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Article

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ADOPTING SUSTAINABILITY AND DIGITAL TRANSFORMATION IN BUSINESS IN ROMANIA: A MULTIFACETED APPROACH IN THE CONTEXT OF THE JUST TRANSITION

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Abstract

This study investigates the many facets of sustainability and digital transformation in business in the context of the fair transition, which will generate multiple challenges and opportunities for companies in various industries. In such a context, a solution to increase resilience and adapt to the fair transition can be identified in the lessons learned by companies due to the application of sustainability and digitization and by understanding the various elements underlying these dimensions. Thus, in order to identify the various elements of this complex framework in practice, based on a semi-structured narrative review of the literature and quantitative analysis, exploring aspects such as the reasons and catalyst factors of the adoption of sustainability and digitalization in companies, the interpenetration of the two concepts in the practice of companies (in production, innovation, customer relationship, logistics, etc.), as well as the associated opportunities and challenges. The research bridges a gap in the academic literature, highlighting the relationships between the digital transformation of business and the adoption of sustainability in companies as a conducive basis for responding to the challenges of the just transition. The analysis details the dimensions of sustainability and digital transition in business in an exploratory model made using structural equations through SmartPLS software applied based on a quantitative study to which 154 professionals, executives, and managers, responded, from local and multinational companies, in different fields of activity. The results obtained after processing 128 valid answers out of the initial 154 are relevant both for the theoretical understanding of the challenges and the practical benefits associated with the digital transformation of business in the context of the development of sustainability strategies. Future lines of investigation are also highlighted.

Keywords: sustainability in business, digital transformation, just transition, structural equations, SmartPLS

JEL Classification: L19, M10, M15, Q01, Q56

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Introduction

The just transition, which the European Union recently defined as a priority strategic objective addressing both climate change and social inclusion, could prove to have both positive and negative microeconomic effects in the future. To meet the imperatives of a just transition, companies will need not only financial resources or compliance with the European policies and regulations but also new ways to understand productivity and competitiveness, as well as innovative redesigns of products, services, or even business models that are part of the broader paradigm of sustainability. Increasingly more managers are paying attention to the idea of sustainability and incorporating it into the daily existence of organizations, and in many cases, use, in this regard, digital tools. Therefore, to design effective business models and decisions, understanding digital business transformation processes coupled with the broader framework of adopting business sustainability is a necessity today, in the complex context of global competition and just transition. We mention that in this article, we chose to use the terms “digital transformation” and “digitization” as synonyms (Brennen and Kreiss, 2016), even though there are authors who differentiate between them (Gray and Rumppe, 2015)

This study investigates the multiple facets of the relationship between sustainability and digital transformation within the broader framework of the just transition imperative. The necessity and opportunity of this research are given by the catalytic element of European policies regarding the transformations generated by the just transition. However, the theoretical framework is that of the simultaneous adoption by companies of two new phenomena: ESG (ecological, social, and governance) criteria of sustainability and digital transformation, considered as favorable options for increasing resilience and organizational agility in the context of fair transition – a phenomenon whose possible consequences on companies have not been sufficiently studied so far. The paper aims to cover the literature gap of the relationship between sustainability in business and digital transformation. The topic of sustainability in business is mainly discussed in literature from narrow perspectives and practical evidence (Porter and Terry, 2012), while the alignment of digitalization with sustainability investigates mainly particular technical aspects (Feroz et al., 2021). Thus, the correlations between the dimensions of sustainability and the digital transformation in companies are identified, highlighting the positive impact of digitalization on business results and the adoption of sustainability in companies, which is an advantage for businesses in the context of challenges of fair transition.

Given that the challenges of fair transition are not yet clearly identified at the firm level, as we will demonstrate in the paper, the authors consider the context created by it as a frame of reference for the development of new managerial tools based on practical experience in adopting sustainability and digital transformation (de Novaes and Brunstein, 2013; Lahtinen and Yrjölä, 2019). The paper is structured as follows: literature review, the definition of research hypothesis, methodology, and analysis, discussions, and conclusions.

