Understanding the Factor Structure of Customer Satisfaction in Business Markets.

Bruno Busacca
Bocconi University
Department of Business Administration
Via Bocconi 8, 20136 Milan (Italy)
Tel. +39 02 5836 6514/ 02 58366848/ 02 58366853, Fax +39 02 58366888, E-Mail:
bruno.busacca@sdabocconi.it

Giovanna Padula
Bocconi University
Department of Business Administration
Via Bocconi 8, 20136 Milan (Italy)
Tel. +39 02 5836 6823/ 02 58366848/ 02 58366853, Fax +39 02 58366888, E-Mail:
giovanna.padula@unibocconi.it

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Abstract

Although creating value for the customer has long been commonly recognized as a pivotal determinant of long business success, the way it is realized has undergone important changes in business-to-business contexts in recent years. In fact, in the past decade, many business customers have decided to forge closer relationships with fewer suppliers, who in turn tend to serve their customers in a broader logic of "business solution" (Capon, 2001). It follows an increase in the breath and depth of the supplier-buyer relationships, that have important implications on the value requirements made by the customers in such a business context. An important consequence of these changes has been the broadening of the dimensions over which the customers make their assessment about the value delivered by their suppliers. As the dimensions of value increase, designing the value proposition with attributes that would maximize the value perception and, consequently, the customer satisfaction gets critical.

Traditionally, multiple-regression models have been employed to identify the key attributes into which managers should invest resources to improve customer satisfaction (e.g., Bolton and Drew, 1991; Wittink and Bayer, 1994). These well accepted, "key drivers" models of customer satisfaction are based on the assumption that attribute-level performance and overall satisfaction are linked through a linear and symmetric relationship. As key attribute performance scores increase (decrease), satisfaction increases (decreases) proportionally. In this vein, satisfaction and dissatisfaction are thought of as two sides of the same coin. An increasing body of research has been revealing the existence of a nonlinear and asymmetric response of satisfaction to attribute-level performance (Kano, 1984, Cadotte and Turgeon, 1988a , 1988b; Johnston, 1995; Matzler, Hinterhuber, Bailom and Sauerwein, 1996; Vavra, 1997; Mittal, Ross and Baldasare, 1998) and documenting the serious danger of misallocation of resources resulting from viewing the world through a linear and symmetric lens (Anderson and Mittal, 2000). This literature has shown that while some attributes are relatively important in determining satisfaction, others are not critical to consumer satisfaction but are related to dissatisfaction when performance on them is unsatisfactory. The identification of these *satisfier* and *dissatisfier* attributes implicitly suggests that satisfaction and dissatisfaction are not opposites on a single factor continuum, but they represent distinct factors of the customer satisfaction construct. The development of viable satisfaction measurement procedures for identifying the factor structure of customer satisfaction is paramount to correctly prioritize the resource allocation bound to improve the attribute performance (Mittal, Ross and Baldasare, 1998; Anderson and Mittal, 2000; Busacca and Padula, 2005).

Yet, although widely recognized, this "factor theory" of customer satisfaction still needs to be further tested and corroborated, and the methodology to identify the factor structure of customer satisfaction still need to be validated. This study realizes an empirical test of this theory based on customer satisfaction data collected from a firm operating in a business-to-business context. The purpose of this study is threefold. First, it shows empirically and discuss the limitations of the traditional "key drivers" analysis, demonstrating that the traditional Importance-Performance Analysis (Martilla and James, 1977) is misleading based on the predictions of the three factor theory of customer satisfaction. Second, it shows empirically and discuss the limitations of the Importance-Grid proposed by Vavra (1997) to identify the three satisfaction factors. Third, it tests empirically the asymmetric and non linear relationships between attribute-level performance and overall satisfaction using a regression analysis with dummy variables, and discuss the superiority of this methodology with respect to the Importance-Grid approach for the identification of the factor structure of customer satisfaction.

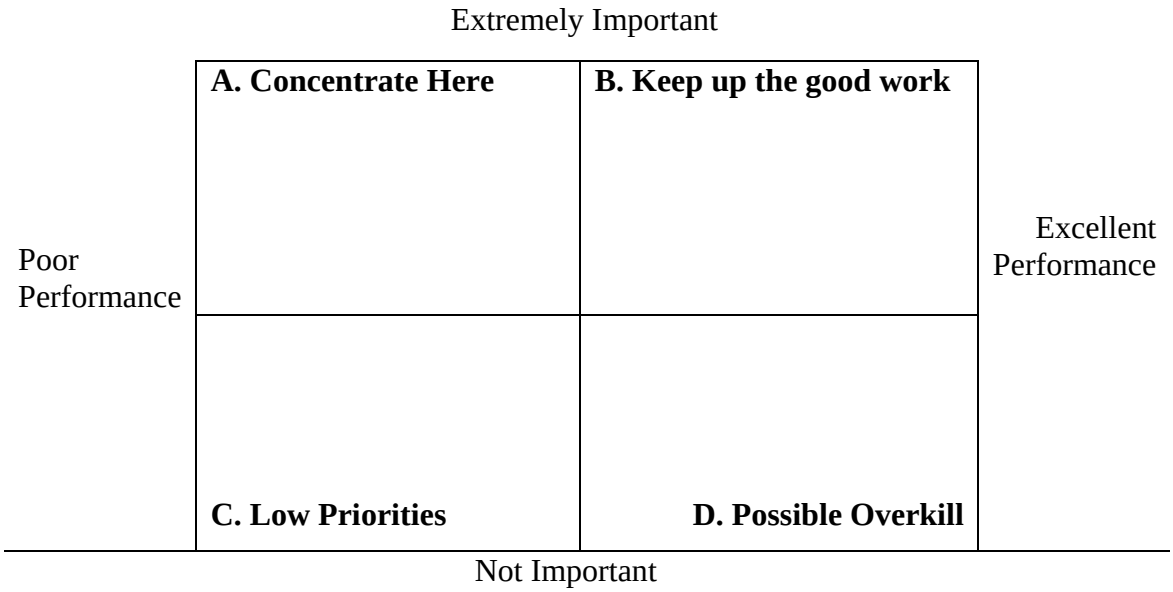
Key words: customer satisfaction, value management, three factor theory, IPA grid, business markets

