Malaysian graduates' employability skills enhancement: an application of the importance performance analysis

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Abstract: In an era of globalisation and competitiveness, employers are looking for versatile graduates who are able to drive their organisations to compete successfully in the market place. Now-a-days, obtaining a good degree is no longer sufficient to get a job. Graduates should equip themselves, not only with technical skills, but more importantly, with soft skills. The main objectives of this study are to identify Malaysian graduates' employability skills, to identify the priority of each skill and to highlight the gap between the importance of graduates' employability skills to employers and their level of satisfaction on those skills. In general, the results of the gap analysis showed that employers perceive graduates' employability skills performance as being lower than the importance assigned to those skills. The widest gap was found in communication skills, especially the skill of the English language usage. Using the importance-performance analysis (IPA), 13 attributes fell into the improvement quadrant.

Keywords: employability skills; IPA; importance-performance analysis; job matching theory; higher education; Malaysia.

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1 Introduction

The rapid growth in the number of higher education institutions (HEIs) in Malaysia is aligned with the government's aspiration to prepare a skilled and professional workforce, to achieve the status of a developed nation by the year 2020. Presently, there are 20 full-fledged public universities and 48 private universities in Malaysia. In a challenging economy, the role of HEIs is not only to prepare graduates with specific areas of specialisation, but more importantly, to develop graduate employability skills that are most demanding in the 21st Century (Lee and Tan, 2003).

If the increasing number of graduates is not aligned with the number of jobs created, this could contribute to a serious unemployment problem in the country. According to Wong (2011), the number of jobless graduates in Malaysia (in 2009) was as many as 60,000. Several factors have been identified that have led to an increasing number of unemployed graduates. First, the supply of graduates from HEIs exceeded the number of job vacancies in the workforce market. This situation created an imbalance between workforce supply and demand. As a result, some graduate employees only managed to get jobs that were below their qualifications and others fail to find work at all (Salina et al., 2011). Another factor that contributes to the unemployment of graduates is

the lack of their employability skills. Employers complain about the lack of graduates' skills to carry out a job effectively. According to Rahmah et al. (2011), graduates are found to be lacking in employability skills, and have low performance in the work place. Zabeda (2009) revealed that job vacancies for graduates do exist, but employers found that candidates were not equipped with the relevant skills and knowledge needed by their companies. This finding was also supported by Shukran et al. (2006), who revealed that students lack the relevant skills, abilities, knowledge and other characteristics, required by the employers. Salina et al. (2011) revealed that as many as 30,000 graduates only managed to get casual or temporary work that was below their qualifications, mainly because of their lack of proficiency in using English language.

This study attempts to identify a list of employability skills, and to examine the importance of these skills from the perspective of employers, their satisfaction level on those skills and the gap between employers' assigned importance and satisfaction on a skill.

2 Literature review

Over the past few decades, employers' needs and job requirements in the work environment have changed dramatically. In a challenging economic condition, new graduates are not only required to possess knowledge of an academic subject, but they must also be equipped with the relevant soft skills that will enhance their competency to join the job market (Zubaidah and Rugayah, 2008). A study to determine the types of graduates' soft skills required by employers that are essential, and to provide details about the relevancy of soft skill development programmes. Most studies found in literature, showed that the highest ranking of employability skills from an employer's perspective was communication skills (Azian and Mun, 2011; Rahmah et al., 2011; Rasul et al., 2010; Zubaidah and Rugayah, 2008). This was supported by Billing (2003), who stated that the importance of communication skills amongst graduates also existed in the UK, the USA, New Zealand, Australia and South Africa.

According to Azian and Mun (2011), a survey conducted by the Malaysian Employers Federation showed that 68% of employers named communication skills as being the most needed skill in a job application. This was followed by work experience (67%), interpersonal skills (56.2%), passion and commitment (55.7%), being a team player (47.8%), having the right degree (46.3%), good academic results (37.9%), a desire to learn (37.9%), can work well under pressure (34.0%) and is able to take initiatives (32.5%).

