, as the reliability and validity criteria are fulfilled. The convergent validity is supported by the AVE scores above 0.50 and the discriminant validity is supported since the autocorrelation is higher than the other correlations present in the matrix (Hair et al., 2017). Additionally, HTMT reinforced the validity by showing that the variables are distinct. The composite reliability criteria show that the reflexive constructs are reliable, as the CR of all variables is above 0.70.

Table 11. Measurement model

Constructs	**Composite Reliability**	**(AVE)**	**R²**	**R²Adjust**	**Q²**
1.Primary Stakeholder pressure	0.835	0.637	-	-	-
2 Secondary stakeholder pressure	0.923	0.799	-	-	-
3.Ethical value-based controls	0.849	0.590	-	-	-
4.Ethical decision	0.890	0.670	0.161	0.157	0.097
5.Corporate Social Responsibility	0.795	0.565	0.293	0.257	0.139
6.Gender	-	-	-	-	-
7.Ownership	-	-	-	-	-
8.Type	-	-	-	-	-

Fornell-Larcker criterion

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1.Primary Stakeholder pressure	**0.798**							
2 Secondary stakeholder pressure	0.813	**0.894**						
3.Ethical value-based controls	0.336	0.332	**0.768**					
4.Ethical decision	0.222	0.321	0.402	**0.819**				
5.Corporate Social Responsibility	0.335	0.373	0.441	0.303	**0.752**			
6.Gender	-0.107	-0.145	-0.051	-0.077	-0.072	-		
7.Ownership	-0.231	-0.296	-0.168	-0.161	-0.208	0.096	-	
8Type	0.009	-0.035	0.045	0.015	0.150	-0.046	-0.475	-

Heterotrait-monotrait								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. Primary Stakeholder pressure	-							
2 Secondary stakeholder pressure	-							
3.Ethical value-based controls	0.422	0.359						
4.Ethical decision	0.273	0.350	0.464					
5.Corporate Social Responsibility	0.486	0.499	0.621	0.403				
6.Gender	0.126	0.152	0.126	0.085	0.090			
7.Ownership	0.266	0.309	0.187	0.170	0.264	0.096		
8.Type	0.043	0.039	0.066	0.029	0.206	0.046	0.475	-

Note: Although the correlation between primary and secondary stakeholder are slightly high, do not consist of concerns for the research due to the likelihood of both variables being more correlated.

4.4.2 Structural model

The second step of the structural equation modeling consists of applying *bootstrapping* with 5,000 subsamples to evaluate the predicted hypotheses. The findings in table 12 show-that stakeholder pressure has an important role in corporate social responsibility management, with secondary stakeholder pressure appearing to be more impactful, which supports H1. In H2, this study predicted a positive influence of ethical decisions on corporate social responsibility. The results support these predictions, showing that the more the restaurant makes decisions that consider ethical values, the more corporate social responsibility is demonstrated. Additionally, this study also examines the meaningful impact of management control focused on ethics.

Table 12.Structural model

Independent variables	**Dependent variables**			
	Model 1		Model 2	
	Ethical decision	Corporate social responsibility	Ethical decision	Corporate social responsibility
Primary Stakeholder pressure		0.048 (0.404)		0.028 (0.231)
Secondary stakeholder		0.197 (1.528*)		0.218 (1.697**)
Ethical value-based controls	0.402 (5.517***)	0.364 (4.477***)	0.402 (5.426***)	0.363 (4.502***
Primary stakeholder pressure x Value-based control		-0.138 (1.067)		-0.134 (1.005)
Secondary stakeholder pressure x Value-based controls		0.194 (1.487*)		0.199 (1.483*)

	0.105	0.108
Ethical decision	(1.329*)	(1.388*)
		-0.002
Gender		(0.030)
		0.012
Ownership		(0.183)
		0.151
Type		(2.507**)

Note: Standardized coefficients are presented. ***, ** and *denote 1%, 5% and 10% significance levels (one-tailed for hypothesized associations and two-tailed otherwise, respectively. The structural paths are reported with their coefficient and t-value.

The benefits of applying management control in the relationship between stakeholder expectations and organizational outcomes are supported in this research, as the influence of ethical value-based control strengthened the effect of secondary stakeholder pressure on corporate social responsibility. This finding supports H3 and demonstrates that the effect of ethical value-based control is higher when secondary stakeholders pressure firms to exhibit more responsible behavior than when the primary stakeholders are the ones exerting the pressure.