Introduction

Customer orientation has been leading the marketing priorities for several decades. This has led to investigate customers' acceptance of the firms' products or services as a central issue within marketing practices. As customers' evaluation is rarely concerned with a single aspect of the product or service package but rather with many aspects (e.g., Berry, Zeithaml and Parasuraman, 1985; Johnston and Lith, 1991), satisfaction measurement procedures have been generally bound to identify the key attributes that most affect the overall customer satisfaction (e.g., Martilla and James, 1997; Bolton and Drew, 1991; Wittink and Bayer, 1994). This is particularly critical in business markets, where the recent increase in the breath and depth of the buyer-seller relationship (Capon, 2001) has greatly increased the "dimensions of merit" of an offer, urging for the development of reliable, analytical tools that may support the decisions about how to prioritize the efforts across the several dimensions of an offer to enhance customer satisfaction and strengthen customer relationships. Moreover, as customer satisfaction is a critical step in the way for developing long-term relationship, understanding the drivers of customer satisfaction is particularly paramount in business-to-business markets, where the development of trust-based relationships play a critical role for the economic and competitive performance of the firms (Dwyer, Schurr and Oh, 1997).

The prescriptions to optimize the resource allocation to enhance customer satisfaction have been traditionally derived by the "Importance-Performance Analysis" (IPA) grid, an easily applied technique first developed by Martilla and James (1977) and still currently and widely applied among satisfaction scholars and practitioners. By combining on a two-dimensional matrix the attribute importance and performance scores, IPA provides four specific recommendations for customer satisfaction management (Figure 1).

Figure 1: Importance-Performance Analysis (IPA)



Source: Martilla and James, 1977:78

Quadrant A shows low performance on highly important attributes, revealing a circumstance which requires immediate attention in terms of resource commitment to improve the overall satisfaction. Attributes in Quadrant B, evaluated high both in importance and performance, represent opportunities for maintaining a competitive advantage. In this area, a firm should "keep up the good work". Quadrant C contains attributes low both in performance and importance, they represent "low priority" attributes that do not require any additional effort. Quadrant D joins attributes which are rated high in performance but low in importance, hence the resource committed on these attributes would be better employed elsewhere.

The "key driver" analysis approach and the related prescriptive toolkit have been still influencing the customer satisfaction measurement approaches and driving the current practices in this field. Yet, although so much accumulated experience and well established techniques have been developed, in many cases customer satisfaction programs fail to deliver the expected results. Often firms improve performance on key attributes only to discover that the overall satisfaction scores have not shown a corresponding increase. At other times, firms fail to identify powerful drivers that sensibly affect the overall satisfaction judgement. Consider the following cases. An automotive

manufacturer realized that investing on the improvement of performance ratings on a key attribute – the engine power – had yielded poor effects on satisfaction. The technical support office of a software house found that the ability to solve problems in one call had a relatively low impact on satisfaction compared to many other attributes of the service package. Yet, by slightly reducing the commitment resources on this operational aspects of service provision proved disastrous, as it provided a huge negative impact on satisfaction scores. A commercial bank had historically found that providing plenty of assistance to its business customers did not show a high impact on satisfaction, neither the decision to allocate elsewhere part of the resources previously devoted to this feature had decreased the overall satisfaction judgement. Yet, a change in several top management positions, which followed an M&A operation, and the huge program of investment in the customer relationship building promoted by the new management made plenty of assistance a key driver of satisfaction increase.

These few examples reveal the typical inconsistencies that current satisfaction programs show. This is because the traditional "key driver" analysis may lead to "importance bias" that prevent from correctly prioritizing efforts to improve performance attributes. Improving the effectiveness of customer satisfaction programs requires to understand the rationale of this failure and to develop a proper response.

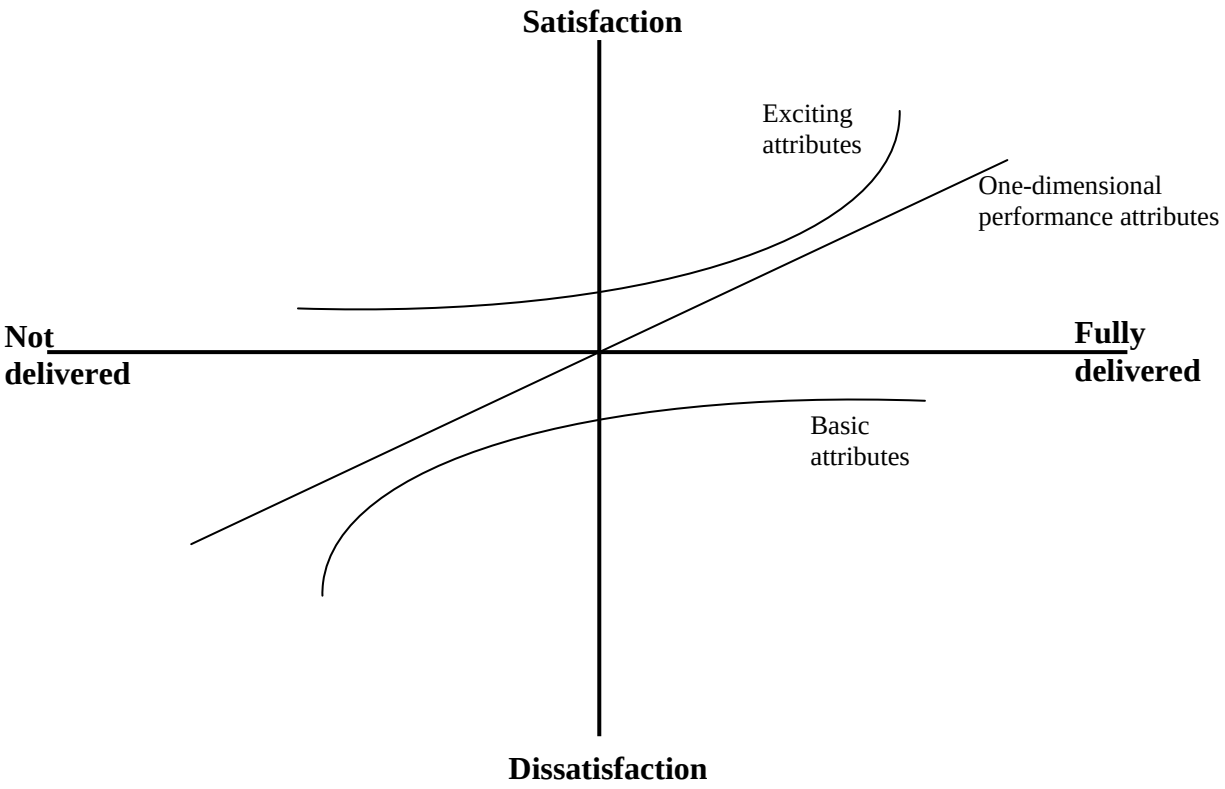
Why do current customer satisfaction measurement approaches lead to "importance bias"?

