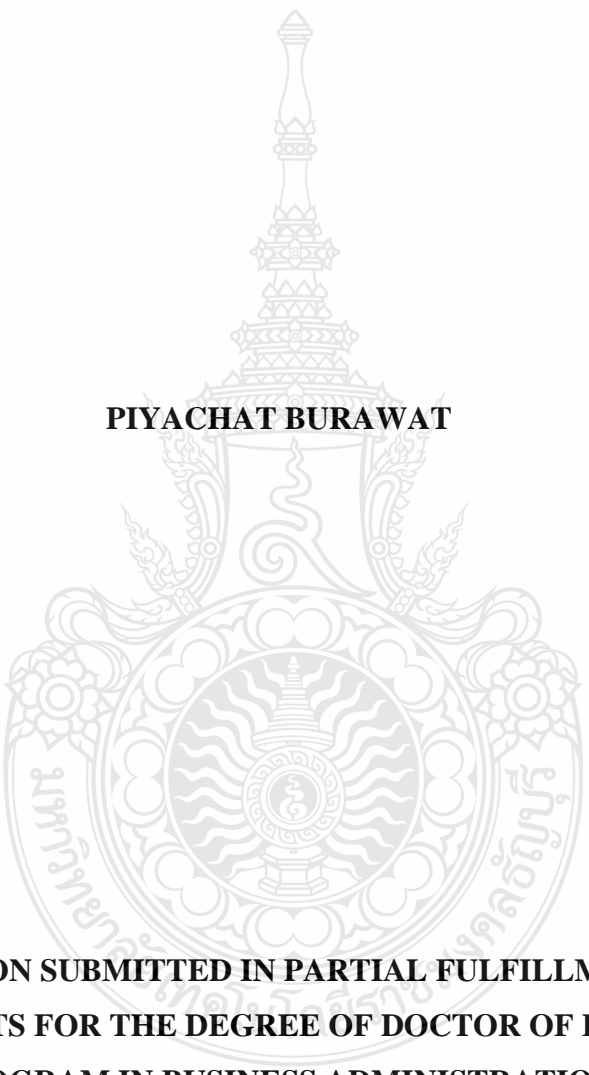


**THE RELATIONSHIPS AMONG PERCEIVED EMPLOYER BRANDING,
EMPLOYEE ENGAGEMENT, AND DISCRETIONARY EFFORT
IN THE PETROLEUM INDUSTRY**

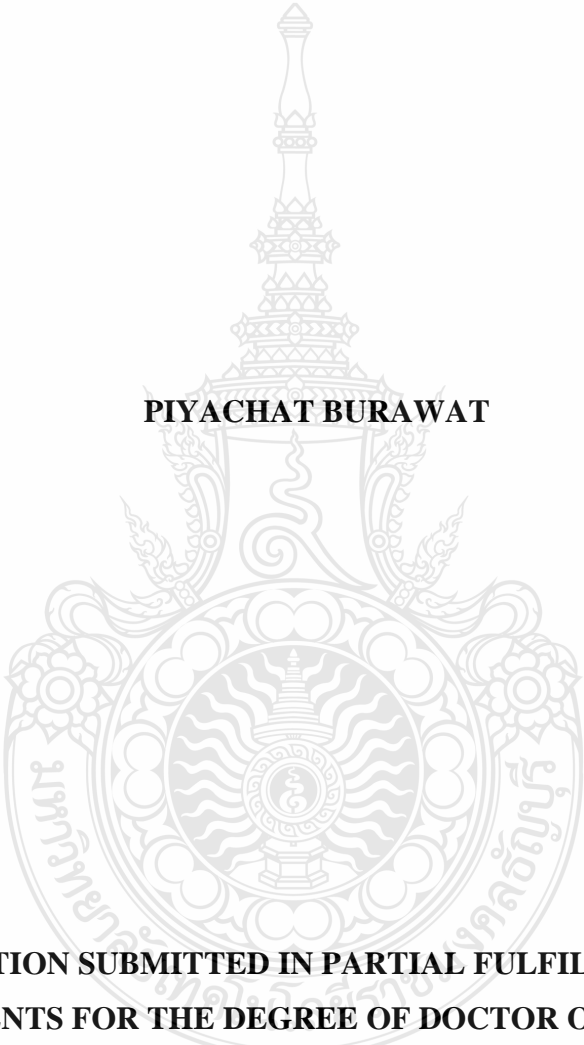
PIYACHAT BURAWAT



**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
PROGRAM IN BUSINESS ADMINISTRATION
FACULTY OF BUSINESS ADMINISTRATION
RAJAMANGALA UNIVERSITY OF TECHNOLOGY THANYABURI
ACADEMIC YEAR 2013
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Dissertation Title The Relationships among Perceived Employer Branding, Employee Engagement, and Discretionary Effort in the Petroleum Industry

Name-Surname Miss Piyachat Burawat


Program Business Administration

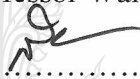
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December 12, 2013

Dissertation Title	The Relationships among Perceived Employer Branding, Employee Engagement, and Discretionary Effort in the Petroleum Industry
Name-Surname	Miss Piyachat Burawat
Program	Business Administration
Dissertation Advisor	Associate Professor Chanongkorn Kuntonbutr, D.B.A.
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Academic Year	2013

ABSTRACT

The purpose of this study was to test the relationships among perceived employer branding, employee engagement, and discretionary effort via the effect of employee expectation.

A survey was completed by 1,349 current employees working in Thai petroleum industry using quota sampling, random sampling, and snowball sampling. The results were analyzed by descriptive statistics, confirmatory factor analysis, and the structural equation modeling by using statistical software programs.

The results indicated that there were strong positive relationships between employer branding and employee engagement, employer branding and employee expectation, employee expectation and employee engagement, employee engagement and discretionary effort, and employer branding and discretionary effort. Moreover, there was a partial effect of employer branding on employee engagement through employee expectation, while there was also a partial effect of employer branding on discretionary effort through employee engagement. The results of this study strongly supported the expectancy theory and the social exchange theory.

Keywords: employer branding, employee engagement, discretionary effort, expectancy theory, social exchange theory, person organization fit, work motivation

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Piyachat Burawat

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CHAPTER 1

INTRODUCTION

The dissertation is entitled the relationships among employer branding, employee engagement, and discretionary effort in the petroleum refining industry. This chapter gave an overview of the research problem, and the area of focus in examining the research problem was the petroleum industry in Thailand. The chapter included the background and statement of the problem as well as the importance and purposes of the study. The research questions and hypotheses were later discussed, followed by conceptual framework, definitions of terms, and delimitations and limitations of the study.

1.1 Background and Statement of the Problem

In recent years, the economy has been in a slowdown caused by a major credit crisis resulting in a significant increase of unemployment all over the world. In contrast, many CEOs and managers believe that the talent pool has not significantly grown, and it has difficulty to get the right employees. The war for talent is still on, and the competition is high in everyday.

Employees are the most valuable asset in any organization relating to a successful company. From practitioner approach, it was revealed that thirty percent of all companies worldwide struggled to find the right employees (Manpower Inc., 2009). This was consistent with the research of consulting company which estimated that replacing an employee costs a half of annual salary (Aon Consulting, 2000). Moreover, the study on firm performance showed that the low turnover rate correlated with

decrease recruiting costs and increase customer satisfaction, which in turn, enhances shareholders' benefit (Aon Consulting, 2000). This was consistent with the study of Rucci et al. (1998) which found that an increase by 5 units of employee satisfaction, leads to 1.3 units increase in customer satisfaction as well as 0.5 units increase in revenue growth.

The changing demographics to senior population country of the developed world pose challenges to workforce. Thai work aging population is expected to be slightly decreasing from 67 percent in 2005 to 60.5 percent in 2065, similar to Thai child aging population which is decreasing from 23 percent to 14.4 percent. On the other hand, Thai old aging population is increasing from 10.3 percent to 25.1 percent (Institute of Population and Social Research, 2005). Based on this tenor Chalamwong and Amorntham (2005) estimated that competition in Thai workforce is getting fiercer.

A global survey on emerging trend in employer branding showed that top five benefits of employer branding were retaining current employees (93 percent), increasing employee engagement (91 percent), attracting job candidates (90 percent), motivating employees in their work (79 percent), and leading to improved business results (71 percent). Employers who understand these issues and seriously apply employer branding to their companies would gain a competitive advantage in the marketplace (Hewitt Associates, 2004).

A study of some academic researchers and consulting companies revealed that employees' perception on their organization attributes have significant impacts on the level of employee engagement. For instance perceived positive organization image and values (Powell & Goulet, 1996; IPSOS Mori, 2006; Austin, 2011) , perceived flexibility and supportive organization policies (Richman, 2008; Macleod & Clarke , 2009),

perceived supportive, fair, and caring supervisors (Aquino et al., 1997; Tepper, 2000; Austin, 2011), perceived high value work experience and contract (Francis & Reddington, 2011), perceived career development opportunities (Macleod & Clarke, 2009), perceived community commitment such as feeling of friend and family member (IPSOS Mori, 2006), and perceived favorable pay (IPSOS Mori, 2006) related to level of employee engagement.

Employee engagement has a significant impact on an organization's profitability such as positive relations on productivity, customer satisfaction and employee retention, and negative relation on employee voluntary turnover. The empirical study reported that engaged employees in Thailand are accounted for only 12 percent of total employee population, whereas not engaged and actively disengaged employees are accounted for 82 and 6 percent of total employee population, respectively. Moreover, the study further estimated that actively disengaged employees who are the main reason of lower productivity make the Thai economy costs each year as much as 98.8 billion Thai baht (\$2.5 billion U.S.) (Gallup, 2005). This was consistent with the global study of 6.7 million employees from more than 2,900 organizations between 2008 and 2010 that asserted the relationship between engagement and organizational success (Aon Hewitt, 2010). In 2010, the company with high-level engagement at 65 percent or greater was outperform than average at 22 percent in total stock market and total return to shareholder. In contrast, the company with low-level engagement at 45 percent or lower could perform worse than average at 28 percent in total return to shareholder (Aon Hewitt, 2011).

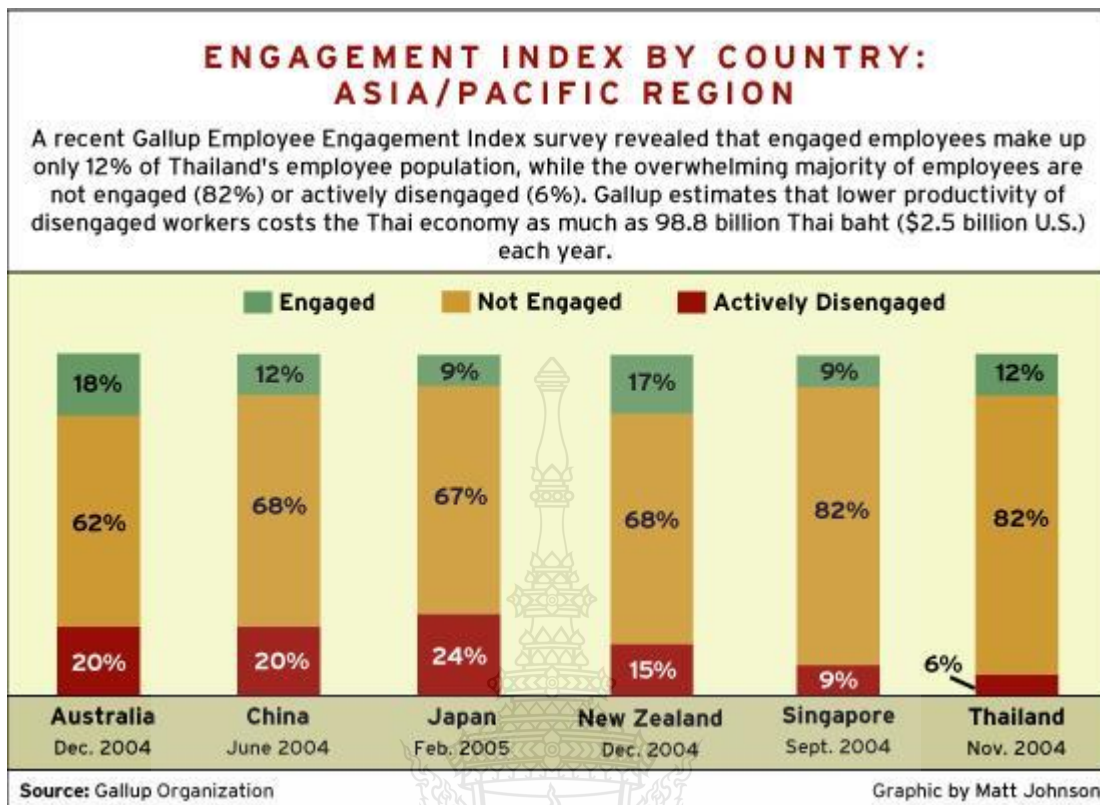


Figure 1.1 The engagement index by country: Asia pacific region
SOURCE: Gallup (2005)

Discretionary effort is referred to the quantity of time and intensity per unit of time which employees choose to allocate to work that is beyond what is the minimum required or expected. Yankelovich and Immerwahr (1983) found that 23 percent of workers said they worked at full potential while 44 percent said that their work effort was at level to keep their jobs, and 75 percent said that they could be better than current working. Corresponding to the report from the Blessing White in 2006, it showed that employees, consisting of 12 percent in North America, 10 percent in Europe, and 22 percent in Asia-Pacific (including Thailand), said that they liked their work and did what was expected (Blessing White, 2006). In summary, discretionary effort is an important organizational variable (Lloyd, 2008), and several studies supported that

discretionary effort is an outcome of employee engagement (Corporate Leadership Council, 2004a; Kular et al., 2008; Towers Perrin, 2003).

Consistently, an economy of Thailand is expected to be increasingly growing although it has, the shortage of crude oil and labor as well as, higher labor wages in comparison with ASEAN. This is a result of an establishment of AEC (ASEAN Economic Community) in 2015, which is likely to make an investment by the free movement of capital, materials, and labor. For example, Thai Oil Group is interested in investing in Indonesia and Myanmar (ASTV, 15 June 2011). Therefore, the labor market is likely to have a fierce competition, especially for skilled and talented workers.

To sum up, according to an increase in old aging population, a low level of employee engagement and discretionary effort, and a high competition of labor market as a result of AEC establishment, employers need to apply employer branding to both attract prospective employees and retain existing employees.

1.2 Importance of the Study

Employees are the most valuable assets in any organization. The organization with strong employer branding differentiating from rivals could better attract prospective employees and retain existing employees, leading to a success of a sustainable competitive advantage through their employees. Many researchers strongly supported the advantages of being the best employers could reduce the costs of recruitment, staff turnover, and sickness-absence while improving employee engagement and commitment at the same time. Moreover, best employers are differentiated from competitors by a high level of employee engagement which links to high discretionary effort and leads to high revenues, profits, and overall returns on

investment resulting in a sustainable competitive company (Gatewood et al., 1993; Grönroos, 2000; Ritson, 2002; Backhaus & Tikoo, 2004; Barrow & Mosley, 2005).

According to Thailand's less capacity in crude oil, it is then dependent on foreign countries by importing crude oil for approximately 14.4% of GDP in order to be used in the petroleum refining industry whereas exporting petroleum products for about 4.4% of GDP in 2011, ranking the fifth position followed from computer, automotive, rubber, and gem, respectively (Thailand Trading Report, 2011). Thai petroleum companies could apply the notion of employer branding to increase the level of employee engagement and discretionary effort, in turn, leading to high performance. As a result, Thailand could reduce imported crude oil and increase exported petroleum products which later lead to reduce the deficit. Moreover, six of nine organizations are invested in the stock exchange market that a reputation of the good company could attract investors which leads to financial performance and competitiveness success.

Both academic researchers and practitioners are intensifying the level of interest in employees' relation with employers. Some studies revealed the relationship between employer branding and employee engagement while some studies revealed the relationship between employee engagement and discretionary effort. However, these relationships are regardless of the theories that engender these relationships. In addition, the study which confirmed the simultaneous relationships among employer branding, employee engagement, and discretionary effort is scarce, especially in academic approach. Therefore, this study proposed to investigate the simultaneous relationships among employer branding, employee engagement, and discretionary effort which were explained by the expectancy and social exchange theory.

In conclusion, best employers who differentiated from rivals such as high quality and profile would succeed a sustainable competitive advantage through their employees. Many studies strongly supported that the advantages of being the best employer could improve retention and, in turn, increase productivity. Best employer is differentiated from competitors by a high level of employee engagement leading to high discretionary effort. Consequently, the organization could achieve in lower turnover and higher retention, larger talent pools, and preferable financial performance.

1.3 Purpose of the Study

The purposes of this study were (1) to study the relationship between employer branding and employee engagement, (2) to investigate the relationship between employee engagement and discretionary effort, (3) to study the relationship between employer branding and discretionary effort, (4) to investigate the relationship between employer branding and employee expectation, (5) to study the relationship between employee expectation and employee engagement, (6) to explore if there is an effect of employer branding on employee engagement through employee expectation, and (7) to explore if there is an effect of employer branding on discretionary effort through employee engagement.

1.4 Research Question and Hypothesis

This study was comprehensive by the following seven research questions: (1) Is there a relationship between employer branding and employee engagement for current employees?; (2) Is there a relationship between employee engagement and discretionary effort for current employees?; (3) Is there a relationship between employer

branding and discretionary effort for current employees?; (4) Is there a relationship between employer branding and employee expectation for current employees?; (5) Is there a relationship between employee expectation and employee engagement for current employees?; (6) Is there an effect of employer branding on employee engagement through employee expectation for current employees?; and (7) Is there an effect of employer branding on discretionary effort through employee engagement for current employees?. To explore and confirm these seven research questions, the below hypotheses were conducted.

To begin with, the relationship between employer branding and employee engagement was developed. Several studies from both academicians and practitioners confirmed the relationship between employer branding and employee engagement. For example, Kunerth and Mosley (2011) conducted surveys among 104 companies of Coca-Cola Hellenic in Southern, Eastern, and Central Europe, Russia, and Nigeria. The result revealed that companies which have invested in employer branding have significantly evolved to attract applicants, engaged and retained talent employees, and in turn helped to maintain performance through a recession. Regarding the above concept, the below hypothesis was thus conducted.

H1: There is a positive relationship between employer branding and employee engagement for current employees.

Considering the relationship between employee engagement and discretionary effort, Kahn (1990) recommended that satisfaction is insufficient to generate discretionary effort whereas employee engagement would be more likely to be available in harder working employees. This was consistent with the global study of Aon Hewitt

(2011) by proposing that engaged employees delivered the discretionary effort (Aon Hewitt, 2011). Based on the above concept the below hypothesis was thus proposed.

H2: There is a positive relationship between employee engagement and discretionary effort for current employees.

The following research hypothesis was associated with the direct relationship between employer branding and discretionary effort which was asserted by both academic researchers and practitioners (Hughes & Rog, 2008; Cushen, 2009; Aon Hewitt, 2012). For example, the study by the consulting company which was conducted from 165 organizations and 74,000 employees in Australia and New Zealand concluded that best employers are not only establishing a great place to work but also creating the conditions for their employees to exceed and encourage discretionary effort (Aon Hewitt, 2012). Based on the above concept, the below hypothesis was thus conducted.

H3: There is a positive relationship between employer branding and discretionary effort for current employees.

The following research hypothesis was associated with the direct relationship between employer branding and employee expectation. Harris and Fink (1987) conducted pre-interview and post-interview from job seekers and found that job seekers intend to accept a job with an organization when they perceived attractive job offer, compensation, and company image. Meanwhile, Turban and Greening (1996) revealed that organizations higher in perceived the organization's reputation are more attractive as employer than organizations lower in perceived the organization's reputation.

Regarding the above concepts, the following hypothesis was therefore conducted.

H4: There is a positive relationship between employer branding and employee expectation for current employees.

The following research hypothesis was associated with the relationships among employer branding, employee engagement, and employee expectation. Austin (2011) revealed that when employees perceived supportive and caring supervisor, proud in their organization, and more opportunities growth, employee engagement would then increase. In addition, the study by the IPSOS Mori in 2006 suggested that employees' perceptions of corporate values, community commitment, favorable pay, and feeling of friend and family member have significant impacts on employee engagement (IPSOS Mori, 2006). Regarding the above concepts, the following hypotheses were therefore conducted.

H5: There is a positive relationship between employee expectation and employee engagement for current employees.

H6: There is an effect of employer branding on employee engagement through employee expectation for current employees.

The following research hypothesis was associated with the mediate effect of employer branding on discretionary effort through employee engagement. Hughes and Rog (2008) stated that engaged employees tend to positively say about their company, want to stay with the company, and provide a superior discretionary effort that advocated to a high level of employer brand. Meanwhile, the study was conducted from HR professionals in North America, and the finding revealed that a well-defined employer brand links to high employee engagement, whereas low employer brand leads to low engagement which, in turn, results in dysfunctional work relationships, lower productivity, and no discretionary effort (Big Picture, 2012). Regarding the above concepts, the following hypothesis was therefore conducted.

H7: There is an effect of employer branding on discretionary effort through employee engagement for current employees.

1.5 Conceptual Framework

The conceptual framework of this dissertation depicted in figure 1.2 was shown in the following paragraph.

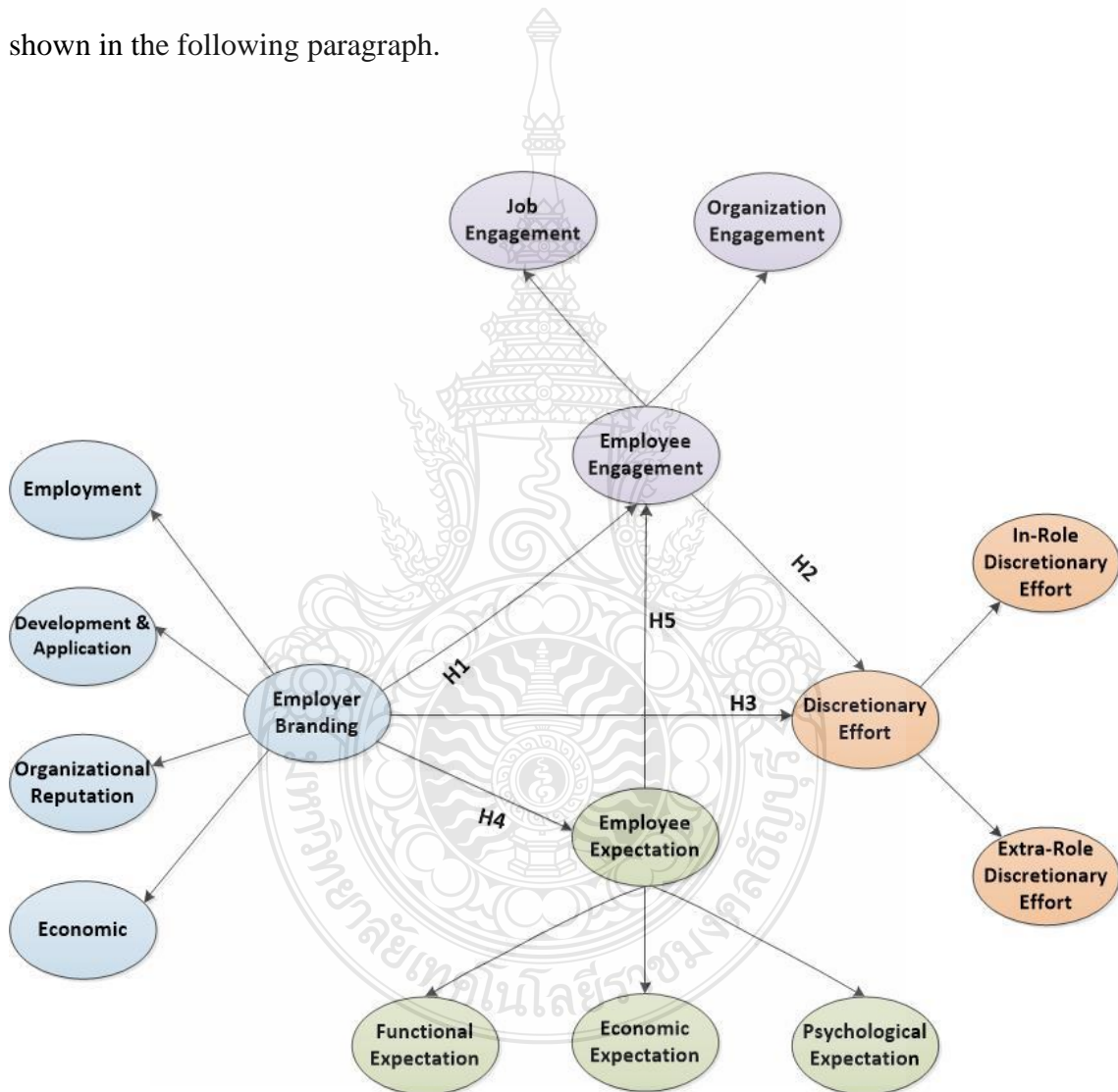


Figure 1.2 Conceptual framework

1.6 Definition of Terms

Employer branding (EB) was defined as “the package of functional, economic, and psychological benefits provided by employment and identified with the employing company” (Ambler & Barrow, 1996, p.187). Meanwhile, Dell et al. (2001) suggested that the employer brand included the organization’s values, systems, policies, and behaviors toward the objectives of attracting, motivating, and retaining the organization’s existing and prospective employees. On the other hand, many authors proposed the different view that described employer branding as a strategy to build an image in the minds of the potential employees to be “a great place to work” or to become an employer of choice (Ewing et al., 2002; Lloyd, 2002; Sullivan, 2004; Minchington, 2006).

Employer attractiveness (EAt) was referred to the envisioned benefits that a potential employee sees in working for a specific organization (Berthon et al., 2005, p.156).

Employee engagement (EE) was defined as “the harnessing of organization members’ selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances” (Kahn, 1990, p.694). The second notion came from Schaufeli et al. (2002, p.74) which defined engagement as “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption.”

Discretionary effort (DE) was defined as “the difference between the maximum amount of effort and care an individual could bring to his or her job, and the minimum amount of effort required to avoid being fired or penalized; in short, the

portion of one's effort over which a job holder has the greatest control" (Yankelovich & Immerwahr, 1983, p.1).

Employee expectation relates to an individual who consciously selects particular courses of action based on his or her perception, attitudes, and beliefs on desired consequences that increase pleasure and avoid pain. The theories associated with three conditions are expectancy, instrumentality, and valence. Vroom (1995) further explained that "given the opportunity a person will choose to work when the valence of outcomes that he expects to attain from working is more positive than the valence of outcomes that he expects to attain from not working" (p.35).

The petroleum industry was defined as an industry associated with three major processes including upstream, midstream, and downstream process. In general, midstream and downstream processes are combined to downstream classification. The upstream process is referred to the exploration, recovery, and production of crude oil and natural gas known as the exploration and production (E and P) process. The midstream process is referred to the collecting and transporting wet natural gas from the well heads to processing plant. Finally, the downstream process is referred to refining crude oil, selling, and distribution of natural gas and products derived from crude oil (Wikipedia Foundation Inc., 2012).

1.7 Delimitation and Limitation of the Study

Some noteworthy limitations of the study were addressed. The first limitation included the effect of extraneous variables which may affect employer branding, employee engagement, and discretionary effort such as macroeconomics and economic crisis. Second, the data collection of the study involved a snowball sampling rather than

a random sampling method. As a result, some cautions are required in generalizing the results to the larger population. Moreover, since the study used cross-sectional and self-report data the conclusions could not only make causal inferences but also raise some concerns about common bias. Therefore, a longitudinal study is required to provide more definitive conclusions. The final limitation was the findings explaining behaviors and emotions of Thai employees which may not be corresponding with foreigner employees.



CHAPTER 2

REVIEW OF THE LITERATURE

Chapter two began with an introduction to the concept of employer branding as an emerging viewpoint in recent times. The latter section about the review of employee engagement which is the consequence of employer branding was discussed, followed by the reviews of discretionary effort which is an outcome of employee engagement. The fourth section was the reviews of expectancy theory while the last section mentioned the review of petroleum industry which is an interested area of this study.

2.1 Employer Branding

Brands are crucial for both marketing and business strategies. The acknowledged definition of a brand was described as a specific name, term, sign, symbol, design, or a combination of these features intending to distinguish seller or sellers from those competitors (The American Marketing Association (AMA), 2012; Kotler et al., 2001; Doyle, 2002; Schneider, 2003). In traditional marketing, consumers received three benefits from purchased the goods or services which were function, scarcity or market price, and psychological benefits (San Bernardino of Siena, c. 1420). On the other hand, in recent years brand management was popularly applied to human resource management (HRM) called as employer branding (Backhaus & Tikoo, 2004; Berthon et al., 2005).

As a result, employer branding (EB) brings return to both HRM and branding to reinforce the strength of and add value to company equity from a customer

perspective (Kennedy, 1977; Dowling, 1994; Ambler & Barrow, 1996; Stuart, 1999; McDonald et al., 2001; de Chernatony et al., 2003; King & Grace, 2005). Although employer branding is one of the most interested strategies in business firms and practitioners, academic study is scarce (Backhaus & Tikoo, 2004). Many organizations and business firms are using employer branding in order to attract potential employees as well as to engage and retain current employees (Grönroos, 2000; Backhaus & Tikoo, 2004).

2.1.1 Theoretical foundation for employer branding

Since employer branding is scarce in academic area, therefore the theoretical foundation has not been fully developed. The theoretical foundation of employer branding is related to the assumption that employees are the most valuable assets in any organization, and employers who have expertise in human capital investment would benefit from higher performance, which consists of resource-based view (RBV), psychological contract, brand equity, person-organization fit, and social identity theory.

Barney (1991) suggested that resource-based view related to the characteristics of the company's resources that are rare, valuable, non-substitutable, and difficult to imitate allow a company to move ahead of its competitor. Moreover, these resources lead to sustainable competitive advantage. Generally, resources which create competitive advantage are composed of capital, plant, equipment, and especially human capital is an important resource that is both unique and difficult to imitate by competitors. Ambler and Barrow (1996) proposed that using employer branding not only helps to increase quality of employment which is difficult to imitate the workforce but also enhances employee retention. The second foundation is psychological contract.

The notion of the traditional psychological contracts concept is that employees promised loyalty to the company in exchange for job security (Hendry & Jenkins, 1997). On the other hand, the recent trend of psychological contracts concept changes in an opposite way which employers provide marketable skill to employees such as training and development in exchange for effort and flexibility (Baruch, 2004).

Companies use employer branding including training, career advancement, and personal growth and development to advertise the benefits which they offer to their employees (Backhaus & Tikoo, 2004). The third foundation is brand equity. Aaker (1991, p.15) defined brand equity as “a set of brand assets and liabilities linked to a brand that add to or subtract from the value provided by a product or service to a firm and/or that firm’s customers.” In employer branding terms, brand equity is applied to the effect of brand knowledge on prospective and current employees that they would respond in different ways to similar recruitment, selection, and retention offers from different companies according to the perceiving employer brand equity associated with these companies (Backhaus & Tikoo, 2004), followed by person-organization fit. Person-organization fit was described that potential candidates compare the employer brand image which offered by each company to their personalities, needs, and values. Potential candidates tend to be more attracted when they perceived that the employer brand image is appropriate to their personalities, needs, and values (Schneider, 1987; Cable & Judge, 1996). The final foundation is social identity theory. The basic foundation is that people derived their self-concept from their membership in certain groups (Tajfel, 1982); for example, employees develop a sense of who they are, what their goals and attitudes are, and what they ought to do from their organizational membership. Dutton et al. (1994) proposed that organization identities consist of the perceived organizational

identity and the construed external image. The perceived organizational identity relates to the perception of employees on the image of organization. On the other hand, the construed external image relates to the perception of employees on the outsiders' evaluation of their organization. Moreover, the construed external image is important to employees for measuring the value of themselves and their organization.

2.1.2 Literature review of employer branding

The application of branding principles to human resource management has been termed employer branding. Organizations increasingly apply employer branding to attract applicants and retain employees who are engaged in the strategy and culture of the organization.

Ambler and Barrow (1996) were credited as the creators of the term “employer brand” which was defined as “the package of functional, economic, and psychological benefits provided by employment, and identified with the employing company” (Ambler & Barrow, 1996, p.187). The authors used semi-structured depth interviews with top executives of 27 UK companies and later found the relevance between branding and employment. By comparing with conventional brand, the authors further explained functional benefit as employee development and job roles, economic benefit as material or financial rewards, and psychological benefit as feeling such as satisfaction and recognition (Ambler & Barrow, 1996). This is consistent with Barrow and Mosley (2005) who separated the employer branding benefits into functional benefits and emotional benefits. Functional benefits relate to basic advantages and performance assurance, such as high payment or incentives, a safe and attractive working environment, and a progressive equipment and technology to perform roles and responsibilities. In contrast, emotional benefits relate to motivation, work experience,

satisfaction, recognition, and belief in the organizations. The authors further stated that brands were extended through functional benefits which are easily imitated and emotional benefits which are difficultly imitated leading to a sustainable competitive advantage.

Employer branding comprises both brand personality and brand positioning which is the same as traditional marketing (Ambler & Barrow, 1996). Barrow and Mosley (2005) proposed that employer brand personality represents in authenticity of current culture and shared aspirations of employees while employer brand positioning is concerned with two important logics. The first logic is based on a diversity of target groups where each target group has different needs and aspirations which employer needs to posit strategy or motivation to meet these needs and aspirations. The second logic is concerned with the communication that employer needs to select the right audiences with the right messages.

Similar to Ambler and Barrow's (1996) definition, Dell et al. (2001, p.10) suggested that employer branding included the organization's value, systems, policies, and behaviors toward the objectives of attracting, motivating, and retaining the organization's existing and prospective employees. The employer branding could be viewed as a long-term strategy to manage the awareness and perception of existing and future employees, attract candidates, and ensure that current employees engaged in the company's culture, strategy, values, and goals (McKinsey, 2001; Backhaus & Tikoo, 2004). Uncles and Moroko (2005) described employer branding as the company's ability to attract, retain, and motivate employees who could bring value to the organization as well as to be able to transfer brand promise to customers as a result.

Many authors proposed different views by describing employer branding as a strategy to build an image in the minds of the potential employees to be “a great place to work” or to become an employer of choice (Ewing et al., 2002; Lloyd, 2002; Sullivan, 2004; Minchington, 2006). Barrow and Mosley (2005) argued that this perspective is too limited to recruitment advertising or internal communication. Moreover, it lacks the depth recognition of the reality of the employment experience. Barrow further explained in Barrow and Mosley (2005) that the 1996’s original employer branding concept proposed that the main role of the employer brand is to provide a coherent framework for management to simplify and focus priorities, increase productivity, and improve recruitment, retention, and commitment. In addition to Barrow and Mosley (2005), Dell et al. (2001) contended that though the great place to work concept is increasing according to improve recruitment and retention, true employer branding is more challenge and goes further. The first role of true employer branding is to motivate and ensure employees’ understandings of the organization’s vision, values, goals, and commitment. The second role is to motivate all of stakeholders to create company excellence. Meanwhile, some researchers argued that only a strategy of becoming an employee of choice is improbable to deliver the brand promise to customer (Mosley, 2007; Maxwell & Knox, 2009).

Dell et al. (2001) suggested that corporate branding is closely related to employer branding, and some researchers stated that their relationship is inseparability. The importance of corporate branding is delivering the brand promise to customers whereas the useful of employer branding is closely related to human resource management. Employer branding is further explained as an exclusive importance in the context of less well-known corporate brand, less product brand identity, and the

company's customers are not end-users. Backhaus and Tikoo (2004) proposed that product and corporate branding directed a communication with external audience whereas employer branding directed the efforts to both internal and external audiences. Successful organizations develop employer brands consistent with product and corporate brand (Sullivan, 1999; Dell et al., 2001; Backhaus & Tikoo, 2004). Although many researchers agreed that employer branding could be used to enhance product and corporate brand, Maxwell and Knox (2009) argued that a few researchers explained how and provided the reasons to support this assumption.

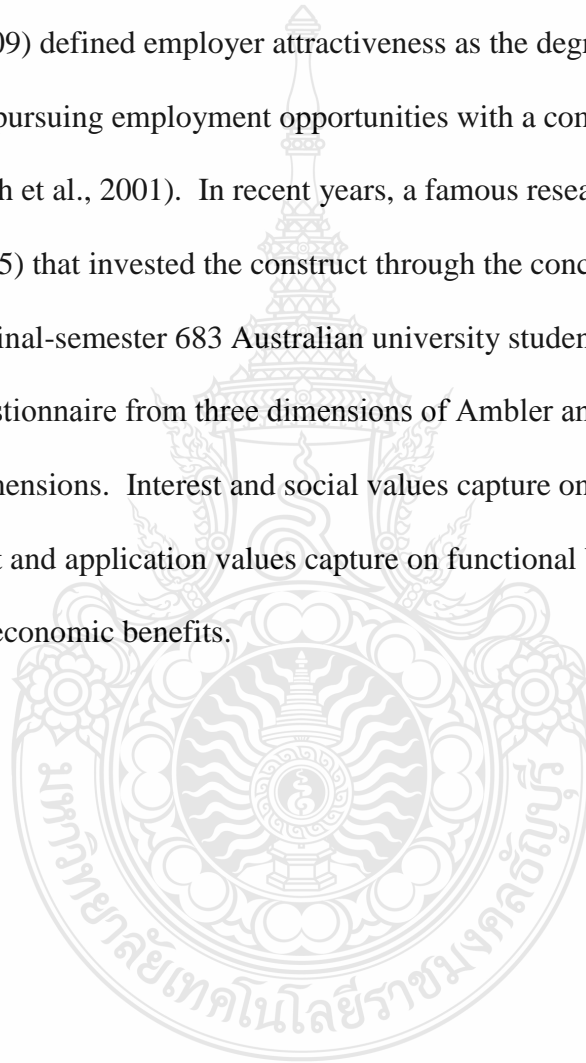
Employer branding concerned both external and internal marketing (Dell et al., 2001; Backhaus & Tikoo, 2004). External marketing is related to strategies that the company creates to attract the talent potential employees. In contrast, internal marketing views existing employees as internal customers, and jobs are viewed as internal products. When internal customers are satisfied with the needs and wants, then the objectives of the firm are delivering (Berry, 1981; Grönroos, 2000; Berthon et al., 2005). Human capital is hard to be imitated, and it brings value to the company such as enhancing corporate values and goals, unique culture and increasing effectiveness (Backhaus & Tikoo, 2004; Ilczuk & Cau, 2006).

According to the above mentioned on brand positioning, Barrow and Mosley (2005) suggested that the company needs to develop flexible strategies to attract and retain different types of employees known as employee value proposition (EVP). Ulrich and Brockbank (2005) defined EVP as the standard specifies that employees would get from the company when they meet expectations. Barrow and Mosley (2005) proposed that EVP is not only an economic benefit, but also covers functional and psychological benefits. A great EVP is applied in Microsoft such as advance career,

forefront technology development, working with smart colleagues, enjoy life balance, and ownership (Barrow & Mosley, 2005).

Employer attractiveness is closely related to employer branding.

Berthon et al. (2005, p.156) defined employer attractiveness as “the envisioned benefits that a potential employee sees in working for a specific organization” while Sorumluluk and Cekiciligi (2009) defined employer attractiveness as the degree that a candidate has been interested in pursuing employment opportunities with a company (Rynes et al., 1991; Aiman-Smith et al., 2001). In recent years, a famous research comes from Berthon et al. (2005) that invested the construct through the concept of employer brand equity by using a final-semester 683 Australian university students. The authors developed the questionnaire from three dimensions of Ambler and Barrow’s (1996) concept to five dimensions. Interest and social values capture on psychological benefits while development and application values capture on functional benefits, and economic value captures on economic benefits.



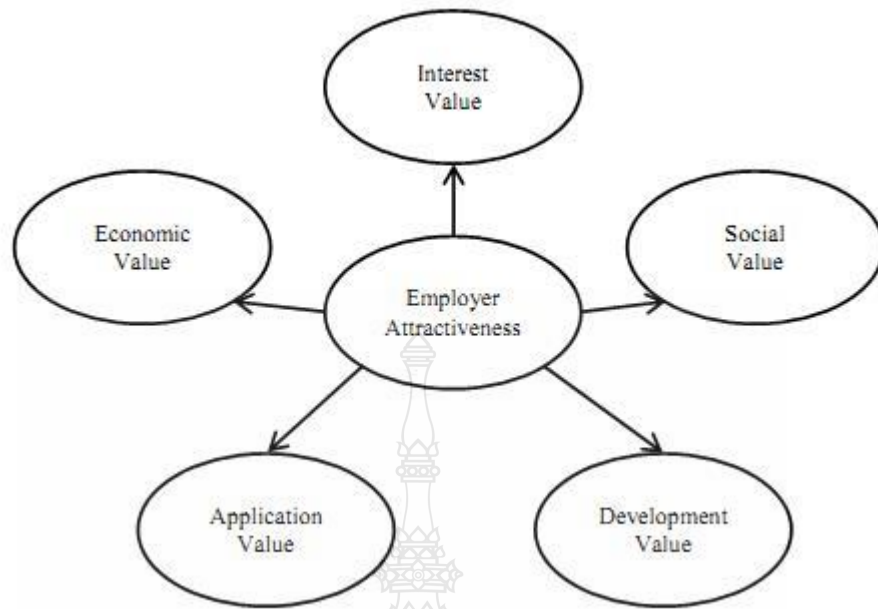


Figure 2.1 The component of employer attractiveness

SOURCE: Berthon et al. (2005)

First of all, interest value relates to work's attractiveness such as challenging practice to create new idea, improving high quality, and working with high technology, and innovative products and services. Second, social value relates to the quality of working environment and the relationships among employees, supervisors, and colleagues. Third, economic value relates to the financial employment package that an employer offers to employees such as above-average salary, health care, rewards, and welfare. Fourth, development value relates to emotional motivation such as recognition, feeling of valued, self-confidence, and career advancement. Finally, application value refers to opportunity to increase and apply their knowledge such as opportunity to teach others, opportunity to apply their competence to jobs, and opportunity to give back to society.