4.4.3- Further analysis

4.4.3.1 Calibration process and necessary analysis

The fsQCA approach was used to complement the study's analysis. It was applied to evaluate how stakeholder pressure, ethical value-based control and ethical decisions can be combined to predict high corporate social responsibility. First, the calibration process is ensured by establishing full non-membership, crossover point, and full membership scale points. The anchors of primary stakeholder pressure, secondary stakeholder pressure, ethical value-based control and ethical decisions were 1 for full non-membership, 4 for the crossover point and 7 for full membership, as per previous studies (Galeazzo & Furlan, 2018). This necessary analysis allows an investigation of each antecedent's behavior in predicting CSR. The results demonstrate that ethical value-based control is an "always necessary condition" for corporate social responsibility prediction. At the same time, ethical decisions are an important antecedent of CSR, as both consistencies were above 0.90.

Table 13. Necessary analysis for corporate social responsibility prediction

Conditions	Consistency	Coverage	Calibration anchors		
			FNM	CP	FM
Primary stakeholder pressure	0.315	1.000	1	4	7
~ Primary stakeholder pressure	0.806	0.946			
Secondary stakeholder pressure	0.515	0.993	1	4	7
~ Secondary stakeholder pressure	0.613	0.945			
Ethical value-based control	0.994	0.927	1	4	7
~ Ethical value-based control	0.095	1.000			
Ethical decision	0.989	0.923	1	4	7
~ Ethical decision	0.095	1.000			

Note: CC = Consistency; CV = Coverage; FNM = Full non-membership; CP = Crossover point; FM = Full membership. *Indirect effect tested (Kaya et al., 2020). Size = Natural logarithm of the number of rooms.

4.4.3.2 Sufficiency analysis

The truth table technique was applied for the sufficiency analysis, as the procedure facilitates an understanding of the antecedents' complementarities for high outcome prediction (Ragin, 2009). The results in table 14 demonstrate the presence, absence, and redundant conditions.

Table 14. Configurations for high corporate social responsibility

Conditions	1	2
Primary stakeholder pressure	⊗	
Secondary stakeholder pressure		●
Ethical value-based control	●	●
Ethical decision	●	●
Consistency	0.959	0.993
Raw Coverage	0.802	0.514
Unique Coverage	0.379	0.092
Overall Coverage	0.894	
Overall Consistency	0.961	

Note: Black circles indicate the presence of a specific condition. Blank spaces indicate that the condition has no effect. Larger circles represent that the condition has a relevant role in the configuration, whereas small circles

The results reveal that ethical value-based control and ethical decisions are the main conditions for achieving corporate social responsibility. The first solution demonstrates the

absence of primary stakeholder pressure, and the presence of ethical value-based control and ethical decisions, while the second solution shows the presence of ethical value-based control and ethical decisions. This finding demonstrates that management control focused on ethics is the core solution for firms that aim to increase their corporate social responsibility and legitimize their sustainability actions, fulfilling stakeholders' expectations.

4.5 DISCUSSION

This study analyzed the effect of stakeholder pressure and ethical value-based control on corporate social responsibility. Stakeholder pressure was divided into two groups (primary and secondary) based on the prior literature (Rodrigues et al., 2013), due to the adopted ethical and CSR approach. The hypotheses were tested considering their degrees of intensity, thus contributing to the management accounting literature that explores the effects of stakeholder pressure (Rodrigues et al., 2013; Pondeville et al., 2013). The results of this research showed that in the service industry, the positive influence of secondary stakeholder pressure on corporate social responsibility is higher than the pressure exerted by primary stakeholders. This means that secondary stakeholders are more concerned with long-term aims related to CSR objectives that include environmental, legal, economic, and other issues that intensify the organizations' social goals. As shown in the literature, the benefits of improving-firms' CSR outcome consist of understanding the power of environmental, social, legal, and economic issues in an integrated manner that legitimizes organizational actions (Theodoulidis et al., 2017). The ethical issue that involves the search for CSR stands out as a bonding mechanism that enables the firm to attend to stakeholder pressures, especially those pressures from secondary stakeholders that are related to socio-environmental aims, and the improvement of policies, values, and responsible culture, which improve the perceived organizational reputation (Rodrigues et al., 2013).

Although the importance of primary stakeholder pressure is recognized in earlier literature, in this study, we advance the knowledge by highlighting how different stakeholder pressures influence CSR outcome in the service industry. It brings up the novel evidence that secondary stakeholder pressure is more effective in the search for higher corporate social responsibility, due to its focus, which is strongly geared towards long-term strategic actions (Rhee et al., 2021). As recent studies have suggested (Clune & O'Dwyer, 2020), the influence of stakeholder pressure on CSR activities is supported in this study. Thus, we encourage firms to invest more responsibly to fulfill their CSR goals, thus guaranteeing loyalty and commitment between the businesses and their partners.

Also, this study introduces ethical value-based control as a management control focused on specific content (ethics), increasing the knowledge on how control practices can bring specific contributions that improve organizational outcomes. The results demonstrated that a high level of ethical value-based control intensifies the positive effects of secondary stakeholder pressure on corporate social responsibility more than those of primary stakeholder pressure. This study presents ethical value-based control as a core element of organizational ethics management that facilitates the communication of ethical values, aiming for the organization's continuity (Merchant & White, 2017). These controls generate benefits for firms, such as shaping employee behavior and reducing counterproductive tasks (Treviño et al., 2014; Bellora-Bienengräber, Radtke & Widener, 2021; Jannat et al., 2021).