Some scholars have been arguing that the explanation of the "important bias" which may affect the current customer satisfaction programs is to be found in the wrong assumption underlying the traditional key driver analysis (Mittal, Ross and Baldasare, 1998; Anderson and Mittal, 2000). In fact, this traditional analysis assumes that satisfaction and dissatisfaction are two sides of the same coin. For example, as far as reliability has been found as the most important attribute in several service industries (Berry et al, 1985), it is also believed that unreliability would lead to

dissatisfaction and reliability would lead to satisfaction. Operationally, this implies that attribute-level performance and overall satisfaction are linked through a symmetric and linear relationship. As key attribute performance scores increase (decrease), satisfaction increases (decreases) proportionally. Based on this assumption, key drivers are identified either through customers' self stated importance (Martilla and James, 1977) or statistically by linear estimate models (Bolton and Drew, 1991; Wittink and Bayer, 1994).

Yet, an increasing body of research has been revealing that behind attribute importance, there may be different attitudes and reactions of customers. In fact, these studies have been finding that some attributes are relatively important in determining satisfaction, while others are not critical to customer satisfaction but are related to dissatisfaction when performance on them is unsatisfactory (e.g., Kano, 1994; Cadotte and Turgeon, 1988a, 1988b; Johnston, 1995; Matzler, Hinterhuber, Bailom and Sauerwein, 1996; Vavra, 1997; Mittal, Ross and Baldasare, 1998; Anderson and Mittal, 2000). The identification of these *satisfiers* and *dissatisiers* attributes implicitly suggests that satisfaction and dissatisfaction are not opposites on a single factor continuum, but they represent distinct factors of the customer satisfaction construct. Operationally, this leads to recognize the existence of a non linear and asymmetric response of satisfaction to attribute-level performance. Within this perspective, research findings have been converging on the image that attributes fall into three categories, each showing a different impact on customer satisfaction (Figure 2):

Figure 2. The Factor Structure of Customer Satisfaction



1. *expected, basic attributes* are minimum requirements that cause dissatisfaction if poorly or not delivered but do not lead to customer satisfaction if fully delivered. They establish an entry "threshold" in the market. As they are prerequisites that customers take for granted, they are a necessary but not sufficient condition for satisfaction.
2. *one-dimensional performance attributes* cause satisfaction if fully delivered and dissatisfaction if poorly or not delivered. They are both a necessary and sufficient condition for satisfaction.
3. *unexpected, exciting attributes* cause satisfaction if fully delivered but do not lead to dissatisfaction if poorly or not delivered. They are unexpected, but if properly delivered they generate delight. Hence, they are a necessary but not sufficient condition for satisfaction. They can act to attract the customers from one brand to another one.

As Figure 2 shows, for *one-dimensional performance attributes*, the performance-satisfaction relationship is both symmetric (they cause both satisfaction and dissatisfaction) and linear (as a change in attribute-level performance generates a proportional change in satisfaction - or

dissatisfaction – scores). Consequently in this case the importance of an attribute is independent from its level of performance. This relationship pattern confirms the assumption underlying the traditional key driver analysis techniques.

The limitations of the traditional techniques come up in assessing and responding to the customers' requirements related to the other two types of attributes. *Basic attributes* show a steep slope in the negative performance domain and a quite flat slope in the positive performance domain. *Exciting attributes* also show a nonlinear and asymmetric - but reversed with respect to the previous case - relationship. They show a quite flat slope in the negative performance domain and a steep slope in the positive performance domain. The *basic* relationship pattern reveals diminishing returns to satisfaction, whereas the *exciting* relationship pattern depicts increasing returns to satisfaction. Hence, for these two types of attributes, we can conclude that importance is not independent from their level of performance. "Importance bias" coming up by traditional key driver analysis is due to the fact that traditional measurement methods miss to account for this importance-performance relationship. In other words, the different relationship patterns depicted above implies different customers' reactions that symmetric and linear lenses cannot uncover. This prevent satisfaction professionals from interpreting, properly responding to and even detecting important customers' requirements.

Let us examine the possible various misestimates that traditional key driver analysis may generate. With respect to the techniques based on customers' self stated importance, it is likely to assume that while basic attributes will be rated as important, customers may not be conscious of the exciting attributes because of their unexpected nature, hence customers will likely rate exciting attributes as unimportant (see, for example, the case of plenty of assistance in the commercial bank, previously cited). Because of the role of exciting attributes, this circumstance will lead the firms to neglect critical "points of difference" which will prevent them from sensibly enhance satisfaction and stand out from their competitors. Moreover, being unaware of the diminishing returns of basic attributes on satisfaction, professionals may feel encouraged to commit resources to further increase

performance ratings on these key attributes only to discover subsequently no rewarding effect on satisfaction (see the example of power engine for the automotive manufacturer or the case of baggage delivery for the airline service company, previously remarked).

Relying on statistically derived (implicit importance) techniques, the misestimates of key attributes may prove even more dangerous. In this case, the importance of an attribute is based on the strength of the relationship between attribute-level performance and overall satisfaction, the stronger the strength the more important the attribute. As far as basic attributes have a high impact if performance is low and a low impact if performance is high, linear statistical models may prove disastrous for high performance basic attributes, whose importance would be strongly underestimated. Basic attributes with high score will appear unimportant because of their low impact on satisfaction, but backing off too far as IPA technique would prescribe will turn these attributes into a serious source of dissatisfaction (among the examples provided upfront, see what happens to the technical support office of the software house when it slightly backs off from solving a problem in one sole call). On the other hand, as far as exciting attributes have a low impact if performance is low and a high impact if performance is high, linear statistical models may prove dangerous for low score exciting attributes. Exciting attributes with low score will appear unimportant because of their low impact on satisfaction, but considering these attributes as low priority features will prevent the firms to grasp an opportunity to invest on a critical “point of difference” which would reinforce customers’ preference or even attract new customers from the competitors.

