EBER
Entrepreneurial Business and Economics Review
2024, Vol. 12, No. 4
10.15678/EBER.2024.120403

Green transformational leadership as a foundation for implementing green strategic orientations and the development of green innovation and green performance

Manuel Alejandro Ibarra-Cisneros, Juan Benito Vela-Reyna, Felipe Hernández-Perlines

ABSTRACT

Objective: The objective of the article is to examine the influence of green transformational leadership on green entrepreneurial and green market orientations, which, in turn, affect green innovation. Moreover, the article analyses the relationship between green innovation and green performance.

Research Design & Methods: We used a quantitative research design. We applied a 37-item survey to a sample of 398 small, medium, and large companies in the industrial and service sectors of Mexico. We analysed the results using the partial least squares structural equation modelling approach.

Findings: Green transformational leadership has a strong influence on green entrepreneurial and green market orientation. Besides, only green entrepreneurial orientation positively influences green innovation. Finally, there is a relationship between green innovation and green performance.

Implications & Recommendations: Theoretical implications support most of the arguments put forth in various studies. However, the context can modify the behaviour of the studied relationships. The results provide arguments for adopting a sustainable view of activities within organisations, leading to improved performance and the achievement of competitive advantages.

Contribution & Value Added: The main contribution of this article is that it demonstrates the importance of green transformational leadership as an element that allows the development of green entrepreneurial orientation and green market orientation, which stimulate green innovation. Likewise, the context does influence the behaviour of the observed variables.

Article type:	research article
Keywords:	green transformational leadership; strategic orientations; green innovation; performance; companies
JEL codes:	L25, M14

Received: 16 December 2023 Revised: 30 July 2024 Accepted: 6 August 2024

Suggested citation:
Ibarra-Cisneros, M.A., Vela-Reyna, J.B., & Hernández-Perlines, F. (2024). Green transformational leadership as a foundation for implementing green strategic orientations and the development of green innovation and green performance. *Entrepreneurial Business and Economics Review,* 12(4), 43-58. https://doi.org/10.15678/EBER.2024.120403

INTRODUCTION

The current environmental concerns are bringing about significant changes in business models, which must incorporate sustainability as a fundamental pillar. Due to pressure from stakeholders, organisations are making substantial efforts to carefully listen to the new needs and concerns of customers, suppliers, employees, and the community (Tjahjadi *et al.,* 2020). Zhai *et al.* (2018) indicate that companies need to respond quickly to changes in customer preferences and maintain sustainable business development. Otherwise, they will be less competitive by not adapting to the new market conditions (Zameer *et al.,* 2020).

While organisations have managed to be competitive by implementing effective leadership, strategic orientations, and innovation, all of this changes when responding to the new needs of the environment (Cillo *et al.,* 2019). As mentioned earlier, sustainability is a determining factor for many organisations, prompting them to reconfigure to address this need. Thus, two sustainable strategic orientations are adopted: green entrepreneurial orientation (GEO) and green market orientation (GMO). Similarly, an organisation's culture must change, developing green transformational leadership (GTL); green innovations (GI) will replace traditional innovations, all resulting in green performance (GP).

In this context, the study of green behaviour in organisations becomes a research area with significant aspects to be addressed, as it is still unknown whether all the mentioned variables positively impact organisations. Moreover, the context plays an important role that must be considered when concluding. In this regard, the evidence generated so far, besides being limited, has been contextualized to specific sectors and economies. Therefore, it is not advisable to extrapolate the results to other contexts.

Consequently, the main objective of this study was to analyse how green transformational leadership influences green performance through green entrepreneurial orientation, green market orientation, and green innovation in the context of small, medium, and large companies in the industrial and service sectors of Mexico. For this purpose, we defined a sample of 398 companies to which we applied a seven-point Likert scale survey. We analysed the results using the partial least squares structural equation modelling (PLS-SEM) approach.

There is vast literature evidence of how innovation relates to higher firm performance. Even on a smaller scale, there is evidence of the influence of entrepreneurial and market orientation strategies on innovation. However, these have been studied individually or indirectly in their effect on innovation. On the other hand, leadership has been studied from a global perspective in the organisation, as a direct catalyst for innovation and performance. However, some gaps have not been strongly addressed, and this study seeks to analyse them.

This lead us to pose the following research questions: Is green transformational leadership suitable for efficiently developing strategic orientations? Does adopting strategic orientations to a sustainable vision significantly contribute to the development of innovation? Does green innovation truly generate better business performance focused on environmental issues? Finally, does the green context in a developing country allow for harvesting the same results as in a developed one?

This study is considered original because, unlike other studies, in which scholars analyse transformational leadership as a mediating variable or require the indirect effect of another variable, here GTL serves as the foundation for developing strategic orientations that lead to innovation and performance. This is regarded as original and will strengthen the state of the art. Furthermore, we developed the study within the green or sustainable context, for which there is still limited evidence, contributing to reducing the gap between theory and empirical evidence.

The article is structured as follows. The first part will discuss the literature review of each study variable and the relationships between them to formulate hypotheses. Subsequently, we will present the research methodology used, followed by the analysis of results and their discussion. Finally, we will present conclusions along with contributions, limitations, and future research directions.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Green Entrepreneurial Orientation

When discussing GEO, it is crucial to understand what green entrepreneurship entails. In this context, Mahdi *et al.* (2021) assert that green entrepreneurship is a subcategory of entrepreneurship that focuses on creating environmentally sustainable products or services. Similarly, Jiang *et al.* (2018) state that green entrepreneurship involves the development of green activities that generate both economic and environmental benefits with due consideration for societal benefits as well (Alwakid *et al.,* 2020).

Specifically, Guo *et al.* (2020) define GEO as a strategic inclination at the company level to identify and seize ecological market opportunities based on a comprehensive consideration of risks and benefits. According to Peris *et al.* (2020), GEO arises from the need to study this strategy from an

ecological perspective, where companies strive to be proactive, innovative, and decision-makers in sustainable projects that result in improved corporate performance.

Moreover, GEO is primarily divided into three dimensions. The first refers to *proactiveness*, involving responding first to customer needs by introducing new eco-friendly products, services, or technologies (Jiang *et al.,* 2018). *Innovativeness* pertains to the implementation of products or services that differ from competitors, addressing previously undetected or unmet needs. Finally, *risk-taking* is the tendency to take an active stance by investing in ecological projects with high levels of uncertainty (Jiang *et al.,* 2018). Balancing these dimensions is essential to achieving economic, environmental, and social performance (Ye *et al.,* 2022).

Evidence indicates that GEO results in superior environmental performance (Guo *et al.,* 2020), particularly financial performance (Muangmee *et al.,* 2021). It also enables market share expansion (Yadegaridehkordi *et al.,* 2023) and accelerates the development of eco-friendly products and services, creating sustainable value (Jiang *et al.,* 2018).

