

Importance-Performance Analysis (IPA): Some Methodological Issues

Dr C. Madhavaiah, P. Akthar Sulthana, Tirupati, Irfan Bashir, Syed Irfan Shafi

Abstract

Importance-performance analysis (IPA) is a simple marketing tool commonly used to identify the main strengths and weaknesses of a value proposition. Traditionally, importance-performance analysis is a simple and effective technique that can assist practitioners in identifying improvement priorities for service attributes. However, many issues still exist and are worthy of discussion. The purpose of this paper is to review various service quality measurement models in general and the various methodological issues pertaining to the use of importance-performance analysis in measuring service quality, in particular. In this process, latest developments in the application of IPA in various service contexts has been reviewed and discussed in detail. The review of these issues will assist the future researchers of IPA to get some insights into the use of the tool in various service/strategy contexts.

Key words: *Service quality, SERVQUAL, importance-performance analysis (IPA).*

INTRODUCTION

Measuring and managing service quality has been increasingly identified as a key factor in differentiating services and building a competitive advantage for the service firm. The process by which customers evaluate a purchase, thereby determining satisfaction and likelihood of repurchase, is important to all marketers but especially to services marketers because, unlike their manufacturing counterparts, they have fewer objective measures of quality by which to judge their production (Zeithaml, Berry, and Parasuraman 1988). The issue of measuring service quality has received increasing attention in recent years in all the service organisations.

But, measurement of service quality has become a major issue for all the researchers. First research roots can be found in this direction, three decades ago, when Parasuraman et al., (1985, 1988) had proposed

service quality model which was criticised by later researchers. Thereafter, many researchers came up with numerous models for measuring service quality. Later on researchers have focused to measure the quality of specific service in the context. Despite all these debates, one popular measure which was developed in the year 1977 by Martilla and Jose, called Importance-Performance Analysis (IPA), to identify the success attributes for any service or product, has been considered as superior by some researchers. Compared to previous models and later models, this IPA is very simple to understand and apply.

Since its development, the IPA has been used by many researchers for measuring the service quality and numerous research works were published on the use of this method. This method is also not free from the criticism on the intellectual platform. Despite all these issues, IPA has emerged as a superior technique for measuring service quality in specific service context. In this context, present research is proposed to discuss the various methodological issues underlying the application of IPA in various services contexts in measuring service quality.

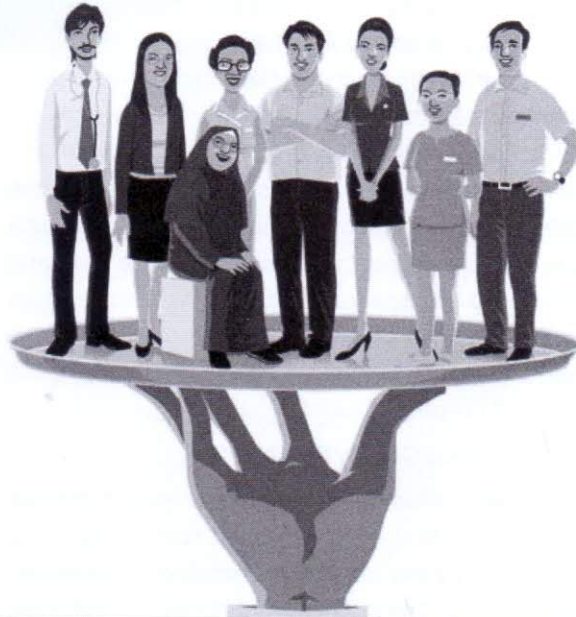
Determinants of the Service Quality

Service quality is the outcome of evaluations made by the customers. The general logic is obvious, since the customer's own evaluation influences his future behaviour such as repurchase behaviour or positive accounts to relatives (Zeithaml et al., 1990; Grönroos, 1984). This fact indicates that service companies cannot solely deliver service according to internal standards which might not match the customers' expectations. Moreover, most service quality writers, belonging to one of the two prevalent schools of thought, agree that the customers evaluate service quality by the outcome of a comparison between their expectations of the service performance and their perception of the actual service received.