Berthon et al. (2005) further suggested that employer attractiveness can be applied in various contexts and situations. For instance, it could be used to attract new employees in various targets such as students, graduates, and professionals, and it can also be used as a checklist among existing employees in their perceptions toward the company longitudinally. Bodderas et al. (2010) conducted the surveys from 2,189 employees of an insurance company, and it was found that employer branding attributes were composed of the Berthon et al.'s (2005) five dimensions. Besides, the authors further supported that employer attractiveness could be applied to the context of current employees. Meanwhile, Maxwell and Knox (2009) argued that current and potential employees tended to perceive different attributes of employer branding (Knox & Freeman, 2006; Lievens et al., 2007). This is consistent with a study of Aiman-Smith et al. (2001) from business students which found that ecological rating most strongly predicted attractiveness while pay most strongly predicted job pursuit intentions. Furthermore, Maxwell and Knox (2009) further argued that academic literature on employer branding concentrated on prospective employees whereas scarce direction on existing employees.

In addition to the research of Berthon et al. (2005), the research of Maxwell and Knox (2009) has received a lot of attention. Maxwell and Knox (2009) conducted a comparative case study from current employees in five organizations consisting of a non-profit sport, a television, a film, a data analysis, and a post-graduate school. The researchers found that four employer attributes important to current employees included employment, organizational success, construed external image, and attributes and values of products or services.

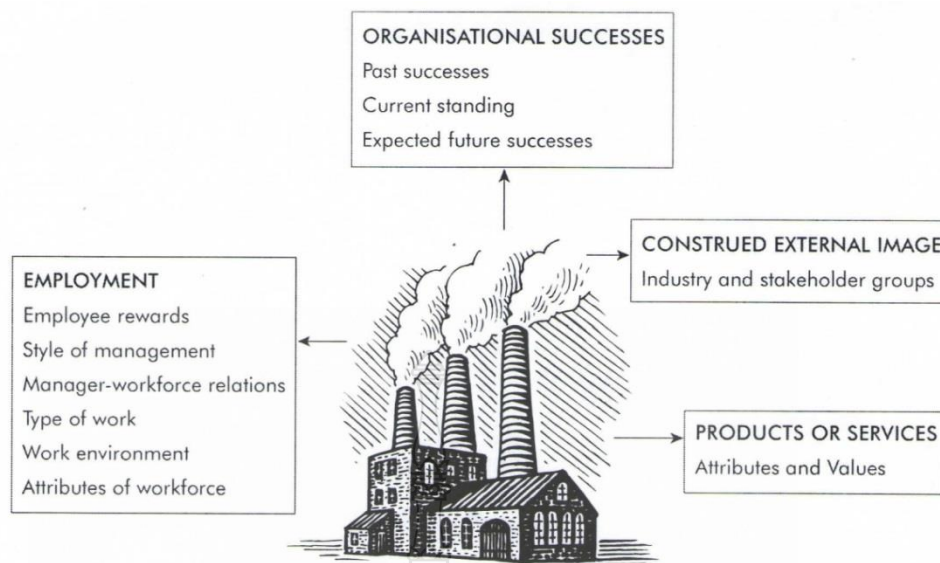


Figure 2.2 Perspective of current employees about organizational attributes influencing the perceived attractiveness of an organization's employer brand

SOURCE: Maxwell and Knox (2009)

First of all, employment attribute relates to six sub-categories including work environment such as office location and social relationships, work force relates to diversity of the workforce and characteristics of employee, type of work including variety and challenging job, style of management such as responsiveness to employees when they need help and level of bureaucracy, employee rewards relating to both tangible and intangible rewards such as salary, compensation, development and career advancement, and management-workforce relations such as trust and respect between managers and employees. Second, organizational success relates to the perception of employees on company success in past, present, and future. Third, construed external image relates to the perception of employees on the outsiders' evaluation of their organization. Finally, products or services relates to employees' perception of their products or services such as diversity, reputation, and values.



Figure 2.3 The employer brand mix

SOURCE: PiB (2003)

In order to help both assessing current employer reality and planning how to deliver the employer brand proposition that the company desires going forwards, Barrow and Mosley (2005) developed a list of twelve key dimensions referring to as the employer brand mix (depicted in figure 2.3). They divided the twelve areas into two broad groups where the first one was related to the wider organizational context and policy, and the second one was the local context and practices. Each of these elements represents key touch-points for the employer brand.

Organizational context and policy consists of external reputation, internal communication, senior leadership, values and corporate social responsibility, internal measurement systems, and service support. First of all, current employees are important to deliver message and image as a reputation of the organization to external stakeholders. In general, most employees are likely to defend their organizations, but employers need to give information and ensure that employees understand either good or bad things. These employees assume to be brand personality proud to be

organizations' members leading to increase employee engagement, sales growth, and external brand image. Furthermore, internal communication is important to employer brand since it has the potential to supplement or destroy employer brand image that people feel with the company. Effective internal communication referred to high degree of consistent communication across the organization to support the desired values and personality. Moreover, senior leadership team is the most powerful to employees' perceptions and engagement of the firm that they need to aware of the effect of their words, messages, and actions. In addition, in recent years numerous researchers are interested in values and corporate social responsibility (CSR). The study of consulting company found that 20 percent of employees indicated that employers with a positive social responsible image are more attractive, especially on the diversity and work-life balance aspects (The Work Foundation and the Future Foundation, 2006). Besides, strong employer brands need to create a measurement system such as 360-degree evaluation and balanced scorecard that lead to organization improvement. Finally, employers need to support both working system and equipment that increase the speed and quality of both product and service.

In contrast, local picture and practice consist of recruitment and induction, team management, performance appraisal, learning and development, reward and recognition, and working environment. First of all, recruitment process relates to select new employees who fit to the organization while employers use an induction process to communicate with employees about expectations which they need from their employees. Second, team management especially employees' sense of valued, involved, and empowered represents credibility and sustainability of the employer brand. Next, employee behaviors depend on the quality of performance appraisal

process such as fairly judged and appropriate appraiser. Fourth, the employer provides learning and development to both attract new employees and increase employee engagement level that their employees feel of caring and valuing. In addition, employment package is important to motivate both future and current employees. Financial package provides a baseline for the brand while recognition enhances the feeling of valued and employee engagement. Lastly, working environment is an important factor of employer brand such as well-furnished offices, modern, and well-appointed sites. Even though the quality of working environment is important, many organizations surprisingly pay little attention to it.

Barrow and Mosley (2005) suggested that strong employer brand requires not only consistent communication but also careful and coherent management. The authors further suggested that there is no ideal template for employer brand, but it needs to match to an organization's resources and objectives. In order to help being a great place to work, human resource practitioners developed a three-step to develop a strong employer branding. To start with, an organization creates a concept of employment package offered to both future and existing employees. Second, an organization develops employment package attractive to the external market such as the targeted potential employees, recruiting agencies, and placement counselors. Finally, an organization delivers the brand promise offered to recruit onto the firm and embedded as a part of organizational culture (Frook, 2001).

In addition, the practitioners from the consulting company suggested five steps to improve the levels of employer brand. The first step is to understand your organization such as the characteristics and distinction of employees as well as organizational values and cultures. The second step is to create attractive and

compelling organizational attributes for both current and future recruits. Moreover, these attributes also deliver brand promise to customers. The third step is to develop the regulations and standards to measure the brand promise achievement. The fourth step is to align all people practices to advocate and strengthen the brand promise. The last step is to execute and measure the level of fulfillment (Hewitt Associates, 2004).

The fundamental contribution of employer branding is the effective communication not only between employers and their current employees but also between employers and new recruits. Strong employer brands increase an organization's ability to attract, retain, and engage employees. Many researchers and practitioners suggested that strong employer brands help to reduce the costs of recruitment, staff turnover, and sickness-absence while improving employee engagement and commitment. High employee engagement links to high revenues, profits, and overall returns on investment leading to sustainably competitive company (Gatewood et al., 1993; Grönroos, 2000; Ritson, 2002; Backhaus & Tikoo, 2004; Barrow & Mosley, 2005).

2.2 Employee Engagement

Recently, employee engagement (EE) has become a hot topic and been widely used in business firms by practitioners whereas few academic and empirical research were conducted by academic researchers (Robinson et al., 2004). Many researchers and practitioners have asserted that the consequences of employee engagement are both employee outcome and organizational success such as employee efficiency, turnover rate, customer satisfaction, and financial performance (Harter et al., 2002; Towers

Perrin, 2003; Baumruk, 2004; Bates, 2004; Richman, 2006; Gallup, 2006; Robertson & Markwick, 2009; Aon Hewitt, 2011).

2.2.1 Theoretical foundation for employee engagement

Since employee engagement is scarce in academic approach, the theoretical foundation is therefore ambiguous that do not fully explain why employees would respond to the conditions offered by the organization with different degrees of engagement. However, Saks (2006) proposed that these varying degrees of engagement could be explained by social exchange theory (SET).

A theoretical foundation of SET is the relationship between parties into trusting, loyal, and mutual commitment that evolve over time as well as parties dwell by certain reciprocity rule (Cropanzano & Mitchell, 2005). Cropanzano and Mitchell (2005) stated that reciprocity or repayment is best known as an exchange rule while Gouldner (1960) classified reciprocity into three different types which were interdependent exchanges, a folk belief, and a norm and individual orientation. First of all, reciprocity as interdependent exchanges is associated with interpersonal transactions; therefore, one party acts or gives something leading to a response or returns something by another party. For instance, when employees receive economic and socio-emotional outcomes from their company, they feel obliged to well respond and repay (Cropanzano & Mitchell, 2005) whereas the company insufficiently supports these outcomes leading to the high level of disengaged employees. Moreover, reciprocity as a folk belief is associated with the cultural expectation that people get what they deserve (Gouldner, 1960). For instance, an unhelpful person will be punished or a helpful person will receive help from another in the future. Finally, reciprocity as a norm and individual orientation is associated with a cultural mandate in which a person

who does not comply is punished (Malinowski, 1932; Mauss, 1967). Cropanzano and Mitchell (2005) suggested that people with a strong exchange orientation were more likely to well respond than people with a low exchange orientation.

The second theoretical foundation of engagement is expectancy theory. Vroom (1964) suggested that an individual consciously selects particular courses of action based on an individual's perception, attitudes, and beliefs on desired consequences that increase pleasure and avoid pain. The theory is associated with three conditions are expectancy, instrumentality, and valence. Vroom (1995) further explained that "given the opportunity a person will choose to work when the valence of outcomes that he expects to attain from working is more positive than the valence of outcomes that he expects to attain from not working" (p.35). Besides, Vroom and Deci (1992, p.15) stated that employees said they engage in behaviors because they expect those behaviors lead to their goals. The expectancy theory has been seriously tested and has received strong support that the expectancy theory provides a general framework for measuring, evaluating, and interpreting individual behavior (Fudge & Schlacter, 1999; Smith & Rupp, 2003).

In summary, social exchange theory and expectancy theory serve as theoretical foundation to clarify why employees choose to respond more or less engaged in their work and company.

2.2.2 Literature review of employee engagement

As the concept of employee engagement has increased in popularity, the developments in various definitions, measurement, and conceptualization has increased significantly. Before examining the predictors and the results of employee engagement, the numerous of definitions applied to it shall be examined.

The definition of employee engagement is inconsistent and separated into many different directions. According to the academic literature, there are four notions consisting of Kahn's (1990) need-satisfying notion, Maslach et al.'s (2001) burnout-antithesis notion, Harter et al.'s (2002) satisfaction-engagement notion, and Saks's (2006) multidimensional notion (Shuck, 2010). A discussion of each notion is as follows.

Regarding the first notion, Kahn (1990) was the first researcher who applied the concept of engagement to work. Personal engagement was defined as "the harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances" (Kahn, 1990, p.694). In contrast, personal disengagement was defined as "the uncoupling of selves from work roles; in disengagement, people withdraw and defend themselves physically, cognitively or emotionally during role performances" (Kahn, 1990, p.694). Kahn (1990) took two qualitative studies of 16 summer camp counselors and 16 architecture firm members. The first study used 24 open-ended questions while the second study used in-depth interviews based four situations in which they had felt. The study revealed that psychological meaningfulness, safety, and availability related to both work engagement and disengagement. The first condition was that psychological meaningfulness was associated with work elements that created incentives or incentives for the investment of self including challenging and variety job, autonomy, clear of procedure and goals, positions that offer preferred self-image and influence, work interactions with more dignity, self-appreciation, and sense of value. The second condition was that psychological safety was associated with the elements of social systems that created more or less predictable, consistent, and nonthreatening

situations such as interpersonal relationships, intergroup relationships, management style, and organizational norms. The final condition was that psychological availability was associated with individual distractions that created more or less preoccupying in role performance situations such as physical energies, emotional energies, the level of confidence in own abilities and status, and outside life.

May et al. (2004) only studied to replicate and confirm the test of Kahn's (1990) personal engagement concept (Shuck, 2010). This study used empirical data investigating 213 employees working in the large U.S. Midwestern insurance firm to explore the determinants and the mediating effects of three psychological conditions on employees' engagement in their work. The results of the study showed that all three psychological conditions had significant positive relationships with personal engagement, especially meaningfulness which has the strongest relationship. On the other hand, May et al. (2004) critiqued that these predictors are revealed the whole effect from an engagement that other variables might be investigated such as training programs and flexible working hour.

The second notion of engagement comes from the burnout literature. Maslach and Leiter (1997) defined burnout as an erosion of job engagement. Maslach et al. (2001) rephrased job engagement as the antipode of burnout. Meanwhile, Watson and Tellegen (1985) stated that burnout and engagement related to the dimensions of enjoyment and motivation. Maslach et al. (2001) further explained that burnout was associated with the low levels of enjoyment and motivation whereas engagement was associated with the high levels of enjoyment and motivation. According to Maslach et al. (2001), there were six antecedents of burnout relating to work-life areas comprising workload, control, reward, community, fairness, and values. First of all, a mismatch of

workload was associated with an excessive job quantity and the lack of skill to carry out the job. Second, a mismatch of control was associated with the lack of control resources and the lack of authority to pursue the work. Third, a mismatch of reward was associated with insufficient extrinsic and intrinsic rewards. Fourth, a mismatch of community occurred when people lost positive relationships with colleagues and supervisors. Fifth, a mismatch of fairness occurred when people perceived unfairness such as the inequity of workload, compensation, and work appraisal. Finally, a mismatch of values occurred when people felt a conflict between values such as between unethical values and sales volume.

The Maslach Burnout Inventory-General Survey (MBI-GS) was developed to measure the level of burnout which comprised three dimensions including exhaustion, cynicism, and professional efficacy. Some researchers conducted empirical studies to confirm that burnout is negatively related with engagement (Schaufeli et al., 1996; 2002; 2004; Schaufeli & Bakker, 2004; Hakanen et al., 2006). On the other hand, Schaufeli et al. (2002) argued that engagement is adequately measured by the opposite dimensions of MBI-GS. One suggestion by Schaufeli and Bakker (2004) was the antecedents and consequences of burnout and engagement are different, and then the organization needs to apply different strategies and interventions to reduce burnout or increase engagement. Meanwhile, Johnson (2003) critiqued the burnout-antithesis approach that this approach is interested in emotional and physical absences of burnout whereas cognitive engagement is disregard.

In addition to testing the model of Maslach et al. (2001), Schaufeli et al. (2002, p.74) also defined engagement as “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption.” According to a new

definition of Schaufeli et al. (2002), the three new dimensions of engagement emerged were vigor, dedication, and absorption. Vigor is referred to a high level of energy and elasticity, a readiness to invest effort in individual's job, an indefatigable ability, and an attempt in the confrontation with obstacles. Dedication is referred to an individual's strong work involvement, feeling of eagerness and importance, and sensing of worthiness and inspiration. Finally, absorption is referred to an individual's time spending in work which feeling of time passing quickly and unable to separate from the job (Schaufeli et al., 2002, p.74). Meanwhile, Shirom (2003) examined the above model and suggested that vigor and burnout are obliquely related and do not represent two poles of the same dimension.

Regarding the third notion, Harter et al. (2002) studied based on meta-analysis by using samples of 7,939 business units from 36 firms, and the researchers defined employee engagement as "an individual's involvement and satisfaction with as well as enthusiasm for work" (p. 269). The Gallup Workplace Audit (GWA) was used to measure the employee perceptions of work characteristics, the quality of management and the relationship between employee and associates at work. The study concluded that employee satisfaction and employee engagement were significantly related to business outcomes such as customer satisfaction, pride, loyalty, productivity, profit, employee turnover and accidents. Several research similar to the research of Harter et al. (2002) was conducted and confirmed that employee engagement and business outcomes were significantly related (Luthan & Peterson, 2002; Harter et al., 2003; Towers Perrin, 2003; Bates, 2004; Baumruk, 2004; Gallup, 2006; Richman, 2006; Harter et al., 2009; Robertson-Smith & Markwick, 2009; Aon Hewitt, 2011; Menguc et al., 2012).

Furthermore, engaged employees were categorized into three levels. First of all, engaged employees referred to employees who want to know their role's desired expectations and the organization's policies or situations which they are willing to apply their competence consistent with the organization's goals. Engaged employees work with the high level of performance and passion to drive their organization moving forward. Second, not-engaged employees referred to employees who concentrate to finish their tasks while disregarding the organization's outcomes and goals. The insufficient relationship between not-engaged employees and managers or colleagues leads to a feeling of unworthy, overlooked, and checked out. Finally, actively disengaged employees referred to employees who are unhappy at work, busy acting out their unhappiness, consistently against everything, and undermine what their colleagues accomplish (Gallup, 2006).

Based on the above study and definitions, Kular et al. (2008) critiqued that the surveys from the Gallup Organization fail to help to increase engaged employee. The results indicated only the level of engagement that might also include an employee's suggestion, opinion, and problems to remove the engagement obstacles. Kular et al. (2008) further suggested that the CIPD, the Roffery Park Institute, and the Gallup Organization need to conduct the study concentrating on an in-depth study on all countries over the world.

Finally, the notion came from the multidimensional perspective of employee engagement. Saks (2006) was the first researcher who separated engagement into job engagement and organizational engagement which explained through the social exchange theory (SET). Consistent with SET, Robinson et al. (2004) proposed engagement as a reciprocal relationship between employer and employee. In addition,

Saks (2006) defined engagement as “a distinct and unique construct that consists of cognitive, emotional, and behavioral components associated with individual role performance” (p.602). The definition of Saks (2006) was overlapped with other constructs from previous researchers including cognitive from Kahn (1990) and Maslach et al. (2001), emotional from Kahn (1990) and Harter et al. (2002), and behavioral from Maslach et al. (2001) and Harter et al. (2002). Moreover, Saks (2006) stated that SET was the theory which fully explains both Kahn’s (1990) need-satisfying concept and Maslach et al.’s (2001) burnout-antithesis concept.

To investigate the distinction between job engagement and organization engagement, Saks (2006) studied 102 employees from the variety of jobs and organizations. The researcher found that there was a significant difference between job engagement and organization engagement. Job characteristics were the antecedents of job engagement whereas a procedural justice was an antecedent of organization engagement. The researcher further reported that job engagement and organization engagement mediated the relationships between the antecedents and consequences, organizational commitment, organizational citizenship behavior, job satisfaction, and intentions to quit.

Macey and Schneider (2008) conducted an empirical study and supported Saks’s (2006) model by suggesting that the application of engagement as a psychological construct in the academic literature is inappropriate to current economy and environment. Therefore, it seems impossible that another scholar develops relevant hypotheses or applies the concept in any meaningful way such as developing the questionnaires and organizational interventions based on the results. Furthermore, Macey and Schneider (2008) proposed three facets of engagement which are

psychological state, behavioral, and trait engagement. Psychological state engagement referred to the job and the work setting connoting or explicitly indicating feelings of persistence, vigor, energy, dedication, absorption, enthusiasm, alertness, and pride (p.24). The latter, behavioral engagement was defined as an adaptive behavior such as behaviors that support organizational effectiveness and aim to encourage an innovation and change (p.24). Lastly, trait engagement was composed of a number of interrelated personal attributes, trait positive affectivity, conscientiousness, the proactive personality, and the autotelic personality (p.24). Nevertheless, this proposition was critiqued by Newman and Harrison (2008) who argued that state engagement seems to be an excessive construct and does not provide many details more than individuals' attitude toward their job that has been evaluated by an appropriate construct in the past.

Meanwhile, Dell et al. (2001) agreed with the research of Saks (2006) that engagement could be separated into three different dimensions which include cognitive, emotional, and behavioral dimensions. Cognitive dimensions are associated with commitment and satisfaction while emotional dimensions are associated with feeling about the relationship with managers and coworkers, pride, valued, etc., and behavioral dimensions are associated with discretionary effort and retention. Therefore, Dell et al. (2001) defined engagement as a strengthened emotional and cognitive relation that employees have with their job, colleagues, managers, or overall organization influencing them to increase their effort to job. However, Dell et al. (2001) critiqued that each scholar seems to focus on different factors rather than concentrate on all at once.

Christian and Slaughter (2007) stated that no single approach overwhelms in both definition and methodology. It is therefore difficult to develop

relevant research hypotheses, design surveys, and develop organization interventions. Nonetheless, in this study employee engagement was defined as a distinct and unique construct which consists of cognitive, emotional, and behavioral components associated with individual role performance influencing an individual to apply additional effort to an individual's work.

In the academic literature, the researchers concluded that engagement is associated with other constructs of organization behavior, but there are differences. For instance, Robinson et al. (2004, p.9) argued that there is a clear overlap between engagement and commitment concepts, and between engagement and organizational citizenship behavior concepts, but there are also differences. Saks (2006) stated that organizational commitment is associated with employees' attitude and the relationship toward their company whereas engagement is not an attitude that it is a level of employees' attention and absorption with their roles performance. Furthermore, the researcher explained that organizational citizenship behavior is associated with voluntary and informal behaviors that employees are willing to help their colleagues and company while engagement is associated with employees' formal role performance rather than extra-role and voluntary behavior. Meanwhile, May et al. (2004) stated that there is a difference between job involvement and engagement. The researchers explained that job involvement is associated with employees' attitude about the perceptions of their ability to work as an important and valuable is leading to satisfaction and self-image while engagement is the time that employees spend on work performance.

In summary, there is ambiguity about the meaning of employee engagement between academic researchers and practitioners. According to Christian

and Slaughter (2007), it was stated that no single approach overwhelms in both definition and methodology; it is therefore difficult to develop relevant research hypotheses, design surveys, and develop organization interventions. Furthermore, employee engagement relates to and also distinct to job involvement, organizational citizenship behavior, and organizational commitment. Consensus with both researchers and practitioners that between employee engagement and business outcomes consisting of customer satisfaction, sales growth, employee retention, and accidents are significantly related (Luthan & Peterson, 2002; Harter et al., 2003; Towers Perrin, 2003; Bates, 2004; Baumruk, 2004; Gallup, 2006; Richman, 2006; Harter et al., 2009; Robertson-Smith & Markwick, 2009; Hewitt, 2011; Menguc et al., 2012).

2.3 Discretionary Effort

Discretionary effort is both a theoretically and practically important construct because it is known to affect individual job performance (Latham, 2007; Morris, 2009) as well as organizational efficiency and effectiveness (Organ, 1988; Dubinsky & Skinner, 2002; 2004; Morris, 2009). Yankelovich and Immerwahr (1983) stated that the low level of work effort often found in the workplace is a result of management practice and workplace structures which are outdated and undermine the work ethic. Therefore, management researchers noticed that worker disengagement is continuing interested in management review (Johnson, 2004; Aubrey, 2006; Fielder, 2006; Kimball & Nink, 2006; De Vita & Vernon, 2007). Locke and Latham (2004) argued that the reluctance of organizational behavior (OB) researchers has obstructed the advancement of the study in discretionary effort area. Thus, a boundary-less science of work motivation,

discretionary effort is recommended in the recent calls for the new directions in work motivation research (Locke & Latham, 2004; Spencer, 2004a; 2004b; Latham, 2007).

2.3.1 Theoretical foundation for discretionary effort

For many decades, researchers are interested in the determinants and the process which individuals decide to expand different behaviors and varying the levels of work effort through work motivation theories.

Traditional concept of motivation was emerged by Mayo in 1933. Mayo (1933) concentrated on fatigue and tedium with specific reference to how the characters of work such as working hours, breaks, and environment affected organizational productivity. The researcher further stated that social contracts that employee has at the company lead to increased or reduced motivation. For instance, challenging tasks increased motivation whereas repetitive tasks reduced motivation. The second concept of motivation is Maslow's (1943) hierarchy which is proposed that there are five levels in the pyramid of needs consisting of physiological needs, safety needs, belongingness and love needs, esteem needs, and self-actualization needs. Physiological and safety needs must be satisfied before the higher-level needs are met. Maslow (1943) further stated that an individual's behavior is determined by an individual's strongest need. The third concept of motivation is McGregor's (1960) Theory X and Theory Y. According to Theory X, manager assumes that their employees are inherently lazy and avoid working whenever possible. In contrast, manager posit in Theory Y assumes that their employees are aspiring, ambitious, self-motivated, and enthusiastic to accept greater responsibility whenever possible. The application of McGregor's Theory X and Theory Y to the discretionary effort model is associated with Theory Y. The final concept of motivation is Vroom's (1964)

expectancy theory. The expectancy theory has been widely used as a general motivation concept for investigating a diversity of behaviors related to work including discretionary effort (Ambrose & Kulik, 1999; Steers et al., 2004; Morris, 2009). According to this concept, employees would judge the potential benefits and costs related to investing greater discretionary effort. If the expected benefits exceed expected costs that employee is induced to increase maximum work effort above the minimum level required. Porter and Lawler (1968) further suggested that the expenditure of an employee's effort would be determined by expectations that an outcome may be attained and the degree of value placed on an outcome in the individual's mind. According to the expectancy model, an individual was motivated to expend discretionary effort is influenced by three factors. First is an effort-performance link called expectancy associated with the employee's belief that extra work effort will lead to higher performance. Second is a performance-outcome link called instrumentality associated with employee's belief that performance occur from extra work effort will be rewarded. Third is a valence associated with the attractiveness of the reward or outcome which will be different depending on the employee's needs and values (Vroom, 1964; Fudge & Schlacter, 1999; Steers et al., 2004).

2.3.2 Literature review of discretionary effort

The notion of discretionary effort appears in both the economic and organizational behavior literature. Within the labor literature, discretionary effort is referred to the quantity of time and intensity per unit of time that employees choose to allocate to work beyond what is the minimum required or expected (Jevons, 1871; Marshall, 1890; Robertson, 1921; Leibenstein, 1979; Weiskopf et al., 1983; Weiskopf, 1987; Kohli, 1988). Some economists argued that this conceptualization is narrow that

the types of activities such as direction, and skill and ability were also conceived as the elements of discretionary effort (Morris, 2009). On the other hand, within the organizational behavior, discretionary effort is defined in terms of time, intensity, and direction. However, researchers have concentrated on the direction of effort by describing the forms of behavior and activity that employees might adopt in demonstrating discretionary effort (Morris, 2001).

Discretionary effort (DE) was defined by Yankelovich and Immerwahr (1983) as “the difference between the maximum amount of effort and care an individual could bring to his or her job, and the minimum amount of effort required to avoid being fired or penalized; in short, the portion of one’s effort over which a job holder has the greatest control” (p.1).

Morris (2009) argued that Yankelovich and Immerwahr’s definition describes potential discretionary effort rather than the actual discretionary effort by an employee. Therefore, Morris (2001) defined discretionary effort as the individual’s voluntary contribution of time, intensity, and effort directed into work activities beyond what is minimal required, expected or enforceable by the organization in a manner that is consistent with the organization’s goal and is intended to have a beneficial impact on the overall effectiveness of the organization.

Some researchers argued that discretionary effort can also be thought of as the gap between a person’s actual performance and their performance. In other words, discretionary effort measures the extent of how hard an employee believes he or she is working. Discretionary effort may enable researchers to discover whether employees perceive they are doing just enough to get by or going beyond the call of duty. Lloyd (2003) defined discretionary effort as the level of employees’ effort which

they used while work which consistent with the company's goals that this level is greater than a minimum level that they still maintain their job. Meanwhile, Podsakoff et al. (2000) defined discretionary effort as "task-related behaviors at a level that is so far beyond minimally required or generally that it take on a voluntary flavor" (p.524).

In order to help better understanding about discretionary effort, Yankelovich and Immerwahr (1983) thus proposed that it is measured as an actual-to-available expenditure ratio. Every member of every organization can make a choice among four options including to expend less energy than what is minimally required to keep their job, to expend the energy minimally required that they can keep their organizational membership, to expend the energy required to fully meet role requirements, and to expend energy at the level beyond what is dictated by the role requirements. The researchers further explained that three basic components of productivity are knowledge and skills, tools, and effort, that effort is an essential. The study found that 23 percent of the workers said that they worked at their full potential, 44 percent said that their work effort was at the level to keep their jobs, and 75 percent said that they could be better at current working (p.2).

Since, discretionary effort and motivation is closely related, Dubinsky and Yammarino (1985) thus studied a large group of insurance agents to distinguish the differentiation. The findings revealed that there is a difference between discretionary effort and motivation. The authors further suggested that an individual has a different motivation resulting in a difference in the amount of individual effort that actually used to work in line with the company's goals. For instance, motivated employees were unnecessarily to take or express any behavioral actions (Dubinsky & Yammarino, 1985). Campbell et al. (1993) supported Dubinsky and Yammarino's

(1985) concept that without motivation means without effort whereas with motivation does not necessarily lead to action.

Despite, discretionary effort in organizational behavior has emphasized extra-role behavior. Entwistle (2001) stated that it represents only one element of discretionary effort. Some researchers critiqued the narrow scope of discretionary effort in organizational behavior emphasizing the direction component or extra-role behavior (Morrison & Phelps, 1999; Entwistle, 2001; Dubinsky & Skinner, 2002). In addition, Entwistle (2001) replicated the study of Yankelovich and Immerwahr (1983) that discretionary effort scale was measured in two categories which were in-role and extra-role discretionary effort. In-role discretionary effort referred to an effort that an individual is exerting directed toward the end of fully performing role requirement. In contrast, extra-role discretionary effort referred to an effort beyond the level required to fully meet role requirements. The results supported Yankelovich and Immerwahr's (1983) study that 48 percent of the respondents were investing into their job little-to-no effort beyond what was absolutely required of them while more than 75 percent of all respondents acknowledged that there was an opportunity to perform their jobs more effectively, and 15 percent were working at full capacity.

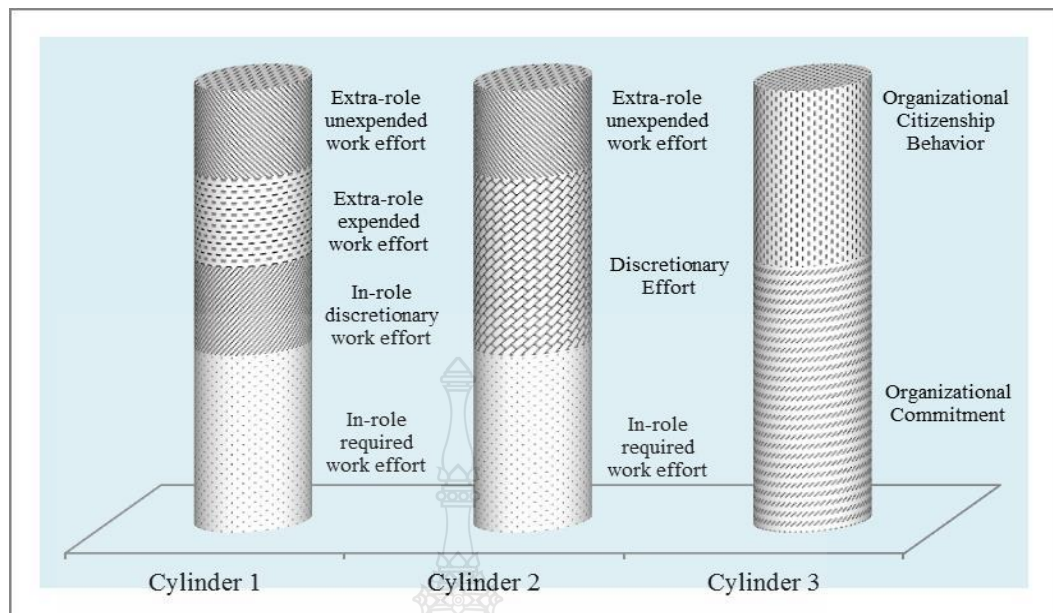


Figure 2.4 The discretionary effort conceptual framework

SOURCE: Developed from Entwistle (2001)

Figure 2.4 was developed from Entwistle's (2001) discretionary effort model that depicted the relationships among various components of effort. Theoretically, the total amount of available effort of employee is 100 percent that will be different widely among employees. In-role required work effort is an effort that an employee needs to expend for remaining a membership. Next, in-role discretionary effort refers to an effort that an individual is exerting directed toward to the end of fully performing role requirement. Follow by extra-role expended work effort refers to an effort that beyond what is dictated by role requirements. Furthermore, extra-role unexpended work effort is an effort that voluntary and informal behaviors which employees are willing to help their company. Organizational commitment consists of in-role required work effort and in-role discretionary effort, and this combination is called in-role behavior. Meanwhile, organizational citizenship behavior consists of extra-role expended work effort and extra-role unexpended work effort which this

combination is called extra-role behavior. Finally, discretionary effort consists of in-role discretionary effort and extra-role expended work effort which is a combination between in-role behavior and extra-role behavior.

Scholl (1981) stated that organizational commitment was separated into two schools of thought. First of all, school is called a behavioral theoretical model focusing on the linkage between the levels of commitment and the levels of staying or leaving intentions, and the levels of turnover. Allen and Meyer (1990) stated that organizational commitment is negatively related to turnover; however, the authors critiqued that the interested in what employees do on their job is more important than whether they are staying or leaving. Consistent with Entwistle (2001), it was stated that whether employee remains or leaves is less important than the level of energy, skill, and creativity that employee expends to benefit the company. Second school is called an attitudinal model focusing on the linkage between the levels of commitment and the level of employee or organization performance. Although this school believes that there is a linkage between organizational commitment and work performance, there is no significant evidence to support both direct and indirect linkage (Entwistle, 2001). Similar to the study of Decotiis and Summers (1987), the authors found that organizational commitment is significantly associated with individual motivation, intention to leave, turnover, but is not significantly associated with a rating of performance. In contrast, Mathieu and Zajac (1990) found that organizational commitment has very little direct effect on performance in most instances. Due to the nature of the relationship between organizational commitment and performance, it is therefore difficult to quantify therefore these findings are confusing and contradicting.

Katz (1964) proposed that organizational citizenship behavior is associated with behaviors that go beyond specified role requirements such as cooperating with colleagues, taking action to protect the company, proposing suggestion to improve the company's intentional self-development, and speaking to outsiders about good things of the company. Entwistle (2001) stated that organizational citizenship behavior is much more important than whether or not an employee chooses to remain or quit. Since organizational citizenship behavior refers to extra-role behavior which is not easily compelled by the punishment and also dominated by an individual's incentive schemes. Furthermore, organizational citizenship behavior is difficult to be measured because it may encourage more to colleagues' performance than employee's performance and may have the effect of the level of sacrificing and voluntary that affects employee performance. Smith et al. (1983) critiqued that the appraisal systems of organizational citizenship behavior are influenced by the recognition and notable of supervisors resulting in variance and inconsistency.

Meanwhile, discretionary effort moves beyond the employee decision about remain or leave, moves beyond effort above minimal requirement to maintain a membership, and links to both employee's and organization's performance. Moreover, discretionary effort is the greatest control holding by employee. Entwistle (2001) critiqued that the redundancy of research on organizational commitment has obstructed the advancement of the research on discretionary effort area. Entwistle (2001) further suggested that considering only at the evaluations of organizational commitment limits the success of an organization and one solution by better understanding discretionary effort and applying to the workplace. Due to the lack of current research on discretionary effort to compare with the earlier finding of

Yankelovich and Immerwahr in 1983, it therefore presents a challenge for this study to make current data for comparison and to enhance the contribution on this area.

While some researchers thought that they cannot observe discretionary effort, Lloyd (2008) suggested that some behaviors, such as the cognitive acts of problem solving or discretionary effort, could only be observed from the result of these behaviors. The researcher proposed that the similarities between discretionary effort and organizational citizenship behavior are representations of the voluntary and creative inclinations and actions that cannot be forced. In contrast, both organizational citizenship behavior and discretionary effort can be applied to both formal and informal roles. To confirm this proposition, Lloyd (2008) conducted an empirical study from 476 university students enrolled in a business administration class. The study revealed that discretionary effort, in role behavior and organizational citizenship behavior, is a distinguished construct, but all of three factors are associated with performance domain. Discretionary effort is the exertion of cognition and emotion behavior to decision of engagement (Saks, 2006; Macey & Schneider, 2008). In addition, Saks's (2006) employee engagement concept suggested that discretionary effort is linked to employee engagement.

To sum up, discretionary effort is associated with dedication intention and persistent exertion of individuals into their work. Several studies confirmed discretionary effort as a consequence of employee engagement.

2.4 Expectancy Theory

Expectancy theory provides a general framework for assessing, interpreting, and evaluating employee behavior in learning, decision-making, attitude formation, and

motivation (Chen & Lou, 2002) which was supported by empirical studies and was one of the most popular means used to understand motivation in the workplace (Heneman & Schwab, 1972; Campbell & Pritchard, 1976).

Vroom (1964) suggested that expectancy theory was the process theory which explained how individuals consciously make decisions on various behavioral alternatives. The theory insisted that employees will select the option with the greatest motivation forces associated with three conditions composed of expectancy, instrumentality, and valence (VIE theory). VIE theory suggested that employees felt motivated when three conditions are perceived. First of all, the personal expenditure of effort will result in an acceptable level of performance. Second, the achieved performance level will result in a specific outcome for the person. Finally, the achieved outcome is personally valued.

The first condition was labeled as expectancy which was the relationship between effort and performance known as E-P linkage. Expectancy was defined as “a momentary belief concerning the likelihood that a particular act will be followed by a particular outcome” (Vroom, 1995, p.20). In other words, if employees judged that they can achieve an outcome that they feel a high level of expectation, it would lead to more motivated to try or exert high energy to accomplish the outcome. For example, an unskilled employee will have a low level of expectancy of being a high performance employee while a skilled employee who has seriously been trained for years might have a high level of expectancy of being a top performance employee. The second condition was labeled as instrumentality which was the relationship between one outcome (performance level) and other outcomes which was known as P-O linkage. Instrumentality was assessed in three values. A strongly negative instrumentality (-1)

indicated that the second outcome is certain without the first outcome and impossible with it. In contrast, a strongly positive instrumentality (+1) indicated that the first outcome is a necessary and sufficient condition for the attainment of the second outcome. Meanwhile, a zero instrumentality (0) assessed a belief that there is no relationship between the first and second outcomes. The last condition was labeled as valence (V) which referred to the affective boundaries that employee valued of rewards that they received. Valence was assessed in three values same as instrumentality which were -1, 0, and +1. According to valence associated with emotional, thus the value of each valence can be different assigned by each person (Vroom, 1995). Thus, an individual performed a particular task by using the below formula.

$$\text{Motivation Force} = \text{Expectancy} \times \text{Instrumentality} \times \text{Valence}$$

Isaac et al. (2001) argued that any weakness factors have significant impacts on the motivation force, and the individual must focus on all three factors in order to achieve the desired goal. For example, employees believed that they have the necessary tools and support to be successful in their roles leading to rewards and recognitions they felt values of self-affirmation. Meanwhile, Arvey and Dunnett (1970) argued that an additive relationship between ability and expectancy is a better predictor of the performance than a multiplicative relationship. Moreover, Landy and Becker (1990) suggested that an expectancy model might be improved in prediction by variables such as the number of outcomes, the valence of outcome, and the particular dependent variable chosen for the study. In addition, Eerde and Thierry (1996) conducted a meta-analysis and found three significant findings. First of all, Vroom's multiplicative models did not yield higher effect sizes than the analyses of the specific components. Second, the expectancy theory used to examine effort or performance was appropriately

studied by using within-subjects more than between-subjects design which confirmed Mitchell (1974). Finally, attitudinal criterion variables such as intention and preference were more strongly related to the models and elements of the model than behavior variables such as performance, effort, and choice.

Expectancy theory used both extrinsic and intrinsic motivators to describe the possible causes for behaviors in the workplace. The extrinsic motivators were factors that bring satisfaction through salaries, compensations, bonuses, commissions, benefits, and cash whereas the intrinsic motivators were such as sense of pride, dignity, and valued which employees obtained from their job. Leonard et al. (1999) argued that expectancy theory mainly relied upon extrinsic motivators to explain causes for behavior in the workplace. Meanwhile, Chiang and Jang (2008) investigated the component of motivation forces that affected motivation of hotel employees. The result revealed that expectancy, intrinsic instrumentality, extrinsic valence, and intrinsic valence were positively influenced on motivation of hotel employees whereas extrinsic instrumentality was not significant. The authors concluded that intrinsic variables had more effect on employee motivation than extrinsic variables. Besides, Chen et al. (2006) revealed that tenured faculty employees were more motivated by intrinsic rewards whereas non-tenured faculty employees were more motivated by extrinsic rewards.