Meanwhile, Zubaidah and Rugayah (2008) examined the attributes of non-technical skills required by foreign and local companies in Malaysia's manufacturing industries. They identified seven important non-technical skills from an employer's point of view, namely communication, creative thinking and problem-solving, information management, leadership and organisation, group effectiveness and teamwork, work-related disposition and attitudes, and personal traits and self-management. Under the communication skill's category, they found that English was the most important language used by both local and foreign companies. However, Bahasa Melayu was only found to be important within local companies. Meanwhile, in the creative thinking and problem solving category, both local and foreign companies placed importance on problem-solving, the ability to prioritise assignments and tasks, critical thinking through

observation and effective questioning. Furthermore, on computer skills, both foreign and local companies were looking for graduates who were able to analyse information, to make better decisions. They also found that teamwork commitment, group cooperation and leading and managing groups, were most important. Foreign and local companies also placed significant importance on job commitment.

Munir et al. (2005) listed the skills and abilities required by graduates in the arts and related fields (i.e., Humanities, Social Sciences, Communication, Management and Information Technology) by Malaysian employers. Their study showed that the order of the list reflected the importance of each attribute from the employers' point of view. This indicates that the ranking of competencies of potential graduates, as needed by employers, is as follows: management skills, personal qualities, communication skills, interpersonal skills, thinking skills and ICT skills. However, they also found that the ranking of competency skills and abilities of graduates varied according to the type of firm. For example, industry-related firms placed high weight age on personal qualities (i.e., helpful, knowledgeable, skilful, obedient and compliant); and service-related firms placed considerable emphasis on management skills (i.e., able to delegate work, positive expectations and comments towards others' potentials).

Furthermore, Zulaikha et al. (2005) examined employers' perceptions of Bachelor of Information Technology alumni, from the Faculty of Information Technology, Universiti Utara Malaysia. From their literature review, they devised a competency list consisting of 56 elements, concentrating on various performance and soft skills. In their study, they identified graduate competency gaps, based on the differences between employers' rated importance levels and competency levels. They found that the top three gaps were non-verbal interpersonal skills, verbal presentation skills and written interpersonal skills. They also realised that most of the elements with wide gaps were the soft skills related to effective communication and teamwork.

Salina et al. (2011) applied importance-performance analysis (IPA) to identify the gap between importance of employability skills and performance of business school graduates. They found that factors such as soft skills and personality development should be emphasised in the future. Meanwhile, factors such as explicit knowledge, hard skills, intellectual abilities, conscientiousness and emotional stability, needed to be maintained.

In another study, Rasul et al. (2010) developed an employability skills assessment tool, for technical graduates in the manufacturing industry, using the Kepner–Tregeo (K–T) method. They found that the highest-ranked employability skill was interpersonal skills, which includes working in a team, negotiation and working with cultural diversity. These are followed by employability skills, such as thinking skills, resource skills, personal qualities/values, system and technology skills, basic skills and information skills. Using this tool, graduate employability levels can be measured before joining a workforce.

According to Shukran et al. (2006), employers' expectations of graduate's skills and abilities go beyond the mastery of academic subjects. Other factors exist, outside the academic curriculum, that graduates need to prepare before they join the employment market. These include involvement in co-curricular activities, training and development programmes and other activities that can enhance a graduates' competence. Also, apart from providing students with technical knowledge, universities should also engage in an effort to equip students with soft skills that are required by the employers.

3 Job matching theory

The underpinning theory that governs the theoretical framework of this study is the job matching theory. The objective of the matching theory is to examine the employer–employee matching process in the labour market (Jovanovic, 1979; Simon and Warner, 1992). According to this theory, jobseekers and employers enter into matches when they estimate positive benefits. Matching between employers and employees in the labour market is a process in which job seekers and employers with job vacancies strive to find appropriate matches. The process of matching depends on several exogenous factors, such as skill and spatial mismatch, costs that occur in information searching and forgone income in case of prolonged duration of information searching (Münich and Svejnar, 2009). According to Coles and Smith (1998), the mismatch between job seekers and employers may be due to imprecise information, resulting in loss of time and costs incurred to search for information to obtain better matches. Costs incurred during the matching process cause matches to be made that are not necessarily optimal. Also, criteria included in matching are not limited to observable attributes, such as employee skills, employer job requirements and selection processes and also some unobservable attributes (Vissa, 2011).

Job matching theory emphasises the imperfection of information provided by observable criteria, such as work experience, qualifications (Simon and Warner, 1992), grades and letters of recommendation (Barron et al., 1989). According to Simon and Warner (1992), employers face uncertainty about job seekers' abilities and also the suitability of candidates to the organisation. To counteract the uncertainty, information regarding a candidate's background needs to be obtained prior to hiring. Information from third parties, such as friends, colleagues and ex-employers, are valuable to employers. According to Simon and Warner (1992), it is easier and cheaper to obtain information about candidates with contacts inside the company than for the candidates who are totally strangers.