This is consistent with Garvin's definition on value-based quality (Garvin, 1988), and the condition can also be seen in Grönroos's definition of service quality:

"...the perceived quality of a service will be the outcome of an evaluation process where consumers compare expectations with the service they perceive they have got" (Grönroos, 1983)

Furthermore, Zeithaml et al. (1990) support that service quality is evaluated by comparing customer expectations with customer perceptions of the service delivered:



"Perceived service quality is a form of attitude, related to but not equivalent to satisfaction, and results from a comparison of expectations with perceptions of service performance". (Zeithaml et al., 1990)

Zeithaml et al., state that service quality is a form of attitude, meaning that customers can have a perception of a specific service even though they have never used it before. Further, it indicates that service quality is an overall perception that is not transaction specific. Although a single interaction between customer and the service provider influence the service quality, service quality is not based on one specific interaction but merely is a compound of several exchanges. This means service quality is evaluated by the customers who compare the expectations of the service with the perceived service performance experienced in a given service process. Service quality can thus be considered as a form of attitude and consequently an overall perception made up by several transactions.

Models for Measuring Service Quality

The intense debate on how to conceptualize quality in services has resulted in a plethora of techniques for assessing service quality. Several authors have attempted to construct different conceptual models. Among the authors are Becker and Wellins (1990), Cronin and Taylor (1992), Grönroos (1988), Rust and Oliver (1994) and Zeithaml et al., (1990). Nonetheless, as a result of the distinction between the Nordic school and the American school, two prevalent models for service quality measurement have pioneered the area and dominated the research field within various services contexts. In the following, the two models will be introduced and discussed in regard to the specific research purpose at hand.

The Grönroos Quality Model

Being the common pioneer of the Nordic school, Grönroos (1984) has found that two fundamental dimensions have an impact on the experienced service and the derived customer's perceived service quality. These two dimensions are the technical quality dimension and the functional quality dimension as shown in the Figure 1.

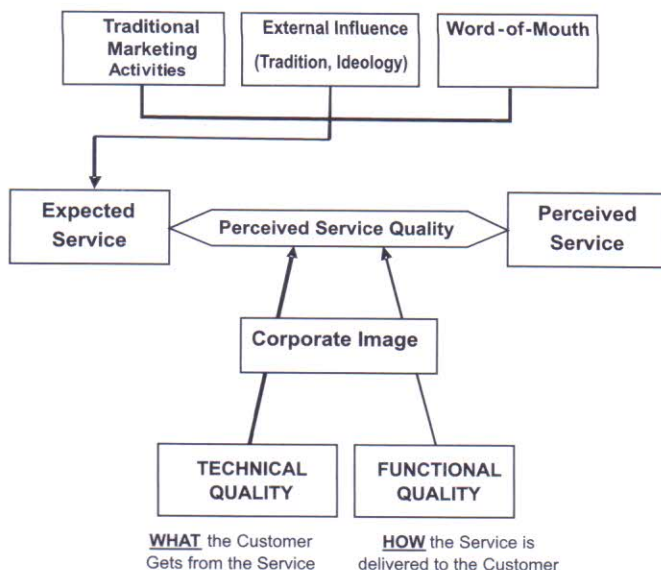
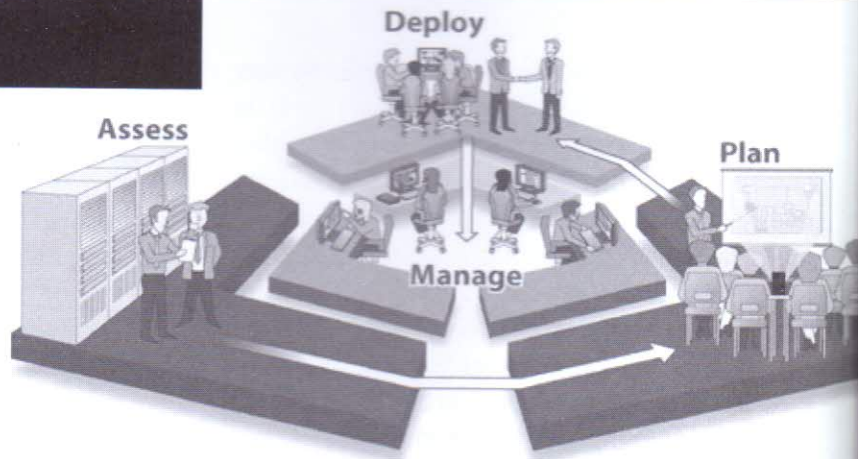


Figure 1: The Nordic Service Quality Model
Source: Grönroos, (1984)



