

PEOPLE-RELATED TOTAL QUALITY MANAGEMENT  
PRACTICES, JOB SATISFACTION AND TURNOVER  
INTENTION IN ELECTRICAL AND ELECTRONICS  
INDUSTRY IN MALAYSIA

YUE JING WEN

DOCTOR OF PHILOSOPHY

FACULTY OF BUSINESS AND FINANCE  
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**PEOPLE-RELATED TOTAL QUALITY MANAGEMENT  
PRACTICES, JOB SATISFACTION AND TURNOVER INTENTION  
IN ELECTRICAL AND ELECTRONICS INDUSTRY IN MALAYSIA**

By

**YUE JING WEN**

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## **DEDICATION**

*My Gracious God*  
*For sustaining me through adversity*

*My beloved parents*  
*Whose loving memories live on in every milestone of my life*

*My mother-in-law*  
*For taking care of my children*

*My husband*  
*For inspiring me to realise my dream*

*My princesses*  
*For giving me abundant joy*

## **ABSTRACT**

### **PEOPLE-RELATED TOTAL QUALITY MANAGEMENT PRACTICES, JOB SATISFACTION AND TURNOVER INTENTION IN ELECTRICAL AND ELECTRONICS INDUSTRY IN MALAYSIA**

**Yue Jing Wen**

Electrical and Electronics (E&E) industry in Malaysia is currently facing high employee turnover. Employee turnover is part of human capital risk that could bring detrimental effects to organisations if it is not managed effectively. Arising from this concern, this research is motivated to analyse whether people-related Total Quality Management (TQM) practices can enhance employee satisfaction and lower turnover intention among the employees. This study aims to assess the multidimensional and mediating relationships between turnover intention, job satisfaction, and six people-related TQM practices, namely, teamwork, employee involvement, reward and recognition, employee empowerment, training and development, and leadership. After conducting an extensive literature review, nineteen hypotheses are constructed and tested using quantitative cross-sectional research based on 244 valid responses from the employees of ISO-certified E&E companies in Malaysia. The survey findings are analysed using the “Partial Least Square approach to Structural Equation Modeling” via SmartPLS version 3.0. Results from the analysis indicate that leadership,

reward and recognition, teamwork, and empowerment lead to enhanced job satisfaction. In addition, leadership, training and development, and empowerment reduce turnover intention. Job satisfaction is found to mediate the links between reward and recognition, teamwork, leadership, empowerment and turnover intention. A major theoretical contribution of this study is the validation of the people-related TQM practices–attitude–behaviour relationship based on Social Exchange Theory and Job Embeddedness Theory. Practically, this study has developed recommendations and a Strategic Human Capital Risk Management Framework for the industry practitioners and policymakers to manage human capital risks effectively. It is also important for organisations to balance hard TQM practices with people-related TQM practices and place justifiable focus on employee satisfaction. Recognising the importance of E&E industry, policymakers should collaborate with industry players to produce and retain quality human capital in order to attain sustainable competitive advantage for E&E industry and the nation.

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## APPROVAL SHEET

This thesis entitled “**PEOPLE-RELATED TOTAL QUALITY MANAGEMENT PRACTICES, JOB SATISFACTION AND TURNOVER INTENTION IN ELECTRICAL AND ELECTRONICS INDUSTRY IN MALAYSIA**” was prepared by YUE JING WEN and submitted as partial fulfilment of the requirements for the degree of Doctor of Philosophy at Universiti Tunku Abdul Rahman.

Approved by:

---

(Prof. Dr. CHOONG CHEE KEONG)

Date: 18 November 2019

Supervisor

Department of Economics

Faculty of Business and Finance

Universiti Tunku Abdul Rahman

---

(Dr. WONG KEE LUEN)

Date: 18 November 2019

Co-supervisor

Department of Commerce and Accountancy

Faculty of Business and Finance

Universiti Tunku Abdul Rahman

## SUBMISSION SHEET

### FACULTY OF BUSINESS AND FINANCE UNIVERSITI TUNKU ABDUL RAHMAN

Date: 18 November 2019

#### SUBMISSION OF THESIS

It is hereby certified that **YUE JING WEN** (ID No: **10ABD07086**) has completed this thesis entitled “**People-Related Total Quality Management Practices, Job Satisfaction and Turnover Intention in Electrical and Electronics Industry in Malaysia**” under the supervision of Prof. Dr. Choong Chee Keong (Supervisor) from the Department of Economics, Faculty of Business and Finance, and Dr. Wong Kee Luen (Co-Supervisor) from the Department of Commerce and Accountancy, Faculty of Business and Finance.

I understand that University will upload softcopy of my thesis in pdf format into UTAR Institutional Repository, which may be made accessible to UTAR community and public.

Yours truly,

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YUE JING WEN



## DECLARATION

I YUE JING WEN hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UTAR or other institutions.

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(YUE JING WEN)

Date: 18 November 2019

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## LIST OF ABBREVIATIONS

AMOS	Analysis of Moment Structure
AVE	Average Variance Extracted
CB-SEM	Covariance-based Structural Equation Modelling
CR	Composite Reliability
CWQC	Company-wide Quality Control
D&D	Design and Development
E&E	Electrical and Electronics
EP	Empowerment
ERM	Enterprise Risk Management
EV	Employee Involvement
FMEA	Failure Mode and Effect Analysis
FMM	Federation of Malaysian Manufacturers
GDP	Gross Domestic Product
HR	Human Resource
HRM	Human Resource Management
ISO	International Organisation for Standardisation
JUSE	Japanese Union of Scientists and Engineers
JS	Job Satisfaction
LD	Leadership
LISREL	Linear Structural Relations
M	Mean
MIDA	Malaysian Investment Development Authority

MNC	Multi-National Corporations
People-CMM	People Capability and Maturity Model
PDCA	Plan-Do-Check-Act
PLS	Partial Least Squares
QCC	Quality Control Circles
R&D	Research and Design
$R^2$	Coefficient of Determination
RR	Reward and Recognition
RO	Research Objective
RQ	Research Question
SD	Standard Deviation
SEM	Structural Equation Modelling
SET	Social Exchange Theory
SME	Small Medium Enterprise
SPC	Statistical Process Control
SPSS	Statistical Package for Social Sciences
STEM	Science, Technology, Engineering and Mathematics
TD	Training and Development
TI	Turnover Intention
TQM	Total Quality Management
TQC	Total Quality Control
TW	Teamwork
VIF	Variance Inflation Factor

## CHAPTER 1

### INTRODUCTION

The practice of Total Quality Management has been much talked about even though it has come into existence many decades ago. Much less is known, however, about the experiences of Electrical and Electronics manufacturing firms in Malaysia with Total Quality Management, specifically from a human resource perspective. This relatively untapped area will be scrutinised in this study.

#### **1.1 Background of Study**

Quality is inevitably a powerful positioning in ensuring sustainable success of an organisation. In today's exceedingly competitive and market driven environment, companies are engaging with discerning customers who desire and demand nothing less than the best of brands. Facing these challenges, business organisations in Malaysia have embraced Total Quality Management as an integral component of their strategic management in order to raise their level of competitiveness to survive in this twenty-first century economy (Abdul-Aziz, Chan, & Metcalfe, 2000; Agus & Abdullah, 2000; Ahmad & Yusof, 2010; Eng & Yusof, 2003; Samat, Ramayah, & Saad, 2006; Sohail, Sohal, & Millen, 2004).

Total Quality Management, prevalently known by its three-letter acronym TQM, is generally a combination of management theories, concepts, thinking, tools and techniques that work together to support sustainable performance (Zairi, 2013). The five main quality pioneers of TQM, specifically, Crosby (1979), Deming (1986), Feigenbaum (1991), Ishikawa (1985), and Juran (1988) have general understanding that TQM is fundamentally a management approach that integrates all the functional tasks in an organisation in the quest to advance the quality of products and services and ultimately to increase customer satisfaction (Yue, Ooi, & Choong, 2011). Generally, TQM necessitates total participation of top management and all employees, regardless of positions, departments and levels, in the mission of striving for quality goals. In the words of Deming (1986), “quality is everyone’s responsibility”.

Originated from the statistical and engineering background, TQM initially emphasises on the hard aspects of quality management that comprise quality standard and procedures as well as quality techniques and tools. Today, TQM has a greater attention on people-related perspectives of quality management that include teamwork, employee involvement, employee empowerment, training and development, reward and recognition, and leadership (Lewis, Pun, & Lalla, 2006; Prajogo & Cooper, 2010; Jayasuriya & Wedage, 2016) which are the focus of this study.

Employees, nowadays, are viewed in a more humanistic approach, from being perceived as “salaried slaves” (Kruger, 1998, p. 296) to being appreciated as valuable strategic asset of an organisation. Without the efforts and contributions of the employees, even top notch management system and cutting-edge technology will be in vain (Yue et al., 2011). A highly competitive business organisation requires committed and competent human capital that possesses the appropriate skills, knowledge, abilities, and talents to enhance its productivity and performance to meet the challenges faced by the economy. In other words, employees are integral in leading organisations to develop sustainable competitive advantage through the management of quality (Dwyer, 2002).

Quality management efforts can only realise its full potential when employees are well taken care of. This underscores the importance of employee job satisfaction in ensuring positive outcomes from the implementation of quality initiatives. Generally, job satisfaction is described as the positive emotional feeling the employees have in relation to their jobs (Locke, 1976; Greenberg & Baron, 2003). Employee job satisfaction is one of the crucial determining factors of the success of an organisation (Harter, Schmidt, & Hayes, 2002). Organisations have proven that effective implementation of people-related TQM practices such as teamwork, employee involvement, reward and recognition, employee empowerment, training and development, and leadership (Lam, 1996; Morrow, 1997; Ooi, Bakar, Arumugam, Vellapan, & Loke, 2007; Ooi, Arumugam, Teh & Chong, 2008; Prajogo & Cooper, 2010) can contribute to the achievement of job satisfaction

among the employees. Satisfied employees prefer long term employment with the organisation and are unlikely to seek employment elsewhere.

Turnover intention, according to Tett and Meyer (1993), is an intentional plan of an employee to leave an organisation which includes the employee having a simple thought of quitting and voicing the wish to resign. Excessive employee turnover causes the organisation weighty loss in resources and escalations in costs (Cascio, 1991). Thus, management is extremely apprehensive about turnover and spends significant efforts and time to better apprehend ways to overcome turnover problems (Cascio, 1991). It comes as no surprise that employee turnover has been identified as one of the critical challenges faced by most business organisations. In the pursuit of retaining talents in the organisations, Sommer and Merritt (1994) and Carlopio and Gardner (1996) found that the application of TQM practices and the involvement of employees in TQM activities would boost the affective response of the employees and in turn resulted in lower turnover intention.

In a nutshell, organisations that truly put their employees at the forefront of their businesses and implement quality practices that promote the overall satisfaction of its employees will be rewarded with low turnover rates. Thus, this research aims to examine the linkages among the multidimensionality of people-related TQM practices (i.e. teamwork, employee involvement, reward and recognition, employee empowerment, training and development, and leadership), job satisfaction and turnover



intention in the manufacturing sector and more precisely, the Electrical and Electronics (E&E) sector in Malaysia.

## **1.2 Overview of E&E Industry in Malaysia**

This section gives an overview of the E&E industry in Malaysia in terms of its historical development, significance, global trends, and justification for selecting the industry as the focus of research.

### **1.2.1 Historical Development of E&E Industry in Malaysia**

Malaysia, strategically situated in the centre of South East Asia, is a developing nation with the aspiration to become a fully developed nation characterised by high-income and knowledge-based economy by year 2020. Known as a dynamic and progressive country, the transformation of Malaysia since gaining Independence in 1957 is strikingly impressive.

The formation years of Malaysia's economic development was based on resource and agriculture industries such as rubber, food, textile, wood products and petrochemicals. As the world witnessed the evolution of technology coupled with the discovery of semiconductor, the economic landscape of Malaysia shifted towards an export-based economy. The major transformation is the setting up of semiconductor manufacturing companies in Malaysia in the 1970s.

The E&E industry in Malaysia traced its formation in 1972. The development of E&E industry can be categorised into four phases spanning from 1970s to 2010s (Wong, 2013). In the 1970s, foreign multi-national corporations (MNCs) set up the assembly and manufacturing plants in Penang, Malaysia. In the 1980s, the MNCs started to undertake more engineering responsibilities in the manufacturing processes in order to facilitate the industry to progress to the next level of development (Wong, 2013). The third phase in the early 1990s saw the emergence of personal computer board assembly and system integration as well as disk drive. This signified the shift from focusing on “manufacturing only” to “manufacturing plus design and development” (Wong, 2013). The fourth phase occurred in the 2000s when the industry started to attract other industries beyond semiconductors such as optoelectronics, solar cell and medical devices. Now, the 2010s marks the expansion of Research and Development (R&D) as well as Design and Development (D&D) centres, embedded system development, high speed communication and mobile devices, and migration to green products (Wong, 2013). Presently, E&E industry is gradually progressing from undertaking low value-added activities to high technology and high value-added products.

According to the Malaysian Investment Development Authority (MIDA) (2016), the E&E industry comprises companies that engage primarily in the design and manufacturing of diverse products that can be divided into four subsectors. The electronic components subsector consists of printed circuits and semiconductor devices. The industrial electronics subsector consists of information technology products such as office equipments,

computers, and telecommunication products. The consumer electronics subsector includes products such as cameras, speakers, and multimedia players. The main electrical products comprise mainly household appliances such as refrigerators, washing machines and air-conditioners.

### **1.2.2 Significance of E&E Industry**

According to the facts and figures provided by MIDA (2018), E&E industry contributes significantly to the economic development of Malaysia. Being the Malaysia's top export earner, E&E industry brought in RM343 billion in export revenues or 36.7% of the total value of exports in 2017 (MIDA, 2018). E&E industry also contributed 27.8% of the Gross Domestic Product share of total manufacturing in 2017 (Ministry of International Trade and Industry, 2018). Moreover, E&E industry captured the highest amount of foreign investment of RM8.2 billion or 84.5% of all the investments in the industry in 2017 (MIDA, 2018). As one of the main engines for economic growth, E&E industry employed the highest number of employees that totalled 421,018 in 2016 (Malaysia Productivity Corporation, 2018). In the global arena, Malaysia's E&E industry is the seventh largest electronics export country in the world and a leading hub for assembly and testing (The Edge Markets, 2018).

With an impressive performance for nearly five decades, the prospect of Malaysia's E&E industry is optimistically promising. Furthermore, the long-term advancement of the E&E sector is encouraging with the strong

support from the Government. In the Eleventh Malaysia Plan 2016-2020 and Malaysia Productivity Blueprint, the E&E industry has been identified by the Malaysian Government as one of the catalytic sectors to spur the growth of the manufacturing sector and national economy. Additionally, E&E industry has also been recognised as one of the sectors within the National Key Economic Areas to help generate additional jobs and boost the national income. In tandem with the nation's drive towards a high-income and high-tech economy, the E&E sector is envisaged to remain as an important engine of growth in Malaysia's economy.

### **1.2.3 Global Trends in E&E Industry**

Since the start of the new millennium, the global E&E industry has experienced several transformations that presents both opportunities and challenges to the industry.

#### **1.2.3.1 Industry 4.0**

Industry 4.0 is characterised by the emergence of a set of rapidly evolving and converging technologies. It includes additive manufacturing, advanced materials, artificial intelligence, big data analytics, advanced materials, cybersecurity, simulation, cloud computing, augmented reality, the Internet of Things, autonomous robots, and systems integration (Ministry of International Trade and Industry, 2018).

The advent of Industry 4.0 is anticipated to bring explosive growth to the E&E industry with the escalating global demand for smart products, mobile devices, storage devices, optoelectronics, artificial intelligence technologies, and embedded technologies (MIDA, 2016). Additionally, digital lifestyle and digital economy in this new millennium will continue to create revenue potential to the E&E industry. AmBank Research (as cited in The Star, 2018) forecasted Malaysia's E&E industry would experience growth of about 9.6% annually from 2018 to 2022.

Additionally, the application of new technologies advancement and convergence in the manufacturing industry would bring unprecedented transformation to the manufacturing industry such as substantial increase in industrial productivity, greater manufacturing efficiencies, and development of fully integrated and automated manufacturing systems (Ministry of International Trade and Industry, 2018). For the Malaysian E&E industry to remain globally relevant and competitive, the industry players need to accelerate the adoption of 4.0 by innovating and investing in new technologies.

Malaysia holds a fairly strong and competitive position in both manufacturing and the use of technology at the global level. Malaysia was ranked at 17<sup>th</sup> place among 40 countries and projected to ascend to 13<sup>th</sup> by 2020 in the Global Manufacturing Competitiveness Index 2016 (Deloitte Touche Tohmatsu, 2016). In addition, Malaysia was ranked at 37<sup>th</sup> globally among 127 countries and 8<sup>th</sup> in Asia in the Global Innovation Index 2017

(Cornell University, INSEAD, & World Intellectual Property Organisation, 2017). Moreover, the recent Readiness for the Future of Production Report 2018 (World Economic Forum & A. T. Kearney, 2018) highlighted that Malaysia is well-positioned to benefit from the future of Industry 4.0.

### **1.2.3.2 Competition and Cost Pressure**

Today, E&E industry in Malaysia is facing aggressive global competition from the rising of developing economies such as China, India, Thailand, and Vietnam that compete on low manufacturing costs. Simultaneously, Malaysia encounters fierce competition from fast-paced and high skilled competitors such as Singapore and Taiwan. As a developing country with moderate labour costs and average skill level, Malaysia is facing challenges of achieving lowest possible manufacturing cost and increasing efficiency in manufacturing process, operational and business management as well as improving the skills of employees in order to move up the value chain. The battle is even tougher especially in this era of slow economic growth.

### **1.2.3.3 Green Technology and Energy-efficient Products**

Arising from the heightening concern for environment, E&E industry is facing increasing pressure from various parties such as consumers, governments, and businesses, to produce more environmental-friendly and energy-efficient products and adopt green manufacturing solutions. This brings great challenge to E&E industry because heavy investment on research

and development is needed to develop environmental-friendly and energy-efficient products. Moreover, employees with knowledge and expertise in the area of green technology are required to produce such products.

#### **1.2.3.4 Short Product Life Cycle**

E&E products are highly vulnerable to changing global trends and usually have short product life cycle due to the rapid shifting of consumer preferences and advancement of technology. Due to the characteristics of E&E products, E&E industry usually operates on a just-in-time production model that brings to a rise in unpredictable and insecure jobs for the employees (Matsuzaki, 2015).

#### **1.2.3.5 Use of Robotics and Automation**

Industry 4.0 has brought a wave of change that reshape the future of employment. In the quest to improve manufacturing efficiency and productivity, companies have begun using robotics and automation pervasively in manufacturing facilities that led to elimination of workers in repetitive jobs (Nübler, 2016). This transformation creates feelings of uncertainty, insecurity and fear of job loss among the workers. According to a study by YouGov Omnibus (as cited in The Star, 2019), 29% of the 1,009 Malaysians surveyed believe robots could replace them at work. It also found 69% of the Malaysians think that robots and automation will lead to a loss of jobs in the overall economy and 31% of them believe the adoption of

technology will lead to more jobs created. Notably, there is a current debate on the impact of emerging technologies on jobs. Based on The Future of Jobs Report 2018 (World Economic Forum, 2018), the adoption of emerging technologies may lead to more jobs created compared to job destroyed.

#### **1.2.4 Justification for Selecting E&E Industry**

This research chose to focus on the execution of TQM practices in the E&E industry because E&E industry contrasts from other sectors with regard to its organisational structures, product quality requirements, market environment, and the challenges they faced in local and global competition (Abdullah, Ahmad and Ismail, 2008).

Furthermore, manufacturing firms are the pioneers of TQM practices. Since TQM historically originated in the manufacturing environment, the manufacturing firms are more mature in the implementation of TQM practices, in terms of having higher level of adoption and more extensive implementation of TQM practices, as compared to service industry. With greater experience of the TQM practices, it would be interesting to ascertain the effectiveness of human capital management in terms of the implementation of people-related TQM practices, namely, teamwork, employee involvement, employee empowerment, training and development, reward and recognition, and leadership, in the E&E industry.



Additionally, E&E industry is the backbone of Malaysia's economic growth and development with significant contribution to the country's manufacturing output, export revenues, foreign investment and employment (MIDA, 2018). Due to the significance of E&E industry, it is strategically important to study the linkages between the multidimensionality of people-related TQM practices, turnover intention and job satisfaction in Malaysia's E&E industry to further boost E&E's contribution to the economy. The efforts of building quality management with justifiable emphasis on nurturing and retaining quality human resources would lead to sustainable competitive advantage for the E&E industry and the nation.

### **1.3 Problem Statement**

The problem statement can be reviewed from two perspectives: industry and literature.

#### **1.3.1 Human Capital Challenges in Malaysia's E&E Industry**

The global trends in the E&E industry that is characterised by intense global competition, rapid technology advancement and ever changing markets, have created profound impact on human capital. One of the major human capital challenges in the Malaysia's E&E industry is high employee turnover. A survey finding by Willis Towers Watson Malaysia (2014) reported that the Malaysia's employee turnover rate in all industries in 2012 was 12.3%. However, it has surged to 13.2% with the manufacturing sector suffered the

highest employee turnover of 24% in 2013. E&E was not spared from the high attrition. Based on another survey by the Malaysian Employers Federation (as cited in The Star, 2012), E&E industry was among the industries that suffered from the highest turnover rate in the manufacturing sector.

With the increasing demand for technology-related skills versus limited supply of these talents in the market, it is inevitable that the war for talents has become more intense. There is a high degree of competition for skilled talents not only in E&E industry but also from other competing industries such as oil and gas industry. In addition, talent competition arises from both local and global markets such as Singapore and China that offer higher salaries. According to a report by Ipsos Business Consulting (2012), Malaysia's E&E industry faced challenges in coping with the talent shortage due to the increasing competition in the recruitment of workforce in both the local and global markets that lead to a rise in job hopping by skilled workers. Due to the shortage of talent, careers in E&E industry have been identified as one of the critical occupations in Malaysia (TalentCorp, 2017).