According to the job matching theory, the mismatch between employability skills required in employment and the skills possessed by the graduates has a serious impact on productivity, wages and chances of getting a job (Rahmah et al., 2011). According to Mason et al. (2009), the mismatch between the employability skills of graduates and the employer requirements may arise from a number of factors. First, imperfect information regarding a graduate's skills affects the employers in terms of time and searching costs (Coles and Smith, 1998). The second factor is the role of the institutional and labour market rigidities (Mason et al., 2009). According to Allen and Velden (2001), the main criterion used by employers in screening job applicants is educational qualifications. Other criteria, such as working experience, gender and social background, were distributed unevenly amongst educational categories, because the importance of the factors to individual employers differs. Mason et al. (2009) explain that employees with equivalent academic qualifications have different degrees of success in securing employment. Rahmah et al. (2001) reveals that the match between a graduate's degree of specialisation and the requirement for that specialisation in a job is also significant.

4 Importance-performance analysis

IPA was introduced by Martilla and James in the 1970s to improve marketing strategy. Later, it was widely used to measure customer satisfaction and service quality (Ainin and Hisham, 2008; Siniscalchi et al., 2008). It has been used in various areas of research, including information systems (Ainin and Hisham, 2008), education (Siniscalchi et al., 2008) and sports (Rial et al., 2008). As an evaluation tool, IPA graphically depicts the comparison of importance and performance of service quality attributes. The basic concept of the IPA method is to examine the importance of an attribute, and customer's satisfaction with that attribute. According to Rial et al. (2008), the main advantage of the IPA technique is its ease of application. There are three steps in IPA, which are as follows (Hendricks et al., 2004):

- identify a list of attributes to evaluate
- rate these attributes in terms of how important they are to customers and how well an organisation performs on them
- plot the importance-performance rating on a two-dimensional grid.

Graphically, importance and performance data are plotted on a pair of coordinate axes, where 'importance' is displayed along the *Y*-axis and 'performance' is displayed along the *X*-axis. Then, the data are mapped into four quadrants (Martilla and James, 1977), as shown in Figure 1. Each quadrant shows the rating of importance and performance of an element of the service assigned by customers.

Quadrant I: Represents the attributes that are perceived to be important by the respondents, but whose performance levels are low. This suggests that improvement efforts should be given top priority and corrective action must be taken to improve overall satisfaction.

Quadrant II: Represents the attributes that are perceived by the users as high, both in importance and performance. This indicates that the performance of the existing system is already good and should continue.

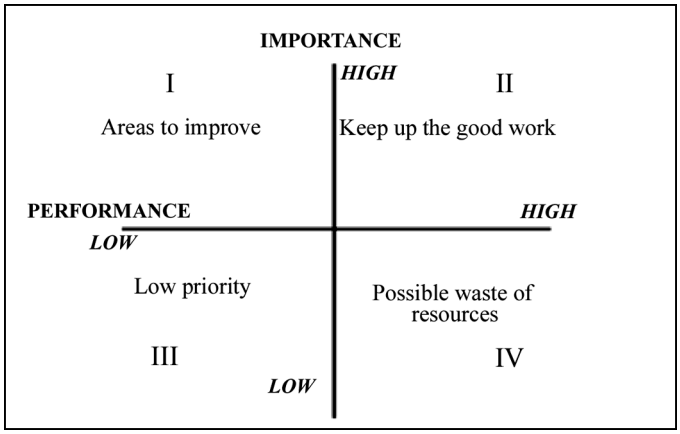
Quadrant III: Represents the attributes that are perceived low in performance, and at the same time, these attributes are not perceived as important. Even if the performance of the organisation is perceived as low, the management should not overly concentrate, since these attributes are not perceived as very important. Limited resources should be spent on these low priority attributes.

Quadrant IV: Represents the attributes that are perceived as low in importance, but high in performance. This indicates that the management should realise that the present effort on these attributes is unnecessary and might consider reallocating the resources elsewhere.