'Technical quality' represents what the customer actually receives from the total service as a result of the process and is further known as the outcome dimension. Services are designed to produce a somehow 'tangible' outcome and therefore customers can think of the quality of services varying according to the outcome received (Grönroos, 1990). Frequently, this measurement can be measured rather objectively by customers because of its nature, being a technical solution to a problem. 'The functional quality' dimension is how the customer receives the service and it concerns the process of delivering the service. The process of delivery is conceived of as the "moment of truth" because it encompasses the pivotal moment in the service experience where the business is truly exposed to the customer through different levels of customer interaction, e.g. human-to-human interaction or technology-to-human interaction (Svensson, 2006). These personal or non-personal interactions will evidently affect the customers' evaluation of the perceived service quality.

Hence, the evaluation is related to the psychological level of performance and could be based on the behaviour of the company's employees, the skills of the employees or the accessibility of the personnel needed in the process. However, no clear elaborative prescriptions to the underlying attributes of the two quality dimensions is stated by Grönroos.

A third dimension identified by Grönroos is the corporate image of the service supplier i.e. the customers' view of the company. The expectations are determined, the factors of image, market

communication, word of mouth and customer needs are found (Gummesson and Grönroos, 1987). Meanwhile, Grönroos is in doubt of the role of the expectations, since the experienced service contribute to perceived service quality itself.

The SERVQUAL Model

In accordance with the more descriptive and standard American approach to service quality, Zeithaml et al. has presented a generic model and measurement system for perceived service quality, which is SERVQUAL. The model is highly acknowledged and much debated, and a vast number of studies are based on the model. The model prior to SERVQUAL is "the gap model" by the same authors. The gap model presents 5 different gaps which a company should avoid. Gap 5, known as the customer gap, represents the specific construct measured upon in the SERVQUAL model.

SERVQUAL is grounded in the earlier writings of the expectancy-disconfirmation theory in which quality is measured from the difference between the expectations (E) and evaluation of the performance (P). The results can be categorized as confirmation or disconfirmation and the outcome is the level of satisfaction (Oliver, 1980; Parasuraman et al., 1985). Meanwhile, the incorporation of disconfirmation theory in the model indicates the close relation between service quality and satisfaction. The generic SERVQUAL model is illustrated in the Figure 2. As a result of several focus group interviews in 4 different service sectors, ten dimensions of service quality were produced. By means of factor analysis the dimensions were later condensed into five dimensions presented in the model. These five dimensions have become dominant within service quality research which are listed and briefly described below.

Tangibles: The appearance of physical facilities, equipment, personnel and communication materials in the service process, such as cleanliness, appearance of staff and appropriate technical equipment for support and entertainment.

Reliability: The ability to perform the promised service dependably and accurately. For example the consistency in meeting promises and the completion of tasks on-time.

Responsiveness: General willingness to help customers and provide prompt service, which refers to the ability of responding to individual customer requirements and showing sincere interest in problem solving.

Assurance: Includes the competence and courtesy of employees and their ability to convey trust and credibility. The dimension would include staff training in competent and courteous charisma among employees and the feeling of safety in the transactions with the customers.

Empathy: Encompasses the access to customers, communication to customers and understanding of customers resulting in paying individualized attention to customers. This is considered a very important element in the in-flight service process and covers the level of individual and personal attention and the understanding of specific customer needs. From figure 2 it can be observed that the five dimensions have an impact on both the expected and the perceived service, where the disconfirmation

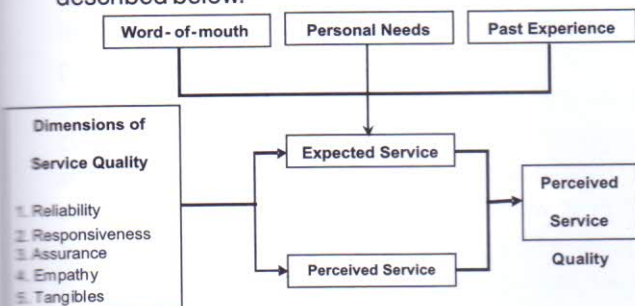


Figure 2: The SERVQUAL Model

(Modified from: Parasuraman et al., (1985) and Parasuraman et al., (1988))



between the two constitute the level of perceived service quality in the given process. The level of expectation is further influenced by the three factors in the uppermost part of the figure. The factors are equivalent to the ones proposed by Grönroos, except from 'image' which is replaced with the notion of 'past experiences'.