A positive characteristic of GEO is its ability to foster green innovation (Shehzad *et al.,* 2023), utilising modern technology for the development of eco-friendly products and processes (Teece, 2016). Therefore, scholars consider GEO a high-level dynamic capability that is adaptive and innovative (Criado-Gomis *et al.,* 2017). Organisations with GEO can also be more efficient in transitioning from polluting to non-polluting processes (Jiang *et al.,* 2018). This prompts organisations to pay closer attention to environmental demands from stakeholders and incorporate them into their corporate strategy, moving beyond merely meeting basic regulations (Wang *et al.,* 2023). Furthermore, organisations with GEO are in a better position to satisfy customer and environmental needs compared to competitors. Their culture of innovation and proactivity promotes the acquisition of heterogeneous resources and knowledge that are difficult for competitors to imitate (Ye *et al.,* 2022).

Therefore, it is relevant to note that implementing GEO strategies is risky in volatile environments (Yadegaridehkordi *et al.,* 2023). Nevertheless, the potential for high benefits justifies the adoption of GEO.

Green Market Orientation

Market orientation (MO) is also a fundamental strategic orientation for development within organisations. In this case, MO aims to foster a culture and values within the organisation focused on the customer and their needs (Narver & Slater, 1990). Noteworthy, this strategy has been used for decades by organisations seeking to be more competitive. However, pressure from stakeholders has led many of them to also implement a green culture that promotes the creation of green products (Pomegbe *et al.,* 2022). For this reason, GMO emerges as a sustainability strategy. From the stakeholder theory perspective, shareholders, consumers, employees, and society as a whole have become aware of the adverse effects of business activities on the environment.

As stated by Papadas *et al.* (2017), GMO is the degree to which an organisation participates in strategic, tactical, and internal processes and activities that collectively seek to create, communicate, and provide products and/or services with a minimal environmental impact.

Scholars divide GMO into strategic, tactical, and internal GMO. Strategic GMO involves designing and implementing strategies aimed at achieving a positive long-term environmental impact by the company (Papadas *et al.,* 2017), through ecological marketing initiatives (Papadas *et al.,* 2019). Developing strategic GMO requires the inclusion of stakeholders and the natural environment. Otherwise, the strategies will not have the expected impact, as all environmental actions are market-oriented (Vilkaite-Vaitone & Skackauskiene, 2019).

Tactical GMO involves developing a mix of green marketing (Borah *et al.,* 2023), and incorporating environmental values into tactical marketing decisions within organisations (Papadas *et al.,* 2017). Internal GMO involves creating a culture oriented towards environmental sustainability. Internal GMO entails assimilating corporate environmental values by all members of the organisation who will implement GMO (Lin *et al.,* 2020). In this regard, internal GMO generate programs for reducing energy, waste, paper consumption, or inputs that affect the environment. It also promotes various sustainable practices within the organisation.

The importance of developing GMO in organisations is significant. GMO enables the implementation of innovative strategies and capabilities to meet customer needs regarding environmental care. Furthermore, it prioritises the use of green technologies for the development of eco-friendly products, resulting in greater customer value compared to the competition and higher profitability. In this sense, companies that promote MO strategies will be better aligned with their customers' requirements, increasing organisational performance. It also allows collaborative work among various departments, resulting in the creation of ecological solutions that meet customer needs.

Green Transformational Leadership

Leadership is a cornerstone of any organisation. Without it, there is no direction to achieve the mission, vision, and objectives. Moreover, the type of leadership developed in an organisation shapes its culture, values, and the way all members work. There are various types of leadership, each with certain characteristics, and their efficiency varies depending on the context (OC, 2018). Among them is transformational leadership. This type of leadership is based on trust between leaders and employees, with the latter being treated with special attention (Nurjanah *et al.,* 2020). With the development of a society more involved in sustainability issues and more demanding towards organisations to contribute to environmental improvement, transformational leadership becomes oriented towards a sustainable green vision.

Chen and Chang (2013) describe GTL as leadership that motivates all personnel to achieve environmental objectives. It promotes organisational learning (Le & Lei, 2019) and enables superior performance (Li *et al.,* 2020). To achieve this, the promotion of values such as respect, collective responsibility, and organisational belonging is used (Mittal & Dhar, 2016). Likewise, GTL fosters a culture of creativity, empathy, knowledge development, ethics, and green innovation in an organisation (Aftab *et al.,* 2022), which, when combined with all strategic resources, leads to the creation of new eco-friendly products and services (Begum *et al.,* 2022).

A characteristic of GTL is that it allows employees to challenge themselves, be able to face challenges, think differently, and develop new perspectives and ideas (Al Nuaimi *et al.,* 2021), leading to the implementation of ecological sustainability initiatives (Begum *et al.,* 2022). By contrast, GTL motivates personnel to prioritise their personal goals over those of the organisation (Mittal & Dhar, 2016). Above all, GTL should inspire, encourage thinking outside the box, innovate in green products (Obeidat *et al.,* 2018), and foster a green organisational culture that, in turn, focuses on meeting customer needs from a sustainability perspective; consequently, GLT influences EO and MO (Menguc *et al.,* 2007).

Green Innovation

We can describe GI as a series of systematic actions and modifications aimed at addressing environmental concerns (Mahdi *et al.,* 2021). According to Peng and Liu (2016), it is the development of products, processes, systems, and methodologies that meet people's needs while simultaneously minimising the consumption of natural resources. In this sense, various authors emphasise the crucial role of modern technology, internal research, and external knowledge in significantly reducing waste, pollution, water, and energy use (Aftab *et al.,* 2022), and addressing issues related to the health and safety of individuals (Jiang *et al.,* 2018).

One of the attributed advantages of GI is the improvement of environmental performance (Roy & Khastagir, 2016). It also enables cost and production time reduction (Begum *et al.,* 2022), enhances the organisation's market position, attracts customers, and generates a competitive advantage (Hur *et al.,* 2013).

Moreover, a significant feature of GI involves the creation of ecologically friendly production strategies, processes, and procedures within the company, requiring a different vision among organisation members (Yadegaridehkordi *et al.,* 2023). This implies developing a culture based on environmental sustainability and commitment to stakeholders. Another characteristic of GI is that developing new products or services considered eco-friendly, conveys an affirmative message indicating that the company is mindful of environmental considerations (Chahal *et al.,* 2014).

However, it is essential to consider that there may be innovation practices focused solely on complying with legal requirements without a real interest in reducing waste or pollution (Leal-Rodríguez *et al.,* 2018). In such cases, long-term simulation may not reflect better customer loyalty or performance.

Green Performance

Unlike business performance, where various indicators measure financial results, and in some cases, market results, GP focuses on understanding how actions and strategies leading to sustainable goods and services positively impact the environment. In this regard, it agrees with Zhan *et al.* (2018) that while financial performance is crucial, environmental performance must also be seriously considered to meet stakeholder demands.

Green performance links the organisation's objectives with its environmental responsibilities (Wang, 2020). That is, there must be consistency between the green culture developed in the organisation and the actions taken in this regard. These actions should impact, for example, reduced pollution, waste, energy and water consumption, and paper use (Asadi *et al.,* 2020). However, they should also impact environmental reputation.