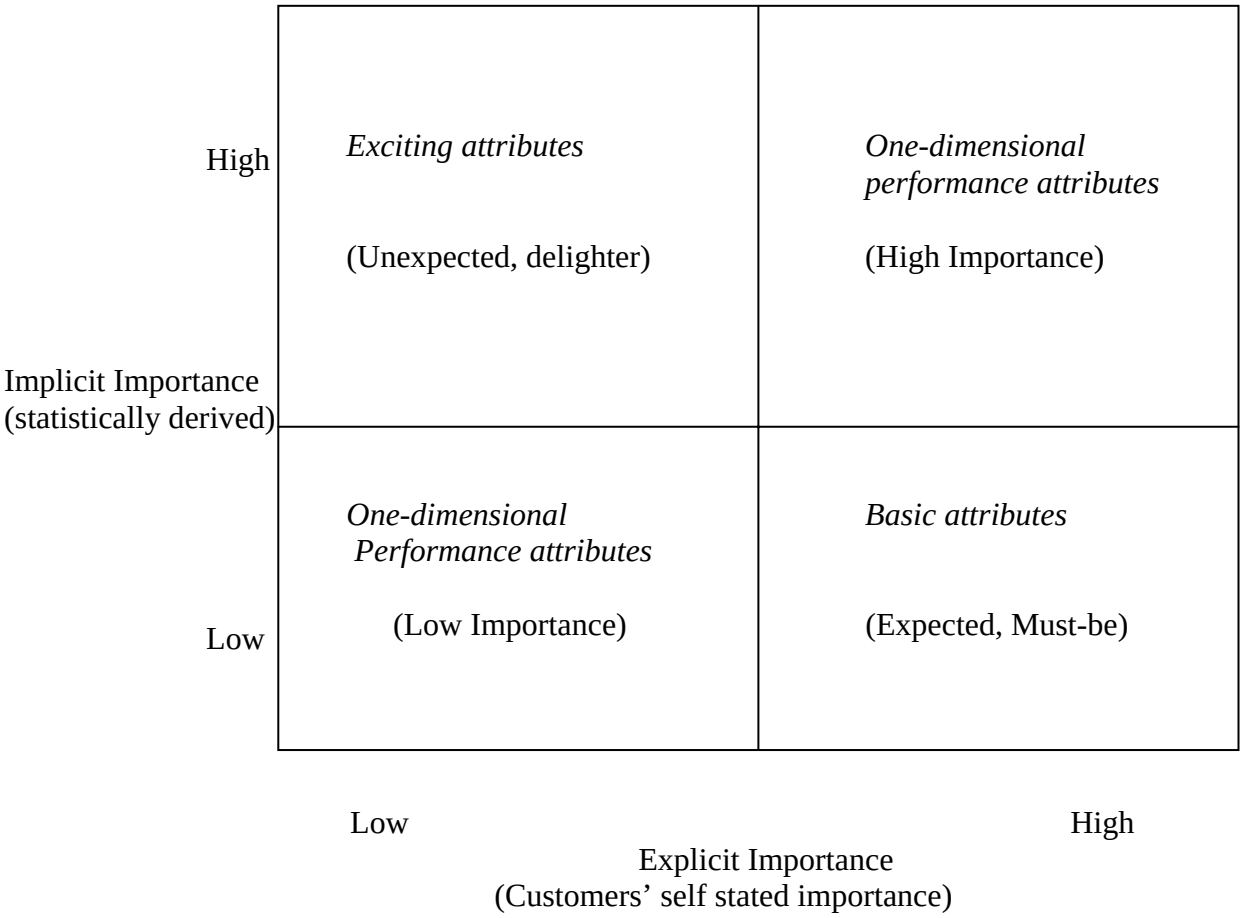
How can the customer satisfaction measurement procedures be improved?

The key point to improve the effectiveness of customer satisfaction measurement methods is to be found in the development of new techniques which can distinguish between the effects of the performance attributes in terms of creation of satisfaction and dissatisfaction. Although this new perspective has been developing much debate, identifying how customers view the importance of various attributes is not well established. This prevents practitioners from accounting for this new

insights in their customer satisfaction programs and leave their satisfaction management still anchored to traditional practices.

A first attempt to provide an analytical procedure in alternative to the traditional key driver analysis can be found in the Importance Grid (Vavra, 1997; Homburg and Werner, 1998). First developed by IBM Consulting Group, the Importance Grid is a two dimensioned matrix based on explicit (customers' self stated) and implicit (derived by linear statistical models) importance (Figure 3).

Figure 3. The Importance Grid



Source: adapted from Vavra (1997:385)

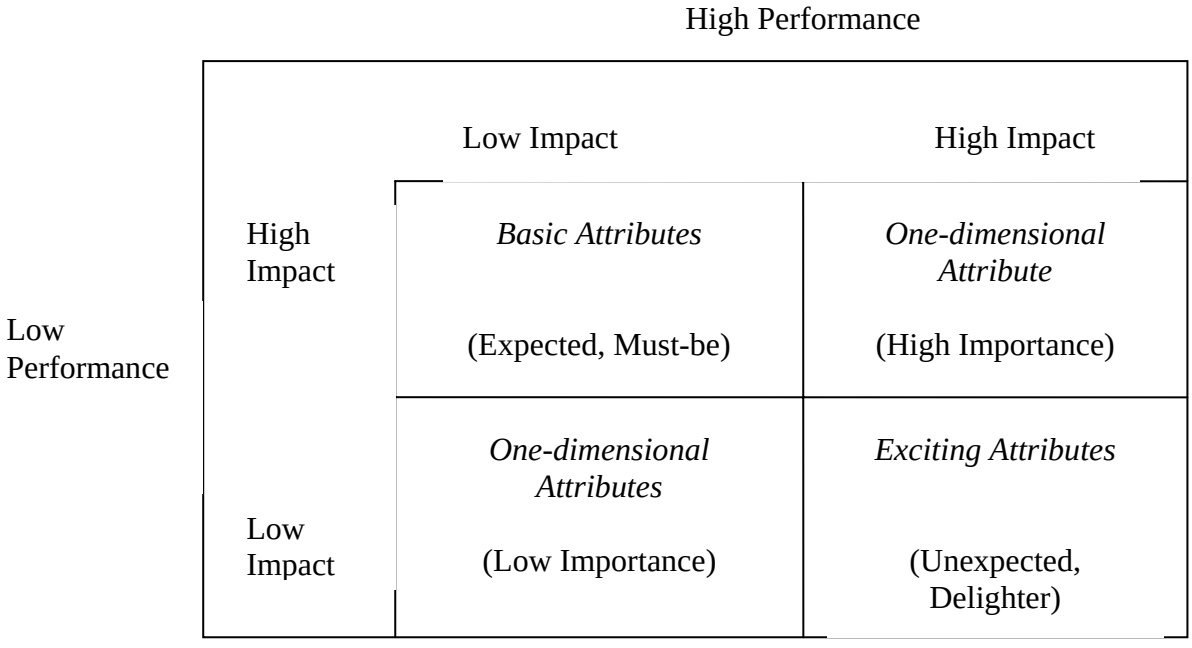
Those attributes for whom the explicit and implicit importance weights agree (lower left and upper right) are the one-dimensional performance attributes, either unimportant or important. Features that customers rate as unimportance but which show to have a high impact on satisfaction identify the exciting attributes (upper left, with low explicit and high implicit importance). Those aspects that customers rate as important but which have a low impact on satisfaction define the basic attributes (lower right, with high explicit but low implicit importance).

