

## Article

# Environmental Product Innovation and Perceived Brand Value: The Mediating Role of Ethical-Related Aspects

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**Abstract:** Studies developed in the last two decades indicate that environmental product innovations can potentially generate competitive advantages. However, the ethical dimension, now increasingly involved in evaluations for consumer decision-making, has received less attention in academic research. Considering the above, our study investigates the mediating role of ethical aspects in the relationship between environmental product innovation and perceived brand value. To this end, we carried out a quantitative study with 336 university students who are end users of Apple and Microsoft products and services. In addition to investigating the main effect of environmental product innovations on perceived brand equity, we explore the possible mediating effects of ethical behaviors: (i) open-mindedness and (ii) concerns with privacy practices. Our results indicate that environmental product innovations need to be supported by the ethical aspects of companies to have a positive effect on perceived brand equity. Crucially, customers perceive value in environmental product innovation when they can confirm that organizations exhibit ethical correctness, particularly in the sector under study. We understand that our research provides advancement in the field of sustainable innovation. The study confirms that broader approaches, mainly centered on corporate commitments beyond environmental issues, are critical for environmental product innovations to generate perceived brand value.

**Keywords:** ethical concern; perceived brand value; environmental product innovations



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## 1. Introduction

The environmental, social, and economic dimensions, which support the concept of triple-bottom line and lately sustainability [1], have become a strategic issue in successful organizations [2]. Focus on sustainability is an effective way for organizations to align themselves with the pressures arising from different stakeholders [3]. Nevertheless, the challenges for companies regarding the precepts of sustainability are not trivial. Specifically, the environmental and social dimensions imposes important changes in the prevailing view of profit [4]. Although much attention has been paid to the external aspects of the firm related to sustainability, the internal aspects also deserve special care [5]. Areas such as R&D, design, manufacturing, and marketing must be changed in respect to the sustainability idea [6].

A key strategy in this context has been the development of production processes and products with the aim of increasing environmental performance [7]. Therefore, resources and capabilities related to environmental product innovation have increasingly been placed

on the research agenda [5]. Studies developed in the last two decades indicate that environmental product innovations can potentially generate competitive advantages [8]. Environmental product innovations tend to be effective for the alignment of organizations with customers who have concerns about the environment [9]. It strengthens the brand image in front of stakeholders, especially shareholders [10]. Furthermore, it enables proactive rather than reactive compliance with established laws and regulations [11].

However, environmentally friendly products or practices are difficult to implement in a real-life context and the strategies currently applied by organizations are far from ideal [12]. In fact, not only should the strategic and competitive positions of companies be adjusted, but also their vision and behavior [6]. For business strategies related to sustainability to be effectively implemented, companies should behave in an ethical manner [13]. According to the author, the ethical dimension reflects the customers' and companies' attitudes and behaviors regarding ethics in sustainable business. Likewise, some authors point out that business and ethics should be taken together, although this has proven challenging for the companies facing the sustainability demands [14].

The literature has indeed advanced in the understanding that ethical issues are also involved in the evaluation of customers' decision-making processes [15]. Notions of ethical consumption and environmental innovation adoption have evoked discussions in different domains, particularly regarding environmental innovation [16]. However, it is necessary to move forward with the existent knowledge related to environmental innovation, ethical aspects, and business performance [16,17]. The main streams of research addressing environmental success are mostly linked to environmental impacts of products and processes [18]. Unfortunately, the related ethical aspects have received less attention in academic research [2].

Furthermore, while sustainable innovation initiatives have increased among companies, research on their effects has shown mixed results [7]. Some authors argue that, while companies are gradually emphasizing sustainable initiatives, their potential for outcomes remains unresolved, and even contradictory, from one empirical study to another [19]. Additionally, others highlight the importance of deepening knowledge on the impacts of environmental product innovations and the possible moderators/mediators of its effect [20]. Accordingly, more research would be necessary to understand the impact of sustainable strategies and business ethics behavior on brand attitude [21]. Furthermore, since ethical issues affect every type of business, enterprise, organization, and person, research on the concept of ethical branding becomes timely and crucial [21].

Thus, our study investigates the role of ethical aspects in the relationship of environmental product innovations and a brand's perceived value for end users of Apple and Microsoft products and services. We justify the selection of information and technology context because products or services in this sector involve the storing or handling of customers' information [22]. In such a context, inadvertent or improper company attitudes may lead to a strong perception of unethical practices, like the customers' sense of privacy breach or a lack of openness [23]. To respond to our objective, we propose a theoretical model in which we investigate the main effect of environmental product innovations on the brand's perceived value. We also explore the possible mediating effects of two important ethical behaviors of a company that may be perceived by customers, particularly in the information technology sector represented by Apple and Microsoft. The two selected ethical behaviors employed by companies were open-mindedness and privacy practices concerns. Open-mindedness is one of the essential components of ethical leadership, in the sense of respecting the vision and principle of others and the willingness to learn in the face of difficulties to maintain corporate ethical standards [24]. Privacy practices concerns represent the companies' ethical need to consider people's desire for privacy regarding their personal data [25].

Thus, in addition to the aforementioned, our study responds to the calls for research that studies the relationship between EPI and brand value [26] and on understanding the ethical aspect with regard to the attitude of the brand from the consumers' perspective [21].

Examining the impact of ethical aspects on the relationship between EPI and brand perception is important for expanding the understanding of consumer behavior, preferences, and motivations. Furthermore, it enables companies to align their innovation and marketing efforts with the needs and expectations of consumers.

This paper is organized as follows. The theoretical background and the development of hypotheses are presented in Section 2. Section 3 describes the method used by the authors to develop the study. Results are explained in Section 4. Section 5 discusses the theoretical and practical research contributions, the conclusions, and presents its limitations and suggestions for future studies.

## 2. Theoretical Background and Hypotheses

### 2.1. Environmental Product Innovation and Perceived Brand Value

In recent years, innovation and sustainability transitions have been addressed more explicitly [16]. Terminologies like green innovation, environmentally sustainable innovation, eco-innovation, environmentally friendly innovation, or environmental innovation have been used interchangeably, but properly referring to the development of new solutions to deal with environmental problems [18]. The general idea involves respecting the environmental commitment in the production and consumption process [27]. There are clear differences between a conventional and an environmental innovation [8], with the latter being driven by the need to avoid environmental damage while still creating the conditions for companies to meet market demands [28].

For this study, we adopted the concept of “Environmental Product Innovation”, which comprises the care of energy efficiency, avoiding the use of toxic materials, the efficient use of raw materials in products, and the concern in not affecting the health of customers [29]. Environmental product innovation is recognized as a beneficial strategy for companies to achieve sustainable success [9]. Compared to conventional product innovation, environmental product innovations consider additional requirements concerning the product design and protection of the environment from the high consumption of raw materials and energy [9]. We justify the use of this concept because it supports the conceptual framework proposed by one study [30], consolidated in the literature that addresses this issue [12].

As such, environmental product innovations can enable companies to grant competitive advantages [31] and enhance business performance [9]. It can also lead to cost reduction, better reputation, and customer satisfaction [32]. Furthermore, innovating in an environmentally sustainable manner can allow companies to attain a closer relationship to the values of customers concerning the environment and sustainable issues [9,33].

In recent times, the growth in demand for environmental product innovations have become apparent, especially due to the increased customer awareness of environmental issues [16]. Thus, customers have gradually screened for and rewarded green practices, even over perceived quality and price [8]. Prior evidence indicates that companies’ environmental product innovations positively affect customers’ purchase intentions [34]. The high percentage of customers declaring to be willing to pay more for environmentally friendly products highlights the market growth of environmental product innovations [35]. Thus, it is noted that companies that display good environmental initiatives are likely to improve their brand image and gain more loyal customers [36]. In fact, other authors have argued that environmental product innovations can be a business solution that adds value to the companies and their stakeholders [36].