Organisations considering themselves green do so within the framework of the Triple Bottom Line, composed of economic, social, and environmental performance (Sung & Park, 2018). Therefore, when measuring performance, it is necessary to consider indicators that impact all three mentioned performances.

However, although sustainable performance addresses environmental issues, not all factors increase financial, social, and environmental performance (Wang, 2020). Sometimes, the increase only occurs in financial performance (Muangmee *et al.,* 2021), or in social and environmental performance (Yadegaridehkordi *et al.,* 2023).

Part of the explanation for why the implementation of sustainable measures and products does not impact performance is that organisations implement sustainable measures due to social pressure, and not genuine interest in contributing to environmental improvement.

Green Transformational Leadership and Green Entrepreneurial Orientation

As mentioned earlier, transformational leadership is of utmost importance in enriching the organisational culture and empowering employees to fulfil the organisation's vision, mission, and objectives. This type of leadership encourages an attitude of innovation, entrepreneurship, and risk-taking to enhance performance and gain competitive advantages. Therefore, we can state that transformational leadership has a significant influence on entrepreneurial orientation (Leite & Rua, 2022). There is evidence supporting this relationship (Engelen *et al.,* 2015; Obeidat *et al.,* 2018; Yamin, 2020); implementing this type of leadership in the organisation strengthens entrepreneurial orientation, leading to improved innovation. Therefore, it is important to know if this behaviour also occurs in a green environment. Thus, we formulated the hypothesis:

H1: Green transformational leadership has a positive influence on green entrepreneurial orientation.

Green Transformational Leadership and Green Market Orientation

Similarly to the previous relationship, it is recognised that leadership is necessary to implement market orientation (Harris & Ogbonna, 2001). In particular, transformational leadership creates a positive environment that influences building a future vision, motivates employees, and creates a customer-centric culture, thereby reinforcing market orientation (Menguc & Auh, 2008).

While studies support the association between transformational leadership and traditional market orientation, including green orientation (Dhaouadi, 2021; Menguc *et al.,* 2007), it is necessary to examine if sustainability-oriented transformational leadership influences GMO in the same way, a relationship scarcely studied in the literature. Therefore, we formulated the following hypothesis:

H2: Green transformational leadership has a positive influence on green market orientation.

Green Entrepreneurial Orientation and Green Innovation

The literature suggests that adopting GEO within organizations fosters a culture of innovation, resulting in the creation of sustainable and innovative products, services, and processes. There is significant evidence supporting this relationship (Guo *et al.*, 2020; Makhloufi *et al.,* 2022; Shehzad *et al.,* 2023). Moreover, GEO functions as a distinct system that mirrors strategic efforts made by companies to expedite green innovation and improve sustainable business outcomes (Muangmee *et al.,* 2021). Green entrepreneurial orientation modifies internal processes within the organisation to stimulate GI. Therefore, GEO plays a relevant role in the proper development of green innovation, laying the foundation for the commercialisation of innovative products and services, resulting in better performance and simultaneously satisfying consumers. Given the lack of significant evidence linking these two variables in a sustainability context, especially in the specific context of Mexico, this presents an opportunity to explore whether this behaviour is similar in this context. Consequently, we proposed the following hypothesis:

H3: There is a relationship between green entrepreneurial orientation and green innovation.

Green Market Orientation and Green Innovation

Wang (2020) notes that society is currently concerned about the negative impact of many products on the environment. Green market orientation contributes to environmental sustainability by understanding customer needs, translating into the innovation of ecological products. Empirical evidence supports the relationship between MO and GI (Muangmee *et al.,* 2021; Nuryakin & Maryati, 2022; Wang *et al.,* 2023), in which the use of innovations is driven by a broad understanding of customers' environmental needs, desires, and concerns. In this context, GMO is the antecedent to innovation. However, the specific impact of GMO on GI has not been extensively studied. This creates an opportunity to enrich existing literature, leading to the following hypothesis:

H4: There is a relationship between green market orientation and green innovation.

Green Innovation and Green Performance

Green innovations positively impact business performance, especially in environmental aspects (Hanif *et al.,* 2023; Ho *et al.,* 2021; Muangmee *et al.,* 2021; Singh *et al.,* 2020). Green innovation enhances the response to external environmental pressure from customers, improving green performance by offering eco-friendly products. The impact of GI on various types of performance is multifaceted. Green innovation benefits economic performance by reducing energy and water consumption costs, resulting in higher profits. It also improves environmental performance by reducing waste, increasing recycling, and optimising resources consumption. Furthermore, GI enhances social performance by supporting sustainable development in the community and benefiting employees, customers, and suppliers. Wang (2020) shares this idea and also indicates that the relationship between GI and GP is based, on the one hand, on the fact that organisations are aware that implementing GI involves using fewer resources, which leads to greater savings. On the other hand, there is a greater demand from consumers to acquire environmentally friendly products.

While the literature generally supports the positive relationship between GI and various types of GP, there are cases when the impact is partial. Therefore, it is crucial to understand if, in the context of this research, GI behaves similarly concerning GP. Consequently, we formulated the following hypothesis:

H5: Green innovation has a positive influence on green performance.

RESEARCH METHODOLOGY

Population and Sample

To analyse the behaviour of the variables described in the national productive sector, we decided to select the two most important sectors of the economy, *i.e.* industry (20.4% of GDP) and services (58.2% of GDP) (National Institute of Statistics, Geography, and Informatics, 2023a). Within these

sectors, we selected economic activities that develop more GI and implement GEO and GMO. The selected activities were manufacturing, hospitals, clinics, and laboratories, waste management, treatment, and final disposal of waste, as well as the hotel industry.

Based on this selection, we identified a total of 51.086 small, medium, and large enterprises according to the National Statistical Directory of Economic Units (National Institute of Statistics, Geography and Informatics, 2023b). Of these, 12.271 correspond to manufacturing and 38.815 to the described services.

We administered a survey to general managers, owners, or authorised executives of the companies, resulting in 420 completed surveys by the end of the application period. However, after the data cleaning process, we validated 398 surveys meeting the minimum sample margin established for a confidence level of 95% and a margin of error of 5%. The survey application period was from April to September 2023, with a pilot test conducted in February of the same year.

Measures

We based the survey design on the review of the analysed literature. We structured the survey into six sections. The first section collected company data such as name, economic activity, type of capital, age of company, and company size. The remaining sections asked about each of the study variables. For the latter, 37 items were developed on a 7-point Likert scale, where 1= totally disagree and 7= totally agree.

The variable *Green Transformational Leadership* consisted of five items originally developed by Dechant and Altman (1994) and adapted by Wang *et al.* (2023). *Green Entrepreneurial Orientation* included eight items adapted from the studies of Galia *et al.* (2020), Hernández-Perlines and Rung-Hoch (2017) and Li *et al.* (2010). *Green Market Orientation* had nine items adapted from Pomegbe *et al.* (2022). *Green Innovation* comprised six items adapted from Guo *et al.* (2020) and Muangmee *et al.* (2021). *Green Performance* had nine items derived from the study of Jiang *et al.* (2018).