1. Literature review

The just transition is an approach that economic agents have begun to be aware of relatively recently, especially in the context of the European Commission's public position. The latter announced the adoption of the JTM (Just Transition Mechanism), which will mobilize a budget of at least 65-75 billion euros in the period 2021-2027 so that “no one is left behind”

(European Commission, 2021). As this framework is incipient, the academic literature has addressed the issue of just transition rather from the perspective of meta-analyses (Heffron and McCauley, 2018; Galcogzi, 2020), studies that explore the effects on employment (Rosemberg, 2010; Stevis and Felli, 2015), impact on the industrial environment (Clarke and Lipsig-Mummé, 2020; Tomassetti, 2021), supra-state policies (Cameron et al., 2020; Heyen et al., 2020; Plant and Lucchese, 2021), state policies (Voicu-Dorobanțu, 2021; Krawcenko and Gordon, 2021) and regional policies (Pactwa et al., 2019; Janikowska and Kulczycka, 2021), focusing on concerns about possible inequities that may result from this process and on the direct and indirect effects at the level of employment and, in extenso, on communities.

The subject of challenges and preparation of companies for the just transition in the literature is still meagre, with a few exceptions that explore the issue tangentially, by sectorial investigation of possible responses of energy companies (Goddard and Farrelli, 2018; Bainton et al., 2021) and by formulating practical recommendations for investors (Robins et al., 2019; Busu et al., 2020). However, beyond the frameworks imposed by regulation in specific sectorial contexts, increasingly more managers are proving a change of mentalities that translates into efforts to achieve a balance between creating economic, ecological, social, and cultural value and permanently streamlining business models. (de Novaes and Brunstein, 2013; Lahtinen and Yrjölä, 2019, Vrânceanu et al., 2020). Such initiatives are found in a wide range of options, from sporadic actions to structured projects and specific articulated strategies, included in companies' overall strategy.

In this context, we can estimate that the just transition is a little-known conceptual framework at the company level, based on an incipient organizational mechanism. At the time when this article was written, there was no comprehensive study of managers' or employees' perceptions of changes in the fair transition, and the only analyses in this field were conducted at well-defined levels as a sector of activity and geographic coverage of workers directly affected by fair transition (Medugorac et al., 2020). A fair transition requires new rules of competitiveness, which highlight the need for adaptation in order to become more sustainable in a digital world, too, so that firms' responses to the challenges of a just transition will be influenced by the extent to which they are already familiar with the concept and practice of business sustainability, and the tools and lessons of digital transformation can be helpful for the development of the required skills (Jenkins and Naude, 2019). A fair transition will be a far-reaching framework, and sustainable leadership will be required to ensure the resilience of companies and their development (Avery and Bergsteiner, 2011). Moreover, on the background of this resilience there will be an increasingly digitalized and interconnected world, so the correlation between the adoption of sustainability and the digital transformation must be all the more understood.

Like sustainability, digital transformation is not necessarily an end in itself but is an essential facet of business strategies and practices, becoming a lever for sustainability in multiple situations by generating tools (Pappas et al., 2018; Sivarajah et al., 2020), through the indirect effects involved (Bieser and Hilty, 2018) or through the emergence of new managerial mentalities (Von Kutzschenbach and Daub, 2021). New digital business models are influenced by the technological evolution and aim to implement digital service-oriented policies that ensure long-term business sustainability (Ruggieri et al., 2018).

To draw the theoretical framework of the complex relationship between sustainability and digital transformation in companies in the context of just transition, the authors conducted a semi-structured narrative analysis of the literature, a solution considered suitable for a

multidimensional exploratory study aimed at identifying as many relevant facets of research as possible (Snyder, 2019). Thus, bibliographic sources containing academic papers listed in recognized databases, reports of internationally renowned consulting agencies, and statistical data aggregators were analysed, which were selected after eliminating papers with an inconclusive methodology or considered as presenting redundant information. Following the documentation approach, the following thematic areas were identified to outline a complex framework of the relationship sustainability – digital transformation in companies: (1) motivations for adopting sustainability in companies; (2) dimensions of sustainability within companies and in the relationship with customers and business partners supported through digital tools; (3) internal communication in companies of sustainability and digital transformation; (4) results of the adoption of sustainability in companies and the use of digital tools to support it.

