ThinkBox

Consumer buying behavior: IPMA – the technique that deepens the analysis and suggests management strategies

Introduction

Importance versus performance map analysis (IPMA) was first proposed by Martilla & James (1977), and its main purpose is to provide additional insights into the degree to which improving the performance of variables influences the overall result (Le & Sutrisna, 2023). Its application depends on expectations about important variables and evaluations of the performance of these variables (Martilla & James, 1977).

This technique's ease of use and applicability, such as explaining customer satisfaction and suggesting management strategies for prioritizing resources, make it very attractive for use in the most varied aspects of management (Haverila, Haverila, & Twyford, 2023; Fakfare & Manosuthi, 2023; Tailab, 2020; Nawanir, Fernando, & Teong, 2018).

Using the Smart PLS software, Hair, Hult, Ringle, & Sarstedt (2017) showed that for a given target construct, the IPMA technique provides clear metrics on the role of the predictor constructs and helps to identify opportunities for management and the development of academic studies, given its consolidated robustness in statistical terms. However, despite this robustness, the technique is still little used in academia and at the management level.

In this light, the general objective of this article is to illustrate how the IPMA technique can be used to select the variables that impact the decision-making process. Its specific objective was to disseminate the technique to both the academic and business communities. With a view to this dissemination, the case in question used the technique in the decision-making process of online consumer purchase intention.

The content is divided into two sections. The first presents the stages of application of the IPMA technique at the constructs and the indicators' level. The second section presents the comments, discussion and reflections on the applications of the technique.

Steps for applying importance versus performance map analysis

IPMA goes beyond the standard PLS-SEM results report, which presents estimates of path coefficients and other parameters, by adding a procedure that considers the mean values of the latent variable indicator scores (Lin et al., 2020; Ringle & Sarstedt, 2016; Slack, 1994).

When using the IPMA technique, the process begins with a check to confirm that all the statistical requirements necessary for the analysis have been met (Step 1). This is followed by calculating the performance values of the latent variables (Step 2) and their respective importance values (Step 3). Based on these results, an importance versus performance map at the construct level is created for the selected construct (Step 4). The importance versus performance map can also be extended to the indicator level for more detailed information to support specific policies or management actions (Step 5) (Ringle & Sarstedt, 2016; Martilla & James, 1977).

Importance versus performance map analysis at the construct level
In this article's example, based on a study modeled in PLS-SEM and considering the dependent variable *online purchase intention* as the target construct, Table 1 shows (in the importance column) the values of the total effects that make up the *x*-axis (*importance*) and are related to the values indicated in the performance column, which make up the *y*-axis (*performance*) of the importance versus performance map at the level of the most critical predictor constructs in the model.

The relationships between importance and performance were also expressed in the map in Figure 1. The indication of mean values of importance ($\beta = 0.126$) and performance (65) enabled the map division into four quadrants of analysis.

As shown by Irimia-Diéguez, Liébana-Cabanillas, Blanco-Oliver, & Lara-Rubio (2023) and Hair et al. (2017), when analyzing the importance versus performance map, the constructs in the lower right quadrant (above average importance and below average performance) represent good opportunities for improvement, followed by the constructs in the upper right, lower left and, finally, the upper left quadrants.

Figure 1 shows that the compatibility with values construct has an importance value of $\beta = 0.275$ and a performance value of 64.0, which, compared to the other constructs, except those in the first quadrant, can be considered a good opportunity to improve the relationship with the consumer, since this digitalized consumer will increasingly make their choices based on the attributes that brands offer and that they consider important.
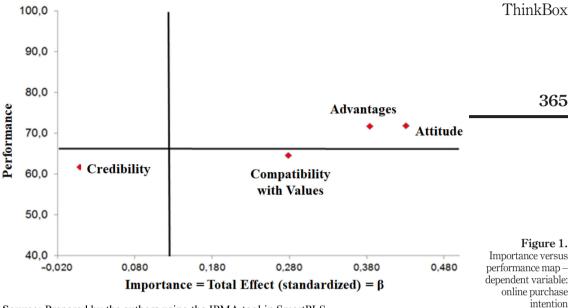
Therefore, to improve the performance of the online purchase intention target construct, the first action would be to improve the performance of the aspects captured by the compatibility with the consumer values construct.