Although this Importance Grid represents an interesting step forward, it remains an analytic procedure still affected by serious limitations. It actually fails to properly account for the importance-performance relationship implicit in the asymmetric and nonlinear linkages between attribute-level performance and overall satisfaction. In fact, low implicit importance characterizes basic factors in a specific circumstance, when they show high performance scores. Yet, if a basic attribute should performance poorly or below the expected levels, it would turn out to strongly affect the satisfaction judgement. Because of its high impact on satisfaction judgement, a poorly performing basic attribute will show high explicit/high implicit importance and, based on the Importance Grid criteria, will end up being located along with important one-dimensional performance attributes. At the same time, high implicit importance characterizes the exciting attributes in the specific circumstance that they are fully delivered. Yet, if an exciting attribute should perform poorly, it would have a low impact on satisfaction, and it would show low explicit/low implicit importance score. As a consequence, a low performing exciting attribute will be positioned along with the unimportant one-dimensional performance attributes, hence it would be interpreted as a low priority feature.

To avoid importance bias, a method which actually accounts for the importance-performance relationship is needed. Regression with dummy variables (Mittal, Ross and Baldasare, 1998) is an alternative procedure developed in the literature, but not diffused among practitioners yet, which seems to fit with this need. This procedure implies that performance ratings are recorded to form dummy variables, such that “low performance” is coded (0,1), “high performance” is coded (1,0)

and “average performance” is coded (0,0). By carrying out a regression analysis on the basis of this coding scheme, this procedure estimates how the impact of attribute performance eventually changes through the whole ranges of possible performance values. Besides being a reliable approach, this method also shows the advantage of beings based on typical customer satisfaction survey data (attribute level performance and overall satisfaction). Hence, it proves a user friendly method suitable to be used by the management team attempting to gauge the level of customer satisfaction in their own business on a continuous base. The results of this method can be displayed in the “Importance-Performance Relationship Analysis” Grid (Figure 4).

Figure 4. The Importance-Performance Relationship Analysis (IPRA) Grid.



Basic attributes are defined by those features whose impact on the overall satisfaction is high when their performance scores are low, and whose impact is low when their performance scores are high. Exciting attributes show a reversed relationship as they have a low impact on the overall satisfaction when their performance scores are low, whereas they turn to show a high impact on

overall satisfaction when their performance scores are high. Clearly, in these two circumstances, the importance of an attribute is dependent on its level of performance. One-dimensional performance attributes are located on those quadrants where the impact values (high/low) agree, independently from the performance domain they fall.

Methodology

Data and Measures

We turn now to apply the IPRA Grid and show empirically the limitations of traditional key drivers analysis techniques as well as the drawbacks of the analytic procedure underlying the Importance Grid. To this purpose, we carried out an empirical investigation on the customer satisfaction data referred to ABB Group, one of the world's leading engineering company. We collected data through an interview based on a structured questionnaire that was tested on a sample of customers based in Italy of the Automation Product Division of the Group, i.e. ABB Sace. The questionnaire included questions measuring on a 7-point scale (1=extremely low, 7=extremely high) the respondents' assessment of the attribute-level performance, attribute importance and overall satisfaction for ABB Sace's offer. A "no basis for judgement" category was also provided. After cleaning the database by dropping the questionnaires with missing data or "no basis for judgement" response, one hundred eighty two questionnaires resulted available for the analysis. Interviews with sales and marketing managers of the company and the results from marketing researches that had previously been accomplished by the company led us to identify six attributes as worth investigating items to understand customer satisfaction drivers: price/quality ratio, breath of product offer, consultancy services, training services, delivery and post-sales services.

Analysis and Discussion of Results

To identify the factor structure of customer satisfaction, according to the method underlying the IPRA Grid, we ran a regression analysis with dummy variables. We recorded the performance scores of each attribute to form the dummy variables so that "low performance" was coded (0,1), "high performance" (1,0), and "average performance" (0,0). We defined as "low performance" all

ratings of 1 or 2, “high performance” all ratings of 6 or 7, and “average performance” all ratings from 3 to 5. For each attribute, two regression coefficients were obtained, one to measure the impact when performance is low, the other one when performance is high. Table 1 shows the results of the regression analysis with dummy variables. By analyzing how the impact of attribute performance on overall satisfaction varies from the negative to the positive performance domain, we assessed the different “types of importance”, hence we identified the factor structure of customer satisfaction.

Table 1. The impact of attribute performance on overall satisfaction in negative and positive performance domains.