We designed all variables as unidimensional. Control variables included the type of capital (national or foreign), age company (below 5 years, 5-10 years, above 10 years), company size (11-50 employees, 51-250 employees, and employees above 250), and the sector (industry or services) to observe if these factors influence the behaviour of the variables.

Common Method Variance

To ensure that the results obtained did not present internal validity problems due to inflated correlations resulting from inadequate survey responses, we used Harman's one-factor test (Podsakoff *et al.,* 2003). According to Cernas *et al.* (2017), this procedure is conducted through an exploratory factor analysis using an unrotated factor matrix. If a single factor emerges or if one factor represents the majority of the explained variance, it is concluded that the variables are contaminated by common method variance.

After performing the mentioned procedure, the result of Harman's one-factor test showed that the first factor explained only 32.55% of the extracted variance. Consequently, we ruled out the existence of common method variance.

Data Analysis

Table 1 displays the characteristics of the surveyed companies, showing the predominance of national companies, with a seniority of over 10 years and mainly small and medium-sized, which is consistent with official data.

We used the partial least squares structural equation modelling (PLS-SEM) statistical technique for data analysis through the Adanco 2.1.1 software (Dijkstra & Henseler, 2015). This software allows the analysis of non-normal data and has a high degree of certainty when performing factor analysis before using multiple regressions (Hair *et al.,* 2014). Noteworthy, the analysis variables are reflective, second-order, and of type B.

Table 1. Firm characteristics

Firm characteristics	Frequency	Percentages
Sector		
Manufacturer	118	30
Services	280	70
Origin		
National	341	85.7
Foreign	57	14.3
Size		
11-50 employees	192	48.2
51-250 employees	155	38.9
Employees above 250	51	12.8
Age		
Below 5 years	46	11.6
5-10 years	78	19.6
Above 10 years	274	68.8

Source: own study.

RESULTS AND DISCUSSION

The use of PLS-SEM in its first phase – the measurement model – allowed us to analyse the reliability and internal consistency of all variables with their respective items. Consequently, we discarded items that did not surpass the thresholds established by the theory. Thus, the analysis of the model, which originally consisted of 37 items, was reduced to 24. GEO, GMO, GI, and GP lost three items each, while GL lost only one.

The initial indicators of internal consistency – reliability and convergent validity – included Dijkstra-Henseler's rho, Jöreskog's rho, Cronbach's alpha (α), and average variance extracted (AVE). Results for the first three indicators exceeded the minimum threshold of 0.800 (Nunnally & Bernstein, 1995). Moreover, all AVE indicator data were above the minimum of 0.500 suggested by Fornell and Larcker (1981) (Table 2).

Table 2. Construct reliability and convergent validity

Construct	Dijkstra-Henseler's rho (ρA)	Jöreskog's rho (ρc)	Cronbach's alpha(α)	AVE
GEO	0.9208	0.9175	0.9176	0.6908
GMO	0.9146	0.9125	0.9133	0.6356
GI	0.8478	0.8446	0.8454	0.6449
GP	0.9239	0.9213	0.9226	0.6620
GTL	0.8954	0.8950	0.8950	0.6808

Source: own study.

However, in line with theory (Carmines & Zeller, 1979), the results of the factor loadings analysis were also positive as all of them were above 0.707. In general, the items belonging to the GTL and GEO constructs had the highest loadings, being above 0.800 (Table 3). Likewise, it is possible to observe the type of items that were used in the survey, which allowed an understanding of the behaviour regarding the green ecosystem developed by Mexican companies.

Furthermore, we analysed the heterotrait-monotrait ratio of the correlations indicator. This indicator measures discriminant validity between indicators of the same construct and between indicators of different constructs. In this indicator, values should be below 0.85 (Henseler *et al.,* 2015). The results consistently showed values below this threshold (Table 4). Furthermore, Table 5 presents the results of the Fornell-Larcker criterion, which aims to demonstrate how a construct is distinct from the other constructs analysed. In all cases, we observed appropriate differences as indicated by Hair *et al.* (2014).

Table 3. Factor loadings

Item	Factor Loadings				
GTL1	0.803	**GMO1**	0.886	**GP1**	0.767
GTL2	0.850	**GMO2**	0.744	**GP2**	0.853
GTL3	0.825	**GMO3**	0.772	**GP3**	0.815
GTL4	0.822	**GMO4**	0.776	**GP4**	0.767
GEO1	0.840	**GMO5**	0.810	**GP5**	0.768
GEO2	0.835	**GMO6**	0.788	**GP6**	0.902
GEO3	0.874	**GI1**	0.755	–	
GEO4	0.877	**GI2**	0.791		
GEO5	0.720	**GI3**	0.860		

Source: own study.

Table 4. Discriminant validity (HTMT)

Construct	GEO	GMO	GI	GP	GL
GEO	–	–	–	–	–
GMO	0.6392	–	–	–	–
GI	0.3041	0.2701	–	–	–
GP	0.0717	0.0870	0.4966	–	–
GTL	0.7547	0.7803	0.2690	0.0843	–

Source: own study.

Table 5. Discriminant validity: Fornell-Larcker Criterion

Construct	GEO	GMO	GI	GP	GL
GEO	**0.6908**	–	–	–	–
GMO	0.4150	**0.6356**	–	–	–
GI	0.0924	0.0725	**0.6449**	–	–
GP	0.0051	0.0077	0.2518	**0.6620**	–
GTL	0.5719	0.6123	0.0725	0.0073	**0.6808**

Source: own study.

After defining each construct and its final items according to all parameters analysed in the measurement model, we evaluated the structural model to test the research hypotheses (Table 6). To achieve this, we applied the bootstrapping procedure with a subsample of 4.999.

We confirmed a positive and highly significant relationship between GTL and the two analysed strategic orientations with very similar values for GTL → GEO (β= 0.756, t=22.561, p= 0.000), as well as GTL → GMO (β= 0.783, t=22.440, p=0.000), with the latter relationship being slightly stronger than the former. Consequently, we confirmed both hypotheses. On the other hand, we found that GEO had a positive impact on GI (β= 0.223, t=3.091, p= 0.001), slightly surpassing the minimum threshold of 0.200 indicated by Chin (1998). However, we found no relationship between GMO and GI (β= 0.126, t=1.533, p=0.063). Therefore, we confirmed H3 but rejected H4. Finally, we confirmed that there was an association between GI and GP (β= 0.502, t=10.790, p=0.000), so we accepted H5.

Table 6. Hypothesis testing

Effect	Original coefficient	Standard bootstrap results			
		Mean value	Standard error	t-value	p-value
GTL -> GEO	0.756	0.7578	0.0335	22.5613	0.000
GTL -> GMO	0.782	0.7825	0.0349	22.4400	0.000
GEO -> GI	0.223	0.2226	0.0721	3.0918	0.001
GMO -> GI	0.126	0.1252	0.0820	1.5330	0.063
GI -> GP	0.502	0.5046	0.0465	10.7904	0.000

Note: P= 0.001

Source: own study.