IPA helps organisations to identify the attributes that need to be concentrated on for improvement and the action that should be taken to minimise the gap between importance and performance. Therefore, the IPA will be used to identify the gap between importance and performance of graduates' employability skills. According to Martilla and James (1977), 'importance' represents customers' wants or desires and 'performance'

represents customers' perception of the service received. Customers have an importance level of service, or in other words, the level of service that they expect to receive. In this study, the gap between importance and performance of graduates' employability skills is studied. Respondents were asked to respond on a scale of one to five, their degree of desirability – from very unimportant to very important, and their degree of satisfaction – from very unsatisfactory to very satisfactory. Mean and standard deviation scores for each of the items were calculated for importance and satisfaction levels, and then the gaps were calculated. The mean importance and satisfaction scores were compared for all attributes, so as to identify the gaps.

Figure 1 Importance-performance map



5 Methodology

Generating a list of attributes is an important part of the IPA procedure. For the purpose of this study, a list of graduate employability skills was developed by reviewing previous studies. This procedure generated a list of 52 graduate employability skill attributes. These attributes focused on computational skills, management skills, critical thinking skills, enterprise and entrepreneurial skills, interpersonal skills, communication skills and thinking skills. This list was reviewed by five human resources professionals for content validity. They were asked to respond in an evaluation form of the statements in terms of understanding, missing item, length of the questionnaire and redundancy and ambiguity in questions. The feedback from the experts was examined for improvement, and decisions were made to maintain, modify or exclude items from the final questionnaire draft. Feedback from respondents resulted in a final list of 49 attributes.

As mentioned previously, the focus of this study is to identify and evaluate the perception of employers towards graduates' employability skills who have completed their degree in business-related fields (i.e., Business, Economics, Accounting, Finance, Banking, etc.) from schools/faculties of business in Malaysian public universities. A random sampling method was used for data gathering. Targeted respondents came from organisations listed in the Federation of Malaysian Manufacturers (FMM) and government and semi-government agencies. A covering letter explained the objectives

and significance of the study, and a survey questionnaire was sent to the Human Resources Manager/Executive or General Manager of the company. The covering letter assured that all responses would be kept confidential. Furthermore, instructions within the covering letter requested that questionnaires should be returned in the self-addressed stamped envelope provided, within three weeks. Of the 942 questionnaires mailed, 233 questionnaires were found to be usable for further analysis, giving us a 25% response rate.

Table 1 shows the distribution of respondents by their gender, age, ethnicity, qualification, working experience and positions. Of the 233 questionnaires returned, 48.1% of the respondents are male and 51.9% are female. In terms of race, the majority of respondents were Malay. The Malay respondents make up 64.5% of the respondents. This is followed by the Chinese (22.9%) and Indians (9.5%). The smallest percentage included other races, like Bumiputras from Sabah and Sarawak or Japanese (3.0%).

The maximum number of respondents belong to the age group of 41–50 years (38.5%), followed by 31–40 years (22.5%). This contributed to the respondents holding high positions, such as human resource manager or general manager, of their companies. To hold these types of position, an incumbent needs to have a few years of work experience. The oldest age group was 51 years and above (19.1%). The smallest percentage of respondents was 30 years or below (19.9 %).The highest qualifications of respondents were those who were first degree holders, totalling 54.4%. This was followed by the holders of master's degrees (20.6%) and diplomas (18.8%). PhD holders constituted 3.5% of the total respondents. The majority of respondents reported working at their company for 5 years or less (37.6%). This was followed by 16 years or above (25.3%), and 6–10 years (24.9%) of working experience. The least percentage of respondents had between 11 and 15 years of experience, making up 12.2% of all respondents. The majority of the respondents consisted of top management (54.7%). Middle management made up 43.2% of respondents and lower management respondents only represented 2.1% of the sample group.

Table 1 Respondents' demographic information

Variables	*Frequency*	*Percent*
Gender		
Male	111	48.1
Female	120	51.9
Age		
30 years or below	46	19.9
31–40 years old	52	22.5
41–50 years old	89	38.5
51 years old and above	44	19.1
Ethnicity		
Malay	149	64.5
Chinese	53	22.9
Indian	22	9.5

Table 1 Respondents' demographic information (continued)

Variables	*Frequency*	*Percent*
Others	7	3.0
Qualification		
Diploma	43	18.8
Bachelor	124	54.4
Master	47	20.6
PhD	8	3.5
Others	6	2.6
Working experience		
5 years or below	86	37.6
6–10 years	57	24.9
11–15 years	28	12.2
16 years and above	58	25.3
Position at the company		
Top management	128	54.7
Middle management	101	43.2
Lower management	5	2.1

Besides the respondents' own personal demographic information, the respondents were also asked to furnish their companies' background. These questions find out the type of the company, employment, ownership and employee size. The details of the respondents' company demographic information are provided in Table 2.