Importance versus performance map analysis at the indicator level
Once again using the IPMA technique, we sought to deepen the analysis and map the indicators related to the constructs of *positive attitude*, *perceived advantage* and *compatibility with values*, shown in Figure 1, which are fundamental predictive constructs of the

Predictor constructs	Importance (X)	Performance (Y)
Positive attitude	0.428	72.1
Compatibility with values	0.275	65.0
Credibility	0.012	60.5
Advantages	0.381	71.0
Mean values	0.126	65.0

Source: Prepared by the authors using the IPMA tool in SmartPLS

Table 1.
Predictor construct – dependent variable: online purchase intention

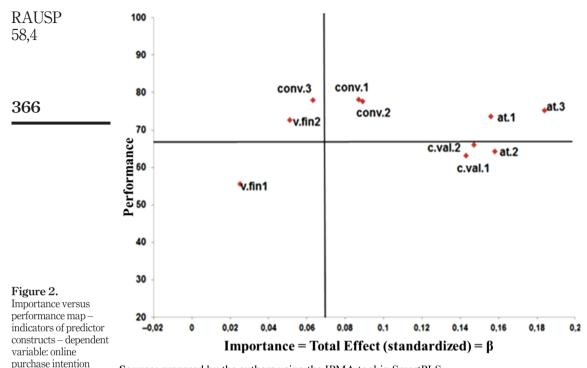Source: Prepared by the authors using the IPMA tool in SmartPLS

dependent variable *online purchase intention*, and to identify those indicators that could be improved managerially to increase the predictive capacity of the respective constructs.

Table 2 shows, in the importance column, the total impact values that make up the *x*-axis and relate to the values shown in the performance column, which make up the *y*-axis of the importance versus performance map for the indicators.

The relationships shown in Table 2 for the indicators are represented in Figure 2 for the dependent variable, *online purchase intention*.

As in Figure 2, the indicators in the second quadrant, related to compatibility with values (c.val.2, c.val.1), and one of the indicators related to positive attitude (at.2), leave room for

	Indicators	Importance (X)	Performance (Y)
at.1	positive_attitude_purchase_1	0.158	74.00
at.2	positive_attitude_purchase_2	0.161	64.80
at.3	positive_attitude_purchase_3	0.184	75.30
c.val.1	compatibility_values_1	0.146	63,20
c.val.2	compatibility_values_2	0.149	66.20
conv.1	conven_advantage_1	0.087	78.13
conv.2	conven_advantage_2	0.089	77.70
conv.3	conven_advantage_3	0.063	77.92
fin.a.1	fin_advantage_1	0.027	55.82
fin.a.2	fin_advantage_2	0.053	73.00
Mean values		0.071	65.00

Source: Prepared by the authors using the IPMA tool in SmartPLS

Figure 2.
Importance versus
performance map –
indicators of predictor
constructs – dependent
variable: online
purchase intention

Source: prepared by the authors using the IPMA tool in SmartPLS

improvement and, consequently, expansion of the predictive power of the constructs related to them, over the *online purchase intention* dependent variable.

As already noted in the analysis of the constructs, the analysis of the indicators related to compatibility with values indicates that management actions should be geared towards making individuals increasingly believe that online shopping fits their lifestyle, individual needs and preferences.

Discussion

Several studies in recent years have used the IPMA technique to select the constructs necessary for more assertive decision-making (Nawanir et al., 2018; Tailab, 2020; Rašovská, Kubickova, & Ryglová, 2021; Wohlfart, Adam, & Hovemann, 2022; Haverila et al., 2023; Fakfare & Manosuthi, 2023).