Reinhardt and Wahba (1975) stated that the original Vroom's model has been altered by subsequent researchers in three directions. The first direction is that the first-level and second-level outcomes have been distinguished. The first-level outcome referred to the level of performance resulting from a given amount of effort whereas the second-level outcome was defined as the reward or penalty received as the result of the

performance level or the result of the effort expended. The second direction is that the intrinsic valences have been identified. The sources included the degree of satisfaction or pleasure that an individual received from the activity or work behavior itself irrespective of the outcome, as well as the degree of satisfaction or pleasure that individual derives from the achievement of the work goal irrespective of extrinsic rewards. The third direction is that expectancy was separated to expectancy 1 and expectancy 2. Expectancy 1 was defined as the perceived belief that an effort will lead to performance or to the second-level outcomes whereas expectancy 2 was the perceived belief that performance will lead to the second-level outcomes.

There were several studies that used Vroom's expectancy theory and focused on the relationships between expectancy theory and other factors such as leadership, performance rating and pay, and learned helplessness. Isaac et al. (2001) studied the linkage between expectancy theory and leadership concepts and found that employees will get the high levels of performance due to their leaders provided motivational environments that inspire employees to accomplish the high levels of performance and believed in their own capacities. Meanwhile, Smith and Rupp (2003) studied the linkage between expectancy and performance rating, pay, and motivation and found that employees' motivation and general morale increased when they were a part of the decision making processes. Besides, Schepman and Richmond (2003) investigated the relationship between expectancy theory and learned helplessness concept and concluded that the lack of control may come from a perceived lack of skills or abilities rather than feeling of low-expectancy.

Although expectancy theory was supported by empirical studies appropriated to explain the motivation, Mitchell (1974) argued that the construct validity remained

ambiguous. Eerde and Thierry (1996) argued that Vroom's model lacked external validity. The authors further stated that the lack of strong theoretical framework may negatively affect the validity of the Vroom's model. Meanwhile, Villere and Hartman (1990) critiqued that the VIE's model assumed that individuals are consciously aware of their choices and the linkage between their choices and outcomes which ignored subconscious motivation. The authors further critiqued that expectancy theory cannot be completely explained employee behavior whereas other factors such as job descriptions, organizational policies, and technology are also important.

Fudge and Schlacter (1999) stated that expectancy theory has been rigorously examined and received strong support. Moreover, Smith and Rupp (2003) also indicated that expectancy theory provided a general framework for assessing, interpreting, and evaluating employee behavior. In addition, Heneman and Schwab (1972) proposed that expectancy theory was one of most popular means used to understand motivation in the workplace. Thus, in this study applied Vroom's expectancy theory to explain the relationship perceived employer branding and employee engagement.

2.5 Petroleum Industry

The petroleum industry is divided into four sections which are an exploration and production of crude oil and natural gas, transportation, refining, and marketing and distribution. In contrast, it is usually divided into three major processes including upstream, midstream, and downstream processes. In general, midstream and downstream processes are combined to downstream classification. The upstream process is referred to the exploration, recovery, and production of crude oil and natural

gas known as the exploration and production (E and P) process. The midstream process is referred to the collecting and transporting wet natural gas from the well heads to processing plant. Finally, the downstream process is referred to refining crude oil, selling, and distribution of natural gas and products derived from crude oil (Wikipedia Foundation Inc., 2012).

Thailand has less capacity in crude oil and still depends on imported oil from foreign countries, therefore this study is interested in the downstream process. Based on Thailand Trading Report (2011), the value of imported crude oil is about 14.4 percent of GDP in 2011. In contrast, Thailand has potential in refining crude oil, so the value on exported petroleum products is about 4.4 percent of GDP in 2011, ranking number 5 as followed from computer, automotive, rubber, and gem, respectively.

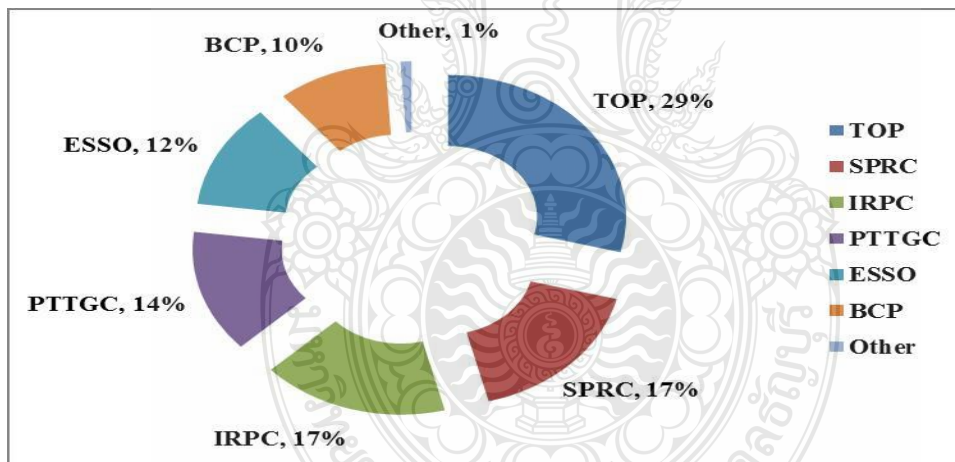


Figure 2.5 Market share in Thai petroleum refining industry in 2011

SOURCE: Thai Oil Group (2011).

In 2011, PTT Public Company Limited (PTT) launched PTT group values known as “SPIRIT” to encourage the company’s employer branding comprising synergy, performance excellence, innovation, responsibility for society, integrity and ethics, and trust and respect. The policy for payment such as salaries, compensations,

and welfare will be harmonization benefits and can compete to other companies in the same industry. Meanwhile, the policies concerned with career development and application were worked with high technology and innovation, improving to be high level of performance, and continuous improvement. Besides, the company launches policy concerned with responsibility for society known as “CREATE” composed of creation of long-term value, responsibility, equitable treatment, accountability, and transparency and ethics (PTT Public Company Limited, 2011).

In recent years, Thai Oil Public Company Limited (TOP) was posited in three aspects comprising high performance organization, corporate governance, and corporate social responsibility. However, the company would like to become an Asia Pacific leader in the next few years, so it launches three changing policies. First of all, the policy changed from commodities to specialties. Second, the policy changed from operation excellence to innovation excellence. Finally, the policy changed from hardware excellence to software excellence. Since the company realized the importance of employees to sustain the company’s success, the software excellence was thus launched. Besides, competing salaries to other companies in order to motivate employees, they would get extra rewards accounted for 4.75 month in 2011. Considering the assessment, the company proposed proportion 10:20:70 which comprised program training, transfer experience from supervisors and colleagues, and their work experience, respectively. Meanwhile, individual career plan and individual development plan supported employees’ growth both vertical and lateral. In addition, employees who are composed of competency, organizational knowledge, work experience, and personal attribute would promote to be career model representing visions and missions to both internal and external customers. Besides, the middle

management would be promoted to critical position. Finally, employees can easily access information that reflected corporate governance (Thai Oil Group, 2011).

Considering IRPC Public Company Limited (IRPC), it was posited in three aspects comprising creating, shared, and value. The company emphasized on employee competency and career development, and it employed the consulting company to improve employees' competency by many programs such as competency development roadmap, knowledge management portal, executive leadership development program, middle leadership development program, and career growth, especially for operation, maintenance, and specialist engineering employees. Meanwhile, the relationship among employees was improved by having the meeting every quarter. Moreover, the policy concerned about social responsibility was growth coupled with improving the quality of life in the community and the safety environment (The Stock Exchange of Thailand, 2011).

Bangchak Petroleum Public Company Limited (BCP) proposed that the values of company were beyond expectation, continuing development, pursuing sustainability together with environment and community while the values of employees were well employees, intellectual employees, and helpful for others. Employees were assessed by themselves, colleagues, and supervisors to find competency gaps, and then the appropriate improvement programs were supported such as self-learning, e-learning, and on the job training. Besides, the company launched six standards for developing knowledge management composed of ability to adoption and initiation, leadership, teamwork spirit, organization commitment, personal mastery, and social and safety health environment (SHE) awareness. In addition, the company promoted talent employees to be "BCP trainer" as the lecturer transferred knowledge to other

employees. Considering the payment system, the company offered good salaries, bonuses, welfare, and extra rewards (The Stock Exchange of Thailand, 2011).

Considering Esso (Thailand) Public Company Limited (ESSO), the company's policy emphasized on individual career development, good benefits, and good corporate governance. The company supported individual career development by many programs such as review individual progress plan regularly, promoted internal employees to higher position, appropriate working atmosphere, sustain professional, rewards and recognitions based on results. Meanwhile, the company believed that salaries, rewards, and other benefits were above average comparing to other industries and could compete with other companies in the same industry (The Stock Exchange of Thailand, 2011).

Regarding Rayong Purifier Public Company Limited (RPC), the values of the company were creativity and initiation, social responsibility, teamwork, and sustainable success. The company emphasized on individual progress plan and social responsibility. The employees were supported to be continuous high performance and skill. The merit system was used to promoted position and increase salaries which appropriated to competency. Meanwhile, the company proposed the social responsibility policy such as growth together community, encouraging education and sports, and donation (The Stock Exchange of Thailand, 2011).

Chevron (Thailand) Limited proposed long-term investment comprising making contribution to energy supply and creating sustained value for stakeholders, employees, business partners, and the communities where the company operates. The company emphasized on employees' benefits and social responsibility. Considering employees' benefits, the company provided above laws and regulations and also attractive benefits such as above average salaries, postretirement benefits, medical,

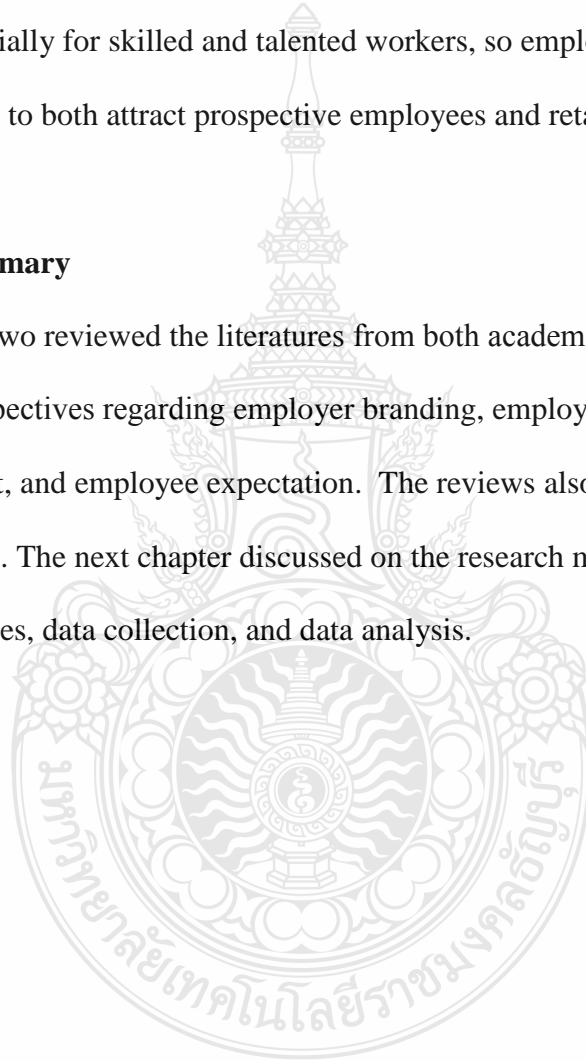
insurance, incentive plans, employee savings investment plan, stock ownership plan. Regarding social responsibility, the company stated that it operated under health and safety laws, regulations concerned with green-house gas emission and global climate change (Chevron (Thailand) Limited, 2012).

Finally, Shell Company of Thailand Limited posited on building an energy future by two policies which were doing in responsibility and innovative way. The company emphasized on individual career and development, and social responsibility. Considering employees' communications and involvement, the company provided many ways dialogue between management and staff such as face-to-face, electronic communications, and webcasts. Moreover, it used the survey, telephone helpline, and website to insights into employees' views and also better understanding the employees' needs and values. Then, the company makes adjustments in job design and appropriate training where possible for any existing employee who becomes disable person. Regarding diversity and inclusion, the company provided equal appropriateness in recruitment, career development, promotion training, and rewards for all employees, including those with disabilities. Moreover, it emphasized on human rights by encouraging women and national to grow up in senior leadership position. In addition, it proposed performance share plan (PSP) to reward talented employees by assessing from three-year performance period. Furthermore, it provided competitive salaries and also other benefits such as retirement plans, share ownership plans, share based compensation plans, and awards of shares. Due to social responsibility, it operated under safety awareness programs, and political and charitable contribution through individual subsidiaries, sponsors, social investment programs, and the Shell foundation (Shell Company of Thailand Limited, 2012).

Due to the shortage of crude oil and labor, higher labor wages comparing with ASEAN as well as establishment of AEC (ASEAN Economic Community) in 2015, investors are likely to make an investment by the free movement of capital, materials, and labor. For example, Thai Oil Group is interested in investing in Indonesia and Myanmar (ASTV, 15 June 2011). The labor market is likely to have fiercer competition, especially for skilled and talented workers, so employers need to apply employer branding to both attract prospective employees and retain existing employees.

2.6 Chapter Summary

Chapter two reviewed the literatures from both academicians' and practitioners' perspectives regarding employer branding, employee engagement, discretionary effort, and employee expectation. The reviews also focused on the petroleum industry. The next chapter discussed on the research methodology including populations, samples, data collection, and data analysis.



CHAPTER 3

RESEARCH METHODOLOGY

Chapter three began with a model/theoretical framework, followed by research design consisting of the generate research hypotheses, research develop instruments, population and sample, pilot study, reliability analysis, validity analysis, data collection, data analysis, and time table. The chapter concluded with a summary of relevant points and an overview of the next chapter.

3.1 Model/ Theoretical Framework

There were four variables consisting of employer branding, employee engagement, discretionary effort, and employee expectation. To begin with, employer branding dimensions were developed from three academic researches. First of all, Berthon et al. (2005) stated that employer attractiveness comprised five factors including social, development, application, interest, and economic value. This study revealed and confirmed Ambler and Barrow's (1996) three dimensions by suggesting that the survey could apply to both prospective and current employees. Similar to the study of Berthon et al. (2005), Barrow and Mosley (2005) proposed twelve dimensions of employer branding consisting of external reputation, internal communication, senior leadership, values and corporate social responsibility, internal measurement systems, service support, recruitment and induction, team management, performance appraisal, learning and development, reward and recognition, and working environment. The third study is Maxwell and Knox's (2009) concept about employer's attributes that influence the perceived attractiveness of an organization's employer brand comprising

employment, organizational success, construed external image, and products or services attribute. According to the above three concepts, this study thus developed four dimensions including employment, development and application, organizational reputation, and economic in order to measure employer branding.

Employee engagement dimension was adapted from the study of Saks (2006) which consisted of job engagement and organization engagement. Discretionary effort dimension was developed from the study of Entwistle (2001) which comprised in-role and extra-role discretionary efforts. Finally, employee expectation was developed from two academic researches. First of all, Harris and Fink (1987) proposed that employee expectation on the company consisted of three dimensions which were perception of job itself, perception of compensation/job security, and perception of work/company. Second, Rose (2006) developed a questionnaire from the study of Harris and Fink (1987) and confirmed that employee expectation comprised three dimensions including job image, pay image, and work image. The model shown in figure 3.1 was the model/theoretical framework of this study based on literatures reviewed.

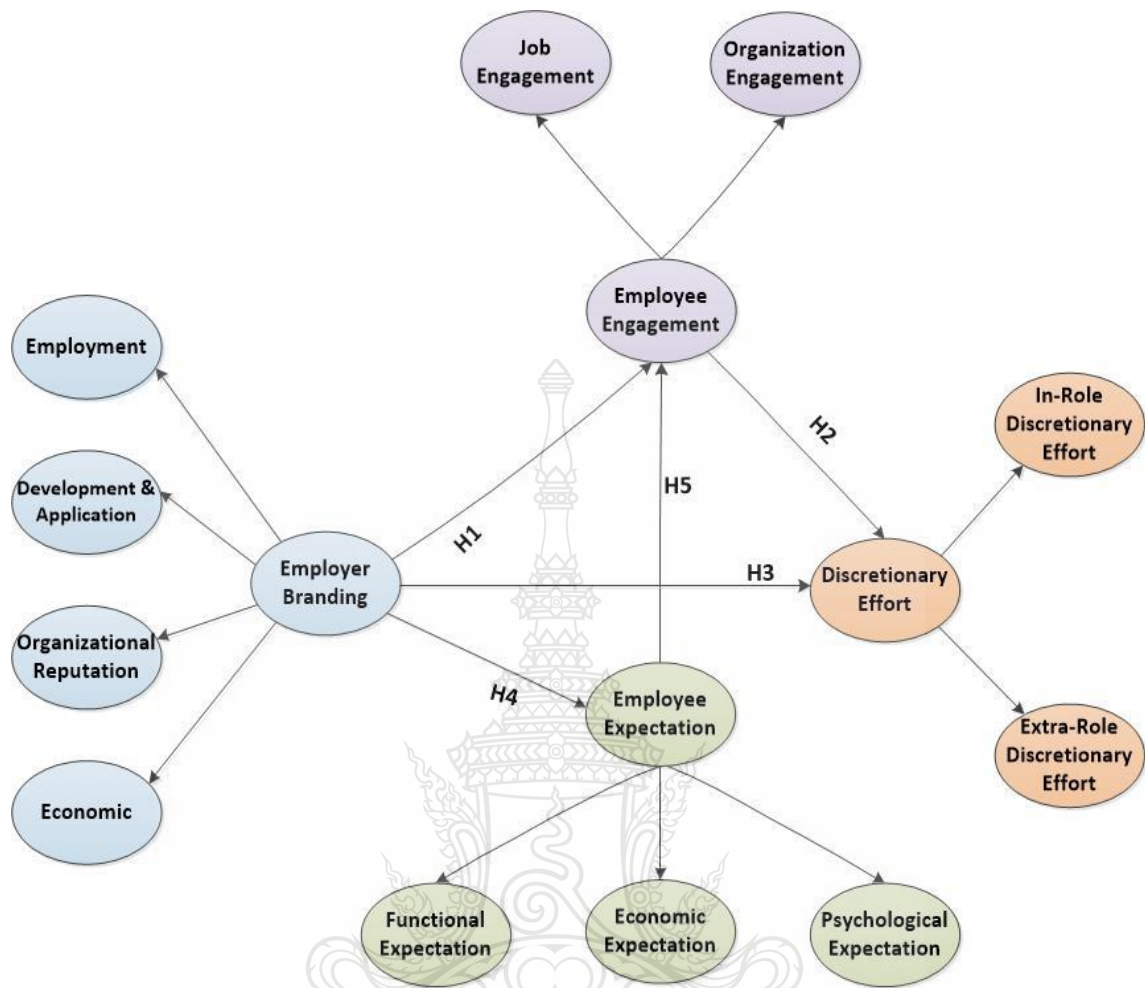


Figure 3.1 Model/ Theoretical framework

3.2 Research Hypothesis

The theoretical framework depicted in figure 3.1 was converted into seven hypotheses. To start with, the relationships between employer branding dimensions and employee engagement were developed. Several studies from both academicians and practitioners confirmed the relationship between employer branding and employee engagement. Minchington (2005) stated that the art and science of employer branding is concerned with the attraction, engagement, and retention initiatives targeted at enhancing the company's employer brand. Meanwhile, Drizin (2005) summarized the results of the 2004-2005 National Workforce Engagement Assessment proceeded by the

Performance Assessment Network, Inc. The conclusion was that the most significant drivers of engagement are job satisfaction, reputation of management team and the company, and effectiveness of senior leadership. Moreover, Kunerth and Mosley (2011) examined the degree of employer brand management impact on employee engagement by conducting surveys among 104 companies of Coca-Cola Hellenic in Southern, Eastern and Central Europe, Russia, and Nigeria. The study revealed that companies which have invested in employer branding have significantly evolved to attract applicants, engaged and retained talent employees, and in turn helped to maintain performance through a recession. In addition, the study of Gallup Consulting confirmed that companies with more engaged workgroups significantly have better outcomes than disengaged workgroups such as superior delivering promise to customer, better retention, and more productive and innovation whereas having lower levels in absenteeism, accidents, and costs (Gallup, 2006). Besides, the global research was conducted based on 6.7 million employees from more than 2,900 organizations between 2008 and 2010 by asserting the relationship between engagement and organizational success. In 2010, companies with high-level engagement at 65 percent or greater excelled than average at 22 percent in total stock market and total return to shareholder. In contrast, companies with low-level engagement at 45 percent or performed lower than average at 28 percent in total return to shareholder. Furthermore, the study revealed that the best employer is interesting according to the large number of supporting evidences. Best employer is differentiated the high-level of engaged employee, which results in higher retention, lower turnover, larger talent employees, and better financial performance. Besides, the study reported that top five drivers of a global engagement are career opportunities, brand alignment, recognition, people or

human resource practice, and organization reputation (Aon Hewitt, 2011). Similarly, Barrow and Mosley (2005) stated that the company is composed of good senior leadership leading to strong employer brand and then a high level of employee engagement (Gallup, 2006; Looi et al., 2007; Macey & Schneider, 2008; The Work Foundation, 2009; Aon Hewitt, 2011; Kunerth & Mosley, 2011). Moreover, the study from the consulting company revealed that the global factors influencing employee engagement consisted of career development, leadership, empowerment, and image of company (IRS, 2004). Furthermore, Truss et al. (2006) found that work experience, development opportunities, and leadership enhance employee engagement (Towers Perrin, 2003) while Kahn (1990) found that work elements and relationships in the work place is significantly and positively related to engagement. Based on the concepts above, the research hypothesis was thus developed as follow:

H1: There is a positive relationship between employer branding and employee engagement for current employees.

Considering the relationship between employee engagement and discretionary effort, Kahn (1990) recommended that satisfaction is insufficient to generate discretionary effort whereas employee engagement would be more likely to be available in harder working employees. Robertson and Markwick (2009) proposed that engaged employees embedded to be a part of the organization that dedicate themselves not only in-role performance, but also extra-role performance throughout the organization. Consistent with the study of the Aon Hewitt (2011) which was conducted about a global engagement, the results revealed that engaged employees delivered discretionary effort (Aon Hewitt, 2011). Meanwhile, some researchers defined that engagement as the emotional and intellectual levels experienced by an employee who are then appeared in

the form of the organizational supporting behaviors such as discretionary effort and intention to stay (Corporate Leadership Council, 2004b; Seijts & Crim, 2006; Kunerth & Mosley, 2011). Practitioners from Hewitt Associates proposed that engagement is a measurement of employees' energy and passion that they have for their companies. The researchers further stated that engaged employees referred to employees who are committed to the company by positively saying about their company and striving to go above and beyond to deliver exclusive job (Hewitt Associates, 2004). Correspondingly, Hughes and Rog (2008) stated that engaged employees tend to positively say about their company, want to stay with the company, and provide a superior discretionary effort that advocated to a high level of employer brand. In addition, the study from Scottish Executive Social Research (2007) proposed that employee engagement is often connected with outcomes such as loyalty to, and advocacy for, the place of employment, as well as some senses that employees would go the extra mile or exert discretionary effort to help achieve organizational goals. Furthermore, Beattie and Smith (2010) conducted the study by using surveys to collect data from 160 UK directors, and the researchers proposed that employee engagement is measured by employee commitment and discretionary effort to stay with their company. In addition, Anand and Banu (2011) further confirmed that there are positive relationships between employee engagement variables and discretionary effort (Towers Perrin, 2003; Corporate Leadership Council, 2004a; Kular et al., 2008; Robertson & Markwick, 2009).

Gibbon (2006) studied on discretionary work effort and found that emotional drivers such as dignity in their works and a positive interpersonal relationship with their managers had four times greater impact on individual's discretionary work effort than other factors such as pay. Similarly, Howland (2008) studied 26 drivers of employee

engagement and confirmed that emotional drivers had impacts on individual's discretionary effort five times greater than economic drivers such as salary and compensation. Moreover, Drizin (2005) summarized the findings of the 2004-2005 National Workforce Engagement Assessment conducted by the Performance Assessment Network, Inc. by concluding that the relationships between employees and managers are significantly influenced engagement that conveys to greater discretionary work effort. Regarding the concepts mentioned above, the hypothesis was thus conducted:

H2: There is a positive relationship between employee engagement and discretionary effort for current employees.

Considering the relationship between employer branding and discretionary effort, practitioners from the Work Foundation proposed that the organization which offers attractiveness contracts such as above average payment, promotion, development, challenging job, and clear about expected output would get back more contributions such as high performance, flexibility, expertise, and discretionary effort (The Work Foundation, 2009). Due to, the study of Towers Perrin from 90,000 employees in 18 countries, the results revealed that the percentages of engaged, moderated, and disengaged employees are 17 percent, 66 percent, and 17 percent, respectively. Moreover, the study concluded that employees are not delivering their full discretionary effort since they do not feel that their organizations and managers are supporting their needs and creating the attractive conditions leading to sustain engagement (Towers Perrin, 2007). In addition, Cushen (2009) conducted six-month participant ethnography from 75 directors and managers in Ireland and found that the logic of branding was transferred from the value of customers to the value of employees through the extra

work functional and discretionary effort. Even though directors and managers agreed to apply branding through their employees, they argued that unsuccessful result could be occurred due to insincerity and communicating without doing.

Besides, Neil (2012) argued that great employer brands are clear understanding and talented employees should put discretionary effort in order to encourage organizational goals and success. Correspondingly, the study of the Aon Hewitt was conducted from 165 organizations and 74,000 employees in Australia and New Zealand, and the results concluded that best employers are not only establishing a great place to work but also creating the conditions for their employees to exceed and encourage discretionary effort (Aon Hewitt, 2012). Meanwhile, practitioners from the Big Picture conducted a survey of HR professionals in North America, and the findings revealed that a strong employer brand where offered attractive conditions could be expected in return for performance and effort beyond the paycheck of their employees. Based on the concepts above, the below research hypothesis was thus conducted:

H3: There is a positive relationship between employer branding and discretionary effort for current employees.

Considering the relationship between employer branding and employee expectation, Harris and Fink (1987) conducted pre-interview and post-interview from job seekers and found that job seekers intend to accept a job with an organization when they perceived attractive job offer, compensation, and company image. Consistent with the study of Turban et al. (1998), the researchers conducted pre-interview and post-interview and revealed that the perception of job offers and organization image have influenced on the applicant's decision. Besides, the study of the Awapotent (2008) which is the Europe's leading consulting company in 2008 found that Swedish

engineering students tend to apply job with the company where they perceived good career development, competitive, and attractive working tasks (Awapatent, 2008). Bredolt and Lundahl (2008) found that the students in North Carolina tend to apply job with the company according to perceived above average pay, good career development, and job security. In addition, Rose (2006) revealed that job seeking in Queensland tend to apply job with the organization according to perceived competitive pay image, attractive job image, and well company image. Furthermore, Turban and Greening (1996) revealed that the organizations which have higher perception of the organization's reputation are more attractive as employer than the organizations which have lower perception of the organization's reputation.

Considering the relationship between employer branding and employee expectation, and employee engagement, Powell and Goulet (1996) revealed that employees who perceived positive organization image would view the organization desirable entity and want to actively engage in an employment relationship while Richman et al. (2008) revealed that perceived flexibility and supportive work-life policies were related to a greater employee engagement and longer than retention. Moreover, Tepper (2000) examined the effects of abusive supervision and found that employees were more likely to disengage and quit their job if they perceived their supervisors abusive. Consistent with the study of Aquino et al. (1997), it revealed that employees perceived poor supervision and unfair procedures were more likely to disengage and quit their job. Furthermore, a case study of the Consult Co was studied by Francis and Reddington (2011) found that employees perceived high value work experience and contract related to high performance and engagement.

Macleod and Clarke (2009) investigated in a case study of the Fujitsu Group in UK and found that employees' perception of their career development opportunities and supportive procedure have a substantive impact on the level of employee engagement. In addition, the study by the IPSOS Mori in 2006 suggested that employees' perceptions of corporate values, community commitment, favorable pay, and feeling of friend and family member have significant impacts on employee engagement (IPSOS Mori, 2006). Consistent with the study of Austin (2011), it revealed that when employees perceived supportive and caring supervisors and are proud in their organization, more opportunities growth would then increase employee engagement. Regarding the concepts mentioned above, the following research hypotheses were therefore conducted:

H4: There is a positive relationship between employer branding and employee expectation for current employees.

H5: There is a positive relationship between employee expectation and employee engagement for current employees.

H6: There is an effect of employer branding on employee engagement through employee expectation for current employees.

Regarding the relationship between employer branding and employee engagement, and discretionary effort, Stump (2010) proposed that best employers understand that engaged employees are more likely to perform better at day-to-day job tasks, exert discretionary effort, and are less likely to leave. Meanwhile, Crozier (2013) suggested that building a strong employer brand enables to build a sustainable success which their employees are much more likely to be engaged and put more discretionary effort.

In practitioner approach, consultants from the EBI proposed that the organization developed a world class employer brand by improving capacity to recruit new employees, engaging and retaining talent employees, increasing employee discretionary effort and customer satisfaction, and making a distinction from their competitors (EBI, 2009). Similarly, practitioners from Engage Group explained that the advantages of sustainable culture and employer brand are high levels of trust of employees, motivation, engagement, and loyalty, which in turn increase discretionary effort leading productivity and financial performance (Engage Group, 2012). Moreover, practitioners from the CIPD suggested that employer brand can play a role in developing engagement in persuading employees to put discretionary effort in their work, beyond the required minimum to get the job done, in the term of the extra time effort and brain power (CIPD, 2008). In addition, the study from Big Picture revealed that a well-defined employer brand links to high employee engagement while low employer brand leads to low engagement which, in turn, results in dysfunctional work relationships, lower productivity, and no discretionary effort (Big Picture, 2012). Based on the concepts above, thus the research hypothesis was conducted:

H7: There is an effect of employer branding on discretionary effort through employee engagement for current employees.

To test the above research hypotheses, the instruments were then developed based on the previous studies.

3.3 Instrument

The framework for this study was developed from theories and concepts related to the workplace. The design of this study was a quantitative approach which

was done by using questionnaires. The first part was to ask for demographic information of the participants. The second part of the questionnaire contained the questions about employer branding questionnaire which was developed from 25 items of the survey of Berthon et al. (2005) at 0.96 alpha scales as well as and 29 items of the survey of Ngakhoopathipat et al. (2007) at 0.949 alpha scales. For this study, employer branding survey was composed of 33 questions (27 items from the survey of Ngakhoopathipat et al. (2007) and 6 items from the survey of Berthon et al. (2005)) based 4 dimensions with a 7-point Likert scale. The full survey is shown in Appendix A. To begin with, employment dimension measured job characteristics and working conditions such as providing the challenging projects with expected tangible outcomes, appropriate corporate assessment, and employee's job fit which including item EMP1, EMP2, EMP3, EMP4, EMP5, EMP6, EMP7, EMP8, EMP9, and EMP10. Moreover, development and application dimension measured feeling valued and emotional motivation such as an opportunity to apply what was learned at a tertiary institution, an opportunity to support and encourage colleagues, and a feeling more self-confident as a result of working for the organization including item DA1, DA2, DA3, DA4, DA5, DA6, and DA7. The latter dimension was organizational reputation dimension which measuring the organizational success, products or services, and external image. For example the organization is a well-recognized and has a good reputation and image, diversified products or services, and corporate stability including item ORG1, ORG2, ORG3, ORG4, ORG5, ORG6, ORG7, ORG8, ORG9, ORG10, ORG11, ORG12, and ORG13. Finally, the economic dimension measured tangible motivation such as attractive compensation and benefit packages including item ECO1, ECO2, and ECO3.

The third part of the questionnaire was about employee engagement questionnaire which was developed from Saks (2006)'s job and organization engagement survey. Job engagement scale was measured from 5 items with 0.82 alpha scales such as "I really "threw" myself into my job" and "sometimes I am so into my job that I lose track of time" including item JEE1, JEE2, JEE3, JEE4, JEE5, JEE6, JEE7, JEE8, and JEE9. Meanwhile, organization engagement scale was measured from 6 items with 0.90 alpha scales such as "being a member of this organization is very captivating," "being a member of this organization makes me come alive," and "I am highly engaged in this organization" including item OEE1, OEE2, OEE3, OEE4, OEE5, and OEE6. According to the purposes of the study, it needs to indicate which area that employees are likely to engage or disengage in order to develop appropriate strategies to enhance engagement. Therefore, the study developed a 5-point Likert scale questionnaire consisting of 9 items for measuring job engagement dimension (5 existing items and 4 new-developed items) and 6 existing items for measuring organization engagement dimension. The full survey is shown in Appendix A.

The fourth part of the questionnaire was discretionary effort questionnaire which was developed from Entwistle's (2001) in-role and extra-role discretionary effort with 15 items at 0.86 alpha scales. For this study, 7-point Likert scales were used consisting of 11 existing items of Entwistle (2001). In-role discretionary effort dimension comprised 7 items such as "I am performing my job to my full capacity" and "I put a great deal of effort into my job over and above what is required" including item IRDE1, IRDE2, IRDE3, IRDE4, IRDE5, IRDE6, and IRDE7. Meanwhile, extra-role discretionary effort dimension comprised 4 items such as "on regular basis, I spend extra-effort to benefit my organization" and "on a regular basis, I spend extra-effort on

behalf of my co-workers which results in benefits to my organization” including item ERDE1, ERDE2, ERDE3, and ERDE4. The full survey is shown in Appendix A.

The last part of the questionnaire was employee expectation which was developed from Harris and Fink (1987) and Rose (2006). First of all, the survey of Harris and Fink (1987) is composed of 8 items of job itself dimension, 5 items of compensation/job security, and 9 items of work/company which the alpha scales were 0.82, 0.95, and 0.78, respectively. Second, the survey of Rose (2006) comprised 8 items of job image dimension, 5 items of pay image, and 9 items of work image which the alpha scales were 0.87, 0.78, and 0.88, respectively. Both of them are 5-point Likert scales. For this study, 5-point Likert scales were used consisting of 18 items separated into three dimensions. First of all, functional expectation dimension comprised 8 items such as “You believe that the job you have applied for will provide adequate opportunities for you to use your abilities to your full potential in performing job tasks” and “You believe that the job you have applied for will provide adequate opportunities for career” including item FEXP1, FEXP2, FEXP3, FEXP4, FEXP5, FEXP6, FEXP7, and FEXP8. Second, economic expectation dimension comprised 4 items such as “You believe that your company will provide you with a competitive salary” and “You believe that your company will provide you with a competitive non-salary benefits” including EEXP1, EEXP2, EEXP3, and EEXP4. Finally, psychological expectation dimension comprised 6 items such as “You believe that your company will provide you with access to competent co-workers” and “You believe that your company will provide you with a supervisor that you can work with” including item PEXP1, PEXP2, PEXP3, PEXP4, PEXP5, and PEXP6. The full survey is shown in Appendix A.

Regarding all parts of the questionnaire, there were some changes of the items to be different from the original studies. Furthermore, the questionnaire was translated into Thai language; therefore, all parts of the questionnaire were tested content validity measured by professional in human resource and management area. Finally, reliability was tested by using a pilot study.

3.4 Population and Sample

The study of the Positioning Magazine in 2007 revealed that PTT Public Co., Ltd. was the best company for both men and women. Moreover, Esso (Thailand) Public Co., Ltd. was ranked the tenth place for women (Positioning Magazine, 2007). Therefore, this study was interested in the petroleum industry in Thailand. Due to a definition of the petroleum industry comprising of three major processes including the exploration and production (E and P) process, the collecting and transporting wet natural gas from the well heads to processing plant, and the refining crude oil, selling, and distribution of natural gas and products derived from crude oil (Wikipedia Foundation Inc., 2012). Therefore, the population for the study consisted of current employees of nine organizations in Thai petroleum industry (Supranee, 2007; The Federation of Thai Industries, 2011; Petroleum Institute of Thailand, 2013) comprising PTT Public Company Limited (PTT), Thai Oil Public Company Limited (TOP), IRPC Public Company Limited (IRPC), Star Petroleum Refining Company Limited (SPRC), Bangchak Petroleum Public Company Limited (BCP), Esso (Thailand) Public Company Limited (ESSO), Rayong Purifier Public Company Limited (RPC), Chevron (Thailand) Limited (Chevron), and Shell Company of Thailand Limited (Shell). Six of them are publicly traded companies in the Stock Exchange of Thailand (SET).

Bentler and Chou (1987) suggested that under normal distribution theory the ratio of sample size to number of free parameters should be at least 5:1 to get trustworthy parameter estimates and in order to get appropriate significance tests although a ratio of 10:1 would be preferred. Meanwhile, consistent with Hoelter's (1983) benchmark, Byrne (2001) concluded that the critical number (CN) should exceed 200 (Garver & Mentzer, 1999; Hoelter, 1983).

Table 3.1 Parameter summary

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	88	0	0	0	0	88
Labeled	0	0	0	0	0	0
Unlabeled	60	0	74	0	0	134
Total	148	0	74	0	0	222

Number of free parameters (unlabeled) equal a sum of number of regression weights, covariances, variances, means, and intercepts which are estimated from the data. Therefore, a number of free parameters for this study equaled 134. According to the ratio of sample size to number of free parameters should be at least 5:1 then the minimum sample size for this study is 670, this study considered both number of respondents is above 670 and Hoelter's critical number is exceed 200.

3.5 Reliability Analysis

The instrument used for the study containing two response options which are 5-point and 7-point Likert scales. Thus the coefficient alpha (Cronbach, 1951) was applied to test the reliability. The Cronbach's alpha refers to the extent to which the items in a test measure the same construct (Ho, 2006). The value above 0.70 is generally accepted (Carman, 1990; Nunnally & Bernstein, 1994). Therefore, the

Cronbach's alpha that is above 0.70 is accepted for the study. The Cronbach's alpha values of coefficients of the instrument were presented in chapter four.

3.6 Validity Analysis

Validity refers to the extent to which the instrument accurately measures or assesses the specific concept that the researcher is intending to measure (Cooper & Schindler, 2003). There are many different types of validity; however, this study tested only two types of validity including content and construct validity.

3.6.1 Content validity

Content validity is the degree to which the instrument fully assesses or measures the construct of attention (Cooper & Schindler, 2003). For this study the content validity was tested by using the index of item-objective congruence (IOC) (Rovinelli & Hambleton, 1977). The IOC was tested by four raters who are professional in human resource area. The raters would reviewed all of the items to clarify and comprehend and then indicate comments for each item by giving the item a rating of 1 (for clearly measuring), -1 (clearly not measuring), or 0 (degree to which it measures the content area is unclear). The IOC score for each item was calculated by total rating score divided by total number of raters. All the items that IOC score was less than 0.5 were eliminated from the final instrument. The value of content validity was presented in chapter four.

3.6.2 Construct validity

Construct validity is the degree to which an instrument measures the trait or theoretical construct that it is attempted to measure (Cooper & Schindler, 2003). For this study the construct validity was tested by using confirm factor analysis (CFA)

including p -value, factor loading, average variance extracted (AVE), and discriminant validity. First of all, p -value associated with each loading should be significant. Second, factor loading is above 0.6 (Nunnally & Bernstein, 1994). Third, AVE is above 0.5 (Fornell & Larcker, 1981). Finally, Fornell and Larcker (1981) proposed that if the AVE for each construct is greater than its shared variance (squared correlation) with any other construct, discriminant validity is supported. The value of construct validity was presented in chapter four.

$$\begin{aligned} \text{CR} &= \text{composite reliability} \\ &= (\Sigma \text{ of standardized loading})^2 / [(\Sigma \text{ of standardized loading})^2 + \Sigma \text{ of } \epsilon_j] \\ \text{AVE} &= \Sigma \text{ of (standardized loading)}^2 / [(\Sigma \text{ of (standardized loading)}^2) + \Sigma \text{ of } \epsilon_j] \\ \text{DV} &= \text{discriminant validity} = \text{AVE} / (\text{corr.})^2 > 1; \\ &(\text{corr.})^2 = \text{highest (correlation)}^2 \text{ between factors of interest and remaining factors.} \end{aligned}$$

3.7 Data Collection

3.7.1 Questionnaire translation

The instrument of the study was developed from previous studies and existing instruments with high scales of reliability and validity. However, the national and official language of Thailand is Thai language which is different from the original instrument; thus the instrument was required to be translated into Thai version. To avoid the distinction of cultural effect and ensure that translated version still maintained the validities and reliabilities of the original instruments, in the study used the three steps of translation model proposed by Brislin (1970; 1986).

The first step was a forward translation that the original version in English language was translated into Thai version. Then, the Thai version was reviewed by a monolingual reviewer who could communicate only Thai language to

adjust incomprehensible or ambiguous wordings. The instrument was reviewed by two clerks who were little communicated in English. The last step was a backward translation that the Thai version was translated into English version by someone who could communicate with both Thai and English languages and enough understand the instrument. The instrument was backward translated by three university professors and a human resource manager. After a translation process, the translated version was reviewed and evaluated for the content validity by three professors in human resource area and a practitioner who is a human resource manager. Finally, the complete translated instrument was tested in the pilot test.

3.7.2 Pilot study

A pilot study is a pre-study that is a small experiment designed to test logistics and to gather information prior to a larger study in order to improve the latter's quality and efficiency. A pilot study could reveal deficiencies in the design of a proposed experiment or procedure, and these could then be addressed before time while resources are expended on large scale studies. The purposes of the pilot study for this study were to develop and test adequacy of research instruments, assess the feasibility of a study/survey, estimate variability in outcomes to help determining sample size, and assess whether the research proposed theoretical model is realistic and workable. To conduct the pilot study, the paper-questionnaires were distributed to 65 respondents from total sample size (21 participants from PTT and 44 participants from ESSO).

