

The role of integrated marketing communication, ecological knowledge and co-creation of value toward visitor satisfaction in the hotel industry

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Article History

Received : 2022-06-17

Revised : 2022-07-20

Accepted : 2023-01-12

Published : 2023-03-03

Keywords:

Integrated marketing communication; ecological knowledge; co-creation of value; satisfaction.

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DOI:

10.20885/AMBR.vol3.iss1.art5

Abstract

This research aims to examine the effect of integrated marketing communication on visitor satisfaction mediated by ecological knowledge and co-creation of value. Respondents in this study were 150 tourists who have stayed at hotels in Yogyakarta. This research has five hypotheses. The analytical technique used in this research were confirmatory factor analysis (CFA) and structural equation model (SEM) using SmartPLS 3 software. The results of this research empirically prove that integrated marketing communication positively affects visitor satisfaction mediated by ecological knowledge and co-creation of value. Each of the hypotheses was accepted and discussed in detail in this article.

Introduction

Companies in several sectors, especially in the tourism sector, face unavoidable pressure due to the adverse effects of greenhouse gas emissions that impact environmental degradation (UNWTO, 2016). As a result, many inevitable pressures from clients, public administration, and society demand to overcome these negative impacts and consider the importance of recovering the tourism sector after the Covid-19 pandemic (Kaushal & Srivastava, 2021). Recognising this reality, many hotels have begun to develop friendly initiatives to satisfy the growing market segment of "green" customers, hoping to achieve economic advantages while protecting the environment (Gössling & Buckley, 2016; Preziosi et al., 2019). However, although more and more consumers consider themselves environmentally friendly, many companies, especially hotels, have difficulties in involving their customers in sustainability practices while not experiencing the expected financial increase with the implementation of such practices "green" initiatives (Gabler et al., 2013; Tölkes, 2018).

One of the reasons for this phenomenon pointed out in the literature is the lack of persuasive power of communication for sustainability by companies (Villarino & Font, 2015; Gössling & Buckley, 2016; Font et al., 2017) underline that only 30% of the sustainability practices implemented by collective accommodation companies are communicated on their web pages. On the other hand, customers can receive confusing and often contradictory messages due to the increasing fragmentation of the media (Hudson & Hudson, 2017). As a result, an opportunity to explore the function and efficacy of hotel communication, mainly that connected to sustainability, arises. The purpose of this work, among others, is to progress in this direction, observing the impact of the communication of a sustainable brand through the approach of Integrated Marketing Communication (IMC), which seeks to achieve synergies through a combination of different communication tools (Kim et al., 2016).

There is evidence that consumers with little ecological awareness may not appreciate hotels' ecological practices (Teng et al., 2018). The Knowledge-Attitude-Behavior model justifies that ecological knowledge has a favourable impact on the positive attitudes of customers regarding various environmental problems and leads to a better perception of the "green" initiatives of

companies (Kollmuss & Agyeman, 2002; Moise et al., 2018) that could perhaps encourage them to participate in them. Communication is essential when managing guest perceptions of “green” practices (Preziosi et al., 2019). This communication leads certain people to adopt pro-environmental behaviours, such as participating in recycling activities or the like (Cornelissen et al., 2008). However, there is little evidence that analyses the impact of the IMC on the ecological knowledge of the consumer. To bridge that gap, this research proposes to investigate this link, assuming that clear, consistent, and integrated communication may assist in educating and enhancing the ecological awareness of guests and so build a favourable attitude toward the hotel, enhancing their pleasure (Verma et al., 2019).

On the other hand, the co-creation of value is also considered an important variable that can cause a better acceptance of the company's ecological practices by tourists (Gössling et al., 2009; Arnold, 2017; Cannas et al., 2019). The critical assumption of SDL (Service Dominant Logic) theory is that value is co-created when customers use goods and services, evaluating their experience with them (Vargo & Lusch, 2008). In this sense, the co-creation of value takes place, among other actions, when guests are encouraged to participate in initiatives linked to the hotel's ecological practices (for example, they accept the low frequency of changing towels and sheets, use electric cars, participate in tourist activities related to the local community, consume personal hygiene products accepting refillable containers, participate in recycling, etc.), and subsequently interact with others, such as hotel staff or with other clients, contributing ideas about how to develop improvement processes in such initiatives (Chang, 2019). Thus, the line of work around the co-creation of value becomes a priority, given the need to explore its nature and scope in the context of the relationship between the hotel and its guest, mainly when the scope of action is limited to the ecological practices of the hotel. In this sense, as has been identified in the literature, effective communication between service providers and clients (Grisseemann & Stokburger-Sauer, 2012; Corsaro, 2019) and a sufficient level of knowledge (Payne et al., 2008; Vargo et al., 2008; Chang, 2019) are crucial antecedents for client engagement in co-creation processes.

Based on the above, objectives are pursued to shed light on the different research gaps identified in this work. The objective is to assess the influence of the IMC both in ecological knowledge and in the co-creation of value, progressing in understanding how these contribute to explaining satisfaction. To do this, the direct and indirect effects in the proposed chain will be observed, thus allowing the mediating character that the last two variables could play in the effect of the IMC on satisfaction to be delimited. The results will provide relevant information to hotel managers to design effective communication strategies related to sustainability. They will help to highlight the path to follow to achieve greater guest satisfaction. At the same time, the findings will guide in identifying the sources for developing competitive advantages, supporting their differentiation strategies against the competition.