However, perceived value is a subjective judgment of a customer’s brand perception in relation to its offerings and deliveries [37]. It comprehends a broad construct involving heterogeneous subcomponents and multiple dimensions. Perceived value affects customers’ brand cognition and purchase decision [36]. Hence, a brand’s perceived value covers the value that customers perceive the brand delivers and in the outcomes that arise because of this value proposition [38]. Customers perceive different benefits from the brands and assign values due to this perception. As a result, customers tend to choose the option that delivers a higher perceived value [39]. Therefore, a brand’s perceived value refers to the

fulfillment of the promise that a company makes to its customers about what they can expect from its products [36].

There is a possible link between the environmental orientation of a firm and its brand values [26]. Sustainable practices, including environmental innovation, can have an impact on the BVP [33]. In this way, companies can implement and communicate sustainable practices to create connections with customers that become a part of the brand image [36]. Associating sustainability to brand value can be a form of differentiation [40] since sustainable brands are increasingly being acknowledged [33]. Hence, investing in innovation that increases the perception of sustainability may be necessary for building a positive brand [36].

In fact, environmental product innovations can help companies to strengthen their skills, achieve greater efficiency, and improve their image, all while increasing profitability [8]. Additionally, environmental product innovations positively affect customers' green purchase intentions and behavior [41], as well as on brand attitude [20] and brand value [36].

Hence, as a company employs environmental product innovations, it is expected that customers are more likely to perceive the value in the brand, as in the following proposed hypothesis:

**H1.** *A higher perception of environmental product innovation will lead to a higher perceived brand value.*

## 2.2. The Mediating Role of Ethical Aspects

Studies in the literature with regard to sustainability mainly show a positive relationship of environmental product innovations with ethical issues [42]. Essentially, customers do not believe in brands that do not have organizational values tied to sustainability, even though they are introducing new environmentally friendly products [20]. Additionally, customers usually negatively evaluated brands involved with unsustainable suppliers, or with inappropriate human resource management practices, even when these brands had the so-called green product portfolio [43]. To be transparent about a brand's products, the brand would need to have a value proposition aligned with ethical and moral issues [4]. In addition, transparency helps to decrease the improper greenwashing view regarding the environmental performance of the products [44].

Consequently, as the number of ethically conscious customers grows, ethical issues in branding tend to be taken seriously [21]. Thus, the customers of companies which engage in ethical behavior are more likely to respond more positively to such brands [45]. Customers consider company ethics to be a critical factor in their perception of the brand [46]. Customers' perceptions of a company's ethics exert a significant influence on their purchasing behaviors [21]. Accordingly, some studies report the alignment between ethical conduct and brand attitude [21,46].

Internally within companies, the open-minded culture has been largely referred to as an important ethical behavior in environmental management [47]. Companies that have highly open-minded teams are more likely to succeed in capturing and understanding customer needs [48]. Open-mindedness is an organizational value necessary for unlearning, which occurs when companies question routines, assumptions, and beliefs [49]. It involves the receptivity to new and possibly different ideas and perspectives [50]. According to Collier and Esteban [24], open-mindedness represents a 'culture of openness' in the organization. Therefore, the presence of open-minded practices is critical for employees that are dealing with customers to discuss and fulfill their requirements and needs [51]. Open-mindedness encourages the consideration of different perspectives and to be receptive to emerging possibilities [50]. Thus, open-minded culture links creativity, freedom, and reflection with current knowledge and helps to implement innovation [52]. In fact, innovative ideas are valued and recognized by open-minded companies [48] by promoting and stimulating the flow of new knowledge [53].

Another study observed that a culture of open-mindedness is a learning process about customers, including their demands about environmental issues [50]. Open-mindedness is

crucial for the company's management as it enables a better understanding of the customers' real needs [54]. Within a pragmatic approach, openness to new ideas is essential for a company to follow the path of sustainability [55]. Furthermore, another study indicates that the existence of open-mindedness practices affects brand performance by stimulating the process of exploring and exploiting customer-related knowledge [51].

Based on the above, we understand that customers' perception of the company's open-mindedness would be necessary to increase the brand's perceived value, as in the following hypothesis:

**H2.** *Open-mindedness mediates the positive influence of environmental product innovations on a brand's perceived value.*

Similarly, ethical issues are extremely important in contexts in which brands encompass products and services that involve the privacy of customer information [56]. Privacy is related to the control over information and information use, while privacy concerns tie to an individual's views on rights in relation to information privacy [57]. Privacy concern is a topic that has become increasingly important, especially with the development of technology [50]. As the use of the internet grows, so do concerns regarding online collection and the use of customer information [22]. Frequently, concerns around privacy and security of data challenges the customer trust regarding the use of the internet and technological products [25]. Thus, innovations that allow for a greater acquisition of consumer information raise ethical questions [58]. Additionally, while currently innovations allow companies to collect and store customer data, they also present risks to people who disclose their personal information [59]. This situation also affects most of the environmental innovation initiatives [50].

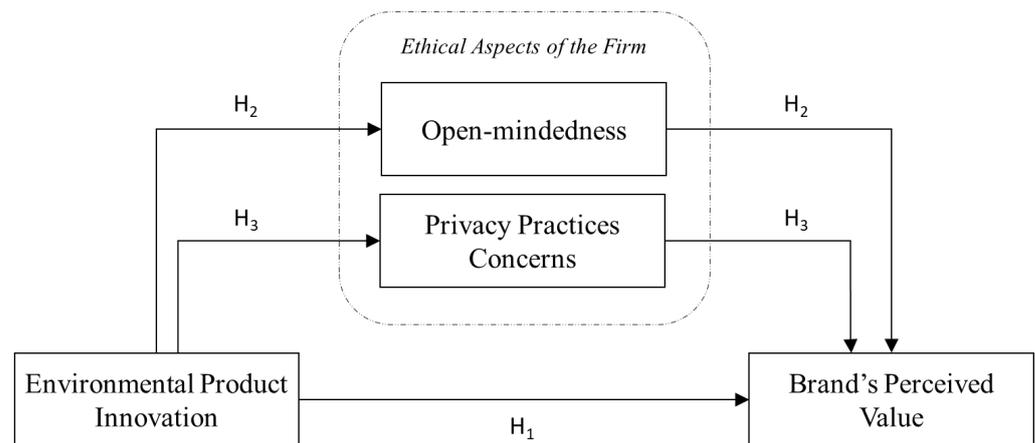
In general, customers trust more in companies that apply mechanisms to ensure the protection of their data [60]. Some authors highlight that a portion of customers tend to react negatively to brands that use their personal data, while others tend to react more favorably to brands that access and use their data if protections are provided [61]. In fact, data privacy has often been associated with ethical business standards, also in relation to product innovation [62]. Accordingly, previous evidence indicates that privacy concerns played a crucial role in customer responses and brand trust [15].

This scenario requires companies to create strategies to mitigate customer privacy concerns [63]. Therefore, data privacy has been a proactive strategy adopted by some companies to differentiate their brand from their competitors [58]. Hence, privacy issues can impair the brand value or compromise its business potential [64]. Thus, strategies that address customers' privacy concerns may be an effective way to build brand–customer relationships and brand reputation [60]. Some authors emphasized the need to strengthen customer relationships through a greater emphasis on brand ethical responsibilities to alleviate ethical concerns regarding privacy issues and increase trust [56]. When companies respect customers' privacy concerns regarding new products, they are able to generate a positive image, thus satisfying customers and providing superior value [62].

Based on the belief that customers' perception of the company's privacy practices would be necessary to increase the brand's perceived value, we propose the following hypothesis:

**H3.** *Privacy practices concerns mediate the positive influence of environmental product innovations on perceived brand value.*

Figure 1 illustrates the theoretical model used to test the three hypotheses, which will be justified in the sequence.