3.7.3 Main study

The main study was conducted by three methods. The first method was formal method which the heads of HR department of the 9 companies were contacted accompanying with the letters authorized by the Rajamangala University of

Technology Thanyaburi (RMUTT) to describe the purpose, the importance, and the benefits of the study. Permissions to send the paper survey to their employees were definitely asked. The second method was an interview method where the respondents were interviewed and asked by highly experienced interviewers. The last method was a snowball method which after observing the initial subject, the researcher asked for assistance from the subject to help identify people with a similar trait of interest. After the respondents returned the surveys, the results were analyzed by using EFA, CFA and SEM.

3.8 Data Analysis

The results from a sampling group were analyzed for the descriptive statistics, the factor analysis, and the structural equation model by using statistical software programs.

3.8.1 Descriptive statistics

Descriptive statistics are the disciplines of quantitatively describing the main features of data collection that aims to summarize a data set of population such as mean, mode, median, variance, and standard deviation. These data included the average age, the proportion of each gender, education, and salary.

3.8.2 Factor analysis

Factor analysis aims to find whether it is possible to “reduce the set of measured variables to a smaller set of underlying factors” (Spicer, 2005, p.181). In other words, the factor analysis is the study of interrelationships among the variables in an effort to find a new set of variables. There are two types of factor analysis, which are exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA is used

when there is an uncertainty about the number of factors which are appropriate to explain the interrelationships among a set of items whereas CFA is used when the researchers have some knowledge about the number of factors which are appropriate to explain the interrelationships among a set of items.

3.8.2.1 Exploratory factor analysis (EFA)

According to the instrument, it was translated into Thai language, and the data were collected from Thai organizations where the different context may affect to the structure of each factor. Thus, EFA was used for in this study. Since the study intended to interpret overall information by second order factor analysis, the extraction method was principal axis factoring method whereas rotation method was direct oblimin.

3.8.2.2 Confirmatory factor analysis (CFA)

CFA was used to confirm the structure of factors by both reliability and validity analysis. This study intended to interpret overall information, and the second order factor analysis was used to test the structure of factors of employer branding, employee engagement, discretionary effort, and employee expectation.

3.8.3 Structure equation model (SEM)

Wright (1921) defined that SEM is a statistical technique for testing and estimating causal relations using a combination of statistical data and qualitative causal assumptions (Wright, 1921). Byrne (2010) further defined that SEM is a statistical methodology that takes a confirmatory approach such as hypothesis testing to the analysis of a structural theory bearing on some phenomena.

This study was to determine the appropriate research model related to seven indicators. The first indicator is the Chi-square (χ^2 or CMIN) which should not be

significant at a 0.05 threshold ($p > 0.05$) (Hu & Bentler 1999). The second indicator is the ratio of Chi-square/degree of freedom (χ^2/df or CMIN/df) which should be less than 5.0 to judge the fitness of the model (Marsh & Hocevar, 1985; Bentler, 1989). The latter two indicators are comparative fit index (CFI) and incremental fit index (IFI) which should be greater than 0.9 to judge the good fit (Bentler & Bonett, 1980; Bentler, 1989). The fifth indicator is adjusted goodness of fit index (AGFI) which should be greater than 0.9 to judge the good fit (Anderson & Gerbing, 1988; Jöreskog & Sörbom, 1993). The sixth indicator is Parsimony goodness of fit index (PGFI) which should be greater than 0.5 to judge acceptable fit (Byrne, 2001; Hair et al., 1998). The last indicator is root mean square error of approximation (RMSEA) which should be less than 0.05 to judge good fit and between 0.05 and 0.08 to judge reasonable fit (Browne & Cudeck, 1993; MacCullum et al., 1996).

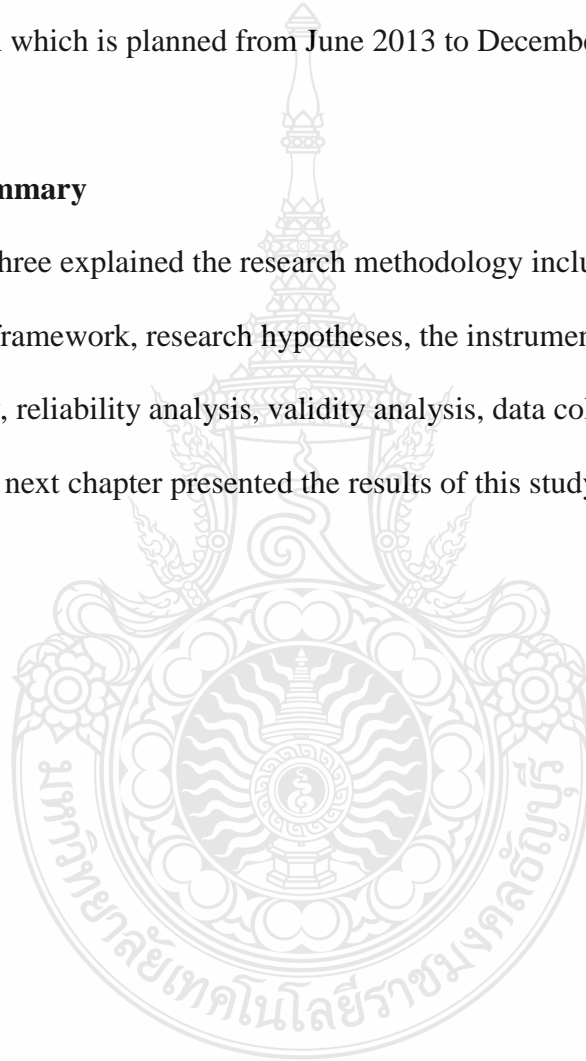
In this study, the relationships among variables were determined by *t*-test related to critical ratios (C.R.) and *p*-value. According to Garson (2005), random sample variables with standard normal distributions, estimates with critical ratios (C.R.) more than 1.96 are significant at the 0.05 level. Thus, each endogenous variable's CR value was assessed with a statistical significance supported by those greater than 1.96. Meanwhile, *p*-value less than 0.05 was at the significant at 0.05 level ($*p\text{-value} < 0.05$), *p*-value less than 0.01 was at the significant at 0.01 level ($**p\text{-value} < 0.01$), and *p*-value less than 0.001 was at the significant at 0.001 level ($***p\text{-value} < 0.001$) (Arbuckle, 2011).

3.9 Timetable

This study was planned to study for one and a half year from June 2012 to December 2013. The first stage is to define research question and review literature which was from June 2012 to January 2013. The second stage is to collect and analyze data which was from February 2013 to June 2013. The last stage is to interpret and provide conclusion which is planned from June 2013 to December 2013.

3.10 Chapter Summary

Chapter three explained the research methodology including the model/theoretical framework, research hypotheses, the instrument, population and sample, pilot study, reliability analysis, validity analysis, data collection, data analysis, and timetable. The next chapter presented the results of this study.



CHAPTER 4

RESEARCH RESULT

Chapter four began with data preparation, followed by pilot study, purification and reliability analysis, construct assessment and validity analysis, structure equation model of proposal model/theoretical framework, and hypotheses testing and results. The chapter concluded with a summary of relevant points and an overview of the next chapter.

4.1 Data Preparation

4.1.1 Normal distribution of sample

Before conducting any statistical analysis, the rule of normal distribution of collected responses should be tested. Normal distribution was assessed by two indicators including value of skewness and kurtosis. Stuart and Ord (1994) proposed that the value of skewness should be between -3 and +3 to judge the normal distribution. Decarlo (1997) proposed that the value of kurtosis between -3 and +3 is judged to be normal distribution. This study collected data from 1,349 respondents which were a large enough sample to assume that they followed the rule of normal distribution. The results indicated the values of skewness ranging from -1.400 to 0.210 and the values of kurtosis ranging from -1.295 to 2.710 (presented in appendix D.1 and appendix D.2). Thus, it could be concluded that the rule of normal distribution of sample in this study was satisfied.

4.1.2 The population and sample rate

Sample size for the study came from current employees working with the petroleum industry which was projected to be at least 670 respondents, and a sample size of 65 was projected for the pilot study. Actual sample size was a total of 1,349 respondents that there were 65 pilot study respondents and 1,349 respondents in the main study.

Due to 2,746 questionnaires distributed, there were 1,349 questionnaires returned to the researcher, so the response rate was 49.13 percent. The returned questionnaires were accounted for 751 (55.67 percent) from PTT, 263 (19.50 percent) from IRPC, 118 (8.75 percent) from ESSO, 100 (7.41 percent) from Chevron, 54 (4.00 percent) from TOP, 33 (2.45 percent) from BCP, and 30 (2.22 percent) from Shell. Meanwhile, the returned questionnaires from SPRC and RPC were accounted for 0 (0 percent).

4.1.3 Profile of respondents

The questionnaires were distributed to the targeted respondents in order to collect demographic information consisting of gender, age, marital status, education level, working experiences, position, department and plan in next three years. The details of the obtained information were discussed below.

Table 4.1 Respondents' profile

Characteristics	Frequency	Percent
Response rate	1,349	49.13%
Gender		
Male	757	56.1%
Female	592	43.9%

Table 4.1 Respondents' profile (Cont.)

Characteristics	Frequency	Percent
Age		
18-21	4	0.3%
22-25	135	10.0%
26-29	283	21.0%
30-35	357	26.5%
36-40	228	16.9%
Above 40	342	25.4%
Marital status		
Single	752	55.7%
Married	574	42.6%
Divorced	23	1.7%
Education level		
Below bachelor	83	6.2%
Bachelor's degree	734	54.4%
Master's degree	526	39.0%
Doctor's degree	6	0.4%
Working experiences		
New graduated	16	1.2%
Less than 1 year	77	5.7%
1-3 years	249	18.5%
4-5 years	218	16.2%
6-10 years	246	18.2%
Above 10 years	543	40.3%
Current position		
Operation employee	944	70.0%
Senior employee	172	12.8%
Supervisor	164	12.2%
Manager or above	69	5.1%

Table 4.1 Respondents' profile (Cont.)

Characteristics	Frequency	Percent
Department		
Human resource (HR)	114	8.5%
Accounting/Finance	136	10.1%
Information technology (IT)	105	7.8%
Engineering	222	16.5%
Maintenance/Service	150	11.1%
Research and development	9	0.7%
Law	17	1.3%
Exploration and production	47	3.5%
Office/Administrative	154	11.4%
Marketing/Sales	106	7.9%
Data analysis	18	1.3%
Export/Shipping	11	0.8%
Internal audit	33	2.4%
Purchasing/procurement/buyer	49	3.6%
Logistics	39	2.9%
Planning	20	1.5%
Other (Safety health and environment, corporate social responsibility, strategic sourcing, social psychological, petroleum supply operations, and corporate communication)	119	8.8%
Plan in next three years		
Work with current company	1,086	80.5%
Change company	239	17.7%
Early retire	24	1.8%

Table 4.2 Characteristics of the majority of respondents

Characteristics	Percent
Response rate	49.13%
Male	56.1%
30-35 years old	26.5%
Single	55.7%
Bachelor's degree	54.4%
Working experiences above 10 years	40.3%
Operation employee	70.0%
Engineering department	16.5%
Plan to work with current company in next 3 years	80.5%

Data were collected from current employees work with 7 organizations by using three sampling methods, which were quota sampling, simple random sampling, and snowball sampling whereas data collection was made from February 2013 to April 2013 which the characteristics of the majority of respondents were summarized as follows. The majority of the respondents were male which were accounted for 56.1 percent with age between 30-35 years old accounted for 26.5 percent, and marital status was mostly single status accounted 55.7 percent. The level of education was mostly Bachelor's degree which was accounted for 54.4 percent while working experience was above 10 years accounted for 40.3 percent. Besides, most of them were operation employees which were accounted for 70.0 percent, working in the engineering department accounted for 16.5 percent. In the next three years the respondents also plan to work with the current company which was accounted for 80.5 percent.

4.2 Pilot Study

After the pilot study was done, some items were slightly adjusted to clarify understanding. The Cronbach's alpha for employer branding, employee engagement, discretionary effort, and employee expectation scale were 0.967, 0.876, 0.799, and 0.901, respectively, which means reliability was supported. Meanwhile, the result from exploratory factor analysis revealed that some items were eliminated from the main study due to a corrected item-total correlation less than 0.50. Considering employer branding questionnaire, the item EMP10, ORG1, ORG2, and ORG8 were eliminated whereas the item JEE1, JEE2, JEE3, JEE4, JEE9, and OEE3 were eliminated from employee engagement questionnaire. Moreover, the item IRDE1, IRDE2, IRDE6 and IRDE7 were eliminated from discretionary effort questionnaire while FEXP1, FEXP2, FEXP3, and PEXP3 were eliminated from employee expectation questionnaire. Furthermore, the pilot study was used to assess the feasibility of a study. The result revealed that all of factor loading values were above 0.6 which means construct validity was supported. In addition, all *p*-values associated with each loading were significant it could thus be concluded that the study was feasibility.

4.3 Main Study

The results from the pilot study revealed that all instruments have both reliability and validity, and the main study of the proposed theoretical model is realistic and workable. The main study was thus conducted.

4.4 Purification and Reliability Analysis

The Cronbach's alpha which is above 0.70 is accepted for the study. The results of reliability analysis for each scale were presented in the next sections.

4.4.1 Employer branding scale

The final instrument contained twenty nine items which the alpha was 0.968. Thus, it could be concluded that the employer branding instrument of the study was reliable for the measurement of employer branding.

4.4.2 Employee engagement

The final instrument contained nine items which the alpha was 0.911. Thus, it could be concluded that the employee engagement instrument of the study is reliable for the measurement of employee engagement.

4.4.3 Discretionary effort

The final instrument contained seven items which the alpha was 0.882. Thus, it could be concluded that the discretionary effort instrument of the study is reliable for the measurement of discretionary effort.

4.4.4 Employee expectation

The final instrument contained fourteen items which the alpha was 0.914. Thus, it could be concluded that the employee expectation instrument of the study is reliable for the measurement of employee expectation.

4.5 Construct Assessment and Validity Analysis

Regarding the instrument, it was translated into Thai language, and the data were collected from Thai organizations while the different context may affect the structure of each factor which was uncertain that these translated scales still contained

the same factor structure as the original versions. Therefore, EFA was used, and the second order factor analysis was used to test and explain the overall information.

4.5.1 The structure of employer branding

In the first phase, the result of the Kaiser-Meyer-Olkin (KMO) test was 0.972 while the results of the Bartlett's test of sphericity was that $\chi^2 = 37083.584$ and $p = 0.000$. Both results showed that the relationships among items were acceptable to conduct the factor analysis. The results of this procedure were reported in table 4.3 and table 4.4. The four factors were accounted for a cumulative of the variation in the data at 62.543%. From the rotated factor, it could be seen that items EMP1-EMP9 load on factor was labeled "employment" dimension (EMP). The second factor comprised items ORG3-ORG7 and ORG9-ORG13 which was labeled "organizational reputation" dimension (ORG). The latter factor comprised items DA1-DA7 which was labeled "development and application" dimension (DA). The last factor was labeled "economic" dimension (ECO) which included items ECO1-ECO3.

Table 4.3 Total variance explained of employer branding

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%	Total
EMP	15.473	53.357	53.357	15.112	52.109	52.109	11.308
ORG	1.973	6.805	60.162	1.612	5.560	57.669	12.537
DA	1.098	3.786	63.948	0.738	2.546	60.215	10.965
ECO	1.002	3.454	67.402	0.675	2.328	62.543	6.030

Extraction Method: Principal Axis Factoring

Table 4.4 Rotated component matrix of employer branding

Item	Component			
	EMP	ORG	DA	ECO
EMP2: Your company has fair and tangible performance measurement	0.868	0.537	0.544	-0.320
EMP3: Your company provides challenging projects with expected tangible outcomes	0.826	0.579	0.610	-0.395
EMP8: Your company promotes career growth	0.796	0.606	0.686	-0.456
EMP4: There is fit between employee and the job	0.772	0.553	0.688	-0.320
EMP9: Your company allows individual development plan	0.757	0.599	0.691	-0.410
EMP1: Your company has appropriate corporate assessment such as KPI (Key Performance Indicator) or BSC (Balanced Scorecard)	0.753	0.493	0.467	-0.274
EMP7: Your company empowers employee to make decisions (decentralization)	0.706	0.590	0.681	-0.326
EMP6: There are good relationships between employee and supervisor in your company	0.678	0.557	0.651	-0.166
EMP5: There are good relationships among employees in your company	0.625	0.558	0.592	-0.206
ORG4: Your company has executable vision, mission, and policy	0.549	0.824	0.572	-0.454
ORG11: Your company has high work-related value and standard	0.585	0.823	0.540	-0.427
ORG12: Your company provides good working environment	0.529	0.818	0.539	-0.411
ORG10: Your company is socially and environmentally responsible	0.471	0.797	0.503	-0.434
ORG3: Your company is stable	0.454	0.767	0.527	-0.438
ORG6: Your company provides access to information and supports for open and honest feedbacks such as open conversation	0.617	0.744	0.571	-0.567
ORG7: Your company has visionary and inspirational leadership	0.681	0.742	0.602	-0.554
ORG5: Your company has effective internal communication system	0.500	0.741	0.499	-0.443
ORG13: There are employee relations activities such as outside seminar, and sport day in your company	0.452	0.731	0.485	-0.438
DA2: In your company, you have opportunity to support and encourage colleagues	0.596	0.634	0.883	-0.307
DA3: In your company, you have opportunity to teach others what you have learned	0.587	0.608	0.863	-0.334
DA4: In your company, there is opportunity to apply what was learned at a tertiary institution	0.659	0.589	0.787	-0.369

Table 4.4 Rotated component matrix of employer branding (Cont.)

Item	Component			
	EMP	ORG	DA	ECO
DA1: There is praise and recognition of employees in your company	0.721	0.626	0.736	-0.457
DA5: You feel more self-confident as a result of working for a particular organization	0.616	0.654	0.709	-0.593
DA6: You feel good about yourself as a result of working for a particular organization	0.593	0.632	0.708	-0.554
DA7: Your company appreciate diversity such as respect race or religion	0.415	0.484	0.486	-0.182
ECO3: There are attractive benefits package such as welfare, health reimbursement, holidays, retirement plan, and scholarship	0.470	0.675	0.491	-0.808
ECO2: The compensation such as salary, commission, bonus, and overtime (OT) is attractive	0.503	0.641	0.448	-0.806
ECO1: Your company has adequate facilities and resources for employees	0.400	0.561	0.425	-0.668

Extraction Method: Principal Axis Factoring ;
Rotation Method: Oblimin with Kaiser Normalization

Table 4.5 Model fit statistics of the second order CFA of employer branding

CMIN	p-value	df	CMIN/df	CFI	IFI	AGFI	PGFI	RMSEA	NFI	TLI
1642.645	0.000	354	4.640	0.959	0.959	0.898	0.746	0.052	0.949	0.953
AIC (Default model)		AIC (Saturated model)		AIC (Independence model)						
1804.645		870.000		32024.573						

The result of the second order CFA, CMIN was 1642.645 at $p = 0.000$, and df was 354 while CMIN/df was 4.640, and CFI and IFI were 0.959. Also, AGFI was 0.898, PGFI was 0.746, RMSEA was 0.052 (PCLOSE = 0.100), NFI was 0.949, and TLI was 0.953.

The Chi-square statistic is in essence, and a statistical significance test is sensitive to sample size which means that the Chi-square statistic nearly always rejects the model when large samples are used (Bentler & Bonnet, 1980; Joreskog,

1981; Jöreskog & Sörbom, 1996). On the other hand, where small samples are used, the Chi-square statistic lacks power and because this may not discriminate between good fitting models and poor fitting models (Kenny & McCoach, 2003). Therefore, other measures were developed to assess the model fit such as NFI, AGFI, CFI, and RMSEA. Although the Chi-square statistic of the second order CFA provided a significant result at a 0.05 threshold, the remaining results were above the minimum criterion. Thus, it could be concluded that the structure of employer branding was appropriated to explain the interrelationships among items and latent variables.

4.5.2 Validity analysis of employer branding

4.5.2.1 Content validity

The results of IOC score of all 33 items were greater than 0.5, it can thus be concluded that there is only one valid construct being measured by each item.

4.5.2.2 Construct validity

First, all p -values associated with each loading were less than 0.05. Besides, most of factor loading values were above 0.6, but only the relationship between item DA7 and latent variable DA was 0.508. Since a corrected item-total correlation of DA7 and the IOC score were greater than 0.5, the final survey still kept this question. Moreover, all average variance extracted (AVE) of four dimensions were above 0.5. Finally, all discriminant validity was above 1.0. As these results were above the minimum criterion, therefore it could be accepted that the structure of employer branding instrument is best represented by four unique dimensions.

Table 4.6 Reliability and validity assessment of employer branding instrument

Factor	Cronbach's alpha	Composite Reliability	Average Variance Extracted	Highest (correlation) ²	Discriminant Validity
EMP	0.929	0.924	0.577	0.549	1.050
DA	0.909	0.902	0.606	0.573	1.057
ORG	0.933	0.932	0.578	0.573	1.009
ECO	0.860	0.867	0.688	0.558	1.232

CR = composite reliability = $(\Sigma \text{ of standardized loading})^2 / [(\Sigma \text{ of standardized loading})^2 + \Sigma \text{ of } \epsilon_j]$;

AVE = $\Sigma \text{ of (standardized loading)}^2 / (\Sigma \text{ of (standardized loading)}^2 + \Sigma \text{ of } \epsilon_j)$;

DV = discriminant validity = $AVE / (\text{corr.})^2 > 1$; $(\text{corr.})^2 = \text{highest (correlation)}^2$ between factors of interest and remaining factors.



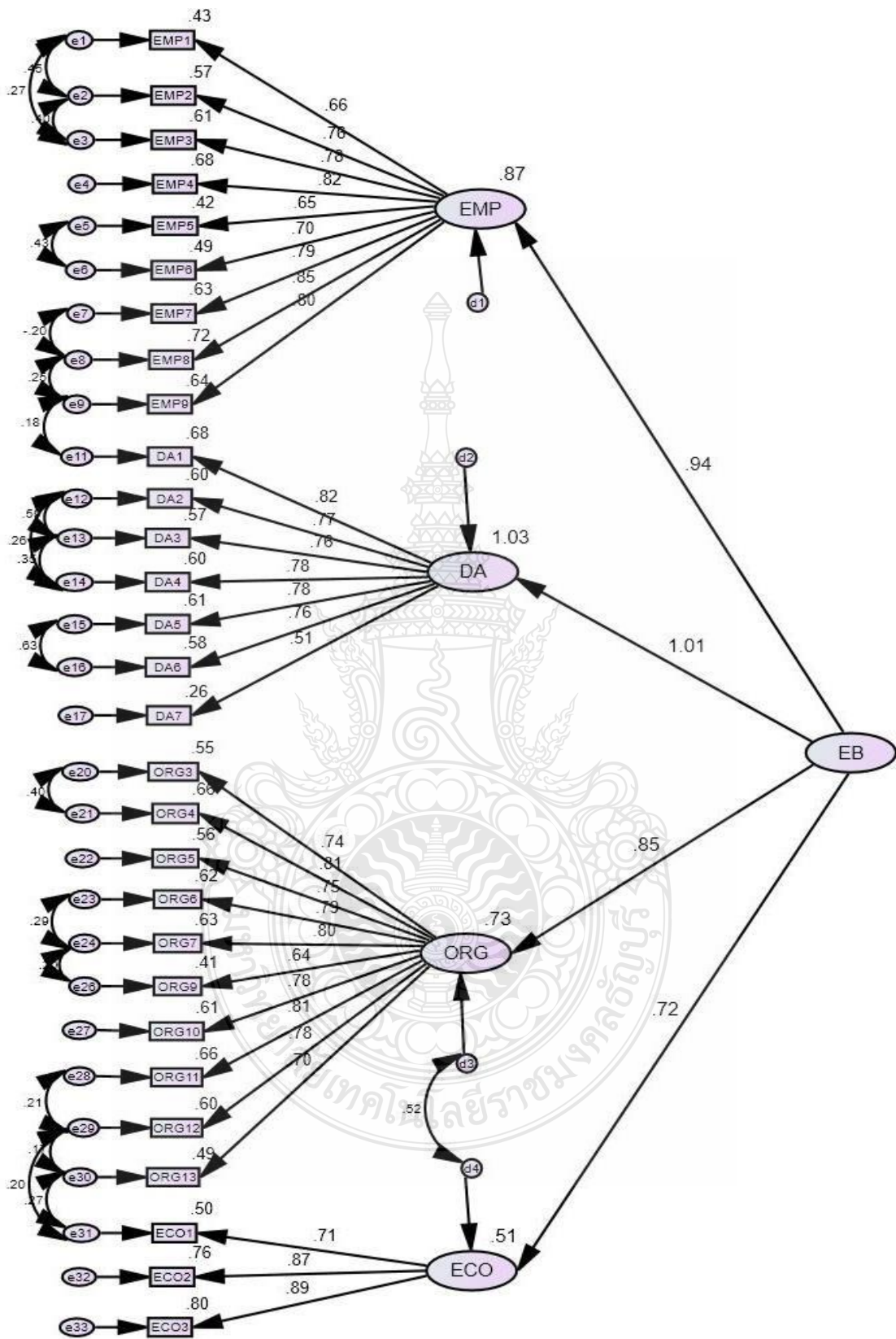


Figure 4.1 Measurement model of the second order CFA of employer branding

4.5.3 The structure of employee engagement

In first phase, the result of the Kaiser-Meyer-Olkin (KMO) test was 0.909 while the results of the Bartlett's test of sphericity was that $\chi^2 = 7517.711$ and $p = 0.000$. Both results showed that the relationships among items were acceptable to conduct the factor analysis. The results of this procedure were reported in table 4.7 and table 4.8. The two factors were accounted for a cumulative of the variation in the data at 63.024%. From the rotated factor, it can be seen that items JEE5-JEE8 load on factor which was labeled "job engagement" dimension (JEE). The second factor comprised items OEE1, OEE2, OEE4, OEE5, and OEE6 which was labeled "organization engagement" dimension (OEE).

Table 4.7 Total variance explained of employee engagement

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%	Total
OEE	5.281	58.677	58.677	4.930	54.774	54.774	4.586
JEE	1.114	12.381	71.057	0.743	8.250	63.024	3.986

Extraction Method: Principal Axis Factoring

Table 4.8 Rotated component matrix of employee engagement

Item	Component	
	OEE	JEE
OEE5: Being a member of this organization is exhilarating for you	0.870	0.588
OEE2: One of the most exciting things for you is getting involved with things happening in this organization.	0.861	0.603
OEE4: Being a member of this organization make you come "alive"	0.824	0.627
OEE1: Being a member of this organization is very captivating	0.797	0.546
OEE6: You are highly engaged in this organization	0.797	0.619

Table 4.8 Rotated component matrix of employee engagement (Cont.)

Item	Component	
	OEE	JEE
JEE6: At your work you feel enthusiastic and bursting with energy	0.534	0.831
JEE5: You are highly engaged in your job	0.589	0.782
JEE7: You find your work is full of meaning and purpose	0.523	0.719
JEE8: You feel happy when you need to continue working for longer hours	0.483	0.618

Extraction Method: Principal Axis Factoring ;
Rotation Method: Oblimin with Kaiser Normalization

Considering the result of the second order CFA, CMIN was 105.118 at $p = 0.000$, df was 24, CMIN/df was 4.380, CFI and IFI were 0.989, AGFI was 0.968, PGFI was 0.524, RMSEA was 0.050 (PCLOSE = 0.475), NFI was 0.986, and TLI was 0.984.

Table 4.9 Model fit statistics of the second order CFA of employee engagement

CMIN	<i>p</i> -value	df	CMIN/df	CFI	IFI	AGFI	PGFI	RMSEA	NFI	TLI
105.118	0.000	24	4.380	0.989	0.989	0.968	0.524	0.050	0.986	0.984

AIC (Default model)	AIC (Saturated model)	AIC (Independence model)
147.118	90.000	7577.150

According to the Chi-square statistic, the second order CFA provided a significant result at a 0.05 threshold, but the remaining results were above the minimum criterion. Thus, it could be concluded that the structure of employee engagement was appropriated to explain the interrelationships among items and latent variables.

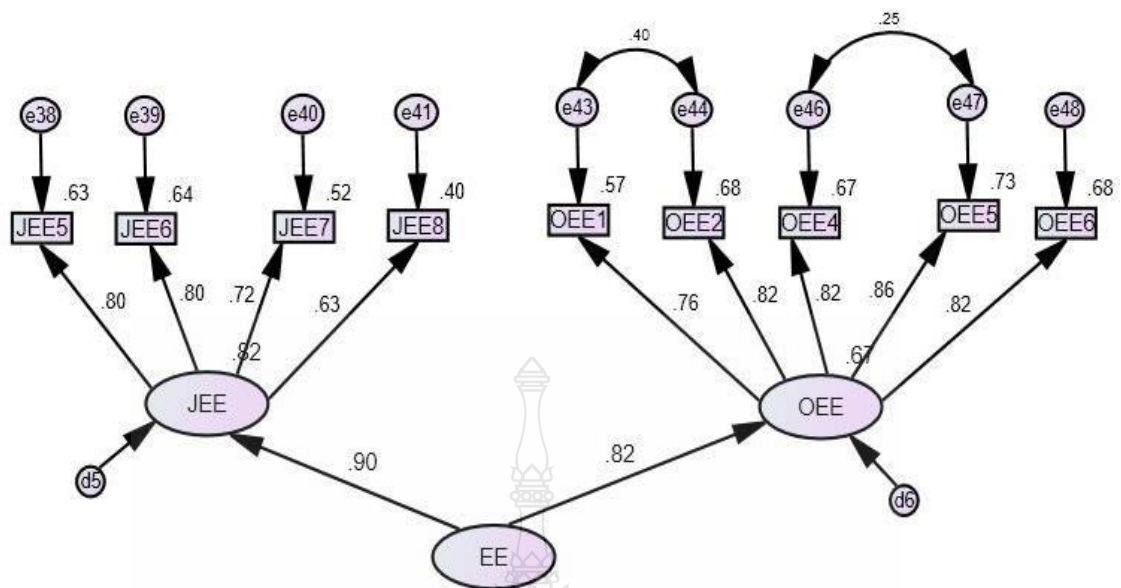


Figure 4.2 Measurement model of the second order CFA of employee engagement

4.5.4 Validity analysis of employee engagement

4.5.4.1 Content validity

The results of IOC score of item JEE4, JEE9, and OEE3 were less than 0.5 which were eliminated whereas the IOC score of remained items were above 0.5 which could be concluded that there is only one valid construct being measured by each remain item.

4.5.4.2 Construct validity

The first result was that all *p*-values associated with each loading were less than 0.05. The second result was that all of factor loading values were above 0.6. Third, all average variance extracted (AVE) of two dimensions were above 0.5. Finally, all discriminant validity was above 1.0. Consequently, all results were above the minimum criterion, it can therefore be accepted that the structure of employee engagement instrument is best represented by two unique dimensions.

Table 4.10 Reliability and validity assessment of employee engagement instrument

Factor	Cronbach's alpha	Composite Reliability	Average Variance Extracted	Highest (correlation) ²	Discriminant Validity
JEE	0.817	0.829	0.550	0.408	1.347
OEE	0.916	0.909	0.666	0.408	1.635

4.5.5 The structure of discretionary effort

In first phase, the result of the Kaiser-Meyer-Olkin (KMO) test was 0.840 while the results of the Bartlett's test of sphericity was that $\chi^2 = 5333.712$ and $p = 0.000$. Both results showed that the relationships among items which were acceptable to conduct the factor analysis. The results of this procedure were reported in table 4.11 and table 4.12. The two factors were accounted for a cumulative of the variation in the data at 65.391%. From the rotated factor it can be seen that items IRDE3, IRDE4, and IRDE5 loaded on factor which was labeled "in-role discretionary effort" dimension (IRDE). The second factor comprised items ERDE1-ERDE4 which was labeled "extra-role discretionary effort" dimension (ERDE).

Table 4.11 Total variance explained of discretionary effort

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%	Total
ERDE	4.105	58.642	58.642	3.764	53.769	53.769	3.343
IRDE	1.113	15.901	74.543	0.814	11.622	65.391	3.032

Extraction Method: Principal Axis Factoring

Table 4.12 Rotated component matrix of discretionary effort

Item	Component	
	ERDE	IRDE
ERDE3: On a regular basis, you spend extra-effort on behalf of my co-workers which results in benefits to your organization	0.869	0.498
ERDE4: You expend extra effort on behalf of your organization to avoid incurring unnecessary costs	0.818	0.460
ERDE2: On regular basis, you spend extra-effort to benefit your organization	0.789	0.541
ERDE1: On a regular basis, you spend a fair amount of time thinking about how to improve things at work	0.699	0.532
IRDE4: You are working as hard as you are able to at your job	0.515	0.885
IRDE3: You are performing your job to your full capacity	0.507	0.846
IRDE5: You could increase your effort at work quite significantly	0.534	0.705

Extraction Method: Principal Axis Factoring ;
Rotation Method: Oblimin with Kaiser Normalization

Considering the result of the second order CFA, the result of CMIN was 41.766 at $p = 0.000$, df was 9, CMIN/df was 4.641, CFI and IFI were 0.994, AGFI was 0.972, PGFI was 0.319, RMSEA was 0.052 (PCLOSE = 0.388), NFI was 0.992, and TLI was 0.986.

Table 4.13 Model fit statistics of the second order CFA of discretionary effort

CMIN	<i>p</i> -value	df	CMIN/df	CFI	IFI	AGFI	PGFI	RMSEA	NFI	TLI
41.766	0.000	9	4.641	0.994	0.994	0.972	0.319	0.052	0.992	0.986
AIC (Default model)			AIC (Saturated model)			AIC (Independence model)				
79.766			56.000			5360.271				

Although the Chi-square statistic of the second order CFA provided a significant result at a 0.05 threshold, and PGFI was less than minimum criterion, the remaining results were above the minimum criterion. Thus, it could be accepted that this structure was appropriated to explain the interrelationships among a set of items.

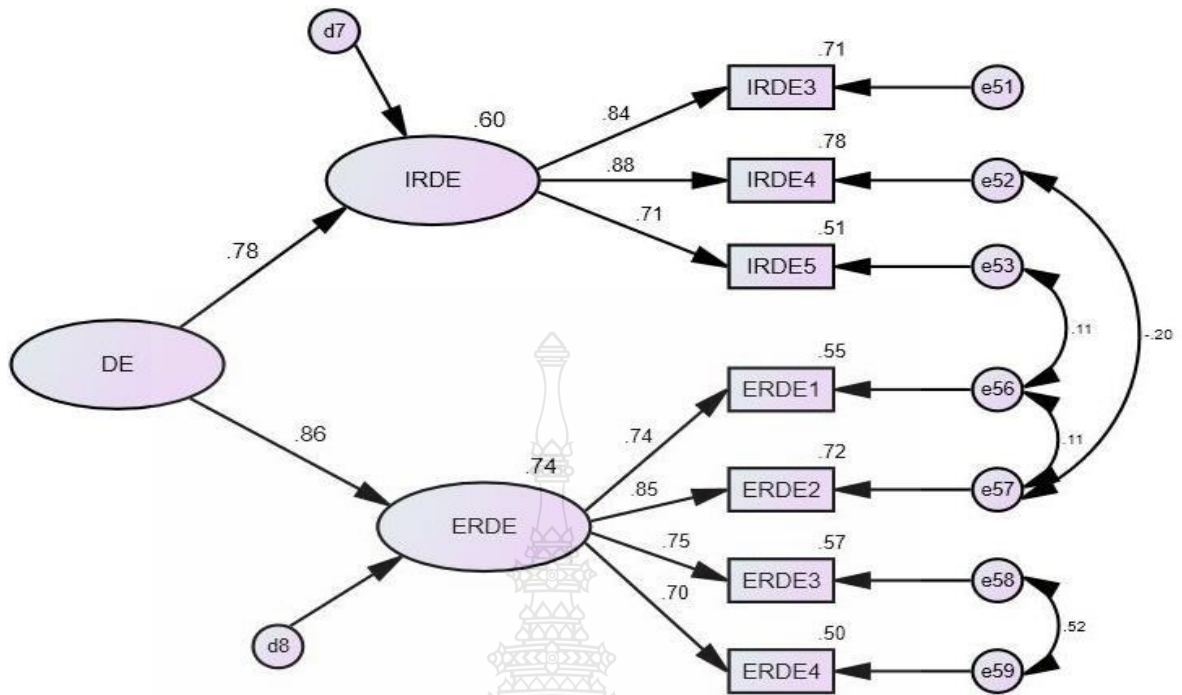


Figure 4.3 Measurement model of the second order CFA of discretionary effort

4.5.6 Validity analysis of discretionary effort

4.5.6.1 Content validity

The results of IOC score of all 11 items were greater than 0.5. It can thus be concluded that there is only one valid construct being measured by each item.

4.5.6.2 Construct validity

It was found that all p -values associated with each loading were less than 0.05 while all of factor loading values were above 0.6. Moreover, all average variance extracted (AVE) of two dimensions were above 0.5. Finally, all discriminant validity was above 1.0. Since all results were above the minimum criterion, it could therefore be accepted that the structure of discretionary effort instrument is best represented by two unique dimensions.

Table 4.14 Reliability and validity assessment of discretionary effort instrument

Factor	Cronbach's alpha	Composite Reliability	Average Variance Extracted	Highest (correlation) ²	Discriminant Validity
IRDE	0.871	0.856	0.666	0.327	2.037
ERDE	0.851	0.848	0.878	0.327	2.685

4.5.7 The structure of employee expectation

In first phase, the result of the Kaiser-Meyer-Olkin (KMO) test was 0.911 while the results of the Bartlett's test of sphericity was that $\chi^2 = 11773.269$ and $p = 0.000$. Both results showed that the relationships among items which were acceptable to conduct the factor analysis. The results of this procedure were reported in table 4.15 and table 4.16. The three factors were accounted for a cumulative of the variation in the data at 62.983%. From the rotated factor, it can be seen that items FEXP4-FEXP8 load on factor which was labeled "functional expectation" dimension (FEXP). The second factor comprised items EEXP1-EEXP4 which was labeled "economic expectation" dimension (EEXP). The last factor comprised items PEXP1, PEXP2, PEXP4, PEXP5, and PEXP6 which was labeled "psychological expectation" dimension (PEXP).

Table 4.15 Total variance explained of employee expectation

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%	Total
PEXP	6.615	47.250	47.250	6.247	44.619	44.619	5.144
EEXP	2.135	15.248	62.499	1.817	12.975	57.594	4.132
FEXP	1.133	8.096	70.595	0.754	5.389	62.983	4.781

Extraction Method: Principal Axis Factoring

Table 4.16 Rotated component matrix of employee expectation

Item	Component		
	PEXP	EEXP	FEXP
PEXP5: You believe that your company offer you a job that fits with your life style	0.792	0.509	0.536
PEXP6: You believe that your company provide you with a supervisor that you can work with	0.757	0.433	0.512
PEXP1: You believe that your company provide you with access to competent co-workers	0.752	0.500	0.482
PEXP4: You believe that your company provide you with a pleasant work environment	0.725	0.458	0.360
PEXP2: You believe that your company provide you with access to sociable co-workers	0.713	0.461	0.410
EEXP2: You believe that your company provide you with a competitive non-salary benefit package such as welfare, health reimbursement, holidays, retirement plan, and scholarship	0.504	0.904	0.269
EEXP3: You believe that your company provide you with strong job security	0.552	0.798	0.301
EEXP1: You believe that your company provide you with a competitive compensation such as salary, commission, bonus, and OT	0.462	0.766	0.330
EEXP4: You believe that your company provide you with adequate facilities and resources	0.555	0.706	0.265
FEXP8: You believe that the job you have applied for will provide you with interesting work	0.472	0.276	0.882
FEXP7: You believe that the job you have applied for will provide you with challenging work	0.467	0.285	0.863
FEXP4: You believe that the job you have applied for will provide you with a variety of work tasks to maintain your interest in the job	0.498	0.305	0.825
FEXP5: You believe that the job you have applied for will provide you with adequate opportunities for career advancement	0.514	0.319	0.798
FEXP6: You believe that the job you have applied for will provide you with the freedom to do the job your own way	0.556	0.349	0.721

Extraction Method: Principal Axis Factoring ;

Rotation Method: Oblimin with Kaiser Normalization

Considering the result of the second order CFA, CMIN was 284.327 at $p = 0.000$, df was 67, CMIN/df was 4.244, CFI was 0.981, IFI was 0.982, AGFI was 0.954, PGFI was 0.620, RMSEA was 0.049 (PCLOSE = 0.593), NFI was 0.976, and TLI was 0.975.

Table 4.17 Model fit statistics of the second order CFA of employee expectation

CMIN	<i>p</i> -value	df	CMIN/df	CFI	IFI	AGFI	PGFI	RMSEA	NFI	TLI
284.327	0.000	67	4.244	0.981	0.982	0.954	0.620	0.049	0.976	0.975
AIC (Default model)			AIC (Saturated model)			AIC (Independence model)				
360.327			210.000			11849.502				

Although the Chi-square statistic of the second order CFA provided a significant result at a 0.05 threshold, the remaining results were above the minimum criterion. Thus, it can be concluded that the structure of employee expectation was appropriated to explain the interrelationships among items and latent variables.

4.5.8 Validity analysis of employee expectation

4.5.8.1 Content validity

The results of IOC score of all 18 items were greater than 0.5. Thus, it could be concluded that there is only one valid construct being measured by each item.

4.5.8.2 Construct validity

All p -values associated with each loading were less than 0.05, and most of factor loading values were above 0.6. Furthermore, all average variance extracted (AVE) of two dimensions were above 0.5. Finally, all discriminant validity was above 1.0. Since all results were above the minimum criterion, it can therefore be accepted that the structure of employee expectation instrument is best represented by three unique dimensions.