Besides those benefits, we highlight the moderating role of ethical value-based control that reinforces the effects of secondary stakeholder pressure on corporate social responsibility. As previously discussed, the pressure from secondary stakeholders is more related to strategic CSR, while the pressure from primary stakeholders is more associated with financial goals (Rhee et al., 2021). Based on this backdrop, this study underpins the literature bringing about ethical value-based control as a thriving management control mechanism that reinforces the positive stakeholder pressure related to the environmental, legal, and social responsibilities of the service industry. It means that while service firms achieve the expected corporate social responsibility, the government and the community feel that firm strategies are addressing their concerns. Simultaneously, they perceive the firm's strong commitment to ethical issues through its value-based control, which increases the CSR outcome. This supports the previous studies that noted the benefits of differentiating the types of pressure that firms receive (e.g. primary versus secondary) (Garcia-Castro and Francoeur, 2016) and those of focusing on the ethical content of management control (Bellora-Bienengräber, Radtke & Widener, 2021).

Additionally, the study demonstrates that ethical value-based control is seen as an organizational response to the increased demands for more ethical responsibility, which improves the decision-making process. The findings demonstrated that a high level of ethical value-based control in the service industry positively influences ethical decision-making. The effectiveness of ethical value-based control facilitates the decision-making process, as previous studies pointed out that the adoption of management control focused on ethics stands out as a necessary condition for increasing ethical decisions (Bellora-Bienengräber, Radtke & Widener, 2021). We show through symmetric and asymmetric approaches that ethical decisions increase as management practices focus on ethics by communicating the restaurant's ethical mission to the workforce and inspiring compliance with ethical rules. By making ethical decisions, firms

may improve human and financial management processes, as well as their strategic resources (Singh et al., 2019). This study suggests that restaurants should formally introduce ethical values into their management controls, defining unethical behavior and monitoring non-compliance, thus encouraging a favorable ethical environment and adherence to ethics programs (Merchant & White, 2017).

Finally, it is possible to note that by making ethically-based decisions, firms obtain benefits such as increased corporate social responsibility. As ethical codes are introduced into corporate values, the management team makes decisions according to these norms and strives to achieve more responsible behavior (Godos-Díez, Fernández-Gago & Martínez-Campillo, 2011). For example, by including ethical issues in the processes for making financial and personal decisions, firms may improve CSR outcome as the resources tend to be orchestrated rationally. This study suggests that firms encourage their workforce to adhere to morally correct behavior and that a transparent environment elicits trust and honesty (Munro & Thanem, 2018). By adopting these actions, unethical behaviors are reduced through the alignment of individual behaviors and, thus, firms increase their engagement in CSR. Additionally, this study stimulates firms to monitor the workplace environment to restrict retaliatory measures that some managers may adopt to inhibit the use of compliance channels in firms to fight unethical behavior.

4.6 CONCLUSION

The results of this study show that stakeholder pressure positively influences corporate social responsibility and that secondary stakeholder pressure is more pronounced. The findings demonstrate that a high level of ethical value-based control intensifies the positive effects of secondary stakeholder pressure on corporate social responsibility more than that of primary stakeholder pressure. Additionally, it reveals that ethical value-based control influences ethical decisions and thus facilitates achieving corporate social responsibility. Moreover, it shows that secondary stakeholder pressure, ethical value-based control and ethical decisions are central conditions for higher corporate social responsibility.

4.6.1 Theoretical implications

This study contributes to the literature in different ways. First, by connecting stakeholder theory and management control theory under the lens of ethics to predict corporate social responsibility, this research brings novel evidence that underpins the knowledge related to CSR in the service industry. Exploring the stakeholders' roles in terms of primary and secondary

stakeholder pressure as antecedents of corporate social responsibility helps to advance topics covered by earlier studies since secondary stakeholder pressure is specified as the main source of pressure that influences CSR performance. Due to the short-term character of the relationship between firms and their primary stakeholders, long-term aims such as CSR activities are less concerned with employees, customers, and suppliers. However, we demonstrate that secondary stakeholders rely more on long-term goals pressuring firms to adopt socially responsible activities. As service firm activities tend to be more rooted in the local culture, long-term organizational actions that positively impact the life of the community, such as CSR activities, are highly expected by secondary stakeholders (e.g., local community).