Literature Review and Hypotheses Development

Integrated Marketing Communication and Ecological Knowledge

There has been renewed interest among professionals and academics in studying the IMC in recent years. Various contributions (Šerić et al., 2015; Bormane, 2018; Porcu et al., 2019) have highlighted the need to coordinate all sources of an organisation and its communication messages by adopting the IMC approach. According to Lee and Park (2007), IMC is identified as a concept in which the company systematically coordinates its different messages and numerous communication channels and integrates them into a coherent set of marketing communications to send a clear and consistent message and image about the company and its offerings to the target market.

Given that the current market requires communication focused on objectives of respect for the environment, some authors have begun to observe the IMC from the perspective of sustainability (Bormane, 2018; Alevizou et al., 2019). According to Bormane (2018), the IMC for sustainability is a new field of research that covers three areas: climate change, corporate social responsibility and sustainable consumption and is defined as: "the implementation of marketing activities integrating opportunities for public welfare, preservation of the environment and

balanced economic development in order to increase the value of consumption of a product or service through the company's communication with market participants using distribution channels”.

The need to investigate the IMC concept for sustainability is based not only on its novelty but also on the need to prevent clients from receiving confusing and contradictory messages about hotel sustainability due to the increasing fragmentation of the media of communication (Hudson & Hudson, 2017). However, Teng et al. (2018) state that Consumers who need proper ecological understanding cannot appreciate the environmental efforts hotels perform. The authors define ecological knowledge as "a person's knowledge and understanding of energy conservation, carbon reduction, and the implementation of this knowledge in everyday life." Therefore, it seems highly relevant to influence initiatives that increase the ecological knowledge of tourists (Gössling & Buckley, 2016), and perhaps one way could be the company's communication focused on sustainability (Cerri et al., 2018; Teng et al., 2018). This communication leads certain people to adopt pro-environmental behaviours, such as participating in recycling activities or the like (Cornelissen et al., 2008).

In some cases, people can behave more environmentally responsibly if they perceive their actions as a social norm (Wehrli et al., 2014). Thus, communication is essential for managing, informing, and even educating consumers about the offers and policies related to the company's sustainability (Bormane, 2018; Cerri et al., 2018). In line with this evidence, the first research hypothesis is proposed:

H₁: The impact of the IMC on ecological knowledge is positive and significant

Co-creation of Value

Despite the growing interest in studying the co-creation of value concepts in the service sector, tourism and collective accommodation developments in the sustainable context have been limited. The need to investigate the factors that influence the decision of customers to participate in activities related to sustainable practices and co-creating value continues to be present, especially in the field of the hotel industry.

According to Vargo and Lusch (2008), value is co-created when the client participates in the definition of the service offered through the exchange of knowledge, co-design, shared service processes or uses the same service evaluating later and sharing experience. In line with the SDL theory and the theory of value, Busser and Shulga (2018) define the co-creation of value in the hotel framework as "the assessment of the importance of the service by the interested parties through the evaluation of what is contributed and what is done through collaboration". From a sustainability perspective, value is co-created when guests participate in the sustainable practices that hotels develop, valuing their importance and contribution, and getting involved in their implementation through collaboration.

Studies by various authors highlight that co-creation can be a one-dimensional concept (Grisseemann & Stokurger-Sauer, 2012; Sarmah et al., 2017); however, approaching its analysis from a multidimensional approach arouses growing interest, as it allows a complete perspective (Yi & Gong, 2013; Albinsson et al., 2016; Frías-Jamilena et al., 2016; Moise et al., 2020), showing the complex nature and proper scope of the concept. The line of work initiated by Busser and Shulga (2018) is relevant because it allows for identifying value co-creation from different elements. This perspective, applied especially to the subject of communal housing in the tourist industry, provides a novel method to understanding the co-creation process, taking into account that the more resources and efforts put into the process, the higher the value of the product (Frías-Jamilena et al., 2016; Busser & Shulga, 2018).

On the other hand, good and active communication between service providers and their clients is a vital prerequisite for client engagement in the co-creation process. (Grisseemann and Stokurger-Sauer, 2012; Corsaro, 2019). In addition, different contributions confirm the need for communication for sustainability to be more persuasive in order to improve the co-creation of the value process in general (Gössling & Buckley, 2016; Font et al., 2017; Tölkes, 2018) because this same communication is capable of achieving a higher level of collaboration and participation of

tourists (Han et al., 2018). On this assumption, the second research hypothesis is established under the orientation of sustainable performance in the hotel sector:

H₂: The impact of the IMC on the co-creation of value is positive and significant

Satisfaction

Customer satisfaction is one of the most researched concepts in the marketing literature, defining an area rich in contributions to the field of tourist behaviour. Some research in tourism companies focuses on studying satisfaction under the approach of its connection with "green" practices (Moise et al., 2018; Wang et al., 2018) and addresses it as a crucial component to obtain a positive behavioural intention by the client to the hotel. However, there needs to be more literature on how guests' ecological knowledge impacts their satisfaction with their hotel stay.