Additionally, the shift towards Industry 4.0 has also led to skill gap among the current human capital. Subsequently, skill development and quality of human capital in Malaysia's E&E industry is a concern that requires immediate attention. The relative share of high-skilled labour in Malaysia has decreased from 19% in 2010 to 18% in 2017 (MITI, 2018). The issue of high turnover is further compounded by lack of skilled talents. To advance in the

Industry 4.0, human capital in Malaysia's E&E industry require continuous training, reskilling, and upskilling to rapidly acquire greater breadth and depth of skills and knowledge. For example, to move up the E&E value chain, advanced skills for more complex high value-added activities are required. Also, the design and manufacturing of new innovative products will require multidisciplinary knowledge for integration of various technologies as well as innovation and creativity in designing. To achieve lowest possible manufacturing cost, employees require knowledge of manufacturing process improvement to increase efficiency. Employees also require knowledge of green technology to produce environmental-friendly and energy-efficient products.

All these challenges present human capital risks to the E&E industry. Excessive turnover has detrimental effects on the organisations and the nation. When employees leave, they bring together their knowledge, experience, skills, innovation and creativity, that amount to huge loss to the organisation (Amah, 2009). Skilled employees can perform complex tasks, spearhead innovation, learn new technology fast, and easily adapt to changes in the organisations. The loss of employees, especially the skilled and experienced employees, would definitely have substantial effect on the E&E industry especially now that E&E industry has restructured to move up the value chain that requires advanced knowledge, skills, and experience.

Moreover, high turnover rate has critical impact on the organisational performance. In terms of cost, Cascio (2006) and Mitchell, Holtom and Lee

(2001) highlighted that direct replacement costs can be amounted from 50 to 60 percent of the yearly salary of an employee. Furthermore, they also highlighted that the total costs linked to turnover can be as high as 200 percent of the employee's yearly salary. Higher level or specialised employees would incur higher replacement costs than lower level employees. This would cause serious repercussions on an organisation's profitability and operational efficiency (Amah, 2009).

Excessive turnover would definitely link to lower productivity (Huselid, 1995). Productivity is a human capital concern in the E&E industry. Malaysia experiences stagnance in its relative global position in labour productivity. The labour productivity of Malaysia was globally ranked at 44<sup>th</sup> position from 2009 until 2016 despite labour productivity increased by 3% to 4% over the last few years (MITI, 2018). From the perspective of a nation, high turnover could cripple the level of national productivity capacity and competitiveness, and in turn would stunt the economic growth of Malaysia.

Recognising the dire consequences of employee turnover, it is paramount for organisations to manage human capital effectively. This study has identified six people-related TQM practices, namely, teamwork, employee involvement, employee empowerment, training and development, reward and recognition, and leadership, that are commonly used by current E&E organisations to manage their human capital (Karia & Asaari, 2006; Ooi et al., 2007, 2008; Ooi, Arumugam & Teo, 2005; Ooi, Arumugam, Loke & Vellapan, 2006, Teh, Yong, Arumugam, & Ooi, 2009).

Employees' performance and productivity are at their best when employees are experiencing satisfaction with their works and are working in a positive working environment that is supported by the implementation of TQM (Arunachalam & Palanichamy, 2017; Jayasuriya & Wedage, 2016; Morrow, 1997; Prajogo & Cooper, 2010). However, the implementation of TQM is a challenging task. Organisations would only achieve the benefits of TQM when it is applicably implemented in a supportive environment. Based on an investigation of 54 TQM empirical studies conducted in developed and developing countries, Mosadeghrad (2014) stated that the top five quoted reasons for ineffective implementation of TQM are inadequate education and training, insufficient employee involvement, deficient top management support, limited resources, and lack of leadership. These weaknesses in the implementation of people-related TQM practices were also observed in Malaysia. In fact, Othman, Rohayu, and Arshad (2001) found that majority of the Chief Executive Officer of Malaysian manufacturing companies perceived that the Human Resource Department lacked the required competencies to accomplish human resource management practices. Rowley and Abdul Rahman (2007) found that Malaysian companies do not place priority on their human resource practices and top management showed low commitment to human resource. Thus, it raises concern that a lack of effective human capital management may contribute to the increasing human capital issues in the industry.

The rapid rate of change in today's business environment requires organisations to adopt new perspectives for managing the 21<sup>st</sup> century human capital. Despite human capital being a driver to organisational success, human capital management remains the weak spot in E&E industry in Malaysia. According to Malaysia Productivity Report 2017/2018 (Malaysia Productivity Corporation, 2019), the critical issues facing workforce and human capital in Malaysia's E&E industry today and in the near future are the quality and quantity of human capital. Taking into account the human capital risks facing the current E&E industry, the present study is critical in assisting organisations to address the human capital management issues in the E&E industry.

### **1.3.2 Literature Gap**

Dale, Papalex, Bamford, and van der Wiele (2016a) identify four common stages in the historical development of quality management, namely, quality inspection, quality control, quality assurance and TQM. The evolution of quality management initiatives provides a basis for investigating the relationship between quality management and human capital management. The earlier stages of quality management initiatives view employees as machines (Kruger, 1998). Quality was considered to depend only on the production process rather than people. Therefore, there is an obsession with quality tools and control system. The personnel department plays a supportive role that focus mainly on administrative tasks (Hassan, 2010). A paradigm shift occurs when organisations change from quality assurance to TQM that combines technical systems and people (Kruger, 1998). Employees are

viewed as 'human' and assets. Human resource department starts to participate in the various phases of quality initiatives (Hassan, 2010).

Recognising employees as asset, employees are viewed within the concept of human capital. According to Schultz (1981), human capital is the combination of knowledge, skills, and abilities of the employees in an organisation that are valuable and can be enhanced through investment. The human capital is later further expanded to include social capital and positive psychological capital (Luthans et al., 2003). Social capital refers to the relationships and networks of the employees with both internal and external parties of the organisations (Luthans et al., 2003). Positive psychological capital refers to positive workplace psychology capacities of the employees that include confidence, hope, optimism, and resilience (Luthans et al., 2003). Human capital represents a unique competency that create value to the organisation that enable organisation to gain competitive advantage (Luthans, Luthans & Luthans, 2003).

The importance of human capital and quality of work life have been highlighted by quality experts such as Deming (1986) and Juran (1988) and presented in quality awards such as European Foundation for Quality Management and Malcolm Baldrige National Quality Award (Vouzas, 2010). Recognising the importance of human capital, organisations are investing heavily on their employees. However, human capital can present risk such as excessive employee turnover, low productivity, high absenteeism, and low employee satisfaction. Human capital risks have the potential to affect the

performance of organisation. Yet, the management of human capital risks receives limited focus in the literature. Therefore, with the focus of analysing the effectiveness of people-related TQM practices in managing human capital risk, this study would fill the gap in the literature.

Numerous studies (Flynn, Schroeder, & Sakakibara, 1994; Kaynak, 2003; Martinez-Costa & Jimenez-Jimenez, 2008; Powell, 1995; Terziovski & Samson, 2000) have supported the positive connection between TQM and organisational performance. In Malaysia, there are many companies that have implemented TQM programmes to advance the quality of products and services (Abdul-Aziz, Chan, & Metcalfe, 2000; Agus & Abdullah, 2000; Ahmad & Yusof, 2010; Eng & Yusof, 2003; Samat, Ramayah, & Saad, 2006; Sohail, Sohal, & Millen, 2004). Though quality management has been widely practised in Malaysia, there is insufficient literature on Total Quality Management as practised in Malaysia.

Most of the research that support the premise of TQM having a positive influence on employee satisfaction were mainly carried out in countries such as UK (de Menezes, 2012); Australia (Prajogo & Cooper, 2010, 2017); Hong Kong (Lam, 1995, 1996); Saudi Arabia (Alsughayir, 2014); India (Arunachalam & Palanichamy, 2017); and Sri Lanka (Jayasuriya & Wedage, 2016). However, it is undeniable that cultural values and attitudes play important roles in shaping work organisations. Based on the Hofstede's cultural model, Malaysia scores extremely high in power distance index (Hofstede-Insights, 2018; Hofstede, 2005). Perceived as a high power



distance nation, Malaysia generally has a strong culture in respecting and obeying people in higher level of position in an organisation or community. In addition, Malaysia is also perceived as a collectivistic society that demonstrates strong relationship and long-term commitment to members of groups such as family, community and teams at the workplace (Hofstede-Insights, 2018; Hofstede, 2005). Contrastively, Westerners have low score in power distance and high score in individualism (Hofstede-Insights, 2018; Hofstede, 2005). In other words, Westerners believe in treating everyone equally and are highly individualistic. Due to differences in the underlying values and attitudes, Malaysian employees may respond differently under similar circumstances. Therefore, this study addresses the current gap by contributing knowledge on TQM as practised in Malaysia. It is important to analyse whether cultural differences would have different impact on the perception of employees towards TQM practices and the level of influence of TQM practices on the employee attitudes in Malaysia as compared to other countries. Furthermore, this study would evaluate the universality of the implementation of TQM practices within the organisations in Malaysia.

Since TQM has high content on people management, the success of TQM relies heavily on the engagement of people-related TQM practices (Karia & Asaari, 2006; Guimaraes, 1997). In Malaysia, few studies have been done on the investigation of the impact of TQM on employee attitudes. For example, TQM implementation has affected the employees, in terms of job satisfaction (Ooi et al., 2007; 2008); organisational commitment (Ooi, et al., 2005); tendency to remain (Ooi et al., 2006) and role stressors (Teh, et al.,

2009). However, there is a continuing dispute on the potential employee outcomes of TQM. An empirical study by Yang (2006) showed that TQM enhanced with human resource management led to higher responsiveness towards quality and improved job satisfaction.

In addition, soft TQM has been revealed to generate positive influence on employee satisfaction in studies conducted by Arunachalam and Palanichamy (2017), Jayasuriya and Wedage (2016), Morrow (1997) and Yang (2006). On the other hand, Lam (1995) found that employees dislike the changes brought about by quality efforts such as the requirement of more skills and involvement. Others (Lam, 1996; Luthans, 1996; Kivimäki, Mäki, Lindström, Alanko, Seitsonen, & Järvinen, 1997; de Menezes, 2012) also found insignificant association concerning quality management and job satisfaction. It can be concluded that the link between TQM practices and job satisfaction indicated mixed results. Therefore, the effect of TQM on employee satisfaction remains arguable and it deserves undivided attention for further analysis on the implementation of TQM programmes especially within the setting of a developing country such as Malaysia.

Employee job satisfaction is an important dimension in organisational performance because it can affect employees' behaviors and lead to profound impact on the functioning of an organisation (Spector, 1997). Within the context of Malaysia, there are few empirical studies that assess the link concerning TQM and job satisfaction. However, the scope of research is limited in coverage. For example, Ooi et al. (2007) examined employees'

perceptions of TQM elements (i.e. reward and recognition, teamwork, organisational culture, customer focus, and organisational trust) on job satisfaction. However, the study was conducted in the setting of an outsourced semiconductor assembly and test organisation only. The narrow scope of the respondents may hamper the generalisability of the findings. Ooi et al. (2008) investigated the relationship between TQM elements (i.e. organisation culture, customer focus, leadership, education and training, and teamwork) on job satisfaction. However, the respondents consisted of production workers only. In contrast, this study covers all level of employees which provides a more comprehensive view on the perception of employees.

On another study, Karia and Asaari (2006) investigated the influence of TQM factors (i.e. empowerment and teamwork, continuous improvement, training and education, customer focus) on career satisfaction, job satisfaction, job involvement, and organisational commitment in private and public sectors. Nonetheless, the people-related TQM practices in this study comprised different factors compared to the past studies. Though the association between TQM practices and employee satisfaction has been studied within Malaysia, the turnover intention variable is not incorporated in their research model. To the best understanding of the author, so far there is none or limited, if any, research conducted on the three dimensional linkages among people-related TQM practices, turnover intention, and job satisfaction in Malaysia's E&E industry.

On the studies related to TQM practices and turnover intention, there are few empirical studies conducted by Sommer and Merritt (1994), Carlopio and Gardner (1996) and Guimaraes (1996; 1997). In Malaysia, there are limited empirical studies regarding TQM practices and their linkage to employees' turnover intention. For example, Ooi et al. (2006) analysed the link relating to TQM practices and tendency to stay of the employees within an organisation only. Zainuddin, Nor, and Johari (2015) investigated the Malaysian E&E employees' intent to turnover. However, it focused on the association relating to the level of job characteristics and turnover intention. In a related study by Nor, Omar, Sumilan, Siong, & Johari (2014), it investigated the relationship between leadership style (i.e. active management, contingent rewards, and passive management) and intent to turnover in Malaysia's E&E industry. Even though there are few empirical studies on TQM practices and their linkage to employees' turnover intention, job satisfaction was not studied as the mediator construct between TQM practices and intent to turnover. Therefore, it can be concluded that there is dearth of literature on the connections relating to people-related TQM, turnover intention, and employee satisfaction, especially on the mediating impact of job satisfaction. In closing the gap in the literature, the analysis of the tridimensional links among people-related TQM practices, turnover intention, plus job satisfaction particularly in the E&E industry in Malaysia would provide valuable contribution.

## 1.4 Research Questions

Ensuing the discussion on the current issues, this study aims to address the research questions as follows:

- RQ1:* Do the employees' perceptions towards people-related TQM practices (i.e. leadership, employee involvement, training and development, reward and recognition, teamwork, and empowerment) affect their job satisfaction in Malaysia's E&E industry?
- RQ2:* Do the employees' perceptions towards people-related TQM practices (i.e. leadership, employee involvement, training and development, reward and recognition, teamwork, and empowerment) affect their turnover intention in Malaysia's E&E industry?
- RQ3:* Does job satisfaction mediate the link between people-related TQM practices (i.e. leadership, employee involvement, training and development, reward and recognition, teamwork, and empowerment) and turnover intention among employees in Malaysia's E&E industry?
- RQ4:* Does job satisfaction demonstrate direct effect on turnover intention among employees in Malaysia's E&E industry?
- RQ5:* What are the recommendations for industry practitioners and policymakers in Malaysia's E&E industry?

## 1.5 Research Objectives

With reference to the research questions discussed in the section above, this study aims to attain the listed four main objectives:

*RO1:* To determine the relationship between people-related TQM practices (i.e. leadership, employee involvement, training and development, reward and recognition, teamwork, and empowerment) and job satisfaction among employees in Malaysia's E&E industry.

*RO2:* To investigate the relationship between people-related TQM practices (i.e. leadership, employee involvement, training and development, reward and recognition, teamwork, and empowerment) and turnover intention among employees in Malaysia's E&E industry.

*RO3:* To evaluate the mediating role of job satisfaction between people-related TQM practices (i.e. leadership, employee involvement, training and development, reward and recognition, teamwork, and empowerment) and turnover intention among employees in Malaysia's E&E industry.

*RO4:* To assess the link between job satisfaction and turnover intention among employees in Malaysia's E&E industry.

*RO5*: To develop recommendations and a framework for industry practitioners and policymakers in Malaysia's E&E industry.

## **1.6 Scope of Study**

The present research focuses on examining the tridimensional linkage among people-related TQM practices, turnover intention plus job satisfaction within E&E industry in Malaysia. Other industries in the manufacturing sector are not included.

Focusing on the research objectives, this study only adopts the significant people-related TQM practices that are expected to have influence on job satisfaction and turnover intention. Thus, the selected people-related TQM elements are employee involvement, empowerment, reward and recognition, training and development, teamwork, and leadership.

In terms of research sampling, this study confined to employees working in large ISO-certified E&E companies only because the implementation of TQM practices in these companies is more pervasive, holistic, and mature.

## **1.7 Overview of Research Methodology**

The current study employs a quantitative and qualitative research method to examine the multitronged links among turnover intention, job satisfaction, and people-related TQM practices, with job satisfaction as the mediator. The unit of analysis is the employees of ISO-certified E&E manufacturing companies in Malaysia.

A simple random sampling was employed to choose samples from ISO-certified organisations registered with the “Federation of Malaysian Manufacturers (FMM) Directory (2012)”. Self-administered survey questionnaires were distributed to collect data from April 2014 to July 2014.

The collected data was analysed using the “Statistical Package for the Social Sciences (SPSS) 16” and SmartPLS 3 (Ringle, Wende, & Becker, 2015). Data analyses were conducted in two main phases. It started with preliminary data examination. This was followed by structural and measurement models analysis using “Partial Least Squares approach to Structural Equation Modelling” (PLS-SEM).

A focus group was conducted to present and discuss the findings with a group of industry practitioners. Based on the inputs from the focus group, recommendations are being developed to assist the industry practitioners to improve their current practices.



## **1.8 Significance of Research**

This study provides an insight into the effects of people-related TQM practices on work-related attitudes. Past studies linked only a few and different elements of TQM practices with either job satisfaction or turnover intention only. The structural linkages among the three constructs, namely, turnover intention, job satisfaction and people-related TQM practices, specifically, using Structural Equation Modelling (SEM) analysis, have not been explored in detail thus far. Therefore, this study will broaden the horizon of previous research by exploring the multidimensionality of people-related TQM practices on both turnover intention and job satisfaction, and that job satisfaction is an important mediator linking people-related TQM practices with turnover intention. Thus, this study provides new insights in terms of theoretical contribution.

From practical viewpoint, this study brings to spotlight the employee-centered and coherent approach of TQM philosophy. Conducting this research in the E&E industry is important to assist the management of E&E companies in developing effective quality-oriented human resource strategies. Undeniably, job satisfaction will bring about significant value to the organisation. It is expected that the findings on people-related TQM practices will assist the management to select and target the appropriate elements of people-related TQM practices to increase job satisfaction and minimise turnover problems. In addition, research findings would also provide the management with better understanding on the way people-related TQM

practices likely to affect their employees and in turn have impact on the overall performance of the organisation. Thus, organisations will pay more attention on balancing the hard TQM practices with soft TQM or people-related TQM practices to achieve a holistic approach towards sustainable success. With the increased concern on turnover heightened by the competition in the recruitment of skilled employees in Malaysia's E&E industry, this study would assist the management to intensify their employee retention strategies to lead the organisation to the next level of excellence.

### **1.9 Definition of Terms**

Below are the operational definitions of the independent, dependent and mediator variables of this study:

#### **Total Quality Management (TQM):**

TQM is a management approach that integrates all the functional tasks in the organisation in the quest to advance quality of products and ultimately to increase customer satisfaction (Crosby, 1979; Deming, 1986; Feigenbaum, 1991; Ishikawa, 1985; Juran, 1988).

### **People-related Total Quality Management Practices:**

People-related Total Quality Management practices are “soft” or employee-related aspects of quality management that focuses on the intangible and qualitative aspects such as leadership, reward and recognition, teamwork, empowerment, employee involvement, and training and development (Yong & Wilkinson, 2001).

#### **Leadership (LD):**

Leadership is a process whereby an individual motivates others to effectively accomplish the organisational goals (Northouse, 2015).

#### **Employee Involvement (EV):**

Employee involvement is the engagement of employees in the quality improvement activities and work-related decisions (Evans & Lindsay, 2014).

#### **Training and Development (TD):**

Training and development is the process of equipping human resources with work-related skills to improve their performance (Gomez-Mejia, Balkin, & Cardy, 2012).

**Reward and Recognition (RR):**

Reward and recognition are all the financial, non-financial, and psychological benefits given by an organisation to the employees for the performance of their work (Bratton & Gold, 2012).

**Teamwork (TW):**

Teamwork refers to the organisational practice that allows employees across all the functional and operating units to work together to identify and solve work-related problems (Karia & Ahmad, 2000).

**Empowerment (EP):**

Empowerment is the enhanced motivation developed through four cognitions, namely, choice, impact, competence, and meaningfulness (Thomas & Velthouse, 1990).

**Job Satisfaction (JS):**

Job satisfaction is the feeling that employees have with regard to the various facets of their work (Spector, 2012).

## **Turnover Intention (TI):**

Turnover intention is an intentional plan of an employee to leave an organisation that includes a simple thought of quitting or a mention of such desire (Tett & Meyer, 1993).

### **1.10 Structure of Thesis**

The present study is organised into six chapters. Chapter One provides a detailed background of the research. An overview of E&E industry in Malaysia is discussed profoundly, followed by research problems, research questions and objectives of the study. Moreover, the significance of the study is discussed from the perspective of theoretical and practical contributions.

Chapter Two describes the definition of quality, dimensions of quality for product and service, and the concept and evolution of TQM from the perspectives of various quality pioneers. Additionally, it also reviews the definition of job satisfaction and turnover intention and the association relating to people-related TQM practices and job satisfaction, association between people-related TQM practices and turnover intention, and the three dimension links among people-related TQM practices, turnover intention and job satisfaction. Furthermore, it also explains the justification of using the selected six TQM practices.

Chapter Three presents a detailed discussion on the development of hypotheses in accordance with the numerous past theoretical and empirical studies to support the hypotheses. A research model that links the variables of people-related TQM practices, turnover intention, as well as job satisfaction is presented.

Chapter Four presents the research methodologies used to test the hypotheses. The research design is discussed in details. The conceptualisation and operationalisation of measurement, data collection method, and sampling strategy of the research are elaborated. In addition, ethical consideration is also included.

Chapter Five begins with an outline of the statistical procedures, the tabulation of preliminary data analysis, profile of the respondents and descriptive analysis using SPSS software. After that, the evaluation of measurement and structural models as well as mediating analysis using the Partial Least Squares approach to Structural Equation Modelling (PLS-SEM) are presented.

Chapter Six deliberates the results obtained from the statistical analysis in the previous chapter. It presents a detailed discussion with reference to the key findings of the correlation among the three main constructs and the hypotheses tested. The findings from focus group and recommendations for industry practitioners are also included.

Chapter Seven concludes with a summary of the key findings, contributions, limitations and future recommendations for this study.

### **1.11 Chapter Summary**

Chapter One presents an overview of the thesis. It begins with the introduction of the background and problem statement of this study. Theoretical concepts related to people-related TQM practices, turnover intention and job satisfaction were discussed. A general perspective on the E&E industry in Malaysia which included the challenges faced by the industry was provided. This entails the development of research questions and objectives. Finally, a summary of the research methodology, the importance of the study and the organisation of the thesis are presented. With this introduction of the research, Chapter Two will review the literature for the main constructs and discuss the interrelationship of the constructs.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Chapter Two starts with the presentation of the definition of quality, historical development of TQM and the concepts of TQM from different quality gurus. It also discusses the dimensions of hard and soft TQM with focus on people-related TQM practices. The subsequent sections provide the literature review on job satisfaction and turnover intention and the interrelationship among the three main constructs.

#### **2.2 Definition of Quality**

Today, despite emerging focus on quality, product recalls and product failures are still making headlines in the news and impacting everyone's life. Quality is indisputably an important focus of every modern organisations. Though the concept of quality has existed for practically a century, it remains prominent in the continual quest for organisational excellence in the 21st century.



