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Labour Attributes of Demand in Service Industries in Thailand

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Abstract

This research aims to investigate the labour attributes of demand in the service industry in Thailand. Conjoint analysis by a specific questionnaire (Carding-Type Survey) was designed for the study. In this study, 201 individual recruiters in service companies participated in the survey. The sample was selected from both small and large organizations covering Bangkok and major urban areas in Thailand. All the respondents were recruiters in service companies working in human resources, public relations departments, or general administration. The results found that the highest attributes (highest total utility) regarded by recruiters from companies in service industries in Thailand were being male, having a functional skill, problem solving, a higher degree and good human relation. The results are useful for human resource development agencies in order to prepare skill sets to meet needs in labor market which thereafter reduce problems occurring from labor market mismatches.

Keywords: Labour Attribute, Service Industry, Thailand

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คุณลักษณะของแรงงานที่เป็นที่ต้องการในอุตสาหกรรมบริการในประเทศไทย

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บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์เพื่อต้องการหาคุณสมบัติของแรงงานที่เป็นที่ต้องการในอุตสาหกรรมบริการในประเทศไทย โดยใช้เทคนิคการวิเคราะห์องค์ประกอบร่วม (Conjoint Analysis) ซึ่งข้อมูลที่ใช้วิเคราะห์เป็นแบบสอบถามที่มีลักษณะเฉพาะ (แบบใช้การ์ดในการสำรวจ) การศึกษาในครั้งนี้เก็บแบบสอบถามจำนวน 201 ราย จากจำนวนผู้ที่มีหน้าที่พิจารณาการเข้าทำงานในอุตสาหกรรมบริการ ผู้ที่ตอบแบบสอบถามทั้งหมดล้วนแต่เคยเป็นผู้พิจารณาผู้สมัครในอุตสาหกรรมบริการทั้งในส่วนของฝ่ายบุคคล ฝ่ายประชาสัมพันธ์หรือฝ่ายบริหารทั่วไป ผลการวิจัยพบว่าคุณลักษณะที่เหมาะสมที่สุดสำหรับแรงงานในอุตสาหกรรมบริการในประเทศไทยคือ เพศชาย สามารถทำงานในหน้าที่ได้อย่างมีประสิทธิภาพ สามารถแก้ปัญหาเฉพาะหน้าได้เป็นอย่างดี มีการศึกษาสูงกว่าปริญญาตรี และมีมนุษยสัมพันธ์ที่ดี ผลการศึกษานี้จะทำให้ทราบถึงหน่วยงานต่างๆ ในการจัดเตรียมความพร้อมของคุณลักษณะของแรงงานเพื่อให้ตรงกับความต้องการในตลาดแรงงานอันนำมาสู่การลดปัญหาความไม่สอดคล้องในตลาดแรงงานได้

คำสำคัญ: คุณลักษณะของแรงงาน, อุตสาหกรรมบริการ, ประเทศไทย

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1. Introduction (บทนำ)

Analysis of labour requirements comes within labour-force planning. Labour-force planning can be defined in several ways that depend on the perspective. Most simply, it can be defined as an effort to match the supply of labour with job opportunities in the labour market. Efficient workforce skills are the most important attributes in both manufacturing and service organizations. The service industry is a huge and vital portion of the business environment in Thailand, making a significant contribution to GDP. In total, Thailand's services industry income constitutes around 44 per cent of GDP. The most important areas within the services industry are wholesale and retail trade (13 per cent of GDP); transport, storage and communication (7 per cent of GDP); hotels and restaurants (5 per cent of GDP); and public administration.

Thailand's services sector accounts for nearly 40 per cent of the labour force, with the numbers expected to rise in the years ahead. The World Bank calls it the "dominant source of new job creation" in Thailand. In 2016, some 13.98 million people are currently working in service businesses around the country, and employment demand is expected to increase 5 per cent annually as a result of substantial government promotion of the sector. Many service businesses demand labour with service skills at the level of a university degree. In reality, most service staff acquire their skills from staff training programmes, but these programmes are limited. Service industries are currently facing a critical problem in service staff qualifications and attributes. For the hotel and tourism sector, for example, service skills are the most important foundation for providing quality performance to customers. The results of poor training are high turnover rates of staff, increasing recruitment and training costs, and declining service quality. These job seekers typically recruit their labour desire to work in the service sector or train their staffs for higher service quality. An investigation of the attributes of employees in service industries has suggested that employee performance is an important factor in the quality of human service provided (Liao & Chuang, 2004).

Employees' performance in service industries is a specific kind of skill developed through service practice guidance provided by both educational institutions and a firm's service training and procedures. Service quality influences business and service performance via a set of behaviours, attitudes, concepts, knowledge and activities. For example, it has been found that service firms tend to place strong emphasis on the interpersonal skills of frontline service employees when facing customers (Alge et al., 2002). The education system currently

faces many obstacles, including inequality in many areas and unqualified workers. The Thai education system has failed to provide the right skills for the workforce, resulting in the creation of a workforce that does not match the jobs available. One of the positive trends among Thailand's workforce in the service industries is the increased level of education. The Thai government should be actively working to improve the education system to increase the qualifications of the workforce and the capacity of the system by training students specifically for employment in the service sector. Changes are necessary so that students that can be armed with the right skills to meet employers' needs.

The service labour requirement has several definitions based on different perspectives on types of service. Workforce attributes will be defined to match with jobs to solve the problem of the mismatch between the supply and demand of labour. The labour demand and needs of the service industry are not driven by the interplay of changing customer expectations in the context of established patterns of service. But the higher qualifications and labour skills necessary as a result of economic changes and developments are the key important factor that will drive the importance of labour-force planning and the education system in relation to the service sector. The process of economic development experienced by a country requires planning the labour force, because skill requirements will change in line with changes in the economic structure and developing technology. This will consequently affect the demand and supply of education and training. The main objective of workforce determination in the service industry is to achieve balance between the demand side (the service sector) and the supply side (employees). The demand side comprises all the factors that relate to demand for labour, including indicators such as labour performance, sectoral output and sectoral final demand. The supply side comprises variables related to labour supply, such as level of education, attitudes, service skill and ability, and rate of return from education.