Based on the Knowledge-Attitude-Behavior model, it can be stated that ecological knowledge contributes to environmental awareness and concern (environmental attitudes), which in turn leads to pro-environmental behavior (Kollmuss & Agyeman, 2002). In this direction of study, Verma et al. (2019) conclude that a higher degree of environmental concern among customers leads to the formation of favourable behavioural intentions toward the hotel, while Schmitt et al. (2018) observe positive associations between pro-environmental behavior and satisfaction. Based on these assertions, the fourth hypothesis is stated as follows:

H₃: The influence of ecological knowledge on the satisfaction of the visitor is positive and significant

In addition, empirical evidence highlights that the client's participation in the co-creation activity increases their satisfaction (Grissemann & Stokburger-Sauer, 2012; Vega-Vazquez et al., 2013; Opata et al., 2019; Moise et al., 2020). On the one hand, hotels that aim to achieve guest satisfaction try to invest in elements related to entertainment that generate positive emotions and attractive sensations in customers, making them feel recognised (Gonzalez-Gallarza et al., 2020). On the other hand, Grissemann and Stokburger-Sauer (2012) indicate that customer involvement in the service creation process fosters a sense of belonging to the organisation, which is reflected in customer happiness. Consumer engagement allows a final product or service to be better fitted to their demands, resulting in higher overall satisfaction (Vega-Vazquez et al., 2013). Therefore, it is feasible to maintain that the co-creation of value, in terms of sustainability practices, has effects on customer satisfaction, and therefore the following hypothesis is proposed:

H₄: The influence of value co-creation toward visitor satisfaction is positive and significant

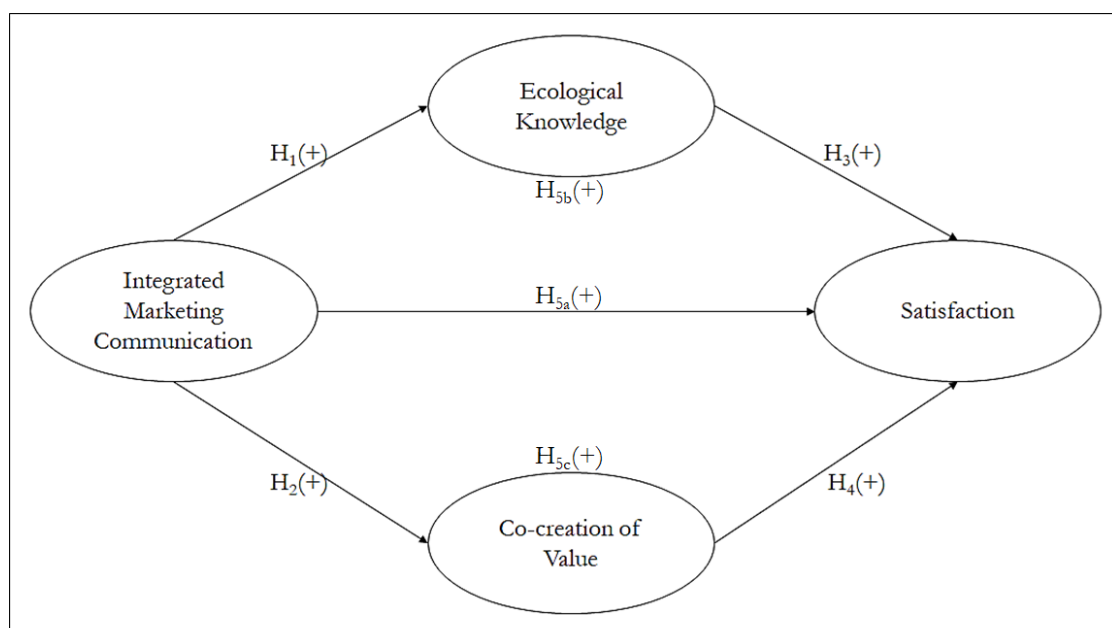


Figure 1. Conceptual Framework

Finally, customer satisfaction is considered an essential instrument when evaluating the final result of the company's implementation of the IMC (Reid, 2005). Thus, it is highlighted that consistent and coherent communication transmitted through different channels is especially favourable and beneficial for guest satisfaction (Reid, 2005; Šerić et al., 2015; Porcu et al., 2019; Šerić et al., 2020). The previous hypotheses state that ecological knowledge and value co-creation influence visitor satisfaction (Wang et al., 2018; Moise et al., 2020). Therefore the fifth research hypothesis is proposed:

H_{5a}: The impact of the IMC on the satisfaction of the visitor is positive and significant

H_{5b}: The impact of the IMC on the satisfaction of the visitor is positive and significantly mediated by ecological knowledge

H_{5c}: The impact of the IMC toward the satisfaction of the visitor is positive and significantly mediated by value co-creation

Research Methods

The four items related to the IMC have been extracted from the measurement scale of Lee and Park (2007) and were adapted for hotels and the sustainable framework. Given that the original measure was developed to assess IMC perceptions from the perspective of firm management, and taking into account that in this work researcher examines the IMC from the point of view of the guests, the researcher decided to retain only the first dimension of the proposal, “unified communications for consistent messages and images”, on the assumption that visitors are only competent to voice their opinions on these indicators; Furthermore, it reflects a significant component of the IMC: message consistency, which is related with the concepts of coherence and uniformity (Lee & Park, 2007). This decision is in line with previous works such as those by Šerić and Gil-Saura (2012) or Šerić et al. (2014; 2015). Regarding the co-creation of value, the items included in the questionnaire have been extracted and adapted from the multidimensional scale proposed by Busser and Shulga (2018). To measure ecological knowledge, seven indicators were derived from the work of Teng et al. (2018). Finally, satisfaction was evaluated through the items proposed by Williams and Soutar (2009) and Wang et al. (2018). The elements were combined to reflect the overall satisfaction of the guest, both in terms of satisfaction with the stay and with the choice of a hotel committed to the environment.

To collect the information to contrast the hypotheses proposed, a quantitative analysis was carried out through a structured questionnaire from 150 tourists who stayed in hotels in Yogyakarta. Each guest, as an introduction before starting the survey, received precise instructions about the meaning of the questions and a brief explanation about the context related to sustainability in which the research was framed. The questionnaire was divided into three sections: the first defines the study's goal, the second collects socio-demographic data, and the third describes the measurement scales for the model variables.