On the other hand, we estimated the effect size f2 of Cohen for each of the proposed relationships, and the results were as follows: GTL → GEO = 1.336, GTL → GMO = 1.579, GEO → GI = 0.032, GMO → GI = 0.010, and GI → GP = 0.336. According to Cohen's parameters (1988), 0.02 is a small effect, 0.15 is a medium effect, and 0.35 is a large effect. The relationships of GEO and GMO with GI presented a small effect, while the relationship between GI and GP was considered medium. A different case is the relationship between GTL with GEO and GMO, where the effect sizes were very high. This indicates that GTL as an exogenous variable has a strong influence on the analysed strategic orientations – endogenous variables.

We determined R2 of the entire model. The coefficients were: GEO = 0.572, GMO = 0.612, GI = 0.102, and GP = 0.252. According to the parameters of Hair *et al.* (2011), the constructs GEO and GMO showed a predictive level from moderate to high, while for GI and GP, it was weak.

Finally, we analysed control variables, such as the type of capital, company age, size, and sector. However, none of them was relevant to their behaviour.

The obtained results allow for the following discussion. Regarding the first hypothesis, the result showed that organisations with GTL have a strong influence on the implementation of GEO, which is in line with various studies (Menguc *et al.,* 2007; Obeidat *et al.,* 2018). This indicates that organisations that develop transformational leadership oriented towards the green or sustainable theme modify their culture so that all employees integrate the values, mission, and vision generated, serving as a catalyst for GEO to foster the creation of a green entrepreneurial culture. The impact of this relationship was strong, indicating the high importance of good leadership to successfully develop a strategic orientation such as GEO. In the same vein, we also accepted the second hypothesis; GTL had a strong influence on GMO and it strengthens the implementation of a green culture based on the customer; organisations seek to understand the needs of their customers and stakeholders in general. Previous literature (Dhaouadi, 2021; Widiana, 2017) has focused on analysing this relationship but without a sustainable approach. In this case, the results show that organisations have matured and transformed to include environmental issues in their culture. On the other hand, the results showed that there is a positive relationship between GEO and GI (H3). These results align with those obtained by Muangmee *et al.* (2021) and Wang *et al.* (2023), confirming the stance that a culture based on green entrepreneurship facilitates the innovation processes, generating environmentally friendly products and services, and that, in turn, GEO is preceded by GTL. On the other hand, unlike what the literature indicates (Lin *et al.,* 2014; Tjahjadi *et al.,* 2020), GMO did not influence GI (H4). An explanation for this result has to do with the fact that this strategic orientation, although focused on the customer and their needs, and implementing sustainable practices internally, has not managed to turn them into specific innovations. That is, GMO has mainly focused on working within organisations by generating sustainable practices, as well as promoting the green actions they conduct. Meanwhile, GEO is the strategy responsible for influencing GI. In this sense, sustainable entrepreneurship is responsible for solving sustainability problems through commercial activities (Sung & Park, 2018). The evidence showed that there was a relationship between GI and GP (H5), which is in line with previous studies (Tian *et al.,* 2023; Wang, 2020). In this regard, we confirmed that green innovations improve the environmental performance of companies; consumers are willing to acquire goods and services from organisations committed to the environment.

Finally, if we did not consider the effect of GTL on GEO and GMO and only analysed. the direct relationship between GTL and GP, the result would still be positive but not significant (β = 0.1340; similar results to Chen *et al.,* 2014). This result indicates that GTL does influence GP, but it does so indirectly by exerting influence on the strategies of GEO and GMO. Thus, we confirmed the main research objective stating that green transformational leadership influences green performance through green entrepreneurial orientation, green market orientation, and green innovation.

CONCLUSIONS

In an era when concern for environmental issues is paramount, organisations have developed the ability to listen to the demands and needs of all stakeholders. This has allowed for the development of GI

that meets the expectations of all stakeholders, ultimately impacting organisations' environmental performance. Green innovation is the result of the correct implementation of GEO and GMO. However, they do not always have a simultaneous impact, as was the case in this study. While this aligns with the empirical evidence developed so far, it should be emphasised that the implementation of two strategic orientations is not easy to control, causing only one of them to influence innovation, in this case, GEO. Moreover, GTL is the factor behind both strategies and we can consider it the foundation for the optimal development of the entire green innovation ecosystem. The context in which the research was conducted is also relevant because the lack of a relationship between GMO and GI suggests that simply knowing the customer is not sufficient to develop green innovations.

The main contribution of this article is that it analyses the influence of GTL as the essential element that allows for the development of the two strategic orientations used. Firstly, it is necessary to forge GTL for it to act and maximise GEO and GMO. Secondly, we conducted the entire analysis in a sustainability environment and in organisations that, due to their characteristics, must be more open to the development of green innovations, and therefore, the generation of GEO, GMO, and GP.

Theoretical implications support most of the arguments put forth in various studies. However, the context can modify the behaviour of the studied relationships.

As practical implications for organisations, the results provide arguments for adopting a sustainable view of activities within organisations, leading to improved performance and the achievement of competitive advantages.

From a social perspective, awareness of the positive impact of environmental issues will mobilise more resources from organisations to address this issue within society, benefiting both the community and organisations and improving their image in society.

The main limitation of conducting the research was the access to information, as many companies chose not to participate. However, we expanded both the number of surveys sent and the time devoted to obtaining a sufficient number of responses necessary to complete the established sample.

As the research develops, we consider it relevant to analyse the behaviour of the variables GEO, GMO, GI, and GP, but by type of leadership. It is worth investigating whether different types of leadership influence a greater or lesser implementation of sustainable measures. Moreover, it is important to identify specifically the types or measures of sustainable practices that organisations implement and how they influence both market strategy design and performance. This way, a model of adopting sustainable best practices can be proposed to improve the innovation, image, and performance of organisations.

REFERENCES

Aftab, J., Abid, N., Sarwar, H., & Veneziani, M. (2022). Environmental ethics, green innovation, and sustainable performance: Exploring the role of environmental leadership and environmental strategy. *Journal of Cleaner Production*, *378*, 134639. https://doi.org/10.1016/j.jclepro.2022.134639

Albort-Morant, G., Leal-Rodríguez, A.L., & De Marchi, V. (2018). Absorptive capacity and relationship learning mechanisms as complementary drivers of green innovation performance*. Journal of Knowledge Management, 22*(2), 432-452. https://doi.org/10.1108/JKM-07-2017-0310

AlNuaimi, B.K., Singh, S.K., & Harney, B. (2021). Unpacking the role of innovation capability: Exploring the impact of leadership style on green procurement via a natural resource-based perspective. *Journal of Business Research*, *134*, 78-88. https://doi.org/10.1016/j.jbusres.2021.05.026

Alwakid, W., Aparicio, S., & Urbano, D. (2020). Cultural Antecedents of Green Entrepreneurship in Saudi Arabia: An Institutional Approach. *Sustainability*, *12*(9), 3673. http://doi.org/10.3390/su12093673