This study primarily examines the service sector's human resource dimension within the context of optimal employee demand to match the availability of employees and the requirements of the service industry. The second major concern is to improve the performance of employees by assessing tasks with a better match for their skills and by conforming to their preferences in terms of the tasks and their attributes. Based on the general information given above, the objective of this research is to investigate the labour attributes demand of the service industry that is the most appropriate to the skills and performance of employees.

2. Literature Review (ทบทวนวรรณกรรม)

Service firms require unique employee characteristics that are different from manufacturing firms (Goerzen & Makino, 2007; Sanchez-Peinado et al., 2007). Due to these unique attributes, service firms may make different decisions on employee procurement than those made by manufacturing firms (Bouquet et al., 2004; Brouthers & Brouthers, 2003). Previous studies have shown that the unique attributes of the service sector, such as human capital intensity, and worker attitude, skill and ability, affect the staffing of service firms (Bouquet et al., 2004). Specialist employees in service firms have been studied extensively in the literature. Analysis of employee requirements is a subject under workforce planning within human resources department. Human resources planning has several definitions depending on different employer perspectives and on the particular industry. Hopkins (2002) argued that workforce planning is crucial for solving the problem of a mismatch between labour supply and demand. Yang (2014) found that the service industry contributes to economic growth in the US. The process of economic development experienced by an industry means that skill requirements will change. In turn, this will affect the demand for and supply of knowledge, skills, education and training, all of which are necessary for improving workforce competence. The labour mismatch will result in an imbalance between demand (firms' requirements) and supply (labour attributes), and this will affect labour efficiency.

Skills are a critical factor in individual employee success. They are an essential part of being able to meet the challenges of a changing environment in a dynamic, globalized world. In developing and emerging countries, expanding and raising the quality of education continues to be a key challenge. Service skills refer to the abilities and techniques acquired by employees. Service skills are embodied by functional skills and technical skills. Skills mismatches occur when workers have either fewer or more skills than jobs require. Becker and Drake (2003) and Swanson et al. (2008) maintained that negotiating and interpersonal skills relate to the role of employment specialists. McGurk and Mueser (2006) suggested that problem-solving skills are essential in the service sector. Beausaert et al. (2015), Adams and Sisson (2013), and Kay, Moncarz, and Newman (2014) have found that those with problem-solving skills and the ability to work with diverse groups have more employment opportunities in the hospitality sector. Moreover, Adams and Sisson (2013) identified customer service problem solving as the most essential skill in the hospitality industry. Sullivan and Marvel (2011) acknowledged that leaders who have experience or functional skills are knowledgeable about their roles and mission responsibilities, which enhances organizational

performance. In the food service industry, Wilson-Wünsch et al. (2015) confirmed that the knowledge and experience of leaders are a major factor affecting organizational performance. Sipe (2016) examined that employees with experience or functional skills contribute new ideas within organizations, which increases both employee empowerment and an organization's performance.

Employees' service performance is defined by the way they use behaviours and service skills. Especially important is strong performance in the interpersonal skills of frontline service employees, such as in the way they serve and help customers to the highest satisfaction of the latter (Liao & Chuang, 2004). Similarly, Brady and Cronin (2001) and Farrell et al. (2001) have conceptualized that service skills such as responsiveness and trustworthiness are essential to the performance of service personnel. Good service skills can make frontline service personnel more quality conscious and directed towards customer satisfaction.

The present study investigates whether an emphasis on different aspects of service orientation, service skills and knowledge of employees would impact on the technical and functional quality of service employees' performance, since both service skills and knowledge contribute to service behaviours, overall service quality and customer satisfaction. Service skills and knowledge related to both the technical and functional aspects of a service must be considered simultaneously.

In the service sector, and especially in the hotel industry, Luk and Layton (2004) found that service knowledge, knowledge about the hotel, room-service delivery skills, and communication skills are core components of technical service skills. The types of skill and knowledge are fundamental technical service skills not only in the hotel industry but also in various other service industries. In addition, service skills are influenced by service attitudes, manner, service performance style, and service behaviour when interacting with customers during the service delivery process. Luk and Layton (2004) also identified several types of service quality and service encounter behaviour and manner were relevant to the ability of employees to manage customers' expectations and satisfaction, to acquire and communicate effective information, to identify customer needs, to customize and control the service encounter, to impress customers, to influence customers' assessment of service quality/benefits, and to satisfy and encourage customers to assist in performing the required service tasks. Furthermore, these skills are potentially suitable for employment specialists who work in the

human services field. Service specialists should possess certain skills and abilities, knowledge of key service aspects, and an overall attitude to help them deliver successful employment in the services sector and achieve consumer satisfaction (Becker & Drake 2003; Swanson et al., 2008).

The service industry is a huge and vital portion of the national income in Thailand. Services sector productivity is a function of external and internal factors (Sigala, 2004). The most important variables of labour demands are dependent on seasonal fluctuations and business cycles (Jang, 2004). Hence, organizations, such as hotels, and tourism need to earn sufficient revenues during peak seasons to sustain the business throughout the year. Service organizations face challenges in maintaining service quality and consumer expectation and satisfaction, and this impacts on firm performance (Capo Parrilla et al., 2007). The services sector faces the seasonal challenge, in particular the demand for a flexible labour force. Flexibility of workers requires the multi-skilled labour force that the service industry needs, particularly since service organizations have to respond to uncertain demand situations arising from seasonal fluctuations. The most influential internal factors related to performance in service sectors relate to full-time workers (Brown and Dew, 2000; Hu and Cai, 2004), working hours (John, Howcroft, & Drake, 1997), labour flexibility (Kappa, Nitschke, & Schappert, 1997), and human resource practices (Kilic & Okumus, 2005; Witt & Witt, 1989).