Table 2 The respondents' company demographic information

Variables		*Frequency*	*Percent*
Type of the company	Manufacturing	152	65.8
	Service	79	34.2
Type of employment	Public	24	10.4
	Semi-government	38	16.5
	Private	169	72.5
Number of employee	Less than 50	9	3.9
	50–350	85	37.1
	351–500	41	17.9
	More than 500	94	41.0
Type of ownership	Fully local	131	57.2
	Majority local	20	8.7
	Majority foreign	18	7.9
	Fully foreign	60	26.2

Table 2 shows that 65.8% of the respondents are from manufacturing companies, while 34.2% are from service companies. For type of employment, 72.5% of the respondents are from the private sector. The rest is made up of 10.4% employers from the public sector and 17.6% employers from semi-government sector. For employee size, majority of the companies have more than 500 employees (41%), followed by the range between 50 and 350 employees (37.1%), 351 and 500 employees (17.9%) and <50 employees (3.9%). Further, 57.2% of the companies have full local ownership and only 26.2% have full foreign ownership.

6 Results

The mean scores, standard deviations (s.d.) and Cronbach's alpha (α) of the importance (I) and satisfaction (S) of the graduates' employability skills perceived by the employers are provided in Table 3. The mean scores of the attributes range from 3.07 to 4.57 for importance and 2.90 to 4.03 for satisfaction. The standard deviations of all these attributes are less than unity. The reliability test of Cronbach's alpha for both performance and satisfaction are >0.7.

Table 3 shows the overall mean scores of importance and satisfaction of employability skills. Overall mean scores were obtained by adding the individual ratings on importance and satisfaction for all the respondents and then divided by the number of the respondents. Meanwhile, the gap was calculated by using the following formula:

$$\text{Gap} = (5 - \text{mean satisfaction}\,(S)) \times (\text{mean importance}\,(I)/5).$$

From the mean scores, it is noted that the employers are particularly satisfied with the following attributes: level of keyboard competency, ability to use word processing software, ability to write in Bahasa Malaysia and ability to speak in Bahasa Malaysia. In contrast, the respondents were less satisfied with the abilities to: encourage and motivate others, explore and identify business opportunities, write effectively and speak fluently in English and make logical conclusions.

Table 3 also indicates the gap scores for importance and satisfaction for the attributes of graduates' employability skills. The table shows that, overall, the employers' importance scores are greater than the satisfaction scores of the graduates. The attribute with the largest gap between means are the ability to think out of the box, the ability to write effectively in English and the ability to speak fluently in English. This implies that the universities are not sufficiently preparing students in these areas and should find ways to improve graduates on these skills. According to managing director of Kelly Services (M) Sdn. Bhd., on an average, 6 out of 10 Malaysian graduates cannot communicate effectively during interviews. In effect, they cannot explain their knowledge effectively during interview sessions due to poor command in English. In addition, the survey conducted by the FMM on ICT workers in 2004 also found that the majority of the employees are poor in English (Hii, 2007). On the other hand, the items with the lowest gap scores are the ability to use word processing software, the ability to be self-employed, the ability to write effectively and speak fluently in Bahasa Malaysia.

Table 3 Importance of graduates' employability skills and satisfaction level on those skills