Companies adopt sustainability as a result of different external and internal factors, with varying degrees of influence (Vătămănescu et al., 2016). One of the most frequently cited internal factors in this regard is the need to reduce operational costs by reducing resource consumption (Rothenberg, 2007; Berg et al., 2015; Álvarez-García and Del RíoRama, 2016). Firms adopt sustainability strategies and/or practices in a complementary way to the cost reduction objective to increase efficiency and improve their business model (Alsayegh et al., 2020), due to the need to avoid vulnerabilities (Mota et al., 2019; Cardenuto and Buluran, 2021) and to the existence of innovation capacities and capabilities that promote sustainability (Rauter, et al, 2019; Läßle and Thorne, 2019). Depending on the field of activity, the adoption of sustainability in business is a way to reduce and weigh risks, especially in areas strongly influenced by the reduction of available resources, such as in the coffee and chocolate industries (Mota et al., 2019; Carodenuto and Buluran, 2021). As in any strategic approach, the adoption of sustainability in business depends on the managerial vision (Millar et al., 2012), being highlighted different degrees of alignment with business strategies (Caputo et al., 2017), which varies from incipient strategy to independent, at integration. Adopting business sustainability is also driven by employee expectations (Lee and Chen, 2018), especially in the case of digital natives (Pînzaru et al., 2016), which can be a factor of boosting organizational culture that favours sustainability projects (Baumgartner, 2014). Companies choose to invest in sustainability in order to maintain a favourable reputation that in turn meets consumer expectations (Treapăt et al., 2018; Zbucnea, 2013): for example, the reputation of CSR (corporate social responsibility) projects is an essential factor in influencing the choice of French consumers of banking services (Statistical, 2021a). A share of 59% of company managers who consider that they gain value from sustainability programs actively promote the products and services' sustainability attributes, and 27% propose sustainable brands (McKinsey, 2021). All these motivations in adopting sustainability in business seem to outperform the legislative-regulatory factor (Lamoureaux et al., 2019) or self-regulate (Dashwood, 2014).

Sustainability can be sustained through digital transformation, as long as smart tools adopted or lessons learned from digitization processes are translated into sustainability strategies and projects for sustainability through digitization; this is evident in the case of supply chains (Muñoz-Villamizar, 2019), where collaborative platforms that give access to big data (Wu et al., 2017) are increasingly common. In the case of production, the type of impact – positive or negative – on ecological sustainability is debatable (Chen, 2020). However, technological opportunities at the equipment level are numerous, directly impacting the reorganization of work and processes (Stock and Seliger, 2016). Achieving the objectives of energy efficiency

and reduction of waste and water consumption through smart solutions adapted to logistics facilities are found in the plethora of smart digital solutions that support the sustainability of companies, in multiple variants: 5G solutions (Chew et al., 2020), big data (Qolomany et al., 2016). External communication of CSR approaches is done digitally, through social networks (Troise and Camilleri, 2021), not only to maintain the excellent reputation of the company but also in order to attract consumers interested in the sustainability attributes of products and services (Kollat and Falache, 2017; Gupta et al., 2021). Market research on the various CSR elements of companies can also be done through digital tools, such as social networks (Glozer and Hibbert, 2017).