The effectiveness of labour performance in relation to variable demand in the services sector is complex (Sigala, 2004). The impact of labour flexibility on productivity depends on the skill requirement of specific tasks. For instance, in the hotel industry, the skill levels of labour are needed to exert varying effects on labour performance, whereas tourism is focused on employees multi-tasking. Gender is another characteristic of the labour force that has been researched by economists as a determinant of productivity. Bloom and Van Reenen (2010) evaluated the effect of gender on function. Adib and Guerrier (2003) examined how the gendered nature of employees in hospitality in general is well documented due to difference in types of job, attitudes and wages. Multi-skilled workers not only bring flexibility, which determines employee productivity, but they also mitigate the negative effects of uncertain labour demand and absenteeism (Easton, 2011). This is especially true for the service sector where employees with a variety of skills are required. Henao et al. (2015) also found that multi-skilled employees contribute maximum benefits at reasonable competencies and costs in service industries.

In term of knowledge, a professional service is reliant on high levels of knowledge intensity (Schmenner, 2004). This will contribute to both variation and successful processes. An emphasis on professional service will enhance appropriate negotiation with customers (Fischer et al., 2014). In other words, a professional service is highly interactive because professional labour in service involves extensive dialogue between client and provider. The generic characteristics of professional service are more knowledge intensive than other types of service operations (Von Nordenflycht, 2010; Frey et al., 2013). Knowledge intensity will contribute an accumulation of interaction with people who will be clients (Fosstenlakken et al., 2003). Davenport and Prusak (2002) and Ryu et al. (2005) have confirmed that knowledge intensity potentially contributes to the ability of an organization to make successful decisions about operating systems and routines. Moreover, Barabasz (2014) found that knowledge as human capital indicates that educational level impacts an organization's profitability and performance.

Matherly and Al Nahyan (2015) found that education is vital as a principle of human capital, since knowledge is transferable to employees and employers. Qiu et al. (2015) conducted a study that revealed that employees' educational increase opportunities for advancement. In relation to the hospitality industry, Gursoy et al. (2012) suggested that higher education and curriculum development need to include career management during the student's hospitality education experience, and that working performance in the hospitality industry is related to academic programmes. Edinyang et al. (2015) firmly placed the notion of graduate employees as being at the heart of the hospitality industry. Agarwal and Dahm (2015) found that lack of education and experience impacts organizational profitability in the food service industry. He, Long, and Kuvaas (2016) identified high educational levels as being more likely to continue increasing an organization's profitability. Labour competency has been defined as a suitable measurement of high effective performance, which comprises knowledge, skill and ability, and personal characteristics (Marrelli et al., 2005). Marrelli et al. have also suggested that labour competencies are the building set of job performance. Adams and Sisson (2013) emphasized the need for the development of a standardized hospitality curriculum to ensure that graduates have the knowledge, skills and abilities required by the industry. From an employer's perspective, educated employees transfer knowledge to other employees, which may improve organizational performance (Ha, Lo, & Wang, 2016). Similarly, McPhail et al. (2015) confirmed that higher education creates better job opportunities and career advancement.

A conceptual skill is the ability to think analytically and to solve complex problems (Hellriegel et al., 2007). Conceptual skills require both knowledge and attitude to contribute to the overall objectives of the employees' service performance in various service skill areas. Improving service organizational performance and managing organizational change require conceptual skills. Northouse (2010) found that conceptual skills are most important for employees in the service sector, also suggesting that these skills are important for middle managers. Moreover, conceptual skills enable employees to process information about the internal and external environment of the organization. Caterine et al. (2014) suggested that conceptual skills should be considered essential for effective middle management and employee procurement.

Most service specialists require specific service skills that can be used to enhance the viability and growth of the service organization. Specialists in the service industry are responsible for specific tasks within an organization and are positioned to encourage and foster organizational growth and economic change within a context of variable customer behaviour (Mullins, 2007). Specific service skills are the key ability of employees in the service sector for performing specific behavioural tasks or specific cognitive processes that are functionally related to a task (Petersen & Van Fleet, 2004). Specific skills in service tasks comprise conceptual skills, interpersonal skills and technical skills.

3. Methodology (ระเบียบวิธีวิจัย)

The hypotheses testing of this study was designed as a quantitative research, and the data were collected by survey. The data were analysed by utilizing an advanced statistical analysis technique: conjoint analysis. In the conjoint method, choices are presented in full profile (with multi-attributes by carding type), which is realistic. Research respondents were asked to rate or rank the full profile of labour attributes or to check which full-profile features they prefer. Each respondent had to evaluate and rank only a fraction of the total combinations from card 1 to card 16. The specific questionnaire (carding type, with cards from 1 to 16) was designed for the appropriate question concerning labour in the service industry. The questionnaire consisted of two parts: the first part referred to background or biographical information; the second part tested all attributes (principle test) to find out which labour attributes are the most important for employer decisions to employ labour to work in their companies. Respondents provided an overall judgement, ranking card 1 to card 16, of the full profiles to ascertain the individual attributes.

New products and labour development are a simple concept and involve the conversion of customer need to the reality of creating the tangible product or service. Successful businesses conduct regular market research as the foundation of their marketing and labour-force planning. Conjoint analysis is a popular marketing research technique that marketers and researchers use to determine which features a new product should have. Conjoint analysis became popular because it can identify the best choice for each component or factor, thereby contributing to the total utility of a product. The main purpose of conjoint analysis is to answer the research question: to what extent does each component (factor) contribute to the highest total utility of the product? It assumes that total utility is equal to the sum of all partial utilities.