CRITICISM OF THE SERVQUAL MODEL

Where the Grönroos model has been criticized for lacking focus on the process perspective i.e. functional quality, SERVQUAL has in contrary been judged upon not incorporating the technical quality or the outcome aspect in the entire service delivery. Hence, it has been accused of neglecting the holistic approach to the management of services.

In operational terms, it has been pointed out that the element of measuring expectations lacks a clear definition. The problem of measuring constructs which are not directly observable and the lack of scale labelling for answers thus make the core of the model unstable (Babakus and Boller, 1992). Further, critics go on and stress that the model lacks a consideration of the relative importance of the dimensions in regard to the given service industry. However, it can be argued that the problems of non-observable measurements and lack of scale labelling can be counteracted by sincere dedication to the construct. With regard to the proceeding integrated research model applied in the project, the questions will be phrased and ordered in an unequivocal and complaisant manner and the measurement scale will be carefully chosen to obtain validity in the deployment of the results.

IMPORTANCE-PERFORMANCE ANALYSIS

Importance-Performance Analysis (IPA) has been considered as an alternative approach for service quality assessment and was developed by Martilla and James (1977). This IPA treats service quality as a function of customers' importance and performance perceptions related to salient service attributes. The method identifies service elements that should be emphasized or de-emphasized and guides the redeployment of resources (Graf et al., 1992; Slack, 1994; Skok et al., 2001). IP analysis has been applied in several services and for several strategies and is summarized in Table 1.

Table 1: Application of Importance-Performance Analysis in Various Service/Strategy Contexts

S. No.	Service/Strategy	Reference
1	Evaluating customer services and marketing strategies	• Martilla and James (1977) • Crompton and Duray (1985) • Sampson and Showalter (1999)
2	Operations strategy	• Slack (1994)
3	IS/IT operations	• O'Neill et al., (2001) • Skok et al., (2001),
4	Human resource management	• Graf et al., (1992)
5	Allocating organizational resources	• Graf et al., (1992) • Slack (1994) • O'Neill et al., (2001).
6	The automotive industry	• Martilla and James (1977)
7	Health clubs	• Skok et al., (2001)
8	Hospitality/tourism	• Weber (2000) • Hudson and Shephard (1998)
9	Banking	• Yeo (2003) • Joseph et al., (1999)
10	Insurance	• Tsoukatos (2008)
1	Education	• Roszkowski (2003) • Joseph and Joseph (1999) • Mostafa (2006)
12	Hotels & Food services	• Sampson and Showalter (1999) • Henry and Ravi (2004) • Qu and Sit (2007) • Wilkins (2010) • Hema Nalini, and Samuel (2011) • Tzeng, and Chang (2011)
13	Online library services	• O'Neill et al., (2001)
14	e-Banking	• Ibrahim et al., (2006)
15	Shipping companies	• Chen et al., (2010)
16	Fitness centers	• Yildiz (2011)
17	Online shopping	• Huang et al., (2009)

For each attribute, customers provide importance and performance scores, usually in identical Likert scales. The analysis then follows two main methodological streams: "gap analysis" and "IP maps". The former, focuses on identifying mismatches, measured by performance-minus-importance scores (Martilla and James, 1977; O'Neill et al., 2001; Skok et al., 2001), the size and sign of which reveal the existence of performance gaps, with positive and negative signs indicating over and under performance respectively. Gap analysis is based on the adequacy-importance

model recommended by Cronin and Taylor (1992) and is often used as an alternative to SERVQUAL's performance-expectation model (Parasuraman et al., 1988).

There are numerous debates on the theoretical and empirical merits of gap analysis. Bacon (2003) rejects its value on a number of accounts. He claims that importance-performance gaps do not appear in classical gap analysis studies (Parasuraman et al., 1985; 1988), that importance and performance are different constructs and the meaning of performance-minus-importance scores is not well-defined. He concludes that, as a consequence, the method is worth only as a "rule of thumb". However, Bacon (2003) fails to provide adequate evidence to support his claims.