**Figure 1.** Theoretical model (source: authors' elaboration).

### 3. Methodology

This paper is concerned with studying consumers' perception of the environmental product innovation influence on the brand's perceived value, and the mediating effect of ethical aspects of the firm (open-mindedness and privacy practices concerns) in this relationship. The research design encompassed a quantitative data collection by an online cross-section survey study. The informants were frequent consumers of products and services from Apple or Microsoft (both brands have been two of the most valued brands in the world for a long time according to Interbras' and Forbes' list; the two brands are synonyms of technology in almost any market [65]; hence, the two were selected as the reference for the survey). The online questionnaire was developed by using previously validated scales for the constructs in evaluation. The research hypotheses were verified by the structural equation modeling approach. Data analysis was primarily executed by partial least-squares structural equation modeling (PLS-SEM) through SmartPLS<sup>®</sup> 4.0 software with bootstrapping procedure (5000 subsamples). PLS-SEM has been applied in related studies [21] because of its suitability to small samples and dependent variable prediction. Following the PLS-SEM guidelines [66], the analysis was performed by a two-stage approach. We first applied the assessment of the measurement model (outer model), and then we evaluated the structural model (inner model). The research design details are offered below.

#### 3.1. Sample and Data Collection

Data collection was performed by an online survey with students from distance-learning postgraduate courses randomly selected from the directory of a Brazilian university. Electronic messages were sent to a total of 4000 with the invitation to participate in the research. Two waves of 2000 students were randomly selected to receive the invitation. Students were initially asked to indicate whether they considered themselves as frequent users of one of two very known brands in Brazil. Those students who considered themselves as frequent users of one of the brands were invited to answer the questionnaire about the specific brand. In the invitation message, different links for the questionnaire were offered—one for each brand. The approach to the use of postgraduate students was applied so as to reach two important target markets of end customers for both brands: students and market professionals. The selected profile was justified by the expected high level of use for the kind of products and services targeted in the study. Furthermore, the previous literature points out that environment-oriented consumers need to have a good set of information about environmental aspects in the production and use of the products and services.

An amount of 1745 messages were refused or not delivered due to anti-spam systems or not updated email addresses. Out of the initial total number of messages, 336 valid questionnaires were received. The return rate of around 15% was considered high for the

patterns of online surveys. The sample included answers from 174 females and 162 males, with ages ranging from 18 to 29 years old (35.4%), 30 to 39 (41.1%), 40 to 49 (15.5%), 50 to 59 (6.5%), and to 60 and above (1.5%), from different states in Brazil. The average amount spent in technology among the individuals in the sample was BRL 2325.87 (around USD 580). A total of 192 responses were from Apple end users, 144 from Microsoft, and 64 individuals declared not to be buyers but only users of the brand.

### 3.2. Measures

The questionnaire measured the extent to which those individuals perceived Apple's or Microsoft's environmental innovation as important to them. In addition, the questionnaire included measuring users' perceptions of Apple's or Microsoft's procedures and care for data privacy when using their products and services. We applied scales previously validated in the literature for all primary measures in the study. Key constructs' wording is presented in Table 1.

**Table 1.** Composite confirmatory analysis.

Scale	Standardized Factor Loadings	VIF
Perceived Brand Value		
I would repeat buying again from Apple (Microsoft)	0.818	1.788
Apple (Microsoft) has offered me products and services according to my needs	0.775	1.644
The quality of the services	0.837	1.898
My loyalty toward the company	0.822	1.745
Environmental Product Innovation		
Apple (Microsoft) products are energy-efficient	0.659	1.184
Apple (Microsoft) does not use toxic substances in their products	0.759	1.575
Apple (Microsoft) make an efficient use of materials in their products (e.g., decompose and recycle materials)	0.755	1.521
Apple's (Microsoft's) products do not affect my health (e.g., do not create electromagnetic fields)	0.781	1.401
Open-mindedness		
Apple (Microsoft) seems to be open to new ideas	0.720	1.496
Apple (Microsoft) is able to identify problems (new ways of action) easily	0.814	1.814
Apple (Microsoft) is able to reflect and learn from their own mistakes	0.732	1.618
Apple (Microsoft) is able to listen to end users (e.g., complaints, suggestions)	0.769	1.691
Apple (Microsoft) is able to adopt the suggestions of end users in the form of new routines and processes	0.749	1.651
Privacy Practices Concerns		
Apple's (Microsoft's) products ask/store the right levels of personal information	0.822	1.691
My personal information is kept up to date in Apple (Microsoft) products	0.751	1.434
Apple (Microsoft) does not use my personal information for a purpose other than what I consent it to be	0.790	1.900
Apple (Microsoft) would never sell my personal information to other companies	0.753	1.722

Source: authors' elaboration.

Environmental product innovation measures were based on definitions from [29]. We use users' perspectives regarding brand care on energy efficiency and the use of toxic products, the efficient use of raw materials in their products, and the concern of the brand in not affecting the health of the customer. The users' perception about the processes to manage privacy practices concerns by the brand was measured according to [67]. The user privacy concern was considered in terms of the control and knowledge that the brand has on users' personal information. The scale included items reflecting users' perception about the level of personal information asked and stored by the brand, and about any unauthorized or commercial use of personal information by the brand. Open-mindedness measure consisted of five items adapted from [68]. The items refer to the ability of the firm

to learn from errors, to pay attention to end users' complaints and suggestions, and to react to them with new behavior, procedures, and routines. Based on [38], perceived brand value is measured as the value which users perceive of the delivery offered by the brand as well as the value proposition outcomes expressed by the brand (e.g., quality, satisfaction, and loyalty). All measures were measured using a 7-point Likert scale.

We also included some control variables in the questionnaire concerning users' demographics (gender and age) and buying behavior regarding the product category (the amount spent on technology per year, and a dummy variable questioning if the respondent had recently bought products from the brand).

The questionnaire had its content validity checked by 3 researchers with expertise in the topic in analysis. It was also pre-tested with a selected group of 20 students. Both processes showed a clear adequacy of the instrument for its purpose.

## 4. Results

### 4.1. Measure and Model Validation

To check possible response bias, we performed three statistical approaches following [67]. Initially, an exploratory factor analysis with the indicators of the main constructs in the model showed four factors with eigenvalues  $>1.0$  and 61.39% of the total variance explained. Then, a Harman's single-factor test was conducted with a confirmatory factor analysis (CFA). The fit indices obtained for this model were very poor ( $\chi^2 = 778.004$ ;  $df = 119$ ;  $\chi^2/df = 6.538$ ;  $RMSEA = 0.129$ ;  $GFI = 0.748$ ;  $AGFI = 0.675$ ;  $TLI = 0.622$ ;  $CFI = 0.670$ ) when compared to the adjustment of the proposed model ( $\chi^2 = 225.751$ ;  $df = 113$ ;  $\chi^2/df = 1.998$ ;  $RMSEA = 0.055$ ;  $GFI = 0.927$ ;  $AGFI = 0.901$ ;  $TLI = 0.932$ ;  $CFI = 0.943$ ). Finally, the inclusion of an unmeasured latent method factor showed no significant effect in the hypothesized relationships in the model [69]. Thus, we considered that the measurement model presented no response bias.