Asadi, S., Pourhashemi, S.O., Nilashi, M., Abdullah, R., Samad, S., Yadegaridehkordi, E., Aljojo, N., & Razali, N.S. (2020). Investigating influence of green innovation on sustainability performance: A case on the Malaysian hotel industry. *Journal of Cleaner Production*, *258*, 120860, https://doi.org/10.1016/j.jclepro.2020.120860

Begum, S., Ashfaq, M., Xia, E., & Awan, U. (2022). Does green transformational leadership lead to green innovation? The role of green thinking and creative process engagement. *Business Strategy and the Environment*, *31*(1), 580-597. https://doi.org/10.1002/bse.2911

Borah, P.S., Dogbe, C.S.K., Pomegbe, W.W.K., Bamfo, B.A., & Hornuvo, L.K. (2023). Green market orientation, green innovation capability, green knowledge acquisition and green brand positioning as determinants of new product success. *European Journal of Innovation Management*, *26*(2), 364-385. https://doi.org/10.1108/ejim-09-2020-0345

Carmines, E.G., & Zeller, R.A. (1979). *Reliability and Validity Assessment*. Sage Publications, Beverly Hills. 17.

Cernas, D.A., Salgado, P.M., & León, F. (2017). La varianza del método común en la relación entre la satisfacción laboral y la satisfacción con la vida. *Estudios Gerenciales*, *33*(145), 321-329. https://doi.org/10.1016/j.estger.2017.11.004

Chahal, H., Dangwal, R., & Raina, S. (2014). Conceptualisation, development and validation of green marketing orientation (GMO) of SMEs in India. *Journal of Global Responsibility*, *5*(2), 312-337. https://doi.org/10.1108/jgr-02-2014-0005

Chen, Y.S., & Chang, C.H. (2013). The Determinants of Green Product Development Performance: Green Dynamic Capabilities, Green Transformational Leadership, and Green Creativity. *Journal of Business Ethics*, *116*(1), 107-119. https://doi.org/10.1007/s10551-012-1452-x

Chen, Y.S., Chang, C.H., & Lin, Y.H. (2014). Green Transformational Leadership and Green Performance: The Mediation Effects of Green Mindfulness and Green Self-Efficacy. *Sustainability, 6*(10), 6604-6621. https://doi.org/10.3390/su610660

Chin, W.W. (1998). The partial least squares approach to structural equation modelling. *Modern Methods for Business Research, 295*(2), 295-336.

Cillo, V., Petruzzelli, A.M., Ardito, L., & Del Giudice, M. (2019). Understanding sustainable innovation: A systematic literature review. *Corporate Social Responsibility and Environmental Management, 26*, 1012-1025. https://doi.org/10.1002/csr.1783

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. Lawrence Erlbaum, Mahwah, NJ.

Criado-Gomis, A., Cervera-Taulet, A., & Iniesta-Bonillo, M.A. (2017). Sustainable Entrepreneurial Orientation: A Business Strategic Approach for Sustainable Development. *Sustainability*, *9*(9), 1667. https://doi.org/10.3390/su9091667

Dechant, K., & Altman, B. (1994). Environmental leadership: From compliance to competitive advantage. *Academy of Management Executive*, *8*(3), 7-20. https://doi.org/10.5465/ame.1994.9503101163

Dhaouadi, K. (2021). Transformational Leadership and Entrepreneurial Orientation: Does Gender Make Difference in The Tunisian SMEs?. *African Journal of Business and Economic Research*, *16*(4), 26. Retrieved from https://hdl.handle.net/10520/ejc-aa_ajber_v16_n4_a13 on October 15, 2023.

Dijkstra, T.K., & Henseler, J. (2015). Consistent partial least squares path modelling. *MIS. Quarterly*, *39*(2), 297-316. https://doi.org/10.25300/MISQ/2015/39.2.02

Engelen, A., Gupta, V., Strenger, L., & Brettel, M. (2015). Entrepreneurial Orientation, Firm Performance, and the Moderating Role of Transformational Leadership Behaviors. *Journal of Management*, *41*(4), 1069-1097. https://doi.org/10.1177/0149206312455244

Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Gali, N., Niemand, T., Shaw, E., Hughes, M., Kraus, S., & Brem, A. (2020). Social entrepreneurship orientation and company success: The mediating role of social performance. *Technological Forecasting and Social Change*, *160*, 120230. https://doi.org/10.1016/j.techfore.2020.120230

Guo, Y., Wang, L., & Chen, Y. (2020). Green Entrepreneurial Orientation and Green Innovation: The Mediating Effect of Supply Chain Learning. *SAGE Open*, *10*(1). https://doi.org/10.1177/2158244019898798

Hair, J., Hult, G., Ringle, M., & Sarstedt, M. (2011). PLS-SEM: indeed, a silver bullet. *Journal of Marketing Theory and Practice*, *2*(19), 139-151. https://doi.org/10.2753/MTP1069-6679190202

Hair, J., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. (2014). Partial least squares structural equation modelling (PLS-SEM): an emerging tool in business research. *European Business Review, 26*(2), 106-121. https://doi.org/10.1108/EBR-10-2013-0128

Hanif, S., Ahmed, A., & Younas, N. (2023). Examining the impact of Environmental Management Accounting practices and Green Transformational Leadership on Corporate Environmental Performance: The mediating role of Green Process Innovation. *Journal of Cleaner Production*, 414 August, 137584. https://doi.org/10.1016/j.jclepro.2023.137584

Harris, L.O., & Ogbonna, E. (2001). Leadership style and market orientation: an empirical study. *European Journal*

of Marketing, 35(5/6), 744-764. https://doi.org/10.1108/03090560110388196

Henseler, J., Ringle, C.M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modelling. *Journal of the Academy of Marketing Science*, *43*(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Hernández-Perlines, F., & Rung-Hoch, N. (2017). Sustainable Entrepreneurial Orientation in Family Firms. *Sustainability*, *9*(7), 1212. https://doi.org/10.3390/su9071212

Ho, C.Y., Tsai, B.H., Chen, C.S., & Lu, M.T. (2021). Exploring Green Marketing Orientations toward Sustainability the Hospitality Industry in the COVID-19 Pandemic. *Sustainability*, *13*(8), 4348. https://doi.org/10.3390/su13084348

Hur, W.M., Kim, Y., & Park, K. (2013). Assessing the effects of perceived value and satisfaction on customer loyalty: a 'Green' perspective. *Corporate Social Responsibility and Environmental Management, 20*(3), 146-156. https://doi.org/10.1002/csr.1280

Jiang, W., Chai, H., Shao, J., & Feng, T. (2018). Green entrepreneurial orientation for enhancing firm performance: A dynamic capability perspective. *Journal of Cleaner Production*, *198*, 1311-1323. https://doi.org/10.1016/j.jclepro.2018.07.104

Le, P.B., & Lei, H. (2019). Determinants of innovation capability: The roles of transformational leadership, knowledge sharing, and perceived organizational support. *Journal of Knowledge Management*, *23*(3), 527-547. https://doi.org/10.1108/JKM-09-2018-0568