The mere fact that importance-performance gaps were not discussed by Parasuraman et al. (1985; 1988) cannot be enough to condemn the method. On the other hand, following Ryan's (1999) proposal that importance and performance are desired and tolerated outcomes respectively, Shaw et al. (2002) consider importance-performance gaps as better indicators, than expectation-performance gaps, of the contrast between what a service ought to be and what it is. They propose that customers' service expectations have built in some actual prior experiences regarding the service industry and/or the specific provider. Negative prior experiences lead to lower expectations that may, in turn, lead to falsely small gaps.

Shaw et al. (2002) consider importance as a better indicator of the ideal service and performance-minus-importance gaps as precise measures of service performance. They argue that if a specific service attribute is very important and performance is very weak then a large gap is an accurate portrait; if negative prior experience has reduced current expectation, the gap shrinks

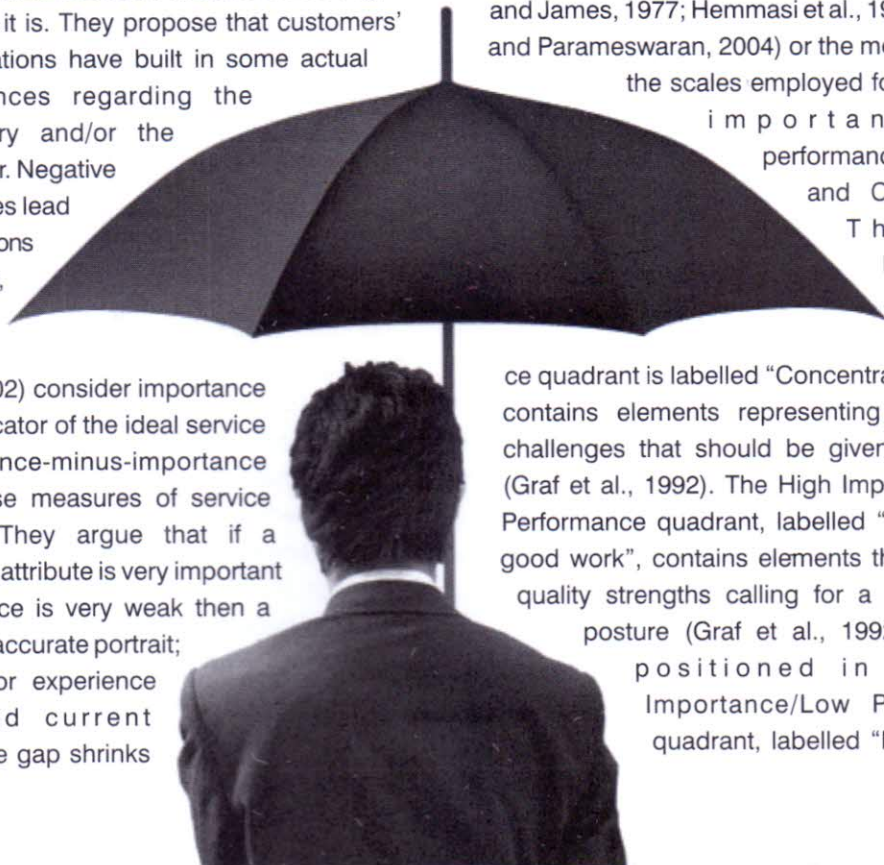
thus providing false information. In empirical research, importance and expectation are often used interchangeably in measuring service quality (e.g. Chon et al., 1991; Evans and Chon, 1989; Hollenhorst et al., 1992; Ennew et al., 1993). Oh (2001) attributes this confusion to the resemblance of gap analysis to other popular research models, such as the expectancy-value theory (Fishbein and Ajzen, 1975) and SERVQUAL (Parasuraman et al., 1988) that involve similar concepts. In short, the conclusion that importance-performance gaps analysis is rigorously grounded and can be appropriately used (Shaw et al., 2002) seems to have prevailed in the literature and the method is widely used (e.g. Shaw et al., 2002; Magal and Levenburg, 2005; Ibrahim et al., 2006).

The IP maps approach plots mean importance and performance ratings of salient service attributes on a two-dimensional grid. A four-quadrant matrix (see Figure 3), identifying areas needing improvement and areas of effective performance, is produced by dividing the horizontal and vertical dimensions into "high" and "low" sections using either the grand means of observed importance and performance ratings (Martilla and James, 1977; Hemmasi et al., 1994; Aigbedo and Parameswaran, 2004) or the mean values of the scales employed for measuring

importance and performance (e.g. Evans and Chon, 1989).