A composite confirmatory analysis (CCA) approach confirmed the validity of the measurement model, following the procedures recommended by Hair et al. [66]. Table 1 provides factor loadings and variance inflation factors (VIFs) of constructs related to the hypotheses. Loadings were strong ( $p < 0.001$ ), varying from 0.66 to 0.84. VIFs (from 1.18 to 1.90) showed low levels of multicollinearity in the measures. Table 2 shows the descriptive estimations: means, standard deviations, extracted variance values (AVEs), composite reliability (CR) levels, and construct correlations. The AVE scores ( $>0.5$ ) and CR levels ( $>0.7$ ) for each construct corroborated the evidence of convergent validity. To verify discriminant validity, the correlations between constructs were compared to their corresponding AVEs [66]. In each case, the square root of the AVE exceeded the correlation between the constructs. Likewise, the heterotrait/monotrait (HTMT) values of the correlations were all below 0.9. The results provided evidence of discriminant validity [66].

**Table 2.** Constructs statistics.

	Mean	SD	$\alpha$	AVE	CR	1	2	3	4
1. Perceived Brand Value	3.95	0.75	0.83	0.89	0.66	0.81			
2. Environmental Product Innovation	3.08	0.56	0.73	0.83	0.55	0.308 **	0.74		
3. Open-mindedness	3.70	0.63	0.82	0.87	0.57	0.534 **	0.271 **	0.76	
4. Privacy Practices Concerns	3.38	0.76	0.79	0.86	0.61	0.413 **	0.338 **	0.409 **	0.78

Source: authors' elaboration. Note: Diagonal elements (0.81, 0.74, 0.76 and 0.78) are the square root of the average variance extracted (AVE). All correlations were significant (\*\*  $p < 0.01$ ).

The structural model was then evaluated as the second stage of the analysis [66]; the theoretical framework was tested by path analysis using SmartPLS and bootstrapping procedure with 5000 subsamples [66]. The analysis included all control variables. Firstly, we evaluated the predictive relevance of the main relationships disposed in the model. The cross-validated redundancy (Stone–Geisser's  $Q^2$ ) estimates were greater than 0 for all endogenous constructs (open-mindedness,  $Q^2 = 0.038$ ; privacy practices concerns,

$Q^2 = 0.086$ ; brand's perceived value,  $Q^2 = 0.2250$ ). Moreover, the proposed model explained 40.5% of the variance ( $R^2$ ) in perceived brand value. Thus, the models' predictive relevance was considered satisfactory [66].

#### 4.2. Hypotheses Testing

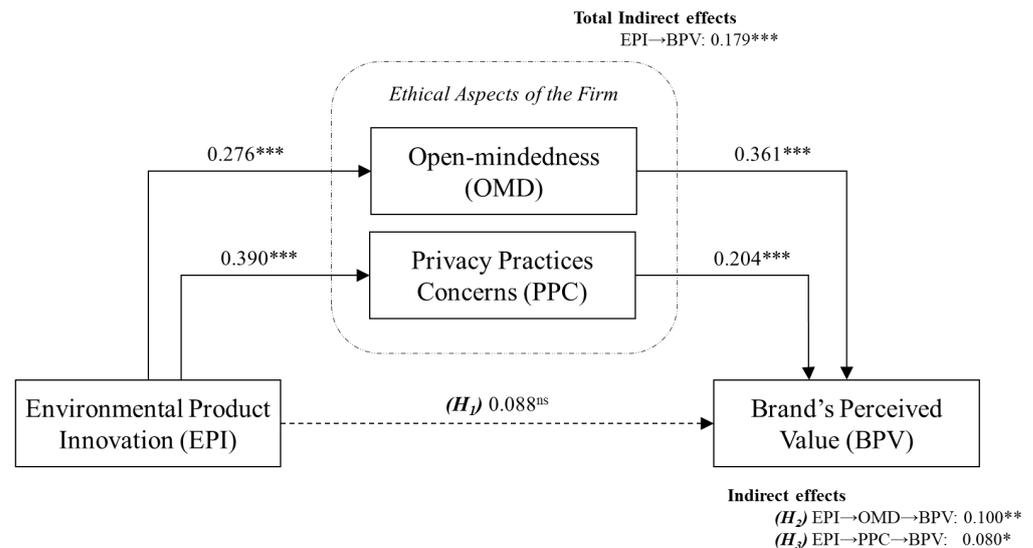
Regarding the hypothesis proposed, Table 3 reveals the main results. According to H1, environmental product innovations should present a positive impact on a brand's perceived value. Per Table 3, the direct effect of environmental product innovations on perceived brand value was not significant ( $\beta = 0.088$ ,  $p = 0.115$ ). Even the correlation among environmental product innovations and perceived brand value was positive and significant ( $r = 0.308$ ,  $p < 0.01$ ); this result is explained by the mediation effects of environmental product innovations on perceived brand value. Therefore, H1 was not supported.

**Table 3.** Path analysis results.

Title 1	Standardized Parameter Estimates (t-Values) and Significance
Main effects	
(H <sub>1</sub> ) EPI → BPV	0.088 (1.579)
EPI → OMD	0.276 (4.411) ***
EPI → PPC	0.390 (7.522) ***
OMD → BPV	0.361 (5.387) ***
PPC → BPV	0.204 (2.653) ***
Control variables	
Age → BPV	−0.023 (0.575)
Amount Spent in Tech → BPV	0.055 (1.343)
Buy Brand (dummy) → BPV	0.138 (2.663) **
Gender (dummy) → BPV	−0.138 (2.899) **
Indirect effects	
(H <sub>2</sub> ) EPI → OMD → BPV	0.100 (3.222) **
(H <sub>3</sub> ) EPI → PPC → BPV	0.080 (2.312) *
Total indirect effects	
EPI → BPV	0.179 (4.306) ***

Source: authors' elaboration. EPI—Environmental product innovations; BPV—brand's perceived value; OMD—open-mindedness; PPC—privacy practices concerns; t-values and significance of path coefficients were generated by a bootstrapping procedure (5000 subsamples). \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$ .

To verify the mediating effects of ethical-related aspects (open-mindedness and privacy practices concerns) on the impact of environmental product innovations on a brand's perceived value, we followed suggestions from [70]. The basic conditions for a mediating effect were exposed in the findings. The relationships involving the mediators were significant (environmental product innovation → open-mindedness,  $\beta = 0.276$ ,  $p < 0.001$ ; environmental product innovation → privacy practices concerns,  $\beta = 0.390$ ,  $p < 0.001$ ; and open-mindedness → brand's perceived value,  $\beta = 0.361$ ,  $p < 0.001$ ; privacy practices concerns → brand's perceived value,  $\beta = 0.204$ ,  $p < 0.001$ ). Also, the Sobel  $\mathcal{Z}$ -test for the mediating effect of both open-mindedness and privacy practices concerns were significant (respectively,  $\mathcal{Z} = 4.38$ ;  $p < 0.001$  and  $\mathcal{Z} = 3.35$ ;  $p < 0.001$ ). Furthermore, the indirect effects of environmental product innovation on perceived brand value via open-mindedness ( $\beta = 0.100$ ,  $p < 0.01$ ) and via privacy practices concerns ( $\beta = 0.080$ ,  $p < 0.05$ ) were both positive and significant. As the direct impact of environmental product innovation on perceived brand value was not significant, there is evidence of the total mediation effect of ethical-related aspects (open-mindedness and privacy practices concerns) on the relationship. In fact, the total indirect effect of environmental product innovations on perceived brand value through the mediating variables was positive and significant ( $\beta = 0.197$ ,  $p < 0.001$ ). Hence, H2 and H3 were supported. Figure 2 presents the revised model, derived from the results of our study.



**Figure 2.** Tested model with the results (source: authors' elaboration). \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$  ns: not supported

## 5. Discussion

Business environments have increasingly explored practices related to sustainability and, at the same time, society has increasingly demanded it [71]. Previous research indicates that there is an expansion in the debate about correct moral behavior [72] and environmental concern [73]. This occurs in the political, educational, and media environment, as well as in people's daily lives [74]. In fact, changes in society's attitudes, habits, beliefs, and worldviews have increased pressures for sustainable innovations to become available [75]. Likewise, the positions and actions of organizations facing environmental aspects have been part of the comparative assessments of brands [21]. Correspondingly, there has been a growing need to understand how ethical aspects interfere with a brand's perceived value of its organization.