Second, this study introduces ethical value-based control based on previous research that has presented scant evidence on the effectiveness of management controls focused on ethical content. By adopting ethical value-based control, firms demonstrate their commitment to ethics and legitimize their sustainability actions; thus, special attention should be paid to the benefits stemming from the formalization of ethical controls. Additionally, we bring ethical value-based control as a moderator and demonstrate that it amplifies the effect of secondary stakeholder pressure on Corporate social responsibility. This evidence brings up a new research avenue for improving the comprehension of socio-environmental benefits brought on by adopting ethical value-based control.

Also, this study pointed out that decision-making processes are improved when control mechanisms are implemented to support the ethical concerns present in the organizational routine. Thus, we add supportive empirical evidence to management accounting literature by exploring ethical decisions as a consequence of formalizing ethical control, which enables the effective routinization of CSR activities. These implications highlight the importance of stakeholder theory in managing ethical issues for promoting CSR outcomes in the service industry and add to the management accounting research by contributing to the existing debate about ethical issues and their relations with management control practices that improve corporate social responsibility.

4.6.2 Managerial implications

Our findings provide–management suggestions that may improve the management actions related to the organizations' strategic and operational activities. First, the study suggests that the industry service managers should better manage the stakeholder demands, differentiating between expectations stemming from primary and secondary stakeholders to improve CSR activities on a routine basis. We inform managers that when the goals of a

restaurant are more focused on long-term targets, special attention should be given to community, social media, and government concerns. Also, we suggest that top management teams insert ethical content into the management agenda and discussions related to the fulfillment of ethical rules and norms should be encouraged. Managers are also stimulated to participate in the definition of ethical policies and in adjusting rules when needed to support the firms' ethical goals. For example, implementing whistleblower channels may be considered a management control focused on ethics and stands out as an important mechanism for reducing counterproductive behavior. Thus, this study recommends the adoption of ethical value-based control. Firms are also encouraged to develop actions that stimulate the search for CSR activities, eliciting environmental, legal, and social benefits. Among the actions, that stood out are the use of effective ethical value-based control and actions to improve ethical decisions. The more firms foster an organizational environment in which transparency, honesty, and trust are fomented, the more this contributes to achieving long-term goals, especially corporate social responsibility.

4.6.3 Limitations and suggestions for future research

Although our predictions are supported, it is necessary to proceed with caution regarding the generalization of these results. Our study explored the common classifications of primary and secondary stakeholders. Thus, future studies should investigate the internal and external approaches to understand how this change may impact on sustainability outcomes. Moreover, a discussion about stakeholder engagement should also seek to answer questions about how stakeholders engage in campaigns to fight perceived unethical behavior. Second, this study adopted ethical value-based control only. Otherwise, interactive and diagnostic controls focused on ethics were also recently introduced in management accounting research and may improve our understanding of how the combination of ethical value-based control and other bureaucratic forms of control, such as diagnostic and interactive controls, may foster an ethical environment. Third, the ethical decision was measured according to the restaurant's code of ethics; thus, future studies should assess managers decisions based on ethics through informal channels. Finally, future studies should explore other methodologies, such as a qualitative approach, by bringing about organizational citizenship behavior as a benefit of ethical decisions made in agreement with management controls.

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APPENDIX C

1. QUESTIONNAIRE

STAKEHOLDER PRESSURE

Indicate the extent to which your hotel feels pressure from the following stakeholders on decisions related to ethical management. The following scale items ranged from 1 (no influence) to 7 (very strong influence).

STP1...Local community
STP2...Employees
STP3...Customers
STP4...Government regulatory agencies (legislative bodies)
STP5...Suppliers
STP6...Social medias

ETHICAL DECISION

How helpful (1 = not helpful, 7 = very helpful) have you found your restaurant's code of ethics to be in ...

ED1	Making financial decisions.
ED2	Making personnel decisions.
ED3	Making decisions about information disclosure.
ED4	Responding to questions about restaurants actions.
ED5	Aiding your restaurant's planning processes.

ETHICAL VALUE-BASED CONTROL

Please rate the extent to which you agree or disagree with the following statements related to the Ethical value-based control used in your hotel, on a 7-point Likert scale (1=strongly disagree; 7=strongly agree).

EVC1	Our mission statement clearly communicates our restaurant's ethical values to our workforce.
EVC2	Top managers communicate ethical values to our workforce.
EVC3	Our workforce is aware of our restaurant's ethical values.
EVC4	Our mission statement inspires our workforce to behave in accordance with our restaurant 's ethical values.

EVC5	Our restaurant relies on a code of conduct to define ethically inappropriate behavior for our workforce.
EVC6	Our code of conduct informs our workforce about behaviors that are ethically off-limits.

CORPORATE SOCIAL RESPONSIBILITY

Please rate the extent to which you agree or disagree with the following statements related to corporate social responsibility, on a 7-point Likert scale (1=strongly disagree; 7=strongly agree)

CSR1	Our restaurant is environmentally responsible in its operations
CSR2	Our restaurant gives back to the local community
CSR3	Our restaurant is successful in generating profits
CSR4	Our restaurant treats its stakeholders well.
CSR5	Our restaurant acts ethically and beyond all legal obligations to fulfill their social responsibilities.