Leal-Rodríguez, A.L., Ariza-Montes, A.J., Morales-Fernández, E., & Albort-Morant, G. (2018). Green innovation, indeed a cornerstone in linking market requests and business performance. Evidence from the Spanish automotive components industry. *Technological Forecasting and Social Change*, *129*, 185-193. https://doi.org/10.1016/j.techfore.2017.07.021

Leite, C., & Rua, O. (2022). Linking Transformational Leadership and Firm Performance: The Role of Entrepreneurial Orientation. *Open Journal of Business and Management*, *10*, 1900-1922. https://doi.org/10.4236/ojbm.2022.104098

Li, W., Bhutto, T.A., Xuhui, W., Maitlo, Q., Zafar, A.U., & Ahmed Bhutto, N. (2020). Unlocking employees' green creativity: The effects of green transformational leadership, green intrinsic, and extrinsic motivation. *Journal of Cleaner Production*, *255*, 120229. https://doi.org/10.1016/j.jclepro.2020.120229

Li, Y., Wei, Z., & Liu, Y. (2010). Strategic orientations, knowledge acquisition, and firm performance: The perspective of the vendor in cross-border outsourcing. *Journal of Management Studies*, *47*(8), 1457-1482. https://doi.org/10.1111/j.1467-6486.2010.00949.x

Lin, R.J., Chen, R.H., & Huang, F.H. (2014). Green innovation in the automobile industry. *Industrial Management & Data Systems*, *114*, 886-903. https://doi.org/10.1108/IMDS-11-2013-0482

Lin, Y.-H., Kulangara, N., Foster, K., & Shang, J. (2020). Improving Green Market Orientation, Green Supply Chain Relationship Quality, and Green Absorptive Capacity to Enhance Green Competitive Advantage in the Green Supply Chain. *Sustainability*, *12*(18), 7251. https://doi.org/10.3390/su12187251

Mahdi, G.A., Sakhdari, K., & Alirezaei, A. (2021). A review of the literature on entrepreneurship and the environment: opportunities for researching on the green entrepreneurial orientation. *Environmental Engineering and Management Journal*, *20*(5), 819-839. https://doi.org/10.30638/eemj.2021.077

Makhloufi, L., Laghouag, A.A., Meirun, T., & Belaid, F. (2022). Impact of green entrepreneurship orientation on environmental performance: The natural resource-based view and environmental policy perspective. *Business Strategy and the Environment*, *31*(1), 425-444. https://doi.org/10.1002/bse.2902

Menguc, B., & Auh, S. (2008). Conflict, leadership, and market orientation. *International Journal of Research in Marketing*, *25*(1), 34-45. https://doi.org/10.1016/j.ijresmar.2007.08.001

Menguc, B., Auh, S., & Shih, E. (2007). Transformational leadership and market orientation: Implications for the implementation of competitive strategies and business unit performance. *Journal of Business Research, 60*(4), 314-321. https://doi.org/10.1016/j.jbusres.2006.12.008

Mittal, S., & Dhar, R.L. (2016). Effect of green transformational leadership on green creativity: A study of tourist hotels. *Tourism Management*, *57*, 118-127. https://doi.org/10.1016/j.tourman.2016.05.007

Muangmee, C., Dacko-Pikiewicz, Z., Meekaewkunchorn, N., Kassakorn, N., & Khalid, B. (2021). Green entrepreneurial orientation and green innovation in small and medium-sized enterprises (SMEs). *Social Sciences, 10*(4), 136. https://doi.org/10.3390/socsci10040136

Narver, J.C., & Slater, S.F. (1990). The effect of a market orientation on business profitability. *The Journal of Marketing, 54*(4), 20-35. https://doi.org/10.1177/002224299005400403

National Institute of Statistics, Geography and Informatics. (2023a). Producto interno bruto por actividad económica. Retrieved from https://www.inegi.org.mx/temas/pib/ on November 15, 2023.

National Institute of Statistics, Geography and Informatics. (2023b). DENUE establishments directory. Retrieved from https://en.www.inegi.org.mx/app/mapa/denue/default.aspx on March 12, 2023.

Nunnally, J.C., & Bernstein, I.J. (1995). *Teoría Psicométrica*. Editorial McGraw-Hill Latinoamericana, McGraw Hill, Mexico, D.F.

Nurjanah, S., Pebianti, V., & Handaru, A.W. (2020). The influence of transformational leadership, job satisfaction, and organizational commitments on Organizational Citizenship Behavior (OCB) in the Inspectorate General of the Ministry of Education and Culture. *Cogent Business & Management, 7*(1), 1-12. https://doi.org/10.1080/23311975.2020.1793521

Nuryakin, N., & Maryati, T. (2022). Do green innovation and green competitive advantage mediate the effect of green marketing orientation on SMEs' green marketing performance?. *Cogent Business & Management*, *9*(1), https://doi.org/10.1080/23311975.2022.2065948

Obeidat, B.Y., Razan, N., & Ra'ed, M. (2018). The Effect of Transformational Leadership on Entrepreneurial Orientation: The Mediating Role of Organizational Learning Capability. *Modern Applied Science*, *12*(11), 1-18. Retrieved from https://ssrn.com/abstract=3300274 on August 21, 2023.

Oc, B. (2018). Contextual leadership: A systematic review of how contextual factors shape leadership and its outcomes. *The Leadership Quarterly, 29*(1), 218-235. https://doi.org/10.1016/j.leaqua.2017.12.004

Papadas, K.K., Avlonitis, G.J., & Carrigan, M. (2017). Green marketing orientation: Conceptualization, scale development, and validation. *Journal of Business Research*, *80*, 236-246. https://doi.org/10.1016/j.jbusres.2017.05.024

Papadas, K.K., Avlonitis, G.J., Carrigan, M., & Piha, L. (2019). The interplay of strategic and internal green marketing orientation on competitive advantage. *Journal of Business Research*, *104*, 632-643. https://doi.org/10.1016/j.jbusres.2018.07.009

Peng, X., & Liu, Y. (2016). Behind eco-innovation: Managerial environmental awareness and external resource acquisition. *Journal of Cleaner Production*, *139*, 347-360. https://doi.org/10.1016/j.jclepro.2016.08.051

Peris, S.F., Supian, K., Hasanat, M.W., & Hossain, N. (2020). A Mediating Effect of Green Market Orientation on the Environmental Performance: From a Literature Review to a Conceptual Framework. *Journal of Management Info*, *7*(2), 92-118. https://doi.org/10.31580/jmi.v7i2.1421

Podsakoff, N.P., MacKenzie, S., Lee, J.Y., & Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879-903. https://doi.org/10.1037/0021-9010.88.5.879

Pomegbe, W.W.K., Dogbe, C.S.K., Bamfo, B.A., Borah, P.S., & Novixoxo, J.D. (2022). Social risk, green market orientation, entrepreneurial orientation, and new product performance among European Multinational Enterprises operating in developing economies. *Business and Society Review*, *127*(4), 891-914. https://doi.org/10.1111/basr.12292