This context drove the development of the present study. We investigate the role of ethical aspects in environmental product innovations and, consequently, in the brand's perceived value with end users of Apple and Microsoft products and services. Unlike previous studies [20,36], we verified that the environmental product innovations have no direct effect on the brand's perceived value. In fact, only the indirect effect of environmental product innovations on perceived brand value was positive and significant. Therefore, our results provide evidence that environmental product innovations tend to influence the perception of quality, the repurchase intention, and the loyalty of users of the investigated brands, but they are not enough per se. Effectively, such influence depends on the customers' perception of ethical behavior of the organization. Hence, the mediating effect of ethical aspects (specifically of open-mindedness and privacy practices concerns) is a necessary condition to favor the positive impact of environmental product innovations on a brand's perceived value. In summary, our study confirms that environmental product innovations need to be supported by the firms' ethical aspects to have a positive effect on a brand's perceived value.

Specifically, given the pressing demand for environmental product innovations in different sectors, the present study examined the mediation effect of the aspects open-mindedness and privacy practices concerns on the perceived brand value of two brands that act in the technology sector (Apple and Microsoft). As a result, the tested hypotheses allowed us to state that there is an indirect effect of environmental product innovations on perceived brand value, which depends on ethical aspects. In general, our results indicate that customers perceive value in environmental product innovations when they have verified that organizations are correct in the management of users' personal data and in the integration of stakeholders in their development processes.

In fact, ethical issues have become important to companies' strategies and operations. When users perceive the ethical behavior of companies, they can reciprocate through social exchanges and good word of mouth to others [45]. Therefore, corroborating with existing studies [21,46,76,77], we confirm the importance for companies to develop strategies based on ethical values. In fact, consumers show preference for companies that have a correct view in terms of ethical and legal aspects of their activities [41]. Negative ethics, on the other hand, resulting from companies that engage in negative ethical actions, can destroy consumer confidence and establish a negative image in all company activities [21]. Therefore, maintaining an ethical culture within the company depends on how this term is inserted in the organization. Thus, in addition to having programs based on values and oriented toward compliance, it must be incorporated into the company's culture, in the understanding of management, and among all employees [24].

Ethical decision-making by companies impacts both internal and external stakeholders [21]. This is related to the stakeholder theory, which postulates that companies affect and are affected by various groups of interested parties [22]. According to this view, companies must satisfy a variety of constituents, such as workers, customers, suppliers, and the local community, who can influence the company's results [78]. Therefore, relating to our study, it is highlighted that companies are responsible not only for the ethical conduct of their operations, but also for their impact on all stakeholders and future generations [24]. Similarly, it is possible to establish a relationship with the theoretical approach of corporate social responsibility (CSR). The basic idea of CSR is that companies have responsibilities toward the societies in which they operate. In addition to generating profit, they must behave ethically, following the law [79].

In addition, it is worth to note that both organizational aspects explored in our study can be defined by the theoretical approach of the resource-based view (RBV) [80] as important resources or capabilities of the firm—openness [81] and data protection capability [82]. In fact, RBV has been frequently applied in the literature to measure internal factors related to environmental management, eco-innovation, and firm performance [5].

Our study complements and expands the above. According to our results, brands must be open to new ideas, be able to reflect and learn from their own mistakes, be able to adopt suggestions passed on by customers, as well as identify and solve problems. Brands must also store adequate/correct levels of personal information, keep them updated, do not use customer data for purposes other than those authorized and never sell personal information to other companies. Correspondingly, some authors claim that such actions tend to generate a greater market confidence in building and sustaining the reputation of organizations [21]. Consequently, they amplify the brand's perceived value in customers. Additionally, our study expanded the findings of [50] by presenting another perspective. We showed that ethical issues (open-mindedness and privacy practices concerns) are necessary conditions to drive the impact of environmental product innovations on a brand's perceived value.

This means that companies are expected to develop an ethical perspective that balances their own interests with the needs of the society and their consumers. In terms of open-mindedness, we complement the findings of Cegarra Navarro [50], who has drawn attention to the fact that an open-minded culture, in addition to creating an environment in which dialogue with stakeholders can flourish, helps organizations to be more proactive on environmental and social issues. Open-mindedness can also foster digital innovations [83]. Supporting the findings of Kmieciak [49], we highlight that open-minded companies tend to receive positive responses from consumers.

Additionally, our study reaffirms the view of Sarathy and Robertson [62], which states that companies need to understand consumers' perspectives on their privacy protection needs and treat this topic as a long-term goal and value. Especially in sectors involving technologies and online environments, the opportunity for ethical violations becomes greater [84]. We reinforce that consumers' intentions are affected by concerns about information privacy [85] and ethical standards should be adopted in confronting online privacy concerns [22]. Corroborating with Cegarra Navarro [50], we support the view that

addressing data privacy concerns contribute to a better achievement of the organizational goals of the firm.

## 6. Conclusions

Environmental innovations and the responsible corporate behavior of the organization are aspects that can influence consumers' purchase decisions. In order to broaden the understanding of the relationship of these factors in the perspectives and preferences of consumers, we investigated the role of ethical aspects (specifically open-mindedness and open privacy practices concerns) in EPI and, consequently, in the perception of brand value for end users of Apple and Microsoft.

Our findings reveal that environmental product innovations have no direct effect on the brand's perceived value. Environmental product innovations need to be supported by the firms' ethical aspects to have a positive effect on perceived brand value. The main conclusion is that customers perceive value in EPI when they can confirm that organizations exhibit ethical correctness, particularly in areas such as personal data management and a culture of openness. This highlights the significance of ethical considerations in shaping customer perceptions and emphasizes the importance of organizations prioritizing ethical practices to enhance perceived brand value.

### 6.1. Implications for the Theory, Practice, and Policymaking

Theoretically, we extend the understanding of the relationship between environmental product innovations on consumer perception of the brand value. We add to the recent literature by exploring the mediating effects of ethical company behaviors on such a relationship. These insights discuss the conflicting prior evidence on the variables under study. We also show the need for more research to elucidate how to motivate sustainable behaviors (by firms and customers) and increase the understanding of the downstream consequences of both sustainable customer choices and sustainable business practices.

Therefore, we understand that our research provides advances in the field of sustainable innovation. We moved beyond environmental issues and considered their relationship with ethical aspects. The study confirms that broader approaches, primarily centered on corporate commitments beyond environmental issues, are critical for environmental product innovations to generate a successful perceived brand value. This contribution fundamentally highlights that external pressures and internal issues (such as capabilities, resources and, fundamentally, organizational values) are interrelated variables [86], as well as the importance of ethical dimensions related to sustainability [13].

From a practical perspective, our findings offer managerial implications for firms that undertake environmental product innovations. Despite its importance, our results reveal that environmental product innovations do not guarantee positive responses from customers if ethical aspects are not considered. To benefit from environmental product innovations, companies should take explicit actions to address privacy concerns and inform customers that they care about the protection of their personal information. Likewise, it is necessary to demonstrate to customers that the company is ready to listen to their demands and is open to learning from past mistakes and solve problems. Thus, the development of corporate ethics should be a priority, which can be linked to the company's marketing actions. In addition to that, it is important to be transparent about the products sold and ethical initiatives carried out to ensure and maintain customers' trust, that is, companies should set and follow appropriate data policies anchored in the principles of fairness, transparency, and accountability.