Table 4.18 Reliability and validity assessment of employee expectation instrument

Factor	Cronbach's alpha	Composite Reliability	Average Variance Extracted	Highest (correlation) ²	Discriminant Validity
FEXP	0.910	0.905	0.657	0.333	1.974
EEXP	0.870	0.858	0.604	0.333	1.815
PEXP	0.864	0.851	0.535	0.333	1.606

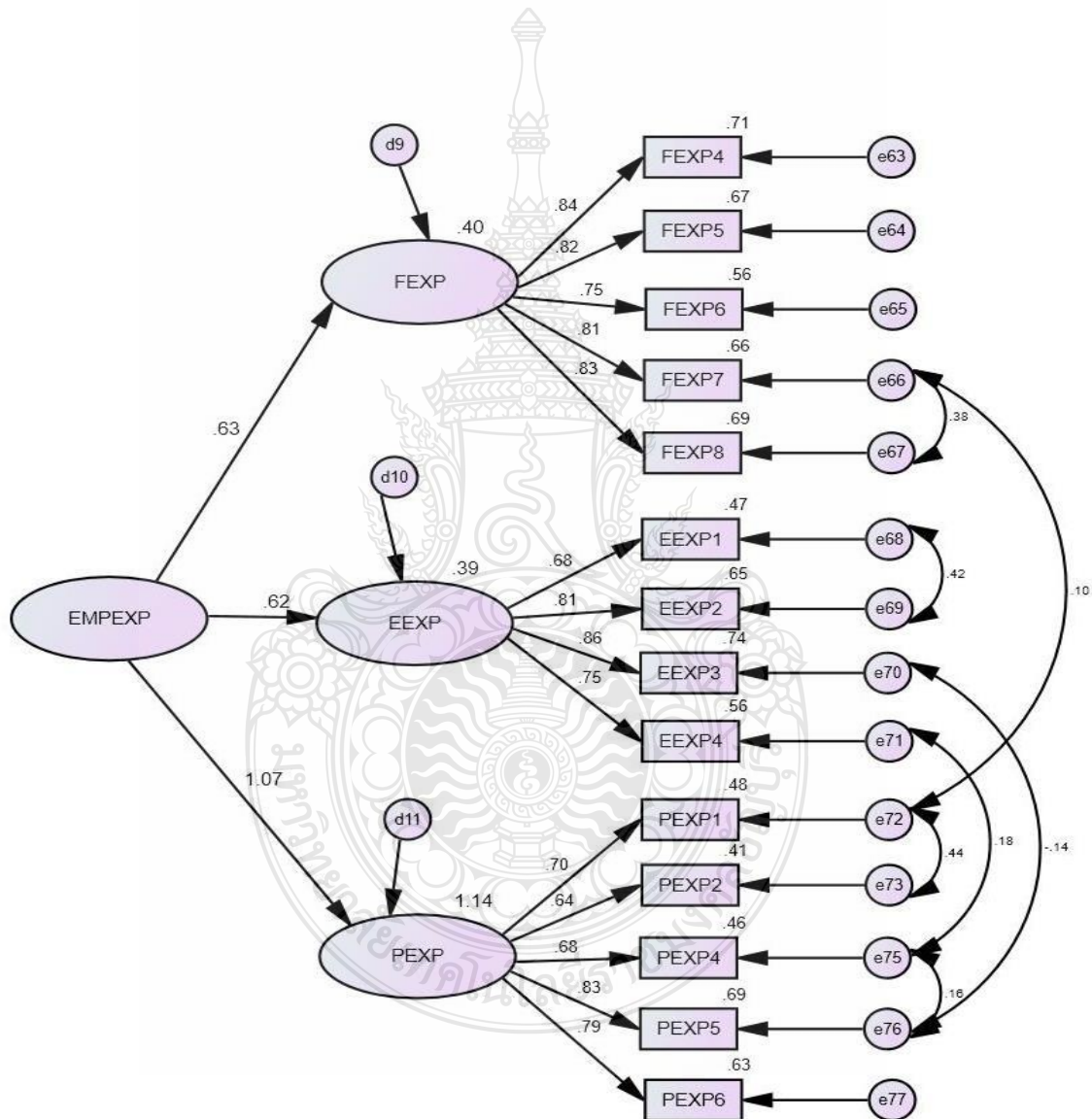


Figure 4.4 Measurement model of the second order CFA of employee expectation

4.6 Structural Model of the Proposed Theoretical Framework

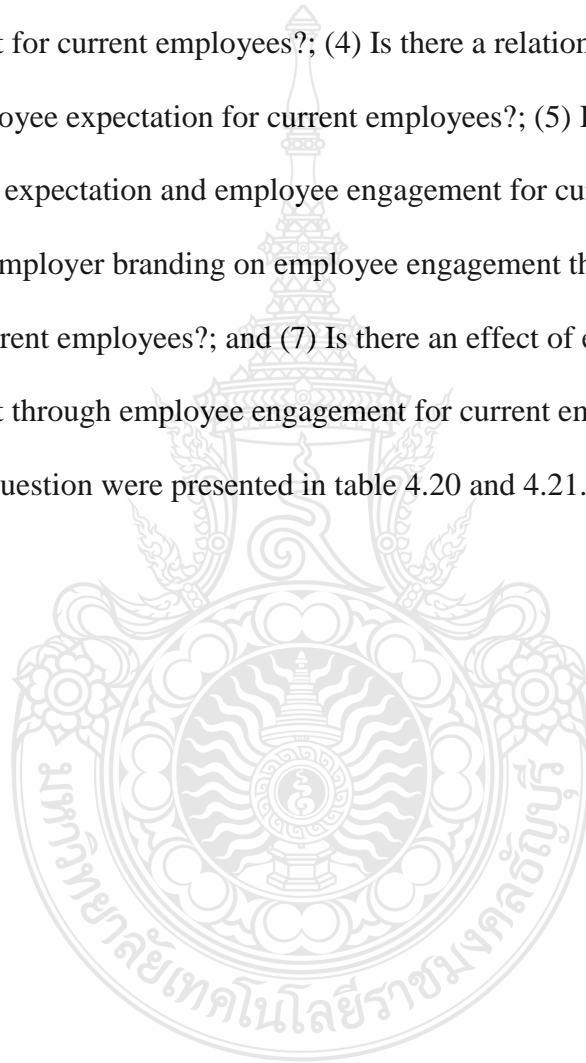
After four instruments were assessed for reliability and validity whereas the proposal theoretical framework was assessed for the good-fitness model by using structure equation model (SEM). The proposed theoretical framework comprised the relationships among four variables including employer branding, employee engagement, discretionary effort, and employee expectation. The result of Hoelter's number was 324, CMIN was 7174.304 at $p = 0.000$, df was 1625, CMIN/df was 4.415, CFI was 0.909, IFI was 0.909, AGFI was 0.816, PGFI was 0.763, RMSEA was 0.050 (PCLOSE = 0.320), NFI was 0.886, and TLI was 0.904. AGFI of 0.8 is sometimes proposed as sufficient to be exceeded the recommended cut-off (Chau & Hu, 2001). As several authors indicated that a model could also be accepted if the majority of fit indices show good adoption measures and only a few are less than the required threshold (Fornell & Larcker, 1981; Bagozzi & Yi, 1988; Homburg & Baumgartner, 1995a). Since the remaining results were above the minimum criterion, it could be concluded that this model appropriated to explain the relationships among variables including employer branding, employee engagement, discretionary effort, and employee expectation.

Table 4.19 Model fit statistics of the proposed theoretical framework

CMIN	<i>p</i> -value	df	CMIN/df	CFI	IFI	AGFI	PGFI	RMSEA	NFI	TLI
7174.304	0.000	1625	4.415	0.909	0.909	0.816	0.763	0.050	0.886	0.904
AIC (Default model)			AIC (Saturated model)			AIC (Independence model)				
7464.304			3540.000			62951.694				

4.7 Hypotheses Testing

This section presented the results of seven main research questions: (1) Is there a relationship between employer branding employee engagement for current employees?; (2) Is there a relationship between employee engagement and discretionary effort for current employees?; (3) Is there a relationship between employer branding and discretionary effort for current employees?; (4) Is there a relationship between employer branding and employee expectation for current employees?; (5) Is there a relationship between employee expectation and employee engagement for current employees?; (6) Is there an effect of employer branding on employee engagement through employee expectation for current employees?; and (7) Is there an effect of employer branding on discretionary effort through employee engagement for current employees?. The results for each research question were presented in table 4.20 and 4.21.



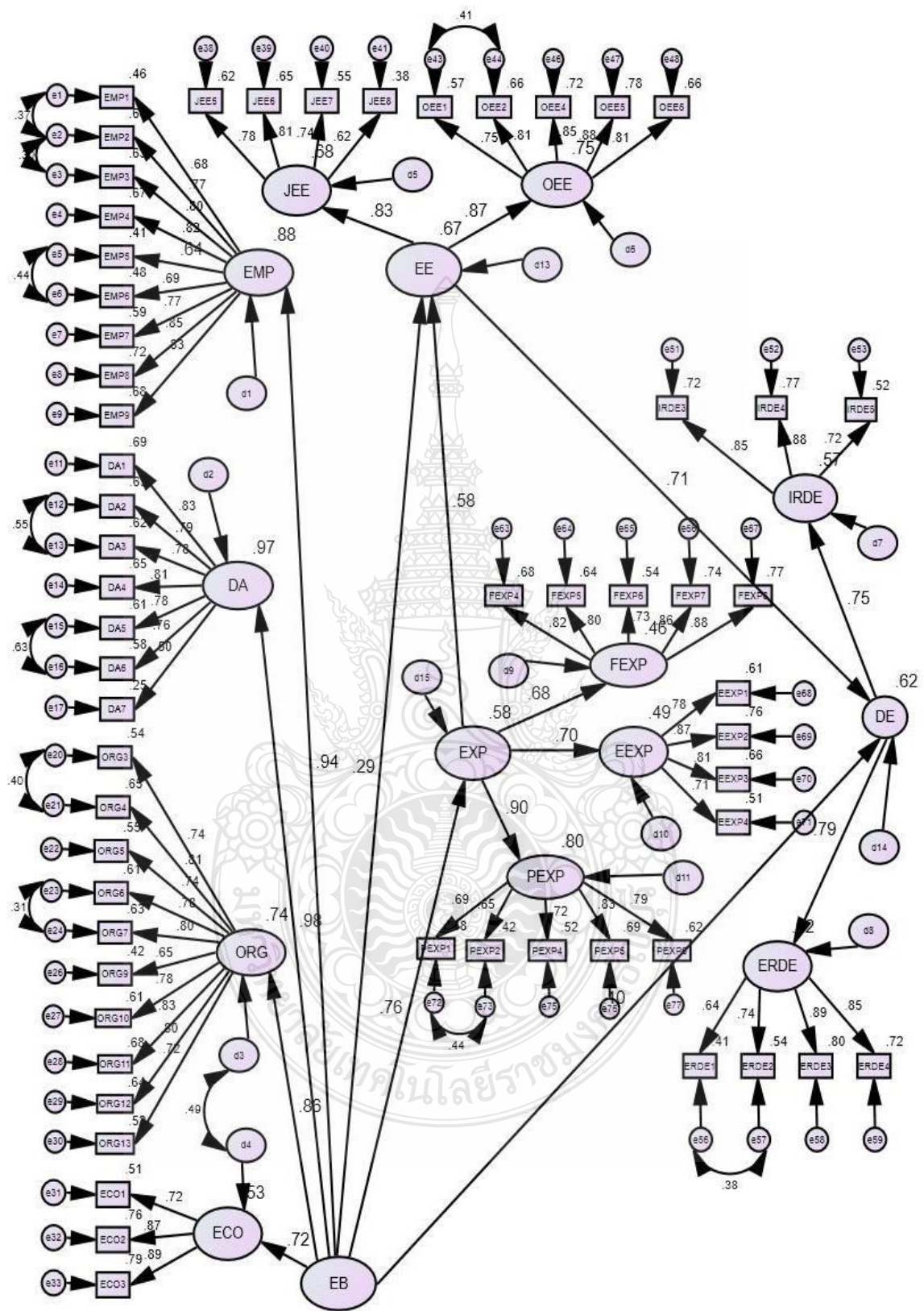


Figure 4.5 Structural model of the proposed theoretical framework

Table 4.20 Hypotheses testing of the proposed theoretical framework

			Estimate	S.E.	C.R.	<i>p</i> -value
H1: Employer branding	---	Employee engagement	0.191	0.031	6.052	***
H2: Employee engagement	---	Discretionary effort	0.719	0.066	10.973	***
H3: Employer branding	---	Discretionary effort	0.067	0.034	2.005	0.045
H4: Employer branding	---	Employee expectation	0.514	0.030	16.927	***
H5: Employee expectation	---	Employee engagement	0.570	0.055	10.391	***

****p*-value < 0.001 (*p*-value less than 0.001 was at the significant at 0.001 level)

Table 4.21 Standardized direct, indirect, and total effect among variables of the proposed theoretical framework

			Standardized Direct effect	Standardized Indirect effect	Standardized Total effect
Employment	---	Employer branding	0.938	0.000	0.938
Development and application	---	Employer branding	0.984	0.000	0.984
Organizational reputation	---	Employer branding	0.859	0.000	0.859
Economic	---	Employer branding	0.725	0.000	0.725
H6: Employer branding	---	Employee engagement	0.286	0.441	0.727
Employee engagement	---	Discretionary effort	0.711	0.000	0.711
H7: Employer branding	---	Discretionary effort	0.100	0.517	0.617
Employer branding	---	Employee expectation	0.763	0.000	0.763
Employee expectation	---	Employee engagement	0.578	0.000	0.578

4.7.1 Results from research question 1

H1: There is a positive relationship between employer branding and employee engagement for current employees.

The value of *t*-test revealed that the estimated value was 0.191, standard error (S.E.) was 0.031, critical ratio (C.R.) was 6.052, and *p*-value was 0.000 indicating that there is a significant positive relationship between employer branding and employee engagement at a significance level of 0.001. Therefore, it could be

concluded that H1 was supported. The results showed that the standardized regression weights for employment, development and application, organizational reputation, and economic were 0.938, 0.984, 0.859, and 0.725, respectively. Consequently, it could be concluded that development and application is the most important dimension, followed by employment, organizational reputation, and economic, respectively.

4.7.2 Results from research question 2

H2: There is a positive relationship between employee engagement and discretionary effort for current employees.

The value of *t*-test revealed that the estimated value was 0.719, standard error (S.E.) was 0.066, critical ratio (C.R.) was 10.973, and *p*-value was 0.000 indicating that there is a significant positive relationship between employee engagement and discretionary effort at a significance level of 0.001. Thus, it could be concluded that H2 was supported.

4.7.3 Results from research question 3

H3: There is a positive relationship between employer branding and discretionary effort for current employees.

The value of *t*-test revealed that the estimated value was 0.067, standard error (S.E.) was 0.034, critical ratio (C.R.) was 2.005, and *p*-value was 0.045 indicating that there is a significant positive relationship between employer branding and discretionary effort at a significance level of 0.05. Therefore, it could be concluded that H3 was supported.

4.7.4 Results from research question 4

H4: There is a positive relationship between employer branding and employee expectation for current employees.

The value of *t*-test revealed that the estimated value was 0.514, standard error (S.E.) was 0.030, critical ratio (C.R.) was 16.927, and *p*-value was 0.000 indicating that there is a significant positive relationship between employer branding and employee expectation at a significance level of 0.001. Thus, it could be concluded that H4 was supported.

4.7.5 Results from research question 5

H5: There is a positive relationship between employee expectation and employee engagement for current employees.

The value of *t*-test indicated that the estimated was 0.570, standard error (S.E.) was 0.055, critical ratio (C.R.) was 10.391, and *p*-value was 0.000 indicating that there is a significant positive relationship between employee expectation and employee engagement at a significance level of 0.001. Therefore, it could be concluded that H5 was supported.

4.7.6 Results from research question 6

H6: There is an effect of employer branding on employee engagement through employee expectation for current employees.

The competing model was to investigate the direct effect of employer branding on employee engagement, employee expectation, and discretionary effort which was presented in appendix D.4 and D.5. The model fit statistics of the competing model was CMIN = 7439.927 at *p* = 0.000, df was 1627, CMIN/df was 4.573, CFI was 0.905, IFI was 0.905, AGFI was 0.810, PGFI was 0.759, RMSEA was 0.051 (PCLOSE = 0.063), NFI was 0.882, and TLI was 0.900 (presented in appendix D.6). Meanwhile, the model fit statistics of the proposed theoretical model was CMIN = 7174.304 at *p* = 0.000, df was 1625, CMIN/df was 4.415, CFI was 0.909, IFI was 0.909, AGFI was

0.816, PGFI was 0.763, RMSEA was 0.050 (PCLOSE = 0.320), NFI was 0.886, and TLI was 0.904. These results indicated that the model fit statistics of the proposed theoretical model was better than the competing model. Thus, it could be concluded that the relationships among employer branding, employee engagement, and discretionary effort were greater explained by an effect of employer branding on employee engagement through employee expectation for current employees.

Considering the competing model, the standardized direct effect between employer branding and employee engagement was 0.746 (presented in appendix D.7). In contrast, the results from the proposed theoretical model showed that standardized direct effect between employer branding and employee engagement was 0.286 while the standardized indirect effect was 0.441, and standardized total effect was 0.727. According to the standardized direct effect of the proposed theoretical model was less than that of the competing model. Therefore, it could be concluded that there is an effect of employer branding on employee engagement through employee expectation for current employees.

As a result of better model fit statistics and the low level of the standardized direct effect, it could be concluded that H6 was supported.

4.7.7 Results from research question 7

H7: There is an effect of employer branding on discretionary effort through employee engagement for current employees.

Regarding the results, it was found that the model fit statistics of the proposed theoretical model was better than the competing model. Thus, the relationships among employer branding, employee engagement, and discretionary effort

were greater explained by an effect of employer branding on discretionary effort through employee engagement for current employees.

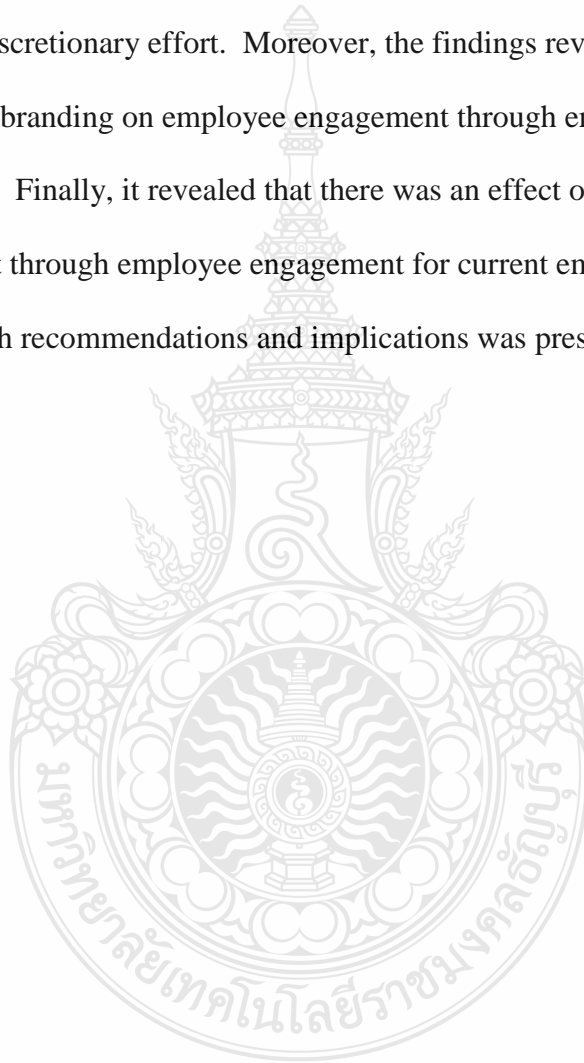
Due to the competing model, the standardized direct effect between employer branding and discretionary effort was 0.661 (presented in appendix D.7). On the other hand, the results from the proposed theoretical model indicated that the standardized direct effect between employer branding and discretionary effort was 0.100, and the standardized indirect effect was 0.517 whereas the standardized total effect was 0.617. Therefore, the standardized direct effect of the proposed theoretical model was less than that of the competing model. Therefore, it could be concluded that there is an effect employer branding on discretionary effort through employee engagement for current employees. As a result of better model fit statistics and the low level of the standardized direct effect, it could be concluded that H7 was supported.

Table 4.22 Summary of hypotheses testing of the proposed theoretical model

Hypothesis and its description	Results
H1: There is a positive relationship between employer branding and employee engagement for current employees.	Supported
H2: There is a positive relationship between employee engagement and discretionary effort for current employees.	Supported
H3: There is a positive relationship between employer branding and discretionary effort for current employees.	Supported
H4: There is a positive relationship between employer branding and employee expectation for current employees.	Supported
H5: There is a positive relationship between employee expectation and employee engagement for current employees.	Supported
H6: There is an effect of employer branding on employee engagement through employee expectation for current employees.	Supported
H7: There is an effect of employer branding on discretionary effort through employee engagement for current employees.	Supported

4.8 Chapter Summary

Chapter four provided the results of the study which revealed that there were significant positive relationships between employer branding and employee engagement, employer branding and employee expectation, employee expectation and employee engagement, employer branding and discretionary effort, and employee engagement and discretionary effort. Moreover, the findings revealed that there was an effect of employer branding on employee engagement through employee expectation for current employees. Finally, it revealed that there was an effect of employer branding on discretionary effort through employee engagement for current employees. A discussion of these results with recommendations and implications was presented in the next chapter.



CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Chapter five started with a summary of the findings, followed by discussions and conclusions, implications for research and practice, and limitations of the study. The chapter concluded with a summary of relevant points.

5.1 Summary of the Findings

The purpose of this study was to explore the relationships among employer branding, employee engagement, discretionary effort, and employee expectation. Data were collected from 1,349 current employees from seven organizations in Thai petroleum industry. The data were drawn from a final sample with 56.1 percent of the male respondents and 43.9 percent of the female respondents. The majority of respondents were age between 30-35 years old accounted for 26.5 percent while marital status was mostly single accounted for 55.7 percent, and the level of education was mostly Bachelor's degree accounted for 54.4 percent. Besides, working experience was mostly above 10 years accounted for 40.3 percent, and most of them were operation employees accounted for 70.0 percent whereas working in the engineering department accounted for 16.5 percent. In the next three years the respondents plan to work with the current company which was accounted for 80.5 percent. The study had seven research questions including (1) Is there a relationship between employer branding employee engagement for current employees?; (2) Is there a relationship between employee engagement and discretionary effort for current employees?; (3) Is there a relationship between employer branding and discretionary effort for current

employees?; (4) Is there a relationship between employer branding and employee expectation for current employees?; (5) Is there a relationship between employee expectation and employee engagement for current employees?; (6) Is there an effect of employer branding on employee engagement through employee expectation for current employees?; and (7) Is there an effect of employer branding on discretionary effort through employee engagement for current employees?. The discussions and conclusions for each hypothesis were presented in the next section.

5.2 Discussions of the Findings

5.2.1 Research question 1

The hypothesis H1 attempted to investigate the relationship between employer branding and employee engagement of current employees. The result reported that there is a positive relationship between employer branding and employee engagement which supported the results of the previous studies. For example, Kunerth and Mosley (2011) revealed that companies which have invested in employer branding have significant impact on employee engagement. The study of Aon Hewitt reported that the best employer is differentiated the high level of engagement (Aon Hewitt, 2011), and Barrow and Mosley (2005) proposed that the company is composed of good senior management leading to strong employer brand and then a high level of employee engagement.

Moreover, the results indicated that the development and application is the most important dimension, followed by employment, organizational reputation, and economic respectively which supported the previous studies. For example, the study of Aon Hewitt revealed that best employer who well supported in career

opportunities, brand alignment, recognition, people or human resource practice, and organization reputation is differentiated the high-level of engaged employee, resulting in higher retention, lower turnover, larger talent employees, and better financial performance (Aon Hewitt, 2011).

Regarding a resource-based view, the development and application, senior management, employment, and organizational reputation are emotional drivers which are non-substitutable and difficult to imitate resources. On the other hand, economic resources are easily substituted and imitated. Thus, the results reported that emotional drivers have greater impact to employee engagement than economic resources. Correspondingly, Gibbon (2006) proposed that emotional drivers such as dignity in their works and a positive interpersonal relationship with their managers had four times greater impact on individual's discretionary work effort than other factors such as pay. Meanwhile, Howland (2008) further confirmed that emotional drivers had impacts on individual's discretionary effort five times greater than economic drivers such as salary and compensation. Therefore, based on the findings of the study and previous study, it could be concluded that employer branding is positively related to employee engagement.

Considering an overview of the petroleum industry, employees evaluated that they perceived organizational reputation at the highest scale, followed by economic, development and application, and employment, respectively. The results revealed that there were significance difference scales of all four dimensions of perceived employer branding among employees who worked for each company. First of all, TOP was assessed at the first rank for employment package followed by ESSO, Shell, BCP, Chevron, PTT, and IRPC, respectively. Second, TOP was assessed at the

first rank for the development and application package followed by ESSO, Chevron, Shell, BCP, PTT, and IRPC, respectively. Third, BCP was assessed at the first rank for organizational reputation package followed by Shell, TOP, ESSO, Chevron, PTT, and IRPC, respectively. Finally, TOP was assessed at the first rank for economic package followed by Shell, BCP, IRPC, PTT, Chevron, and ESSO. Employees agree with packages provided by their company in organizational reputation, economic, and development and application dimension whereas employment dimension was evaluated as slightly agree. Employees stated that there are good relationships among employees, whereas the relationship between employee and supervisor should be improved. Moreover, the results revealed employees need their company to improve its visionary and inspirational leadership and good governance. In addition, employees slightly agree with the company's performance assessment which should be more fair and tangible measurement. Besides, the work roles and responsibilities should be more challenging and empowering for making decisions as well as providing opportunities to promote career growth. The result revealed that employees need more work-life balance. Finally, employees indicated that the opportunity for overseas business travels was the lowest score which must be improved.

Due to each company, PTT stated that the company provided all of four packages including employment, development and application, organizational reputation, and economic. The results revealed that their employees slightly agreed with employment package but they agreed with the other three packages. Regarding the low level, the company should emphasized on employees' career growth, opportunities for overseas business travels, work-life balances, visionary and inspirational leadership, and good governance. Though IRPC stated that the company emphasized on employee

competency and career development, the result showed that employees slightly agree. Moreover, three packages comprised employment, development and application, and organizational reputation package, which were ranked the last place comparing with other companies. According to the low level of all items of employment packages, the company should improve to fit for their employees' values and needs. In addition, the company should focus on praise and recognition, an opportunity to apply their knowledge to their job, work-life balances, visionary and inspirational leadership, and good governance. Meanwhile, Esso stated that the company emphasized on individual career development, good benefits, and good corporate governance which was consistent with the assessment from their employees. Even though, employees agree with economic package, it was ranked the last place comparing with other companies. Thus, the company should improve more attractive and diverse compensations fit more to their employees' needs and values. Considering Chevron, the company stated that it emphasized on employees' benefits and social responsibility which was consistent with the assessment from their employees. Although employees agree with economic package, it was ranked the sixth place comparing with other companies whereas employment package was ranked the fifth place. Therefore, the company should improve package more fit to their employees' needs and values, especially opportunities for overseas business travel, and adequate facilities and resources for employees. Regarding TOP, the company stated that the company provided all of four packages consisting of employment, development and application, organizational reputation, and economic which were consistent with the assessment from their employees. Moreover, three packages comprising employment, development and application, and economic were ranked at the first place comparing with other companies whereas organizational

reputation was ranked the third place. Though employees agree with provided packages, some items such as opportunities for overseas business travels and work-life balances get the low level. Furthermore, BCP also stated that the company provided all of four packages consisting of employment, development and application, organizational reputation, and economic. Employees agree with development and application, organizational reputation, and economic package whereas slightly agree with employment package, especially organizational reputation package was ranked the first place comparing with other companies. As some items were the low level, the company should emphasize more on such as opportunities for overseas business travels, praise and recognition, opportunity to apply their knowledge to their job, and work-life balances. Finally, Shell stated that the company emphasized on individual career and development and social responsibility which was consistent with an assessment from their employees. Both economic and organizational reputation packages were ranked the second place comparing with other companies while employees slightly agree with employment packages, so it should be improved to fit more with their employees' needs and values such as fair and tangible performance measurement, fit between employees competency and job roles, and opportunities for overseas business travels.

Although employees agree with packages provided from their companies, some items still get the low level. Thus, companies should emphasize more on employees' needs, values, and inspirations and then improve to be more appropriate and attractive to their employees leading to the high level of employer branding and employee engagement.

5.2.2 Research question 2

The second hypothesis (H2) attempted to investigate the relationship between employee engagement and discretionary effort of current employees. The result indicated that there is a strong positive relationship between employee engagement and discretionary effort which supported the results of previous studies. For example, the results of the study of the Aon Hewitt conducted about a global engagement revealed that engaged employees delivered the discretionary effort (Aon Hewitt, 2011) while Anand and Banu (2011) further confirmed that there are positive relationships between employee engagement variables and discretionary effort (Robertson & Markwick, 2009; Corporate Leadership Council, 2004a; Kular et al., 2008; Towers Perrin, 2003; Shuck, 2010). Therefore, based on the findings of this study and previous studies, it could be concluded that employee engagement is positively related to discretionary effort.

Due to an overview of the petroleum industry, employees evaluated that they engaged in both job and organization. The results also revealed that there was significant difference scales of both job and organization engagement among employees who worked for each company. TOP was ranked at the first place for job engagement followed by IRPC, BCP, Shell, PTT, Chevron, and ESSO, respectively. Considering organization engagement, TOP was also ranked at the first place followed by BCP, Shell, IRPC, Chevron, PTT, and ESSO, respectively. Most employees stated that they engaged in both job and organization except employees from ESSO who proposed that they did not engage in both job and organization. To increase employee engagement and discretionary effort levels employers need to understand more about their employees such as personality, interests, needs, values, inspirations and then improve

employer branding packages such as challenging, diversity, valued, and empowering job which are appropriate to their employees. Even though the company provided many attractive packages, without appropriate and clear communications and interactions between management and employees could reduce feeling, enthusiastic, and dedication level that employees engaged to the company leading to the low level of discretionary effort as a result.

5.2.3 Research question 3

The third hypothesis (H3) attempted to investigate the relationship between employer branding and discretionary effort of current employees. The result revealed that there is a strong positive relationship between employer branding and discretionary effort which supported the result of previous studies. For example, the study from Work Foundation proposed that the organization which offers attractive contracts such as above average payment, promotion, development, challenging job, and clear about expected output would get back more contributions such as high performance, flexibility, expertise, and discretionary effort (The Work Foundation, 2009). Besides, Neil (2012) argued that great employer brands are clear understanding, and talented employees should put in discretionary effort in order to encourage organizational goals and success. Correspondingly, the results of the study of the Aon Hewitt, which was conducted from 165 organizations and 74,000 employees in Australia and New Zealand, indicated that best employers are not only establishing a great place to work but also creating the conditions for their employees to exceed and encourage discretionary effort (Aon Hewitt, 2012). Therefore, based on the findings of this study and previous studies, it could be concluded that employer branding is positively related to discretionary effort.

Employees evaluated that they worked with a strong employer brand consistent with the outsiders' evaluation. Based on self-affirmation theory, employees need to get praise and recognition from supervisors, co-workers, and outsiders. Thus, they need to put extra effort both in-role and extra-role efforts leading to high performance so that they felt valued and appropriated to work and to be members of their company.

Regarding employer branding, the results revealed that employers provided appropriated development and application, organizational reputation, and economic package to their employees whereas employment package should be improved. Meanwhile, due to an overview of the petroleum industry, employees evaluated that they slightly put both in-role and extra-role discretionary efforts while they were working. Moreover, the results indicated that there was no significant difference scales of in-role discretionary effort among employees who worked for each company. In addition, most of employees stated that they put effort into their job only at the amount of effort required to keep them safe from getting fired or disciplined whereas extra-role discretionary effort indicated a significant difference which TOP was ranked the first place followed by Chevron, Shell, BCP, IRPC, PTT, and ESSO, respectively.

Even though the results showed that employees agreed with packages that they received from their company, both in-role and extra-role discretionary effort scales were at low level. Many managers agreed to apply branding through their employees; however, the carelessness, insincerity, and wrong communications could affect employees' feelings such as feeling indifferent between putting more effort and not putting more effort which finally decided to work at the level to keep their job,

ignore when co-workers need their help, and also ignore to help organization to avoid incurring unnecessary costs.

5.2.4 Research question 4

The fourth hypothesis (H4) attempted to investigate the relationship between employer branding and employee expectation of current employees. The result revealed that there is a strong positive relationship between employer branding and employee expectation. No research findings explored this relationship in the context of current employees. Although the previous study was interested in the context of prospective employees, the results were corresponding with the result of this study. For example, Harris and Fink (1987) conducted pre-interview and post-interview from job seekers and found that job seekers intend to accept a job with an organization when they perceived attractive job offer, compensation, and company image. Consistent with Turban et al. (1998), the researchers conducted pre-interview and post-interview and found that the perception of job offers and organization image have influenced on the applicant's decision. In addition, Rose (2006) revealed that job seeking in Queensland tend to apply job with the organization according to perceived competitive pay image, attractive job image, and good organization image.

According to the context of current employees, employees assessed their organization by both individual's opinion and construed external image relating to the perception of employees on the outsiders' evaluation their organization. The results reported that employees perceived their organization as the strong employer brand, and then they tend to expect well support such as work experience including variety and challenging job, style of management such as responsiveness to employees when they need help and the level of bureaucracy, employee rewards relating to both tangible and

intangible rewards such as salary, compensation, development and career advancement, and management-workforce relations such as trust and respect between managers and employees. Furthermore, the results revealed that employees who worked with Shell most expected in functional expectation followed by employees who worked with TOP, PTT, Chevron, IRPC, BCP, and ESSO, respectively. The results further reported that employees who worked with TOP most expected in economic expectation, followed by Shell, BCP, Chevron, PTT, ESSO, and IRPC, respectively. Finally, employees who worked with TOP most expected in psychological expectation, followed by Shell, ESSO, BCP, PTT, Chevron, and IRPC, respectively.

Regarding ESSO, employees strongly expected that their company provided adequate facilities and resources and access to competent and sociable co-workers while employees who worked with Chevron strongly expected that their company provided adequate facilities and resources. Besides, employees who worked with TOP strongly expected that their company provided a competitive compensation such as salary, commission, bonus, and overtime, a competitive non-salary benefit package such as welfare, health reimbursement, holidays, retirement plan, and scholarship, strong job security, a job that fits with your life style, and a supervisor who they can work with. Considering BCP, employees strongly expected that their company provided a strong job security and a competitive non-salary benefit package such as welfare, health reimbursement, holidays, retirement plan, and scholarship. Finally, employees who worked with Shell strongly expected that their company provided adequate opportunities to develop and learn new work skills, adequate opportunities to show your supervisors effective performance in competing work tasks, a variety of work tasks to maintain self interest in the job, adequate opportunities for career

advancement, a competitive non-salary benefit package such as welfare, health reimbursement, holidays, retirement plan, and scholarship, access to competent and sociable co-workers.

Consequently, based on the findings of the study and previous studies it could be concluded that employer branding is positively related to employee expectation.

5.2.5 Research question 5

The fifth hypothesis (H5) attempted to examine the relationship between employee expectation and employee engagement for current employees. The result revealed that there is a strong positive relationship between employee expectation and employee engagement which supported the result of previous studies. For example, Macleod and Clarke (2009) investigated in a case study of the Fujitsu Group in UK and found that employees' perception of their career development opportunities and supportive procedure have a substantive impact on the level of employee engagement. In addition, the study from IPSOS Mori in 2006 suggested that employees' perceptions of corporate values, community commitment, favorable pay, and feeling of friend and family member have significant impacts on employee engagement (IPSOS Mori, 2006). Consistent with Austin (2011), the study revealed that when employees perceived supportive and caring supervisor, proud in their organization, more opportunities growth, employee engagement would then be increased.

Employees expected that their company would provide packages which are adequate and suitable for their needs, interests, and values. In order to push these expectations to be real, employees felt that they need to put more time and intensity while they were working. Then, their managers would judge that they were

talented and competent employees. Furthermore, managers believed to give more empowering, challenging, and important responsibilities which increased more opportunities to work with competent co-workers and, in turn, to provide adequate opportunities for career advancement and above average salary and compensations. Consistent with this result, there was a positive relationship between employee expectation and employee engagement which most expectation was from psychology aspect, followed by economic and functional, respectively. Thus, it could be concluded that employers who would like to increase the level of engagement need to emphasize on and provide adequate support to employees' expectation.

5.2.6 Research question 6

The sixth hypothesis (H6) attempted to investigate an effect of employer branding on employee engagement through employee expectation of current employees. The result found that there is a partial effect of employer branding on employee engagement through employee expectation, the relationship between employer branding and employee engagement was firstly explained toward employee expectation.

Based on the expectancy theory, employees expected employer branding composed of attractive working tasks, high value work experience, good career development, community, feeling of friend and family, well-known company reputation, corporate values, above average compensation, supportive supervisor, and caring supervisor. Besides, these employees compared their expected employer branding to perceived employer branding when the outcomes are more positive leading to high performance and engagement. On the other hand, when employees found that their outcomes are less than expectation, they would feel depressed and decide not to

work. Consistent with the result of this study, it was revealed that when employees judged their perceived employer branding is above than their expectation, they would thus intend to well respond and repay to their company by increasing their performance and engagement, especially Thai culture which is normally sympathetic and considerate culture. Consequently, the results indicated the strong correlation. For example, employees who worked with ESSO strongly expected that their company will provide adequate facilities and resources, opportunities to work with competent and sociable co-workers. However, they perceived employer branding under expected, and the result revealed that they assessed to not engage in both job and organization. In contrast, employees who worked with TOP strongly expected that their company will provide a strong job security, adequate facilities and resources, above attractive compensation and benefits package such as salary, commission, bonus, overtime, welfare, health reimbursement, holidays, retirement plan, and scholarship, job that fits with their life style, and supervisor who they can work with. Meanwhile, they judge that perceived employer branding is above than their expectation, so they tend to engage in both job and organization. Thus, based on the findings of this study and previous studies it could be concluded that there is an effect of employer branding on employee engagement through employee expectation.

5.2.7 Research question 7

The seventh hypothesis (H7) attempted to investigate an effect of employer branding on discretionary effort through employee engagement of current employees. The result indicated that there is a partial effect of employer branding on discretionary effort through employee engagement which the mediate effect was explored by academic approach. Even though the previous study came from

practitioner approach, the results were corresponding with the result of this study. For example, the study from EBI proposed that the organization developed a world class employer brand by improving capacity to recruit new employees, engaging and retaining talent employees, increasing employee discretionary effort and customer satisfaction, and making a distinction from their competitors (EBI, 2009). Practitioners from Engage Group similarly explained the advantages of sustainable culture and employer brand are the high levels of trust of employees, motivation, engagement, and loyalty, which increase discretionary effort leading to productivity and financial performance (Engage Group, 2012). Practitioners from the CIPD also suggested employer brand could play a role in developing engagement in persuading employees to put discretionary effort in work, beyond the required minimum to get the job done, in a term of the extra time effort and brain power (CIPD, 2008).

According to the social exchange theory, employees judged their outcomes based on what they received from the company. If the above average outcomes are made comparing to the other company, then they would feel obliged to well respond and repay by delivering the greater levels of engagement and voluntary decision to increase their discretionary effort to be above a minimum level to maintain their job. Meanwhile, the notion of the expectancy theory proposed that an individual motivated to expand discretionary effort is influenced by three factors including performance, rewarded, and an attractiveness of the rewards or outcomes offered from the company. Consistent with the result of this study, employees believe that being highly engaged in both their job and the organization would lead to a high level of discretionary effort and performance. In addition, employees believed that a higher performance occurring from an extra work effort would also be rewarded. Individual

assessed an attractiveness of the rewards or outcomes in different level leading to the different level of expand discretionary effort. Due to the attractiveness of the rewards or outcomes were evaluated to be similar such as attractiveness of economic rewards therefore the results indicated that there was no significant difference scales of in-role discretionary effort among employees who worked for each company. Meanwhile, the attractiveness of employment and development and application rewards were evaluated to be different such as empowers to make decisions, promotes career path, praise and recognition, opportunity to support and encourage colleagues, and opportunity to teach others what they have learned therefore the results indicated that there was significant difference scales of extra-role discretionary effort among employees who worked for each company where TOP was ranked the first place followed by Chevron, Shell, BCP, IRPC, PTT, and ESSO, respectively.

Human resource management is important in improving level of employee engagement and discretionary effort by insightfully understanding their employees and promoting effective communication. As individual possessed different personalities, needs, and values, human resource management thus need to understand more insightful about their employees to help create the rewards which are attractive and appropriate to their employees. Moreover, human resource management acts as a coordinator between management and employees. Misunderstandings which may occurred from wrong communications could affect employees' feelings such as feeling indifferent between putting more effort and not putting more effort which finally lead to a decision to work at the level to keep their job, ignore when co-workers need their help, and also ignore to help the organization to avoid incurring unnecessary costs. Therefore, human resource management need to use communication strategies to

compromise and express the caring and sincere in resolving the conflict. In contrast, based on a case of good relationship, human resource should use communication strategies to express a feeling of understanding, caring, and sensing of unity to increase the level of engagement and extra effort. Consequently, these feelings were developed into the organizational culture and in turn enhance an organizational success.