Conjoint analysis is predicated on the factors and their values being defined by the researcher in advance. The key feature of conjoint analysis is that respondents evaluate product profiles (labour attributes in this current research) composed of multiple conjoint elements (attributes or features). Conjoint analysis quickly became the most broadly used and powerful survey-based technique for measuring and predicting consumer (or, in this research, employer) preferences. The various combinations of the factor values yield fictive products that are then ranked by the interviewed person or respondent. Conjoint analysis can be used to derive metric partial utilities from the ranking results. The current study was designed as a quantitative research exercise, and the data were collected by survey. In the conjoint method, choices are presented in full profile (with multi-attributes by carding type), which is realistic. This choice activity is thought to simulate an actual recruiting situation, thereby mimicking actual employer recruiting. Choice-based conjoint analysis requires the respondent to make a choice of their preferred full-profile concept. Research respondents were asked to rank full-profile labour attributes or to check which full-profile feature(s) they preferred. Respondents rank or score a set of profiles, or cards, according to preference. Each profile describes a complete product or service (individual attributes of labour for this research) and consists of a different combination of factor levels for all factors (attributes) of interest.

Using full-profile conjoint analysis, the researcher carefully constructed conjoint cards, with each card describing a product profile, namely a labour attributes profile. Respondents evaluated each card and ranked or rated them in order from best to worst. Based on the reserved ordering, the researcher could statistically deduce for each individual which attributes were the most important, and which levels were most preferred. Each respondent needed to evaluate and rank only a fraction of the total combinations contained in a fraction of the cards.

Because each attribute level appeared exactly once with other levels in the study, there is a simple way to estimate attributes level utilities (also known as part worth). Therefore, the part-worth scores are useful for determining which levels were preferred, as well as the relative importance of each attribute. A specific questionnaire (carding-type survey) was designed for the study. The summation of these partial utilities therefore resulted in metric total utilities. The utility structure of a number of persons or respondents can be computed through aggregation of the individual results. The conjoint analysis variables have both independent and dependent variables. The independent variable is objective attributes, while the dependent variable consists of the preferences of the interviewed persons or respondents for the fictive products – in this case, the best labour attributes.

Table 1 shows the attribute levels identified from the literature review and grouped according to the dimensions described above to form the basis of this empirical investigation. After selection of attributes and attribute levels, these attributes and their respective levels were then used to compile hypothetical profiles or scenarios. The research design is covered in the following sections.

The conjoint approach can better predict the overall labour preference through the aggregated total scores of all individual labour attributes. It enables not only assessment of the product attributes in the questionnaire, but also the quantification of their effect in terms of their utility. The incorporation of a customized set of attributes for different respondents can be considered different product attributes to be analysed in the context of full profiles directly relevant to particular market segments, namely the service industry in this research. In summary, the main purpose of conjoint analysis is to consider the extent to which each component (factor) contributes to the total utility of the product. Assume as follows:

Total utility = Sum of all partial utilities

Conjoint analysis produces two important results (Levy, 1995).

1. Utility of attribute. This is a numerical expression of the value consumers give to an attribute level. It represents the relative best value of the attribute. Low utility indicates less value; high utility indicates more value.

2. Importance of attribute. This can be calculated by examining the difference between the lowest and highest utilities across the levels of attributes.

Table 1 The List of Five Attributes as well as Detailed Attribute Level Description (รายละเอียดของ 5 คุณลักษณะและระดับของลักษณะของแรงงาน)

Attributes	Levels	Descriptions
Gender	Male	Gender is demanding the ability to work flexibly, often using flexible work arrangements during seasonal, weekend and peak business.
	Female	
Skills	Communication skill	This skill includes language ability and is used when engaging in face-to-face communication with a wide variety of people.
	Service skill	This skill involves treating customers professionally and to their satisfaction.
	Functional skill	This skill enables an individual to operate confidently and effectively in their field of work. Performance is measured as a pass/fail.
Ability	Problem-solving	The ability to solve unexpected problems with professionalism in all customer service situations.
	Team working	The ability to work together with one or more other people.
	Multi-skills	Multi-skills provide various functions taking full quality and helping flexible options including weekends of worker substitution.
Knowledge	Lower degree (Diploma/Certificate)	Measurement refers to the relationship among the three values: responsibility; ability to understand the job quickly; and faster practice. These relate to the attributes of the task.
	Bachelor degree	
	Higher Degree	
Conceptual skill	Specific cognitive	Skills related to thinking, reading, learning, remembering, reasoning, and processing. These enable an individual to perform in ways suited to the mental activities of customers, and to work with others.
	Human relation	Human relations refers to the ability to interact with other individuals and groups of employees in a healthy way that builds effective relationships.

Source: From Literature review
ที่มา: จากการทบทวนวรรณกรรม

1) Model (แบบจำลอง)

Denote the set of n attributes or factors that have been chosen. Next, let Y_{jp} denote the level of the p^{th} attribute for the j^{th} stimulus. We first consider the case where *Yjp* is inherently a continuous variable. The case of categorical attributes will be considered later. The vector model of preference, referred to as the Composite Criterion Model by Srinivasan and Shocker (1973b) and Parker and Srinivasan (1976), posits that the preference P_j for the j^{th} stimulus is given by

$$Pj = \sum_{p=1}^{n} Wp\, Yjp$$

where the W_p are the individual weights for the *n* attributes. Thus, the vector model is identical in mathematical form to the Fishbein-Rosenberg class of multi-attribute models. The weights W_p will, in general, be different for different individuals in the sample. Geometrically, the preference P_j can be represented as the projection of the stimulus point Y_{jp} on the vector W_p in the *n*-dimensional attribute space.