Our findings indicate that environmental product innovations alone do not provide organizations with a competitive advantage. In fact, the success of environmental product innovations depends on other relevant aspects to the assessment of stakeholders, such as the ability to establish an open-minded culture and the ability to securely and correctly manage customer data. Such a verification reinforces that sustainable competitive advantage depends on ethical aspects in addition to environmentally friendly practices in

development processes. Today, socioenvironmental issues have become structural and strategic elements of successful organizations (not merely environmental ones). In addition, although organizations seek to maximize profits, it is also possible to seek the well-being of stakeholders. Such a moral position emphasizes the need for the concurrency of objectives (profit, environmental, social, and ethical responsibility). The focus on sustainability, by contemplating all its dimensions, creates, delivers and captures value for the business.

As implications for the government, decision-makers could provide incentives and develop policies for companies to adopt environmental product innovations. In addition to that, public administration could develop policies and legislation that help protect customers' personal information and preserve their privacy.

### *6.2. Limitations and Future Research Avenues*

Our study has some limitations that open opportunities for future research. A cross-sectional survey for a sample of students from postgraduate courses was conducted for this study. Although the two sets of students were randomly selected to receive the link for participating in the study, the received valid questionnaires cannot be considered a random set of cases. In fact, the results must be considered with the possible bias from a sample that is not random. Additionally, we suggest alternative research designs like experiments that thoroughly check the cause relationship tested in the present study. Although we chose to study the technology sector because it provided exemplary cases for studying ethical aspects, we cannot generalize the findings to other industries. Therefore, future analyses can complement and expand this study to other sectors. Additionally, it would be interesting to extend the study to samples of various nationalities and age intervals to increase the generalization of the results. Another limitation of our study is the consideration of only one response variable (perceived brand value). Thus, future research could build on our theoretical model to test the role of ethical aspects on other variables, such as purchase intention and willingness to pay. Also, it has been revealed that the virtuousness and personality traits would shape the consumer's perception of a company's ethical behavior [87]. Research efforts would be needed to evaluate the interference of personality traits on the tested model. Future studies could also improve the variables related to ethical aspects. In this sense, the dimensions associated with corporate social responsibility could be a possibility.

Furthermore, alternative explanations for our findings should also be further explored. The state that ethical aspects are necessary to favor the positive impact of environmental product innovations on perceived brand value may relate to the fact that different types of environmental product innovations elicit different customer reactions, and there are important contextual, social, personal, and innovation factors that influence customer environmental innovation adoption [16]. In addition, some authors reinforce that company reputation and brand image can influence how customers trust and perceive environmental innovations [16]. Nevertheless, organizations need to see environmental practices as an investment which does not conflict with wealth maximization, but support sustainability and contribute to ethical and socially responsible corporate conduct [8].

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**Informed Consent Statement:** Informed consent was obtained from all individual participants included in the study.

**Data Availability Statement:** Data available on request due to restrictions (privacy).

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## References

1. Elkington, J. *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*; New Society Publishers: Gabriola Island, CA, USA, 1998.
2. Da Cunha Bezerra, M.C.; Gohr, C.F.; Morioka, S.N. Organizational capabilities towards corporate sustainability benefits: A systematic literature review and an integrative framework proposal. *J. Clean. Prod.* **2020**, *247*, 119114.
3. Marcon, A.; de Medeiros, J.F.; Ribeiro, J.L.D. Innovation and environmentally sustainable economy: Identifying the best practices developed by multinationals in Brazil. *J. Clean. Prod.* **2017**, *160*, 83–97. [[CrossRef](#)]
4. Freudenreich, B.; Lüdeke-Freund, F.; Schaltegger, S. A Stakeholder Theory Perspective on Business Models: Value Creation for Sustainability. *J. Bus. Ethics* **2019**, *166*, 3–18. [[CrossRef](#)]
5. Marín-Vinuesa, L.M.; Scarpellini, S.; Portillo-Tarragona, P.; Moneva, J.M. The Impact of Eco-Innovation on Performance Through the Measurement of Financial Resources and Green Patents. *Organ. Environ.* **2018**, *33*, 285–310. [[CrossRef](#)]
6. Dangelico, R.M.; Pujari, D.; Pontrandolfo, P. Green product innovation in manufacturing firms: A sustainability-oriented dynamic capability perspective. *Bus. Strategy Environ.* **2017**, *26*, 490–506. [[CrossRef](#)]
7. Katsikeas, C.S.; Leonidou, C.N.; Zeriti, A. Eco-friendly product development strategy: Antecedents, outcomes, and contingent effects. *J. Acad. Mark. Sci.* **2016**, *44*, 660–684. [[CrossRef](#)]
8. Padilla-Lozano, C.P.; Collazzo, P. Corporate social responsibility, green innovation and competitiveness—Causality in manufacturing. *Compet. Rev. Int. Bus. J.* **2022**, *32*, 21–39.
9. Zhang, M.; Zeng, W.; Tse, Y.K.; Wang, Y.; Smart, P. Examining the antecedents and consequences of green product innovation. *Ind. Mark. Manag.* **2020**, *93*, 413–427. [[CrossRef](#)]
10. Nirino, N.; Battisti, E.; Ferraris, A.; Dell’Atti, S.; Briamonte, M.F. How and when corporate social performance reduces firm risk? The moderating role of corporate governance. *Corp. Soc. Responsib. Environ. Manag.* **2022**, *29*, 1995–2005. [[CrossRef](#)]
11. Potrich, L.; Cortimiglia, M.N.; de Medeiros, J.F. A systematic literature review on firm-level proactive environmental management. *J. Environ. Manag.* **2019**, *243*, 273–286. [[CrossRef](#)]
12. Russo-Spena, T.; Di Paola, N.; O’Driscoll, A. Configurations to Superior Environmental Innovation Strategy: A Both-And Approach. *Organ. Environ.* **2022**, *35*, 468–494.
13. Lim, W.M. A blueprint for sustainability marketing: Defining its conceptual boundaries for progress. *Mark. Theory* **2016**, *16*, 232–249.
14. Aguilera-Caracuel, J.; Ortiz-de-Mandojana, N. Green Innovation and Financial Performance: An Institutional Approach. *Organ. Environ.* **2013**, *26*, 365–385.
15. Wang, X.; Tajvidi, M.; Lin, X.; Hajli, N. Towards an Ethical and Trustworthy Social Commerce Community for Brand Value Co-creation: A trust-Commitment Perspective. *J. Bus. Ethics* **2019**, *167*, 137–152. [[CrossRef](#)]
16. Flores, P.J.; Jansson, J. SPICe—Determinants of consumer green innovation adoption across domains: A systematic review of marketing journals and suggestions for a research agenda. *Int. J. Consum. Stud.* **2022**, *46*, 1761–1784. [[CrossRef](#)]
17. Nadeem, W.; Juntunen, M.; Hajli, N.; Tajvidi, M. The Role of Ethical Perceptions in Consumers’ Participation and Value Co-creation on Sharing Economy Platforms. *J. Bus. Ethics* **2019**, *169*, 421–441. [[CrossRef](#)]
18. de Medeiros, J.F.; Bisognin Garlet, T.; Duarte Ribeiro, J.L.; Cortimiglia, M.N. Success factors for environmentally sustainable product innovation: An updated review. *J. Clean. Prod.* **2022**, *345*, 131039.
19. Mustonen, N.; Karjaluo, H.; Jayawardhena, C. Customer Environmental Values and Their Contribution to Loyalty in Industrial Markets. *Bus. Strat. Environ.* **2015**, *25*, 512–528. [[CrossRef](#)]
20. Olsen, M.C.; Slotegraaf, R.J.; Chandukala, S.R. Green Claims and Message Frames: How Green New Products Change Brand Attitude. *J. Mark.* **2014**, *78*, 119–137. [[CrossRef](#)]
21. Ferrell, O.; Harrison, D.E.; Ferrell, L.; Hair, J.F. Business ethics, corporate social responsibility, and brand attitudes: An exploratory study. *J. Bus. Res.* **2018**, *95*, 491–501. [[CrossRef](#)]

