RESEARCH IN PROGRESS

# GREEN IS – EXTERNAL PRESSURES AND IS EXECUTIVES

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Addressing the urgent need for sustainable solutions aligned with the United Nations' (UN) Sustainable Development Goals (SDGs) requires collective action across all societal levels, including the information systems (IS) discipline. One strand of IS research focuses on understanding how IS executives' actions and beliefs contribute to sustainability outcomes through Green IS practices. This research proposes to investigate how external pressures influence IS executives' perceptions of the salience of sustainability issues, and how these perceptions, in turn, shape their Green IS-related actions and underlying beliefs. Adopting a qualitative research design, the proposed research study spans two phases: first, expert interviews with IS executives experienced in Green IS will be conducted to explore their perspectives. Second, a case study will validate and deepen these findings by identifying the factors that influence executives' Green IS actions and beliefs, and examining how and why these factors exert their influence. The proposed research aims to generate both theoretical contributions to Green IS and practical insights for organizations seeking to enhance sustainability through IS leadership.

**DOI**
https://doi.org/10.18690/um.fov.4.2025.45

**ISBN**
978-961-286-998-4

**Keywords:**
sustainability,
green IS,
IS executives,
CIO,
CDO,
qualitative research

University of Maribor Press

## 1 Introduction

As the global community copes with pressing sustainability challenges, the urgency for innovative solutions has become pronounced (Dwivedi et al., 2022; Lennerfors et al., 2015; Pan et al., 2022). The United Nations' (UN) Sustainable Development Goals (SDGs) offer a detailed roadmap towards achieving sustainability on the economic, environmental, and societal level (Watson et al., 2021). This ambitious agenda requires transformative actions across all sectors (Butler & Hackney, 2021). The discipline of information systems (IS) is uniquely positioned to contribute significantly to this endeavor by developing and implementing IS-based solutions that foster sustainability (Dwivedi et al., 2022; Melville, 2010; Seidel et al., 2017).

Sustainability is a broad and terminologically fuzzy concept (Guandalini, 2022). Thus, we distinguish sustainability outcomes from practices geared towards achieving those (Chen & Roberts, 2024). Sustainability outcomes can be classified by intention, scope of impact – direct, or indirect –, and alignment with the UNs' SDGs (Hassmann & Westner, 2024b; Schoormann et al., 2025). Relevant sustainability practices in context of IS are Green IS, Green IT, and digital sustainability (DS). Green IS describes practices that are future-oriented, leveraging technology-driven scenarios and use cases to achieve sustainability outcomes through strategic use of IS (Chen & Roberts, 2024; Guandalini, 2022; Loeser et al., 2017). Green IT practices are restricted to the IT function, aiming to efficiently operate existing IT systems (Kotlarsky et al., 2023; Loeser et al., 2017; Pan et al., 2022). Lastly, DS practices combine the realm of digital transformation (DT) with sustainability, focusing on enhancing environmental, social, and economic well-being and ensuring that digital technologies drive sustainable innovation and minimize their own environmental impact (Guandalini, 2022; Kotlarsky et al., 2023; Schoormann et al., 2025).

Numerous IS studies have emphasized the need for a more profound understanding of sustainability within the IS discipline (Dwivedi et al., 2022; Gholami et al., 2016; Melville, 2010; Seidel et al., 2017; Watson et al., 2010). Nonetheless, considerable gaps persists in IS literature. One example is the dearth of research exploring the role of IS executives in championing sustainability outcomes within organizations (Hassmann & Westner, 2024b) – despite being deemed an important topic (Gholami et al., 2013; Loeser et al., 2017; Melville, 2010). Building on this, we propose to

explore how IS executives, specifically Chief Information Officers (CIOs) and Chief Digital Officers (CDOs), contribute to achieving sustainability outcomes through Green IS practices. CIOs and CDOs are the highest-ranking IS leaders within organizations, who influence corporate strategy (Karahanna & Preston, 2013; Karahanna & Watson, 2006) and drive topics of DT (Fitzgerald et al., 2014; Weill & Woerner, 2013). Thus, their role is pivotal for integrating Green IS practices into an organization's DT and digital strategy (Menz, 2012; Tumbas et al., 2018).

This paper is structured as follows: Chapter 2 introduces the foundational concepts underlying the proposed research project: institutional theory, the Input-Mediator-Outcome (IMO) framework, and the connection between external pressures and salient sustainability issues. Chapter 3 outlines the proposed research model and the research objectives (ROs). Chapter 4 details the suggested methodological approach.