SOCIAL DESIRABILITY

Please rate the extent to which you agree or disagree with the following statements related to social desirability, on a 7-point Likert scale (1=strongly disagree; 7=strongly agree)

SD1	"I never cover up my mistakes,"
SD2	"I always obey laws, even if I'm unlikely to get caught,"
SD3	"When I hear people talking privately, I avoid listening."

Demographic variables

1.Age (years): .....

2. Gender: ( ) Male ( ) Female ( ) Prefer not to say.

3. City / State of the country in which the Restaurant is located: .....

4. How many years has the Restaurant been offering its services? .....

5. Is the Restaurant family-owned (family business)? .....

6. Is the restaurant a franchise / member of a restaurant chain? ( ) yes, ( ) no.

Some remedies were taken to reduce possible bias

1. The participants were selected carefully to ensure suitable knowledge of the questions.
2. The questionnaire was pretested with managers. Contributions related to the wording of the questions and adequate duration time of the survey improved the final version.
3. Some constructs were labeled in general terms.
4. The instructions did not suggest the relationships of interest.
5. The participants were informed in the instructions that there were no right or wrong answers as the study was only interested in their opinion.
6. We ensured the anonymity of responses and their firms.
7. We mixed the variables of interest within the questionnaire.

8. The social-desirability bias was tested, although its inclusion in the structural model did not change the consistency of the results.

Appendix D

Descriptive statistics

items	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
Local community (Sst)	3.305	3.000	1.000	7.000	1.444	-0.414	0.246
Employees (Pst)	2.542	3.000	1.000	6.000	0.971	0.539	0.471
Customers (Pst)	3.600	3.000	1.000	7.000	1.609	-0.970	0.342
Suppliers (Pst)	2.342	2.000	1.000	6.000	1.130	1.010	1.015
Government agencies (Sst)	3.653	4.000	1.000	7.000	1.510	-0.986	0.061
Social media (Sst)	4.000	5.000	1.000	7.000	2.120	-1.468	-0.097
ED1	6.526	7.000	4.000	7.000	0.693	1.119	-1.336
ED2	6.137	6.000	3.000	7.000	0.964	0.729	-1.025
ED3	6.447	7.000	5.000	7.000	0.684	-0.471	-0.851
ED4	6.621	7.000	5.000	7.000	0.575	0.563	-1.241
ED5	6.658	7.000	5.000	7.000	0.537	0.663	-1.275
EVC1	6.563	7.000	4.000	7.000	0.644	1.063	-1.312
EVC2	6.589	7.000	5.000	7.000	0.607	0.403	-1.203
EVC3	6.647	7.000	5.000	7.000	0.559	0.820	-1.332
EVC4	6.437	7.000	3.000	7.000	0.683	2.310	-1.216
EVC5*	6.316	6.000	3.000	7.000	0.751	1.402	-1.046
EVC6*	6.279	6.000	3.000	7.000	0.719	1.792	-0.989
CSR1	6.537	7.000	5.000	7.000	0.685	0.054	-1.172
CSR 2	5.142	5.000	1.000	7.000	1.581	-0.178	-0.671
CSR 3	6.326	6.000	4.000	7.000	0.687	0.161	-0.727
CSR 4*	6.647	7.000	4.000	7.000	0.550	2.310	-1.470
CSR 5*	6.605	7.000	3.000	7.000	0.622	5.373	-1.865
Gender (male=1; female=0)	0.579	1.000	0.000	1.000	0.494	-1.916	-0.322
Ownership (family=1; non-family=0)	0.737	1.000	0.000	1.000	0.440	-0.833	-1.084
Type (Chain =1; independent=0)	0.132	0.000	0.000	1.000	0.338	2.858	2.197

Note: (Pst) primary stakeholder; (Sst)= secondary stakeholder; ED=Ethical decision; EVC= ethical value-based control; CSR= corporate social responsibility. * Dropped duo to low factorial loading.