Variables		*Means* (*s.d.*)		
Interpersonal skills		*Importance* (*α = 0.898*)	*Satisfaction* (*α = 0.909*)	*Gap*
1	Ability to work and contribute to the group/team	4.57 (0.61)	3.64 (0.74)	1.24
2	Ability to understand other peoples' problems, emotions, concerns, and feelings, related to work	4.31 (0.79)	3.42 (0.78)	1.36
3	Ability to negotiate with subordinates or colleagues	4.39 (0.69)	3.46 (0.78)	1.35
4	Ability to encourage and motivate others	4.35 (0.71)	3.27 (0.85)	1.51
5	Ability to network	4.36 (0.71)	3.53 (0.79)	1.28
6	Ability to work in a diverse environment (ethnic group, religion, and gender)	4.38 (0.67)	3.46 (0.77)	1.35
7	Ability to deal with superiors	4.48 (0.65)	3.56 (0.76)	1.29
8	Ability to manage others	4.32 (0.71)	3.30 (0.80)	1.47
Computing skills		(*α = 0.854*)	(*α = 0.901*)	*Gap*
9	Level of keyboard competency	4.33 (0.73)	3.89 (0.72)	0.96
10	Ability to use word processing software	4.28 (0.64)	3.85 (0.76)	0.98
11	Ability to use statistical software packages	3.94 (0.83)	3.45 (0.79)	1.22
12	Ability to deliver effective presentations using computer software	4.33 (0.62)	3.51 (0.75)	1.29
13	Ability to use database programmes for data management	4.06 (0.78)	3.42 (0.76)	1.28
14	Ability to use spreadsheets for data analysis	4.16 (0.69)	3.48 (0.73)	1.26
15	Ability to search and manage the relevant information from various sources	4.30 (0.65)	3.39 (0.83)	1.38
Enterprise and entrepreneurial skills		(*α = 0.912*)	(*α = 0.914*)	*Gap*
16	Ability to explore and identify business opportunities	3.97 (0.90)	3.16 (0.81)	1.46
17	Ability to develop a business plan	3.91 (0.88)	3.12 (0.92)	1.47
18	Ability to develop business opportunities	3.87 (0.86)	3.07 (0.88)	1.49
19	Ability to capitalise on business opportunities	3.85 (0.88)	3.06 (0.89)	1.49
20	Ability to be self-employed	3.75 (0.99)	3.07 (0.91)	1.45
Communication skills		*Importance* (*α = 0.840*)	*Satisfaction* (*α = 0.951*)	*Gap*
21	Ability to listen attentively and give appropriate feedback	4.56 (0.58)	3.49 (0.78)	1.38
22	Ability to negotiate and reach consensus	4.47 (0.58)	3.42 (0.78)	1.41
23	Ability to write effectively in Bahasa Malaysia	4.15 (0.92)	3.86 (0.76)	0.95
24	Ability to write effectively in English	4.55 (0.58)	3.26 (0.98)	1.58
25	Ability to write effectively in other languages	3.18 (0.99)	2.90 (0.91)	1.34
26	Ability to speak fluently in Bahasa Malaysia	4.19 (0.88)	4.03 (0.80)	0.81
27	Ability to speak fluently in English	4.54 (0.57)	3.32 (0.99)	1.53

Table 3 Importance of graduates' employability skills and satisfaction level on those skills (continued)

Variables	*Means* (*s.d.*)		
Communication skills	*Importance* (*α = 0.840*)	*Satisfaction* (*α = 0.951*)	*Gap*
28 Ability to speak fluently in other languages	3.07 (0.99)	2.95 (0.90)	1.26
29 Ability to communicate formally and informally with people from different backgrounds	4.41 (0.61)	3.46 (0.80)	1.36
30 Ability to present a case/project effectively	4.35 (0.61)	3.32 (0.83)	1.46
31 Ability to express own ideas clearly, effectively, and with confidence	4.51 (0.55)	3.34 (0.89)	1.50
Thinking skills	(*α = 0.904*)	(*α = 0.951*)	*Gap*
32 Ability to recognise and analyse problems	4.53 (0.55)	3.41 (0.78)	1.44
33 Ability to explain, analyse, and evaluate data and information	4.47 (0.59)	3.35 (0.86)	1.48
34 Ability to generate creative ideas	4.46 (0.63)	3.33 (0.82)	1.49
35 Ability to think critically	4.52 (0.59)	3.29 (0.83)	1.55
36 Ability to learn and apply new knowledge and skills	4.50 (0.56)	3.42 (0.84)	1.42
37 Ability to understand statistical and numerical data	4.11 (0.72)	3.37 (0.79)	1.34
38 Ability to think out-of-the-box	4.37 (0.65)	3.15 (0.93)	1.62
39 Ability to make logical conclusions by analysing relevant data	4.35 (0.63)	3.26 (0.85)	1.51
Management skills	(*α = 0.939*)	(*α = 0.957*)	*Gap*
40 Ability to lead a project	4.43 (0.65)	3.52 (0.83)	1.31
41 Ability to supervise group members	4.47 (0.63)	3.55 (0.81)	1.30
42 Ability to optimise the use of resources	4.53 (0.59)	3.53 (0.79)	1.33
43 Good time management	4.67 (0.51)	3.54 (0.87)	1.36
44 Ability to plan, coordinate, and organise a project	4.61(0.56)	3.54 (0.89)	1.35
45 Ability to monitor group members to achieve targets	4.49 (0.61)	3.46 (0.86)	1.38
46 Ability to plan and implement an action plan	4.54 (0.57)	3.52 (0.81)	1.34
47 Ability to work under pressure	4.54 (0.60)	3.52 (0.93)	1.34
48 Ability to work independently	4.63 (0.55)	3.55 (0.91)	1.34
49 Ability to deliver expected results	4.63 (0.55)	3.58 (0.84)	1.31
Mean	*4.30*	*3.41*	