The digital transformation of the practice of sustainability itself seems inevitable, given the multitude of areas of sustainability (e.g., in pollution control, waste management, sustainable production, etc.) that are transformed by digital solutions such as IoT (Internet of Things), AI (artificial intelligence), big data, social networking, analytics, cloud and mobile technologies (Feroz et al., 2021). In order to use digital tools to support business sustainability, both management support and the integrated vision through which sustainability is an integral part of the business strategy are essential (Epstein et al., 2010; E&Y, 2018). For the vision to be shared, it is necessary to have continuous internal communication on the two topics, sustainability and digitalization, and continuous training of employees. Internal communication is needed to increase employees' awareness of both what sustainability means – for example, more than half of the Hungarian population does not know what sustainability means (Statista, 2021b) – and to present technical solutions for sustainability projects and in order to increase employee involvement in such projects (Duthler and Dhanesh, 2018). Employee training is specific to high-performing companies in terms of sustainability. It is often done with external educational partners (Stachová et al., 2019), covering concrete solutions and future problems of future work, such as those raised by the generalization of AI in sustainability projects (Goralski and Tan, 2020).

The main expected results of the adoption of sustainability supported by digital tools come from: increasing efficiency and reducing costs – product development, operational, regulatory compliance (McKinsey, 2021); risk management (Mota et al., 2019; Carodenuto and Buluran, 2021); adapting to consumer expectations (Ahmed et al., 2020; McKinsey, 2021); employee loyalty (Gill, 2015); gaining competitive advantage (Sroufe, 2018; Polzunova and Kostygova, 2019; Iliescu, 2020). In other words, most of the motivations for adopting sustainability in business are expecting concrete benefits for companies, such as cost reduction, more efficient risk management, adapting to consumer expectations, stimulating innovation, attracting and hiring staff, a better reputation, etc. The best-performing companies, which also obtain maximum value from adopting sustainability, are characterized by strategic vision (Maassen, 2018) and concrete implementation of scenarios, objectives, and KPIs – key performance indicators (McKinsey, 2021).

2. Description of research hypotheses

The research hypotheses were deduced from the literature presented above. Based on their testing, the authors defined a model that shows how internal and external drivers of sustainability influence digitalization, which further influences both sustainability and its outcomes. Even if companies intensely discuss various aspects of sustainability and digital transformation,

highlighting qualitative connections between the two concepts, the academic research, which measures the actual relationships between the two inside companies, lag behind.

Most available articles investigate the instrumental dimension of digitization in supporting sustainability, highlighting technical solutions and case studies (Wu et al., 2017; Muñoz-Villamizar, 2019; Chew et al., 2020). Some authors draw attention to the impossibility of determining whether digitization has only positive effects on sustainability (Chen et al., 2020), and the subject seems to be the beginning of a systematic investigation. However, some studies analyse – separately – the issue of digital maturity (Gill and VanBoskirk, 2016) and the maturity of firms' sustainability strategies (Baumgartner and Ebner, 2010).

The present projected model is based on the following research hypothesis:

- H1. DIG → SUST: Digitalization influences sustainability practices in companies. This hypothesis is in line with previous studies: Kollat and Farache, 2017; Feroz et al., 2021.
- H2. ISDRIV → DIG: Internal drivers of sustainability influence digitalization in companies. H2 is in line with by previous studies: Epstein et al., 2010; E&Y, 2018; McKinsey, 2021.
- H3. ESDRIV → DIG: External drivers of sustainability influence digitalization in companies. H3 is in line with previous studies: Feroz et al., 2021; Chew et al., 2021; Chen et al., 2021; McKinsey, 2021.
- H4. SUST → OUTSBENEF: Sustainability practices influence the perceived benefits of companies. H4 is in line with previous studies: Sroufe, 2018; Mota et al., 2019; Ahmed et al., 2020; Alsayegh et al., 2020; Carodenuto and Buluran, 2021; McKinsey, 2021.
- H5. DIG → OUTSBENEF: Digitalization has positive impact on organizational outcomes. H5 is in line with the studies of: Qolomany et al., 2016; Stock and Seliger, 2016; Glozer and Hibbert, 2017; Wu et al., 2017; Muñoz-Villamizar, 2019; Chew et al., 2020; Chen et al., 2020; Troise and Camilleri, 2021; Gupta et al., 2021.