Once the model was determined, the instrument was validated through a Confirmatory Factor Analysis (CFA). Later, the structural model was estimated through partial least squares (PLS) using the Smart PLS 3 software. The variance-based structural equation model (SEM) was preferred as it is well suited to the characteristics of the research and the nature of the data collected.

Confirmatory analysis criteria in SmartPLS 3 are items declared to have good validity if they have a standardised factor loading value \geq of 0.50, the t-value $>$ 1.96, and the average variance extracted (AVE) \geq 0.50, while the statement item is declared to have good reliability if the composite reliability (CR) \geq 0.70. Furthermore, to examine the relationship between variables, both directly and indirectly, and test the hypotheses using path analysis (Hair et al., 2017). The measurement scales were developed from previous research with Likert-type scales. In addition, the use of PLS is advisable in the case of handling complex (second-order) constructs and advanced data analysis (i.e. measurement invariance analysis and multigroup analysis) (Chin, 1998; Hair et al., 2017). Finally, this methodology shows increasing use in research in the hotel and tourism industry (Šerić & Gil-Saura, 2012; Šerić et al., 2015; Moise et al., 2018; Preziosi et al., 2019; Moise et al., 2020; Šerić et al., 2020). For all these reasons, applying this technique in the data analysis is considered valid.

Results and Discussion

Regarding gender, 42.8 per cent of respondents were men, and 57.2 per cent were women. Likewise, 40.9% are between 17 and 24 years old, 40.3% are between 25 and 36 years old, 10.6% are between 37 and 46 and 8.2% are over 47 years. Regarding education, the majority have a master's degree (23.4%) and a bachelor's degree (76.6%), while regarding their employment status, 73.4% are employed, and 26.6% are entrepreneurs. Next, the results of the CFA allowed retaining several dimensions, namely: a) a dimension to explain the IMC; b) a dimension to explain ecological knowledge; c) dimensions to explain the co-creation of value; and d) a dimension to explain satisfaction, as reflected in Table 1.

Table 1. CFA Results and Psychometric Properties of the Measurement Model

Measurement Indicator	SD	Standardized Loadings	T-value
IMC for Sustainability – (Cronbach's Alpha=0,851; CR=0,899; AVE=0,692)			
I believe that the hotel consistently sends its sustainability message through all communication tools and channels (advertising, sales promotions, public relations, social media, banner, website)	1,821	0,892**	34,454
I believe that the hotel maintains coherence in all the visual components of communication (brand, logos, models and colors)	1,635	0,819**	32,456
I believe that the hotel maintains coherence in all the linguistic components of communication (slogans)	1,741	0,794**	22,735
I believe that the hotel ensures a sustainable and consistent brand image	1,892	0,818**	79,741
Ecological Knowledge - (Cronbach's Alpha=0,874; CR=0,906; AVE=0,621)			
I have knowledge about what global warming is	1,526	0,826**	12,573
I have knowledge about what green consumption is (consumption of products grown locally or in season)	1,742	0,819**	14,764
I understand the interdependence between human beings and the ecosystem	1,582	0,849**	23,621
I understand how much the tourism industry depends on the natural environment and its resources	1,421	0,753**	45,424
I understand the balance between means of life and the need to conserve the natural environment	1,729	0,776**	53,715
I understand how tourism activities influence biodiversity and the population of species in a region	1,727	0,781**	76,034
Co-creation of Value - (Cronbach's Alpha=0,894; CR=0,896; AVE=0,654)			
Participation in the environmental practices of the hotel was important to me	1,573	0,753**	45,342
The time I spent in the hotel was worth it	1,693	0,774**	55,725
When it comes to implementing environmental practices, the hotel staff and I would make a good team	1,753	0,767**	76,183
I would like participating in the environmental practices of the hotel	1,882	0,843**	35,781
Satisfaction - (Cronbach's Alpha=0,859; CR=0,853; AVE=0,791)			
Overall, I am happy with the decision to select green hotels due to their environmental image	1,766	0,879**	38,441
In general, I am happy to visit green hotels because they are friendly to the environment	1,634	0,753**	18,642
In general, I am satisfied with green hotels due to their environmental performance	1,714	0,871**	32,626

Total standardised loadings for the other components were examined to determine convergent validity. As presented in Table 1, all loadings were more outstanding than 0.6 and statistically significant (Hair et al., 2017). Furthermore, both the composite reliability values and Cronbach's Alpha coefficient are higher than 0.7 (Nunnally & Bernstein, 1994) for all constructs, which, in turn, confirms the reliability of all scales. The average variance extracted (AVE) analysis confirms that the values exceed the critical value of 0.5 established in the previous literature (Fornell & Larcker, 1981). As a result, the scales' reliability and the convergent validity of the suggested constructs were validated.

As shown in Table 2, discriminant validity exists when the AVE is more than the square of the covariances, and no indicator substantially impacts another component that does not

correspond to it. Furthermore, the discriminant validity is supported by squared correlation values smaller than 0.9 (Henseler et al., 2015).