	Dummy-Variable Regression Coefficients	
Attributes	**Low Performance**	**High Performance**
1. Price/Quality	-.561**	-.031 n..s.
2. Breath of Product Offer	-.226***	.402 n..s.
3. Consultancy	.044 n..s.	.127** *
4. Training	.231 n..s.	.321****
5. Delivery time	-.502 ***	.474***
6. Post-Sales Services	-.222 **	.204 ***

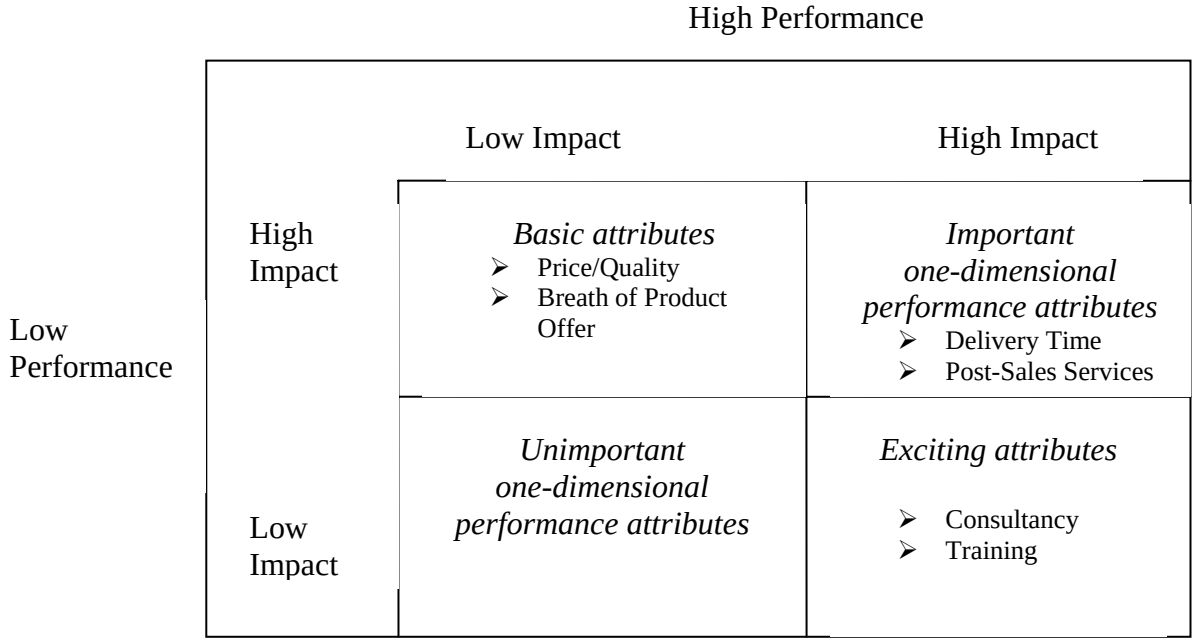
$R^{2=}$ 0.49; Number of Observations 327

**** p < 0.001; *** p < 0.01; ** p < 0.05; * p < 0.10; n.s.=not significant

The results of the regression analysis with dummy variables reveal that the price/quality ratio the breath of product offer form the basic factor of customer satisfaction in our empirical set. In fact, these two attributes show a high and significant impact when their performance is low, but they do not have a significant impact when their performance is high. Delivery time and post-sales service form the important one-dimensional performance factor, as they display a high and significant impact on overall satisfaction in case of both low and high performance. Consultancy and training

services show a high and significant impact when their performance ratings are high, but they do not have a significant impact when their performance ratings are low. Consequently, these two attributes define the exciting factors of customer satisfaction. On the basis of these results, we developed the IPRA grid as shown in Figure 5.

Figure 5. The IPRA Grid.



In order to compare these results with what would come up by the traditional "key driver" analysis, we computed the mean of the customers' assessment of attribute performance and importance (explicit importance) as well as we ran a linear regression model to estimate the implicit importance as traditionally measured. Table 2 displays the results of the linear regression model estimations and Table 3 reports the means of performance, explicit importance and implicit importance ratings per each attributes along with their average values across all attributes.

Table 2. Linear estimates of the impact of attribute performance on customer satisfaction

Attributes	Coefficient estimates and significance
1. Price/Quality	0,021 n..s.
2. Breath of Product Offer	0,157 **
3. Consultancy	0,174***
4. Training	0,004*
5. Delivery Time	0,175***
6. Post-Sales Services	0,335*

$R^{2=}$ 0.47; Number of Observations 327

**** p < 0.001; *** p < 0.01; ** p < 0.05; * p < 0.10; n.s.=not significant

Excepts for price/quality ratio, all the other attributes show a significant impact on customer satisfaction, although in some cases – specifically, for training and post-sales services - the strength of the impact is very low. The lost of significance and the huge decrease in the magnitude of the impact that comes up by using linear estimations provide the first cues about the weaknesses of linear estimation models in assessing the key drivers of customer satisfactions.

Table 3. Mean of performance, explicit and implicit importance ratings per each attribute

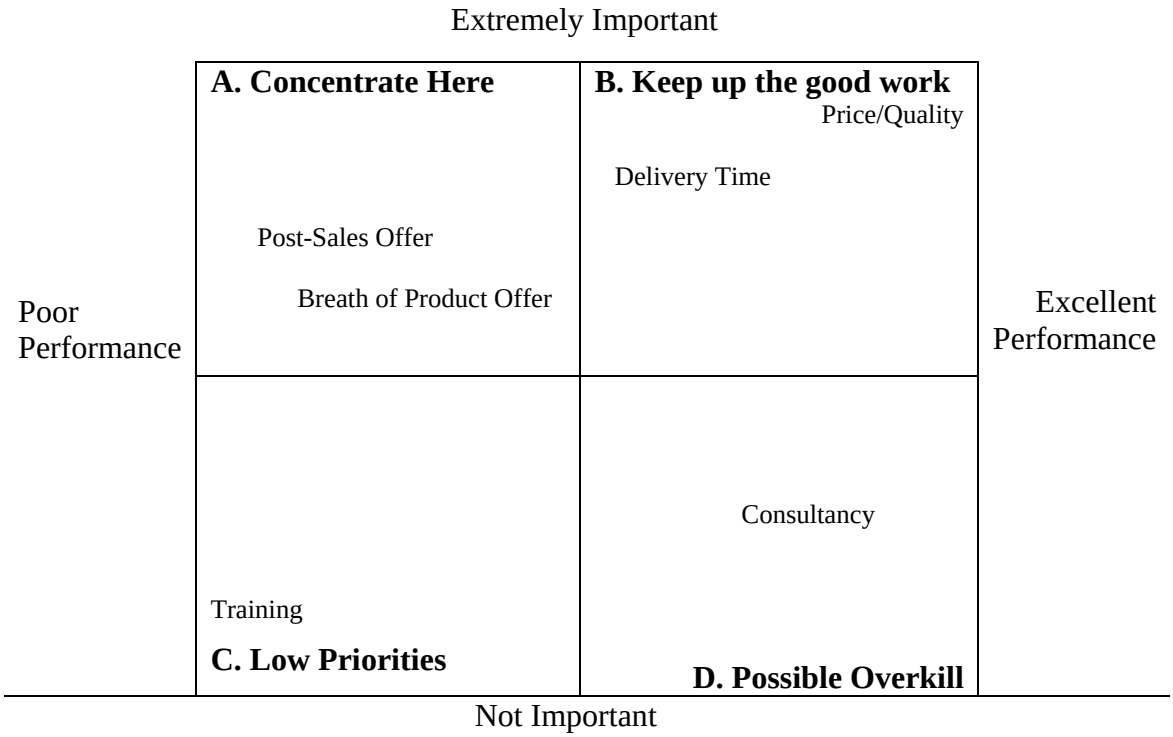
Attributes	Mean of performance	Mean of explicit importance	Mean of implicit importance [(a)]
1. Price/Quality	6,127	5,824	0,021 n..s.
2. Breath of Product Offer	3,004	5,224	0,157 **
3. Consultancy	5,640	4,242	0,174***
4. Training	2,624	3,642	0,004*
5. Delivery Time	4,228	5,762	0,175***
6. Post-Sales Services	3,249	5,448	0,335*
Average values	*4,145*	*5,024*	*0,127*