The part-worth function model can also presented as follow where f_p is the function denoting the part worth of different levels of Y_{jp} for the p^{th} attribute. In practice, $f_p(Y_{jp})$ is estimated only for a selected set of levels for Y_{jp} with the part worth for intermediate *Yjp* obtained by linear interpolation. Thus, the part-worth function is represented as a piecewise linear curve. To determine the part worth for a value of Y_{ip} outside the range of estimation, extrapolation of the piecewise linear function would be needed and the validity of this procedure is questionable. The part-worth function approach has received wide acceptance due, in part, to the ready interpretability of the displayed attribute part-worth functions.

$$Pj = \sum_{p=1}^{n} fp\,(Yjp)$$

An important problem with the full-profile approach is that factors are involved, and each factor has more than a couple of levels. The total card of full profiles resulting from all possible combinations of the levels becomes too great for respondents to rank or score in a meaningful way. Orthogonal array design is a type of general fractional factorial design to solve this problem. A fractional factorial design presents a suitable fraction of all possible combinations of the factor levels. The resulting set, known as an orthogonal array, is designed to capture the main effects for each factor level.

In order to generate an orthogonal design for the appropriate labour attribute factors and factor levels, it was necessary for the factors to be evaluated independently of each other despite the fractionality of the design. The foregoing objectives were approached by seeking specific research questions to be analysed. The proposed model included five attributes: skills, ability, flexibility, knowledge, and conceptual skill. Each of these attributes and levels have still too many (2*3*3*3*2 = 108) possible profiles for respondents to rank. The full concept in categories conjoint uses fractional design, which uses a smaller fraction of all possible alternatives. In this case, orthogonal array generated a parsimonious orthogonal array of 16 profiles. Respondents ranked from 1 (best) to 16 worst). It was decided it would be useful to study the utilities for the follow, as shown in Table 2

5) Data Collection (การเก็บรวบรวมข้อมูล)

In conjoint analysis, a closed-ended questionnaire is used for collecting data. In the questionnaire, the different attributes of labour were explained to respondents, who were asked to rank the various combinations of factor levels from most preferred to least preferred. The full-profile approach utilizes the complete set factors, as shown by an illustrative card for a five-factor design for this research. Errors are deviations from the truth. The researcher using conjoint analysis as a method reduces measurement error by including more conjoint questions on specific questionnaires, with each question evaluating all attributes on the same card. Based on the theories above and appropriate observations of common practices in the labour market community, sample sizes for conjoint studies generally range from about 150 to 1,200 respondents (Orme, 2010). If the purpose of research is to compare respondents and to detect significant differences, the researcher should use a large enough sample size with a minimum of about 200 respondents (Orme, 2010).

In this study, 201 individual recruiters from companies in the service industry participated in the survey. The sample was selected from both small and large organizations from Bangkok and other major urban areas in Thailand. As recruiters in service companies, all the respondents had experience of screening résumés. They worked in human resources, public relations department, or general administration, or they were business owners, or they worked as recruiters for various Thai and international service companies. More than 26 per cent of the recruiters participating in this research had been in employment for between 15 and 35 years, and their companies were likely to employ applicants with precise attributes in the future. In this research, the service industry was divided into five categories: (1) tourism, for example

hotels, tour guides, restaurants; (2) finance, for example, banking, insurance, financial securities; (3) healthcare, for example, hospitals and public health; (4) education, for example, schools and universities, private education, and other educational institutions; (5) other service sectors, for example, transportation, real estate, communication, sport. Lastly, all participating companies were located in Thailand.

Table 2 Labor Attributes Generated from the Orthogonal Array Design (การกำหนดคุณลักษณะของแรงงานด้วยวิธี Orthogonal Array)

Card No.	Labour Attributes				
	Gender	Skills	Ability	Knowledge	Conceptual Skill
1	Male	Functional skill	Multi-skills	Bachelor's degree	Specific cognitive
2	Female	Functional skill	Team working	Lower degree (Diploma/ Certificate)	Human relation
3	Female	Service skill	Problem solving	Lower degree (Diploma/ Certificate)	Specific cognitive
4	Female	Communication skill	Problem solving	Lower degree (Diploma/ Certificate)	Specific cognitive
5	Female	Communication skill	Team working	Bachelor's degree	Specific cognitive
6	Female	Communication skill	Problem solving	Bachelor's degree	Human relation
7	Male	Communication skill	Multi-skills	Lower degree (Diploma/ Certificate)	Human relation
8	Male	Communication skill	Team working	Higher degree	Specific cognitive
9	Female	Functional skill	Problem solving	Higher degree	Human relation
10	Male	Functional skill	Problem solving	Lower degree (Diploma/ Certificate)	Specific cognitive
11	Female	Communication skill	Multi-skills	Lower degree (Diploma/ Certificate)	Human relation
12	Male	Service skill	Team working	Lower degree (Diploma/Certificate)	Human relation
13	Female	Service skill	Multi-skills	Higher degree	Specific cognitive
14	Male	Communication skill	Problem solving	Lower degree (Diploma/ Certificate)	Specific cognitive
15	Male	Communication skill	Problem solving	Higher degree	Human relation
16	Male	Service skill	Problem solving	Bachelor's degree	Human relation

Source: From statistical package by orthogonal array design

ที่มา: จากการออกแบบด้วยโปรแกรมสำเร็จรูปทางสถิติด้วยวิธี Orthogonal Array Design

The choice of sampling method for informant selection depends on the type of research on which the methodology will be based. The best consideration is to sample the population efficiently and appropriately. The researcher needs to find appropriate informants in order for there to be knowledgeable and reliable respondents. Information from every respondent is potentially valuable. The researcher must then decide that purposive sampling is the most suitable tool for the study and to find appropriate respondents who are knowledgeable, experienced and reliable informants. Purposive sampling can be suitable for data gathering based on a survey to determine both qualities and appropriate people (Brown, 2006). These requirements depend on each recruiter, human resource manager, operating and service manager, etc. responding about future employee demand.