3. Methodology and analysis

The main objective of this research is to build and validate an exploratory model, using structural equations, on the relationship of sustainability and digital transformation, in the conceptual framework presented above and based on the research hypotheses stated above. In order to investigate and develop this relational model, Smart-PLS has been used. It allows identifying cause-effect relationship models even when considering a complex set of items/situations (Benítez et al., 2020).

Data was collected using an online survey during August and September 2021. We obtained a convenience sample comprising 154 participants working in Romania in multinational and domestic companies (see Table no. 1). After validating the database and eliminating corrupt answers, the final sample consisted of 128 persons representing various types of companies. Convenience sampling has several advantages, such as flexibility, ease of acquiring data, and low costs. Nevertheless, it also presents some limits, such as not investigating a representative population sample and, therefore, being possible to include biased respondents. In order to reduce these limits, we recruited participants mainly via LinkedIn and using a snowball technique. In this way, respondents are more likely to be outside researchers' circles and are interested in the investigated phenomena, possibly being more informed about and critical of them.

Table no. 1. Socio-demographic characteristics of the respondents

Characteristic	Structure	No.	%
Work experience	1-5 years	5	4.3
	6-10 years	23	19.8
	11-15 years	27	23.3
	More than 15 years	61	52.6
Job Level	Executive position / management	81	63.3
	Operational position	47	36.7
Size of the company	1-10 employees	4	3.1
	11-50 employees	20	15.6
	51-250 employees	17	13.3
	251-1000 employees	29	22.7
	More than 1000 employees	58	45.3
Type of the company	Domestic company	41	32
	Subsidiary of an international company	69	53.9
	Headquarters of an international company	18	14.1

The sample considered for analysis includes 128 respondents employed in companies operating in Romania, who completely answered the questions in the questionnaire and whose companies operate in different fields of activity: agriculture - 3; audit and consulting - 5; automotive, logistics & transportation - 7; FMCG and retail - 18; energy, oil, water treatment - 11; banking and finance - 32; health - 2; IT - 9; media and telecommunications - 15; technology, metallurgy, semiconductors - 11; others - 15. As table no. 1 shows, the respondents have significant experience in business and mainly work for large international companies operating in Romania in managing positions (81 respondents out of 128). Therefore, their views on the subject investigated would be informed and relevant, compensating the vulnerabilities associated to convenience sampling. The structure of the sample (Tabel no. 1) ensures a broad perspective on the investigated aspects both through the fields of activity covered and through the professional experience of the respondents.

The survey consists in a 35-items questionnaire, defined as discussed in the literature. Respondents were invited to rate these items presented in table no. 2 using a five-point Likert scale (1 = not at all; to 5 = to a very large extent). The respondents also provided information on their work record (years of work experience and the job position) and on their organization (type of business and size).

The main constructs selected in correlation with the literature review are Digitization, Sustainability, Sustainability Factors and Results. The first construct, Digitization, was designed as a reflective factor comprising 5 items, referring to the extent to which the company is oriented towards digital transformation. The second construct, Sustainability, was assessed through 5 items, which investigate sustainable organizational attitudes and practices. The third reflective construct, Drivers of Sustainability, contains two main categories, internal factors, and external factors. The internal factors are structured in 7 lines, while the external ones have 6 dimensions. The latest construct, Results, includes 12 items. Table no. 2 presents the items included in the questionnaire, structured on the main lines of investigation.