In view of the importance of quality, it is vital to fully grasp the meaning of quality. However, there is no globally agreed definition of quality (Reeves & Bednar, 1994; Sebastianelli & Tamimi, 2002). Quality, according to Seawright and Young (1996), is an abstract concept with multidimensional interpretations by various individuals and organisations. To comprehend the complexity of the quality construct, multiple definitions of the term quality are required. Quality has been defined in different ways for products and services, for different industries, and from different perspectives (Wicks & Roethlein, 2009).

There are various definitions of quality by quality scholars. For example, Crosby (1979) defined quality as conformance to requirements, meaning strict adherence to the quality requirement of a company. Complying to own company's quality requirement is equivalent to viewing quality from an internal perspective. Contrastly, Deming (1986), Feigenbaum (1991), and Juran (1988) viewed quality from the perspective of customers which can be considered as external perspective. Juran (1988) defined quality as fitness for use. In other words, the products' features and performance should lead to customer satisfaction and products should be free from deficiencies. Feigenbaum (1991) defined quality as meeting the customers' expectations. He also emphasised that quality is dynamic due to the everchanging level of expectations of the customers. Additionally, Deming (1986) defined quality as exceeding customers' expectations. Companies should aim at producing products or services that are not only meeting the basic requirement of the customers but also providing beyond their expectation to delight customers.

Evans and Lindsay (2014) classified six main approaches that are used to define quality, that is, transcendent, product-based, user-based, manufacturing-based, value-based, and customer-based. Evans and Lindsay (2014) further elaborates that transcendent relates to the aesthetic characteristics of products which are extremely subjective and abstract in nature and therefore difficult to measure. The product-based relates to the measurable features or attributes of the product. User-based approach focuses on the capability of the product to execute its intended function. Manufacturing-based approach is focused on meeting the standards for goods and services, that is, compliance to requirements or specifications. Value-based approach is centred on costs and pricing of the product. Customer-based approach emphasises fulfilling or surpassing customer expectations whereby the customers include both internal and external customers. Among the approaches, meeting customers' needs and expectations is the most widely used definition of quality (Ishikawa, 1994; Kanji, 1998; Oakland, 1993; Spencer, 1994). In this study, the meaning of quality is viewed from the customer-based approach that comprises meeting and surpassing the needs of internal and external customers.

There are two major dimensions of quality, that is, product quality and service quality. As stated by Garvin (1987), there are eight dimensions of product quality which are still relevant today. These eight dimensions include aesthetics, features, durability, reliability, serviceability, perceived quality, performance, and conformance. Garvin (1987) further explains that aesthetics describe the beauty of a product in terms of its appeal to the senses. Features

are the set of basic characteristics and auxiliary functions of the product. Durability refers to how long a product could last. Reliability denotes the ability of the product to perform faultlessly. Serviceability refers to the availability of repairs for the product which include the ease and speed of repairs. Perceived quality refers to elements that affect a firm's reputation such as marketing strategies. Performance denotes the basic operating and functional features of the product. Lastly, conformance indicates the capability of the product in meeting the specified standards.

Quality is defined differently for products and services due to their remarkable dissimilarities in nature and characteristics. According to Kotler and Keller (2005), there are four main dissimilarities concerning products and services. Firstly, services are generally intangible in nature whereas products are tangible. Thus, customers face difficulty in evaluating the service before they purchase the service and the measurement of service quality can be more complicated. Secondly, service is inseparable which means service is generated and consumed simultaneously and it cannot be separated from the service providers. Thus, service employees perform a significant part in delivering quality. Thirdly, service is perishable. Service cannot be stored for later use or sale. This presents a huge problem to the service sector especially when the demand is irregular. Finally, service is variable. This poses critical problem in quality control because quality of service hugely depend on who provides the service plus when, where and how the service is provided.

Arising from the unique characteristics of service, service quality is defined using five diverse dimensions, namely, tangibles, assurance, reliability, empathy, and responsiveness (Parasuraman, Zeithaml, & Berry, 1988; Russell & Taylor, 2006; Wang, Lo, & Hui, 2003). Tangibles refer to the elements that are visible to the customers that project the image and quality of the service. Assurance indicates the ability of the service staff to give confidence. Reliability describes the ability of a company to deliver the promised service consistently. Empathy describes the personalised attention provided by the service employees. Responsiveness is the readiness of the employees to assist customers. To gauge the level of service quality, the five dimensions are incorporated in a 22-item survey instrument named SERVQUAL (Parasuraman et al., 1988).

Undeniably, the meaning of quality continues to evolve with time. Antony (2013) described quality as multidimensional and dynamic. The fast changing environment and the ever increasing customer demand unceasingly raises the standard for quality. Quality is moving beyond the four walls of an organisation to encompass a customer's entire experience with the organisation instead of just the functional characteristics of the product or service. In addition, environmental forces such as globalisation, rapid technology advancement, consumer awareness, and social responsibility continue to shape the future of quality. With the ever increasing expectation on quality, there is no way companies can stay in their comfort zone to survive and compete with others. Quality is the key to survival (Zink, 1997). Therefore, companies need to constantly advance the quality of their services

and products via the practice of TQM in order to continuously satisfy the changing customer needs.

In this study, the word “quality” encompasses both product quality and service quality because more than half the activities in manufacturing industries are service-related (Evans & Lindsay, 2014). For example, in a typical manufacturing system such as E&E industry, there are various interdependent functions in the organisation which include manufacturing, service and business support. Also, in this study, the word “quality” comprises both external and internal perspectives of quality. This concurs with the holistic view of TQM whereby satisfying the needs of customers, employees and the management remains the ultimate goal of TQM.

### **2.3 The Historical Development of Quality Management**

Systems for quality management have come a long way since as early as 1800s. Dale, Papalex, Bamford, and van der Wiele (2016a), Bounds, Yorks, Adams, and Ranney (1994), Lakhe and Mohanty (1994), and Weckenmann, Akkasoglu, and Werner (2015) suggested that the historical development of quality improvements evolved through four main paradigm shifts as discussed in the subsequent section.

### **2.3.1 Quality Inspection**

Prior to Industrial Revolution, skilled craftsmen performed the entire stages of production by producing and inspecting the quality of their individual products (Evans & Lindsay, 2014). However, in the early 1800s, the craftsmanship concept changed drastically with the emergence of mass production or factory concept in the manufacturing sector during the Industrial Revolution. Evans and Lindsay (2014) explained that, under the factory concept, a division of labor was implemented whereby workers were divided into groups to perform similar tasks and responsible for only a small portion of each product. The inspection activities were carried out by inspectors who examined, measured and tested the end products with stated specifications to evaluate the conformance (Dale et al., 2016a). Products that did not conform to specification were scrapped, reworked or modified and this resulted in high costs and high wastage (Weckenmann et al., 2015). Dale et al. (2016a) further highlighted that the simple inspection system is conducted after the products are being produced and there is no prevention strategies or quality control. In addition, inspection is implemented internally within the firms only without the involvement of suppliers and customers.

### **2.3.2 Quality Control**

The 1920s marked the paradigm shift from product quality to process quality to reduce the high loss and waste from the inspection-based concept. As the volume and complexity of manufacturing increased, the focus on

quality of the final products was widened to include the whole manufacturing processes (Evans & Lindsay, 2014). There is a paradigm shift from simple inspection to quality control that includes operational activities and statistical methods to achieve quality requirements (Weckenmann et al., 2015). The quality control system is characterised by comprehensive product and performance specification, proper administration of control system, development of quality manual, and intermediate stage product testing (Dale et al., 2016a).

This led to quality engineering which resulted in the development of statistical tools to control processes and reduce variability. One of the major tools that has gained widespread usage was the Statistical Process Control (SPC). In 1930s, Shewhart, Dodge and Romig designed Statistical Process Control to assist in the inspection of products manufactured in large quantity. SPC allows variabilities to be detected in the production process, thus preventing product defects from occurring at the initial stage and avoiding production of waste (Weckenmann et al., 2015). Other statistical techniques include the seven quality management tools (Q7) such as cause and effect diagrams, Pareto charts, and histograms, to name a few. According to Dale et al. (2016a), quality control techniques have contributed to better process control and lesser non-conformance incidence. Both quality inspection and quality control are considered as detection method that involves discovering and solving an error after the occurrence of non-conformance (Dale et al., 2016a).

### 2.3.3 Quality Assurance

The 1950s marked a shift from quality control to quality assurance. Being a prevention-based system, quality assurance focuses on planning and design of product, service and process to avoid non-conforming products being produced in the first place (Dale et al., 2016a). Quality assurance also involves identifying and prevention of possible risks and problems (Weckenmann et al., 2015). Generally, quality assurance is a proactive method in contrast to reactive method in the inspection and quality control stage. Quality assurance places more emphasis on quality costs, non-production operations, detailed quality manuals, development of quality systems, and advanced quality planning (Dale et al., 2016a). The evolution from detective to preventive quality assurance was supported by several innovative methods using logical reasoning for preventive analysis such as Failure Mode and Effects Analysis or in short, FMEA. FMEA is a highly structured and systematic technique that assesses the probability of failure in the system (Bounds et al., 1994). This is followed by the introduction of the second tool set, the New Seven Tools (N7), that are used to complement the existing Q7 for logic-based information (Weckenmann et al., 2015). The new seven tools comprised the tree diagram, activity network diagram, prioritisation matrix, process decision programme chart, interrelationship diagram, matrix diagram, and affinity diagram (Ćwiklicki, 2016).



This quality assurance era also witnessed the progressive development of quality management by the quality experts. In 1950, upon request from JUSE (Union of Japanese Scientists and Engineers), W. Edward Deming taught Japanese producers statistical quality control (Evans & Lindsay, 2014). Deming also introduced the Deming cycle, fourteen-point quality management principles and seven deadly diseases. Joseph M. Juran encouraged the use of “quality trilogy” (Goestch & Davis, 1994). Promoted by Deming and Juran, “Quality Control Circles” (QCC) was made popular in Japan by Kaoru Ishikawa. Other than that, Armand Feigenbaum developed the “Total Quality Control” (TQC) (Feigenbaum, 1956); Philip Crosby promoted the “zero defects” and “cost of quality” (Crosby, 1979); and Kaoru Ishikawa introduced the concept of organisation-wide involvement in quality. All the quality concepts mentioned above are discussed in details in Section 2.4.

#### **2.3.4 Total Quality Management**

In the 1980s, the evolution of quality took a paradigm shift to a more strategic and comprehensive quality approach (Stevenson & Sum, 2010). The era witnessed several changes such as higher demand by customers, intensified market competition and increased complexities in products (Weckenmann et al., 2015). Thus, Weckenmann et al. (2015) added that a system-oriented view is required to integrate the suppliers and all the processes and activities in the organisation to achieve customer satisfaction. Top management started to be aware of the fact that product or service quality leads to competitive advantage. The recognition of the importance of the

relationships between leadership, employees, processes, customer satisfaction and business results, and the need for strong commitment from top management and all employees to achieve high quality, has led to the conceptualisation of TQM (Weckenmann et al., 2015). In short, TQM involves all levels of management and employees in a continuing effort to increase quality and attain customer satisfaction (Dale et al., 2016a).

The word “total” gives implication that TQM puts emphasis on managing the whole system, rather than individual departments. TQM requires a total change of the entire organisation and this cannot be achieved within a short period of time. It transforms the traditional ways of doing business; it changes the way people work and the processes from design to delivery (Anjard, 1998).

History showed that though TQM expertise originally came from the USA, the quality management knowledge was shared to Japan in the 1950s and 1960s (Fotopoulos & Psomas, 2009). Thereafter, in the 1970s, the Japanese became proficient at attaining quality in the manufacturing industry. Losing their market shares to Japan, the American began to pay serious attention to TQM in the 1980s. Subsequently, more companies showed interest in TQM. The phenomenon led to the inception of the “Malcolm Baldrige National Quality Award” in 1987, the “European Quality Award” in 1991, and other quality awards, which are deemed as the official acknowledgement of the significance of TQM (Martinez-Lorente, Dewhurst & Dale, 1998). These awards are given to promote quality awareness and

recognise the accomplishments in the implementation of quality management. Furthermore, in the early 1990s, International Standards Organisation created the ISO 9000 series that forms the basis for quality management.

At the dawn of 21<sup>st</sup> century, the quality movement has evolved beyond the foundations established by quality pioneers. Moving beyond the manufacturing industry, now quality has been embraced by other sectors such as service, government, education and healthcare. Nowadays, globalisation and advancement in technology have exerted demand on new requirements for quality management. In order to satisfy customer requirements, companies have to act beyond the actual product. Moving forward, companies must extend their quality management to integrate the well-being of the employees and customers as well as embrace social responsibility and sustainability (Weckenmann et al., 2015). Table 2.1 summarises the four phases of quality management.

**Table 2.1: Summary of Four Phases of Quality Management**

<b>Characteristics</b>	<b>Phase of quality movement</b>			
	<b>“Inspection”</b>	<b>“Quality control”</b>	<b>“Quality assurance”</b>	<b>TQM</b>
<b>Stage of Quality</b>				
<b>Period</b>	<b>1800s</b>	<b>1930s</b>	<b>1950s</b>	<b>1980s</b>
<b>Approach</b>	“Detection”	“Control”	“Coordination”	“Strategic impact”
<b>Focus</b>	“Product uniformity”	“Product uniformity with reduced inspection”	“Entire production chain and contribution of all functional groups, to prevent quality failures”	“The market and consumer needs”
<b>Techniques</b>	“Gauging and measurement”	“Statistical tools and techniques”	“Programmes and systems”	“Strategic planning, goal setting, and mobilising the organization”
<b>Involvement in quality</b>	“The inspection department”	“The manufacturing and engineering departments”	“All departments, although top management is only peripherally involved in designing, planning, and executing quality policies”	“Everyone in the organisation, with the top management exercising strong leadership”

Source: Bounds et al., 1994, p. 47

## **2.4 Foundations of Total Quality Management**

The knowledge provided by quality pioneers forms the starting point of TQM. The quality pioneers contributed their ideas, propositions and concepts that had laid the foundation for the development of principles, practices, tools and techniques of quality management. TQM started nearly a century ago with Walter A. Shewhart’s work in statistical process control (SPC) (Zairi, 2013). Being a statistician, Shewhart used statistical methods such as control

charts and probability sampling theory to analyse the causes of quality variation in production processes. He also designed the plan-do-check-act cycle (Evans & Lindsay, 2002). Known as the “father of statistical quality control”, Shewhart’s inventive thinking has sparked off the emergence of major pioneers in the quality movement. The following section discusses the five main schools of TQM, also known as “The Big Five” (Krüger, 2001) that highlights the main contributions of the renowned quality pioneers.

#### **2.4.1 Deming’s Approach and Contribution**

Deming (1986) specified quality as “satisfying the customer beyond expectations” which means surpassing customers’ needs. This definition has formed the central of focus of his approach to management. In his Chain Reaction Theory, Deming believed that focusing on quality would bring about higher productivity whereby improvement of quality would decrease costs as a result of less rework, fewer errors and better utilisation of resources. The outcome would be better quality product and lower price, and subsequently, firms would be able to satisfy their customers, capture the market and survive in business (Deming, 1986).

Deming (1986) stressed the importance of using statistical process control to increase standardisation in production. It is essential for the senior management to spearhead quality initiatives. From his analysis of the weaknesses in the Western management, he pinpointed seven deadly sins (Deming, 1994), that include, lack of commitment, short-term profit

orientation, and high costs. Thus, to transform the business, Deming had come up with solution which consisted of 14 points (Deming, 1986, p. 23; Dale, Papalexi, Bamford & van der Wiele, 2016b, p. 40; Evans & Lindsay, 2014, p. 51; Krüger, 2001; Zairi, 2013) that serve as management guideline as summarised below:

1. “Create constancy of purpose to improve products and services.”
2. “Learn new philosophy for new economy.”
3. “Cease dependence on inspection to achieve quality.”
4. “End the practice of awarding business on the basis of cost.”
5. “Constantly improve the system of production and service to enhance quality and productivity, and to reduce costs.”
6. “Institute training on the job.”
7. “Adopt and cultivate leadership.”
8. “Drive out fear.”
9. “Break down barriers between departments.”
10. “Discard slogans and numerical goals.”
11. “Eliminate quotas for the work force and the management.”
12. “Remove barriers to pride of workmanship.”
13. “Institute a vigorous education and retraining programme.”
14. “Put everyone in the company to work to accomplish this transformation.”

The main thrust of Deming’s approach is that all employees are responsible for the quality improvement and senior management is required to

lead the change and involve in all phases of the process (Dale et al., 2016b). The 14 Points were later summarised into four simple components called “The System of Profound Knowledge”. Other than that, Deming developed the PDCA (plan-do-check-act) cycle or commonly known as Deming cycle which is a variation of the Shewhart cycle. It consisted of steps linking the production of a product with customer needs and to ensure continuous improvements. Knouse, Carson, Carson, and Heady (2009) highlighted that Deming’s ideas continues to influence the management of the 21<sup>st</sup> century in areas such as customer satisfaction, supply chain management, and accreditation.

#### **2.4.2 Juran’s Approach and Contribution**

Juran (1988) defined quality as “fitness for use” that emphasised the features and customer’s intentions for the use of the product. Juran published the first edition of a very detailed and comprehensive quality manual titled “Quality Control Handbook” in 1951 (Krüger, 2001). Juran contributed significantly to the world of quality by being the first to widen the knowledge of quality control with managerial aspect.

In addition, Juran (1986) developed the Quality Trilogy which is a conceptual approach to managing quality whereby quality is managed using quality planning, quality control, and quality improvement (Zhang, 2000; Goetsch & Davis, 1997). Quality planning involves setting the quality goals, identifying the needs of the company’s internal and external customers,

transforming customers' needs into product specifications and features, and developing systems and processes that are capable of producing the products (Evans & Lindsay, 2014). Quality control involves measuring the quality performance and resolving the gap between performance and goals. Meanwhile, quality control emphasises on prevention of quality problems and correction of defects with the main purpose of producing faultless products (Zairi, 2013). Quality improvement involves identifying areas for improvement, setting up a team to implement the improvement project, and providing resources to the teams to ensure success in the implementation of improvement projects to achieve quality goals (Zhang, 2000).

Developing the idea of cost of quality, Juran insisted that the key objective of any business is to minimise the quality costs (Dale et al., 2016b). According to Juran (1988), cost of quality is divided into four categories. First, internal failure costs denote costs that are related to defects detected during production such as scrap and rework. External failure costs are costs that are related to defects detected after the products are sent to the customers, for instance, warranty charges, returned goods, and complaint adjustment. Third, appraisal costs represent costs that occurred in identifying conformance to quality standards such as product quality audits and final inspection and testing. Fourth, prevention costs represent costs that occurred in minimising failure and appraisal costs such as training, quality planning, supplier evaluation, and quality audits (Zhang, 2000). Juran suggested ten strategies to improve quality as follows (Juran, 1992, as cited in Zairi, 2013):



1. “Build awareness of the need and opportunity for improvement.”
2. “Set goals for improvement.”
3. “Organise to reach the goals.”
4. “Provide training.”
5. “Carry out projects to solve problems.”
6. “Report progress.”
7. “Give recognition.”
8. “Communicate results.”
9. “Measure all processes and improvements.”
10. “Maintain momentum by making annual improvement part of the regular systems and processes of the company.”

### **2.4.3 Crosby’s Approach and Contribution**

Well-known for the concepts of “Do it Right First Time” and “Zero Defects”, Crosby (1979) firmly believed that “doing it right the first time” is important and will cost less than detecting and correcting mistakes. Crosby highlighted the significance of top management and emphasised that top management should totally reject defects and mistakes in order to increase profitability through quality improvement (Dale et al., 2016b). To eliminate mistakes, it is vital to have education and training, attention to details, and dedication to excellence (Zhang, 2000). Crosby stated that quality is essentially free. Crosby opined that translating the cost into monetary figures would allow the senior management to grasp the effects of non-conformance (Zairi, 2013).

The key points of Crosby's quality philosophy are stated in his four fundamentals of quality management (Crosby, 1979). First, quality has to be defined in specific terms in accordance with "conformance to requirements". The second point stated that the focus of quality system is prevention. Inspection resulted in high appraisal cost. Thus, "doing the job right the first time" is essential to prevent errors. The third point stated that performance should be measured quantitatively based on costs of quality. The fourth point stated that "zero defects" is the only performance standard. To achieve zero defects, employees should be provided appropriate training and possess the commitment to have attention to details and avoid errors (Krüger, 2001).

In summary, Crosby's approach stresses on management to change corporate culture and attitudes rather than dwelling much on statistical techniques (Evans & Lindsay, 2014). Crosby also developed an action plan for implementation of quality improvement. It consisted of a 14-step approach to quality improvement as illustrated below:

**Table 2.2: Crosby’s 14-Step to Quality Improvement**

No.	Principles / Practices	Descriptions
1	“Management Commitment”	“Make it clear that management is committed to quality for the long term.”
2	“Quality Improvement”	“Form quality improvement teams with senior representatives from each department.”
3	“Quality Assessment”	“Measure processes to identify where current and potential quality problems exist.”
4	“Cost of Quality”	“Evaluate the cost of quality and explain how it is used as a management tool.”
5	“Quality Awareness”	“Raise the quality awareness and personal commitment of all employees.”
6	“Corrective Action”	“Take immediate action to rectify problems identified through previous steps.”
7	“Zero Defects Program”	“Establish a zero defects programme to monitor and enhance the quality improvement process.”
8	“Supervisor Training”	“Train supervisors to actively carry out their responsibilities in the quality programme.”
9	“Zero Defects Day”	“Hold a “Zero Defects Day” to ensure all employees are aware there is a new direction and reaffirm management commitment.”
10	“Goal Setting”	“Encourage individuals and teams to establish both personal and team improvement goals.”
11	“Error Causal Removal”	“Encourage employees to communicate to management about the obstacles they face in attaining their improvement goals.”
12	“Recognition”	“Recognise and appreciate employees who participate.”
13	“Quality Councils”	“Implement quality councils to promote continual communication.”
14	“Do It Over Again”	“Do it all over again to emphasize that quality improvement is a never-ending process.”