22. Caudill, E.M.; Murphy, P.E. Consumer Online Privacy: Legal and Ethical Issues. *J. Public Policy Mark.* **2000**, *19*, 7–19. [[CrossRef](#)]
23. Riivari, E.; Lämsä, A.-M. Organizational Ethical Virtues of Innovativeness. *J. Bus. Ethics* **2017**, *155*, 223–240. [[CrossRef](#)]
24. Collier, J.; Esteban, R. Corporate social responsibility and employee health. *Bus. Ethics A Eur. Rev.* **2007**, *16*, 187–203.
25. Mpinganjira, M.; Maduku, D.K. Ethics of mobile behavioral advertising: Antecedents and outcomes of perceived ethical value of advertised brands. *J. Bus. Res.* **2018**, *95*, 464–478. [[CrossRef](#)]
26. First, I.; Khetriwal, D.S. Exploring the Relationship Between Environmental Orientation and Brand Value: Is There Fire or Only Smoke? *Bus. Strategy Environ.* **2010**, *19*, 90–103.
27. Saraiva, A.; Fernandes, E.; von Schwedler, M. The pro-environmental consumer discourse: A political perspective on organic food consumption. *Int. J. Consum. Stud.* **2020**, *45*, 188–204. [[CrossRef](#)]
28. Albort-Morant, G.; Henseler, J.; Leal-Millán, A.; Cepeda-Carrión, G. Mapping the Field: A Bibliometric Analysis of Green Innovation. *Sustainability* **2017**, *9*, 1011. [[CrossRef](#)]
29. Cleff, T.; Rennings, K. Determinants of environmental product and process innovation. *Eur. Environ.* **1999**, *9*, 191–201. [[CrossRef](#)]
30. Dangelico, R.M.; Pujari, D. Mainstreaming Green Product Innovation: Why and How Companies Integrate. *J. Bus. Ethics* **2010**, *95*, 471–486.
31. Gao, Y.; Li, Z.; Khan, K. A Study on the Relationship between Paradox Cognition, Green Industrial Production, and Corporate Performance. *Sustainability* **2019**, *11*, 6588. [[CrossRef](#)]
32. Morales-Raya, M.; Martín-Tapia, I.; de Mandojana, N.O.-M. To Be or to Seem: The Role of Environmental Practices in Corporate Environmental Reputation. *Organ. Environ.* **2017**, *32*, 309–330. [[CrossRef](#)]
33. Kumar, V.; Christodouloupoulou, A. Sustainability and branding: An integrated perspective. *Ind. Mark. Manag.* **2014**, *43*, 6–15. [[CrossRef](#)]
34. Long, S.; Liao, Z. Would consumers pay for environmental innovation? The moderating role of corporate environmental violations. *Environ. Sci. Pollut. Res.* **2021**, *28*, 29075–29084. [[CrossRef](#)]
35. Dangelico, R.M.; Nonino, F.; Pompei, A. Which are the determinants of green purchase behaviour? A study of Italian consumers. *Bus. Strat. Environ.* **2021**, *30*, 2600–2620. [[CrossRef](#)]
36. Lin, W.L.; Ho, J.A.; Sambasivan, M.; Yip, N.; Bin Mohamed, A. Influence of green innovation strategy on brand value: The role of marketing capability and R&D intensity. *Technol. Forecast. Soc. Chang.* **2021**, *171*, 120946. [[CrossRef](#)]
37. Zeithaml, V.A. Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *J. Mark.* **1988**, *52*, 2–22.
38. Carmeli, A.; Tishler, A. The relationships between intangible organizational elements and organizational performance. *Strat. Manag. J.* **2004**, *25*, 1257–1278. [[CrossRef](#)]
39. Acquila-Natale, E.; Iglesias-Pradas, S. A matter of value? Predicting channel preference and multichannel behaviors in retail. *Technol. Forecast. Soc. Chang.* **2020**, *162*, 120401. [[CrossRef](#)]
40. Gupta, S.; Czinkota, M.; Melewar, T. Embedding knowledge and value of a brand into sustainability for differentiation. *J. World Bus.* **2013**, *48*, 287–296. [[CrossRef](#)]
41. Chen, L.; Qie, K.; Memon, H.; Yesuf, H.M. The Empirical Analysis of Green Innovation for Fashion Brands, Perceived Value and Green Purchase Intention—Mediating and Moderating Effects. *Sustainability* **2021**, *13*, 4238. [[CrossRef](#)]
42. Luchs, M.G.; Naylor, R.W.; Irwin, J.R.; Raghunathan, R. The sustainability liability: Potential negative effects of ethicality on product preference. *J. Mark.* **2010**, *74*, 18–31.
43. Hesse, A.; Bündgen, K.; Claren, S.; Frank, S. Practices of brand extensions and how consumers respond to FMCG giants' greening attempts. *J. Brand Manag.* **2022**, *29*, 520–537. [[CrossRef](#)]
44. Chen, Y.S.; Chang, C.H. Greenwash and Green Trust: The Mediation Effects of Green Consumer Confusion and Green Perceived Risk. *J. Bus. Ethics* **2013**, *114*, 489–500.
45. Cheung, M.F.Y.; To, W.M. The Effect of Consumer Perceptions of the Ethics of Retailers on Purchase Behavior and Word-of-Mouth: The Moderating Role of Ethical Beliefs. *J. Bus. Ethic* **2020**, *171*, 771–788. [[CrossRef](#)]
46. Quezado, T.C.C.; Fortes, N.; Cavalcante, W.Q.F. The Influence of Corporate Social Responsibility and Business Ethics on Brand Fidelity: The Importance of Brand Love and Brand Attitude. *Sustainability* **2022**, *14*, 2962. [[CrossRef](#)]
47. Eisenbeiß, S.A.; Brodbeck, F. Ethical and Unethical Leadership: A Cross-Cultural and Cross-Sectoral Analysis. *J. Bus. Ethics* **2013**, *122*, 343–359. [[CrossRef](#)]
48. Schmelzle, U.; Tate, W.L. Purchasing orchestration practices—Introducing a purchasing-innovation framework. *J. Purch. Supply Manag.* **2022**, *28*, 100756. [[CrossRef](#)]
49. Kmiecik, R. Improving SME performance through organizational memory: The role of open-mindedness culture. *J. Organ. Change Manag.* **2019**, *32*, 473–491.
50. Cegarra-Navarro, J.G.; Papa, A.; Garcia-Perez, A.; Fiano, F. An open-minded strategy towards eco-innovation: A key to sustainable growth in a global enterprise. *Technol. Forecast. Soc. Chang.* **2019**, *148*, 119727. [[CrossRef](#)]
51. Wensley, A.K.P.; Cegarra-Navarro, J.G.; Cepeda-Carrión, G.; Genaro Leal Millán, A. How entrepreneurial actions transform customer capital through time: Exploring and exploiting knowledge in an open-mindedness context. *Int. J. Manpow.* **2011**, *32*, 132–150.
52. Michna, A.; Kmiecik, R. Open-Mindedness Culture, Knowledge-Sharing, Financial Performance, and Industry 4.0 in SMEs. *Sustainability* **2020**, *12*, 9041. [[CrossRef](#)]