Table no. 2. Structure of the variables

Main construct	Items
Digitalization	DIG01. My organization provides my co-workers or me with the resources or opportunities to obtain the right skills to take advantage of digital trends. DIG02. My manager encourages me to innovate with digital technologies. DIG03. My organization considers digital technologies as an opportunity. DIG04. I am satisfied with my organization's current reaction to digital trends. DIG05. I am confident about my leadership's understanding of relevant digital trends and emerging technologies.
Sustainability	SUST01. My organization has key performance indicators for sustainability projects. SUST02. My manager encourages me to participate in sustainability actions and behaviour at work. SUST03. Sustainability is part of our organization's culture. SUST04. Employees in my organization receive training on integrating sustainability practices in everyday work. SUST05. Employees across the organization understand how sustainability efforts align with the overall strategy.
Organizational internal drivers of sustainability	ISDRIV01. The top management's sustainability-oriented vision. ISDRIV02. The employees' evolving expectations and behaviour towards sustainability. ISDRIV03. The shareholders' sustainability-oriented vision. ISDRIV04. Improvement of the operating model or business model. ISDRIV05. Assessing the vulnerability of current business model. ISDRIV06. A culture of the ongoing improvement process. ISDRIV07. A momentary trend on what is fashionable in business.
Organizational external drivers of sustainability	ESDRIV01. Evolving customer behaviours and preferences toward sustainability. ESDRIV02. New standards in regulatory compliance. ESDRIV03. Proactive investment in fighting disruption. ESDRIV04. Increased competitive pressure. ESDRIV05. Business partners' evolving business models and expectations. ESDRIV06. Growth opportunities in new markets.
Organizational outcomes of sustainability	OUTSBENF01. Satisfy changing customer expectations. OUTSBENF02. Increase design re-use. OUTSBENF03. Reduce product development costs. OUTSBENF04. Reduce product costs. OUTSBENF05. Reduce regulation compliance. costs OUTSBENF06. Driving competitive advantage through stakeholder engagement OUTSBENF07. Fostering innovation. OUTSBENF08. Reducing operational costs. OUTSBENF09. Attracting and engaging employees. OUTSBENF10. Improving risk management. OUTSBENF11. Building and maintaining good reputation. OUTSBENF12. Being an actor that contributes to overall social sustainability.

The proposed model was tested with SmartPLS 3.3.3 software. Despite its limitations, at present, it is one of the reliable tools we have for complex models and proved its reliability in different research situations (Hair Jr et al., 2017). Figure no. 1 presents the measurement model using SmartPLS.