One of the first studies in this area was conducted by Martilla & James (1977) in a seminal article in the *Journal of Marketing* in the context of the automobile industry. The authors compared the importance and performance of a series of personal consumer constructs concerning the automobile. They established a fairly simple structure to guide the allocation or reallocation of scarce company resources to increase consumer satisfaction, and this targeted allocation was only possible through this technique.

Nawanir et al. (2018), in turn, used the IPMA technique to select the constructs needed to increase productivity in the manufacturing industry. The authors found that IPMA indicated that although one of the constructs (namely, *reduced batch production*) has lower

importance and performance, it is fundamental to support the application of other components, such as quality management and level production.

Regarding importance and performance, Tailab (2020), studying the MPI to assess the financial performance of American banks during the financial crisis, found that one construct can direct the trajectory of the others. In this case, IPMA helped prioritize the constructs used for more assertive financial decisions, thereby reducing decision-making errors. As to another topic in the management field, the role of government, in-depth discussions indicate that it is of fundamental importance in developing tourist destinations. In their study, Rašovská et al. (2021) addressed this issue to highlight destination management's importance versus performance aspects. The authors used the technique to analyze the Czech Republic's three touristic regions (mountain, spa and wine). The results indicated differences between the regions in terms of areas of importance and performance and pointed to opportunities for improvement.

With the same managerial focus, Haverila et al. (2023) applied IPMA to assess the impact of marital status on customer-centric measures in a Canadian ski resort concerning repurchase intentions. Using this methodology, the authors verified that the constructs that influence repurchases are different when marital status is considered. This finding can be used to design a customized strategy that provides a satisfying experience and generates the best possible cost-benefit ratio.

Still on issues related to tourism, Fakfare & Manosuthi (2023) used the IPMA methodology to evaluate the constructs that influence Thai tourists' intention to use travel apps. According to the authors, IPMA revealed that restaurants and shopping are the most sought-after constructs when using a travel app, while sports and attractions are the least important. This finding, as well as the previous ones, can help companies in their strategic direction.

Focusing on the sports industry, Wohlfart et al. (2022) examined the fit (or lack thereof) between the competences required by this industry and the proficiency of sports management students. The authors use importance versus performance analysis as a strategic management tool to analyze the results of two competence-oriented data sets in the German sports management market context.

The authors found that students' self-identification of proficiency is lower than the importance attributed to proficiency by sports management experts. Based on the findings, they critically discuss the lack of differences between the perceived performance of bachelor's and master's students and provide strategic recommendations for higher education in sports management.

By applying IPMA, the article provided a platform to examine competence-based education as an important area to minimize the gap between industry and academia. Three main themes emerged: competences to be developed and communicated, competences to be improved, and the need for proper curriculum design to (better) differentiate bachelor's and master's degrees.

Finally, the approach of this article exemplified how the importance versus performance map technique can be used to select the variables that influence the consumer's decision-making process in relation to online channels. IPMA enabled the in-depth analysis of a model, using the *online purchase intention* construct as the dependent variable. It made it possible to obtain detailed metrics of the overall effects of the relationship between the predictor constructs on the dependent variable *consumer purchase intention* in the online environment.

Comments and considerations
The general objective of this article was to illustrate how the importance versus performance map technique can be used to select the variables that impact the decision-

making process. The use of IPMA enabled the development of an in-depth analysis of the model using the construct *online purchase intention* as the dependent variable, which made it possible to obtain more detailed metrics of the overall effects of the relationship between the predictor constructs on this dependent variable.

From an academic and managerial point of view, an essential consideration for researchers and managers is to develop proposals for specific studies and actions on each of the indicators or even to identify new indicators that improve the performance of each construct in the model and, consequently, the performance of the primary constructs, in this case, indicated by credibility, positive attitude, and purchase intention.

Ultimately, the Importance versus Performance technique offers several advantages for assessing consumer acceptance of marketing proposals. IPMA is a low-cost, easy-to-understand technique that can provide important insights into which aspects of the marketing mix a company should pay more attention to, and it is believed that these insights can contribute to the development of future studies in the areas of marketing and competitive strategy in various segments.

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Data availability statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study.