6) Results (ผลการวิจัย)

This research examines the employee attributes in demand in five service industries in Thailand: tourism, finance, healthcare, education, and other service sector, such as transportation, real estate, communication, and sport. This study involved 201 individual recruiters from companies in the service industry. Of the 201 participants, 129 were from tourism, 17 were from finance, 28 were from healthcare, eight were from education, and 19 were from other service sectors. A quantitative research paradigm tests objective theories by examining the relationship among variables (Creswell, 2009), while a qualitative research paradigm describes the understanding and meaning of the labour demands of an individual or a group. These results consist of three parts: 1) Aggregate level results of the employee attributes of demand in service industries in Thailand, 2) Relative importance of labour attributes of the employee attributes of demand in service industries in Thailand, and 3) Validity

First, in term of its aggregate level results of the employee attributes of demand in service industries in Thailand, conjoint analysis provides part-worth utilities for all the factors under investigation. Part-worth utilities indicate the amount of variability attributes of each factor. These scores are based on the original orthogonal design for all the profiles (see Table 3). The orthogonal design was constructed to acquire the participant preferences for each level of the variables presented. The part worths utility scores were obtained from employers' rank ordering 1 (best) to 16 (worst) of this basic orthogonal design. Part worths utility scores show employer preferences for each level of each variable. The relative importance scores of each variable were derived from the part-worth utility scores (Hair et al., 2006). The aggregate preference function is calculated by averaging the part-worth scores across all respondents.

The regression estimates of the aggregate preference functions for the employee attributes of demand in service industries in Thailand are reported in Table 3.

The part worths utility scores were arrived at by calculating each individual participant's average ranking of the variables across all levels. This value is expressed inversely, as the higher value corresponds to more importance assigned by the participant. Essentially a part worths utility score is the breakdown or directionality of each variable level. For example, the variable "skill" can be broken down by the preference weights that were assigned to communication skill and service skill. Functional skill received a highest preference weight or part worths score of 1.880, while communication skill and service skill received scores of -.499 and -1.381 respectively. These scores and their directionality indicate that participants preferred functional skill to communication skill and service skill when considering the employee attributes of demand in service industries in Thailand.

The standard error for each part worths utility was calculated. Standard error is a measurement of the uncertainty in the part worths utility score (Tabachnik & Fidell, 2001). Standard error of the mean in conjoint analysis describes how much the participants agree in their responses. Conjoint analysis is qualitative and individual responses can have great variability in the part-worth utilities. This variability can lead to a larger standard error than other parametric forms of regression. In conjoint analysis, this limitation is overcome by presenting the full array of possible orthogonal combinations, which helps control measurement error (Orme, 2010).

To interpret the part worths utility scores, a higher value indicates larger preference for that level of the factor. A lower or negative value indicates less preference for that level of the factor. By examining the preference weights, the weight given to each level of each factor can be compared across the entire design.

In service industries in Thailand, a male employee (part worths utility = .098, SE = .471) is considered by the participant sample to be preferable to a female employee (part worths utility = -.098, SE = .471).

The employee skill, functional skill (part worths utility = 1.880, SE = 0.737) is preferred over communication skill (part worths utility = -.499, SE = .628) and service skill (part worths utility = -1.381, SE = .737).

An ability in problem solving (part worths utility = .264, SE = .628) is the highest preference in service industries, compared to team working and multi-skill (part worths utility = .062, SE = .737 and -.327, SE = .737 respectively).

Educational attainment of a higher degree (part worths utility = .585, SE = 1.705) is the highest preference, compared to bachelor's degree and lower degree (diploma/certificate) (part worths utility = .390, SE = 1.137 and .195, SE = .568 respectively).

Human relation skill (part worths utility = .088, SE = .471) is preferred over specific cognitive skill (part worths utility = -.088, SE = .471).

In conclusion, the highest attributes (highest total utility) regarded by employers from companies in service industries in Thailand were to be male, and to have functional skill, problem solving, higher degree and human relation attributes.

Table 3 Part-Worth Utility Scores of the Employee Attributes of Demand in Service Industries in Thailand (ค่าประมาณการอรรถประโยชน์ของคุณลักษณะของแรงงานที่เป็นที่ต้องการในอุตสาหกรรมบริการในประเทศไทย)

Variable	Level	Utility Estimate	Standard Error	Contrasts
Gender	Male	.098	.471	Male > Female
	Female	-.098	.471	
Skill	Communication skill	-.499	.628	Functional skill >
	Service skill	-1.381	.737	Communication skill >
	Functional skill	1.880	.737	Service skill
Ability	Problem solving	.264	.628	Problem solving
	Team working	.062	.737	> Team working
	Multi-skills	-.327	.737	> Multi-skills
Knowledge	Lower degree	.195	.568	Higher degree >
	(Diploma/Certificate)			Bachelor's degree >
	Bachelor's degree	.390	1.137	Lower degree
	Higher degree	.585	1.705	(Diploma/Certificate)
Conceptual	Specific cognitive	-.088	.471	Human relation >
	Human relation	.088	.471	Specific cognitive
(Constant)		8.217	1.123	

Source: Author's Calculation by statistical package
ที่มา: จากการคำนวณด้วยโปรแกรมสำเร็จรูปทางสถิติ

Second, in term of relative importance of labour attributes of the employee attributes of demand in service industries in Thailand, the relative importance scores (in percentages) will give a more precise measure of the preference for each variable. The relative importance values of labour attributes can already be inferred from the part worths utility scores presented in Table 4. The range of the part worths utility estimate shows the importance of each factor overall. A wider range in the part-worth estimate shows that factor to have played a more important role in the participants' decision-making. The relative importance scores of each variable were derived from the part worths utility scores (Hair et al., 2006).