Table 2. Discriminant Validity

Factor	1	2	3	4
1. Integrated Marketing Communication	0,853	0,470	0,131	0,140
2. Ecological Knowledge	0,511	0,782	0,554	0,351
3. Co-creation of Value	0,316	0,742	0,932	0,792
4. Satisfaction	0,430	0,275	0,474	0,937

Note: Values on the diagonal are the square roots of the AVE. Below the diagonal: correlations between the factors. On the diagonal: values of the squared correlations

Next, the SEM is estimated through partial least squares (PLS), and the significance of the structural relationships are analysed through the bootstrapping algorithm. To verify the explanatory power and confirm the predictive relevance of the structural model, the values of the coefficient of determination R^2 exceed the value of 0.10 (Falk & Miller, 1992), as presented in Table 3.

Table 3. Hypotheses Test Results

Hypothesis	Relationship	β	t-value	Result
H ₁	IMC → Ecological Knowledge	0,448**	9,827	Accepted
H ₂	IMC → Co-creation of Value	0,493**	8,953	Accepted
H ₃	Ecological Knowledge → Satisfaction	0,292**	4,532	Accepted
H ₄	Co-creation of Value → Satisfaction	0,195*	2,241	Accepted
H _{5a}	IMC → Satisfaction	0,285**	4,792	Accepted

Note: Ecological knowledge: $R^2=0.211$; Co-creation of value: $R^2=0.205$; Satisfaction: $R^2=0.296$; ** $p<0.01$; * $p<0.05$; n/s – not significant

The calculation findings reveal that the first two hypotheses are accepted since positive and significant connections are established between the hotel's IMC for sustainability and the customers' ecological awareness ($\beta = 0.448$, $p < 0.01$; H₁) and between IMC and value co-creation ($\beta = 0.493$, $p < 0.01$; H₂), with respective t-values of 9.827 and 8.953. This means that there is a positive and significant influence of IMC on ecological knowledge and value co-creation. In other words, the higher the role of IMC in sustainability, the more influence it will have on ecological knowledge and value co-creation (Tölkes, 2018; Corsaro, 2019).

Furthermore, the data show that ecological knowledge significantly influences satisfaction ($\beta = 0.292$, $p < 0.01$, H₃) with a t-value of 4.532, leading to the acceptance of hypothesis three. Moreover, the co-creation of value exerts a positive influence on satisfaction ($\beta = 0.195$, $p < 0.05$; H₄) with a t value of 2.241, supporting the fourth hypothesis. This proves a positive and significant effect of ecological knowledge and value co-creation on visitor satisfaction. In other words, the higher the role of ecological knowledge and value co-creation, the more visitor satisfaction (Schmitt et al., 2018; Opata et al., 2019). Finally, the results show the significant influence of the IMC on satisfaction ($\beta = 0.285$, $p < 0.01$; H_{5a}) with the t value of 4.792; therefore, the fifth hypothesis is accepted. The results show a positive and significant influence of IMC on visitor satisfaction. In other words, the higher the role of IMC, the more visitor satisfaction will increase (Porcu et al., 2019).

As stated in the objective of this research, it is necessary to advance along the lines of identifying the mediating role of ecological knowledge and the co-creation of value. The analysis is in Table 4. Thus, the results provide empirical support for H_{5b} & H_{5c} mediating the relationship between IMC and visitor satisfaction. The IMC exerts its impact on satisfaction through two mediating variables: ecological knowledge and value co-creation, creating a multiple mediation effect (Hair et al., 2018). Since the IMC's direct and indirect effects on satisfaction are significant, the researcher concludes that ecological knowledge and value co-creation partially mediate this relationship. Both variables serve as complementary mediators to the relationship between the IMC and satisfaction since the signs of the products (p-value) of the mediation are positive (Hair et al.,

2018). As the total effect of IMC on satisfaction shows ($\beta_{\text{total}}=0.481$; $t=10.621$; $p<0.01$), IMC increases not only guest satisfaction directly but also through ecological knowledge and co-creation of value, which in turn lead to a higher degree of guest satisfaction with the hotel stay. Therefore, the effect of IMC on satisfaction is better explained through ecological knowledge and value co-creation.

Table 4. The Effect of Multiple Mediations of the IMC on Satisfaction

Relationship	Direct Effect		Indirect Effect		Overall Effect		p-value
	β	t-value	β	t-value	β	t-value	
(IMC \times Ecological knowledge) \rightarrow Satisfaction	0,281	4,765**	0,129	3,847**	0,459	8,769**	0,0347
(IMC \times Co-creation of value) \rightarrow Satisfaction	0,281	4,765**	0,039	2,139*	0,329	6,395**	0,029
Multiple effect IMC \rightarrow Satisfaction					0,481	10,621**	

Note: ** $p < 0,01$; * $p < 0,05$.

Implication and Conclusion

The growing need to increase the effectiveness of communication strategies drives research on how its effects can be intensified, especially in the hotel sector. The results of this work show the capacity of the IMC approach based on sustainability to influence guest satisfaction and allow us to observe that when ecological knowledge and value co-creation mediate this link, satisfaction rises. In this way, the findings derived from this work contribute to reducing the gaps identified in the literature in the converging field that unites IMC and sustainable practices and provide solid empirical evidence of the achievements that companies can achieve through the implementation of IMC for sustainability, increasing the ecological knowledge of the guest and the development of value co-creation processes. Ecological knowledge and co-creation become helpful ways to boost the effect of IMC on visitor satisfaction. In addition, this work provides a second significant contribution by investigating the role of the travel motive in the relationships under evaluation. In this regard, it has been discovered that, compared to leisure visitors, the IMC significantly impacts the level of ecological awareness, which leads to better satisfaction with the hotel. Thus, it is possible to affirm that the effects of the IMC on satisfaction are modified according to the type of tourist who stays at the hotel. The implication of this research that can be practised in the hotel industry in Indonesia, especially in Yogyakarta, is that these hotels can apply IMC more to promote environmental awareness to visitors so that visitor satisfaction will increase. Based on all this, it is possible to draw a series of derived conclusions.