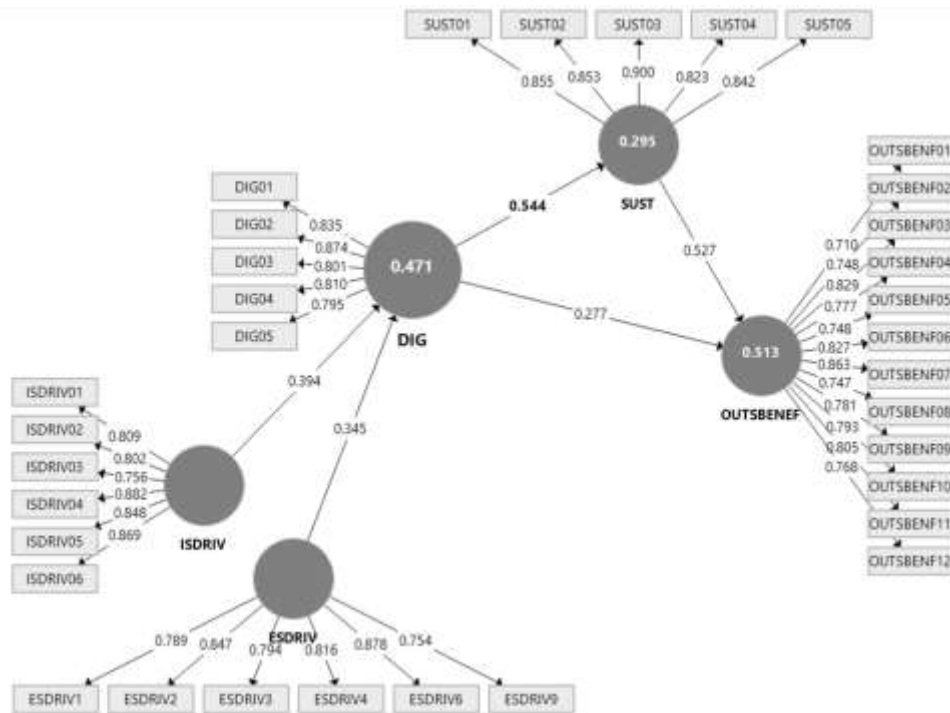


Figure no. 1. Structural model with path coefficients

In order to check the reliability of the multi-item measurements, we used Cronbach's Alpha tests for each main dimension. We used SPSS software and we found that all indexes are reliable, as Cronbach's Alpha coefficient is: Digitalization (5 items) - 0.897; Sustainability (5 items) - 0.912; Internal drivers (7 items) - 0.864; External drivers (6 items) - 0.884; Outcomes (12 items) - 0.947. The measurement model conforms to all reliability and validity criteria, according to the SmartPLS assessment, as presented in table no. 3. For all variables, Cronbach's $\alpha > 0.7$; $\rho_A > 0.7$; composite reliability (CR) > 0.8 ; average variance extracted (AVE) > 0.5 . It shows that the model has distinct constructs, explains more than 50% of the variance of its items, and satisfies the reliability validity criteria.

Table no. 3. Reliability and convergent validity

Variables	α	ρ_A	CR	AVE
DIG	0.882	0.889	0.913	0.678
SUST	0.908	0.913	0.931	0.731
ISDRIV	0.909	0.917	0.929	0.687
ESDRIV	0.898	0.903	0.922	0.663
OUTSBENEF	0.943	0.946	0.950	0.615

All other criteria for validity have been checked. Outer loadings for all items are bigger than 0.7; therefore, the items passed the convergent validity test. Discriminant validity and Collinearity statistics (VIF) also proved valid. All VIF values are below 4; therefore, no collinearity problem was detected. The SRMR value is of 0.068, lower than 0.08, indicating

a good model fit. The bootstrapping procedure was considered for evaluating the structural model, resulting in another confirmation of the model.

The most substantial relationships detected consist in (1) Digitalization positively influences sustainability, and (2) Sustainability positively impacts the perceived benefits. The model validates all hypotheses (see Table no. 4).

Table no. 4. Effects inference

Path	Path coefficient	Mean	Standard deviation	T Statistics	P Values	Hypotheses
DIG -> SUST	0.544	0.555	0.055	9.796	0.000	H1 supported
ISDRIV -> DIG	0.394	0.406	0.096	4.107	0.000	H2 supported
ESDRIV -> DIG	0.345	0.342	0.114	3.036	0.003	H3 supported
SUST -> OUTSBENEF	0.527	0.531	0.083	6.341	0.000	H4 supported
DIG -> OUTSBENEF	0.277	0.281	0.094	2.957	0.003	H5 supported

The model validates all assumptions (see Table no. 4). Thus, hypothesis H1 (DIG → SUST: Digitization influences sustainability practices in companies) is confirmed ($\beta = 0.544$; T-value = 9.796; $p < 0.05$), showing a positive and significant influence. Hypothesis H2 (ISDRIV → DIG: Internal sustainability factors influence digitalization in companies) is confirmed ($\beta = 0.394$; T-value = 4.107; $p < 0.05$). Therefore, there is a significant relationship between the internal factors of sustainability and the digitization process, especially in terms of assessing the vulnerability of the current business model, the culture of the process of continuous improvement, and the current trend towards what is fashionable in business. Hypothesis H3 (ESDRIV → DIG: External sustainability factors influence digitalization in companies) is also confirmed ($\beta = 0.345$; T-value = 3.036; $p < 0.05$). Significantly contributing items are in particular new standards in terms of regulatory compliance, evolving business models and business partner expectations, and increasing competitive pressure. Hypothesis H4 (SUST → OUTSBENEF: Sustainability practices influence the benefits perceived by companies) is confirmed ($\beta = 0.527$; T-value = 6.341; $p < 0.05$). Also, the hypothesis H5 (DIG → OUTSBENEF: Digitization has a positive impact on organizational results) is confirmed ($\beta = 0.277$; T-value = 2.957; $p < 0.05$).