Source: Adapted from Zhang (2000, pp. 12-13) and Rampersad (2005, pp. 9-10)

#### **2.4.4 Feigenbaum’s Approach and Contribution**

Feigenbaum (1961) originated the term “Total Quality Control (TQC)”. Feigenbaum (1986) believed that customer satisfaction is the ultimate goal of quality management and all functional activities affect the achievement of quality. Therefore, high level of inter-functional integration is

required. Feigenbaum (1991) asserted that there are four key steps in TQC, starting with setting quality standards, assessing conformance to standards, taking action if standards are not achieved, and devising improvement in the standards. Feigenbaum (1986) stressed that effective quality training is an important part of TQM and it should include quality skills, attitude, and knowledge.

The essence of Feigenbaum's ideas is teamwork, employee participation, and commitment to continuous improvement (Zairi, 2013). Feigenbaum (1956) also made a contribution by identifying the total cost of quality as the summation of prevention costs, failure costs and appraisal costs. (Dale et al., 2016b). One of the major contributions of Feigenbaum is that many of his quality principles have become important elements in the "Malcolm Baldrige National Quality Award" criteria (Evans & Lindsay, 2014). Feigenbaum's approach to quality is identified by the following ten benchmarks (Zairi, 2013):

1. "Quality is a company-wide process."
2. "Quality is what the customer says it is."
3. "Quality and cost are a sum, not a difference."
4. "Quality requires both individual and team work."
5. "Quality is a way of managing."
6. "Quality and innovation are mutually dependent."
7. "Quality is an ethic."
8. "Quality requires continuous improvement."

9. “Quality is the most cost effective, least capital intensive route to productivity.”

10. “Quality is applied in connection with customers and suppliers.”

(Stevens, 1994, as cited in Zairi, 2013)

#### **2.4.5 Ishikawa’s Approach and Contribution**

Being a quality tool expert, Kaoru Ishikawa (1915-1989) has made major contribution in the development of renowned quality tools which are very useful and indispensable in quality problem solving. The seven basic quality tools developed by Ishikawa are cause and effect diagram (also known as “Ishikawa diagram”), Pareto chart, histogram, stratification chart, control chart, check sheet, and scatter diagram (Evans & Dean, 2000). Ishikawa stressed that all the employees should undertake training on the seven quality tools. Moreover, Ishikawa (1985) strongly advocated the quality circles and quality training.

Ishikawa was the founder of the JUSE. He strongly promoted quality circles and TQC in Japan. Identifying the difference between Western and Japanese management quality practices, Ishikawa (1985) customised TQC into Japanese culture and developed company-wide quality control (CWQC). In comparing the Juran’s and Feigenbaum’s TQC approach which was generally a top-down approach, CWQC advocated both top-down and bottom-up perspectives emphasising on employee involvement (Dahlgard-Park, 2011).

According to Zhang (2000), Ishikawa's TQM concept comprised the subsequent six fundamental concepts:

1. "Firms should emphasise on quality first; not short-term profits."
2. "Firms should be customer-oriented; not producer-oriented."
3. "Firms should break the barrier of sectionalism of customers."
4. "Firms should use facts and data to make presentation. Utilization of statistical methods is strongly encouraged."
5. Firms should respect for humanity as a management philosophy, and promote full participatory management."
6. "Firms should cultivate cross-functional management."

#### **2.4.6 Relevance of Various TQM Approaches to This Study**

The ideas, propositions and concepts of the quality pioneers had contributed to the establishment of TQM concepts and they signified the beginning of the change from traditional management to modern management practices. These various TQM approaches are relevant to this study because they brought light to the renewed focus on employees in TQM perspective.

Traditional management, as compared to modern management practices, viewed employees as "just an extension of the assembly line" (Kruger, 1998). Employees, nowadays, are viewed in a more humanistic approach and valued as important assets of the organisation. Quality pioneers such as Deming (1986), Feigenbaum (1983) and Ishikawa (1985) strongly

advocated employee participation in decision making (Dwyer, 2002). For example, though Deming highlighted the importance of statistical process control, he placed balanced emphasis on people. This is evident in Deming's 14 principles in which more than half are concerned with people (Prajogo & Cooper, 2010). Deming's propositions on incorporating training (Point 6); enhancing leadership (Point 7); removing fear (Point 8); and demolishing obstacles to achievement (Point 9) are strong indicators of putting employees at the core of quality initiatives. Similarly, Ishikawa emphasises putting employees' needs first and actively promoted quality circles and participative management. In addition, in his 14 steps of continuous improvement, Crosby (1979) emphasised management commitment (Point 1), teamwork (Point 2), education and training (Point 5 and 8), involvement (Point 9), reward system for quality (Point 12) and communication (Point 13). Meanwhile, Feigenbaum's (1983) work emphasises on dedication to continuous improvement, teamwork, employee participation, and quality training.

Despite their differences in implementing organisational change, the philosophies of Deming, Juran, and Crosby have more similarities rather than differences (Evans & Lindsay, 2014). All of them shared the similar views that quality is imperative in the future competitive and global markets. Moreover, they emphasised on the significance of senior management commitment in championing quality initiatives, and placed responsibility for quality on management instead of employees. They shared the need for continuous improvement and advocated quality education and training. They acknowledged that quality management practices will lead to cost saving and

increased profit. Other common grounds include the recognition of the importance of customers as well as strong partnership between management and employees.

In essence, there is a general agreement that people-related TQM practices are vital in developing the full potential of the employees to attain organisational quality goals. People-related TQM practices, namely, empowerment, reward and recognition, teamwork, training and development, employee involvement, and leadership form the foundation of TQM by various quality pioneers and thus, they are justified to be selected as the focus of this study.

## **2.5 Review of Total Quality Management**

This section discusses the literature review on TQM that includes definition of TQM, principles and concepts of TQM, relationship between soft and hard TQM, as well as people-related TQM practices in this study.

### **2.5.1 Definition of Total Quality Management**

Interestingly, Wilkinson and Witcher (1993) defined TQM by analysing the meaning of each word separately. “Total” refers to the involvement of every person within the organisation, together with suppliers and external customers, in the process of continuous improvement. “Quality” represents the capability of the organisation in meeting the expressed and



implied needs of the customers. “Management” denotes the commitment of the leadership towards quality.

Different researchers view TQM differently. Some considered TQM as a management philosophy, others suggested TQM as system, principles, holistic approach, and culture. For example, TQM is perceived as a “philosophy and a set of guiding principles for management” centralising on continuous and company-wide improvement (Dale & Cooper, 1994). Kumar, Choisine, Grosbois, and Kumar (2009) and Kaynak (2003) defined TQM as a “holistic management philosophy” aims at satisfying customer needs. Goetsch and Davis (1997) defined TQM as an “approach” to managing business by ensuring continuous improvement of quality. Additionally, TQM is seen as a constantly progressing “management system” that comprises methodologies, tools and values (Hellsten & Klefsjö, 2000). Dahlgaard, Kristensen, Kanji, Juhl, and Sohal (1998) viewed TQM as a corporate culture. In short, TQM is a synchronisation of management philosophies, theories, system, tools and techniques to achieve organisational excellence and sustainable performance (Zairi, 2013).

Since this study focuses on employees, TQM is defined as a management approach that integrates all the functional tasks in the organisation in the quest to advance quality of products and ultimately to increase customer satisfaction (Crosby, 1979; Deming, 1986; Feigenbaum, 1991; Ishikawa, 1985; Juran, 1988).

## **2.5.2 Principles of Total Quality Management**

Initially, the TQM philosophy centralised on three main concepts, namely, continuous improvement, teamwork, and customer focus (Evans & Lindsay, 2014). These three simple principles signify the beginning of the change from traditional management to modern management practices. Traditional management, as compared to modern management practices, did not take into consideration the needs of external and internal customers, empowerment of employees, and continuous improvement. As quality management evolves through the passage of time, the principles that define TQM have expanded to include more elements. In accordance with the ISO 9000:2015 and ISO 9001:2015 standards, there are seven quality management principles that management can apply: relationship management, fact-based decision making, improvement, process approach, engagement of people, leadership, and customer focus.

Relationship management describes the importance of establishing and managing relationships with various stakeholders that comprises suppliers, partners, customers, investors, employees and society, to achieve sustainable organisational success (ISO 9001, 2015). Fact-based decision making refers to the usage of analytical tools and factual information to make decisions (ISO 9001, 2015). To support a process of continuous improvement, an organisation requires quality tools and techniques in problem-solving (Papalex, Bamford, & Dehe, 2016).

Improvement refers to the ongoing effort of ensuring progress in the achievement of organisational goals (ISO 9001, 2015). Continuous improvement is essential to elevate the performance of an organisation to the next level of excellence. Process approach refers to the management of organisational activities as inter-related processes that foster an integrated system to improve the efficiency and effectiveness of outcomes (ISO 9001, 2015).

Engagement of people describes the empowerment and involvement of employees to enhance the organisational capability to create and deliver value (ISO 9001, 2015). It means all employees actively participate in working toward common objectives and goals. Leadership refers to the role of leaders in establishing the direction and cultivating an environment conducive for employees to achieve quality objectives (ISO 9001, 2015). In the implementation of TQM, it is vital for management to encourage an organisation-wide commitment to quality and drive the organisation towards achieving organisational excellence.

Customer focus refers to the core objective of implementing quality management, that is, to fulfill customer needs and to surpass customer expectations (ISO 9001, 2015). The customers, both internal and external, are the one who ultimately determines the level of quality. Organisations must not only understand the customers' current and future needs to plan, design, develop, and produce goods that meet customer needs and expectations, but also review customer complaints and make relevant changes (Ahire, Golhar, &

Waller, 1996). Moreover, it is important to actively measure and monitor customer satisfaction as well as manage the relationships with customers to achieve organisational success.

### **2.5.3 Concepts of Total Quality Management**

TQM can be categorised into two distinct components, namely, “soft TQM” and “hard TQM” (Vouzas & Psychogios, 2007; Wilkinson, 1994). TQM originated from statistical and engineering background which emphasises the “hard” or technical facets of quality management, for instance, statistical quality tools, technical techniques, system and documentation. Specifically, hard TQM consists of a set of quality tools and techniques such as control charts, histograms, scatter diagram, flow charts, and stratification (Evans & Lindsay, 1999) as well as processes and production control techniques such as just-in-time system, ISO 9000 standards, benchmarking, and process design (Wilkinson et al., 1998).

Contrariwise, soft TQM practices focus on the intangible and qualitative aspects such as training, leadership, employee participation, empowerment, reward and recognition, as well as teamwork (Lewis et al., 2006; Prajogo & Cooper, 2010). Today, TQM consists of vast emphasis on human relations which refer to “soft” or people-related facets of quality management or behavioural characteristics of management. Thus, soft TQM practices are also identified as people-related TQM practices (Prajogo & Cooper, 2010; Jayasuriya & Wedage, 2016), human-related TQM practices

and human dimension of TQM concepts (Krüger, 1998), and human resource (HR) focused practices (Prajogo & Cooper, 2017).

#### **2.5.4 Relationship between Soft and Hard TQM**

Successful TQM heavily depends on both the hard and soft practices of TQM (Krüger, 1998). Krüger (1998) highlighted that TQM needs to be based on technical competence and at the same time requires supportive culture for TQM. He recognised the importance of capturing the hearts of employees to fully commit to and participate in the implementation of quality initiatives. Gadenne and Sharma (2009) established that there is positive association among all soft and hard TQM practices and organisational performance. Thus, to achieve organisational excellence, the hard and soft TQM practices need to be implemented together effectively.

Some studies found that hard and soft TQM practices have different effects on the quality management results. Using a research on 370 Greek companies, quality was found to be affected mainly by soft TQM and secondarily by hard TQM (Fotopoulos & Psomas, 2009). Similarly, Chin, Pu, Xu, and Chan (2002) found that the effectiveness of hard TQM practices rely largely on the support of soft TQM practices to attain high quality. In addition, Brah, Wong, and Rao (2000) and Prajogo and Cooper (2010) found that intangible practices, for instance, senior management commitment, employee involvement, employee empowerment and teamwork, have significant impact on the outcome of TQM. In contrast, the result on hard quality management

practices are inconclusive with some studies (Ho, Duffy, & Shih, 2001; Powell, 1995; Samson & Terziovski, 1999) found that some of the hard TQM practices have no relations with performance. Ho et al. (2001) found that hard TQM practices mediated the relationship between soft TQM practices and organisational performance. Meanwhile, Rahman and Bullock (2005) and Abdullah and Tari (2012) established that soft TQM practices have direct effect on performance, and indirect effect on performance through hard TQM. It can be concluded that the above-mentioned research underline the importance of soft or people-related TQM practices in impacting the organisational performance.

This study chose to focus on people-related TQM practices instead of hard TQM practices based on the following reasons. First, people-related TQM practices are concerned with the role of the human dimension in the TQM concept. Schonberger (1994), Hassan (2010), Kruger (1998), and Dale, Boaden, and Lascelles (1994) postulated that TQM requires considerable attention of people management issues in order to achieve a self-sustaining TQM. Fotopoulos and Psomas (2009) highlighted that “soft TQM” practices was found to play a major role in attaining quality goals while “hard TQM” plays a supporting role only.

Second, employee turnover intention and job satisfaction are considered as “soft” indicators of performance as they are connected with behaviour and attitudes of employees which are intangible in nature and cannot be measured directly. In contrast, “hard” indicators of performance

refer to actual data and facts that can be measured directly such as financial performance, profitability, and sales figures. As advocated by Prajogo and Cooper (2010), people-related TQM or soft practices largely affect “soft” outcomes, specifically, turnover intention and job satisfaction in this study. Prajogo and Cooper (2010) further added that the people-related TQM practices would influence the “soft” measures of performance first before influencing the “hard” practices of performance.

Third, employees are regarded as internal customers of an organisation (Ijaz, Kee, & Irfan, 2012). TQM proponents (Burke et al., 2005; Prajogo & Cooper, 2010) indicated that satisfying internal customers first would contribute to the ultimate goal of achieving customer satisfaction in quality management. Thus, the investigation of people-related TQM practices and its influence on employee satisfaction are crucial to attain organisational excellence.

### **2.5.5 People-related TQM Practices in This Study**

The six people-related TQM practices in this study, specifically, empowerment, teamwork, reward and recognition, training and development, employee involvement, and leadership, were selected based on the People Capability and Maturity Model (People-CMM).

Developed in 1995 and improved in 2001, the People-CMM is an established set of human capital management practices that aims at continuously improving the capability of human capital in stages (Curtis, Hefley, & Miller, 2009). It provides a guideline for attracting, developing, motivating, organising, and retaining the talents for the transformation of an organisation (Curtis et al., 2009).

The People-CMM has been successfully used by many organisations to address critical human capital issues such as turnover, talent shortage, and low productivity (Dangmei, 2017). Facing similar human capital challenges in the skill-intensive E&E industry, the People-CMM is an appropriate framework for reference in this study.

Aligning with the organisation's business goals and changing needs, the human capital management practices are introduced progressively based on five maturity levels as illustrated in the Table 2.3 below.



**Table 2.3: The People-CMM Framework**

<b>Maturity Level</b>	<b>Focus</b>	<b>Process Areas (Human Capital Management Practices)</b>
5 Optimising	Continuously improve and align personal, workgroup, and organisational capability	<ul style="list-style-type: none"> <li>• Continuous Workforce Innovation</li> <li>• Continuous Performance Alignment</li> <li>• Continuous Capability Improvement</li> </ul>
4 Predictable	Empower and integrate workforce competencies and manage performance quantitatively	<ul style="list-style-type: none"> <li>• Mentoring</li> <li>• Organisational Capability Management</li> <li>• Competency-based Assets</li> <li>• Empowered Workgroups</li> <li>• Competency Integration</li> </ul>
3 Defined	Develop workforce competencies and workgroups, and align with business strategy and objectives	<ul style="list-style-type: none"> <li>• Participatory Culture</li> <li>• Workgroup Development</li> <li>• Competency-Based Practices</li> <li>• Career Development</li> <li>• Workforce Planning</li> <li>• Competency Analysis</li> </ul>
2 Managed	Managers take responsibility for managing and developing their people	<ul style="list-style-type: none"> <li>• Compensation</li> <li>• Training and Development</li> <li>• Performance Management</li> <li>• Work Environment</li> <li>• Communication and Coordination</li> <li>• Staffing</li> </ul>
1 Initial	Workforce practices applied inconsistently	-

Source: Curtis, Hefley, & Miller (2009, p. 47)

With reference to the People-CMM in Table 2.3, human capital management practices such as training and development as well as reward and recognition are important in developing capabilities of the human capital. Employee involvement and teamwork are crucial in building teams and culture of the organisation. Empowerment plays an important role in motivating and managing performance. Additionally, according to the TQM principles in ISO 9001, leadership is significant in establishing the direction and cultivating an employee-friendly environment to drive the organisation towards achieving organisational excellence.

The foundations of People-CMM integrate principles from three domains, namely, TQM practices, human resource management (HRM), and organisational change and development (Curtis et al., 2009). Based on the People-CMM framework, HRM, and TQM principles, this study has identified six practices, specifically, empowerment, teamwork, reward and recognition, training and development, employee involvement, and leadership, to be used as the people-related TQM practices framework in this study.

The six people-related TQM practices are selected based on several reasons. First, the six people-related TQM practices selected are strongly grounded in the foundations of quality management by quality gurus and the details have been reviewed in Section 2.4.6. In essence, quality gurus strongly advocated management commitment, employee involvement, education and training, reward and recognition, teamwork, and empowerment as key practices in motivating employees to develop their full potential in achieving organisational quality goals.

Second, the six people-related TQM practices are also consistent with the criteria in the quality awards. For example, the six people-related TQM practices are in line with the leadership and people management practices in the “European Foundation for Quality Management 2012 Model” in which the people management criteria place importance on reward system, training, empowerment, teamwork, and involvement. In addition, the six people-related TQM practices are consistent with the leadership and employee dimensions of “Malcolm Baldrige National Quality Award Criteria” (2005)

that emphasises employees' well-being and satisfaction; education, training and development; and performance management (Jun et al., 2006). In addition, the six people-related TQM practices are consistent with the human-resource related variables in the TQM practices created and endorsed by Ahire et al. (1996) and Zhang (2000).

Third, according to Evans and Lindsay (2014), reward and recognition, employee involvement, teamwork, training and development, and empowerment, are key components of a high performance work system. Both TQM and HRM have the common objective of developing successful competitive advantage with the implementation of high performance work practices (Boselie & Wiele, 2002). Wilkinson et al. (1998) confirmed the existence of a link associating TQM with HR practices. It was recommended that HR policies and practices should be developed to assimilate TQM principles for the application of quality management. In addition, according to Dwyer (2002), the integration of quality management and people management can facilitate the achievement and sustainment of competitive advantage. Similarly, Prabhu, Appleby, Yarrow, and Mitchell (2000) found a strong association between people management (shared vision, employee involvement, problem solving) and people satisfaction (employee morale, training and education, job flexibility).

Fourth, several researchers have adopted people-related TQM practices in their analysis of the effect of TQM practices on employee attitudes (Alsughayir, 2014; Arsić, Nikolić, Živković, Urošević, & Mihajlović, 2012;

Chang, Chiu, & Chen, 2010; Ijaz et al., 2012; Jayasuriya & Wedage, 2016; Jun, Cai, & Shin, 2006; Kabak Şen, Göçer, Küçüksöylemez, & Tuncer, 2014; Prajogo & Cooper, 2010). The six people-related TQM practices were found to be applied in service and manufacturing sectors (Arsić et al., 2012; Kabak et al., 2014) as well as public and private organisations (Chang et al., 2010; Alsughayir, 2014). Furthermore, the six people-related TQM practices are extensively implemented in the developing and advanced nations as exemplified by the work of Prajogo and Cooper (2010); Ooi et al. (2007); Ijaz et al. (2012); Jayasuriya and Wedage (2016). Hence, the usage of the people-related TQM practices framework across different sectors and countries indicated the transferability of the framework.

Fifth, Mosadeghrad (2014) identified 54 obstacles to successful TQM implementation and found that the most highly mentioned reasons for failure in TQM implementation include poor leadership, lack of training, insufficient involvement, inadequate management support, ineffective reward and recognition programme, and employee resistance to change. It is evident that people issues are the main culprit of unsuccessful TQM. Thus, people-related TQM practices, particularly, empowerment, teamwork, reward and recognition, training and development, employee involvement, and leadership, have been selected as areas of focus to further improve the current critical human capital challenges faced by TQM organisations.

In summary, the six people-related TQM practices, particularly, empowerment, teamwork, reward and recognition, training and development,

employee involvement, and leadership, are justified to be used as the people-related TQM practices framework in this study. These six people-related TQM practices are discussed in details in the subsequent section.

#### **2.5.5.1 Leadership**

According to Northouse (2015), leadership is a process whereby an individual motivates others to effectively accomplish the organisational goals. Leaders are generally individuals who are responsible for and contribute to the management, change process and performance of an organisation. They may be referred to the chief executive officer (CEO), the team of top management, upper management or senior management, senior executives and line managers. The literature highlighted that involvement and dedication of top management are essential in achieving success in TQM (Dale et al., 2016a; Kanji, 1990; Deming, 1986; Oakland, 1993; Crosby, 1979; Feigenbaum, 1986; Juran & Gryna, 1993).

An effective leadership lies at the heart of a successful TQM implementation. In his research on TQM in small to medium-sized enterprises (SMEs) in India, Singh (2011) identified leadership as the major driving factor for TQM success. Sharma and Kodali (2008) concurred that leadership is the first and fundamental criterion for a successful TQM. Leaders act as role models and agents of change in the implementation of TQM (Dale et al., 2016a). Setting good example, leaders must be knowledgeable about TQM and personally participate in various quality management initiatives.

Furthermore, leaders must demonstrate visible involvement in championing the total quality initiatives throughout the organisation and encourage employee engagement in quality activities. In brief, leaders have to be fully responsible and accountable for the planning, organisation, implementation and assessment of the TQM process (Mohamed & YuanJian, 2008).

Leaders are the ones who define the future of an organisation and drive the whole company towards achieving business excellence. Employee empowerment is one of the initiatives that the leaders in an organisation need to undertake (Dale et al., 2016a). Leaders should empower employees by delegating decision-making authority to the employees to solve problems they encounter and prevent recurrence of similar problems.

Deros, Rahman, Ghani, Wahab, Hashim, and Khamis (2008) highlighted that leaders should commit to providing adequate resources for the training and development of the employees to ensure the human resources have the necessary knowledge and skills for successful implementation of TQM. TQM must be accepted and embraced wholeheartedly by everyone in the organisation and communicated properly to all organisational members (Dale et al., 2016a). Thus, top management should discuss and obtain feedback on quality-related issues in meetings.