5. DISSERTATION CONCLUSION

5.1 General considerations

This dissertation analyzed the influence of stakeholder pressure on organizational sustainability through management control systems. Under the lens of stakeholder theory, the study considered employees, customers, suppliers, government, and social media as they are the main stakeholders in hospitality. Additionally, the study explored the ambidexterity approach to deepen the interplay between stakeholder influence, management control, and sustainable outcome. When examining temporal ambidexterity as a moderator variable and contextual ambidexterity as a mediator, this study brings novel evidence on the double role of ambidexterity theory as suggested by Simsek et al. (2009). Three studies were developed to operationalize this dissertation. The first analyzed the effects of stakeholder pressure on proactive sustainable strategy and eco-control to enhance sustainable performance. Additionally, the pivotal role of temporal ambidexterity was introduced as a moderator in the relationship between eco-control and sustainable performance. The second study supported the predicted positive effect of stakeholder pressure on ambidextrous environmental innovation through the environmental performance measurement system (EPMS). The facilitator effect of contextual ambidexterity was ensured to demonstrate the conciliation of alignment and adaptability capabilities in the hospitality sector. The third study analyzed the effects of stakeholder pressure and ethical value-based control on CSR. Specifically, the stakeholder pressure is divided into two groups (primary and secondary stakeholders). The assumption is that the influence of secondary stakeholder pressure is greater than primary stakeholder pressure due to the long-term aim of investigating outcome (CSR). Moreover, the benefit of ethical value-based control in influencing ethical decisions is explored. Thus, the predicted benefits of exploring the interplay among stakeholder theory, management control theory, and ambidexterity in predicting sustainability outcomes are deepened and attend the contemporary call for new studies.

5.2 Results summarize

This section summarizes the results of the three studies. The survey with managers of the hospitality firms was employed in all studies. The requested survey step was employed, and the anonymity of the responses was guaranteed. The analysis was performed through PLS regression, especially to test the predicted hypothesis in each study. Additionally, advanced analyses such as importance performance map analysis (IPMA), FIMIX approach, and multigroup were employed. The fsQCA approach was applied as further analysis to underpin the tailored complementarities of stakeholder pressure and management controls.

The objective of the first study was attended through the development of six hypotheses, all of which were statistically significant. Thus, (i) the effects of stakeholder pressure on proactive sustainable strategy were positive and significant (H1); (ii) the positive impact of proactive sustainable strategy on eco-control was confirmed (H2); (iii) the mediation role of the proactive sustainable strategy in facilitating the effect of stakeholder pressure on eco-control was supported (H3); (iv) the positive impact of eco-control on sustainable performance was confirmed, broadening previous studies that explored the sustainable goals (environmental, economic, and social performance) as outcomes (H4). In addition, (v) the mediation effect of eco-control on the relationship between proactive sustainable strategy and sustainable performance is supported (H5), and (vi) the temporal ambidexterity reinforces the influence of eco-control on sustainable performance, mainly when hotels conciliate short and long-term efforts to support sustainability goals (H6). Additionally, the fsQCA approach revealed four solutions where the combination of the presence of stakeholder pressure, proactive sustainable strategy, eco-control, and temporal ambidexterity underpinned the suggested importance of these antecedents in fostering high sustainable performance

The second aim of this dissertation was supported through the four hypothesized paths. The first demonstrated that stakeholder pressure positively influences the environmental performance measurement system (H1), and the second showed a positive effect of EPMS on ambidextrous environmental innovation (H2), which highlighted the effectiveness of EPMS in promoting incremental and radical green innovation simultaneously. Additionally, the findings supported the effectiveness of EPMS as a facilitator of the stakeholder pressure influence on ambidextrous environmental innovation (H3). This study revealed that management control stands out as a mechanism through which stakeholders demands are incorporated and consequently hospitality firms create value to attend them. The novel mediation role of contextual ambidexterity in the relationship between EPMS and ambidextrous environmental innovation is confirmed, which supports the predicted benefits of reconciliation of the alignment and adaptability capabilities when seeking ambidextrous environmental innovation. At the subgroups level, this study revealed that some hospitality firms (belonging to segment 1) dedicate more attention to EPMS and contextual ambidexterity, whereas hospitality firms belonging to segment 2 devoted less importance. Thus, this study advises special attention to EMPS and contextual ambidexterity because it can become a strategic differentiation source.

The third objective is supported through the constitution of three hypotheses. The first showed that the influence of secondary stakeholder pressure on corporate social responsibility is greater than primary stakeholder pressure (H1). The second demonstrated that a high level of

ethical value-based control intensifies the positive effect of secondary stakeholder pressure on corporate social responsibility more than primary stakeholder pressure (H2). The Third hypothesis showed that the effective use of ethical value-based control leads to a more positive ethical decision-making process (H3a). When ethical decisions are made, high corporate social responsibility is obtained (H3b). The configurational approach reinforces the results from the regression analysis, demonstrating that ethical value-based control and ethical decisions are pivotal for firms that seek long-term sustainability by developing strong corporate social responsibility.

The results of the three studies enable concluding that the objective of this dissertation was attended as the predicted pivotal role of management control in converting stakeholder pressure into organizational sustainability was supported. This evidence underpins the interwoven influence of stakeholder pressure on management control corroborating previous literature on management accounting that debated the benefits obtained by interacting stakeholder theory and management control theory under the sustainability spectrum (Lisi, 2015; Hörisch, Schaltegger & Freeman, 2020). Generally, this study acknowledges that the likelihood of obtaining a desirable outcome increases when firms anticipate their sustainability actions by shaping their management controls to meet stakeholder demands. The core assumption of stakeholder theory is observed as this study evidenced that the value firms create through the organizational action guided by responsible behavior become successfully aligned with stakeholder demands when their interests/expectation are accomplished.