The relative importance values of labour attributes of the employee attributes of demand in service industries in Thailand are presented in Table 4, which indicates the overall weight assigned to each variable by participants. Part worths utility scores indicate directionality

within each variable level, whereas relative importance values indicate the weight of each variable in relation to the other variables.

Table 4 Relative Importance of Labor Attributes of Demand in Service Industries in Thailand (ค่าน้ำหนักความสำคัญของคุณลักษณะของแรงงานที่เป็นที่ต้องการในอุตสาหกรรมบริการในประเทศไทย)

Employer	Labour Attribute	Relative importance (%)	Contrasts
Companies in service industries in Thailand	Skills	38.767	Skills > Ability > knowledge > Conceptual > Gender
	Ability	21.268	
	Knowledge	14.911	
	Conceptual	12.950	
	Gender	12.103	

Source: Author's Calculation by statistical package
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Skill was the most important attribute for employer respondents of companies in service industries in Thailand, accounting for the highest percentage of explained variance (38.767 per cent). Ability was the second most important factor, with the weighted response of 21.268 per cent. Knowledge was the third most important factor, with a weighted response of 14.911 per cent, and this was followed by conceptual (12.950 per cent). Gender explained 12.103 per cent of the variance in the decision-making among employer of companies in service industries in Thailand, which was the lowest percentage.

Lastly, in term of its validity, conjoint analysis has an inherent check on its own utility and consistency which is built into the design. This check was obtained by summing the part-worth estimates for each factor in each statement, then rank ordering them according to the part worths utility totals. Each individual participant's preferences can be evaluated for model fit and consistency. Measures of model utility, consistency and interpretation are presented in Table 5. Pearson's product correlation coefficient and Kendall's tau were used as further consistency and utility checks on the model. These correlation coefficients supply the measures of correlation between the observed and estimated part worths utility preferences.

Table 5 Correlation coefficients (ค่าสัมประสิทธิ์สหสัมพันธ์)

Measures of Model Utility	Value	Significant
Pearson's R	.685	.002
Kendall's tau	.533	.002

Source: Author's Calculation

Note. * Correlation is significant at the p<.005

Pearson's R measures the linear relationship and dependence between two values. The coefficient is expressed in a range of -1 to 1, with 1 expressing a positive linear relationship, -1 expressing an inverse relationship, and 0 expressing no relationship (Tabachnik & Fidell, 2001; Hair et al., 2006). Standards have been provided in interpreting the correlation coefficient to be in the range from .5 to 1.

In this model, Pearson's R value ($r = .685$, $p < .005$) shows good accuracy for this sample. The Kendall tau rank correlation is a non-parametric coefficient that measures the degree of correspondence between values. Like Pearson's R, it is expressed within a range of -1 to 1. In this sample, Kendall's tau ($r = .533$, $p < .005$) shows high consistency and concordance between the predicted and actual model fit.

In summary, the analysis using both Pearson's product correlation and Kendall's tau supported the model observation. Both these measures show that the model is accurate for the sample.

7) Conclusion and Discussion (สรุปผลและอภิปรายผลการวิจัย)

The findings of this study indicate the overall preference model for employee effectiveness in the service industry in Thailand. Skill was the most important factor, with a weighted response of 38.767 per cent, and functional skill was the most highly valued skill. Ability was the second most important factor, with a weighted response of 21.268 per cent; the preferred ability was problem solving. Knowledge was the third most important factor, with a weighted response of 14.911 per cent, and a preference for employees holding a higher degree. Conceptual was the fourth most important variable, with a weighted response of 12.950 per cent. Most employers preferred to hire those with ability in human relations. Gender was the least

important factor, with a weighted response of 12.103 per cent; males were preferred over females. The two factors, skill and ability, accounted for more than half the total. Thus, both skill and ability were the two most important factors for employees to possess in service industry. Finally, measures of validity, model utility, consistency and interpretation were discussed, and this model was found to have high accuracy for this sample.

Skill was founded to be the most important attribute of employees in relation to labour demand in service industries in Thailand. The findings indicate that skill has a weighted response of 38.767 per cent. Functional skill had a higher preferred part worth than communication skill and service skill. Employees with functional skill are able to operate confidently and effectively as specialists in typical fields within the service industry. Functional skill is typically outlined by job applicants in their work experience, education and the personal strengths that qualify them for a position. Service skills were embodied by functional skills and technical skills. This supports the earlier finding of Swanson et al. (2008) that negotiation and interpersonal skill relates to the role of the specialist employee – that is, a person highly skilled in a specific function and field. Luk and Layton (2004) confirmed that, in the hotel industry, knowledge about the hotel as functional skill, room-service delivery skills, is core components of skills of service in this industry.

There is much discussion about functional skills. Functional skills can be applied to everyday life and work, and they help employees perform their jobs better. Some of the recent discussion suggests that functional skills have a negative image that could be rectified by a rebranding exercise. For some time, employers have been looking for young candidates with the functional skills needed to operate confidently, effectively and independently. In times of economic downturn, functional skill is more important than academic abilities, since the former enables employees to manage the demands both of the workplace and of further and higher education institutions. In the workplace, functional skill better equips employees to apply their skills to scenarios to solve particular problems, and it also helps learners build independence and confidence. Functional skills also help employees to express themselves better and it can help them manage their job when they start working. It has been suggested that functional skills ensure that employees have the confidence, knowledge and skills that can open doors to more learning, to higher performance in employment, and to better career prospects. Functional skills are the foundation for many skills, such as English and communication skills, which help employees gain the most from life, learning and work. Wilson-Wünsch et al. (2015)

found that knowledge and experience are major factors in organizational performance. Sipe (2016) argued that employees with experience or functional skills will contribute to new ideas within organizations, which increases both the empowerment of other employees and the performance of the organization.