Leaders must aware that TQM is a long-term business strategy and it requires eight to ten years to put TQM in place (Dale et al., 2016a). Leaders are required to develop a well-defined long-term strategic plan for TQM and

deploy the strategies to all organisational levels to ensure the plans are implemented accordingly. Moreover, leaders need to incorporate quality into designs and processes, put quality assurance procedures and tools and techniques into place, and develop the infrastructure to support the quality improvement activities.

#### **2.5.5.2 Employee Involvement**

Employee involvement is described as the engagement of employees in the quality improvement activities and work-related decisions (Evans & Lindsay, 2014). Chiu (1999) postulated that employee involvement is the cornerstone of TQM and it requires commitment from both the management and employees to ensure a successful implementation of employee involvement.

A major characteristic of employee involvement is the active engagement of workers in quality groups, for instance, quality control circles, problem-solving teams, and cross-functional teams (Dale et al., 2016a). By participating in quality management activities, employees are motivated to contribute their innovations, knowledge, skills and expertise to achieve organisational mission and objectives. Furthermore, employees acquire new knowledge by learning from others and achieve a sense of achievement through problems solving.

Daily and Bishop (2003) posited that employee involvement initiatives involve developing open communication between management and employee and providing schemes to encourage employees to raise suggestion on quality issues. In addition, the implementation of employees' suggestions after an evaluation would encourage employee involvement. In long run, employee involvement would encourage job commitment. Employees committed to the success of the organisation would experience high job satisfaction and contribute positively to the organisation (Jun et al., 2006)

Effective employee involvement can be achieved when employees are motivated to take ownership of their jobs by reporting and solving work problems encountered in their jobs or organisations (Deming, 1986). Employees should be encouraged to discuss with their supervisors or managers regarding areas that need improvement and recommend solutions to the problems.

### **2.5.5.3 Training and Development**

According to Gomez-Mejia et al. (2012), training is the process of equipping human resources with work-related skills to improve their performance. All the employees, irregardless of their positions and departments, should be provided with appropriate training and development so that they could contribute actively in quality improvement activities. Training the workforce is critical to the success of TQM (Deming, 1986; Ishikawa, 1985; Imai, 1986).



In the context of TQM, the structure of training programme incorporates both technical skills and non-technical skills. Examples of technical skills are statistical analysis and engineering, whereas non-technical skills are communication and teambuilding. Employees are encouraged to participate in training and development programmes provided by their companies. Through training, employees acquire knowledge of TQM principles, practices, techniques and tools, in addition to other skills relevant to quality management. Lawler, Mohrman, and Ledford (1992) identified various types of training that are crucial for TQM such as leadership, problem solving, statistical analysis, group decision making, and team building.

Recognising employees as valuable resources, organisations that implement TQM invest highly in training and development programmes. Management would allocate resources to enable employees to participate in proper training and development so that they could apply quality standards and continuous improvement to achieve the targeted organisational quality outcomes.

#### **2.5.5.4 Reward and Recognition**

According to Bratton and Gold (2012), reward and recognition are all the financial, non-financial, and psychological benefits given by an organisation to the employees for the performance of their work. Examples of financial rewards are salaries, increments, bonuses and promotions whereas non-financial rewards include flexible working hours, excellent work

conditions and career development opportunities. Psychological benefits or recognition are acknowledgement, praise, gratitude and appreciation for the employees resulting from their excellent performance and extra effort in their contributions. There are two ways of giving recognition, namely, formal and informal recognition. Examples of formal recognition include presentation of awards or certificates to the achievers at company events, and publication of employees' success stories in company media or display board. Informal recognition includes a pat on the back and compliments made to others about the outstanding employees.

Be it a team or individual contribution, accomplishments in enhancing customer satisfaction and quality need to be recognised and compensated. Both rewards and recognition have powerful effects on the employees and they are the most effective approach for motivating employees to adopt new values and practices of TQM in the organisation.

Organisations may devise an employee performance measurement and reward system that strongly links quality accomplishments with pay to support their quality initiatives (Arunachalam & Palanichamy, 2017). In TQM organisations, there is a change from rewarding the employees based on qualification and seniority to performance and quality-linked. Salary and position promotions are justified by work quality and employees' participation in quality management.

To encourage employee participation in the suggestion schemes, excellent suggestions should be rewarded and recognised. In addition, improvement on work condition can be used to recognise efforts in quality improvement (Mann & Kehoe, 1994). Cao, Chen, and Song (2013) suggested that organisations should provide a fair pay system. Comparable rewards should be given to employees who achieve the same level of performance. In this regard, rewards should be stated clearly to lead the employees towards achieving the organisational goals. In short, effective recognition and reward can increase the effectiveness of TQM practices as well as motivate and enhance employees' commitment to the firm (Allen & Kilmann, 2001).

#### **2.5.5.5 Teamwork**

Teamwork refers to the organisational practice that allows employees across all the functional and operating units to work together to identify and solve work-related problems (Karia & Ahmad, 2000). According to Dessler (2003), team refers to a group of people dedicated to a shared objective. Teams can be in the forms of quality circles, quality improvement teams and project teams, to name a few.

Teamwork is a major feature in the context of TQM (Dale et al., 2016a). In a manufacturing environment, employees work as a team to carry out quality activities such as FMEA, SPC, and benchmarking. Dale et al. (2016a) opined that teams play significant roles in the process of continuous improvement. According to Dale et al. (2016a), teams can enhance the

commitment of employees towards TQM, improve communication with internal and external customers, allow employee to participate in decision making, improve morale and relationships among employees, develop trust and leadership skills, and facilitate problem solving and change management. Ooi et al., (2005) further reiterated that the development of supportive relationship among team members facilitates the implementation of TQM. Working as a team leads to enhanced employee attitudes (Chin & Sofian, 2011). In addition, according to Lee and Lee (2014), strong collaborations between employees and managers are proven to be the key factor in attaining successful organisations.

To build effective and efficient teams, top management and managers must commit themselves to developing and supporting the teams by putting in place a formally structured organisational support to the teams and the individuals' functions and roles that it affects (Dale et al., 2016a). Employees must firstly be familiarised with concepts of TQM and high-performance work teams before forming a team. Team members must be clear about the goals, objectives, roles and responsibilities of the team. Teams should meet regularly to solve problems and track their progress. In other words, teams and their functions must be managed by the group itself. To enhance the performance of team, management should provide appropriate training such as project management, team building, problem-solving, and team dynamics to the employees, and conduct periodic review of the team's progress. Upon completion of project, management should give appropriate recognition to the successful teams.

### **2.5.5.6 Empowerment**

Employee empowerment, as affirmed by TQM researchers, is a fundamental principle of TQM (Lawler, 1994; Prajogo & Cooper, 2010). Thomas and Velthouse (1990) defined empowerment from a psychological perspective whereby employees experience enhanced intrinsic task motivation developed through four cognitions, namely, choice, impact, competence, and meaningfulness. Meaningfulness is significance of the work to the employee, and competence denotes ability of employee to perform work effectively and efficiently. Impact refers to the level of difference made by the work performed by the employee, while choice is the level of independence and freedom the employee has in the performance of the work. Through empowerment, employees may develop intrinsic motivation from their work and as a result generate job satisfaction (Thomas & Velthouse, 1990).

Meanwhile, empowerment is a process of increasing the employees' belief in their abilities to accomplish tasks and goals (Conger & Kanungo, 1988). This definition implies strengthening the employees' feeling of self-efficacy. In fact, Deming's management principles are associated with empowerment, namely, institute training (Point 6); establish leadership (Point 7); drive out fear (Point 8); eliminate exhortations (Point 10) and encourage education and self-improvement (Point 13).

Empowerment as action refers to the process of giving authority to employees to make decisions, to have control over their jobs, to take risks, and to promote change (Evans & Lindsay, 2014). Ugboro and Obeng (2000) opined that TQM organisations generally provide an environment that promotes the development and utilisation of employees' knowledge and skills for the benefits of both the workers and companies. Employees are encouraged to identify quality-related problems and take initiatives to solve the problems. Furthermore, employees are delegated authority and allocated resources so that they could make decisions on quality improvement (Hill & Huq, 2004; Rubinstein, 1993).

## **2.6 Review of Job Satisfaction**

This section discusses the literature review on job satisfaction that includes definition of job satisfaction, theories of job satisfaction, relevance of theories to this study, and significance of job satisfaction.

### **2.6.1 Definition of Job Satisfaction**

Employees are viewed as individuals who possess the essential skills, knowledge, talent and experience, recruited to undertake and perform various tasks and responsibilities to achieve the mission, goals, objectives and expectations of the organisations. In fact, according to Kreitner and Kinicki (2013), employees should be viewed holistically in terms of their vast potential contribution. Besides their intelligence and skills, employees bring

together a list of intangible values such as their aspirations, creativity, ethical standards, and emotional intelligence, that form the whole package of an individual human capital (Kreitner & Kinicki, 2013) with potentials to deliver competitive advantage for the organisation. In a wider perspective, these individual human capital collectively form the social capital resulting from strong relationships, goodwill, trust, and cooperative effort among the employees. Kreitner and Kinicki (2013) further illustrates that social capital includes various dimensions such as shared values, shared goals, teamwork, collaborations, mentoring, camaraderie, and empowerment.

Employees, be it individually or collectively, have great influence on the culture and success of the organisations (Kreitner & Kinicki, 2013, Prajogo & Cooper, 2017). Thus, organisations must leverage on building human capital and social capital that are keys to organisational sustainable success. Notably, the concern for job satisfaction has triggered considerable amount of theoretical and empirical investigations among academics and practitioners as evidenced in the plethora of research in human resources, organisational behavior, industrial and organisational psychology, and management literature.

According to Zhang (2000), job satisfaction and employee satisfaction are synonymous and can be used interchangeably. Broadly defined, employee satisfaction is the feeling that employees have with regard to the various facets of their work (Spector, 2012). Locke (1976) opined that job satisfaction is a positive emotional feeling after assessing their job experience. It comprises

“psychological, emotional, and evaluative response” of the employees in relation to their jobs (Greenberg & Baron, 2003) and it covers both positive and negative attitudes and feelings (Davis & Newstrom, 1985). Armstrong (2006) highlighted that satisfaction describes positive attitudes towards the job whereas job dissatisfaction describes the negative attitudes.

Similarly, George and Jones (2008) stated that job satisfaction comprise a wide range of feelings i.e. from extreme satisfaction to extreme dissatisfaction, and it can be defined as an assortment of feelings and beliefs. Chang and Chang (2007) and George and Jones (2008) added that job satisfaction is a multidimensional construct that not only cover attitudes towards job content only but also various job components, for instance, salary, supervisors, colleagues, and nature of work. It is noted that employees will match their needs and expectations to the actual benefits they receive at workplace.

Generally, two methods are used to evaluate job satisfaction: global approach and facet approach. According to Spector (2012), the global approach captures the employees’ overall feeling or satisfaction toward the job using a single rating for job satisfaction. On the other hand, the facet approach uses different components of the job, for example, pay, supervisors, colleagues, and nature of work itself, to capture overall job satisfaction. The present study defined job satisfaction as the feeling that employees have with regard to the various facets of their work (Spector, 2012).



### **2.6.2 Relevance of Job Satisfaction Theories**

This study hypothesised that people-related TQM practices enhance employee job satisfaction. Various job satisfaction theories are used to explain the elements of job satisfaction. According to Maslow's Needs Hierarchy Theory (1954, 1970), there are five levels of needs, starting from the basic lower to higher order needs. According to Robbins (2005), the first level is physiological needs, that is, food and shelter. Next, safety needs which means free from harm. Social needs refer to love and belongingness. Esteem needs includes status and achievement. Last, self-actualisation needs comprise attaining one's full potential. The first three needs are lower order and the remaining are higher order needs. The theory explains that when individual satisfied the lower needs, one will then focus on satisfying the higher order needs.

Generally, Maslow's theory explains the human motivation and it has been used to measure employee satisfaction in the workplace (Naseem, Sadia, & Malik, 2011; Alafi, Al-Qeed, & Alkayed, 2013). Within a workplace setting, an employee is given financial compensation and other benefits such as healthcare and insurance which provide the employee with basic physiological needs. In addition, employees are provided quality working environment and job security, thus, satisfying the second level of safety needs. When the basic physiological and safety needs are being satisfied, employees will seek for sense of belonging in their organisations. Having good relationships with co-workers and supervisors in the workplace will satisfy

one's social needs. Next stage, employees feel valued, appreciated and respected by their colleagues and organisation. The final stage, known as self-actualisation, portrays the situation where the employees seek for growth and development by maximising their full potential to achieve the organisational and their personal goals. Understanding the factors affecting job satisfaction can assist organisations to maximise productivity and minimise turnover. In line with the Maslow's theory, organisations must emphasise on generating a quality and supportive workplace that will heighten job satisfaction of employees. In addition, according to Kolawole and Ali (2013), a quality work condition and environment would enhance innovation and ability to work effectively and efficiently.

In this study, job satisfaction is evaluated based on the employees' satisfaction with promotional prospects, colleagues, salary, supervisors, and the nature of the work itself (Spector, 2012). All these factors can be related to Maslow's needs theory whereby satisfaction with colleagues and supervisors are linked to social needs, satisfaction with pay and nature of work are related to physiological and safety needs, and promotional opportunities are related to esteem and self-actualisation needs.

The needs theory was further refined by McClelland (1961) who categorised human needs into three groups: affiliation, power, and achievement. The achievement needs describes individuals who are driven by the desire to continuously improve their work to attain better results. High achievers prefer to receive prompt feedback on their performance that enable

them to measure their improvement and set challenging goals. The need for power refers to individuals who are motivated to have influence and control over others. Third, individuals with high affiliation need strive for high degree of mutual understanding and cooperation in the workplace and they value team spirit and harmonious working relationship. McClelland's theory also provides insights into different facets of job satisfaction adopted in this study.

People-related TQM practices emphasise the importance of treating employees as human and satisfying employees' need. Marescauz, De Winne, and Sels (2012) integrated soft HR factors and self-determination theory to validate the association of basic need satisfaction and employees' intention to turnover. Self-determination theory is a motivation theory that emphasises three fundamental needs, namely, competence, relatedness, and autonomy. To achieve satisfaction and success at workplace, employees would aim at fulfilling these three needs. (Deci & Ryan, 2000). Autonomy refers to the ability to initiate one's own actions. Relatedness refers to interaction with others with mutual respect. Competence indicates the ability of individual to performs tasks effectively and skillfully. Similarly, people-related TQM practices in this study are hypothesised to satisfy employees' need, thus predicted job satisfaction. For example, empowerment and employee involvement boost the autonomy needs of employees and training and development enhance the competence needs. This was confirmed by Mayer, Bardes, and Piccolo (2008) who found that basic need satisfaction predicted job satisfaction.

### **2.6.3 Significance of Job Satisfaction**

Excellent employees are akin to a four leaf clover. They are rare and hard to find. Inevitably, attracting and retaining good employees is number one challenge for most firms. Job satisfaction is critical to attract and retain capable employees. In accordance with Social Exchange Theory, satisfied employees would reciprocate the organisations they attached to with increased efforts and better performance in their jobs (Cropanzo & Mitchell, 2005).

Many researchers found that employees who are satisfied with their job tend to display various positive work attitudes due to the intrinsic motivation derived from job satisfaction. In the TQM organisations, it was observed that satisfied employees are more willing to contribute their knowledge, involve highly in quality initiatives, and participate actively in problem-solving (Kivimaki & Kalimo, 1994). Moreover, according to Matzler, Fuchs, and Schubert (2004), employees that experience high satisfaction are more dedicated to continuous improvement and quality management. McNeese-Smith's (1997) study proved that employee productivity is strongly affected by job satisfaction. When employees enjoy job satisfaction, they will show more concern about quality of their work and tend to be more competent. Undoubtedly, Sousa-Poza and Sousa-Poza (2000) agreed that satisfied employees generate higher performance and efficiency. Additionally, Burke, et al., (2005) noted that organisations that treat employees as "internal customers" would ultimately witness increased customer satisfaction due to

the interrelationship between internal and external customers. When internal customers are happy, they will go the extra mile to serve the external customers.

Other than that, Organ and Ryan (1995) noted that job satisfaction enhances organisational citizenship behaviours while Porter, Steers, Mowday, and Boulian (1974) observed improved organisational commitment among satisfied employees. Above all, job satisfaction determines the success of an organisation (Harter, Schmidt, & Hayes, 2002). In the long run, according to Lee and Mowday (1987), job satisfaction can contribute to the competitive advantage of an organisation.

Conversely, job dissatisfaction is the negative feelings that employees have with regard to their work or in short, the employee dislikes his/her job (Ellickson & Logsdon, 2002). Therefore, an unsatisfied employee may become less productive (Bolin & Heatherly, 2001). If such dissatisfied employee remains in the organisation, he may likely engage in counterproductive behaviours such as absenteeism (Knights & Kennedy, 2005). Moreover, job dissatisfaction would lead to lower organisational commitment whereby the dissatisfied employee would spend less time and effort on the job and withdraw from the job gradually (Cohen & Golan, 2007). All these negative effects (i.e. absenteeism, withdrawal, lower productivity, lack of commitment) would cause serious additional costs for companies.

## **2.7 Review of Turnover Intention**

This section discusses the literature review on turnover intention that includes definition of turnover intention, types of turnover, theories of turnover, relevance of turnover theories to this study, and consequences of turnover.

### **2.7.1 Definition of Turnover Intention**

Turnover intention is expressed in many terms which includes the intention to quit, resign, leave, and end employment contract. Turnover intention, according to Tett and Meyer (1993), is an intentional plan of an employee to leave an organisation that includes a simple thought of quitting or a mention of such desire. In the same vein, turnover intention is interpreted as a mindset developed by an employee with regard to his/her assessment of the company and the job before making decision to leave the organisation (Meeusen, Van Dam, Brown-Mahoney, Van Zundert, & Knape, 2011). Also, turnover intention is the plan to have voluntary permanent departure from an organisation (Hom & Griffeth, 1991). Price (2001) refers to turnover as a situation whereby an individual changes the status from being a member of an organisation to a non-member of the organisation. Winterton (2004) provided another definition of turnover that refers to the termination of contract between the employee and the organisation. Another definition refers to employee turnover as the change of employees' status from employment to unemployment (Abbasi & Hollman, 2000). In short, turnover intention is the

willingness of an employee to terminate the employment contract and end the relationship with the employer. The present study interpreted turnover intention as an intentional plan of an employee to leave an organisation that includes a simple thought of quitting or a mention of such desire (Tett & Meyer, 1993).

Actual turnover happens when one leaves the company permanently. It is established that actual turnover behaviour can be predicted by turnover intention as supported by the perception-attitude-behavioural intention model commonly known as Theory of Planned Behaviour (Fishben & Ajzen, 1975). In addition, studies have proven that turnover intention is a strong determinant of actual voluntary turnover (Alam & Mohamad, 2010; Bluedorn, 1982; Mowday, Porter, & Steers, 1982; Price, 2001; Steel & Ovalle, 1984). In conclusion, the proven significant and positive relationship between turnover intentions and turnover have justified the use of turnover intention as the proxy in measuring actual turnover in this study.

### **2.7.2 Types of Turnover**

Generally, there are many forms of turnover which can be categorised according to voluntariness, functionality, and avoidability (Perez, 2008). In terms of voluntariness, it is important to differentiate between voluntary and involuntary turnover. Voluntary turnover happens when an employee willingly resign from a company (Lee, Gerharat, Weller, & Trevor, 2008) on his or her own decision or initiation (Shaw, Delery, Jenkins Jr, & Gupta, 1998).

Voluntary turnover could be due to many possible reasons such as an attractive job offer, argument with colleagues and superiors, lack of promotional opportunities in current job, and personal matters. Conversely, involuntary turnover is the termination of employment contract by employer and the employee has no choice but unwillingly leaves the organisation (Shaw et al., 1998). Reasons for the employer's decision could be poor job performance, misconduct or violation of workplace policies by the employee. Layoff or separation scheme, though having different procedures, can be categorised under involuntary turnover.

Voluntary turnover is subcategorised as functional turnover and dysfunctional turnover. Functional turnover refers to the resignation of low performing employee or unproductive employee (Woods & Macaulay, 1989; Dalton, Todor, & Krackhardt, 1982) which does not lead to much impact to the organisation and instead would be beneficial to the organisation. On the contrary, dysfunctional turnover refers to the resignation of high performing employee or productive and skilled employee (Woods & Macaulay, 1989; Dalton et al., 1982) which could bring about detrimental impact on the organisation.

Turnover is categorised as avoidable and unavoidable. Avoidable turnover occurs when employees leave an organisation due to higher salary, improved working conditions, etc. (Morrell, Loan-Clarke, & Wilkinson, 2004; Woods & Macaulay, 1989; Dalton et al., 1982). In such situation, employees may feel lack of self-fulfillment, receive little recognition on the job, or



encounter continuous conflicts with supervisor or colleagues in their current job. Consequently, they will look for better opportunities elsewhere and leave their employers. If the employee's voluntary turnover is identified as avoidable, the organisation have the possibility to intervene to retain the employee rather than losing the employee to the competitor. Contrariwise, unavoidable turnover occurs when the voluntary turnover cannot be prevented (Woods & Macaulay, 1989; Dalton et al., 1982) such as relocation of spouse, terminal illness, and divorce. In such case, the organisation has no control over the reasons for an employee's resignation (Morrell et al., 2004).

With reference to the various characteristics of turnover, focus of turnover in this study would be on voluntary, avoidable, and dysfunctional turnover.

### **2.7.3 Relevance of Turnover Theories**

This study is concerned with how the people-related TQM practices and employee satisfaction affect the turnover intentions of employees in the E&E industry. Resignation is not an ad hoc decision. In fact, turnover behaviour involves a process that consists of several stages that include behavioural, attitudinal, and decisional components. Thus, it is imperative for managers to comprehend the reasons employees leave or resign from the organisations. One of the theories that attempts to explain why employees leave organisation is the March and Simon's (1958) Theory of Organisational Equilibrium. This early model of turnover, to a certain extent, provides the

foundation for other subsequent models. According to March and Simon's model, there are two considerations in determining the employee turnover, namely, inducement and contributions. Inducements refer to the benefits offered by the organisation, for instance, attractive salary and promotional opportunities. Contributions represent the knowledge, time and efforts required of an employee. Employee will not leave an organisation if he/she perceives that the inducements are same as or more than the contributions. However, if the inducements are lesser than the contributions, employees would felt dissatisfied and contemplate the decision to leave the organisation voluntarily. The quitting decision are affected by two key factors, namely, the desirability and ease of movement. More precisely, the employee's decision to resign subject to the strength of the intention to leave that is influenced by job satisfaction as well as the perception of other attractive alternatives or opportunities exist. This theory provides some insights to the management in terms of managing the balance of inducement and contributions to reduce turnover. However, there is some limitations to the model. For example, it does not view the turnover as a comprehensive process and exclude other important variables that might influence the turnover process (Morrell, Loan-Clarke, & Wilkinson, 2001).