(a) the column reports the linear regression coefficients from Table 2.

Discussion about the limitations of the Importance-Performance Analysis (IPA)

We use now the values reported in Table 3 to develop the IPA matrix and discuss the implications that traditional key driver analysis would provide. Figure 6 reports the IPA Grid based on the explicit importance.

Figure 6. The explicit importance-based IPA.



Price-quality ratio and delivery time are identified as important and well performing attributes, hence IPA recommends to “keep up with the good work”. Although their importance is correctly identified, relying on these results does not allow to discriminate between the two different nature of these attributes. In fact, price-quality ratio is a basic attribute and the three factor theory reminds us that keep on investing of a well performing, basic attribute does not bear much fruit. Instead, delivery time is an important one-dimensional performance attribute, so that investing further of this attribute may provide proportional improvement of customer satisfaction. Briefly, the measurement procedure suggesting by IPA does not help correctly prioritize customer satisfaction investment amongst different attributes (of different nature), as it cannot discriminate the nature of the satisfaction attributes.

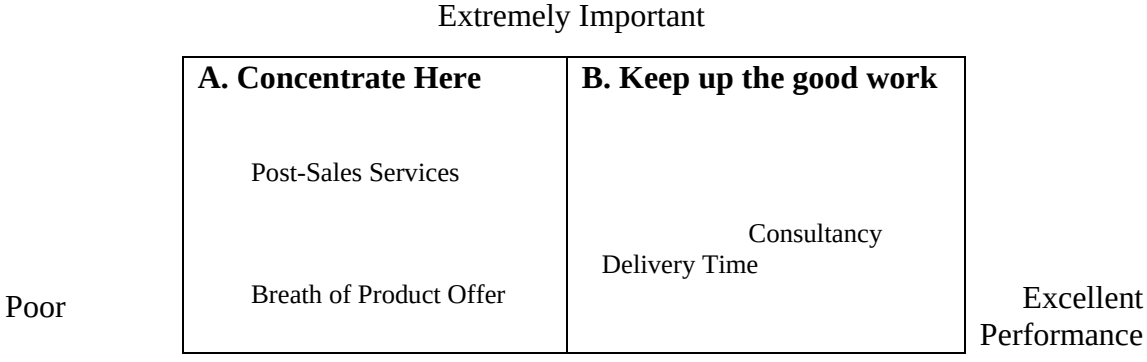
Breath of product offer as well as the post-sales service fall in the high importance-low performing attribute quadrant. Although the IPA grid correctly prescribe to concentrate the customer satisfaction investments on those attributes, it cannot detect the different nature of those attributes, hence the different rates of increase in customer satisfaction that would come up from the same amount of resources invested on each of those attributes. Because of the basic nature of the

breath of product offer, one would expect a more than proportional return on the investments in customer satisfaction on that attribute, instead the one-dimensional nature of post-sales service would make one expect a proportional return on the investments in customer satisfaction on that attribute. Moreover, the basic nature of the breath of product offer reminds us that this attribute is a *must* to operate in the business under investigation, which is not the case for the post-sales service. Again, the IPA grid does not help correctly prioritize customer satisfaction investment amongst different attributes (of different nature), as it cannot discriminate the nature of the satisfaction attributes.

Even more serious are the IPA drawbacks with respect to the exciting factor of satisfaction. Figure 6 shows that both exciting attributes have been assessed as unimportant by the customers. Coupling this information with the performance ratings – positive ratings in case of consultancy and negative ratings in case of training services – leads IPA to recommend to back-off from consultancy and keep on neglecting training services. Yet, we know that because of the unexpected nature of exciting attributes, customers' assessment of the attribute importance ends up underestimating the importance of exciting attributes. As we know that this type of attributes have a role in differentiating one organization's offering from another's and even shifting customers' preferences from one brand to another one, relying on explicit importance may prevent the firms to invest in critical "points of difference" and stand out from the competitors.

Turning the attention to IPA recommendations when the matrix is developed on the basis of implicit importance (Figure 7), other sorts of limitations can be detected.

Figure 7. The implicit importance-based IPA.



Performance		
	Training **C. Low Priorities**	Price-Quality **D. Possible Overkill**

Not Important

The left side of this latest matrix is the same as the left side of the matrix displayed in Figure 6. As such, the limitations of explicit importance-based IPA already discussed with respect to breath of product offer and post-sales service, on one side, and training service, on the other side, also apply in this implicit importance-based IPA: incorrect prioritization of efforts between breath of product offer and post-sales service, on one side, and lost of an important "point of difference" from competitors with respect to training service, on the other side. With respect to the right side of the matrix, in the case of implicit importance-based IPA grid, the importance of consultancy and delivery time are correctly identified, yet, as in the explicit importance-based IPA above discussed, also in this case the procedure fails to identify the different "type of importance" between the two attributes. In fact, while consultancy services are exciting attributes that would guarantee more than proportional returns on investments in customer satisfaction, delivery time is an important one dimensional performance attribute that can guarantee only proportional returns on investments. Moreover, because of their different nature, the two attributes have a different role in shaping the competitive performance of the companies: whereas training services can represent the base of a successful differentiation strategy of a firm, delivery time might be expected to play a weaker role in the competitive strategies of a firm. Again, this procedure does not help to prioritize the customer satisfaction efforts across different dimensions of a company offer. Finally, price-quality ratio turns to be thought of as unimportant. As we know from our IPRA Grid, price-quality ratio is indeed a basic attribute, hence backing off on these two features – as IPA would recommend – might prove disastrous as we would turn these attributes into importance sources of dissatisfaction.