4. Discussions

The data obtained in the study cover some of the gaps in the literature, completing practical studies in the academic literature (Porter and Terry, 2012) and supplementing, by the comprehensive structure of the items in the questionnaire and by covering the areas of activity and size of respondents, the sporadic character of the scientific debate about the relationship between sustainability and digitalization (Feroz et al., 2021), beyond technical options.

The research on companies operating in Romania confirms a significant influence of the digital transformation on sustainability practices in organizations. The two main dimensions identified are the provision of resources or opportunities to obtain the right skills to take advantage of digital trends (DIG01) and encouragement to innovate with digital technologies (DIG02), confirming literature findings (McKinsey, 2021). Considering the sub-dimensions of sustainability, the most relevant identified by respondents is the inclusion of sustainability

in the organizational culture. Also, key performance indicators for sustainability projects are appreciated, which supports previous discussions that emphasize the need for objectives and KPIs in the planning of sustainability projects (Păun-Zamfiroiu and Pinzaru, 2021; McKinsey, 2021). The study also reveals that Romanian employees consider that internal drivers are more influential than external drivers of sustainability. Even more, their impact is not so much direct: rather, it influences digital transformation, which, in turn, influences sustainability practices. To the best of our knowledge, this provides fresh insight into the state-of-the-art as previous literature has not tackled these relationships in-depth.

The model confirms a strong relationship between sustainability practices and the perceived benefits, confirming previous studies (McGill, 2015; Vătămănescu et al., 2016; Sroufe, 2018). Digital transformation also has a positive impact on organizational results, obtaining benefits such as meeting changing customer expectations; increasing the degree of reuse of projects; reducing product development costs; reducing product costs; reducing regulatory compliance costs; stimulating competitive advantage by involving stakeholders; encouraging innovation; reduction of operational costs; attracting and hiring staff; improving risk management; building and maintaining a good reputation; positioning the company as an actor that contributes to overall social sustainability.

The most important results highlighted by this model are driving competitive advantage through stakeholder engagement, fostering innovation, reducing product development costs, and developing organizational reputation – all of which are essential elements for increasing resilience in the context of profound transformation, as we can expect the just transition for most companies in the future.

Conclusions

In a world that is accelerating the move to a just transition, companies will soon face significant challenges in terms of strategies, tactics, practices, and processes. The just transition, currently analysed by the literature, especially at the macro level, will represent an institutional framework that will lead to profound changes. The mechanisms of resilience and development companies will be tested, regardless of the field of activity. Research prior to the launch of this institutional approach correlates sustainable leadership with business development, and the digital transformation of business is imperative for any company. Thus, a solid foundation for accelerating adaptation to meet the new conditions of a just transition is the adoption of sustainability by firms – and in the context of an extensive digitalization of the economy and society, sustainability can no longer be decoupled from the digital transformation.

This study covers multiple research gaps today, with theoretical and practical value. Thus, the results obtained are relevant for many areas of activity that have not been studied as rather distinct sectors being investigated. At the same time, the study demonstrates a direct relationship between sustainability and digitalization: digitalization influences sustainability practices, and the factors that lead to the adoption of sustainability, internal and external, influence the digital transformation of companies. This aspect not only covers current theoretical gaps, but it also has practical relevance for managers: the study demonstrates a positive impact of both the adoption of sustainability and digitalization on companies' results, which has both theoretical relevance and practical implications by supporting the benefits that the two approaches – sustainability and digitization – generate.

The main limitations of the present study are given by the convenience composition of the sample and by its application exclusively in Romania. Other limitations refer to the self-reported measures used in the research instrument, which may imply a certain degree of subjectivism.

This paper is the first of its kind in Romania and operates an exploratory model for companies present on the domestic market. However, since most respondents hold managerial positions, which means access to theoretical managerial training from international sources, we can assume that this study may have translatable conclusions for other markets, an element that could be investigated in the future. Other future research directions could investigate the impact of internalizing sustainability and digital orientation in organizational cultures at the managerial and/or employee mentality, familiarity with the concept of just transition in an institutional context, and concrete measures in this context in sustainability strategies of companies.

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