5.3 Theoretical Implications

The findings provided several implications for researchers who are not only in a field of human resource development but also interested in the organization-related studies. The first area suggested for future research would be to investigate other potential antecedents and consequences of employer branding. Regarding the person-organization fit, it tends to be more attractive when employees perceive that employer brand image is appropriate to their personalities, needs, and values (Schneider, 1987; Cable & Judge, 1996). Therefore, demographic factors such as age, working experience, position, personality variables, organization identities as well as social identities and culture variables might influence the development of employer branding. Considering consequences, future research would be to examine other potential consequences of employer branding such as an individual's performance, financial performance, turnover, intention to leave, customer satisfaction, and customer loyalty. In addition, future research could include a broader range of consequences incurred from the particular dimensions of employer branding.

Due to the second area of the suggested future research, the study was applied to the notion of employee engagement developed from Saks (2006). Nevertheless, there are other three notions including Kahn's (1990) need-satisfying notion, Maslach et al.'s

(2001) burnout-antithesis notion, and Harter et al.'s (2002) satisfaction-engagement notion which might also provide better understanding about engagement in the complex organizational phenomena related to the employees' behavior and performance.

Regarding the fact that an individual possessed different characteristics and personalities that might predict employee engagement, the future research might consider individual differences as the antecedents of employee engagement. For example, there are workaholic behavior, the need for achievement, hardiness, self-esteem, self-efficacy, and locus of control. Considering the social exchange theory, employees with a strong exchange tradition are more likely to feel obliged to well respond when they receive well support. Thus, the relationship between various antecedents and engagement tend to be stronger for employees with a strong exchange tradition. As a result, the future research would be to examine the moderate effects of exchange tradition on the relationship between antecedents and engagement.

The next area for the future research would be to investigate an effect of the potential experimental interventions on employee engagement. There are some evidences that exchange-inducing interventions could raise a feel of obligation of employees who feel obliged to respond (Ganzach et al., 2002). Therefore, the future research might investigate the extent to which interventions could make a sense of obligation leading employees to respond with the higher engagement levels. For example, more supportive training managers might be effective for improving the perceptions of organizational supportive and caring. Job design interventions would provide employees with more autonomy and variety of their work, and career management interventions might also be effective.

Regarding the person-organization fit, employees compare the employer brand image offered by each company to their personalities, needs, and values, and they tend to be more attracted when they perceived that the employer brand image is appropriated to their personalities, needs, and values (Schneider, 1987; Cable & Judge, 1996). This study confirmed that employee expectation has a partial effect on the relationship between employer branding and employee engagement. However, the result indicated that an indirect effect was at high level which was nearly two times higher than a direct effect. Thus, it is possible that employee expectation affects the direction and/or the strength of the relation between employer branding and employee engagement. As a result, the future research would be to examine the moderate effects of employee expectation on the relationship between employer branding and employee engagement.

According to many previous studies, this study confirmed that employer branding is an antecedent which has a high influence on employee engagement. However, some studies provided the different views. For example, Robinson et al. (2004) proposed that the relationship between employer and employee is reciprocal; therefore, the researchers proposed that the relationship of employer branding and employee engagement is a two-way relationship. Meanwhile, Martin et al. (2005) argued that engagement offers a key opportunity for human resources to earn greater voice in business, especially for increasingly rare and expensive knowledge workers. Therefore, becoming an employer of choice is a central human resources and business essential. Consequently, the future research would be to test and confirm that employer branding is an antecedent of employee engagement. Besides, the future research pursues the questions on “Is there an influence of employee engagement on employer

branding?” and “Is there a two-way relationship between employer branding and employee engagement?” which incur to explore the new conceptual framework.

Finally, the study used the quantitative method by conducting a survey which could explain concrete information. Nonetheless, the future research should apply qualitative method to understand more insightful information so that the company could provide good benefits suitable for their employees and the organization context.

5.4 Managerial Implications

The findings provide numerous implications for the organization, especially those who are working in human resource department and management. First of all, employer branding was a significant predictor of both employee engagement and discretionary effort. Thus, the organizations wishing to improve the levels of employee engagement and discretionary effort should focus on developing a strong employer branding. Recently, the most popular way was the employee value propositions (EVPs). Ulrich and Brockbank (2005) defined EVPs as the standard specifies that employees would get from the company when they meet expectations. The result showed that development and application is the most important dimension, followed by senior management, employment, organizational reputation, and economic, respectively. Thus, the organizations should emphasize more on emotional than economic drivers. These include career advancement, personal growth, appropriate training, supportive management, caring support, working with smart colleagues, meaningfulness, feedback, autonomy, variety job, challenging job, forefront technology development, forefront product development, variety product development, above average compensations, health care, good working environment, enjoy life balance, and

retirement benefits might be considered. Besides, the organizations should implement three steps to sustain employer brand image. First, the organizations may create a concept of EVPs offered to both future and existing employees. The second step is to develop EVPs attractive to the external markets such as the targeted potential employees, recruiting agencies, and placement counselors. The last step is to deliver the brand promise offered to recruit onto the firm and embedded as a part of the organizational culture (Frook, 2001).

Considering the second implication for practice, employee expectation was a significant mediate effect on the relationship between employer branding and employee engagement. Thus, the organizations wishing to improve employee engagement should focus on the expectations of employees regarding the received offerings.

Organizational programs that disclose employees' expectation such as surveys, focus groups, and 360-degree feedback might cause employers to get the insights of their employees leading to the higher levels of job and organization engagement.

Due to the third implication for practice, the notion that employees are the best-qualified witness to their own personalities is supported by the indisputable fact that no one else has access to more information both quantity and breath, and quality and depth information. The quantity information was a wide range of behaviors covering a wide swatch of time such as academic cheating, napping, and masturbation whereas the quality information was the self has access to intra-psychic such as thoughts, feelings, and sensations that were unavailable to others (Robins et al., 1999). Some studies confirmed that the self is better able to contextualize when reporting on personality-relevant information and, therefore, better able to provide a valid report (Howard et al., 1980; Spector, 1987; O'Reilly & Chatman, 1994; Funder, 1995; Pualhus

& Vazire, 2007). For example, Funder (1995) revealed that the results of personalities judgments evaluated by self-report similar findings of college peers, hometown peers, parents, seven videotaped behavior samples, and eight days of diary and experience sampling. In addition, O'Reilly and Chatman (1994) found that the results of self-reported on the general cognitive ability were similar compared to peers and observers. According to the above reasons, thus this study used self-report data. However, there are some criticized that the use of self-report measured was an unacceptable methodology in most areas of organizational research (Schmitt, 1989). Thus, the extent to which common method variance such as studies based solely on self-report affected research conclusions was still hotly debated. For example, Williams et al. (1989) claimed that their findings were wrong and the result of improper analytic procedures. In contrast, Spector (1987) concluded that there is little evidence of the problem in a study that examines the relationship between perceived working conditions and affect. Furthermore, Paulhus and Vazire (2007) suggested that, as a method for accurate personality assessment, self-report is dreadful yet, overall, more effective than any alternative. Moreover, Howard (1994) suggested that the analyses of height and weight showed that one should not automatically assume that self-reports are the inferior sources of data in workplace research, and that the argument that co-worker or supervisor reports are necessarily better than self-reports is dubious. Overall, no clear trends emerged in the over-reporting or under-reporting by self-report compared to other alternative. Therefore, the future research should be done to develop a better understanding about the problem of self-report bias on employer branding, employee engagement, discretionary effort, and employee expectation compared to other evaluated methods such as co-workers, supervisors, and observers.

Last, but not least, the organizations should understand that employee engagement and discretionary effort are long-term and continuous processes requiring continued interactions over time to create the obligations and a state of mutual interdependence (Cropanzano & Mitchell, 2005).

5.5 Limitations of the Study and Recommendations for Future Research

Some noteworthy limitations of the study were addressed. The first limitation included the effect of extraneous variables which may affect employer branding, employee engagement, and discretionary effort such as macroeconomics and economic crisis. Second, the data collection of the study involved a snowball sampling rather than a random sampling method. As a result, some cautions are required in generalizing the results to the larger population. Moreover, since the study used cross-sectional and self-report data, the conclusions could not only make causal inferences but also raise some concerns about common bias. Therefore, a longitudinal study is required to provide more definitive conclusions. The final limitation was that the findings explained behaviors and emotions of Thai employees which may not be corresponding with foreigner employees.

5.6 Conclusions

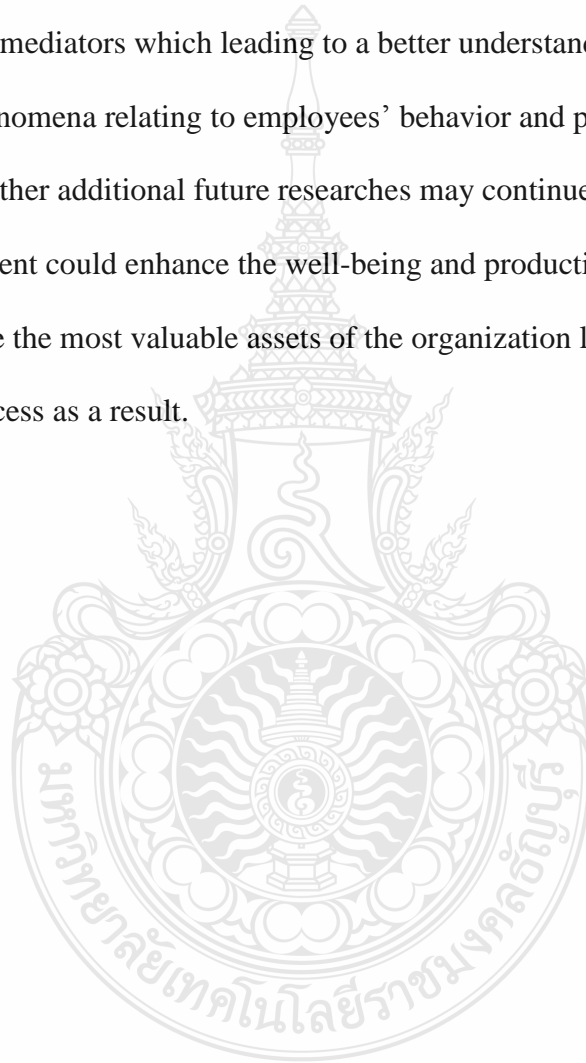
The major purpose was to investigate the relationships among perceived employer branding, employee engagement, employee expectation, and discretionary effort. The data were collected from 1,349 current employees working with seven organizations in the Thai petroleum industry. The results indicated that there were strong positive relationships between employer branding and employee engagement,

employer branding and employee expectation, employee expectation and employee engagement, employee engagement and discretionary effort, and employer branding and discretionary effort, which supported the previous studies. Moreover, the results revealed that 38.88 percent of the respondents said that their effort was above the level to keep their job. In contrast, 48.63 percent of the respondents said that their effort was at the level to keep their job which supported the previous studies of Yankelovich and Immerwahr (1983) and Entwistle (2001), which were at 44 percent and 48 percent, respectively.

Regarding the contribution in academic approach, the result indicated the partial effect of employer branding on employee engagement through employee expectation. Furthermore, the result showed the partial effect of employer branding on discretionary effort through employee engagement. Thus, this was the first time that the relationship between employer branding and employee engagement was explained toward employee expectation by academic approach. Similarly, the relationship between employer branding and discretionary effort was explained toward employee engagement by an empirical study. Furthermore, the simultaneous relationships among employer branding, employee engagement, employee expectation, and discretionary effort were examined through academic researches. On the other hand, the contribution to practitioners was that the survey was confirmed the concurrent validity where all items of the instruments could be applied to measure current employees' attitude work with other industry.

Even though employer branding is one of the most interested strategies in business firms and practitioners, an academic study is scarce (Backhaus & Tikoo, 2004) which is similar to employee engagement (Robinson et al., 2004) and discretionary

effort (Entwistle, 2001). According to the lack of current data of employer branding, employee engagement, and discretionary effort, it is likely to be a challenge for the future research to explore both independent and dependent variables which lead to better understandings of the concepts and applications. In addition, the future research further continues to explore the possible variables into the model which could be moderators and/or mediators which leading to a better understanding about the complex organizational phenomena relating to employees' behavior and performance. Finally, the study and the other additional future researches may continue to explore how human resource management could enhance the well-being and productive behaviors of employees who are the most valuable assets of the organization leading to an organizational success as a result.



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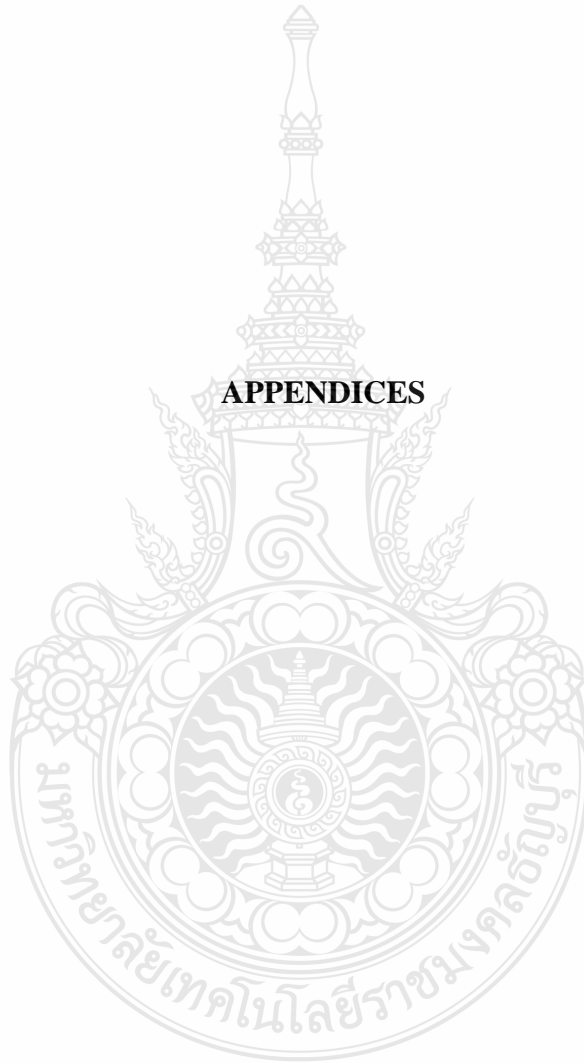
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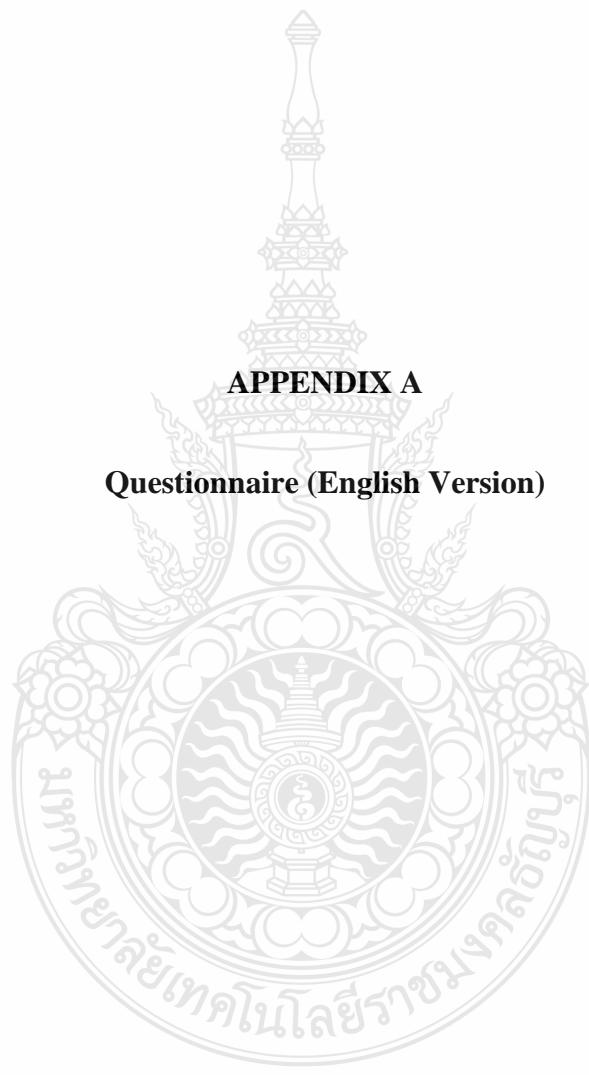
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APPENDICES





APPENDIX A

Questionnaire (English Version)

INFORMED CONSENT

Dear Participant,

You are being asked to complete a questionnaire that will ask you about your thoughts and experiences in your workplace. Completing the questionnaire will take approximately 30 minutes of your time. This questionnaire is the data-collection tool for a Doctoral Dissertation project overseen by Rajamangala University of Technology Thanyaburi.

Data collected from individual questionnaires will be treated confidentially and will not be identifiable to any particular participant. It is the themes and trends in the data that are of interest to the researcher. These theme and trends will be shared with the participating organization, and it will be done so that an opportunity is created for the organization to direct attention to important matters that surface from the questionnaire. The purpose of sharing general results with the participating organization is to encourage action, if any is needed, toward improvement.

Your participation is voluntary that you may refuse to participate or feel free to withdraw your participation at any time without fear of penalty. All of the information in this consent form will be reviewed with you verbally, and the individual presenting this information to you will be able to answer any question that you may have.

Thank you for considering participation in this project.

Piyachat Burawat, Rajamangala University of Technology Thanyaburi

Part 1: Demographic information

1. Gender 1) Male 2) Female
2. Age 1) 18-21 2) 22-25 3) 26-29
 4) 30-35 5) 36-40 6) above 40
3. Marital 1) Single 2) Married 3) Divorce
4. Education 1) Below bachelor 2) Bachelor's degree
 3) Master's degree 4) Doctor's degree
5. Experience in the 1) New graduated 2) less than 1 year
current company 3) 1-3 years 4) 4-5 years
 5) 6-10 years 6) above 10 years
6. Current Position 1) Operation 2) Senior
 3) Supervisor 4) Manager or above
7. Department 1) HR 2) Finance/Account 3) IT
 4) Engineering 5) Maintenance 6) R&D
 7) Law 8) E & P 9) Office
 10) Marketing/Sales 11) Data analysis 12) Export
 13) Internal audit 14) Procurement 15) Logistics
 16) Planning 17) Other.....
8. Plan in next 3 years 1) Work with current company
 2) Change company
 3) Early Retire

Part 2: Please evaluate the current company you working with using the following scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neither disagree nor agree, 5 = slightly agree, 6 = agree, and 7 = strongly agree)

Item	Description	1	2	3	4	5	6	7
EMP1	Your company has appropriate corporate assessment such as KPI (Key Performance Indicator) or BSC (Balanced Scorecard)							
EMP2	Your company has fair and tangible performance measurement							
EMP3	Your company provides challenging projects with expected tangible outcomes							
EMP4	There is fit between employee and the job							
EMP5	There are good relationships among employees in your company							
EMP6	There are good relationships between employee and supervisor in your company							
EMP7	Your company empowers employee to make decisions (decentralization)							
EMP8	Your company promotes career growth							
EMP9	Your company allows individual development plan							
EMP10	There are opportunities for overseas business travels in your company							
DA1	There is praise and recognition of employees in your company							
DA2	In your company, you have opportunity to support and encourage colleagues							
DA3	In your company, you have opportunity to teach others what you have learned							

Item	Description	1	2	3	4	5	6	7
DA4	In your company, there is opportunity to apply what was learned at a tertiary institution							
DA5	You feel more self-confident as a result of working for a particular organization							
DA6	You feel good about yourself as a result of working for a particular organization							
DA7	Your company appreciate diversity such as respect race or religion							
ORG1	Your company has good reputation and image							
ORG2	Your company has well-recognized and diversified products or services							
ORG3	Your company is stable							
ORG4	Your company has executable vision, mission, and policy							
ORG5	Your company has effective internal communication system							
ORG6	Your company provides access to information and supports for open and honest feedbacks such as open conversation							
ORG7	Your company has visionary and inspirational leadership							
ORG8	Your company has good governance							
ORG9	Your company promotes work-life balance							
ORG10	Your company is socially and environmentally responsible							
ORG11	Your company has high work-related value and standard							
ORG12	Your company provides good working environment							

Item	Description	1	2	3	4	5	6	7
ORG13	There are employee relations activities such as outside seminar, and sport day in your company							
ECO1	Your company has adequate facilities and resources for employees							
ECO2	The compensation such as salary, commission, bonus, and overtime (OT) is attractive							
ECO3	There are attractive benefits package such as welfare, health reimbursement, holidays, retirement plan, and scholarship							



Part 3: Please evaluate how the following statements describe you using the following scale

(1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, and 5 = strongly agree)

Item	Description	1	2	3	4	5
JEE1	You really “thrown” myself into my job					
JEE2	Sometimes you are so into your job that you lose track of time					
JEE3	Your job is all consuming; You are totally into it					
JEE4	Your mind often wanders and you think of other things when doing your job (R)					
JEE5	You are highly engaged in your job					
JEE6	At your work you feel enthusiastic and bursting with energy					
JEE7	You find your work is full of meaning and purpose					
JEE8	You feel happy when you need to continue working for longer hours					
JEE9	When you get up in the morning. You feel boring to go to work (R)					
OEE1	Being a member of this organization is very captivating					
OEE2	One of the most exciting things for you is getting involved with things happening in this organization.					
OEE3	You are really not into “goings-on” in this organization (R)					
OEE4	Being a member of this organization make you come “alive”					
OEE5	Being a member of this organization is exhilarating for you					
OEE6	You are highly engaged in this organization					

Part 4: Please evaluate how the following statements describe you using the following scale

(1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neither disagree nor agree, 5 = slightly agree, 6 = agree, and 7 = strongly agree)

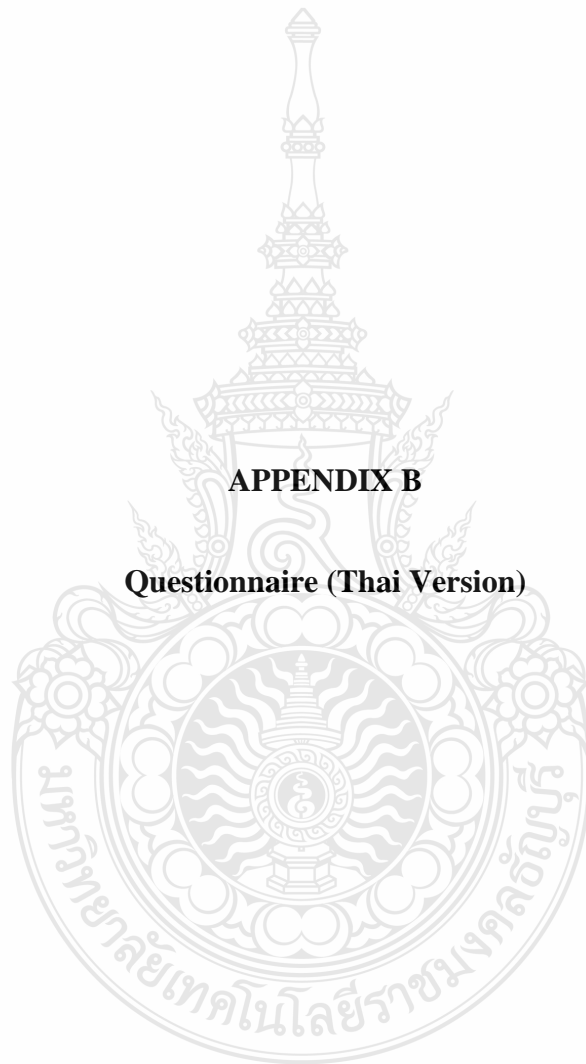
Item	Description	1	2	3	4	5	6	7
IRDE1	You avoid taking on additional duties and responsibilities at work (R)							
IRDE2	Basically, You are an employee like everybody else: What counts is not getting under stress so that you do not get overworked.							
IRDE3	You are performing your job to your full capacity							
IRDE4	You are working as hard as you are able to at your job							
IRDE5	You could increase your effort at work quite significantly							
IRDE6	You put a great deal of effort into your job over and above what is required							
IRDE7	On a regular basis, you put into your job only the amount of effort required to keep you from getting fired or disciplined (R)							
ERDE1	On a regular basis, you spend a fair amount of time thinking about how to improve things at work							
ERDE2	On regular basis, you spend extra-effort to benefit your organization							
ERDE3	On a regular basis, you spend extra-effort on behalf of my co-workers which results in benefits to your organization							
ERDE4	You expend extra effort on behalf of your organization to avoid incurring unnecessary costs							

Part 5: Please evaluate how the following statements describe you using the following scale

(1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, and 5 = strongly agree)

Item	Description	1	2	3	4	5
FEXP1	You believe that the job you have applied for will provide adequate opportunities for you to use your full potential in performing job tasks					
FEXP2	You believe that the job you have applied for will provide you with adequate opportunity to develop and learn new work skills					
FEXP3	You believe that the job you have applied for will provide you with adequate opportunities to show your supervisors effective performance in competing work tasks					
FEXP4	You believe that the job you have applied for will provide you with a variety of work tasks to maintain your interest in the job					
FEXP5	You believe that the job you have applied for will provide you with adequate opportunities for career advancement					
FEXP6	You believe that the job you have applied for will provide you with the freedom to do the job your own way					
FEXP7	You believe that the job you have applied for will provide you with challenging work					
FEXP8	You believe that the job you have applied for will provide you with interesting work					
EEXP1	You believe that your company provide you with a competitive compensation such as salary, commission, bonus, and OT					

Item	Description	1	2	3	4	5
EEXP2	You believe that your company provide you with a competitive non-salary benefit package such as welfare, health reimbursement, holidays, retirement plan, and scholarship					
EEXP3	You believe that your company provide you with strong job security					
EEXP4	You believe that your company provide you with adequate facilities and resources					
PEXP1	You believe that your company provide you with access to competent co-workers					
PEXP2	You believe that your company provide you with access to sociable co-workers					
PEXP3	You believe that your company provide you with access to appropriate training programs					
PEXP4	You believe that your company provide you with a pleasant work environment					
PEXP5	You believe that your company offer you a job that fits with your life style					
PEXP6	You believe that your company provide you with a supervisor that you can work with					



APPENDIX B

Questionnaire (Thai Version)

แบบสอบถามสำหรับการศึกษา

รายละเอียดการศึกษาและแบบฟอร์มการยินยอม

เรียน ผู้ตอบแบบสอบถาม,

กรุณากรอกแบบสอบถามเกี่ยวกับความคิดเห็นของท่านเกี่ยวกับประสิทธิภาพการทำงานในที่ทำงานของท่าน การตอบแบบสอบถามใช้เวลาประมาณ 30 นาที แบบสอบถามนี้เป็นส่วนหนึ่งของเครื่องมือที่ใช้ในการเก็บข้อมูลสำหรับการศึกษาระดับปริญญาเอกของมหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี ในหัวข้อวิจัยเรื่อง: การศึกษาความสัมพันธ์ระหว่างแบรนด์นายจ้าง, ความผูกพันพนักงาน, ความคาดหวังของพนักงาน, และความพยายามในการตัดสินใจอย่างเป็นอิสระ

ข้อมูลที่เก็บรวบรวมจากแบบสอบถามของแต่ละบุคคลจะถูกเก็บไว้เป็นความลับและไม่สามารถระบุตัวตนของผู้ตอบแบบสอบถามแต่ละคนได้ ข้อมูลที่เก็บรวบรวมได้จะถูกนำไปศึกษาแนวโน้มที่เกี่ยวข้องกับหัวข้องานวิจัยของผู้วิจัย และแนวโน้มที่ได้จากการศึกษานี้ผู้วิจัยจะนำเสนอข้อมูลให้กับบริษัทที่เข้าร่วมด้วย ซึ่งผู้วิจัยจะนำเสนอข้อมูลที่เป็นประโยชน์สามารถส่งเสริมหรือพัฒนาบริษัทในด้านที่เกี่ยวข้องกับหัวข้อวิจัย

การมีส่วนร่วมในการตอบแบบสอบถามของท่านเป็นความสมัครใจโดยที่ท่านสามารถที่จะปฏิเสธไม่เข้าร่วมหรือสามารถยุติการมีส่วนร่วมได้ตลอดเวลาโดยไม่ต้องกล่าวถึงโทษ ถ้าท่านมีส่วนร่วมท่านใดมีคำถามหรือข้อสงสัยในแบบฟอร์มการยินยอมนี้ทางผู้วิจัยจะตรวจสอบและอธิบายรายละเอียดให้ท่านทราบเป็นรายบุคคล

ขอขอบคุณสำหรับความร่วมมือและการมีส่วนร่วมในหัวข้อวิจัยนี้

ปิยฉัตร บุระวัฒน์

นักศึกษาระดับปริญญาเอก, คณะบริหารธุรกิจ, มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี

ส่วนที่ 1: ข้อมูลทั่วไป

1. เพศ 1) ชาย 2) หญิง
2. อายุ (ปี) 1) 18-21 2) 22-25 3) 26-29
 4) 30-35 5) 35-40 6) สูงกว่า 40
3. สถานะ 1) โสด 2) แต่งงาน 3) หย่า/หม้าย
4. การศึกษา 1) ต่ำกว่าปริญญาตรี 2) ปริญญาตรี
 3) ปริญญาโท 4) ปริญญาเอก
5. ประสบการณ์การทำงานกับบริษัท ปัจจุบัน (ปี) 1) บัณฑิตใหม่ 2) น้อยกว่า 1 ปี
 3) 1-3 4) 4-5
 5) 6-10 6) สูงกว่า 10 ปี
6. ตำแหน่งปัจจุบัน 1) พนักงานระดับปฏิบัติการ 2) พนักงานอาวุโส
 3) หัวหน้างาน 4) ผู้จัดการและสูงกว่า
7. แผนกปัจจุบัน 1) ทรัพยากรมนุษย์ 2) บัญชี/การเงิน 3) ไอที
 4) วิศวกรรม 5) ซ่อมบำรุง/บริการ 6) วิจัย/พัฒนา
 7) กฎหมาย 8) ตำรวจและผลิต 9) ออฟฟิศ
 10) การตลาด/ขาย 11) วิเคราะห์ข้อมูล 12) ส่งออก
 13) ตรวจสอบภายใน 14) จัดซื้อ/จัดจ้าง 15) โลจิสติกส์
 16) วางแผน 17) อื่นๆ.....
8. ในอีก 3 ปีข้างหน้า คุณวางแผน 1) ทำงานกับบริษัทปัจจุบัน
 2) เปลี่ยนที่ทำงาน
 3) เกษียณก่อนกำหนด

ส่วนที่ 2: กรุณาประเมินว่าบริษัทที่ท่านทำงานอยู่มีคุณลักษณะต่อไปนี้มากน้อยเพียงใด โดยใช้เกณฑ์ต่อไปนี้

(1 = ไม่เห็นด้วยอย่างมาก, 2 = ไม่เห็นด้วย, 3 = ไม่เห็นด้วยเล็กน้อย, 4 = เฉยๆ, 5 = เห็นด้วยเล็กน้อย, 6 = เห็นด้วย, และ 7 = เห็นด้วยอย่างมาก)

ข้อ	รายละเอียด	1	2	3	4	5	6	7
EMP1	บริษัทของท่านมีการวัดและการประเมินผลงานอย่างเหมาะสม เช่น ตัวชี้วัดจากผลการทำงานหลัก (KPI) หรือ การบริหารเชิงคุณภาพ (BSC)							
EMP2	บริษัทของท่านมีระบบการวัดและประเมินผลการปฏิบัติงานที่เป็นธรรมและเป็นรูปธรรม							
EMP3	บริษัทของท่านมีการจัดทำเป้าหมายการทำงานที่จูงใจ, ทำทหายและมีความเป็นไปได้ที่ประสบความสำเร็จ							
EMP4	บริษัทของท่านมีการมอบหมายงานในหน้าที่ความรับผิดชอบอย่างสอดคล้องกับคุณลักษณะ ตลอดจนความรู้ความสามารถของพนักงานเป็นหลักสำคัญ							
EMP5	บริษัทของท่านเป็นบริษัทที่พนักงานกับพนักงานมีความสัมพันธ์ที่ดีต่อกัน							
EMP6	บริษัทของท่านเป็นบริษัทที่พนักงานกับหัวหน้างานมีความสัมพันธ์ที่ดีต่อกัน							
EMP7	บริษัทของท่านมีการมอบหมายอำนาจหน้าที่ในการตัดสินใจในการทำงาน							
EMP8	บริษัทของท่านส่งเสริมความก้าวหน้าในอาชีพของพนักงาน							
EMP9	บริษัทของท่านส่งเสริมให้มีการพัฒนาความสามารถและศักยภาพในการทำงานเป็นรายบุคคล							
EMP10	บริษัทของท่านมีการส่งเสริมให้ไปดูงานหรือฝึกงานที่ต่างประเทศ							

ข้อ	รายละเอียด	1	2	3	4	5	6	7
DA1	บริษัทของท่านเป็นบริษัทที่มีการยกย่องชมเชยและให้การยอมรับในความสามารถของพนักงาน							
DA2	บริษัทของท่านเปิดโอกาสในการช่วยเหลือหรือส่งเสริมเพื่อนร่วมงาน							
DA3	บริษัทของท่านเปิดโอกาสในการถ่ายทอดความรู้แก่เพื่อนร่วมงาน							
DA4	บริษัทของท่านเปิดโอกาสในการประยุกต์ใช้ความรู้ที่ศึกษาจากสถาบันการศึกษากับการทำงาน							
DA5	การที่ท่านได้ร่วมงานกับบริษัทแห่งนี้ทำให้ท่านรู้สึกมั่นใจมากขึ้น							
DA6	ท่านรู้สึกดีต่อตนเอง เนื่องจากได้ทำงานกับบริษัทแห่งนี้							
DA7	บริษัทของท่านเป็นบริษัทที่ให้ความเคารพและยอมรับในความแตกต่าง เช่น เพศ, เชื้อชาติ, ศาสนา							
ORG1	บริษัทของท่านเป็นบริษัทที่มีชื่อเสียง และภาพลักษณ์ที่ดี							
ORG2	บริษัทของท่านมีผลิตภัณฑ์เป็นที่ยอมรับและมีความหลากหลาย							
ORG3	บริษัทของท่านเป็นบริษัทที่มีความมั่นคงและเสถียรภาพ							
ORG4	บริษัทของท่านเป็นบริษัทที่มีวิสัยทัศน์, ภารกิจ, และนโยบายที่เป็นรูปธรรมและนำไปใช้ในทางปฏิบัติได้							
ORG5	บริษัทของท่านมีระบบการติดต่อสื่อสารภายในบริษัทที่มีประสิทธิภาพ ได้แก่ อีเมล, อินทราเน็ต, หรือระบบอิเล็กทรอนิกส์อื่นๆ							
ORG6	บริษัทของท่านเป็นบริษัทที่ยอมรับในความคิดเห็นและสนับสนุนให้พนักงานมีโอกาเข้าถึงข้อมูลข่าวสารได้อย่างทั่วถึง							
ORG7	ผู้บริหารของบริษัทนี้มีวิสัยทัศน์และความสามารถในการสร้างแรงบันดาลใจ							

ข้อ	รายละเอียด	1	2	3	4	5	6	7
ORG8	บริษัทของท่านเป็นบริษัทที่มีธรรมาภิบาล, โปร่งใส ตรวจสอบได้ ปราศจากการแทรกแซงจากภายนอก							
ORG9	บริษัทของท่านจัดให้มีสมดุลระหว่างชีวิตส่วนตัวกับการ ทำงานที่ดี							
ORG10	บริษัทของท่านเป็นบริษัทที่มีความรับผิดชอบต่อสังคมและ สิ่งแวดล้อม							
ORG11	บริษัทของท่านเป็นบริษัทที่ให้ความสำคัญกับมาตรฐานการ ทำงานในระดับสูง							
ORG12	บริษัทของท่านจัดให้มีสภาพแวดล้อมในการทำงานที่ดี เช่น มีความ ปลอดภัย, ถูกสุขลักษณะ, อากาศถ่ายเทสะดวก, บรรยากาศการ ทำงานที่ดีเหมาะกับการปฏิบัติงาน							
ORG13	บริษัทของท่านมีกิจกรรมกระชับความสัมพันธ์อันดี ระหว่างพนักงาน เช่น สัมมนาต่างจังหวัด, กีฬา, งานเลี้ยง ประจำปี							
ECO1	บริษัทของท่านมีการจัดสิ่งอำนวยความสะดวกและอุปกรณ์ ที่เอื้อประโยชน์ให้กับพนักงาน เช่น รถรับส่ง, ห้องอาหาร, ฟิตเนส							
ECO2	บริษัทของท่านให้ค่าตอบแทนที่จูงใจ เช่น เงินเดือน, ค่า นายหน้า, โบนัส, ค่าทำงานล่วงเวลา							
ECO3	บริษัทของท่านให้ผลประโยชน์ด้านอื่นๆ ที่จูงใจ เช่น สวัสดิการที่ดี, การรักษาพยาบาล, วันหยุด, รายได้หลัง เกษียณ, ทุนการศึกษา							

ส่วนที่ 3: กรุณาประเมินว่าท่านมีลักษณะต่อไปนี้มากน้อยเพียงใด โดยใช้สเกลต่อไปนี้

(1 = ไม่เห็นด้วยมาก, 2 = ไม่เห็นด้วย, 3 = เฉยๆ, 4 = เห็นด้วย, และ 5 = เห็นด้วยมาก)

ข้อ	รายละเอียด	1	2	3	4	5
JEE1	ท่านโยนตัวท่านเข้าไปในงานอย่างแท้จริง					
JEE2	เมื่อท่านทำงานบางครั้งท่านรู้สึกว่าคุณลืมนึกถึงเรื่องเวลาไปโดยปริยาย					
JEE3	ท่านทุ่มเททุกอย่างให้กับการทำงานเพราะมันเป็นทั้งหมดของท่าน					
JEE4	ท่านมักใจลอยบ่อยๆและคิดถึงสิ่งอื่นในขณะที่ทำงาน					
JEE5	ท่านรู้สึกผูกพันกับงานนี้อย่างมาก					
JEE6	ขณะที่ทำงาน ท่านรู้สึกกระตือรือร้นและมีการปะทุของพลังงานในตัวท่าน					
JEE7	ท่านพบว่าการทำงานของท่านมีความหมายและวัตถุประสงค์					
JEE8	ท่านรู้สึกมีความสุขเมื่อท่านจำเป็นต้องทำงานในเวลาที่นานกว่าการทำงานปกติ					
JEE9	เมื่อท่านตื่นนอนตอนเช้า ท่านรู้สึกเบื่อในการไปทำงาน					
OEE1	การเป็นสมาชิกของบริษัทนี้เป็นสิ่งที่มีเสน่ห์ดึงดูดใจ					
OEE2	สิ่งหนึ่งที่ตื่นเต้นที่สุดสำหรับท่าน คือการได้เป็นส่วนหนึ่งของบริษัทนี้					
OEE3	ท่านรู้สึกจริงๆ ที่จะไม่ก้าวต่อไปกับบริษัทนี้					
OEE4	การเป็นสมาชิกของบริษัทนี้ทำให้ท่านรู้สึกสดชื่นมีชีวิตชีวา					
OEE5	การเป็นสมาชิกของบริษัทนี้ทำให้ท่านรู้สึกดีอกดีใจ					
OEE6	ท่านรู้สึกผูกพันกับบริษัทนี้อย่างมาก					

ส่วนที่ 4: กรุณาประเมินว่าท่านมีลักษณะต่อไปนี้มากน้อยเพียงใด โดยใช้สเกลต่อไปนี้

(1 = ไม่เห็นด้วยอย่างมาก, 2 = ไม่เห็นด้วย, 3 = ไม่เห็นด้วยเล็กน้อย, 4 = เฉยๆ, 5 = เห็นด้วยเล็กน้อย, 6 = เห็นด้วย, และ 7 = เห็นด้วยอย่างมาก)

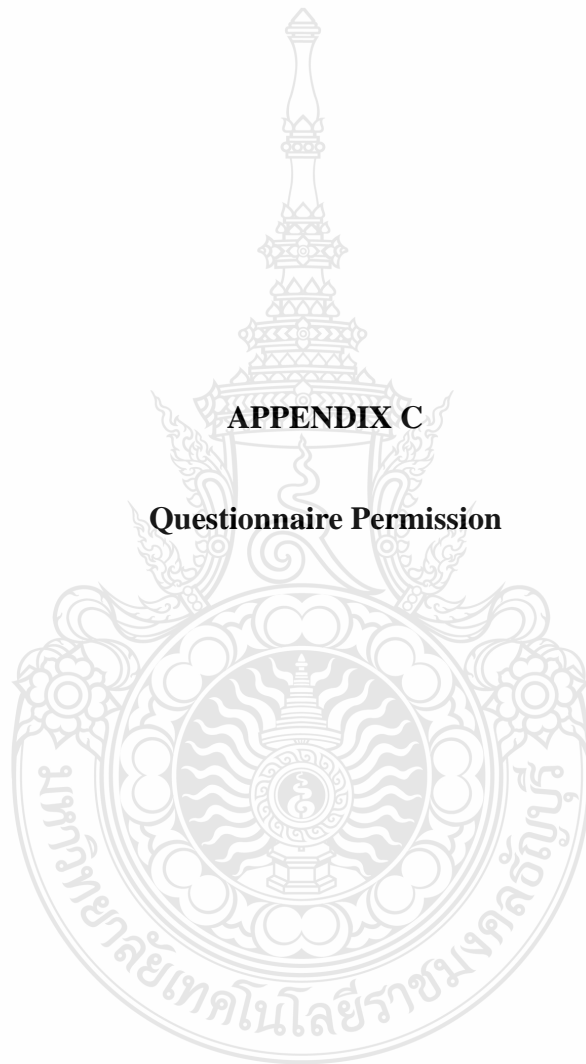
ข้อ	รายละเอียด	1	2	3	4	5	6	7
IRDE1	ในที่ทำงาน ท่านหลีกเลี่ยงหน้าที่และความรับผิดชอบที่เพิ่มขึ้น							
IRDE2	โดยปกติแล้ว ท่านก็เหมือนกับคนอื่น การทำงานไม่ได้ อยู่ภายใต้ความกดดันดังนั้นท่านไม่ได้ทำงานหนักเกินไป							
IRDE3	ท่านปฏิบัติงานอย่างเต็มกำลังการผลิตของท่าน							
IRDE4	ท่านทำงานหนักเท่าที่ความสามารถของท่านจะทำได้							
IRDE5	ท่านสามารถเพิ่มความพยายามของท่านในที่ทำงานได้อย่างมีนัยสำคัญ							
IRDE6	ท่านใช้ความพยายามในการทำงานที่มากกว่าและอยู่เหนือความต้องการปกติ							
IRDE7	โดยปกติแล้ว ความพยายามในการทำงานของท่านอยู่ในระดับที่ไม่ถูกไล่ออกหรือเท่ากับกฎระเบียบขั้นพื้นฐาน							
ERDE1	โดยปกติแล้ว ท่านใช้เวลาของท่านพอสมควรในการคิดเกี่ยวกับการปรับปรุงสิ่งต่างๆ ในที่ทำงาน							
ERDE2	โดยปกติแล้ว ท่านใช้ความพยายามอย่างมากพิเศษ เพื่อประโยชน์ขององค์กรของท่าน							
ERDE3	โดยปกติแล้ว ท่านใช้ความพยายามอย่างมากเป็นพิเศษในการเป็นตัวแทนของเพื่อนร่วมงาน เพื่อประโยชน์ขององค์กรของท่าน							
ERDE4	โดยปกติแล้ว ท่านใช้ความพยายามอย่างมากพิเศษในการเป็นตัวแทนขององค์กร เพื่อช่วยหลีกเลี่ยงการเกิดขึ้นของต้นทุนที่ไม่จำเป็นขององค์กร							

ส่วนที่ 5: กรุณาประเมินว่าท่านมีลักษณะต่อไปนี้มากน้อยเพียงใด โดยใช้สเกลต่อไปนี้

(1 = ไม่เห็นด้วยมาก, 2 = ไม่เห็นด้วย, 3 = เฉยๆ, 4 = เห็นด้วย, และ 5 = เห็นด้วยมาก)

ข้อ	รายละเอียด	1	2	3	4	5
FEXP1	ท่านเชื่อว่า งานที่ท่านได้รับมอบหมายเพียงพอที่จะทำให้ท่านสามารถทำงานได้อย่างเต็มประสิทธิภาพสูงสุดของท่าน					
FEXP2	ท่านเชื่อว่า งานที่ท่านได้รับมอบหมายเพียงพอที่จะทำให้ท่านได้รับโอกาสในการพัฒนาและเรียนรู้ทักษะการทำงานใหม่ๆ					
FEXP3	ท่านเชื่อว่า งานที่ท่านได้รับมอบหมายเพียงพอที่จะทำให้ท่านมีโอกาสดำเนินการแสดงผลการทำงาน (ซึ่งเป็นงานที่มีการแข่งขันสูง) แก่หัวหน้างานของท่าน					
FEXP4	ท่านเชื่อว่า งานที่ท่านได้รับมอบหมายมีความหลากหลายเพียงพอที่จะทำให้ท่านยังสนใจในงานที่ทำ					
FEXP5	ท่านเชื่อว่า งานที่ท่านได้รับมอบหมายเพียงพอที่จะทำให้ท่านมีโอกาสก้าวหน้าในการทำงาน					
FEXP6	ท่านเชื่อว่า งานที่ท่านได้รับมอบหมายเพียงพอที่จะทำให้ท่านมีโอกาสในการทำงานได้อย่างอิสระ					
FEXP7	ท่านเชื่อว่า งานที่ท่านได้รับมอบหมายเป็นงานที่มีความท้าทาย					
FEXP8	ท่านเชื่อว่า งานที่ท่านได้รับมอบหมายเป็นงานที่มีความน่าสนใจ					

ข้อ	รายละเอียด	1	2	3	4	5
EEXP1	ท่านเชื่อว่า บริษัทของท่านให้ค่าตอบแทนที่เพียงพอ เช่น เงินเดือน, ค่านายหน้า, โบนัสและค่าทำงานล่วงเวลา					
EEXP2	ท่านเชื่อว่า บริษัทของท่านให้ผลประโยชน์อื่นๆ ที่เพียงพอ เช่น สวัสดิการ, ประกันสุขภาพ, วันหยุด, การเกษียณ, และทุนการศึกษา					
EEXP3	ท่านเชื่อว่า การทำงานกับบริษัทของท่านมีความมั่นคง					
EEXP4	ท่านเชื่อว่า บริษัทของท่านจัดเตรียมเครื่องอำนวยความสะดวก, เครื่องมือ, และอุปกรณ์ในการทำงานอย่างเพียงพอ					
PEXP1	ท่านเชื่อว่า การทำงานกับบริษัทของท่านจะทำให้ท่านมีโอกาสทำงานร่วมกันเพื่อนร่วมงานที่มีความสามารถ					
PEXP2	ท่านเชื่อว่า การทำงานกับบริษัทของท่านจะทำให้ท่านมีโอกาสทำงานกับเพื่อนร่วมงานที่เป็นกันเอง					
PEXP3	ท่านเชื่อว่า การทำงานกับบริษัทของท่านจะทำให้ท่านมีโอกาสในการฝึกอบรมที่เพียงพอและเหมาะสมกับหน้าที่ที่ได้รับมอบหมาย					
PEXP4	ท่านเชื่อว่า สภาพแวดล้อมในการทำงานของบริษัทท่านมีความสวยงามและรื่นรมย์					
PEXP5	ท่านเชื่อว่า งานที่ได้รับมอบหมายเหมาะสมกับการดำเนินชีวิตของท่าน					
PEXP6	ท่านเชื่อว่า การทำงานกับบริษัทของท่านทำให้ท่านได้ทำงานกับหัวหน้างานที่ท่านสามารถทำงานร่วมกันได้					



APPENDIX C

Questionnaire Permission

Warangkana Ng. 15/5/2013

ถึง pueng_naja, kbkan, ถิ่น

Dear Khun Piyachat,

We all permit you to use our survey questionnaire for research purpose.