This research uncovers specifications related to the stakeholder influence and organizational behavior relation. It is inferred that when firms meet specific stakeholder demands and bring these demands to the top management team, the better are the responses. Thus, organizations need to define their short- and long-term aims. For example, this study brings new insights by supporting the tailored interest of secondary stakeholders in long-term aims, such as corporate social responsibility activities (Rhee et al., 2021), while primary stakeholders are more interested in short-term goals, like financial outcomes. The type of relationship firms develop with their stakeholders may determine how operational and strategic actions are prioritized in the organization. The two main issues of stakeholder theory are envisaged in this dissertation (Freeman, Wicks & Parmar, 2004). First, demonstrating that the influence of stakeholder pressure leads firms to develop proactive strategies and implement sustainability management controls shows how the organization shapes its structure source to respond to stakeholders with the deserved attention. Second, by exploring CSR and ethical behavior in hospitality firms as a result of stakeholder pressure, firms are concerned by both

their social responsibility and the stakeholder demands. The results evidence that hospitality firms realized that stakeholder pressure is key for successful results. It must be well managed to play in accordance with others tools in the organizational orchestra.

The main results of this study support the dissertation's assumption, as it confirmed that the stakeholder pressure affects sustainable performance, ambidextrous environmental innovation, and CSR, and the response to such pressure is supported by management control systems (Eco-control, environmental PMS, Ethical value-based control)

5.3 Theoretical implications

This dissertation brings threefold novel evidence for the management, accounting, and hospitality literature. First, we advance by contributing to the contemporary debate related to sustainability issues. As well known, hospitality sector activities involve consuming a large amount of natural resources such as water, food, and energy, which awake stakeholders interested in these firms' operations. Prior studies on management accounting (e.g., Lisi, 2015; Beusch et al.,2021) brought evidence related to the usefulness of management control in the environmental context. We focus specifically on the hospitality sector, bringing eco-control as a central tool that enables the rational consumption of scarce resources. It advances prior studies (e.g., Henri & Journeault 2010; Abdel-Maksoud, Kamel & Elbanna, 2016; Bastini, Getzin & Lachmann, 2021), revealing that the effectiveness of eco-control simultaneously converts stakeholder pressure and sustainable strategy into high economic, environmental, and social performance.

In addition, this dissertation introduced temporal ambidexterity as a novelty in management accounting, and hospitality literature. The less known effect of temporality in this field is unpacked through this dissertation in two forms: (i) we acknowledge that the reconciliation of short and long-term capabilities origin highly impacts sustainability outcomes and (ii) temporality ambidexterity is a building block that reinforces the effectiveness of management control standing out as an important theory to be explored more deeply in management accounting literature.

Second, this dissertation highlights the importance of stakeholder pressure in promoting incremental and radical environmental innovation in the hospitality field. While prior studies in management accounting presented robust evidence of the management control-innovation relationship (Henri, 2006; Naranjo-Gil & Hartmann, 2007; Lopez-Valeiras et al., 2016; Bisbe & Malagueño, 2009; Bedford et al., 2019), this study contributes by suggesting that the formalization of a performance measurement system focused on sustainability facilitates

incremental improvements and promotes the radical change in organizational routine which increase the ambidextrous environmental innovation. The more hospitality firms perceive multiple pressure from diverse stakeholders, the more cybernetic environmental controls (e.g. EPMS) are used effectively as a response, and thus desirable outcomes are achieved. The results from this dissertation respond to recent calls related to the existence of management practice capable of managing sustainable issues (Beusch et al.,2021), highlighting EPMS as a core practice that enables the accomplishment of the needed improvement for innovative routines surrounding sustainability in the hospitality industry. Moreover, this dissertation proposes contextual ambidexterity in management accounting literature, in terms of alignment and adapting capabilities, as organizational attributes that facilitate the effective impact of environmental performance measurement on ambidextrous environmental innovation.