53. Dobni, C.B. Measuring innovation culture in organizations: The development of a generalized innovation culture construct using exploratory factor analysis. *Eur. J. Innov. Manag.* **2008**, *11*, 539–559.
54. Ling, Y.; Floyd, S.W.; Baldrige, D.C. Toward a model of issue-selling by subsidiary managers in multinational organizations. *J. Int. Bus. Stud.* **2005**, *36*, 637–654. [[CrossRef](#)]
55. York, J.G. Pragmatic Sustainability: Translating Environmental Ethics into Competitive Advantage. *J. Bus. Ethics* **2008**, *85*, 97–109. [[CrossRef](#)]
56. Hemker, S.; Herrando, C.; Constantinides, E. The Transformation of Data Marketing: How an Ethical Lens on Consumer Data Collection Shapes the Future of Marketing. *Sustainability* **2021**, *13*, 11208. [[CrossRef](#)]
57. Fox, A.K.; Royme, M.B. Private information in a social world: Assessing consumers' fear and understanding of social media privacy. *J. Mark. Theory Prac.* **2018**, *26*, 72–89. [[CrossRef](#)]
58. Martin, K.D.; Kim, J.J.; Palmatier, R.W.; Steinhoff, L.; Stewart, D.W.; Walker, B.A.; Wang, Y.; Weaven, S.K. Data Privacy in Retail. *J. Retail.* **2020**, *4*, 474–489.
59. Dinev, T.; Hart, P. An Extended Privacy Calculus Model for E-Commerce Transactions. *Inf. Syst. Res.* **2006**, *17*, 61–80. [[CrossRef](#)]
60. Willis, B.; Jai, T.; Lauderdale, M. Trust and commitment: Effect of applying consumer data rights on U.S. Consumers' attitudes toward online retailers in big data era. *J. Consum. Behav.* **2021**, *20*, 1575–1590. [[CrossRef](#)]
61. Pallant, J.I.; Pallant, J.L.; Sands, S.J.; Ferraro, C.R.; Afifi, E. When and how consumers are willing to exchange data with retailers: An exploratory segmentation. *J. Retail. Consum. Serv.* **2022**, *64*, 102774.
62. Sarathy, R.; Robertson, C.J. Strategic and Ethical Considerations in Managing Digital Privacy. *J. Bus. Ethic* **2003**, *46*, 111–126. [[CrossRef](#)]
63. Maseeh, H.I.; Jebarajakirthy, C.; Pentecost, R.; Arli, D.; Weaven, S.; Ashaduzzaman, M. Privacy concerns in e-commerce: A multilevel meta-analysis. *Psychol. Mark.* **2021**, *38*, 1779–1798.
64. Newkirk, D. "Apple: Good Business, Poor Citizen": A Practitioner's Response. *J. Bus. Ethics* **2018**, *151*, 13–16.
65. Statista. Apple—Statistics & Facts. 2019. Available online: <https://www.statista.com/topics/847/apple/> (accessed on 6 July 2023).
66. Hair, J.F.; Howard, M.C.; Nitzl, C. Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *J. Bus. Res.* **2019**, *109*, 101–110. [[CrossRef](#)]
67. Preibusch, S. Guide to measuring privacy concern: Review of survey and observational instruments. *Int. J. Human-Comput. Stud.* **2013**, *71*, 1133–1143. [[CrossRef](#)]
68. Baker, W.E.; Sinkula, J.M. The Synergistic Effect of Market Orientation and Learning Orientation on Organizational Performance. *J. Acad. Mark. Sci.* **1999**, *27*, 411–427.
69. Podsakoff, P.M.; MacKenzie, S.B.; Podsakoff, N.P. Sources of method bias in social science research and recommendations on how to control it. *Annu. Rev. Psychol.* **2012**, *63*, 539–569. [[CrossRef](#)]
70. Iacobucci, D.; Saldanha, N.; Deng, X. A Meditation on Mediation: Evidence That Structural Equations Models Perform Better Than Regressions some arguing that experimental methods still reign supreme in the establishment of causality. *J. Consum. Psychol.* **2007**, *17*, 139–153.
71. Kolling, C.; Ribeiro, J.L.D.; de Medeiros, J.F. Performance of the cosmetics industry from the perspective of Corporate Social Responsibility and Design for Sustainability. *Sustain. Prod. Consum.* **2022**, *30*, 171–185.
72. Ritter, Á.M.; Borchardt, M.; Vaccaro, G.L.R.; Pereira, G.M.; Almeida, F. Motivations for promoting the consumption of green products in an emerging country: Exploring attitudes of Brazilian consumers. *J. Clean. Prod.* **2015**, *106*, 507–520. [[CrossRef](#)]
73. Nagano, M.S.; Iacono, A. Knowledge Management in Eco-Innovation Practice: An Analysis of the Contribution of Eco-Innovation Tools in the Early Stages of the Product Development Process. *J. Inf. Knowl. Manag.* **2019**, *18*, 1–17. [[CrossRef](#)]
74. Rezai, G.; Sumin, V.; Mohamed, Z.; Shamsudin, M.N.; Sharifuddin, J. Implementing Green Practices as Sustainable Innovation Among Herbal-Based SME Entrepreneurs. *J. Food Prod. Mark.* **2015**, *22*, 1–18. [[CrossRef](#)]
75. Jahanshahi, A.A.; Al-Gamrh, B.; Gharleghi, B. Sustainable development in Iran post-sanction: Embracing green innovation by small and medium-sized enterprises. *Sustain. Dev.* **2019**, *28*, 781–790. [[CrossRef](#)]
76. Hayat, K.; Jianjun, Z.; Ali, S. Reinforcing purchase behaviors through CSR and ethical practices. *Mark. Intell. Plan.* **2022**, *40*, 256–272. [[CrossRef](#)]
77. Adamkiewicz, J.; Kochanska, E.; Adamkiewicz, I.; Łukasik, R.M. Greenwashing and sustainable fashion industry. *Curr. Opin. Green Sustain. Chem.* **2022**, *35*, 100710.
78. Freeman, E.R. *Strategic Management: A Stakeholder Approach*; Cambridge University Press: Cambridge, UK, 1984.
79. Wang, H.; Tong, L.; Takeuchi, R.; George, G. Corporate Social Responsibility: An Overview and New Research Directions. *Acad. Manag. J.* **2016**, *59*, 534–544. [[CrossRef](#)]
80. Barney. Firm Resources. *RBV. J. Manag.* **1991**, *17*, 410.
81. Tian, H.; Dogbe, C.S.K.; Pomegbe, W.W.K.; Sarsah, S.A.; Otoo, C.O.A. Organizational learning ambidexterity and openness, as determinants of SMEs' innovation performance. *Eur. J. Innov. Manag.* **2020**, *24*, 414–438. [[CrossRef](#)]
82. Hossain, A.; Akter, S.; Yanamandram, V. Revisiting customer analytics capability for data-driven retailing. *J. Retail. Consum. Serv.* **2020**, *56*, 102187. [[CrossRef](#)]
83. Kiefer, D.; van Dinther, C.; Spitzmüller, J. Digital Innovation Culture: A Systematic Literature Review. In *Innovation through Information Systems*; Springer: Cham, Switzerland, 2021; pp. 305–320. [[CrossRef](#)]

84. Yuniarti, F.; Arief, H.R.; Meydia, H.; Yevis, M.O. Online retailers' ethics and its effect on repurchase intention: The mediating role of perceived risk. *Cogent Bus. Manag.* **2022**, *9*, 2051691. [[CrossRef](#)]
85. Tajvidi, M.; Richard, M.-O.; Wang, Y.; Hajli, N. Brand co-creation through social commerce information sharing: The role of social media. *J. Bus. Res.* **2018**, *121*, 476–486. [[CrossRef](#)]
86. Chen, R.-H. Effects of Green Operations and Green Innovation on Firm's Environmental Performance. *Ind. Eng. Manag. Syst.* **2014**, *13*, 118–128. [[CrossRef](#)]
87. Song, S.Y.; Kim, Y.K. Theory of Virtue Ethics: Do Consumers' Good Traits Predict Their Socially Responsible Consumption? *J. Bus. Ethics* **2018**, *152*, 1159–1175.

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