It is worth remarking that whereas IPA based on explicit importance underestimates the exciting attribute importance, IPA based on implicit importance fails to detect the importance of basic attributes when they fall in the positive performance domain and the importance of exciting attributes when they fall in the negative performance domain. To summarize, relying on explicit importance leads the firms to loose the opportunity to identify important "points of difference" to stand out from the competitors (exciting attributes). At the same time, relying on implicit importance leads the company to loose the opportunity to identify important "points of difference" - if these differentiating features have been poorly delivered – and to turn well performing basic attributes into important sources of dissatisfaction.

Discussion about the limitations of the Importance Grid

Some efforts have been already devoted to overcome the limitations of the traditional key driver analysis and provide satisfaction professionals with new techniques aimed to account for the different types of attribute importance (Vavra, 1997). Yet, as already discussed in the theoretical section of this paper, this new suggestion does not prove satisfactory. We now provide further discussion by showing empirically the limitations of these first few attempts to improve customer satisfaction programs. Figure 8 displays the identification of the factor structure of customer satisfaction according to the analytic procedure underlying the Importance Grid. The positioning of the attributes within the matrix is defined on the basis of the implicit and explicit importance shown in Table 3.

Figure 8. The Importance Grid.

Exciting attributes ➢ Consultancy	*One-dimensional performance attributes* (High Importance) Breath of product offer Delivery time Post-sales services
One-dimensional performance attributes) (Low Importance ➢ Traning	*Basic attributes* Price-Quality

The Importance Grid suggests a different factor structure of customer satisfaction than our IPRA Grid had previously defined. Specifically, two differences come up by comparing the results suggested by the Importance Grid with those provided by the IPRA Grid. A first difference refers to the breath of product offer , which is interpreted as important one-dimensional performance attribute in this latest matrix, but that our IPRA Grid had identified as a basic attribute. A second difference refers to training services which now appears as unimportant one-dimensional performance attribute but that our IPRA Grid had identified as exciting attribute. Both methods converge in the identification of the nature of the other attributes. By comparing these latest results with those provided by the IPRA Grid, we can conclude that the Importance Grid works only under the specific circumstances that basic and exciting attributes are fully delivered. Indeed, for poorly performing exciting and basic attributes, the Importance Grid proves to be misleading. In fact, poorly performing exciting attributes (in our case, training) end up to be thought of as low priority features and poorly performing basic attributes (in our case, breath of product offer) fall along with the important one-dimensional performance attributes. By this way, this procedure leads to loose important “points of difference” to invest on to stand out from the competitors (training) as well as lacks to identify important sources of dissatisfaction (breath of product offer). In other words, our results show that the Importance Grid proves to be unreliable as it does not fully and properly account of the importance-performance relationship that affect both basic and exciting attributes. By implicitly assuming well performing attributes as area of investigation, it lacks the information about how the impact of attributes on overall satisfaction differs throughout the whole ranges of values – both negative and positive performance ratings - which actually is a central point to discriminate the different types of importance.

Besides being unreliable, the Importance Grid cannot bear any prescriptive value as it misses to show the performance levels. For example, the delivery time and post-sales services are considered as important one-dimensional performance attributes. This informs about which kind of impact it generates on the overall satisfaction but provides no cues about the level of performance: is kindness a well performing or a poorly performing attribute? obviously, this information is paramount to correctly prioritize efforts across the several features of the service package.

Conclusions and limitations of the study.

While research on customer satisfaction has been addressing the need to account for the non linear and asymmetric relationship between attribute performance and overall satisfaction, the availability of reliable methods that could actually support the customer satisfaction measurement practices are still lacking. The need to account for the non linear and asymmetric relationship between attribute performance and overall satisfaction is a pressing concern. Indeed, keeping satisfaction programs anchored to traditional, linear lenses prevents from identifying the different types of importance of satisfaction drivers as well as leads to "importance bias" and, by consequence, to uncorrectly prioritize the resource allocation to improve attribute performance.

The paper has discussed and shown empirically the danger of traditional – still currently and widely used – key driver methods, as well as the limitations of the first few attempts aimed to provide new methods bound to identify the different types of attribute importance. The paper has then turned to suggest an alternative satisfaction measurement procedure, the IPRA Grid based on regression with dummy variables, a reliable and easily applied methods to identify the nature of customer satisfaction drivers.

Although the IPRA Grid seems a proper response to avoid the "importance bias" that current techniques may lead to, this procedure shows some limitations. As it detects the types of importance by assessing whether and how the impact of attributes varies for different levels of performance, it can get to a correct identification of the factor structure only if a wide enough range of performance

ratings – from negative to positive domains – are provided. If not, a mis-understanding of importance on some attributes may come up also with this method.

Another limitation of the IPRA Grid is related to the evidence of the performance ratings. Although IPRA Grid shows how the impact changes for different performance levels, it does not provide any evidence about where exactly – in which performance value range – each attribute is located. This is a strongly important piece of information to optimize the resource allocation bound to maximize satisfaction. If we go back to our empirical results, price-quality ratio and breath of product offer are both positioned as a basic attribute. Yet, in the process of resource allocation, these attributes deserve a different attention as breath of product offer has been producing a strong dissatisfaction effect (being a poorly performing basic attribute) whereas price/quality ratio has been simply maintaining the satisfaction level (being highly performing basic attributes). The same limitations come up with respect to the exciting attributes. Our results show that both consultancy and training services are exciting attributes. Yet, training is still a low performing attribute whereas consultancy has already shown good performance ratings on average. This distinction in the performance ratings provides useful information about how to distribute resources within the exciting category of attributes. By neglecting to report the performance ratings, the IPRA Grid misses to provide valuable cues for a more effective prioritization of efforts to improve customer satisfaction. This limitation can be faced by carrying out a two step procedure. First, apply the IPRA Grid to identify the factor structure of customer satisfaction. Then, within each distinct factor, measure the average level of performance and make more finer-grained distinction while defining the priority setting.

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