To validate the results of the gap analysis, a paired-sample *t*-test was performed to test the hypothesis whether there is significant difference between mean importance score and mean satisfaction score of the graduates' employability skills. The hypotheses are as follows:

H_0: $\mu_1 = \mu_2$ (There is no significant difference between mean importance and mean satisfaction scores).

H_1: $\mu_1 \neq \mu_2$ (There is a significant difference between mean importance and mean satisfaction scores).

As shown in Table 4, the largest employability skills gap is in thinking skills and the smallest gap is in computing skills. Overall, all the mean gaps between importance and satisfaction of those skills are statistically significant ($p < 0.01$) and hence H_0 was rejected. Thus the results of the *t*-test confirm that employers are significantly less satisfied with the employability skills of the current graduates.

Table 4 Paired-sampled *T*-test for the means of importance and satisfaction levels of employability skills

Variables	*Mean importance*	*Mean satisfaction*	*T*	*Significance*
Interpersonal skills	4.3976	3.4318	18.249	0.000*
Computing skills	4.2136	3.5782	13.976	0.000*
Enterprise and entrepreneurial skills	3.8636	3.0583	12.455	0.000*
Communication skills	4.1085	3.3824	16.612	0.000*
Thinking skills	4.4197	3.2986	18.709	0.000*
Management skills	4.5551	3.5145	18.727	0.000*

*Significant at the 0.01 level.

On the basis of the gap analysis results in Table 3, the IPA map was constructed as shown in Figure 2. Referring to Figure 2, the *X*-axis shows mean levels for satisfaction and the *Y*-axis shows mean levels for importance. On the basis of the overall mean importance and satisfaction, the IPA map was divided into four quadrants. The IPA map and Table 5 shows that most of the attributes (21 attributes) fall in the upper right quadrant (keep up the good work), suggesting that the importance and satisfaction of the attributes to the employers are high. Thus, all the activities and resources should be maintained. In contrast, 13 attributes fell in the upper left quadrant (areas to improve), which means that the attributes are perceived important by the employers, but satisfaction levels are low. This suggests that improvement efforts and corrective actions must be taken to improve overall satisfaction on these 13 attributes. It is also noted that eight attributes received low scores on both importance and performance, thus indicating that these attributes possess low priority and are not perceived important. Hence, universities should not overly concentrate on these attributes. Lastly, six attributes were rated low in importance, but in contrast, satisfaction levels of the employers were high. Since the employers' satisfactions on these attributes are high but they reported them not very important, universities should redirect their resources to other attributes that impact the development of desired employability skills.