The High Importance/
Low Performance

quadrant is labelled "Concentrate here" and contains elements representing key quality challenges that should be given top priority (Graf et al., 1992). The High Importance/High Performance quadrant, labelled "Keep up the good work", contains elements that represent quality strengths calling for a maintenance posture (Graf et al., 1992). Elements positioned in the Low Importance/Low Performance quadrant, labelled "Low priority",





The graphic features a white cloud-like shape with a black outline, containing the text 'Corporate Culture' in a bold, black, sans-serif font. The background is a grayscale image of a modern office interior with large windows and silhouettes of people working at desks and in conversation.

Corporate Culture

do not require immediate attention and may be candidates for discontinuation of resources (Crompton and Duray, 1985). Finally, the Low Importance/High Performance quadrant, labelled "Possible overkill" contains elements that, although insignificant, are over-resourced suggesting that quality resources could be diverted elsewhere.

Quadrant A: Attributes that fall within this quadrant are perceived to be very important by customers. However, the performance levels are seen as below average and the service provider falls short of customers' expectations. This implies that improvement efforts should be concentrated here to reach a satisfactory level.

Quadrant B: Attributes situated in this quadrant are of great importance to the customers, and in this case the service provider has at least achieved an acceptable level of satisfaction. The possible paths of action include exploring the possibilities to further delight the customers or at least remain at status quo.

Quadrant C: Customers are generally unsatisfied with the performance of the service attributes falling within this quadrant. Luckily, customers also place little emphasis on these attributes and solely consider the attribute as less important. Therefore, limited resources should be used on the elements in this quadrant because of the low importance-level among customers. Nonetheless, the service provider should not entirely neglect the improvement of these attributes.

Quadrant D: This cell is referred to as the possible overkill quadrant, because service providers can be said to over-perform for customers in terms of the attributes that falls here. The customers are satisfied with the performance on these attributes but do not put vast emphasis on them. In other words, present efforts on the elements in this cell are over-utilized and managers should consider allocating resources elsewhere. Evidently, the IPA framework is a valuable tool in helping service providers assess the quality of their efforts in satisfying customers.

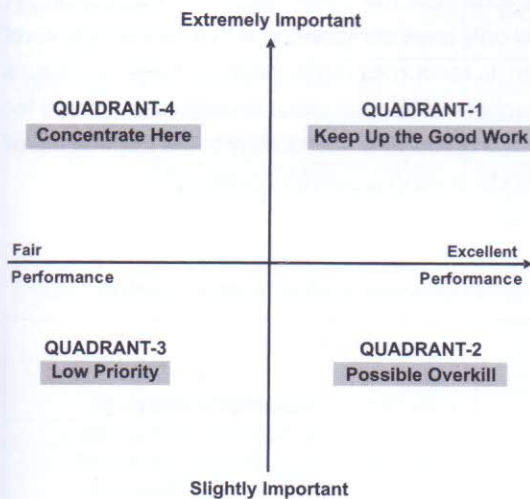


Figure 3 : Importance-Performance Grid with Four Quadrants
 (Source: Martilla, J.A., and James, J.C. (1977), "Importance Performance Analysis",

An extension of the IP map approach is the iso-rating or iso-priority line, an upward 45-degree line from the grid's origin, on which importance equals performance. The area above the line is that of quality challenges where the larger the distance from the line the greater the priority (Skok et al., 2001). IP maps are valuable decision-making tools for providing quality services in areas perceived to be the most critical to customers; and monitoring service providers' performance in keeping up with their customers' changing needs and preferences.

Scale Approach to Importance-Performance Analysis

The IPA-technique is used to construct service attribute evaluation maps in a simple and intuitive manner. However, the location of the cross-point that divides the matrix into quadrants is critical since it determines the interpretation of the results. Until now, three different scaling approaches have been presented by researchers, but it is unclear which of the following approaches that results in a more accurate classification of the attributes (Leong, 2008; Bacon, 2003).

Martilla and James (1977) who developed the original framework used scale-mean as the axes intersection point between importance (Y) and performance (X), when plotting each of the attributes into the IPA matrix. For example, on a 7-point scale,

the value 4 will be the intersection point between the axes. This approach is known as the 'scale-centered approach'. Subsequent researchers introduced two additional approaches to plotting data into the IPA model. The 'data-centered approach' used data means the intersection points between the X and Y axes to form the grid. This was found appropriate



when the mean values of the data were close, in order to scatter the plots and obtain a more accurate classification for interpretation (Leong, 2008). The third approach used the median value of the mean scores as the intersection point of the importance (X) and performance (Y) axes.