According to the Met Expectations Model (Porter & Steers, 1973), an employee's expectations are assumed to be met when the positive and negative experiences that the employee encountered at work match with what the employee anticipated would happen. Every employee is unique and has different expectations when they take up a job. As such, depending on their

expectations, any given construct will probably have diverse effects on individuals' withdrawal decisions. In situation where people's expectations are not met, the possibility of them withdrawing from work would increase. Therefore, factors associated with both the organisation and the individual should also be examined and included in the assessment of expectations of employees.

Price and Mueller's (1986) study provides understanding on the various factors affecting job satisfaction and turnover. It was highlighted that lack of inclusiveness was the major weakness in the earlier models and as a result the relative importance of each variable was not able to be assessed accurately. In order to overcome the weakness, Price and Mueller (1986) used a turnover model that listed various causal determinants of voluntary turnover that had previously been identified in the turnover literature and focused on turnover as the dependent variable. By doing so, Price and Mueller were able to test the relative importance of the determinants. The model incorporated 11 determinants as independent variables of turnover with job satisfaction and turnover intention as intervening variables. Using a sample of nurses, the investigation showed that intent to leave has the largest effect on turnover. The second largest effect was opportunity, thus supporting the model of March and Simon (1958). The third largest effect was general training with both direct and indirect effects on turnover, implying that better trained employees were more likely to resign. Moreover, it was noted that job satisfaction strongly mediated the link between the determinants and turnover. This model has the advantage of a comprehensive list of determinants. However, there are

some limitations in the model. Since the sample consisted of nurses only, there was a lack of diversity in the occupations (Morrell et al., 2001). Most importantly, Price and Mueller's (1986) study has justified the usage of job satisfaction as mediator in the link between people-related TQM practices and intent to leave.

Most employees who resign would first spend time evaluating their current job. If the current job is being appraised as providing low satisfaction, it would trigger the start of the turnover process. In relation to the turnover process, Mobley (1977) developed a 10-stage process model of employee turnover that focused on the connection between job dissatisfaction and turnover. Mobley's model provides a series of complex cognitive processes which starts with the (1) evaluation of individual's job which resulted in an emotional state of (2) satisfaction or dissatisfaction. If the outcome of the evaluation of one's job is dissatisfaction, one is likely to initiate the (3) thoughts of quitting that will lead to (4) assessment of the searching tasks and cost of leaving. At this juncture, one will consider various information such as the possibility of finding a new job and the various costs involved in the search or resigning. If the costs are acceptable, then there would be (5) intention to search for alternatives. Next, one will conduct an (6) actual search for alternatives and (7) evaluate the alternatives by (8) comparing the alternatives with the present job. If the outcome of the comparison leans towards the alternative, then behavioural (9) intention to quit will be motivated and the process proceed to the (10) final decision to quit. However, if the evaluation does not support the alternative, one may continue to seek new

alternatives or accept the current situation and remain in the job. In addition, in situation where employee made an impulsive decision to quit, then many or all of the steps in the process model may be excluded. In this study, people-related TQM practices are hypothesised to affect turnover intention. Mobley's model has shown that turnover decision starts with employee's dissatisfaction with their jobs. Therefore, according to Jex and Britt (2008), to prevent turnover problems, it is important for the management to keep satisfaction levels high among the employees and to continuously monitor their employee satisfaction levels as part of their retention strategies.

#### **2.7.4 Consequences of Turnover**

Turnover has become a critical issue facing organisations today because excessive voluntary turnover, especially of competent, productive and skilled workers, is damaging to organisation.

First, excessive turnover would have a great impact on the cost of the organisation. From the financial perspectives, Cascio (2006) and Mitchell, Holtom, and Lee (2001) highlighted that direct replacement costs can be more than 60 percent of an employee's yearly remuneration, and total costs related to turnover can be as high as double the amount of the employee's yearly remuneration. Higher level or specialised employees would incur higher replacement costs than lower level employees. Cascio (2006) highlighted that the total of turnover cost consisted of three major cost, that is separation cost, replacement cost and training cost. Separation cost is cost arising from

separation pay, if any, and exit interviews. Additionally, replacement cost involves expenses for recruitment advertisements, entrance interviews, and recruitment and selection meetings. Third, training cost involves expenses for orientation of new employees, on-the-job training activities, and quality and technical trainings. Some studies also include vacancy costs which refer to the expenses arising from recruitment of additional part-time employees to perform the work of the vacant position. Costs not only confined to financial costs, but also time and other resources. For example, the cost also included manager's time for exit interviews, delays in production and customer service, and supervisor's time in handling on-the-job training.

Second, high turnover rate would have critical impact on the organisational performance. According to Amah (2009), the employees who leave would bring along with them the knowledge, technology, experience and skills. This would generate huge loss and definitely drain on operating profits and affect the profits. Also, Baron, Hannan, & Burton (2001) opined that excessive turnover would weaken future revenue performance and affect the company's reputation.

Third, turnover may disrupt the operation of an organisation especially when there is high interdependence of tasks because the turnover of important employees can affect the ability of other employees to complete their tasks (Perez, 2008). Finding quality employees or the right employees with the right skills is becoming more difficult nowadays. Thus, the replacement of employees may take a long time. Huselid (1995) highlighted that high

turnover rate is also linked to lower productivity and affects the operational efficiency.

Fourth, high turnover affects the morale of the remaining employees (Staw, 1980). However, it depends on the reason of leaving the organisation. According to Makhbul, Rahid, and Hasun (2011), turnover intention can be an expression of dissatisfaction with the organisation. Turnover intention could be a result of unfair treatment, unequal compensation, unfavourable working environment, unfair organisation policies and politics (Cohen & Golan, 2007; Carmeli, 2005). If turnover intention is not managed accordingly, it can cause excessive turnover. For example, if an employee decided to leave for a better salary in another organisation, the remaining employees may start to evaluate their current job and organisation, and further develop their intention to leave the organisation. This may cause additional turnover. However, the morale of the remaining employees would not be affected if the employee leaves due to unavoidable issues such as spouse relocation.

Although voluntary turnover may be detrimental to an organisation, some benefits may arise from turnover, such as more opportunities for internal promotion, the prevention of stagnation and complacency, the positive elimination of unproductive employees, the sharing of expertise from new employees, and facilitation of change and innovation (Johnson, Griffeth, & Griffin, 2000). In other words, turnover may have functional effects, especially if the turnover involves low performing and unproductive employees. Moreover, Mobley (1982) opined that turnover may create

positive outcome when unproductive employees are replaced with more skillful employees. In view of intense competition for talent and the high costs of turnover, organisations should develop employee retention strategies to minimise turnover.

## **2.8 Relationship between TQM Practices and Job Satisfaction**

Undeniably, TQM necessitates an organisational change and impacts various components of the employees' work. Grunberg, Moore, and Greenberg (2001) opined that organisational change put forth pressure on both the organisation and employees. Thus, the implementation of TQM is likely to impose implications on the work-related attitudes especially employees' job satisfaction. However, Barger and Kirby (1995) observed that employees respond differently to organisational change. Some employees may view the implementation of TQM provides opportunity for self-improvement and fosters a highly motivating working environment resulting in an increased employee satisfaction (Adler & Cole, 1993). On the contrary, some employees may resist even to a slight change and find that TQM implementation create more job strain due to higher employee involvement (Korunka et al., 2003; Lam, 1995).

Extant literature supports the positive association between TQM and job satisfaction. From a theoretical perspective, quality gurus perceived that TQM viewed employees as important stakeholders who contribute values to the organisations. In line with this perception, employees are given more



power to make decision, more responsibility to involve in the quality initiatives, more opportunity to work as a team, are provided with sophisticated training to enhance personal development and are rewarded appropriately for their quality efforts. Employees are likely to feel more satisfied and more committed to their organisations when they involve highly in their work (Lawler et al., 1998; Prajogo & Cooper, 2010). Prajogo and Cooper (2010) proved that TQM practices such as leadership, empowerment, training, involvement, and teamwork, have a significant impact on employees' job satisfaction. Furthermore, Prajogo and Cooper (2017) also found TQM practices have stronger impact on job satisfaction at organisational levels. This finding strongly validated the synergy of company-wide TQM implementation to create a high performance climate in the organisations. An empirical study by Yang (2006) showed improved satisfaction and quality awareness among workers in Taiwan via the implementation of human resources related TQM practices. Other recent researches that showed positive association between soft TQM practices and job satisfaction including Alsughayir (2014), Amin and Ahmad (2015), Arunachalam and Palanichamy (2017), Ijaz et al. (2012), Jayasuriya and Wedage (2016), Jha and Kumar (2012) and Kabak et al. (2014).

An empirical study by Arunachalam and Palanichamy (2017) attempted to link TQM and work satisfaction in India. The result indicated that five soft TQM practices, namely, empowerment, training, customer focus, continuous improvement, and top management commitment, influence work satisfaction. On the other hand, teamwork, appraisal system, organisational

trust, and employee involvement did not correlate with work satisfaction. Jayasuriya and Wedage (2016) studied six people-related TQM practices, namely leadership, training, empowerment, involvement, teamwork and compensation, and their impact on job satisfaction among the senior managers in Sri Lanka. The outcome revealed that all the above TQM practices, other than compensation, had positive relationship with job satisfaction.

Alsughayir (2014) studied the effect of TQM practices i.e. teamwork, customer focus, reward and recognition, organisation culture, and organisational trust, on job satisfaction in Saudi Arabia. The result revealed that practicing TQM has a significant positive effect on employee satisfaction. Investigating the relationship between TQM and job satisfaction in the service sector in Turkey, Kabak et al. (2014) concluded that TQM practices, namely, empowerment, quality culture, teamwork, reward, and training, have impact on job satisfaction.

Within the context of Malaysia, few researches have studied the influence of TQM practices on job satisfaction. For example, Amin and Aldakhil's (2017) study on the connection concerning TQM, employee satisfaction and performance of hotels in Malaysia showed that seven TQM constructs i.e. process management, learning, leadership, internal/external cooperation, employee fulfilment, continuous improvement, and customer focus, were significantly related to employee satisfaction and hotel performance. In a study by Ooi et al. (2007), having substantial influence on

work satisfaction are four TQM practices, namely, teamwork, organisational culture, customer focus, and organisational trust. Meanwhile, with respondents from private and public sector companies, Karia and Asaari's (2006) study showed that three TQM practices, namely, continuous improvement, training and education, plus teamwork and empowerment, had significant positive effect on employee satisfaction. Also, Ooi et al.'s (2008) probe which focused on the association of TQM practices with job satisfaction of production employees in E&E companies found only two out of five TQM practices i.e. organisation culture and teamwork had positive link with work satisfaction.

Nonetheless, there is a contradictory view on the correlation with regard to TQM and job satisfaction, on the matter. In a recent study, de Menezes (2012) probed the association concerning work satisfaction and quality management using a large sample of 22,451 employees in Britain. The results surprisingly demonstrated non-significant correlation between quality management and job satisfaction. An analysis on Hong Kong's employees by Lam (1995) revealed that not all components of job satisfaction were improved by TQM. The supervisors seemed to dislike the TQM transformation due to tedious work and tough requirements. Similarly, middle managers and front-line employees cited reasons such as less work autonomy and lack of sense of achievement (Lam, 1996). Employing before and after test, Luthans's (1996) study on a healthcare organisation confirmed non-significant correlation pertaining to TQM's influence on job satisfaction. The findings was further confirmed by a longitudinal study in Finland by Kivimäki,

Mäki, Lindström, Alanko, Seitsonen, and Järvinen (1997). There was no change in work-related perceptions and work satisfaction among the workers due to TQM.

The outcomes of the association concerning TQM and job satisfaction remain inconclusive and inconsistent. In addition, the research with regard to TQM's impact on job satisfaction in Malaysia is sparse. Evidently, establishing and affirming the link among each people-related TQM practices and job satisfaction is vital in the Malaysian E&E manufacturing companies.

## **2.9 Relationship between TQM Practices and Turnover intention**

Yeh (2003) emphasised that effective TQM necessitates workers to involve committedly in “extra-role behaviours” to carry out additional responsibilities and tasks. Similarly, Korunka et al. (2003) found that employees faced job strain due to higher employee participation in TQM. Analysing the hindrances to successful TQM, Mosadeghrad (2014) identified that people issues are the main root problems of failure in TQM implementation. Among the people issues mentioned are insufficient employees' involvement and employee resistance to change. Employees who could not cope with the job-related stress demanded by TQM implementation may likely consider leaving the organisation (Hasin & Omar, 2007).

There are a few, though not many, empirical studies conducted concerning the impact of TQM on turnover intention. In the context of Malaysia, Ooi et al. (2006) examined the relationship between soft TQM i.e. empowerment, involvement, organisational communication, organisational trust, and customer focus, and employees' tendency to stay (inverse of intention to leave). With respondents of 230 Malaysian workers, the outcomes showed that all five soft TQM practices increased tendency to stay. Using human resource practices, similar studies also yielded support for the hypothesised TQM/HRM practices on intention to stay. For example, Sinniah and Kamil (2017) analysed the impact of six Human Resource practices i.e. results oriented appraisals, participation, training and development, job description, employment security, and internal career opportunity, on employee turnover intention at a telecommunication company in Malaysia. The result showed that results-oriented appraisals, training, job description, and employment security strongly influence turnover intention of the employees. Employee compensation and benefits seemed to be significant to Malaysian employees in relation to employee retention. For instance, Johari, Tan, Adnan, Yahya, and Ahmad (2012) assessed human resource management practices i.e. appraisal, compensation, career progress, and training, in connection to employees' remain tendency. However, remain tendency was only affected by compensation.

An investigation on employee perceptions of HRM/TQM conducted in The Netherlands by Boselie and Wiele (2002) revealed that leadership, cooperation, and pay, had increased work satisfaction and reduced turnover.

Similarly, Arsić et al. (2012), Chang, Chiu, and Chen (2010), Martensen and Grønholdt (2006), as well as Turkeyilmaz, Akman, Ozkan, and Pastuszak (2011) found that TQM practices led to increased job satisfaction and improved loyalty or intention to remain in the organisation (inverse of turnover).

Guimaraes (1996, 1997) conducted a case study for pre- and post-TQM to assess employees' turnover intention. Favourable transformations was observed at the workplace and these changes had brought significant improvement in turnover intention within the organisation. A test by Sommer and Merritt (1994) showed significant decrease of quitting tendency after one year of TQM implementation. Additionally, better affective response of workers can be achieved via TQM as illustrated by Carlopio and Gardner's (1996) analysis in Australia. It was reported that decreased turnover intention can be attained when employees highly immerse in quality initiatives.

The inverse association between employees' perception of TQM and employees' turnover intention provides an insight on how an organisation can motivate its employees to remain loyal and contribute productively via TQM. However, from the literature review pertaining to the impact of TQM on turnover intention in Malaysia, it was found that there is limited studies on the topic. Thus, association concerning people-related TQM practices and turnover intention is unquestionably a beneficial topic for future research that requires thorough investigation in an organisational setting.

## **2.10 Relationship between TQM Practices and Turnover Intention with Job Satisfaction as Mediator**

Generally, a successful TQM requires mutual support from management and employees. For example, an appropriate reward system and training structure as well as commitment from top management are equally important. These basic requirements will impact job satisfaction and turnover intention. Thus, people-related TQM practices can be anticipated to have structural linkage with job satisfaction (Alsughayir, 2014; Amin & Ahmad, 2015; Arunachalam & Palanichamy, 2017; Ijaz et al., 2012; Jayasuriya & Wedage, 2016; Jha & Kumar, 2012; Kabak et al., 2014; Prajogo & Cooper, 2010, 2017; Yang, 2006) and with turnover intention (Boselie & Wiele, 2002; Guimaraes, 1996; Sommer & Merritt, 1994). It is noted that the abovementioned studies focus on the direct effect of TQM practices on either job satisfaction or turnover intention only. There are no or limited studies on the tridimensional links among TQM practices, job satisfaction, and turnover intention. Moreover, turnover intention can also be affected by people-related TQM practices via the mediating effect of job satisfaction. However, the mediating role of job satisfaction in the link between TQM practices and turnover intention was seldom analysed.

Despite limited studies on the tridimensional linkages among turnover intention, job satisfaction, and TQM practices, there are few studies that analysed the relationship among loyalty, work satisfaction, and TQM (inverse of turnover). TQM-employee satisfaction-loyalty model has been studied by

Turkyilmaz et al. (2011), Chang et al. (2010), Arsic et al. (2012), Jun et al. (2006), and Martensen and Grønholdt (2006). These studies supported the notion that TQM practices led to increased job satisfaction and subsequently enhanced loyalty among employees. However, in all these five studies, the mediating influence of job satisfaction in the linkage connecting TQM practices and loyalty was not analysed.

In a recent study, Arunachalam and Palanichamy (2017) analysed the link between soft TQM practices and commitment with work satisfaction as mediator. Using structural equation modelling technique, the results showed that work satisfaction mediated the link between commitment and soft TQM. Deducing from Arunachalam and Palanichamy's (2017) analysis, employee satisfaction is likely to mediate the linkage connecting TQM practices and turnover intention.

Notably, there is a dearth of empirical study to investigate job satisfaction as a mediator between each people-related TQM practices and turnover intention. Evidently, it is essential take a stand on the existence of such a mediating correlation among the workers in Malaysia's E&E companies.



## **2.11 Chapter Summary**

This chapter discusses the historical development, foundations, principles, and concepts of TQM. In addition, literature review on job satisfaction presents various job satisfaction theories and the significance of job satisfaction whereas literature review on turnover intention highlights various turnover theories and consequences of turnover. This chapter also explores the interrelationship among the three major constructs, namely, people-related TQM practices, job satisfaction, and turnover intention. The detailed literature review delivers a solid groundwork for the development of a conceptual model linking people-related TQM practices, turnover intention and job satisfaction that will be presented in the following chapter.

## **CHAPTER 3**

### **HYPOTHESES DEVELOPMENT AND CONCEPTUAL FRAMEWORK**

#### **3.1 Introduction**

Chapter Three describes the Social Exchange Theory and Job Embeddedness Theory that are used as the fundamental theories in this study. Additionally, this chapter also addresses the hypothesised multidimensional and mediating relationships among turnover intention, job satisfaction, and people-related TQM practices. The chapter concludes with a conceptual model that forms the research framework for this study.

#### **3.2 Fundamental Theories**

The present study employed Social Exchange Theory (SET) and Job Embeddedness Theory to illustrate the impact of people-related TQM practices on employee satisfaction and quitting intention. Cropanzano and Mitchell (2005) concurred that SET is a well-known theory for explaining organisational behaviour. The main principle in SET is that parties form and maintain exchange relationships with others anticipating rewarding and positive outcomes from the relationships (Blau, 1968). In essence, there is a

norm of reciprocity in the interdependent relationship. Secondly, in terms of the resources exchanged, there are two dimensions of resources being exchanged: economic and social resources (Miles, 2012). According to Miles (2012), economic resources refer to tangible items such as goods, money, or services. Social resources refer to intangible items such as appreciation, praise, friendship, support, or respect. Highlighting the long term commitment of social exchange, Cropanzano and Mitchell (2005) explained that organisation may require years to build the exchange relationship into mutually beneficial relationship.

This study practically examines the impacts of exchange relationships between employees and employers in the E&E industry. SET is applied to develop the framework for predicting the impact of people-related TQM practices on work-related attitudes. In this study, people-related TQM practices such as empowerment, teamwork, reward and recognition, training and development, employee involvement, and leadership, are predicted to increase job satisfaction and lower turnover intention.

Many authors have applied SET to predict the effect of human resource or TQM practices on employees (Avanzi, Fraccaroli, Sarchielli, Ullrich, & van Dick, 2014; Biron & Boon 2013; Gould-Williams & Davies, 2005; Malik, Abbas, Kiyani, & Waheed, 2011; Omar, Salessi, & Urteaga, 2017; Rahman & Nas 2013; Sinniah & Kamil, 2017). For example, Bari, Fanchen, and Baloch's (2016) study revealed that three soft TQM factors i.e. education and training, reward and recognition, and teamwork, have indirect

and direct effect on employee satisfaction with relational psychological contract (which is part of SET) as mediator. In other words, employees require top management support to achieve outstanding outcomes of the implementation of soft TQM practices. The mediating effect of relational psychological contract validates the SET exchange theory as the link between TQM and job satisfaction.

The SET (Blau, 1964; 1968) is an appropriate theoretical framework to elucidate the effect of employees' attitudes, cognitions, and behaviours. From the lens of SET, employee-focus TQM organisations would indicate to their employees that they are committed to taking care of their employees by investing in their human resources, especially in areas concerning compensation, welfare, and development of employees. In accordance with reciprocal principle in SET, employees would respond to such benefits, welfare, and investments, by contributing productively to the organisations and developing long-term job prospects with the organisations. This will entail win-win outcomes to both the organisations and employees whereby organisations enjoy better performance and employees experience higher level of job satisfaction, thus leading to lower resignation.

The win-win relationship between organisation and employee can be expanded to include wider connections and links within the organisation and the within the community. In the perspective of the Job Embeddedness Theory, Mitchell, Holtom, Lee, Sablinski, and Erez (2001) investigated various ways in which employees become embedded in their jobs and their

communities. Generally, there are three types of connections that cultivate embeddedness: (1) links (2) fit and (3) sacrifice. Links are connection with other people, groups, or organisations. Examples include relationships with co-workers, friends, and religious groups. Employees would have greater sense of embeddedness and find it difficult to leave if they have numerous strong links and interpersonal relationships with others in their organisations and communities. Fit represents the extent of compatibility of the employees with their job, organisation and community. For example, if an employee has a passion for sports and the employee works with a sports company and lives in a community that provides good sports facilities, the employee would become more embedded in the job and community, and likely continue to stay with his or her current job. Sacrifice refers to things that an employee would have to give up if he or she leave a job. Sacrifices include a high salary, a conducive working environment, promotional opportunities, and others. The employee would become more embedded if they need to sacrifice more to leave the organisation. These three factors would have an impact on the decision to stay or leave the organisation. Organisation that focuses on employee engagement and fostering team dynamics, interpersonal, social, and among the employees is expected to find higher job satisfaction and lower turnover intention among its employees.