Figure 2 Map of employability skill attributes

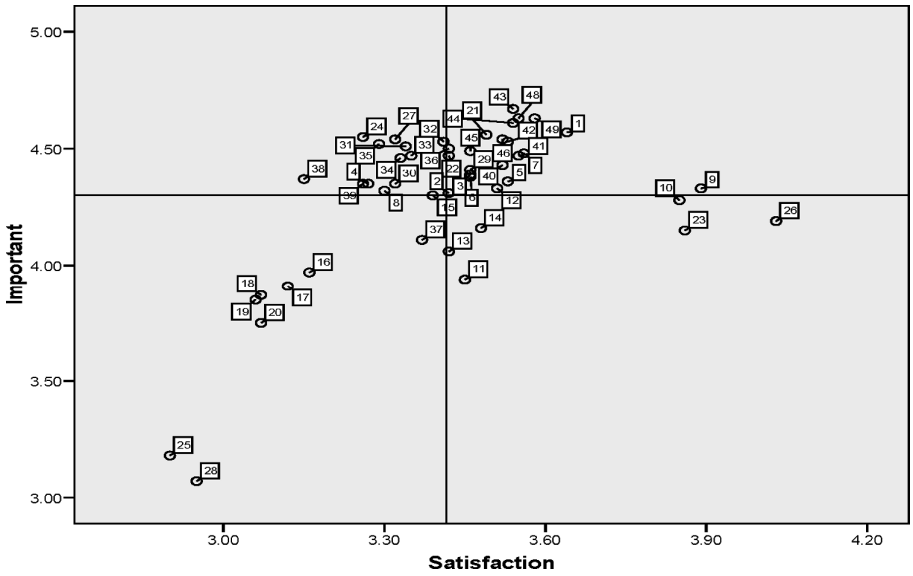


Table 5 Classification of items based on IPA map

	High importance – high satisfaction (*keep up the good work*)
1	Ability to work and contribute to the group/team
2	Ability to understand other peoples' problems, emotions, concerns, and feelings, related to work
3	Ability to negotiate with subordinates or colleagues
4	Ability to network
5	Ability to work in a diverse environment
6	Ability to deal with superiors
7	Level of keyboard competency
8	Ability to deliver effective presentations using computer software
9	Ability to listen attentively and give appropriate feedback
10	Ability to communicate formally and informally with people from different backgrounds
11	Ability to learn and apply new knowledge and skills
12	Ability to lead a project
13	Ability to supervise group members
14	Ability to optimise the use of resources
15	Good time management
16	Ability to plan, coordinate, and organise a project
17	Ability to monitor group members to achieve targets
18	Ability to plan and implement an action plan
19	Ability to work under pressure
20	Ability to work independently
21	Ability to deliver expected results

Table 5 Classification of items based on IPA map (continued)

	High importance – low satisfaction (*areas to improve*)
1	Ability to encourage and motivate others
2	Ability to manage others
3	Ability to search and manage the relevant information from various resources
4	Ability to write effectively in English
5	Ability to speak fluently in English
6	Ability to do presentations of a project effectively
7	Ability to express own ideas clearly, effectively and with confidence
8	Ability to recognise and analyse problems
9	Ability to explain, analyse and evaluate data/information
10	Ability to generate creative ideas
11	Ability to think critically
12	Ability to think out of the box
13	Ability to make logical conclusion by analysing relevant data
	Low importance – low satisfaction (*low priority*)
1	Ability to explore and identify business opportunities
2	Ability to develop business plan
3	Ability to develop business opportunities
4	Ability to capitalise business opportunities
5	Ability to be self-employed
6	Ability to write effectively in other languages
7	Ability to speak fluently in other languages
8	Ability to understand statistical and numerical data
	Low importance – high satisfaction (*possible waste of resources*)
1	Ability to use word processing
2	Ability to use statistical software package
3	Ability to use database programmes for data management
4	Ability to use spreadsheets for data analysis
5	Ability to write effectively in Bahasa Malaysia
6	Ability to speak fluently in Bahasa Malaysia

7 Conclusions

IPA is an effective evaluation tool in identifying the gap between the importance of a service and the performance of that service to a customer. Data are mapped in four quadrants, namely 'concentrate here', 'keep up the good work', 'low priority' and 'possible overkill'. IPA can identify areas of concern and thus help to close the gap between the importance and performance of attributes. The attributes that fall into the 'concentrate here' quadrant, should be given higher priority for improvement.

This is because these attributes are perceived as very important to the customers, but their organisational performance is low.

The present study shows that there is a significant gap between the importance ratings and satisfaction ratings of graduates' employability skills, especially regarding English language abilities. The literature also revealed that a weakness in English is one of the main reasons why graduates have difficulty finding jobs in Malaysia (Azian and Mun, 2011; Rahmah et al., 2011; Rasul et al., 2010; Zubaidah and Rugayah, 2008). This situation is worrying because English is a compulsory subject at the primary and secondary schools in Malaysia. The situation is more critical in schools in the rural area. At the university level, students are required to take a few subjects in English as a requirement of their graduation (i.e., English for communication, public speaking, business report writing and academic writing). Although students have been exposed to the importance of English from primary school through university, the inadequate efficiency of students in the English language is still a major cause of un- and underemployment. It is therefore important that English language education in Malaysia is reviewed at the roots to identify the main cause of the problem and to provide access and equal opportunity to all students.

The findings also show that employees had a lower mean data of all performance attributes, compared with importance levels. Furthermore, 13 attributes fell into the 'concentrate here' quadrant, which means that further investigation should be made for their improvement. It is hoped that the findings of the study can help universities improve their curricula, in accordance with current market requirements. The findings can also assist them to re-allocate their resources and implement improvement programmes, such as facilities development, financial re-allocation, to improve graduate's employability skills.

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