First, the IMC's attitude toward sustainability impacts the visitors' ecological understanding. Affirming this link is a significant contribution to the field of this study, and it builds on past efforts such as that of Cornelissen et al. (2008), Gössling and Buckley (2016) and Tölkes (2018), who state that persuasive communication on sustainability is critical for motivating ecologically favourable decisions. As a result, it is feasible to conclude that the IMC improves the host's ecological knowledge by leveraging the synergy impact of numerous communication aspects. In addition, this ecological knowledge of the clients affects the satisfaction level of the guest with the stay in the hotel, allowing to underline its relevance when defining the result variable, that is, satisfaction. These findings support the findings of Moise et al. (2018) and Schmitt et al. (2018), who underlines the importance of good opinions of sustainable practices in visitor satisfaction.

Secondly, the positive influence of the guests' perceptions regarding the IMC on the co-creation of value is observed. The result supports the conclusions reported by the studies by Grisseman and Stokburger-Sauer (2012), Han et al. (2018) and Corsaro (2019), who affirmed that active and effective communication enables the process of co-creation of value. Consequently, the hotel's IMC perception has a good influence when it comes to believing in the significance of service, cooperating, sharing resources, and emotionally reacting to the process of co-creation of value, including the visitor in the development of the hotel's sustainable practices. On the other hand, it is also concluded about the effect of the co-creation of value on satisfaction, establishing that a higher degree of co-creation of value leads to a higher level of guest satisfaction. This result coincides with those obtained by Grisseman and Stokburger-Sauer (2012), Vega-Vazquez et al.

(2013) and Opata et al. (2019). However, the contribution is in an original context, such as sustainability in the hotel industry. Customers who can co-create value by sharing their experience, giving/receiving feedback, participating and cooperating with hotel personnel in the hotel's sustainable operations, and finding the process meaningful and fascinating will be more satisfied with their stay.

Finally, the results show that the IMC for sustainability has a direct and indirect positive influence on guest satisfaction, which should encourage hotel managers to integrate their marketing communications to reinforce guest satisfaction. These findings are in line with the results obtained by Šerić et al. (2015) and Porcu et al. (2019), who also found a positive and significant relationship between the implementation of the IMC and customer satisfaction. However, the contribution of this work goes further by providing evidence of the mediating role of ecological knowledge and the co-creation of value in the relationship between IMC and satisfaction. These findings are considered an essential contribution in that they show the way forward to enhance the effect of the IMC on satisfaction and reveal the need to focus hotel communication strategies on increasing the ecological knowledge of the guest and raising their degree of involvement in value co-creation processes if what is ultimately pursued is the achievement of higher levels of visitor satisfaction.

The limitation of this study is that this research does not use interview techniques due to limited time and resources. Another limitation of this study is that there are only four variables. Further research is recommended to increase the research sample by expanding the research area so that the results obtained can describe a more realistic situation. Future research is also suggested to add independent, moderator, mediator, or dependent variables in a different industry.

References

- Albinsson, P.A., Perera, B.Y., & Sautter, P.T. (2016). DART scale development: Diagnosing a firm's readiness for strategic value co-creation. *Journal of Marketing Theory and Practice*, 24(1), 42-58. <https://doi.org/10.1080/10696679.2016.1089763>
- Alevizou, P., Henninger, C., & Spinks, C. (2019). Communicating sustainability practices and values: A case study approach of a micro-organisation in the UK. *International Journal of Business and Globalisation*, 22(1), 37-52. <https://doi.org/10.1504/IJBG.2019.097388>
- Arnold, M. (2017). Fostering sustainability by linking co-creation and relationship management concepts. *Journal of Cleaner Production*, 140, 179-188. <https://doi.org/10.1016/j.jclepro.2015.03.059>
- Bormane, S. (2018). Integrated Marketing Communications in Sustainable Business. In *Proceedings of the International Scientific Conference «Society. Integration. Education»*, 6, 80-96. <https://doi.org/10.17770/sie2018vol1.3405>
- Busser, J.A., & Shulga, L.V. (2018). Co-created value: Multidimensional scale and nomological network. *Tourism Management*, 65, 69-86. <https://doi.org/10.1016/j.tourman.2017.09.014>
- Cannas, R., Argiolas, G., & Cabiddu, F. (2019). Fostering corporate sustainability in tourism management through social values within collective value co-creation processes. *Journal of Sustainable Tourism*, 27(1), 139-155. <https://doi.org/10.1080/09669582.2018.1501053>
- Cerri, J., Testa, F., Rizzi, F. (2018). The more I care, the less I will listen to you: How information, environmental concern and ethical production influence consumers' attitudes and the purchasing of sustainable products. *Journal of Cleaner Production*, 175, 343-353. <https://doi.org/10.1016/j.jclepro.2017.12.054>
- Chang, C.H. (2019). Do green motives influence green product innovation? The mediating role of green value co-creation. *Corporate Social Responsibility and Environmental Management*, 26(2), 330-340. <https://doi.org/10.1002/csr.1685>
- Chin, W.W., (1998). *The partial least squares approach to structural equation modelling*. In G. A. Marcoulides (Ed.), *Modern methods for business research*. Mahwah, NJ: Lawrence Erlbaum Associates.