## 2 Background and theoretical underpinning

My proposed research endeavor is theoretically underpinned by institutional theory (Butler & Hackney, 2021; Campbell, 2007; Chen & Roberts, 2024; DiMaggio & Powell, 1983; Scott, 2014) and the IMO framework (Ilgen et al., 2005; Klotz et al., 2014; Mathieu et al., 2008).

Existing IS literature shows a gap in explaining how *external pressures* impact IS executives' actions and beliefs towards Green IS practices (Hassmann & Westner, 2024b). This is a noteworthy finding: external pressures are closely linked to institutional theory (Butler & Hackney, 2021; Campbell, 2007; Chen & Roberts, 2024; Scott, 2014), which is a frequently employed theoretical model to explain organizational and individual Green IS practices (Butler & Hackney, 2021). Institutional theory explores how organizations are influenced by the norms, rules, values, and cultural expectations of the environments in which they operate (Scott, 2014). It considers institutions to be systems of established norms and rules that guide behavior. For organizations to survive and thrive, they must align with institutional expectations to gain legitimacy (Butler & Hackney, 2021; DiMaggio & Powell, 1983; Scott, 2014). Thus, they strive for isomorphism to obtain institutional legitimacy and consequently become similar over time (Liang et al., 2007; Scott, 2014). The trends towards institutional isomorphism are propelled by *coercive*, *mimetic*, and *normative* pressures that shape organizational behavior, structures, and practices,

often leading to conformity and homogeneity within industries or fields (Butler & Hackney, 2021; Campbell, 2007; Scott, 2014). *Coercive* pressures arise from formal and informal pressures exerted by other organizations or authorities, such as governments, regulators, and powerful stakeholders, which demand compliance with specific rules or norms (Butler & Hackney, 2021; DiMaggio & Powell, 1983). *Mimetic* pressures describe how, in situations of uncertainty, organizations often imitate successful or legitimate peers, adopting similar practices to reduce risk and uncertainty (DiMaggio & Powell, 1983; Scott, 2014). Finally, *normative* pressures stem from professional standards and norms established by networks of professionals, trade associations, or industries, emphasizing conformity to accepted practices and values (Butler & Hackney, 2021; Campbell, 2007; Chen & Roberts, 2024; Scott, 2014). Relatedly, external pressures also impact organizations' strategic actions: they impact stakeholders and consumers through salient issues (Chen & Roberts, 2024). These are topics of matter for stakeholders and consumers, which can become part of organizations' *instrumental* and *expressive* logics, influencing managers' perception and prioritization of issues (Chen & Roberts, 2024). *Instrumental* logic pertains to the extent to which an issue supports the achievement of the organization's strategic goals. *Expressive* logic refers to the alignment of a salient issue with an organization's core values and beliefs, reflecting how a particular stakeholder concern resonates with the organization's identity and mission (Chen & Roberts, 2024).

Finally, the IMO framework suggests that IS executives receive different input, for example, from the Top Management Team. Following institutional theory (Butler & Hackney, 2021; DiMaggio & Powell, 1983; Scott, 2014), I consider external pressures one important input factor for IS executives that influence their actions, which, in turn, are mediated by team processes (Ilgen et al., 2005; Mathieu et al., 2008). These are processes such as team formation, for example, trust-building or planning, team functioning, for instance, collaboration or collective learning, and emergent cognitive and affective states (Ilgen et al., 2005). The IMO framework operates through episodic cycles: each outcome feeds back into the system as new input, reinforcing continuous development (Ilgen et al., 2005; Klotz et al., 2014).

## 3 Research model and propositions

I posit that external pressures influence IS executives' Green IS actions and beliefs (figure 1). In fact, IS research has shown that *coercive*, *mimetic*, and *normative* pressures directly affect human behaviors and beliefs, including those of the top management.

(Butler & Hackney, 2021; Campbell, 2007; Li et al., 2023; Liang et al., 2007). RO1 systematically explores how IS executives perceive external pressures and examines both the nature and mechanisms through which these pressures impact IS executives in their Green IS beliefs and corresponding actions (C'). I also hypothesize that external pressures influence organizations' stakeholders and consumers so that salient sustainability issues are fostered to which organizations align their instrumental and expressive logics (Chen & Roberts, 2024). Accordingly, I seek to examine (RO2) which sustainability issues arise from external pressures ($a_1$) and how IS executives consider these to be salient within their organization ($b_1$). Relatedly, recent IS research on social corporate responsibility showed that organizational factors, for example, organization size (Liang et al., 2007) or ideology (Gupta et al., 2017), impact how salient issues are perceived by organizations. Thus, I posit that organizational contexts condition the impact of external pressures by amplifying or filtering the salience of sustainability issues, which I plan to explore as part of RO3. Finally, drawing on the IMO framework, I argue that IS executives' Green IS beliefs and actions generate sustainability outcomes through mediating team processes and emergent states (Ilgen et al., 2005; Klotz et al., 2014; Mathieu et al., 2008). I will exclusively examine team formation and functioning processes to analyze how these translate IS executives' actions into tangible sustainability outcomes ($a_2$), which then serve as new inputs for IS executives in an iterative feedback loop ($b_2$).