In this study, Social Exchange Theory is linked with Job Embeddedness Theory to achieve better outcomes in the implementation of people-related TQM practices.

### **3.3 Hypotheses Development**

With reference to the problem statement and research objectives identified in Chapter One, this study intends to contribute to the operational management, organisational behaviour and quality management knowledge by exploring the impact of people-related TQM practices on turnover intention and job satisfaction in Malaysia's E&E industry. In view of the research objective, the relationships among the constructs are addressed as follows:

#### **3.3.1 The Hypothesised Relationship between Leadership, Job Satisfaction and Turnover Intention**

According to TQM philosophy, the decisions and systems developed and implemented by the senior management affect both the organisation and the employees. Leaders motivate, inspire, mentor, and coach people as well as create and nurture a supportive working environment. More importantly, leaders build the culture and generate change at the organisational level. In a nutshell, managers and their leadership style is the key determinant to organisational success (Kreitner & Kinicki, 2013). Appropriate leadership styles can boost productivity and satisfaction. Styles of leadership include transformational, participative, autocratic, transactional, laissez-faire, and charismatic, to name a few (Berson & Avalio, 2004). Transactional and transformational leadership are associated positively with a range of employee behaviours and attitudes. Transactional leadership focuses on clarifying employees' roles and tasks and providing rewards based on performance as

well as penalties if the employee did not perform well (Burns, 1998). In contrast, transformational leaders cultivates high levels of engagement, trust, and commitment among the employees to transform employees to pursue organisational goals (Gul, Ahmad, Rehman, Shabir, & Razzaq, 2012). Nor, Omar, Sumilan, Siong, and Johari (2014) investigated the relationship of transactional leadership style on tendency to quit among 645 manufacturing operators in Malaysia and discovered significant negative association concerning transactional leadership and turnover intention. Furthermore, Leong's (2017) investigation showed that both leadership styles affect turnover intention, however, transformational leadership style influence more on reducing turnover intention as compared to transactional leadership style. However, contemporary leaders usually adopt leadership style interactively in accordance with different situation (Lee & Chuang, 2009).

Leadership and management dedication to TQM play significant roles in enhancing employee job satisfaction as proven by Prajogo and Cooper (2010), Ugboro and Obeng (2000), Jun, Cai, and Shin (2006), Jha and Kumar (2012), and Ijaz et al. (2012). Ijaz et al. (2012) studied the sample of employees of various levels in ISO-implemented service and manufacturing organisations in Pakistan. Using structural equation modelling (AMOS), the outcomes showed TQM practices positively influence employee satisfaction. Results indicated highest correlation between leadership role and teamwork. It showed that effective leadership promotes teamwork, contributing to both individual and organisational performances as well as employee job satisfaction. Similar findings were obtained from an empirical study by

Ugboro and Obeng (2000) whereby leadership was established to have strong and positive association with employee satisfaction, subsequently contributing to increased customer satisfaction, the ultimate goal of TQM. On the other hand, Sohal and Terziovski (2000) highlighted that inadequate support from management may bring about failure in TQM. Despite awareness of the quality operations of an organisation, the potential contribution of the employees is often hindered by ineffective leadership. Ooi et al. (2008) found that leadership was not significantly related to production workers' satisfaction. Clearly, insufficient leadership dedication may lead to malfunction of TQM.

A leader is perceived to have substantial impact on the implementation of TQM. Leaders are required to develop shared vision and communicate it effectively to the employees so that they fully comprehend the purpose and benefits of implementing TQM. By doing so, employees will be motivated to walk the extra miles with the leaders in the transformational journey of achieving excellence in quality management. Adversely, if a leader is incompetent in the management of quality, it may cause dissatisfaction in the employees and progressively will lead to turnover intention. An empirical research by Boselie and Wiele (2002) concluded that leadership demonstrated via provision of "supportive and coaching style of management" led to high employee job satisfaction and thus reducing turnover rates.



Also, job satisfaction may mediate the link between leadership and turnover intention. For example, Sellgren, Ekvall, and Tomson (2007) conducted a study to analyse the linkages between leadership and actual turnover with job satisfaction and work climate as intervening constructs. Questionnaires were distributed to 77 nurse managers and 770 subordinates in a hospital in Sweden. The result showed the effect of leadership on turnover was mediated by job satisfaction, despite non-significant direct relation between leadership and turnover.

From the deliberation above, one can conclude that leadership and dedication from top management would determine the success or failure of TQM implementation. Many past researches recognised the positive association relating to leadership and job satisfaction, the inverse relation between leadership and turnover intention and the mediating effect of job satisfaction in the link associating leadership and turnover intention. In accordance with these results, the influence of leadership, a major TQM factor, on job satisfaction and turnover intention is hypothesised as follows:

*[H1a]: Leadership is positively linked to job satisfaction among employees in Malaysia's E&E industry.*

*[H1b]: Leadership is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

*[H1c]: Job satisfaction mediates the link between leadership and turnover intention among employees in Malaysia's E&E industry.*

### **3.3.2 The Hypothesised Relationship between Employee Involvement, Job Satisfaction and Turnover Intention**

A string of benefits to both the employees and the entire organisation can be contributed by employee involvement. Research showed that success of TQM hinged on substantial employee involvement especially participation in the organisation's decision-making process (Oakland, 2014). Well-being of employees has been proven to improve significantly due to employee involvement (Freeman & Kleiner, 2005). Studies have shown that employee involvement makes the employees feel more satisfied with and committed to their companies (Griffin, Hogan, Lambert, Tucker-Gail, & Baker, 2010; Lawler, Mohrman, & Ledford, 1998; O'Driscoll & Randall, 1999; Ooi et al., 2007). Furthermore, excellent work performance and organisational commitment can be attained when employees experience satisfaction via taking part in decision-making (Kim, 2002; Rodwell, Kienzle, & Shadur, 1998; Wagner, 1994). Increased employee productivity, according to Jones, Kalmi, & Kauhanen (2010), is also known to be one of the positive outcomes of employee involvement. In addition, Apostolou (2000) postulated that employee involvement that promotes speedy and direct decision making by employees contributes to cost reduction through removal of waste and lower product cycle time. Additionally, Prajogo and Cooper's (2010) study further confirmed the noteworthy link connecting involvement with job satisfaction.

Ooi et al. (2006) conducted a study to assess the connection linking TQM and employees' intention to remain. The results showed that employee

involvement have positive association with probability to stay. In another words, employee involvement is negatively related with employee's turnover intention. Similar findings also obtained from the study by Sachdeva (2014) who investigated the job involvement of the 400 bank employees in North India. The outcome of the study revealed inverse association with regard to job involvement and turnover intention, indicating that reduced intentions to quit the present jobs can be attained via increased employee involvement.

Scott, Bishop, and Chen (2003) investigated the mediating influence of job satisfaction in the link between employee involvement or participative management and intention to quit and willingness to cooperation. Following the survey of 268 manufacturing workers of a United States invested enterprise in China, it was established that job satisfaction mediated the link connecting employee involvement and intention to quit.

With reference to the discussion above, it is hypothesised that:

*[H2a]: Employee involvement is positively linked to job satisfaction among employees in Malaysia's E&E industry.*

*[H2b]: Employee involvement is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

*[H2c]: Job satisfaction mediates the link between employee involvement and turnover intention among employees in Malaysia's E&E industry.*

### **3.3.3 The Hypothesised Relationship between Training and Development, Job Satisfaction and Turnover Intention**

Having two-pronged goals, training and development benefits both the organisation and employees. When an organisation provides training to its employees, it assists them to enhance their skills and knowledge for their career development. It also makes employees to realise that the organisation invests heavily on them and takes care of them. According to reciprocal concept in the social exchange theory, employees would respond to such training and development opportunities by contributing productively to the organisations (Rahman & Nas, 2013). This will contribute to decreased tendency to quit and increased satisfaction among the employees.

Schonberger, 1994 noted that organisations financed heavily in training and development programmes due to its many benefits to employees. Evaluating the effect of TQM on work-related attitudes, Karia and Asaari (2006) conducted an empirical study on employees from private and public companies in Malaysia. 104 valid questionnaires were analysed. The results showed that training and education significantly linked to job satisfaction. Conversely, Ooi et al. (2008) found no significant effect of training and development on satisfaction among production workers. Having similar results, Zhang (2000) reasoned that training demands long-term obligation and thus, the outcomes could not be realised overnight. Though training are important, it generates more satisfaction among higher educated employees compared to lower level workers (Zhang, 2000).

Successful implementation of TQM relies heavily on appropriate training and development. Be it work-related or non-work related trainings, employees would gain more practical knowledge and experience in performing their roles and responsibilities. With appropriate training and development, employees tend to be more motivated to perform better in their job. Thus, employees enjoy their job and anticipate advancement in their career pathway with their companies, and unlikely thinking of quitting their jobs. Using respondents from Pakistan's public universities, Rahman and Nas (2013) examined the association between employees' training and development and turnover intention. Data were collected using quantitative survey method. A significant inverse link associating training and employees' intention to leave was found.

Furthermore, the mediating role of job satisfaction in training-turnover intention relationship existed in several past studies. For example, Huang and Su (2016) conducted a survey on 150 employees in Taiwan and discovered that employee satisfaction has indirect effect on the inverse relationship between training and intention to quit. Using 250 respondents from fast food industry in Saudi Arabia, Jehanzeb, Hamid, and Rasheed (2015) found that job satisfaction mediated the link concerning effective training programmes and intention to leave. Another study conducted among 2,833 Dutch pharmacy assistants also discovered that employee satisfaction generated effective mediation between training and turnover intention (Koster, De Grip, & Fouarge, 2011). Similar mediating effect is also indicated in the survey among Chinese employees by Cheng and Waldenberger (2013).

With reference to the discussion above, it is postulated that:

*[H3a]: Training and development is positively linked to job satisfaction among employees in Malaysia's E&E industry.*

*[H3b]: Training and development is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

*[H3c]: Job satisfaction mediates the link between training and development and turnover intention among employees in Malaysia's E&E industry.*

### **3.3.4 The Hypothesised Relationship between Reward and Recognition, Job Satisfaction and Turnover Intention**

Reward and recognition are highly valued by employees. To some employees, reward and recognition represent personal success and value (Cao, Chen, & Song, 2013). In fact, the two-factor theory by Herzberg (1996) identified recognition for achievement as a motivator that contributes to satisfaction. Reward and recognition boost the self-esteem and self-actualisation needs of the employees (Maslow, 1954, 1970). Thus, employees who put in extra effort to achieve outstanding result would feel satisfied towards their jobs and in turn decrease their likelihood of resigning from their companies. Studies conducted by Brief and Weiss (2002), Alsughayir (2014), Arsic, Nikolic, Zivkovic, Urosevic, and Mihajlovic (2012), and Lee and Lee (2014) showed that employees experience greater amount of job satisfaction when the employees' efforts are rewarded by the organisation. However, not

all studies showed affirmative link connecting reward and recognition and work satisfaction. For instance, Ooi et al. (2007) found no obvious correlation concerning reward and recognition and employee satisfaction in their survey.

Due to the changing needs and expectation of employees, Cao et al. (2013) highlighted that organisations must focus on developing total rewards management that consists of a holistic employee-oriented remuneration system. By doing so, it was found that total rewards which comprised five elements, namely, salary, rewards, career, recognition, and work-life, have a significant negative link to employee tendency to leave.

As reward and recognition can improve the satisfaction of employees and reduce the turnover rate, employees' job satisfaction can thus be assumed to intervene between reward and recognition and turnover intention. This was proven by Guzman's (2007) empirical analysis results that indicated full mediating effect of job satisfaction in the relationship between reward and recognition and tendency to leave among government agency personnels in the United States.

The above deliberation leads to the following hypotheses:

*[H4a]: Reward and recognition is positively linked to job satisfaction among employees in Malaysia's E&E industry.*

*[H4b]: Reward and recognition is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

*[H4c]: Job satisfaction mediates the link between reward and recognition and turnover intention among employees in Malaysia's E&E industry.*

### **3.3.5 The Hypothesised Relationship between Teamwork, Job Satisfaction and Turnover Intention**

In a TQM organisation, teamwork is essential to encourage employees to work effectively and efficiently to accomplish a task or project. According to Rahman and Bullock (2002), the ability to work in teams will increase the employees' motivation and enhance their efficiency, and simultaneously meet their social and affiliation needs at the workplace. Therefore, successful teamwork contributes to higher job satisfaction among the employees. Majority of studies (Guimaraes, 1996; Ijaz et al., 2012; Jun et al., 2006; Kabak et al., 2014; Ooi et al., 2008; Prajogo & Cooper, 2010; Sommer & Merritt, 1994) showed that teamwork has positive impact on employee satisfaction. Ijaz et al. (2012), Kabak et al. (2014), and Ooi et al. (2007, 2008) indicated that as a main TQM practice, teamwork have significant and positive connection with employee job satisfaction. Ijaz et al. (2012) conducted research on 243 employees of various positions in ISO-implemented manufacturing and service sectors in Pakistan. Result showed that teamwork strongly influence job satisfaction. However, teamwork may have adverse effect on job satisfaction if conflict arises among the team members or teamwork practices do not suit the organisational culture as shown by the



findings in the research conducted by Arunachalam and Palanichamy (2017) and Govindan and Ahmad (2003).

Teamwork is crucial in any organisation or industry. A lack of cross-functional teamwork makes it difficult for employees to carry out their responsibilities, thus leads to frustration and in turn higher job turnover. Furthermore, lower teamwork produces lower levels of productivity and growth and hampers the operational efficiency to achieve strategic goals. Helga, Sigrún, Sólrún, and Gudny (2017) conducted a study on teamwork using a descriptive cross-sectional quantitative study in eight hospitals in Iceland. The Nursing Teamwork Survey consisted of 33 statements on teamwork within five aspects, namely, team leadership, shared mental model, back-up, team orientation, and trust. The result showed a significant negative link between teamwork and desire to resign.

Teamwork is a critical factor to productivity. Since the entire organisational processes are interdependent, each of the employee's task will affect others' work. Trybou, Malfait, Gemmel, and Clays (2015) distributed questionnaires to nursing staff to analyse the link between team-member exchange and turnover intention with employee satisfaction as mediator. With reference to the reciprocal exchange relationship among the nursing staff, the result confirmed that job satisfaction exerted full mediating effect on the turnover intention of the staff.

Thus, it is proposed that:

*[H5a]: Teamwork is positively linked to job satisfaction among employees in Malaysia's E&E industry.*

*[H5b]: Teamwork is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

*[H5c]: Job satisfaction mediates the link between teamwork and turnover intention among employees in Malaysia's E&E industry.*

### **3.3.6 The Hypothesised Relationship between Empowerment, Job Satisfaction and Turnover Intention**

Employees who have certain degree of autonomy display control over their work and the outcome of their work. With greater autonomy, employees able to participate in decision-making and receive great support from their superiors. According to Conger and Kanungo (1988), autonomy in the workplace increases self-efficacy motivation of employees to do their tasks better. Empowerment makes the employees feel that their work are challenging and meaningful (Hackman & Oldham, 1980). Empowered employees demonstrate higher performance and satisfaction predominantly due to their participation in decision making and goal setting. Therefore, it is anticipated that employee empowerment brings about positive effect on job satisfaction.

The fact that empowerment has positive association with job satisfaction is evidenced in TQM and HRM literatures (Prajogo & Cooper, 2010; Jayasuriya & Wedage, 2016; Ugboro & Obeng, 2000). Jayasuriya and Wedage (2016) study the relationship between TQM and employee job satisfaction in the context of the apparel manufacturing in Sri Lanka. The sample used was senior managers in the production and quality department of 15 randomly selected apparel manufacturing organisations. Interestingly, results showed varying impact of TQM practices on the gender of the employees. Teamwork, leadership, and involvement are the significant factors for the job satisfaction of male employees whereas empowerment and involvement are the significant factors for female employees. Notably, for employee involvement, both genders have the same positive effect. However, in the study conducted in Serbia by Arsić et al. (2017), employee empowerment was found to relate negatively with employee satisfaction. The negative impact was attributed to the top-down hierarchical structure of Serbian culture whereby employees tend to depend on senior managers for decision making and there was also possibility of employees not having the appropriate information and skills to contribute effectively to the organisation.

Kim and Fernandez (2017) analysed a survey on 200,055 employees of U.S. federal government and found an inverse and significant link between empowerment and desire to quit. It was found that multifaceted managerial intervention of employee empowerment can reduce intention to leave U.S. federal bureaucracy. In addition, Kim and Fernandez (2017) found that job satisfaction mediated the link connecting empowerment and desire to quit.

The effective mediation of employee satisfaction in the empowerment-turnover intention link is confirmed by a study conducted by Oluwaseun (2016). He conducted a case study among 140 bank employees in Nigeria. Using online questionnaires, Oluwaseun (2016) found that job satisfaction mediated the link connecting empowerment and propensity to remain (inverse of turnover intention). Additionally, Wong Humborstad and Perry's (2011) investigation confirmed that the empowerment-turnover intention link was fully intervened by job attitudes which used job satisfaction and organisational commitment scales. The samples comprised 290 frontline hotel employees in Macau. Obviously, employee empowerment creates a workforce with an enhanced ability to surpass expectations of customers.

Subsequently, the hypotheses are developed as follows:

*[H6a]: Empowerment is positively linked to job satisfaction among employees in Malaysia's E&E industry.*

*[H6b]: Empowerment is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

*[H6c]: Job satisfaction mediates the link between empowerment and turnover intention among employees in Malaysia's E&E industry.*

### **3.3.7 The Hypothesised Relationship between Job Satisfaction and Turnover Intention**

Several studies has supported job satisfaction as the main contributor to employees' desire to resign (Hellman, 1997; Sukriket, 2018; Tett & Meyer, 1993; Tian-Foreman, 2009). The job satisfaction-turnover intention relationship can be explained using Mobley's (1977) model of turnover. According to Mobley (1977), job dissatisfaction is the starting point that triggers the thinking of resigning from a job. Job dissatisfaction can occur in various aspects, for example, pay, career advancement, appraisal, and supervisory support. Employing a study among employees in the publication industry, Tnay, Othman, Siong, and Lim's (2013) study showed that supervisory support and pay satisfaction significantly and negatively affected employees' turnover intention, and in contrast, organisational commitment had no significant relationship with turnover intention. Chin (2018) investigated the job satisfaction-turnover intention link in Malaysian manufacturing sector. Results showed overall high job satisfaction, with career development and supervision significantly contributed to the inverse association with turnover intention.

Using respondents of software programmers in Thailand, Sukriket's (2018) investigation revealed that four of the job satisfaction variables i.e. supervision, benefits, nature of work, and job condition, significantly related to employees' turnover intention. Tian-Foreman's (2009) study strongly supported the inverse association with regards to turnover intention and job

satisfaction in a well-known Chinese retail company that was facing excessive turnover. Using survey from 2,300 employees in the Netherlands, Boselie and Wiele (2002) confirmed the correlation of employee satisfaction and intention to quit. Employees that perceive TQM/HRM practices positively portrayed greater satisfaction and lesser inclination to resign, therefore, confirming the correlation. Evidently, mean correlation of -0.49 and -0.58 was observed in the investigation by Hom et al. (1992) and Tett and Meyer (1993) further confirmed the strength of satisfaction-turnover intention link.

In Malaysia, several job satisfaction-turnover intention studies have been conducted. For example, Alam and Mohammad's (2009) investigation revealed that the nursing staff were moderately satisfied with their job and exhibited lower resignation desire. Mahdi, Zin, Nor, Sakat, and Naim's (2012) analysis showed that both extrinsic and intrinsic job satisfaction have negative relationship on employees' turnover intention. Additionally, in a survey of 116 Information Systems employees in multinational companies in Malaysia, Teh and Laosirihongthong's (2011) study revealed that job satisfaction influenced propensity to leave. Using the motivator and hygiene factors in the Herzberg's Two Factor Theory, Hasin and Omar (2007) proved that higher job satisfaction led to lowered turnover intention. Hasin and Omar's (2007) study which was conducted among audit staff in Malaysia also highlighted that job-related stress significantly influenced turnover intention. It was further noted that motivation factors were found to affect job satisfaction, whereas hygiene factors were found to cause job-related stress.

It is interesting to note that employee turnover may not be necessarily caused by low job satisfaction. For example, using a nationwide cross-sectional survey of 10,457 responses, Roslan, Noor Hazilah, Nor Filzatun, and Azahadi (2014) investigated the job satisfaction and turnover intention among the public healthcare personnels and found that the employees were generally satisfied with their work with a mean of 3.45. Yet, dentists, pharmacists, and medical specialists experienced high turnover intention. It was reasoned that the high turnover was due to the high demand from the more lucrative private medical sector.