- Cornelissen, G., Pandelaere, M., Warlop, L., & Dewitte, S. (2008). Positive cueing: Promoting sustainable consumer behaviour by cueing common environmental behaviours as environmental. *International Journal of Research in Marketing*, 25, 46-55. <https://doi.org/10.1016/j.ijresmar.2007.06.002>
- Corsaro, D. (2019). Capturing the broader picture of value co-creation management. *European Management Journal*, 37(1), 99-116. <https://doi.org/10.1016/j.emj.2018.07.007>
- Falk, R.F., & Miller, N.B. (1992). *A primer for soft modelling*. Akron, OH:
- Font, X., Elgammal, I., & Lamond, I. (2017). Greenhushing: the deliberate under communicating of sustainability practices by tourism businesses. *Journal of Sustainable Tourism*, 25(7), 1007-1023. <https://doi.org/10.1080/09669582.2016.1158829>
- 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>
- Frías-Jamilena, D.M., Polo-Peña, A.I., & Rodríguez-Molina, M.Á. (2016). The effect of value-creation on consumer-based destination brand equity. *Journal of Travel Research*, 56(8), 1011-1031. <http://doi.org/10.1177/0047287516663650>
- Gabler, C. B., Butler, T. D., & Adams, F. G. (2013). The environmental belief-behaviour gap: Exploring barriers to green consumerism. *Journal of Customer Behaviour*, 12(2), 159-176. <https://doi.org/10.1362/147539213X13832198548292>
- Gonzalez-Gallarza, M., Gil-Saura, I. & Arteaga-Moreno, F. (2020). Conceptualización y medición del valor percibido: Consensos y controversias. *Cuadernos de Gestión*, 20(1), 65-88. <https://doi.org/10.5295/cdg.180997mg>
- Gössling, S., & Buckley, R. (2016). Carbon labels in tourism: Persuasive communication? *Journal of Cleaner Production*, 1-12. <https://doi.org/10.1016/j.jclepro.2014.08.067>
- Gössling, S., Haglund, L., Kallgren, H., Revahl, M., & Hultman, J. (2009). Swedish air travellers and voluntary carbon offsets: Towards the co-creation of environmental value? *Current Issues in Tourism*, 12(1), 1-19. <https://doi.org/10.1080/13683500802220687>
- Grissemann, U.S., & Stokburger-Sauer, N.E. (2012). Customer co-creation of travel services: The role of company support and customer satisfaction with the co-creation performance. *Tourism Management*, 33(6), 1483-1492. <https://doi.org/10.1016/j.tourman.2012.02.002>
- Hair, J.F., Hult, G. T.M., Ringle, C.M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modelling (PLS-SEM) (2nd ed.)*. Thousand Oaks, CA: Sage.
- Hair, J.F., Sarstedt, M., Ringle, C.M., & Gudergan, S.P. (2018), *Advanced issues in partial least squares structural equation modelling (PLSSEM)*. Thousand Oaks, CA: Sage.
- Han, W., McCabe, S., Wang, Y., & Chong, A.Y.L. (2018). Evaluating user-generated content in social media: An effective approach to encourage greater pro-environmental behavior in tourism? *Journal of Sustainable Tourism*, 26(4), 600-614. <https://doi.org/10.1080/09669582.2017.1372442>
- 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>
- Hudson, S., and Hudson, L. (2017). *Marketing for Tourism, Hospitality and Events. A Global and Digital Approach*. SAGE., London.
- Kaushal, V., & Srivastava, S. (2021). Hospitality and tourism industry amid COVID-19 pandemic: Perspectives on challenges and learnings from India. *International journal of hospitality management*, 92, 102707. <https://doi.org/10.1016/j.ijhm.2020.102707>