Best regards,
Warangkana

From: Piyachatbu <piyachatbu@gmail.com>

To: andannann@yahoo.com

Sent: Tuesday, May 14, 2013 5:36 PM

Subject: Doctoral Dissertation Research- Employer Branding Scale

Dear Madam, Ngakhoopathipat Warangkana

My name is Ms. Burawat Piyachat. I am a doctoral student in Ph.D. business administration program, faculty of business administration at the Rajamangala University of Technology Thanyaburi Thailand.

My dissertation topic involves the Relationships among Perceived Employer Branding, Employee Engagement, and Discretionary Effort in the context of current employees in the Petroleum Industry in Thailand . I plan to use the survey of Employer Branding to measure the employer branding. The current study initially targeted a sample 900 of current employees.

I am currently writing the methodology section of my dissertation (Proposal). At present, I am considering with structural equation model (SEM) analysis to test framework model. I have been to the ThaiLis site (<http://tdc.thailis.or.th/tdc/>) and download the information about assessing employer branding.

I would like to confirm that my study is for non-commercial educational research propose only also I agree to share my data (SPSS) with you.

Thank you so much for all the research you've done on dimensions of employer branding, and for allowing the use of the Employer Branding Scale for education research.

Best regards,

Ms. Burawat Piyachat

Ph.D. candidate, Ph.D. Business administration Program

Faculty of Business administration

The Rajamangala University of Technology Thanyaburi, Thailand

piyachatbu@gmail.com

Cell (66)894865461

Maree Biggar <maree.biggar@monash.edu> 13/5/2013

ถึง คุณ

Dear Burawat

On behalf of Professor Ewing, I would like to acknowledge your thanks and tell you how pleased he was that you have found his work of help with your studies.

With best wishes for your doctoral studies.

Maree

Ms Maree Biggar, Research Administrator

Department of Marketing, MONASH UNIVERSITY, Tel: +61 3 990 32283

From: Piyachatbu <piyachatbu@gmail.com>

Date: 13 May 2013 2:32:29 PM ACST

To: Mike.Ewing@monash.edu

Subject: Doctoral Dissertation Research- Employer Branding

Dear Sir: Prof. Dr. Michael Ewing

My name is Ms. Burawat Piyachat. I am a doctoral student in Ph.D. business administration program, faculty of business administration at the Rajamangala University of Technology Thanyaburi Thailand.

My dissertation topic involves the Relationships among Perceived Employer Branding, Employee Engagement, and Discretionary Effort in the context of current employees in the Petroleum Industry in Thailand . I plan to use the survey of Employer Attractiveness (EmpAt) to measure the employer branding. The current study initially targeted a sample 900 of current employees.

I am currently writing the methodology section of my dissertation (Proposal). At present, I am considering with structural equation model (SEM) analysis to test framework model. I have been to the Proquest site (<http://search.proquest.com/docview/231076181/13E01BD2E5F5E9AB56F/1?accountid=32078>) and download the information about assessing employer attractiveness.

I would like to confirm that my study is for non-commercial educational research propose only also I agree to share my data (SPSS) with you.

Thank you so much for all the research you've done on dimensions of attractiveness in employer branding, and for allowing the use of the Employer Attractiveness (EmpAt) Scale for education research.

Best regards,

Ms. Burawat Piyachat

Ph.D. candidate, Ph.D. Business administration Program

Faculty of Business administration

The Rajamangala University of Technology Thanyaburi, Thailand

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Cell (66)894865461



Alan Saks <saks@utsc.utoronto.ca> 14/5/2013

ถึง กัน

Thanks for your message. Good luck with your research.

Alan Saks, PhD
Professor, HRM
University of Toronto

On 13/05/2013 12:39 AM, Piyachatbu wrote:
Dear Sir: Prof. Dr. Alan M. Saks

My name is Ms. Burawat Piyachat. I am a doctoral student in Ph.D. business administration program, faculty of business administration at the Rajamangala University of Technology Thanyaburi Thailand.

My dissertation topic involves the Relationships among Perceived Employer Branding, Employee Engagement, and Discretionary Effort in the context of current employees in the Petroleum Industry in Thailand . I plan to use the survey of job and organization engagement to measure the employee engagement. The current study initially targeted a sample 900 of current employees.

I am currently writing the methodology section of my dissertation (Proposal). At present, I am considering with structural equation model (SEM) analysis to test framework model. I have been to the Emerald site (<http://www.emeraldinsight.com>) and download the information about assessing employee engagement scale.

I would like to confirm that my study is for non-commercial educational research propose only also I agree to share my data (SPSS) with you.

Thank you so much for all the research you've done on employee engagement, and for allowing the use of the Employee Engagement Scale for education research.

Best regards,
Ms. Burawat Piyachat
Ph.D. candidate, Ph.D. Business administration Program
Faculty of Business administration
The Rajamangala University of Technology Thanyaburi, Thailand
piyachatbu@gmail.com
Cell (66)894865461

George Entwistle> 14/5/2013

ถึง กัน

Hello-

It is a pleasure to know that the work I did may be helpful to you. My very best wishes for good success in your research. Whatever data you are able to share with me would be of great interest.

Best regards,

George Entwistle

Dr. George H. Entwistle 3rd

Superintendent of Schools

Scarborough Public Schools

Scarborough, Maine 04070

(207) 730-4100

From: Piyachatbu [piyachatbu@gmail.com]

Sent: Monday, May 13, 2013 2:00 AM

To: George Entwistle

Subject: Doctoral Dissertation Research- Discretionary Effort Scale

Dear Sir: Dr. George H. Entwistle 3rd

My name is Ms. Burawat Piyachat. I am a doctoral student in Ph.D. business administration program, faculty of business administration at the Rajamangala University of Technology Thanyaburi Thailand.

My dissertation topic involves the Relationships among Perceived Employer Branding, Employee Engagement, and Discretionary Effort in the context of current employees in the Petroleum Industry in Thailand . I plan to use the survey of Discretionary Effort Scale (DES) to measure the discretionary effort. The current study initially targeted a sample 900 of current employees.

I am currently writing the methodology section of my dissertation (Proposal). At present, I am considering with structural equation model (SEM) analysis to test framework model. I have been to the Proquest site (<http://search.proquest.com/docview/304682128/13E01E8BCAA1C114777/3?accountid=32078>) and download the information about assessing discretionary effort.

I would like to confirm that my study is for non-commercial educational research propose only also I agree to share my data (SPSS) with you.

Thank you so much for all the research you've done on measuring effort expended in the workplace, and for allowing the use of the Discretionary Effort Scale for education research.

Best regards,

Ms. Burawat Piyachat

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APPENDIX D

Statistical Results

Appendix D.1 Table of items' descriptive statistics

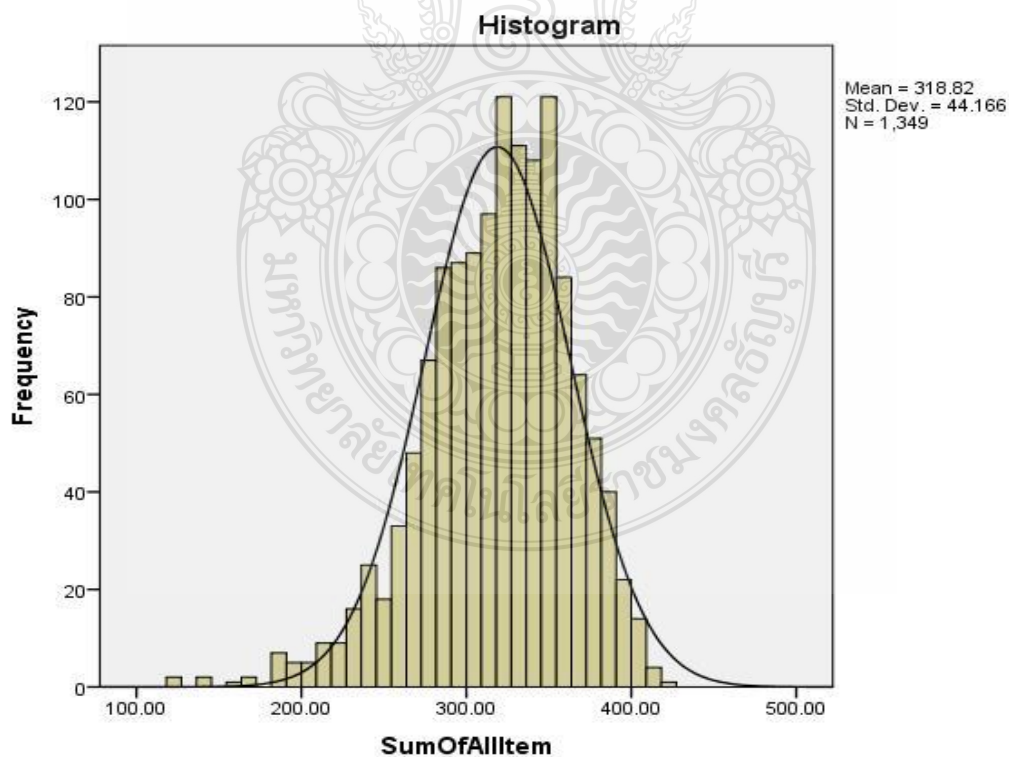
	N	Mean	Std.	Skewness	Kurtosis		
	Statistic	Statistic	Deviation Statistic	Statistic	Std. Error	Statistic	Std. Error
EMP1	1349	5.00	1.402	-0.759	0.067	0.181	0.133
EMP2	1349	4.97	1.312	-0.848	0.067	0.601	0.133
EMP3	1349	5.00	1.305	-0.731	0.067	0.419	0.133
EMP4	1349	5.05	1.220	-0.873	0.067	0.800	0.133
EMP5	1349	5.38	1.140	-0.802	0.067	0.507	0.133
EMP6	1349	5.30	1.200	-0.910	0.067	0.822	0.133
EMP7	1349	5.20	1.147	-0.819	0.067	0.737	0.133
EMP8	1349	4.94	1.318	-0.711	0.067	0.415	0.133
EMP9	1349	5.02	1.286	-0.727	0.067	0.473	0.133
EMP10	1349	4.40	1.678	-0.456	0.067	-0.648	0.133
DA1	1349	5.07	1.315	-0.707	0.067	0.280	0.133
DA2	1349	5.40	1.107	-0.775	0.067	0.876	0.133
DA3	1349	5.41	1.151	-0.881	0.067	1.147	0.133
DA4	1349	5.08	1.217	-0.677	0.067	0.368	0.133
DA5	1349	5.42	1.199	-0.796	0.067	0.547	0.133
DA6	1349	5.47	1.188	-0.866	0.067	0.695	0.133
DA7	1349	6.01	1.017	-1.400	0.067	2.710	0.133
ORG1	1349	5.94	1.113	-1.287	0.067	1.932	0.133
ORG2	1349	5.81	1.140	-1.160	0.067	1.661	0.133
ORG3	1349	5.85	1.146	-1.149	0.067	1.376	0.133
ORG4	1349	5.65	1.182	-0.964	0.067	0.937	0.133
ORG5	1349	5.79	1.188	-1.144	0.067	1.434	0.133
ORG6	1349	5.38	1.198	-0.883	0.067	0.915	0.133
ORG7	1349	5.20	1.252	-0.760	0.067	0.652	0.133
ORG8	1349	5.22	1.348	-0.787	0.067	0.421	0.133
ORG9	1349	4.98	1.271	-0.672	0.067	0.391	0.133
ORG10	1349	5.88	1.098	-1.080	0.067	1.206	0.133
ORG11	1349	5.68	1.136	-0.935	0.067	1.037	0.133
ORG12	1349	5.82	1.159	-1.225	0.067	1.851	0.133
ORG13	1349	5.71	1.202	-1.048	0.067	1.165	0.133
ECO1	1349	5.61	1.346	-1.149	0.067	1.224	0.133
ECO2	1349	5.43	1.367	-1.112	0.067	1.163	0.133
ECO3	1349	5.70	1.279	-1.344	0.067	2.077	0.133

Appendix D.1 Table of items' descriptive statistics (Cont.)

	N	Mean	Std.	Skewness	Kurtosis		
	Statistic	Statistic	Deviation	Statistic	Std. Error	Statistic	Std. Error
JEE1	1349	3.96	0.727	-0.492	0.067	0.557	0.133
JEE2	1349	3.90	0.811	-0.647	0.067	0.645	0.133
JEE3	1349	3.62	0.899	-0.462	0.067	0.169	0.133
JEE4	1349	3.48	1.034	-0.234	0.067	-0.609	0.133
JEE5	1349	3.59	0.834	-0.371	0.067	0.304	0.133
JEE6	1349	3.65	0.804	-0.378	0.067	0.377	0.133
JEE7	1349	3.82	0.796	-0.652	0.067	0.909	0.133
JEE8	1349	3.17	1.006	-0.222	0.067	-0.293	0.133
JEE9	1349	3.18	1.111	-0.095	0.067	-0.544	0.133
OEE1	1349	3.74	0.843	-0.385	0.067	0.240	0.133
OEE2	1349	3.70	0.842	-0.399	0.067	0.356	0.133
OEE3	1349	3.49	1.148	-0.380	0.067	-0.546	0.133
OEE4	1349	3.55	0.809	-0.181	0.067	0.298	0.133
OEE5	1349	3.61	0.824	-0.193	0.067	0.266	0.133
OEE6	1349	3.70	0.871	-0.294	0.067	0.070	0.133
IRDE1	1349	5.15	1.565	-0.625	0.067	-0.498	0.133
IRDE2	1349	4.08	1.565	-0.068	0.067	-0.752	0.133
IRDE3	1349	5.55	1.075	-0.768	0.067	0.440	0.133
IRDE4	1349	5.60	1.036	-0.732	0.067	0.454	0.133
IRDE5	1349	5.45	1.061	-0.717	0.067	0.765	0.133
IRDE6	1349	5.12	1.135	-0.512	0.067	0.424	0.133
IRDE7	1349	3.93	1.974	0.210	0.067	-1.295	0.133
ERDE1	1349	5.15	1.109	-0.640	0.067	0.446	0.133
ERDE2	1349	5.13	1.127	-0.631	0.067	0.821	0.133
ERDE3	1349	4.90	1.145	-0.235	0.067	0.073	0.133
ERDE4	1349	4.94	1.175	-0.409	0.067	0.208	0.133
FEXP1	1349	3.79	0.806	-0.614	0.067	0.534	0.133
FEXP2	1349	3.77	0.854	-0.595	0.067	0.296	0.133
FEXP3	1349	3.75	0.839	-0.549	0.067	0.211	0.133
FEXP4	1349	3.75	0.817	-0.612	0.067	0.417	0.133
FEXP5	1349	3.66	0.929	-0.656	0.067	0.290	0.133
FEXP6	1349	3.69	0.859	-0.614	0.067	0.465	0.133
FEXP7	1349	3.68	0.872	-0.635	0.067	0.565	0.133
FEXP8	1349	3.69	0.878	-0.715	0.067	0.696	0.133

Appendix D.1 Table of items' descriptive statistics (Cont.)

	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
EEXP1	1349	3.68	1.020	-0.701	0.067	0.118	0.133
EEXP2	1349	3.88	0.957	-0.946	0.067	0.859	0.133
EEXP3	1349	4.05	0.872	-0.969	0.067	1.236	0.133
EEXP4	1349	4.01	0.842	-0.896	0.067	1.177	0.133
PEXP1	1349	3.92	0.756	-0.634	0.067	0.965	0.133
PEXP2	1349	3.93	0.742	-0.517	0.067	0.696	0.133
PEXP3	1349	3.76	0.813	-0.573	0.067	0.572	0.133
PEXP4	1349	3.69	0.849	-0.350	0.067	0.056	0.133
PEXP5	1349	3.72	0.830	-0.527	0.067	0.434	0.133
PEXP6	1349	3.78	0.839	-0.623	0.067	0.622	0.133
Sum of All Item	1349	318.821	44.166	-0.655	0.067	0.891	0.133
Valid N (listwise)	1349						



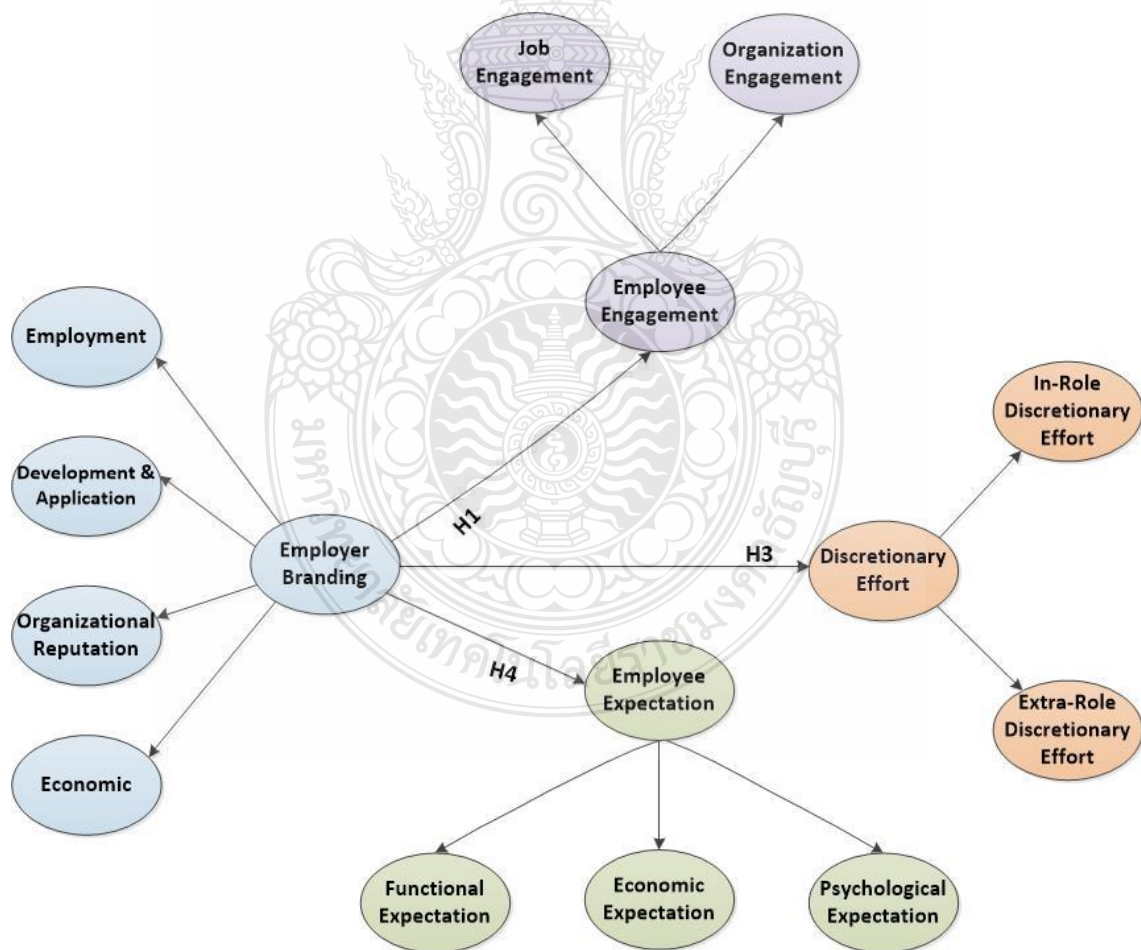
Appendix D.2 Figure of histogram of data set of all items

Appendix D.3 Table of standardized direct effects, indirect effects, and total effects among variables of the proposed theoretical model

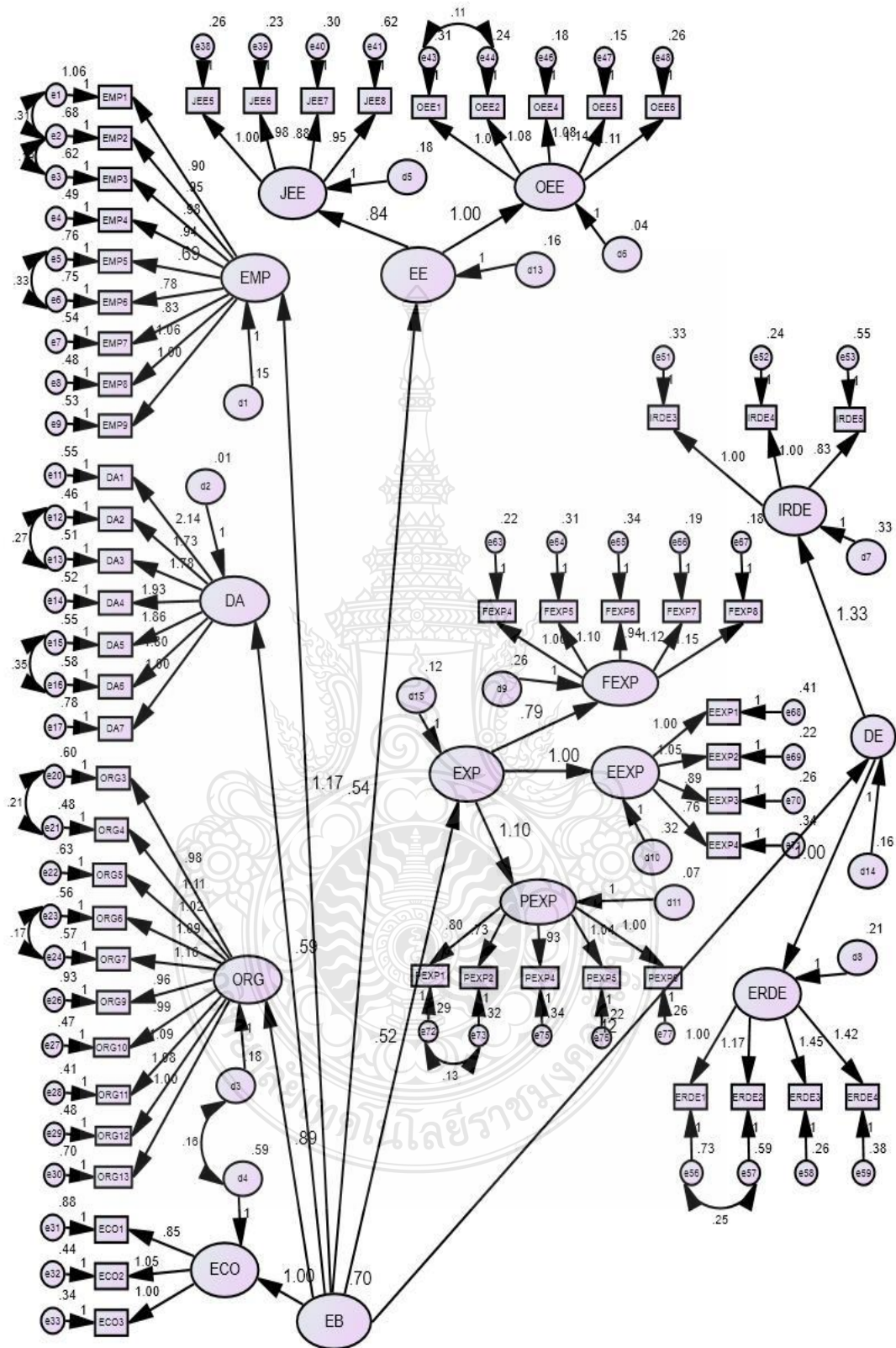
			Standardized Direct effect	Standardized Indirect effect	Standardized Total effect
Development and application	-->	Employer branding	0.984	0.000	0.984
Employment	-->	Employer branding	0.938	0.000	0.938
Organizational reputation	-->	Employer branding	0.859	0.000	0.859
Economic	-->	Employer branding	0.725	0.000	0.725
Organization engagement	-->	Employee engagement	0.866	0.000	0.866
Job engagement	-->	Employee engagement	0.825	0.000	0.825
Extra-role discretionary effort	-->	Discretionary effort	0.787	0.000	0.787
In-role discretionary effort	-->	Discretionary effort	0.754	0.000	0.754
Psychological expectation	-->	Employee expectation	0.896	0.000	0.896
Economic expectation	-->	Employee expectation	0.699	0.000	0.699
Functional expectation	-->	Employee expectation	0.677	0.000	0.677
Effect of employer branding					
Employer branding	-->	Employee expectation	0.763	0.000	0.763
Employer branding	-->	Employee engagement	0.286	0.441	0.727
Employer branding	-->	Psychological expectation	0.000	0.684	0.684
Employer branding	-->	Organization engagement	0.000	0.630	0.630
Employer branding	-->	Discretionary effort	0.100	0.517	0.617
Employer branding	-->	Job engagement	0.000	0.600	0.600
Employer branding	-->	Economic expectation	0.000	0.533	0.533
Employer branding	-->	Functional expectation	0.000	0.517	0.517
Employer branding	-->	Extra-role discretionary effort	0.000	0.486	0.486
Employer branding	-->	In-role discretionary effort	0.000	0.465	0.465
Effect of employee engagement					
Employee engagement	-->	Discretionary effort	0.711	0.000	0.711
Employee engagement	-->	Extra-role discretionary effort	0.000	0.560	0.560
Employee engagement	-->	In-role discretionary effort	0.000	0.536	0.536

Appendix D.3 Table of standardized direct effects, indirect effects, and total effects among variables of the proposed theoretical model (Cont.)

			Standardized Direct effect	Standardized Indirect effect	Standardized Total effect
Effect of employee expectation					
Employee expectation	-->	Employee engagement	0.578	0.000	0.578
Employee expectation	-->	Organization engagement	0.000	0.500	0.500
Employee expectation	-->	Job engagement	0.000	0.477	0.477
Employee expectation	-->	Discretionary effort	0.000	0.411	0.411
Employee expectation	-->	Extra-role discretionary effort	0.000	0.323	0.323
Employee expectation	-->	In-role discretionary effort	0.000	0.310	0.310



Appendix D.4 The competing model based on literature review from previous study



Appendix D.5 Structural model of the competing model

Appendix D.6 Model fit statistics of the competing model and the proposed theoretical model

Model	CMIN	<i>p</i> -value	df	CMIN/df	CFI	IFI	AGFI	PGFI	RMSEA	NFI	TLI
Competing	7439.927	0.000	1627	4.573	0.905	0.905	0.810	0.759	0.051	0.882	0.900
Proposed	7174.304	0.000	1625	4.415	0.909	0.909	0.816	0.763	0.050	0.886	0.904

	AIC (Default model)	AIC (Saturated model)	AIC (Independence model)
Competing	7464.304	3540.000	62951.694
Proposed	7725.927	3540.000	62951.694

Appendix D.7 Table of standardized direct effects, indirect effects, and total effects among variables of the competing model

			Standardized Direct effect	Standardized Indirect effect	Standardized Total effect
Development and application	-->	Employer branding	0.971	0.000	0.971
Employment	-->	Employer branding	0.928	0.000	0.928
Organizational reputation	-->	Employer branding	0.867	0.000	0.867
Economic	-->	Employer branding	0.736	0.000	0.736
Organization engagement	-->	Employee engagement	0.945	0.000	0.945
Job engagement	-->	Employee engagement	0.767	0.000	0.767
In-role discretionary effort	-->	Discretionary effort	0.779	0.000	0.779
Extra-role discretionary effort	-->	Discretionary effort	0.759	0.000	0.759
Psychological expectation	-->	Employee expectation	0.921	0.000	0.921
Economic expectation	-->	Employee expectation	0.699	0.000	0.699
Functional expectation	-->	Employee expectation	0.654	0.000	0.654
Effect of employer branding					
Employer branding	-->	Employee expectation	0.787	0.000	0.787
Employer branding	-->	Employee engagement	0.746	0.000	0.746
Employer branding	-->	Discretionary effort	0.661	0.000	0.661
Employer branding	-->	Psychological expectation	0.000	0.725	0.725
Employer branding	-->	Organization engagement	0.000	0.705	0.705
Employer branding	-->	Economic expectation	0.000	0.550	0.550
Employer branding	-->	Job engagement	0.000	0.573	0.573
Employer branding	-->	Functional expectation	0.000	0.515	0.515

Appendix D.7 Table of standardized direct effects, indirect effects, and total effects among variables of the competing model (Cont.)

			Standardized Direct effect	Standardized Indirect effect	Standardized Total effect
Employer branding	-->	In-role discretionary effort	0.000	0.515	0.515
Employer branding	-->	Extra-role discretionary effort	0.000	0.502	0.502

Appendix D.8 Table of test of homogeneity of variances

	Levene Statistic	df1	df2	Sig.
EMP	1.461	6	1342	0.188
DA	4.464	6	1342	0.000
ORG	3.815	6	1342	0.001
ECO	5.817	6	1342	0.000
JEE	1.709	6	1342	0.115
OEE	2.036	6	1342	0.058
IRDE	0.690	6	1342	0.658
ERDE	2.988	6	1342	0.007
FEXP	3.867	6	1342	0.001
EEXP	4.108	6	1342	0.000
PEXP	1.262	6	1342	0.272

Appendix D.9 Table of robust tests of equality of means

		Statistic ^a	df1	df2	Sig.
EMP	Welch	14.003	6	164.483	0.000
DA	Welch	6.585	6	168.783	0.000
ORG	Welch	9.121	6	169.160	0.000
ECO	Welch	7.034	6	171.925	0.000
JEE	Welch	8.835	6	162.049	0.000
OEE	Welch	8.142	6	162.894	0.000
IRDE	Welch	2.098	6	162.038	0.056
ERDE	Welch	2.733	6	163.626	0.015
FEXP	Welch	12.545	6	164.431	0.000
EEXP	Welch	6.652	6	167.370	0.000
PEXP	Welch	10.702	6	163.910	0.000

a. Asymptotically F distributed.

Appendix D.10 Table of multiple comparisons (ANOVA)

		ANOVA				
		Sum of	df	Mean Square	F	Sig.
		Squares				
EMP	Between Groups	70.880	6	11.813	12.059	0.000
	Within Groups	1314.607	1342	0.980		
	Total	1385.487	1348			
DA	Between Groups	23.390	6	3.898	4.448	0.000
	Within Groups	1176.152	1342	0.876		
	Total	1199.541	1348			
ORG	Between Groups	36.767	6	6.128	7.228	0.000
	Within Groups	1137.711	1342	0.848		
	Total	1174.478	1348			
ECO	Between Groups	26.456	6	4.409	3.216	0.004
	Within Groups	1839.783	1342	1.371		
	Total	1866.239	1348			
JEE	Between Groups	16.736	6	2.789	9.308	0.000
	Within Groups	402.147	1342	0.300		
	Total	418.882	1348			
OEE	Between Groups	18.179	6	3.030	6.963	0.000
	Within Groups	583.930	1342	0.435		
	Total	602.109	1348			
IRDE	Between Groups	6.769	6	1.128	2.285	0.034
	Within Groups	662.625	1342	0.494		
	Total	669.394	1348			
ERDE	Between Groups	18.460	6	3.077	3.320	0.003
	Within Groups	1243.556	1342	0.927		
	Total	1262.016	1348			
FEXP	Between Groups	25.655	6	4.276	8.933	0.000
	Within Groups	642.351	1342	0.479		
	Total	668.006	1348			
EEXP	Between Groups	14.248	6	2.375	3.913	0.001
	Within Groups	814.462	1342	0.607		
	Total	828.710	1348			
PEXP	Between Groups	20.839	6	3.473	8.690	0.000
	Within Groups	536.397	1342	0.400		
	Total	557.236	1348			

Appendix D.11 Table of multiple comparisons

Multiple Comparisons

Dependent Variable: EMP (Bonferroni)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PTT	Bangchak	-0.16332	0.17604	1.000	-0.6992	0.3725
	Chevron	-0.12526	0.10536	1.000	-0.4460	0.1954
	Esso	-0.25048	0.09801	0.225	-0.5488	0.0479
	IRPC	0.40282*	0.07092	0.000	0.1870	0.6187
	Shell	-0.23726	0.18428	1.000	-0.7982	0.3237
	ThaiOil	-0.56096*	0.13944	0.001	-0.9854	-0.1365
Bangchak	PTT	0.16332	0.17604	1.000	-0.3725	0.6992
	Chevron	0.03806	0.19870	1.000	-0.5667	0.6429
	Esso	-0.08716	0.19490	1.000	-0.6804	0.5061
	IRPC	0.56614*	0.18278	0.042	0.0098	1.1225
	Shell	-0.07394	0.24967	1.000	-0.8339	0.6860
	ThaiOil	-0.39764	0.21869	1.000	-1.0633	0.2680
Chevron	PTT	0.12526	0.10536	1.000	-0.1954	0.4460
	Bangchak	-0.03806	0.19870	1.000	-0.6429	0.5667
	Esso	-0.12522	0.13453	1.000	-0.5347	0.2843
	IRPC	0.52808*	0.11628	0.000	0.1741	0.8820
	Shell	-0.11200	0.20603	1.000	-0.7391	0.5151
	ThaiOil	-0.43570	0.16714	0.194	-0.9445	0.0731
Esso	PTT	0.25048	0.09801	0.225	-0.0479	0.5488
	Bangchak	0.08716	0.19490	1.000	-0.5061	0.6804
	Chevron	0.12522	0.13453	1.000	-0.2843	0.5347
	IRPC	0.65330*	0.10966	0.000	0.3195	0.9871
	Shell	0.01322	0.20237	1.000	-0.6028	0.6292
	ThaiOil	-0.31048	0.16261	1.000	-0.8054	0.1845
IRPC	PTT	-0.40282*	0.07092	0.000	-0.6187	-0.1870
	Bangchak	-0.56614*	0.18278	0.042	-1.1225	-0.0098
	Chevron	-0.52808*	0.11628	0.000	-0.8820	-0.1741
	Esso	-0.65330*	0.10966	0.000	-0.9871	-0.3195
	Shell	-0.64008*	0.19073	0.017	-1.2206	-0.0595
	ThaiOil	-0.96378*	0.14787	0.000	-1.4139	-0.5137

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: EMP (Bonferroni)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Shell	PTT	0.23726	0.18428	1.000	-0.3237	0.7982
	Bangchak	0.07394	0.24967	1.000	-0.6860	0.8339
	Chevron	0.11200	0.20603	1.000	-0.5151	0.7391
	Esso	-0.01322	0.20237	1.000	-0.6292	0.6028
	IRPC	0.64008*	0.19073	0.017	0.0595	1.2206
	ThaiOil	-0.32370	0.22537	1.000	-1.0097	0.3623
ThaiOil	PTT	0.56096*	0.13944	0.001	0.1365	0.9854
	Bangchak	0.39764	0.21869	1.000	-0.2680	1.0633
	Chevron	0.43570	0.16714	0.194	-0.0731	0.9445
	Esso	0.31048	0.16261	1.000	-0.1845	0.8054
	IRPC	0.96378*	0.14787	0.000	0.5137	1.4139
	Shell	0.32370	0.22537	1.000	-0.3623	1.0097

*. The mean difference is significant at the 0.05 level.