Third, as stakeholder theorists informed the essential role of this theory in debating ethical issues in the organizational stream (Freeman, Wicks & Parmar, 2004; Hörisch, Schaltegger & Freeman, 2020), this dissertation supports previous suggestions, showing that by adjusting organizational practices considering ethical concerns, firms accomplish their long-term aims (e.g., CSR). However, we posit that identifying specific demands from the stakeholder in the hospitality industry is essential to achieving CSR performance. For example, this dissertation segregated the stakeholder pressure into primary and secondary to meet stakeholder needs in a personalized way. Additionally, ethical value-based control is introduced as a growing research agenda in management accounting literature, adding to recent calls for more studies that focus on the content of management controls, mainly when related to ethics (Merchant & White, 2017; Bellora-Bienengräber, Radtke, & Widener, 2021). Interacting stakeholder pressure with management control focused on ethics, this research advances on the literature and informs that to enhance CSR activities the segregation of multiple stakeholder pressure is essential to identify their socio-environmental expectation and thus orchestrate the organizational lines of action to serve them. It became clear that in the hospitality industry, when the focus of management control is centered on ethics, corporate social responsibility goals are more likely to be achieved than immediate goals. This dissertation opens avenues for deep comprehension of the interplay between stakeholder theory, management control, and ambidexterity building block in the contemporary context where sustainability issues grow daily.

5.4. Managerial implications

This dissertation contributes to a more actionable managerial practice revealing that the adoption of management control for monitoring the daily organizational routine and embedded

stakeholder concerns become a successful tool mainly when addressed in top management team discussion. Managers are advised to use eco-control effectively to incorporate the sustainability concerns of suppliers, customers, local communities, employees, and others into the organizational routine. However, it is important that hospitality firms understand the aims of these stakeholders to better respond to them. By understanding that short-term concerns are more related to primary stakeholders (employees, suppliers, customers) while long-term concerns awake more interest in secondary stakeholders (social media, government, and local community), this research recommends that managers first identify the type of pressure from each stakeholder as this may guide the choice of management control for tackling their sustainability expectation.

The temporality issues are an important resource that should be considered during the decision-making process to enhance sustainability performance. This study suggests that managers conciliate short-term with long-term actions to meet both financial and environmental demands. This reconciliation reinforces the effect of budget and reward controls on sustainability results. Thus, we encourage managers to contribute with their knowledge to improve performance indicators and compensation metrics. This dissertation also motivates managers to develop alignment and adaptability capabilities to foster creativity through rapid information sharing, assumption debate, search for solutions, and improvisation when needed, facilitating simultaneous incremental and radical environmental innovation. Additionally, hospitality firms are encouraged to strengthen their management control systems, focusing on specific content such as sustainability and ethics. We motivate firms to reinforce their ethical value-based control to enhance long-term aims required not only by stakeholders but also for hospitality firms to demonstrate their social responsibility and commitment to scarce natural resources. Moreover, serving multiple stakeholders' demands, hospitality firms may obtain economic benefits as recycling material contribute to increasing the firm's revenue and reducing environmental costs and waste expenses and so creating value in a win-win perspective.

5.5 Limitations and suggestions

This dissertation presents a few limitations that suggest caution in interpreting the results, although they may serve as opportunities for new studies. First, other forms of analyzing stakeholder pressure should be explored instead of the pressure perceived by managers. For example, recent studies explored shareholder activism (hand-collected) as a type

of pressure that impacts management control (Anzilado, Gomez-Conde & Lunkes, 2022). In the hospitality industry, customer satisfaction is an important tool that impacts organizational performance. Thus, understanding the influence of customers' activism (negative versus positive comments) on organizational processes should improve the comprehension of how firms deal with customers' concerns.

Second, recent studies adopted the enabling eco-control to deepen the design of MCS in the sustainability research field (Heggen & Sridharan, 2021). Interacting the enable eco-control and use of diagnostic seems to be a research thrive-line on substitution perspective of MSC for future studies. The complementarity of enabling and interactive eco-control in predicting green organizational commitment should be examined. This dissertation acknowledges that the explored outcome should be more specific, such as water, food, and energy performance. Future studies should investigate the interconnection of these elements (water, food, and energy) when adopting a management control system. Specifically, (i) understanding how organizations shape the control practice to avoid water waste, (ii) examining the influence of food waste control (e.g., food performance metrics, see Amicarelli and Bux, 2021) on the restaurant industry's environmental impact, (iii) exploring the adoption of specific metrics that evaluate the effect of energy consumption on climate change mitigation, are important questions that remain and thus constitute an opportunity for future research.

Third, one of this dissertation's streams focused on ethical issues analyzing stakeholder pressure as a driver for high corporate social responsibility. However, future studies may explore the effect of stakeholder engagement to understand how they cooperate with the organization, offering suggestions instead of only exerting pressures, often seen skeptically. New studies should also explore the impact of ethical decisions on firms' reputations, adding management control to facilitate the firms' relationship with stakeholders. Additionally, exploring the stakeholders' interaction with firms based on ethics and conditional conservatism in the context of CSR performance decline should bring theoretical and practical implications on the firms' actions to respond to external demands. In these contexts, the comprehension of how firms prioritize conditional conservatism as a response to pressure groups over other groups seems to be an unanswered research question. Finally, in the results section of this dissertation, a few correlations were slightly high (above 0.7), thus consisting of a limitation that future studies should be aware of when exploring sustainability issues.

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