Roy, M., & Khastagir, D. (2016). Exploring the role of green management in enhancing organizational efficiency in petrochemical industry in India. *Journal of Clean Production*, *121*(1), 109-115. https://doi.org/10.1016/j.jclepro.2016.02.039

Rua, O., & Rodrigues, S. (2017). Empowerment e orientacao empreendedora: Fundamentacao teórica. *Dos Algarves: A Multidisciplinary e-Journal*, *31*, 70-80. https://doi.org/10.18089/DAMeJ.2017.31.5

Shehzad, M.U., Zhang, J., Latif, K.F., Jamil, K., & Waseel, A.H. (2023). Do green entrepreneurial orientation and green knowledge management matter in the pursuit of ambidextrous green innovation: A moderated mediation model. *Journal of Cleaner Production*, *388*, 135971. https://doi.org/10.1016/j.jclepro.2023.135971

Singh, S.K., Del Giudice, M., Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological Forecasting and Social Change*, *150*, 119762. https://doi.org/10.1016/j.techfore.2019.119762

Sung, C., & Park, J. (2018). Sustainability Orientation and Entrepreneurship Orientation: Is There a Tradeoff Relationship between Them?. *Sustainability*, *10*(2), 379. https://doi.org/10.3390/su10020379

Teece, D.J. (2016). Dynamic capabilities and entrepreneurial management in large organizations: toward a theory of the (entrepreneurial) firm. *European Economic Review, 86*, 202-216. https://doi.org/10.1016/j.euroecorev.2015.11.006

Tian, H., Siddik, A.B., Pertheban, T.R., & Rahman, M.N. (2023). Does fintech innovation and green transformational leadership improve green innovation and corporate environmental performance? A hybrid SEM-ANN approach. *Journal of Innovation & Knowledge*, *8*(3), 100396. https://doi.org/10.1016/j.jik.2023.100396

Tjahjadi, B., Soewarno, N., Hariyati, H., Nafidah, L.N., Kustiningsih, N., & Nadyaningrum, V. (2020). The Role of Green Innovation between Green Market Orientation and Business Performance: its Implication for Open Innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(4), 173. https://doi.org/10.3390/joitmc6040173

Vilkaite-Vaitone, N., & Skackauskiene, I. (2019). Green marketing orientation: evolution, conceptualization, and potential benefits. *Open Economics*, *2*(1), 53-62. https://doi.org/10.1515/openec-2019-0006

Wang, C.H. (2020). An environmental perspective extends market orientation: Green innovation sustainability. *Business Strategy and the Environment*, *29*(8), 3123-3134. https://doi.org/10.1002/bse.2561

Wang, G., Feng, T., Zhu, Z., & Jiang, Y. (2023). Enabling green supply chain integration via green entrepreneurial orientation: Does environmental leadership matter?. *Corporate Social Responsibility and Environmental Management*, *30*(2), 518-530. https://doi.org/10.1002/csr.2371

Widiana, M.E. (2017). Transformational Leadership Effect on the Marketing Performance through Market Orientation. *Advances in Social Sciences Research Journal, 4*(9), 118-132. https://doi.org/10.14738/assrj.49.3150

Yadegaridehkordi, E., Foroughi, B., Iranmanesh, M., Nilashi, M., & Ghobakhloo, M. (2023). Determinants of environmental, financial, and social sustainable performance of manufacturing SMEs in Malaysia. *Sustainable Production and Consumption*, *35*, 129-140. https://doi.org/10.1016/j.spc.2022.10.026

Yamin, M. (2020). Examining the role of transformational leadership and entrepreneurial orientation on employee retention with moderating role of competitive advantage. *Management Science Letters*, *10*(2), 313-326. https://doi.org/10.5267/j.msl.2019.8.039

Ye, F., Yang, Y., Xia, H., Shao, Y., Gu, X., & Shen, J. (2022). Green entrepreneurial orientation, boundary-spanning search, and enterprise sustainable performance: The moderating role of environmental dynamism. *Frontiers in Psychology*, *13*(1), 1-17. https://doi.org/10.3389/fpsyg.2022.978274

Zameer, H., Wang, Y., & Yasmeen, H. (2020). Reinforcing green competitive advantage through green production, creativity, and green brand image: implications for cleaner production in China. *Journal of Cleaner Production*, *247*, 119119. https://doi.org/10.1016/j.jclepro.2019.119119

Zhai, Y.M., Sun, W.Q., Tsai, S.B., Wang, Z., Zhao, Y., & Chen, Q. (2018). An empirical study on entrepreneurial orientation, absorptive capacity, and SMEs' innovation performance: A sustainable perspective. *Sustainability*, *10*(2), 31. https://doi.org/10.3390/su10020314

Zhan, Y., Tan, K.H., Ji, G., Chung, L., & Chiu, A.S.F. (2018). Green and lean sustainable development path in China: Guanxi, practices and performance. *Resources, Conservation and Recycling, 128*(1), 240-249. https://doi.org/10.1016/j.resconrec.2016.02.006

Authors

The contribution share of authors is in equal proportions.

Manuel Alejandro Ibarra-Cisneros
Holds PhD in Economics and Labor Relations. He is a professor at the Faculty of Administrative Sciences at the Autonomous University of Baja California, Mexico. His research interests include innovation, intellectual capital, entrepreneurial orientation, corporate social responsibility, and international economics.
Correspondence to: Manuel Ibarra, Autonomous University of Baja California, Faculty of Administrative Sciences. Río Nuevo y eje central 21330, Mexicali, Baja California, México. e-mail: manuel_ibarra@uabc.edu.mx
ORCID https://orcid.org/0000-0002-0731-7225

Juan Benito Vela-Reyna
Holds PhD in Administrative Sciences. He is a professor at the Faculty of Administrative Sciences at the Autonomous University of Baja California, Mexico. His research interests include organizational performance, international business strategy, e-commerce strategy, and technology transfer.
Correspondence to: Juan Vela, Autonomous University of Baja California, Faculty of Administrative Sciences. Río Nuevo y eje central 21330, Mexicali, Baja California, México. e-mail: jbenitovela@uabc.edu.mx
ORCID https://orcid.org/0000-0002-7739-0225

Felipe Hernández-Perlines
Holds PhD in Economics and Business. He is a professor of Strategic Management in the Department of Business Administration at the University of Castilla-La Mancha (Spain). His research interest includes agri-food cooperatives and family businesses.
Correspondence to: Felipe Hernández, Faculty of Legal and Social Sciences, University of Castilla-La Mancha. Cobertizo de San Pedro Mártir, s/n 45071- Toledo, Spain. e-mail: Felipe.Hperlines@uclm.es
ORCID https://orcid.org/0000-0002-6409-5593

Acknowledgements and Financial Disclosure

Project of the Junta de Comunidades de Castilla-La Mancha with reference SBPLY/21/180501/000192. The authors would like to thank the anonymous referees for their useful comments, which allowed to increase the value of this article.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright and License

Published by Krakow University of Economics – Krakow, Poland