Ability was the second most important factor in the service industry, with a weighted response of 21.268 per cent. An ability in problem solving had a higher preference than team working and multi-skill respectively. Problem solving is a universal job ability that applies to any position and every industry. In the service industry, understanding each step of the process and being able to deal with unpredictable encounters between employees and customers will help an employee to make better decisions and find workable solutions. Even if it is not specified in the job description, many employers will look for applicants with problem-solving skills at various different stages in the application process. They might use anything from psychometric tests to group activities or one-to-one interviews to assess problem-solving skills. McGurk and Mueser (2006) found that the problem-solving skill is essential for employment in the service sector. Strong problem solvers are a valuable addition to any team. Problem solving may seem straightforward to employers when initially considering applicants. As a skill, it is all about using logic and imagination to make sense of a situation and come up with an intelligent solution. In conclusion, problem solving is a vital skill in daily life and work, which is why graduate employers are so keen on it. Beausaert et al., (2015), Adams and Sisson (2013), and Kay et al. (2014) have identified problem-solving skills as creating more and better opportunities in the hospitality sector. Moreover, Adams and Sisson (2013) found that problem solving in relation to customer service is the most essential skill in the hospitality industry. Within the field of hospitality, employee ability means the capability of producing creative ideas and effective solutions to problems, and a hospitality organization with creative employees can thus create extra value and maintain competitive advantages in a dynamic business environment. So, problem-solving ability is necessary to have more creative employees who can deliver better performance and achieve high levels of customer satisfaction in an intensive service industry.

Knowledge was the third most important factor, with a weighted response of 14.911 per cent. A knowledge level gained from a higher degree was preferred to bachelor's degrees and lower degrees (diplomas/certificates). The highest job satisfaction related to higher degrees,

since the latter enable a more effective pursuit of a career and lead to a number of benefits, including financial security, a prosperous career and customer satisfaction. A higher education is important not only in the chosen field; since it enables individuals to think analytically in different situations, it also helps them to understand subjects that are complex, and it improves the ability to communicate with customers in an effective way. Additionally, a higher degree instils important skills like self-discipline, organization, and the ability to see a task through from start to finish. In short, it helps an employee to become a more professional person with many work-related skills.

Marrelli et al. (2005) found that labour competency is a capable measurement of high effective performance, and comprises knowledge, skill and ability, and personal characteristics. Schmenner, (2004) found that a professional service relies on high levels of knowledge that contribute to both varied and successive processes. Barabasz (2014) agreed that educational level impacts an organization's profitability and performance. Matherly and Al Nahyan (2015) also found that education is vital as a principle of human capital, because it can be transferred from employees to employers. Qiu et al. (2015) conducted a study that revealed employees' educational levels to increase opportunities for advancement, particularly in the hospitality industry. Gursoy et al. (2012) found that higher education institutions need to include career management in their curriculum development, so that employees can constantly adapt their knowledge to meet challenging situations as the work environment changes, especially since working performance in the hospitality industry comes from academic programmes. Edinyang et al. (2015) emphasized the notion that graduate employees are at the heart of the hospitality industry. He et al. (2016) found that high education levels are more likely to remain attractive to organizations, since such knowledge ensures technically competent employees who are equipped with relevant generic skills suited to technological and globalization changes. Ha et al. (2016) and McPhail et al. (2015) confirmed that higher education creates better advancement job opportunities. This finding indicates a need for standardization and for the quality of service education to match service industry standards.

Conceptual was the fourth important factor, with a weighted response of 12.950 per cent. Human relation skill was preferred to having a specific cognitive skill. A successful business relies on the productivity of its employees, which is where human relations come into play. Human relations concern the relationships between groups of people, and these relationships

can be between different workers in an organization or between workers and customers. Human relation skills help employees to see how all the parts of an organization work together to achieve the organization's goals. Managers need to make sure everyone working for them is helping to achieve the company's larger goals. Caterine et al. (2014) suggested that conceptual skill should be considered essential for effective management and employee procurement. Workplace relations directly affect work performance. Employees must regularly work together to get things done. An unstable workplace culture will create challenges in managing employees and in a company's productivity. In the service sector in particular, customer satisfaction is a key factor that contributes to organizational success. The human relations ability of an employee has a significant influence on customer service and consequently on the customer's overall satisfaction. Many businesses use customer feedback forms to measure customer satisfaction and remedy any problems. Beausaert et al. (2015), Adams and Sisson (2013) and Kay et al. (2014) have identified that being able to work with diverse groups creates better opportunities in the hospitality sector. So, developing effective human relations skills is crucial to establishing and maintaining a productive service business. However, human relations skill is useful for almost every position, since high-quality human relations in a workplace impacts how employees regard their jobs and influences how they interact with co-workers and customers. It typically leads to increased levels of productivity, as well as job and customer satisfaction. Most important of all, when service employees self-identity as having human relations skill, they can utilize more creativity at work to provide better creative service and increase customer satisfaction.

Gender explained 12.103 per cent of the variance in the decision-making of employers in service industries in Thailand. The employers preferred to hire male employees.

Gender differences in job performance and earnings are systematic and persistent. Differences in average wages and types of work between men and women have been extensively documented in the service industry. What lies behind these systematic gender differences in job performance and earnings? There are three possible explanations: differences in the characteristics of female and male workers; differences in the types of activities and jobs that women and men do; and differences in the returns to both worker and job characteristics. For instance, hotel domestic staff, waitress, and cooks are generally female, while most tour guides, transportation workers, boat operators, and maintenance workers are male. In the financial sector, women are disadvantaged not only by their limited property rights but also by their

relatively low engagement in formalized economic activity and by social barriers to female mobility and interactions with men. This often leads to segmentation of labour markets along gender lines. Bloom and Van Reenen (2010) have examined how gender affects production, while Adib and Guerrier (2003) found that the gendered nature of employees in hospitality is well documented due to differences in types of job, attitudes and wages.

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