Review of the Literature on the Application of Importance-Performance Analysis

IPA technique has been applied in various service contexts and is summarised in the Table 2. All the methodological issues are clearly shown in the Table.

CONCLUSION

The traditional IPA model has been regarded as the effective analytic technique for resources distribution. However, related researches showed that due to the limitation in basic assumptions of setting the traditional IPA model to carry out the strategic analysis, it caused lower validity of practical application to lead to misunderstanding results.

Therefore, this article takes the understanding of the methodological issues related to IPA model further. Thus, from the viewpoint of a service quality gap model, these aforementioned service items should be enhanced and improved; and, as a result, making the gap analysis respond further to the traditional IPA model will be a major contribution to the practical

application. On the other hand, the traditional IPA model only uses comparison with total average level to plan its resources reallocation strategy. So, future researchers of IPA can focus on these issues and for developing sound methodology in the application of IPA model in various service contexts.

Table 2: Summary of the Literature Review on the Application of Importance-Performance Analysis in various services

Author & Year	Purpose	Instrument	Data collection & Sampling	Results
Aigbedo and Parameswaran (2004)	To demonstrate the use of the importance-performance analysis framework to assist management of a campus food service organization to improve its services. To study the relative effects of implicit and explicit weighing methods on importance ranking as well as the grid-classification of service quality attributes.	DINESERV	298 students who are the customers of campus food services	<ul style="list-style-type: none"> The study contributed to the literature by proposing suitable metrics for assessing the congruence in results obtained from different weighting techniques under the importance-performance framework for analyzing service quality. Highlighted many important areas where extensions can be made to the research results presented here.
Chen et al., (2010)	To provide an alternative approach in importance-performance analysis (IPA) for improving service performance.	Service Performance Index (SPI) and Service Improvement Score (SIS)	210 customers of international container shipping company	<ul style="list-style-type: none"> The company only delivers 75% service quality desired by the customers, and that the service ability of the front-line employees of this company should be the first priority needed to be improved. The differences between the proposed model and the methods in the extant literature will provide managers and researchers further insights for the study of IPA.
Yildiz (2011)	To propose the SQS-FC (Service Quality Scale for Fitness Centers) scale for fitness centers and examine its effectiveness using importance-performance analysis (IPA).	Service Quality Scale for Fitness Centers	246 customers of a private commercial fitness center	<ul style="list-style-type: none"> The results revealed four factors for the SQS-FC scale including personnel, physical environment, supporting services, and program. Showed the applicability of IPA in evaluating service quality for fitness centers. Findings indicate that the most important factors for fitness center customers are programs, personnel and physical environment. Furthermore, results show that there is a perceived quality deficit in physical environment while quality surplus in supporting services dimension.
Tsoukatos (2008)	To demonstrate the potential of importance-performance (IP) analysis as a decision-making tool for service management, employing IP analysis to assess the performance of Greek insurance in delivering quality services.	SERVQUAL suitably modified for insurance sector	Data were collected in a two-stage survey, where respondents were asked to provide importance and performance scores, in identical seven-point Likert scales for the 25 service attributes. Convenience sampling was employed.	<ul style="list-style-type: none"> The value of importance-performance analysis as a tool for managerial decision making in services was reaffirmed. The method can be employed in assessing the efficacy of allocating service quality resources in accordance with customer requirements.