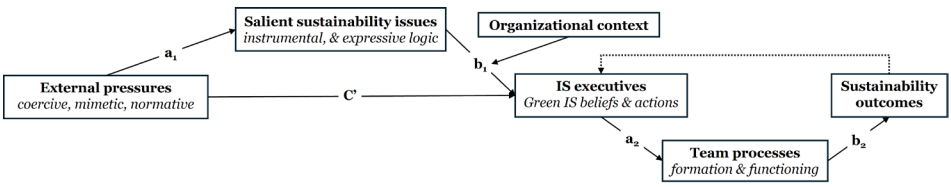


**Figure 1: Research propositions and proposed theoretical model**

## 4 Methodological approach

The overarching goal of this research is to generate evidence supporting the proposed theoretical model and research propositions, enabling theory abduction and offering practical guidance for IS executives to achieve sustainability outcomes through Green IS. I plan to use a mixed-method, qualitative research approach that follows an exploratory sequential research design, rooted in a pragmatist viewpoint (Creswell & Creswell, 2023). A pragmatist approach is appropriate since it allows to focus on a realworld challenge and actionable solutions (Johnson & Duberley, 2000; Simpson & Den Hond, 2022; Visser, 2019). Also, it supports abductive reasoning, which aligns with studying dynamically evolving and complex phenomenona such as sustainability (Creswell & Creswell, 2023; Hassmann & Westner, 2024b).

Table 1 summarizes the proposed research approach, which hinges on two research phases: first, I plan to employ systematizing expert interviews, focusing on collecting factual-technical, process, and context expert knowledge (Bogner et al., 2009; Hassmann & Westner, 2024a). For interviewing, I plan to purposefully select experts who are IS executives with Green IS experience and working in different organizational settings (Hassmann & Westner, 2024a). I acknowledge the challenges in gaining access to IS executives for interviewing and will therefore apply different mitigation strategies such as lowering the participation barriers by conducting interviews online (Hassmann & Westner, 2024a; Robinson, 2021). The interview will probe how IS executives perceive and prioritize external pressures for their Green IS actions (RO1). The second aim is to identify external pressures that shape sustainability issues such that IS executives believe them to be salient (RO2). By interviewing IS executives from organizations that have different characeteristics, I can trace patterns and contrasts in how these differences filter of amplify salient sustainability issues (RO3). Second, a subsequent case study will allow me to corroborate and triangulate the findings from the expert interviews, tracing the identified themes in realworld organizational context (Eisenhardt, 1989; Yin, 2018). By immersing in an organizational setting, I can observe how contextual factors influence the salience of sustainability issues (RO3) and how team collaboration processes translate IS executives' Green IS requirements into sustainability actions that generate outcomes, which become new inputs (RO4). To synthesize insights, I will apply Gioia's inductive coding approach (Gioia et al., 2013), identifying first-order and aggregated concepts related to external pressures and team processes.

Sustainability outcomes will be classified by scope of impact, intent (Schoormann et al., 2025), and alignment with UNs' SDGs (Hassmann & Westner, 2024b).

**Table 1: Research objectives and planned research methodologies**

| # RO | Research objective | Methodology |
|---|---|---|
| **RO1** | Systematically explore *how* IS executives *perceive, respond to*, and *prioritize external pressures* in their Green IS actions and beliefs | Expert interview |
| **RO2** | Identify *salient sustainability issues* that arise from external pressures that shape IS executives' Green IS beliefs and actions | Expert interview, Case study |
| **RO3** | Explore *how organizational features* enable or constrain the perception of salient sustainability issues by Green IS executives | Expert interview Case study |
| **RO4** | Reveal *which* and *how team formation and functionining processes* translate IS executives' Green IS actions and beliefs into sustainability outcomes | Case study |

## 5 Conclusion

My proposed research project pursues two overarching objectives. First, it seeks to advance theoretical understanding by refining existing models that explain the formation of IS executives' Green IS actions and beliefs – particularly in response to external pressures – and how beliefs and actions subsequently contribute to sustainability outcomes aligned with the global UNs' SDGs. Second, the proposed study aims to generate actionable recommendations for practitioners, providing guidance on effectively implementing and sustaining Green IS practices within their organizations to achieve measurable sustainability outcomes.

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