Dependent Variable: DA (Game-Howell)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PTT	Bangchak	-0.22071	0.16017	0.810	-0.7210	0.2796
	Chevron	-0.19201	0.09008	0.340	-0.4615	0.0775
	Esso	-0.16051	0.10201	0.699	-0.4653	0.1443
	IRPC	0.08071	0.06420	0.871	-0.1093	0.2707
	Shell	-0.26487	0.10231	0.158	-0.5833	0.0536
	ThaiOil	-0.50666*	0.10327	0.000	-0.8204	-0.1930
Bangchak	PTT	0.22071	0.16017	0.810	-0.2796	0.7210
	Chevron	0.02870	0.17660	1.000	-0.5132	0.5706
	Esso	0.06020	0.18297	1.000	-0.4986	0.6190
	IRPC	0.30142	0.16491	0.538	-0.2105	0.8133
	Shell	-0.04416	0.18314	1.000	-0.6056	0.5173
	ThaiOil	-0.28595	0.18368	0.710	-0.8475	0.2756

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: DA (Game-Howell)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Chevron	PTT	0.19201	0.09008	0.340	-0.0775	0.4615
	Bangchak	-0.02870	0.17660	1.000	-0.5706	0.5132
	Esso	0.03150	0.12624	1.000	-0.3443	0.4073
	IRPC	0.27272	0.09825	0.086	-0.0202	0.5656
	Shell	-0.07286	0.12649	0.997	-0.4560	0.3103
	ThaiOil	-0.31466	0.12727	0.179	-0.6961	0.0668
Esso	PTT	0.16051	0.10201	0.699	-0.1443	0.4653
	Bangchak	-0.06020	0.18297	1.000	-0.6190	0.4986
	Chevron	-0.03150	0.12624	1.000	-0.4073	0.3443
	IRPC	0.24121	0.10930	0.297	-0.0845	0.5669
	Shell	-0.10436	0.13525	0.987	-0.5120	0.3033
	ThaiOil	-0.34616	0.13597	0.151	-0.7528	0.0604
IRPC	PTT	-0.08071	0.06420	0.871	-0.2707	0.1093
	Bangchak	-0.30142	0.16491	0.538	-0.8133	0.2105
	Chevron	-0.27272	0.09825	0.086	-0.5656	0.0202
	Esso	-0.24121	0.10930	0.297	-0.5669	0.0845
	Shell	-0.34557*	0.10958	0.041	-0.6824	-0.0088
	ThaiOil	-0.58737*	0.11047	0.000	-0.9207	-0.2540
Shell	PTT	0.26487	0.10231	0.158	-0.0536	0.5833
	Bangchak	0.04416	0.18314	1.000	-0.5173	0.6056
	Chevron	0.07286	0.12649	0.997	-0.3103	0.4560
	Esso	0.10436	0.13525	0.987	-0.3033	0.5120
	IRPC	0.34557*	0.10958	0.041	0.0088	0.6824
	ThaiOil	-0.24180	0.13620	0.569	-0.6544	0.1708
ThaiOil	PTT	0.50666*	0.10327	0.000	0.1930	0.8204
	Bangchak	0.28595	0.18368	0.710	-0.2756	0.8475
	Chevron	0.31466	0.12727	0.179	-0.0668	0.6961
	Esso	0.34616	0.13597	0.151	-0.0604	0.7528
	IRPC	0.58737*	0.11047	0.000	0.2540	0.9207
	Shell	0.24180	0.13620	0.569	-0.1708	0.6544

*. The mean difference is significant at the 0.05 level.

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: ORG (Games-Howell)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PTT	Bangchak	-0.41155	0.13991	0.075	-0.8478	0.0247
	Chevron	-0.23540	0.08251	0.072	-0.4821	0.0113
	Esso	-0.23620	0.10037	0.226	-0.5361	0.0637
	IRPC	0.22723*	0.06504	0.009	0.0347	0.4198
	Shell	-0.28848	0.10970	0.147	-0.6308	0.0538
	ThaiOil	-0.25628	0.09455	0.111	-0.5431	0.0306
Bangchak	PTT	0.41155	0.13991	0.075	-0.0247	0.8478
	Chevron	0.17615	0.15453	0.913	-0.2975	0.6498
	Esso	0.17536	0.16476	0.936	-0.3257	0.6764
	IRPC	0.63878*	0.14595	0.001	0.1876	1.0900
	Shell	0.12308	0.17060	0.991	-0.3978	0.6440
	ThaiOil	0.15527	0.16128	0.960	-0.3372	0.6478
Chevron	PTT	0.23540	0.08251	0.072	-0.0113	0.4821
	Bangchak	-0.17615	0.15453	0.913	-0.6498	0.2975
	Esso	-0.00080	0.11991	1.000	-0.3578	0.3562
	IRPC	0.46263*	0.09238	0.000	0.1876	0.7377
	Shell	-0.05308	0.12782	1.000	-0.4426	0.3365
	ThaiOil	-0.02088	0.11509	1.000	-0.3659	0.3241
Esso	PTT	0.23620	0.10037	0.226	-0.0637	0.5361
	Bangchak	-0.17536	0.16476	0.936	-0.6764	0.3257
	Chevron	0.00080	0.11991	1.000	-0.3562	0.3578
	IRPC	0.46342*	0.10863	0.001	0.1398	0.7870
	Shell	-0.05228	0.14002	1.000	-0.4755	0.3709
	ThaiOil	-0.02009	0.12850	1.000	-0.4040	0.3639
IRPC	PTT	-0.22723*	0.06504	0.009	-0.4198	-0.0347
	Bangchak	-0.63878*	0.14595	0.001	-1.0900	-0.1876
	Chevron	-0.46263*	0.09238	0.000	-0.7377	-0.1876
	Esso	-0.46342*	0.10863	0.001	-0.7870	-0.1398
	Shell	-0.51571*	0.11730	0.001	-0.8770	-0.1544
	ThaiOil	-0.48351*	0.10328	0.000	-0.7944	-0.1726

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: ORG (Games-Howell)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Shell	PTT	0.28848	0.10970	0.147	-0.0538	0.6308
	Bangchak	-0.12308	0.17060	0.991	-0.6440	0.3978
	Chevron	0.05308	0.12782	1.000	-0.3365	0.4426
	Esso	0.05228	0.14002	1.000	-0.3709	0.4755
	IRPC	0.51571*	0.11730	0.001	0.1544	0.8770
	ThaiOil	0.03219	0.13591	1.000	-0.3810	0.4454
ThaiOil	PTT	0.25628	0.09455	0.111	-0.0306	0.5431
	Bangchak	-0.15527	0.16128	0.960	-0.6478	0.3372
	Chevron	0.02088	0.11509	1.000	-0.3241	0.3659
	Esso	0.02009	0.12850	1.000	-0.3639	0.4040
	IRPC	0.48351*	0.10328	0.000	0.1726	0.7944
	Shell	-0.03219	0.13591	1.000	-0.4454	0.3810

*. The mean difference is significant at the 0.05 level.

Dependent Variable: ECO (Game-Howell)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PTT	Bangchak	-0.36803	0.17709	0.386	-0.9202	0.1841
	Chevron	0.03439	0.11517	1.000	-0.3102	0.3790
	Esso	0.04106	0.12484	1.000	-0.3319	0.4140
	IRPC	-0.01408	0.08065	1.000	-0.2528	0.2246
	Shell	0.52561*	0.11237	0.001	-0.8738	-0.1775
	ThaiOil	-0.53302*	0.12465	0.001	-0.9114	-0.1547
Bangchak	PTT	0.36803	0.17709	0.386	-0.1841	0.9202
	Chevron	0.40242	0.20130	0.426	-0.2122	1.0171
	Esso	0.40909	0.20698	0.439	-0.2208	1.0390
	IRPC	0.35396	0.18374	0.475	-0.2146	0.9225
	Shell	-0.15758	0.19971	0.985	-0.7701	0.4549
	ThaiOil	-0.16498	0.20686	0.984	-0.7959	0.4659

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: ECO (Game-Howell)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Chevron	PTT	-0.03439	0.11517	1.000	-0.3790	0.3102
	Bangchak	-0.40242	0.20130	0.426	-1.0171	0.2122
	Esso	0.00667	0.15730	1.000	-0.4615	0.4749
	IRPC	-0.04847	0.12515	1.000	-0.4216	0.3247
	Shell	-0.56000*	0.14760	0.005	-1.0049	-0.1151
	ThaiOil	-0.56741*	0.15715	0.008	-1.0381	-0.0967
Esso	PTT	-0.04106	0.12484	1.000	-0.4140	0.3319
	Bangchak	-0.40909	0.20698	0.439	-1.0390	0.2208
	Chevron	-0.00667	0.15730	1.000	-0.4749	0.4615
	IRPC	-0.05513	0.13411	1.000	-0.4546	0.3444
	Shell	-0.56667*	0.15527	0.007	-1.0333	-0.1001
	ThaiOil	-0.57407*	0.16437	0.011	-1.0655	-0.0826
IRPC	PTT	0.01408	0.08065	1.000	-0.2246	0.2528
	Bangchak	-0.35396	0.18374	0.475	-0.9225	0.2146
	Chevron	0.04847	0.12515	1.000	-0.3247	0.4216
	Esso	0.05513	0.13411	1.000	-0.3444	0.4546
	Shell	-0.51153*	0.12258	0.002	-0.8860	-0.1370
	ThaiOil	-0.51894*	0.13392	0.004	-0.9227	-0.1152
Shell	PTT	0.52561*	0.11237	0.001	0.1775	0.8738
	Bangchak	0.15758	0.19971	0.985	-0.4549	0.7701
	Chevron	0.56000*	0.14760	0.005	0.1151	1.0049
	Esso	0.56667*	0.15527	0.007	0.1001	1.0333
	IRPC	0.51153*	0.12258	0.002	0.1370	0.8860
	ThaiOil	-0.00741	0.15511	1.000	-0.4766	0.4618
ThaiOil	PTT	0.53302*	0.12465	0.001	0.1547	0.9114
	Bangchak	0.16498	0.20686	0.984	-0.4659	0.7959
	Chevron	0.56741*	0.15715	0.008	0.0967	1.0381
	Esso	0.57407*	0.16437	0.011	0.0826	1.0655
	IRPC	0.51894*	0.13392	0.004	0.1152	0.9227
	Shell	0.00741	0.15511	1.000	-0.4618	0.4766

*. The mean difference is significant at the 0.05 level.

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: JEE (Bonferroni)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PTT	Bangchak	-0.04641	.09736	1.000	-0.3428	0.2500
	Chevron	0.00656	.05827	1.000	-0.1708	0.1839
	Esso	0.28002*	0.05421	0.000	0.1150	0.4450
	IRPC	-0.13921*	0.03922	0.008	-0.2586	-0.0198
	Shell	-0.02789	0.10192	1.000	-0.3381	0.2823
	ThaiOil	-0.21513	0.07713	0.112	-0.4499	0.0196
Bangchak	PTT	0.04641	0.09736	1.000	-0.2500	0.3428
	Chevron	0.05296	0.10990	1.000	-0.2815	0.3875
	Esso	0.32643	0.10780	0.053	-0.0017	0.6545
	IRPC	-0.09280	0.10109	1.000	-0.4005	0.2149
	Shell	0.01852	0.13809	1.000	-0.4018	0.4389
	ThaiOil	-0.16872	0.12095	1.000	-0.5369	0.1994
Chevron	PTT	-0.00656	0.05827	1.000	-0.1839	0.1708
	Bangchak	-0.05296	0.10990	1.000	-0.3875	0.2815
	Esso	0.27347*	0.07441	0.005	0.0470	0.4999
	IRPC	-0.14577	0.06431	0.495	-0.3415	0.0500
	Shell	-0.03444	0.11395	1.000	-0.3813	0.3124
	ThaiOil	-0.22169	0.09244	0.349	-0.5031	0.0597
Esso	PTT	-0.28002*	0.05421	0.000	-0.4450	-0.1150
	Bangchak	-0.32643	0.10780	0.053	-0.6545	0.0017
	Chevron	-0.27347*	0.07441	0.005	-0.4999	-0.0470
	IRPC	-0.41923*	0.06065	0.000	-0.6039	-0.2346
	Shell	-0.30791	0.11193	0.126	-0.6486	0.0328
	ThaiOil	-0.49515*	0.08994	0.000	-0.7689	-0.2214
IRPC	PTT	0.13921*	0.03922	0.008	0.0198	0.2586
	Bangchak	0.09280	0.10109	1.000	-0.2149	0.4005
	Chevron	0.14577	0.06431	0.495	-0.0500	0.3415
	Esso	0.41923*	0.06065	0.000	0.2346	0.6039
	Shell	0.11132	0.10549	1.000	-0.2098	0.4324
	ThaiOil	-0.07592	0.08178	1.000	-0.3249	0.1730

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: JEE (Bonferroni)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Shell	PTT	0.02789	0.10192	1.000	-0.2823	0.3381
	Bangchak	-0.01852	0.13809	1.000	-0.4389	0.4018
	Chevron	0.03444	0.11395	1.000	-0.3124	0.3813
	Esso	0.30791	0.11193	0.126	-0.0328	0.6486
	IRPC	-0.11132	0.10549	1.000	-0.4324	0.2098
	ThaiOil	-0.18724	0.12465	1.000	-0.5667	0.1922
ThaiOil	PTT	0.21513	0.07713	0.112	-0.0196	0.4499
	Bangchak	0.16872	0.12095	1.000	-0.1994	0.5369
	Chevron	0.22169	0.09244	0.349	-0.0597	0.5031
	Esso	0.49515*	0.08994	0.000	0.2214	0.7689
	IRPC	0.07592	0.08178	1.000	-0.1730	0.3249
	Shell	0.18724	0.12465	1.000	-0.1922	0.5667

*. The mean difference is significant at the 0.05 level.

Dependent Variable: OEE (Bonferroni)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PTT	Bangchak	-0.10771	0.11732	1.000	-0.4648	0.2494
	Chevron	-0.00549	0.07022	1.000	-0.2192	0.2082
	Esso	0.21197*	0.06532	0.025	0.0131	0.4108
	IRPC	-0.07180	0.04726	1.000	-0.2157	0.0721
	Shell	0.04785	0.12281	1.000	-0.3260	0.4217
	ThaiOil	-0.45956*	0.09294	0.000	-0.7424	-0.1767
Bangchak	PTT	0.10771	0.11732	1.000	-0.2494	0.4648
	Chevron	0.10222	0.13243	1.000	-0.3009	0.5053
	Esso	0.31968	0.12990	0.294	-0.0757	0.7151
	IRPC	0.03591	0.12182	1.000	-0.3349	0.4067
	Shell	0.15556	0.16640	1.000	-0.3509	0.6621
	ThaiOil	-0.35185	0.14575	0.334	-0.7955	0.0918
Chevron	PTT	0.00549	0.07022	1.000	-0.2082	0.2192
	Bangchak	-0.10222	0.13243	1.000	-0.5053	0.3009
	Esso	0.21746	0.08966	0.324	-0.0555	0.4904
	IRPC	-0.06631	0.07750	1.000	-0.3022	0.1696
	Shell	0.05333	0.13731	1.000	-0.3646	0.4713
	ThaiOil	-0.45407*	0.11140	0.001	-0.7931	-0.1150

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: OEE (Bonferroni)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Esso	PTT	-0.21197*	0.06532	0.025	-0.4108	-0.0131
	Bangchak	-0.31968	0.12990	0.294	-0.7151	0.0757
	Chevron	-0.21746	0.08966	0.324	-0.4904	0.0555
	IRPC	-0.28377*	0.07309	0.002	-0.5062	-0.0613
	Shell	-0.16412	0.13488	1.000	-0.5747	0.2464
	ThaiOil	-0.67153*	0.10838	0.000	-1.0014	-0.3417
IRPC	PTT	0.07180	0.04726	1.000	-0.0721	0.2157
	Bangchak	-0.03591	0.12182	1.000	-0.4067	0.3349
	Chevron	0.06631	0.07750	1.000	-0.1696	0.3022
	Esso	0.28377*	0.07309	0.002	0.0613	0.5062
	Shell	0.11965	0.12712	1.000	-0.2673	0.5066
	ThaiOil	-0.38776*	0.09855	0.002	-0.6877	-0.0878
Shell	PTT	-0.04785	0.12281	1.000	-0.4217	0.3260
	Bangchak	-0.15556	0.16640	1.000	-0.6621	0.3509
	Chevron	-0.05333	0.13731	1.000	-0.4713	0.3646
	Esso	0.16412	0.13488	1.000	-0.2464	0.5747
	IRPC	-0.11965	0.12712	1.000	-0.5066	0.2673
	ThaiOil	-0.50741*	0.15021	0.016	-0.9646	-0.0502
ThaiOil	PTT	0.45956*	0.09294	0.000	0.1767	0.7424
	Bangchak	0.35185	0.14575	0.334	-0.0918	0.7955
	Chevron	0.45407*	0.11140	0.001	0.1150	0.7931
	Esso	0.67153*	0.10838	0.000	0.3417	1.0014
	IRPC	0.38776*	0.09855	0.002	0.0878	0.6877
	Shell	0.50741*	0.15021	0.016	0.0502	0.9646

*. The mean difference is significant at the 0.05 level.

Dependent Variable: IRDE (Bonferroni)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PTT	Bangchak	-0.25149	0.12498	0.932	-0.6319	0.1289
	Chevron	-0.04240	0.07480	1.000	-0.2701	0.1853
	Esso	-0.03368	0.06958	1.000	-0.2455	0.1781
	IRPC	-0.05017	0.05035	1.000	-0.2034	0.1031
	Shell	-0.28526	0.13083	0.617	-0.6835	0.1130
	ThaiOil	-0.24452	0.09900	0.286	-0.5459	0.0568

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: IRDE (Bonferroni)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Bangchak	PTT	0.25149	0.12498	0.932	-0.1289	0.6319
	Chevron	0.20909	0.14107	1.000	-0.2203	0.6385
	Esso	0.21781	0.13837	1.000	-0.2034	0.6390
	IRPC	0.20132	0.12977	1.000	-0.1937	0.5963
	Shell	-0.03377	0.17726	1.000	-0.5733	0.5058
	ThaiOil	0.00697	0.15526	1.000	-0.4656	0.4796
Chevron	PTT	0.04240	0.07480	1.000	-0.1853	0.2701
	Bangchak	-0.20909	0.14107	1.000	-0.6385	0.2203
	Esso	0.00872	0.09551	1.000	-0.2820	0.2994
	IRPC	-0.00777	0.08255	1.000	-0.2590	0.2435
	Shell	-0.24286	0.14627	1.000	-0.6881	0.2024
	ThaiOil	-0.20212	0.11866	1.000	-0.5633	0.1591
Esso	PTT	0.03368	0.06958	1.000	-0.1781	0.2455
	Bangchak	-0.21781	0.13837	1.000	-0.6390	0.2034
	Chevron	-0.00872	0.09551	1.000	-0.2994	0.2820
	IRPC	-0.01648	0.07786	1.000	-0.2535	0.2205
	Shell	-0.25157	0.14368	1.000	-0.6889	0.1858
	ThaiOil	-0.21083	0.11545	1.000	-0.5622	0.1406
IRPC	PTT	0.05017	0.05035	1.000	-0.1031	0.2034
	Bangchak	-0.20132	0.12977	1.000	-0.5963	0.1937
	Chevron	0.00777	0.08255	1.000	-0.2435	0.2590
	Esso	0.01648	0.07786	1.000	-0.2205	0.2535
	Shell	-0.23509	0.13541	1.000	-0.6473	0.1771
	ThaiOil	-0.19435	0.10498	1.000	-0.5139	0.1252
Shell	PTT	0.28526	0.13083	0.617	-0.1130	0.6835
	Bangchak	0.03377	0.17726	1.000	-0.5058	0.5733
	Chevron	0.24286	0.14627	1.000	-0.2024	0.6881
	Esso	0.25157	0.14368	1.000	-0.1858	0.6889
	IRPC	0.23509	0.13541	1.000	-0.1771	0.6473
	ThaiOil	0.04074	0.16001	1.000	-0.4463	0.5278
ThaiOil	PTT	0.24452	0.09900	0.286	-0.0568	0.5459
	Bangchak	-0.00697	0.15526	1.000	-0.4796	0.4656
	Chevron	0.20212	0.11866	1.000	-0.1591	0.5633
	Esso	0.21083	0.11545	1.000	-0.1406	0.5622
	IRPC	0.19435	0.10498	1.000	-0.1252	0.5139
	Shell	-0.04074	0.16001	1.000	-0.5278	0.4463

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: ERDE (Games-Howell)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PTT	Bangchak	-0.23570	0.17621	0.830	-0.7870	0.3156
	Chevron	0.07711	0.09925	0.987	-0.2203	0.3745
	Esso	0.34969*	0.10527	0.019	0.0349	0.6645
	IRPC	-0.08467	0.06863	0.881	-0.2880	0.1186
	Shell	0.01961	0.11573	1.000	-0.3424	0.3816
	ThaiOil	0.01683	0.18428	1.000	-0.5465	0.5801
Bangchak	PTT	0.23570	0.17621	0.830	-0.3156	0.7870
	Chevron	0.31280	0.19657	0.688	-0.2900	0.9156
	Esso	0.58539	0.19968	0.069	-0.0256	1.1963
	IRPC	0.15103	0.18302	0.981	-0.4169	0.7189
	Shell	0.25530	0.20538	0.874	-0.3738	0.8844
	ThaiOil	0.25253	0.25050	0.951	-0.5048	1.0098
Chevron	PTT	-0.07711	0.09925	0.987	-0.3745	0.2203
	Bangchak	-0.31280	0.19657	0.688	-0.9156	0.2900
	Esso	0.27258	0.13665	0.421	-0.1341	0.6793
	IRPC	-0.16178	0.11090	0.769	-0.4924	0.1688
	Shell	-0.05750	0.14486	1.000	-0.4966	0.3816
	ThaiOil	-0.06028	0.20384	1.000	-0.6765	0.5559
Esso	PTT	-0.34969*	0.10527	0.019	-0.6645	-0.0349
	Bangchak	-0.58539	0.19968	0.069	-1.1963	0.0256
	Chevron	-0.27258	0.13665	0.421	-0.6793	0.1341
	IRPC	-0.43436*	0.11632	0.005	-0.7808	-0.0880
	Shell	-0.33008	0.14905	0.299	-0.7806	0.1205
	ThaiOil	-0.33286	0.20684	0.677	-0.9573	0.2916
IRPC	PTT	0.08467	0.06863	0.881	-0.1186	0.2880
	Bangchak	-0.15103	0.18302	0.981	-0.7189	0.4169
	Chevron	0.16178	0.11090	0.769	-0.1688	0.4924
	Esso	0.43436*	0.11632	0.005	0.0880	0.7808
	Shell	0.10428	0.12586	0.981	-0.2830	0.4915
	ThaiOil	0.10150	0.19081	0.998	-0.4790	0.6820

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: ERDE (Games-Howell)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Shell	PTT	-0.01961	0.11573	1.000	-0.3816	0.3424
	Bangchak	-0.25530	0.20538	0.874	-0.8844	0.3738
	Chevron	0.05750	0.14486	1.000	-0.3816	0.4966
	Esso	0.33008	0.14905	0.299	-0.1205	0.7806
	IRPC	-0.10428	0.12586	0.981	-0.4915	0.2830
	ThaiOil	-0.00278	0.21235	1.000	-0.6451	0.6396
ThaiOil	PTT	-0.01683	0.18428	1.000	-0.5801	0.5465
	Bangchak	-0.25253	0.25050	0.951	-1.0098	0.5048
	Chevron	0.06028	0.20384	1.000	-0.5559	0.6765
	Esso	0.33286	0.20684	0.677	-0.2916	0.9573
	IRPC	-0.10150	0.19081	0.998	-0.6820	0.4790
	Shell	0.00278	0.21235	1.000	-0.6396	0.6451

*. The mean difference is significant at the 0.05 level.

Dependent Variable: FEXP (Games-Howell)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PTT	Bangchak	0.15472	0.16855	0.967	-0.3736	0.6830
	Chevron	0.03059	0.07565	1.000	-0.1961	0.2573
	Esso	.32977*	0.06812	0.000	0.1263	0.5333
	IRPC	0.04175	0.04981	0.981	-0.1058	0.1893
	Shell	-0.45816*	0.11796	0.008	-0.8290	-0.0873
	ThaiOil	-0.32529*	0.06288	0.000	-0.5158	-0.1348
Bangchak	PTT	-0.15472	0.16855	0.967	-0.6830	0.3736
	Chevron	-0.12413	0.18126	0.993	-0.6838	0.4356
	Esso	0.17504	0.17826	0.955	-0.3770	0.7271
	IRPC	-0.11297	0.17209	0.994	-0.6497	0.4238
	Shell	-0.61288	0.20260	0.054	-1.2325	0.0068
	ThaiOil	-0.48001	0.17632	0.119	-1.0273	0.0673
Chevron	PTT	-0.03059	0.07565	1.000	-0.2573	0.1961
	Bangchak	0.12413	0.18126	0.993	-0.4356	0.6838
	Esso	0.29917*	0.09532	0.031	0.0153	0.5830
	IRPC	0.01115	0.08323	1.000	-0.2371	0.2594
	Shell	-0.48875*	0.13550	0.011	-0.9039	-0.0736
	ThaiOil	-0.35588*	0.09165	0.003	-0.6298	-0.0820

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: FEXP (Games-Howell)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Esso	PTT	-0.32977*	0.06812	0.000	-0.5333	-0.1263
	Bangchak	-0.17504	0.17826	0.955	-0.7271	0.3770
	Chevron	-0.29917*	0.09532	0.031	-0.5830	-0.0153
	IRPC	-0.28802*	0.07646	0.004	-0.5155	-0.0606
	Shell	-0.78792*	0.13145	0.000	-1.1923	-0.3835
	ThaiOil	-0.65505*	0.08555	0.000	-0.9106	-0.3995
IRPC	PTT	-0.04175	0.04981	0.981	-0.1893	0.1058
	Bangchak	0.11297	0.17209	0.994	-0.4238	0.6497
	Chevron	-0.01115	0.08323	1.000	-0.2594	0.2371
	Esso	0.28802*	0.07646	0.004	0.0606	0.5155
	Shell	-0.49990*	0.12296	0.004	-0.8828	-0.1171
	ThaiOil	-0.36703*	0.07183	0.000	-0.5824	-0.1516
Shell	PTT	0.45816*	0.11796	0.008	0.0873	0.8290
	Bangchak	0.61288	0.20260	0.054	-0.0068	1.2325
	Chevron	0.48875*	0.13550	0.011	0.0736	0.9039
	Esso	0.78792*	0.13145	0.000	0.3835	1.1923
	IRPC	0.49990*	0.12296	0.004	0.1171	0.8828
	ThaiOil	0.13287	0.12881	0.944	-0.2651	0.5308
ThaiOil	PTT	0.32529*	0.06288	0.000	0.1348	0.5158
	Bangchak	0.48001	0.17632	0.119	-0.0673	1.0273
	Chevron	0.35588*	0.09165	0.003	0.0820	0.6298
	Esso	0.65505*	0.08555	0.000	0.3995	0.9106
	IRPC	0.36703*	0.07183	0.000	0.1516	0.5824
	Shell	-0.13287	0.12881	0.944	-0.5308	0.2651

*. The mean difference is significant at the 0.05 level.

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: EEXP (Games-Howell)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PTT	Bangchak	-0.20750	0.12312	0.630	-0.5917	0.1767
	Chevron	-0.13917	0.07404	0.497	-0.3607	0.0823
	Esso	0.00931	0.08302	1.000	-0.2388	0.2574
	IRPC	0.02507	0.05566	0.999	-0.1397	0.1899
	Shell	-0.22417	0.10633	0.371	-0.5571	0.1088
	ThaiOil	-0.44361*	0.07943	0.000	-0.6846	-0.2026
Bangchak	PTT	0.20750	0.12312	0.630	-0.1767	0.5917
	Chevron	0.06833	0.13744	0.999	-0.3525	0.4892
	Esso	0.21681	0.14248	0.731	-0.2174	0.6511
	IRPC	0.23257	0.12848	0.549	-0.1649	0.6300
	Shell	-0.01667	0.15721	1.000	-0.4962	0.4628
	ThaiOil	-0.23611	0.14042	0.631	-0.6655	0.1933
Chevron	PTT	0.13917	0.07404	0.497	-0.0823	0.3607
	Bangchak	-0.06833	0.13744	0.999	-0.4892	0.3525
	Esso	0.14847	0.10307	0.779	-0.1583	0.4553
	IRPC	0.16424	0.08264	0.426	-0.0819	0.4104
	Shell	-0.08500	0.12263	0.992	-0.4598	0.2898
	ThaiOil	-0.30444*	0.10020	0.044	-0.6045	-0.0044
Esso	PTT	-0.00931	0.08302	1.000	-0.2574	0.2388
	Bangchak	-0.21681	0.14248	0.731	-0.6511	0.2174
	Chevron	-0.14847	0.10307	0.779	-0.4553	0.1583
	IRPC	0.01576	0.09078	1.000	-0.2545	0.2861
	Shell	-0.23347	0.12825	0.539	-0.6234	0.1564
	ThaiOil	-0.45292*	0.10701	0.001	-0.7727	-0.1331
IRPC	PTT	-0.02507	0.05566	0.999	-0.1899	0.1397
	Bangchak	-0.23257	0.12848	0.549	-0.6300	0.1649
	Chevron	-0.16424	0.08264	0.426	-0.4104	0.0819
	Esso	-0.01576	0.09078	1.000	-0.2861	0.2545
	Shell	-0.24924	0.11249	0.309	-0.5973	0.0988
	ThaiOil	-0.46868*	0.08751	0.000	-0.7319	-0.2055

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: EEXP (Games-Howell)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Shell	PTT	0.22417	0.10633	0.371	-0.1088	0.5571
	Bangchak	0.01667	0.15721	1.000	-0.4628	0.4962
	Chevron	0.08500	0.12263	0.992	-0.2898	0.4598
	Esso	0.23347	0.12825	0.539	-0.1564	0.6234
	IRPC	0.24924	0.11249	0.309	-0.0988	0.5973
	ThaiOil	-0.21944	0.12596	0.591	-0.6040	0.1652
ThaiOil	PTT	0.44361*	0.07943	0.000	0.2026	0.6846
	Bangchak	0.23611	0.14042	0.631	-0.1933	0.6655
	Chevron	0.30444*	0.10020	0.044	0.0044	0.6045
	Esso	0.45292*	0.10701	0.001	0.1331	0.7727
	IRPC	0.46868*	0.08751	0.000	0.2055	0.7319
	Shell	0.21944	0.12596	0.591	-0.1652	0.6040

*. The mean difference is significant at the 0.05 level.

Dependent Variable: PEXP (Bonferroni)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PTT	Bangchak	-0.08562	0.11245	1.000	-0.4279	0.2567
	Chevron	0.05964	0.06730	1.000	-0.1452	0.2645
	Esso	-0.24822*	0.06261	0.002	-0.4388	-0.0577
	IRPC	0.07779	0.04530	1.000	-0.0601	0.2157
	Shell	-0.34370	0.11771	0.075	-0.7020	0.0146
	ThaiOil	-0.40604*	0.08907	0.000	-0.6772	-0.1349
Bangchak	PTT	0.08562	0.11245	1.000	-0.2567	0.4279
	Chevron	0.14525	0.12692	1.000	-0.2411	0.5316
	Esso	-0.16260	0.12450	1.000	-0.5416	0.2164
	IRPC	0.16340	0.11676	1.000	-0.1920	0.5188
	Shell	-0.25808	0.15948	1.000	-0.7435	0.2274
	ThaiOil	-0.32043	0.13969	0.461	-0.7456	0.1048
Chevron	PTT	-0.05964	0.06730	1.000	-0.2645	0.1452
	Bangchak	-0.14525	0.12692	1.000	-0.5316	0.2411
	Esso	-0.30785*	0.08593	0.007	-0.5694	-0.0463
	IRPC	0.01815	0.07427	1.000	-0.2079	0.2442
	Shell	-0.40333*	0.13161	0.047	-0.8039	-0.0027
	ThaiOil	-0.46568*	0.10677	0.000	-0.7907	-0.1407

Appendix D.11 Table of multiple comparisons (Cont.)

Dependent Variable: PEXP (Bonferroni)

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Esso	PTT	0.24822*	0.06261	0.002	0.0577	0.4388
	Bangchak	0.16260	0.12450	1.000	-0.2164	0.5416
	Chevron	0.30785*	0.08593	0.007	0.0463	0.5694
	IRPC	0.32600*	0.07005	0.000	0.1128	0.5392
	Shell	-0.09548	0.12927	1.000	-0.4890	0.2980
	ThaiOil	-0.15783	0.10387	1.000	-0.4740	0.1583
IRPC	PTT	-0.07779	0.04530	1.000	-0.2157	0.0601
	Bangchak	-0.16340	0.11676	1.000	-0.5188	0.1920
	Chevron	-0.01815	0.07427	1.000	-0.2442	0.2079
	Esso	-0.32600*	0.07005	0.000	-0.5392	-0.1128
	Shell	-0.42148*	0.12183	0.012	-0.7923	-0.0506
	ThaiOil	-0.48383*	0.09445	0.000	-0.7713	-0.1963
Shell	PTT	0.34370	0.11771	0.075	-0.0146	0.7020
	Bangchak	0.25808	0.15948	1.000	-0.2274	0.7435
	Chevron	0.40333*	0.13161	0.047	0.0027	0.8039
	Esso	0.09548	0.12927	1.000	-0.2980	0.4890
	IRPC	0.42148*	0.12183	0.012	0.0506	0.7923
	ThaiOil	-0.06235	0.14396	1.000	-0.5005	0.3759
ThaiOil	PTT	0.40604*	0.08907	0.000	0.1349	0.6772
	Bangchak	0.32043	0.13969	0.461	-0.1048	0.7456
	Chevron	0.46568*	0.10677	0.000	0.1407	0.7907
	Esso	0.15783	0.10387	1.000	-0.1583	0.4740
	IRPC	0.48383*	0.09445	0.000	0.1963	0.7713
	Shell	0.06235	0.14396	1.000	-0.3759	0.5005

*. The mean difference is significant at the 0.05 level.

Appendix D.12 Table of descriptive statistics

	PTT	IRPC	ESSO	CHEVRON	TOP	BCP	SHELL	Overall
EMP1	5.00	4.32	5.31	5.40	5.46	5.48	5.40	5.00
EMP2	4.97	4.45	5.12	5.34	5.50	5.24	5.00	4.97
EMP3	5.00	4.59	5.03	5.33	5.56	5.24	5.20	5.00
EMP4	5.05	4.80	5.24	5.12	5.80	5.09	5.00	5.05
EMP5	5.38	5.13	5.75	5.37	5.65	5.70	5.70	5.38
EMP6	5.30	5.07	5.64	5.24	5.67	5.64	5.30	5.30
EMP7	5.20	5.02	5.29	5.37	5.69	5.42	5.50	5.20
EMP8	4.94	4.57	5.25	5.14	5.78	5.09	5.60	4.94
EMP9	5.02	4.57	5.42	5.17	5.72	5.18	5.30	5.02
EMP10	4.40	3.89	4.87	4.20	5.22	3.97	4.80	4.40
EMP	5.03	4.64	5.29	5.17	5.61	5.21	5.28	5.03
DA1	5.07	4.91	5.52	5.34	5.76	4.91	5.30	5.07
DA2	5.40	5.20	5.62	5.49	5.91	5.61	5.60	5.40
DA3	5.41	5.22	5.55	5.47	5.85	5.42	5.80	5.41
DA4	5.08	4.81	4.97	5.23	5.61	5.06	5.30	5.08
DA5	5.42	5.40	5.46	5.51	5.94	5.94	5.50	5.42
DA6	5.47	5.47	5.44	5.56	5.91	5.94	6.00	5.47
DA7	6.01	5.98	6.12	6.29	6.11	6.21	5.90	6.01
DA	5.41	5.28	5.53	5.56	5.87	5.58	5.63	5.41
ORG1	5.94	5.66	6.23	6.14	6.30	6.55	6.20	5.94
ORG2	5.81	5.77	5.93	5.92	6.11	6.36	6.00	5.81
ORG3	5.85	5.46	5.90	6.00	6.28	6.39	5.90	5.85
ORG4	5.65	5.40	5.78	5.90	5.94	6.33	5.80	5.65
ORG5	5.79	5.60	6.14	6.35	5.94	5.94	6.00	5.79
ORG6	5.38	5.10	5.58	5.62	5.54	5.64	5.50	5.38
ORG7	5.20	4.87	5.42	5.27	5.44	5.52	5.40	5.20
ORG8	5.22	4.83	5.86	5.54	5.37	5.85	5.50	5.22
ORG9	4.98	5.84	5.03	5.09	4.72	5.03	5.70	4.98

Appendix D.12 Table of descriptive statistics (Cont.)

	PTT	IRPC	ESSO	CHEVRON	TOP	BCP	SHELL	Overall
ORG10	5.88	5.81	5.66	6.12	6.06	6.61	6.40	5.88
ORG11	5.68	5.30	5.96	6.19	6.04	5.94	5.80	5.68
ORG12	5.82	5.55	6.22	6.19	6.15	5.91	6.00	5.82
ORG13	5.71	5.49	6.00	5.38	6.09	5.94	6.20	5.71
ORG	5.61	5.44	5.82	5.82	5.84	6.00	5.88	5.61
ECO1	5.61	5.68	5.77	5.00	6.13	5.85	6.00	5.61
ECO2	5.43	5.35	5.03	5.62	5.98	5.76	6.10	5.43
ECO3	5.70	5.63	5.69	5.90	6.11	6.12	6.10	5.70
ECO	5.58	5.55	5.50	5.51	6.07	5.91	6.07	5.58
JEE1	3.95	4.04	3.85	3.95	3.87	4.00	3.90	3.96
JEE2	3.89	3.98	3.86	3.92	3.65	4.00	3.90	3.90
JEE3	3.65	3.82	3.16	3.47	3.72	3.42	3.60	3.62
JEE4	3.39	3.56	3.34	3.70	3.93	3.58	3.90	3.48
JEE5	3.57	3.76	3.19	3.50	3.94	3.64	3.50	3.59
JEE6	3.66	3.73	3.34	3.64	3.87	3.76	3.60	3.65
JEE7	3.84	3.93	3.56	3.72	3.94	3.73	3.70	3.82
JEE8	3.21	3.33	2.58	2.99	3.63	3.09	2.70	3.17
JEE9	3.09	3.35	2.86	3.30	3.63	3.45	3.70	3.18
JEE	3.58	3.72	3.30	3.58	3.80	3.63	3.61	3.60
OEE1	3.74	3.73	3.60	3.74	4.20	3.82	3.30	3.74
OEE2	3.73	3.70	3.43	3.67	4.17	3.55	3.40	3.70
OEE3	3.42	3.50	3.18	3.68	3.96	3.73	4.40	3.49
OEE4	3.54	3.65	3.37	3.49	3.93	3.61	3.40	3.55
OEE5	3.61	3.63	3.47	3.53	4.06	3.70	3.40	3.61
OEE6	3.65	3.91	3.36	3.61	4.13	3.94	3.50	3.70
OEE	3.62	3.69	3.40	3.62	4.08	3.73	3.57	3.63
IRDE1	5.10	5.25	5.06	5.47	4.94	5.30	4.70	5.15
IRDE2	4.13	4.06	4.14	3.74	4.00	3.70	4.50	4.08
IRDE3	5.48	5.60	5.64	5.59	5.74	5.82	5.70	5.55

Appendix D.12 Table of descriptive statistics (Cont.)

	PTT	IRPC	ESSO	CHEVRON	TOP	BCP	SHELL	Overall
IRDE4	5.56	5.63	5.51	5.66	5.74	5.82	6.10	5.60
IRDE5	5.41	5.59	5.42	5.27	5.52	5.61	5.70	5.45
IRDE6	5.09	5.16	4.90	5.05	5.48	5.33	5.40	5.12
IRDE7	3.83	3.65	4.18	4.12	4.89	4.79	4.50	3.93
IRDE	4.94	4.99	4.98	4.99	5.19	5.20	5.23	4.98
ERDE1	5.14	5.30	4.86	4.97	5.13	5.24	5.60	5.15
ERDE2	5.16	5.23	4.74	5.09	5.30	5.39	4.40	5.13
ERDE3	4.92	4.97	4.60	4.85	4.80	5.27	4.90	4.90
ERDE4	4.95	5.02	4.58	4.96	4.89	5.21	5.20	4.94
ERDE	5.04	5.13	4.70	4.97	5.03	5.28	5.03	5.03
FEXP1	3.80	3.79	3.54	3.80	4.02	3.73	4.10	3.79
FEXP2	3.79	3.70	3.46	3.89	3.91	3.73	4.40	3.77
FEXP3	3.78	3.72	3.51	3.76	3.83	3.67	4.30	3.75
FEXP4	3.77	3.76	3.39	3.66	4.22	3.55	4.20	3.75
FEXP5	3.69	3.56	3.34	3.65	4.11	3.52	4.30	3.66
FEXP6	3.68	3.65	3.69	3.66	4.04	3.42	4.00	3.69
FEXP7	3.72	3.68	3.16	3.62	4.20	3.58	4.10	3.68
FEXP8	3.70	3.75	3.20	3.65	4.20	3.52	4.20	3.69
FEXP	3.74	3.70	3.41	3.71	4.07	3.59	4.20	3.72
EEXP1	3.65	3.73	3.18	3.85	4.33	3.97	4.00	3.68
EEXP2	3.80	3.88	3.86	4.03	4.35	4.21	4.30	3.88
EEXP3	4.05	3.94	4.13	4.03	4.39	4.24	4.00	4.05
EEXP4	3.99	3.85	4.30	4.15	4.20	3.91	4.10	4.01
EEXP	3.87	3.85	3.87	4.02	4.32	4.08	4.10	3.91
PEXP1	3.89	3.79	4.25	3.86	4.17	3.85	4.30	3.92
PEXP2	3.87	3.90	4.33	3.80	4.13	4.09	4.20	3.93
PEXP3	3.77	3.55	3.97	3.77	4.09	3.76	4.10	3.76
PEXP4	3.69	3.58	3.84	3.40	4.19	3.79	3.90	3.69
PEXP5	3.65	3.68	3.88	3.66	4.24	3.82	4.10	3.72
PEXP6	3.75	3.68	3.85	3.79	4.26	3.85	4.10	3.78
PEXP	3.77	3.70	4.02	3.71	4.18	3.86	4.12	3.80

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