Author & Year	Purpose	Instrument	Data collection & Sampling	Results
Joseph and Joseph (1999)	To measure the customers perception of service quality in higher education using importance-performance analysis as an alternative to SERVQUAL method.	The instrument was developed based on the Importance-Performance paradigm	280 New Zealand employers and 1000 business graduates	<ul style="list-style-type: none"> Employers and students have perceptual problems with the level of service provided by tertiary institutions
Qu and Sit (2007)	To investigate Hong Kong hotel service quality levels to assist Hong Kong hoteliers in formulating customized strategies to enhance their ability to extend the promised service to visitors.	Survey instrument was developed based on the review of past literature.	300 international visitors who stayed at one of the hotels in Hong Kong	<ul style="list-style-type: none"> Six underlying hotel service quality dimensions were identified and four of them were important influential factors in determining international visitors' overall satisfaction levels as well as their likelihood of returning to the same hotels
Wilkins (2010)	To evaluate the service quality using importance-performance analysis. To evaluate the effect of demographics on factors customers consider important for hotel selection	Survey instrument was developed based on the review of past literature.	664 first class and luxury hotel customers	<ul style="list-style-type: none"> This research highlighted several important issues for hotel managers and developers. Although there are many specific aspects of the research that are of importance for the industry, there are three particular elements that are noteworthy
Huang et al., (2009)	To evaluate logistics service quality in online shopping among retailing delivery using importance-performance analysis	Survey instrument was developed based on the review of past literature.	147 customers of 45 e-retailing firms which use the retailing delivery service for their online customers.	<ul style="list-style-type: none"> According to SEM analysis in this study, the logistics service quality has positive effects on loyalty. Furthermore, logistics service quality not only direct by affects loyalty but also indirect by affect loyalty by satisfaction.
Hema Nalini, and Samuel (2011)	To explore and identify the importance of various service attributes of customers for different restaurant service dimensions through importance-performance analysis.	Seven dimensions of SERVQUAL scaling given by Rooma (2007) are taken as base measuring attributes.	302 restaurant customers in Trichy, India using convenience sampling.	<ul style="list-style-type: none"> Importance-performance matrix was constructed and all the 56 items of the instrument have found place in all the four quadrants of the matrix. Attributes for which improvement has been required are discussed in detail
Tzeng, and Chang (2011)	To identify both the importance and performance of restaurant service quality in the Taiwan food service industry.	SERVQUAL, Improvement factor (IF) and IPA model.	154 restaurant customers of top 10 restaurants in Taiwan	<ul style="list-style-type: none"> In addition to improvement factors of SERVQUAL, the other improvement factors of IF also need to be taken into consideration in the service quality improvement ranking. All three methods (SERVQUAL, IF and IPA) are able to explain significant amount of service quality.
Hudson and Shephard (1998)	To identify and evaluate the attributes (features and services) of a ski resort in Switzerland	Focus groups and in-depth interviews were used to develop a list of attributes that both customers and service providers believe to be of importance.	A sample of 151 skiers randomly chosen throughout the season	<ul style="list-style-type: none"> IPA provides a useful technique for evaluating service attributes in relation to skiing destinations

Author & Year	Purpose	Instrument	Data collection & Sampling	Results
Mostafa (2006)	To compare SERVQUAL and I-P Analysis in measuring and improving education service quality within an Arab, non-Western context	Arabic version of SERVQUAL instrument was distributed during classes. Importance-performance (I-P) analysis distributed the SERVQUAL's 22 items among the grid's four	508 students from four private universities in Egypt	<ul style="list-style-type: none"> The results highlighted a three-factor solution with 79 per cent of variance explained. This result does not support the 5 components of original SERVQUAL. The results of I-P analysis revealed that 9 attributes are located in quadrant I (concentrate here), 2 in quadrant II (keep up the good work), 8 in quadrant III (lower priority), and 3 attributes in quadrant IV (possible overkill). This study has provided some insights into the factors associated with service quality in higher education within an Arab, non-Western context.
Yang et al., (2011)	To apply importance-performance analysis (IPA) approach to empirically study the SQ of mobile application stores in Taiwan based upon the customers' perspective.	Thirty-six service quality attributes based on the review of literature.	A total of 152 questionnaires were distributed, and 133 effective samples were returned.	<ul style="list-style-type: none"> 12 attributes of 'concentrate here' quadrant, 11 attributes of 'low priority' quadrant, 9 attributes of 'keep up the good work' quadrant, and 4 attributes of 'possible overkill' quadrant 4 are plotted in a two dimensional IP matrix, respectively.
Joseph et al., (1999)	To investigate the role that technology plays in Australian banking and its impact on the delivery of perceived service quality using the importance-performance analysis.	Hemmasi et al. (1992) importance-performance grid	A sample of 440 electronic banking customers was taken and 300 useable questionnaires were analysed.	<ul style="list-style-type: none"> The analysis from the gap scores and the Importance-Performance grid displays a perceptual problem when the sample indicates poor performance of electronic banking facilities compared with an ideal banking service. The Importance-Performance grid suggests that banks providing electronic banking need to concentrate their efforts in several areas:

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