- Kim, J., Kim, J., & Marshall, R. (2016). Are two arguments always better than one? Persuasion knowledge moderating the effect of integrated marketing communications. *European Journal of Marketing*, 50(7/8), 1399-1425. <https://doi.org/10.1108/EJM-06-2014-0344>
- Kollmuss, A. & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior?. *Environmental Education Research*, 8 (3), 239-260. <https://doi.org/10.1080/13504620220145401>
- Lee, D.H., & Park, C.W. (2007). Conceptualization and measurement of multidimensionality of integrated marketing communications. *Journal of Advertising Research*, 47, 222-236. <https://doi.org/10.2501/S0021849907070274>
- Moise, M.S, Gil-Saura, I., & Ruiz-Molina, M.E. (2020). Implications of value co-creation in green hotels: The moderating effect of trip purpose and generational cohort. *Sustainability*, 12(23), 9866. <https://doi.org/10.3390/su12239866>
- Moise, M.S., Gil-Saura, I., & Ruiz-Molina, M.E. (2018). Effects of green practices on guest satisfaction and loyalty. *European Journal of Tourism Research*, 20(20), 92-104.
- Nunnally, J.C., & Bernstein, I.H. (1994). *Validity. Psychometric theory*, 3, 99-132.
- Opata, C.N., Xiao, W., Nusenu, A.A., Tetteh, S., & Asante Boadi, E. (2019). The impact of value co-creation on satisfaction and loyalty: The moderating effect of price fairness (empirical study of automobile customers in Ghana). *Total Quality Management & Business Excellence*, 1-15. <https://doi.org/10.1080/14783363.2019.1684189>
- Payne, A.F., Storbacka, K., & Frow, P. (2008). Managing the co-creation of value. *Journal of the Academy of Marketing Science*, 36(1), 83-96. <https://doi.org/10.1007/s11747-007-0070-0>
- Porcu, L., Barrio-garcía, S., Alcántara-pilar, J.M., & Crespo-almendros, E. (2019). Analyzing the influence of firm-wide integrated marketing communication on market performance in the hospitality industry. *International Journal of Hospitality Management*, 80(01), 13-24. <https://doi.org/10.1016/j.ijhm.2019.01.008>
- Preziosi, M., Tourais, P., Acampora, A., Videira, N., & Merli, R. (2019). The role of environmental practices and communication on guest loyalty: Examining EU-Ecolabel in Portuguese hotels. *Journal of Cleaner Production*, 237, 1-13. <https://doi.org/10.1016/j.jclepro.2019.117659>
- Reid, M. (2005). Performance auditing of integrated marketing communications (IMC) actions and outcomes. *Journal of Advertising*, 34(4), 41-54. <https://doi.org/10.1080/00913367.2005.10639208>
- Sarmah, B., Kamboj, S., & Rahman, Z. (2017). Co-creation in hotel service innovation using smart phone apps: An empirical study. *International Journal of Contemporary Hospitality Management*, 29(10), 2647-2667. <https://doi.org/10.1108/IJCHM-12-2015-0681>
- Schmitt, M.T., Aknin, L.B., Axsen, J., & Shwom, R.L. (2018). Unpacking the relationships between pro-environmental behavior, life satisfaction, and perceived ecological threat. *Ecological Economics*, 143, 130-140. <https://doi.org/10.1016/j.ecolecon.2017.07.007>
- Šerić, M., & Gil-Saura, I. (2012). ICT, IMC, and brand equity in high-quality hotels of Dalmatia: An analysis from guest perceptions. *Journal of Hospitality Marketing & Management*, 21(8), 821-851. <https://doi.org/10.1080/19368623.2012.633211>
- Šerić, M., Gil-Saura, I., & Ozretić-Došen, Đ. (2015). Insights on integrated marketing communications: Implementation and impact in hotel companies. *International Journal of Contemporary Hospitality Management*, 27(5), 958-979. <https://doi.org/10.1108/IJCHM-12-2013-0568>
- Šerić, M., Gil-Saura, I., & Ruiz-Molina, M.E. (2014). How can integrated marketing communications and advanced technology influence the creation of customer-based brand

- equity? Evidence from the hospitality industry. *International Journal of Hospitality Management*, 39, 144-156. <https://doi.org/10.1016/j.ijhm.2014.02.008>
- Šerić, M., Ozretić-Došen, Đ., & Škare, V. (2020). How can perceived consistency in marketing communications influence customer–brand relationship outcomes? *European Management Journal*, 38(2), 335-343. <https://doi.org/10.1016/j.emj.2019.08.011>
- Teng, C.-C., Lu, A. C.C., & Huang, T.-T. (2018). Drivers of consumers' behavioral intention toward green hotels. *International Journal of Contemporary Hospitality Management*, 30(2), 1134-1151. <https://doi.org/10.1108/IJCHM-04-2017-0203>
- Tölkes, C. (2018). The role of sustainability communication in the attitude–behaviour gap of sustainable tourism. *Tourism and Hospitality Research*, 1-12. <http://dx.doi.org/10.1177/1467358418820085>
- UNWTO (2016). Tourism Highlights 2016 Edition (World Tourism Organization, 2016). Available at: <http://www.e-unwto.org/doi/pdf/10.18111/9789284418145>
- Vargo, S.L., & Lusch, R.F. (2008). Service-dominant logic: Continuing the evolution. *Journal of the Academy of Marketing Science*, 36(1), 1–10. <https://doi.org/10.1007/s11747-007-0069-6>
- Vargo, S.L., Maglio, P.P. and Akaka, M.A. (2008). On value and value cocreation: A service systems and service logic perspective. *European Management Journal*, 26, 145-152. <https://doi.org/10.1016/j.emj.2008.04.003>
- Vega-Vazquez, M., Ángeles Revilla-Camacho, M., & Cossío-Silva, F. (2013). The value co-creation process as a determinant of customer satisfaction. *Management Decision*, 51(10), 1945-1953. <https://doi.org/10.1108/MD-04-2013-0227>
- Verma, V.K., Chandra, B., & Kumar, S. (2019). Values and ascribed responsibility to predict consumers' attitude and concerns towards green hotel visit intention. *Journal of Business Research*, 96, 206–216. <https://doi.org/10.1016/j.jbusres.2018.11.021>
- Villarino, J., & Font, X. (2015). Sustainability marketing myopia: The need for sustainability communication persuasiveness. *Journal of Vacation Marketing*, 2-11. <https://doi.org/10.1177/1356766715589428>
- Wang, J., Wang, S., Xue, H., Wang, Y., & Li, J. (2018). Green image and consumers' word-of-mouth intention in the green hotel industry: The moderating effect of Millennials. *Journal of Cleaner Production*, 181, 426-436. <https://doi.org/10.1016/j.jclepro.2018.01.250>
- Wehrli, R., Priskin, J., Demarmels, S., & Schaffner, D. (2014). Communicating sustainable tourism products to customers: Results from a choice experiment. *Current Issues in Tourism*, 20(13), 1375-1394. <https://doi.org/10.1080/13683500.2014.987732>
- Williams, P. & Soutar, G.N. (2009). Value, satisfaction and behavioural intentions in an adventure tourism context. *Annals of Tourism Research*, 36 (3), 413–438. <https://doi.org/10.1016/j.annals.2009.02.002>
- Yi, Y., & Gong, T. (2013). Customer value co-creation behaviour: Scale development and validation. *Journal of Business Research*, 66(9), 1279-1284. <https://doi.org/10.1016/j.jbusres.2012.02.026>