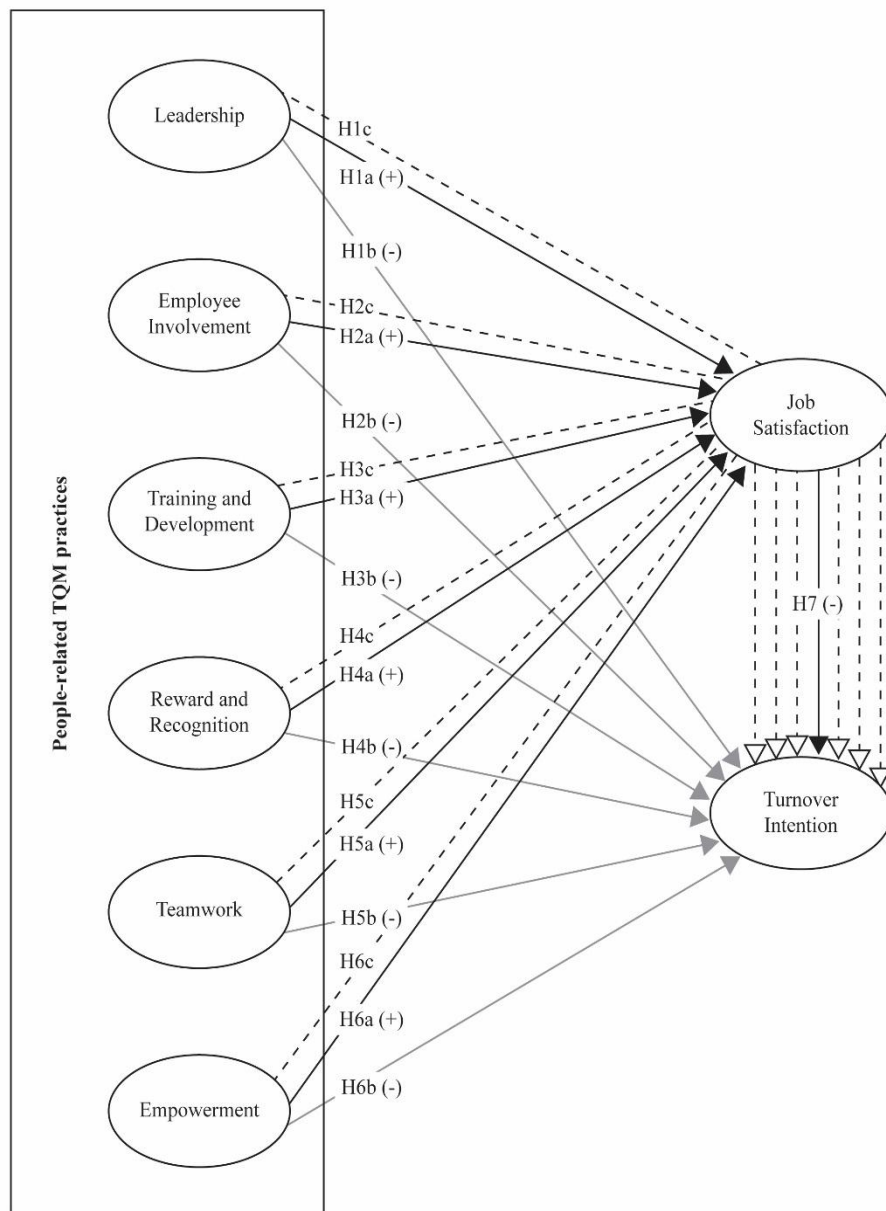
In recognition of the intensity of the correlation between turnover intention and job satisfaction, it is definitely an essential field that needs to be thoroughly investigated.

Below is the recommended hypothesis:

*[H7]: Job satisfaction is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

### **3.4 Conceptual Framework**

Figure 3.1 demonstrates the three-factor link among turnover intention, job satisfaction, and people-related TQM practices, as well as hypotheses summary.



**Figure 3.1: The Conceptual Framework**



### 3.5 Summary of Hypotheses

A list of 19 hypotheses has been formed to assess the links among the main variables:

*[H1a]: Leadership is positively linked to job satisfaction among employees in Malaysia's E&E industry.*

*[H1b]: Leadership is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

*[H1c]: Job satisfaction mediates the link between leadership and turnover intention among employees in Malaysia's E&E industry.*

*[H2a]: Employee involvement is positively linked to job satisfaction among employees in Malaysia's E&E industry.*

*[H2b]: Employee involvement is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

*[H2c]: Job satisfaction mediates the link between employee involvement and turnover intention among employees in Malaysia's E&E industry.*

*[H3a]: Training and development is positively linked to job satisfaction among employees in Malaysia's E&E industry.*

*[H3b]: Training and development is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

*[H3c]: Job satisfaction mediates the link between training and development and turnover intention among employees in Malaysia's E&E industry.*

*[H4a]: Reward and recognition is positively linked to job satisfaction among employees in Malaysia's E&E industry.*

*[H4b]: Reward and recognition is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

*[H4c]: Job satisfaction mediates the link between reward and recognition and turnover intention among employees in Malaysia's E&E industry.*

*[H5a]: Teamwork is positively linked to job satisfaction among employees in Malaysia's E&E industry.*

*[H5b]: Teamwork is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

*[H5c]: Job satisfaction mediates the link between teamwork and turnover intention among employees in Malaysia's E&E industry.*

*[H6a]: Empowerment is positively linked to job satisfaction among employees in Malaysia's E&E industry.*

*[H6b]: Empowerment is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

*[H6c]: Job satisfaction mediates the link between empowerment and turnover intention among employees in Malaysia's E&E industry.*

*[H7]: Job satisfaction is negatively linked to turnover intention among employees in Malaysia's E&E industry.*

### **3.6 Chapter Summary**

The fundamental theories and interrelationship among each construct of the people-related TQM practices (i.e. empowerment, teamwork, reward and recognition, training and development, employee involvement, and leadership), turnover intention, and job satisfaction are elaborated and proposed. A conceptual model and hypotheses regarding interrelationships of the main variables have been developed. Subsequently, the next chapter discusses the research methodology undertaken by this study.

## **CHAPTER 4**

### **RESEARCH METHODOLOGY**

#### **4.1 Introduction**

Chapter Four consists of explanation of the research process, research design, operationalisation of variables, data collection approach, development of research instrument, sampling strategy, and data analysis method. In addition, ethical considerations for this study are also discussed in this chapter.

#### **4.2 Research Process**

This study adheres to a blueprint commonly used by scientific-based analysis. The nine core phases involve problem identification, hypotheses development, research plan, development of research instrument, data collection, statistical analysis, reporting of findings and focus group.

**Table 4.1: Research Process for This Study**

<b>Stage</b>	<b>Descriptions</b>
Stage 1	Identify Research Problem
Stage 2	Review Literature
Stage 3	Develop Research Model and Hypotheses
Stage 4	Identify Research Design
Stage 5	Develop Research Instrument
Stage 6	Collect Data
Stage 7	Conduct Statistical Analysis
Stage 8	Report Results of Statistical Analysis and Research Findings
Stage 9	Focus Group

Table 4.1 elucidates the research blueprint for this study. It starts with identification of research problem by identifying gaps in the literature and empirical research. Next, review of literature leads to formation of pertinent hypotheses and research model.

Stage four determines the most suitable research design to be employed. It involves the identification of appropriate research strategy, research methodology, and research techniques so that the research objectives can be assessed efficiently and effectively. Having decided on the research design, considerable efforts are given to the development of survey questionnaire through pilot study and pretest. The finalised questionnaires are then distributed to the respondents. The collected data are then analysed using SPSS and PLS-SEM. The next stage involves the reporting of the results of

statistical analysis and interpretation of the findings. The final stage involves the conduct of a focus group to present and discuss the findings with a group of industry practitioners. Based on the inputs from the focus group, recommendations are being developed to assist the industry practitioners to improve their current practices.

### **4.3 Research Design**

Research design is an overall framework that comprises systematic procedures to guide a researcher pertaining to collection, analysis and reporting of data for a research study (Clark & Creswell, 2014). It aims to assist the researcher to identify the most appropriate research strategy, research methodology, and techniques in order to address or answer the research problems, objectives, questions, and hypotheses, efficiently and effectively (Collis & Hussey, 2013; Saunders, Lewis, & Thornhill, 2012).

A research design should align with the purpose or nature of the study. According to Sekaran and Bougie (2013), the purpose of the study is classified as: exploratory, descriptive, and hypothesis testing. They further explained that an exploratory study is implemented to better comprehend the phenomena of a situation when there is not much information available on the research issue at hand or lack of studies done in that particular area in the past. A descriptive research aims to describe the characteristics of variables of interest such as persons, organisations, and events. Hypothesis testing is undertaken when the research aims to explain the relationships between constructs. Since

this study intends to evaluate and establish the link that exists among turnover intention, job satisfaction, and people-related TQM practices, using statistical tools such as SPSS and SmartPLS 3 (Ringle, Wende, & Becker, 2015), this study is categorised as hypothesis testing. In terms of research paradigm, this study adopted the positivist approach, that is, a method that applies scientific and statistical evidence to test the link among the constructs (Peñaloza & Venkatesh, 2006).

Basically, there are two types of research methodology: quantitative and qualitative research (Kinnear & Gray, 2011; Remenyi, 2012; Stokes, 2011). Quantitative research is described as a detailed empirical research of social phenomena that uses statistical and mathematical techniques (Neuman, 2013; Remenyi, 2012) whereas qualitative research uses interviews, focus groups and observations to uncover thought, opinions, and underlying reasons. The research objectives of this study can be achieved through the mixed method whereby the hypothesis tests is used in the quantitative research and focus group in the qualitative research. Quantitative research has the major advantage and capability to make accurate predictions. Quantitative research allows researcher to test hypotheses, determine reliability and validity of the measured variable as well as determine the strengths of links between variables with statistical substantiation (Sekaran & Bougie, 2013). In addition, quantitative approach is much efficient and more economical especially when the studies experience constraints in time and resources (Collis & Hussey, 2013). Furthermore, quantitative research is used effectively in job satisfaction and quality management studies, specifically in the manufacturing

sector (Ooi et al., 1996; Alsughayir, 2014; Kumar & Jha, 2012). On the other hand, qualitative research is a process of inquiry that pursues in-depth understanding of social phenomena within their natural setting (Sekaran & Bougie, 2013). It allows the researcher to study selected issues in detail. Qualitative research methods include focus group and interviews. Having considered the nature of this study, research objectives, hypotheses, and research model that were developed in the earlier chapter, the suitable research methodology for this study is the combination of quantitative research and qualitative research.

#### **4.3.1 Survey Method**

Generally, there are four types of research techniques in the quantitative research, namely, survey, experiment, mechanical observation and stimulation. This study employed cross-sectional survey research because it is an effective research method for evaluating people's experiences and perceptions with regard to a specific issue (Zikmund & Babin, 2007; Sureshchandar, Rajendran, & Anantharaman, 2001) and measuring unobservable constructs such as employee perceptions and attitudes. Zikmund, Babin, Carr, and Griffin (2010) added that survey has become scientifically accurate over the years. Among the advantages of using survey in this study are: it has statistical power (Teo, Wei, & Benbasat, 2003); it allows systematic assessment of several variables simultaneously (Hair et al., 2016); it enhances the potential generalisability and reliability of the findings by collecting information from a wide variety of respondents (Blackstone,



2012); it guarantees anonymity of data and thus reduces interviewer bias (Bailey & Burch, 2002); it is inexpensive and relatively flexible and easy to use (Sekaran & Bougie, 2013); and it collects a large amount of data from respondents at one time and provides information about respondents' attitudes and beliefs (Zikmund & Babin, 2007).

Using measurement items in the questionnaires, cross-sectional survey was used in this study to gather wide-ranging data pertaining to turnover intention, job satisfaction, people-related TQM practices from various respondents. A cross-sectional survey collects data at one time whereas a longitudinal study is conducted at two or more points in time (Sekaran & Bougie, 2013). A cross-sectional research is suitable for hypothesis testing analysis because the data collected from cross-sectional research are not influenced by changes over time and thus the data can be used for comparison (Bailey & Burch, 2002).

#### **4.3.2 Self-Administered Questionnaires**

In this study, employees are enquired about their perceptions of latent constructs (e.g. empowerment, employee involvement, training and development) and its influence on their psychological conditions (e.g. job satisfaction and turnover intention). The self-administered questionnaires are considered the most plausible choice of research technique for this study. According to Podsakoff and Organ (1986), self-administered questionnaires are suitable for gathering demographic data, collecting descriptions of a

respondent's past or future behaviour (e.g., turnover intention) and to scale the psychological states of the respondent. Furthermore, most studies of organisational behaviour employed self-administered survey to comprehend the attitudes and behaviours of employees because it allows the respondents to think about their responses at their own time and pace (Lavrakas, 2008), thus giving higher accessibility for the respondents.

On the other hand, the usage of cross-sectional and self-administered survey brings about concern for common method variance (CMV) (Bagozzi & Yi, 1990; Podsakoff & Organ, 1986). When two constructs are assessed using the same method, the accuracy of links among constructs are prone to CMV (Podsakoff & Organ, 1986). To control the biases generated from the self-administered survey, this study used the following remedies. Firstly, as suggested by Podsakoff, MacKenzie, Lee, and Podsakoff (2003), the response anonymity was guaranteed by the researcher to reduce method bias. Secondly, Harman's single-factor test was applied to detect CMV (Podsakoff et al., 2003).

#### **4.4 Conceptualisation and Operationalisation of Constructs**

Conceptualisation refers to the process of development and explanation of concepts. On the other hand, operationalisation of construct describes the measurement items for the specific construct (Hair et al., 2010). Both conceptualisation and operationalisation of construct are important to the development of research instrument. Therefore, an extensive review of

literature covering quality management, operation management, human resource management, organisational behaviour and organisational psychology, was conducted to identify the initial measurements for the constructs that were included in this study and that were available in the manufacturing industry. Subsequently, after the literature review as deliberated in Chapter Two and Chapter Three, measurement items that were closely associated with the purpose of this study were adopted in this study. The adoption and adaption of existing measurement items from past literatures can further enhance the validity and reliability of the measurements of the variables (Hair et al., 2010).

In this study, operationalisation of variables was based on response mode of five-point Likert scale with 1 indicate “strongly disagree” to 5 “strongly agree” that is applied to whole questionnaire. On choosing between even or odd number of response point, odd number of response point is favoured because it allows the respondents to choose a neutral position, that is, neither agree nor disagree (Cox,1980). In measuring attitude, five and seven points are widely applied (Bearden, Netemeyer, & Mobley, 1993; Peter, 1979). Regarding this study, five-point Likert scale is chosen as compared to seven-point because five-point scales showed higher reliabilities (McKelvie, 1978). Babakus and Mangold (1992) and Hayes (1992) posited that five-point scale is less perplexing and thus lead to higher reply rate. In addition, since most of the quality management research use five-point Likert scales (Jayasuriya & Wedage, 2016; Ooi et al., 2006; 2007; 2008), it is easier to compare reliability

coefficients with other studies utilising five-point Likert scale (Saleh & Ryan, 1991).

#### **4.4.1 People-related TQM Practices Constructs**

This section is further divided into six sub-categories to measure people-related TQM practices, namely, Leadership, Employee Involvement, Training and Development, Reward and Recognition, Teamwork, as well as Empowerment. These TQM measurement items are mainly derived from studies of Zhang (2000), and Lau and Idris (2001).

Each of these six TQM classifications comprise 4 to 8 indicators, amounting to 38 indicators being formed. All the questions are closed-ended in nature. Five-point Likert scale is used to measure all the statements.

##### **4.4.1.1 Leadership**

With reference to Section 2.5.5.1 in Chapter Two, leadership is a process whereby an individual motivates others to effectively accomplish the organisational goals (Northouse, 2015).

Based on the definition of leadership and roles and responsibilities of leaders in TQM, leadership in this study is conceptualised as a construct that measures the level of top management commitment in influencing and motivating the employees to achieve the organisational goals effectively

through the top management participation, management learning, management encouragement, employee empowerment, training and development, commitment to quality, pursuit of product quality and sustainable business success (Zhang, 2000). In line with the conceptualisation of leadership, eight items were adopted from Zhang (2000, p. 207) to measure the leadership construct in the questionnaire as shown below.

**Table 4.2: Operationalisation of Leadership Constructs**

<b>Indicator</b>	<b>Statement</b>	<b>Source</b>
LD1	“Top management actively participates in quality management activities”.	Adopted from Zhang (2000, p. 207)
LD2	“Top management learns quality-related concepts and skills”.	
LD3	“Top management strongly encourages employee involvement in quality management activities”.	
LD4	“Top management empowers employees to solve quality problems”.	
LD5	“Top management arranges adequate resources for employee” training and development.	
LD6	“Top management discusses many quality-related issues in top management meetings”.	
LD7	“Top management focuses on product quality rather than yields”.	
LD8	“Top management pursues long-term business success”.	

#### 4.4.1.2 Employee Involvement

In developing measures of employee involvement in this study, the definition and concept of employee involvement was derived from Evans and Lindsay (2014) whereby employee involvement is the engagement of employees in the quality improvement activities and work-related decisions.

With reference to Section 2.5.5.2 in Chapter Two, the concept of employee involvement is illustrated by active engagement of employees in various types of quality teams, suggestion schemes, and problem solving. Thus, to assess the level of employee involvement in a company, eight items of employee involvement constructs were adopted from Zhang (2000, p. 208) as described below.

**Table 4.3: Operationalisation of Employee Involvement Construct**

Indicator	Statement	Source
EV1	“Our firm has cross-functional teams”.	Adopted
EV2	“Our firm has several quality control “circles (within one function)”.	from Zhang
EV3	“Employees are actively involved in quality-related activities”.	(2000, p. 208)
EV4	“Our firm implements suggestion activities extensively”.	
EV5	“Most employees’ suggestions are implemented after an evaluation”.	
EV6	“Employees are very committed to the success of our firm”.	
EV7	“Employees are encouraged to fix problems they find”.	
EV8	“Reporting work problems is encouraged in our firm”.	

#### **4.4.1.3 Training and Development**

With reference to Section 2.5.5.3 in Chapter Two, the conceptualisation of training and development was based on the definition offered by Gomez-Mejia et al. (2012). They described training as the process of equipping human resources with work-related skills to improve their performance.

In this study, the term “education and training” in the original indicators has been changed to “training and development” because the term “training and development” is more commonly and highly used by Malaysians.

In this study, the concept of training and development is epitomised by the active participation of employees in training and development programmes, allocation of resources for training and development, training on quality management methods, quality awareness training, specific work-skills training, and view of employees as valuable resources. Thus, six items adopted from Zhang (2000, p. 209) were utilised to assess the training and development variables in the questionnaire as stated below.

**Table 4.4: Operationalisation of Training and Development Construct**

<b>Indicator</b>	<b>Statement</b>	<b>Source</b>
TD1	“Employees are encouraged to accept” training and development “in our firm”.	Adopted from Zhang (2000, p. 209)
TD2	“Resources are available for” employees’ training and development “in our firm”.	
TD3	“Most employees in our firm are trained on how to use quality management methods (tools)”.	
TD4	“Quality awareness training is given to employees”.	
TD5	“Specific work-skills training is given to all employees”.	
TD6	“Employees are regarded as valuable, long-term resources worthy of receiving” training and development “throughout their career”.	

#### **4.4.1.4 Reward and Recognition**

The conceptualisation of the concept of reward and recognition was based on the definition offered by Bratton and Gold (2012) as mentioned in the Section 2.5.5.4 of Chapter Two. According to Bratton and Gold (2012), reward and recognition are all the financial, non-financial, and psychological benefits given by an organisation to the employees for the performance of their work.

In this study, the concept of reward and recognition are illustrated by the improvement of working conditions, salary promotion scheme, position promotions, rewards for excellent suggestions, clear rewards scheme, and effectiveness of recognition and reward activities. Table 4.5 shows the



operationalisation of reward and recognition construct. The six items used to measure the perception of the level of reward and recognition implemented in an organisation were adopted from Zhang (2000, pp. 208-209).

**Table 4.5: Operationalisation of Reward and Recognition Construct**

<b>Indicator</b>	<b>Statement</b>	<b>Source</b>
RR1	“Our firm improves working conditions in order to recognise employee quality management efforts”.	Adopted from Zhang (2000, pp. 208-209)
RR2	“Our firm has a salary promotion scheme to encourage employee participation in quality management”.	
RR3	“Position promotions are based on work quality in our firm”.	
RR4	“Excellent suggestions are financially rewarded”.	
RR5	“Employees’ rewards and penalties are clear”.	
RR6	“Recognition and reward activities effectively stimulate employee commitment to quality management”.	

#### **4.4.1.5 Teamwork**

In developing the measures of teamwork, the definition of the concept of teamwork by Karia and Ahmad (2000) was used as mentioned in Section 2.5.5.5 of Chapter Two. This definition views teamwork as the organisational practice that allows employees across all the functional and operating units to work together to identify and solve work-related problems (Karia & Ahmad, 2000).

In this study, the concept of teamwork is illustrated by the forming of clearly identifiable teams, training on high-performance work teams, formally structured roles, clearly defined mission, self-managed team, and regular meeting. The six items used to measure the perception of the level of teamwork implemented in an organisation were adopted from Lau and Idris (2001, p. 56).

**Table 4.6: Operationalisation of Teamwork Construct**

<b>Indicator</b>	<b>Statement</b>	<b>Source</b>
TW1	“Clearly identifiable teams are utilised as the primary means to organise the work, as opposed to individual job functions or independent work stations”.	Adopted from Lau and Idris (2001, p. 56)
TW2	“All team members, managers, supervisors, and technical and support people have been formally introduced to the concepts of high-performance work teams through educational experience”.	
TW3	“The roles/jobs have been formally structured to support the work team approach”.	
TW4	“Each team has developed a clearly defined charter/mission and operation guidelines”.	
TW5	“The work teams and the functions they perform are almost entirely self-contained and managed by the group itself. Group members rely on one another for cross-training, problem solving, handling of administrative duties, and mutual support”.	
TW6	“Each team meets regularly and frequently to solve problems and explore opportunities in its work area”.	

#### 4.4.1.6 Empowerment

As mentioned in Section 2.5.5.6 of Chapter Two, the conceptualisation of empowerment was taken from the definition offered by Thomas and Velthouse (1990) that described empowerment as enhanced motivation developed through four perceptions, namely, choice, impact, competence, and meaningfulness.

In this study, empowerment is conceptualised by elements that demonstrated the four cognitions: meaningfulness, competence, impact, and choice. The four items utilised to gauge the perception of the level of empowerment experienced by the employees in an organisation were adopted from Spreitzer (1995, pp. 1464-1465). This study selected four items instead of 12 items in the original questionnaire by Spreitzer (1995, pp. 1464-1465) because there are redundancy in the original indicators. Moreover, the selected four statements are sufficient to comprehend the essence of empowerment.

**Table 4.7: Operationalisation of Empowerment Constructs**

<b>Indicator</b>	<b>Statement</b>	<b>Source</b>
EP1	The “work I do is very important to me”.	Adopted from Spreitzer (1995, pp. 1464-1465)
EP2	“I am confident about my ability to do my job”.	
EP3	“I have significant autonomy in determining how I do my job”.	
EP4	“My impact on what happens in my department is large”.	

#### 4.4.2 Job Satisfaction Construct

As mentioned in Section 2.5.5.7 of Chapter Two, job satisfaction is defined as the feeling the feeling that employees have with regard to the various facets of their work (Spector, 2012).

Adopted from Wright and Cropanzano (1998, p. 488), satisfaction is assessed according to the five dimension of satisfaction with their promotional opportunities, co-workers, total pay, supervisor, as well as works of the job, that range from (1) “extremely unsatisfied” to (5) “extremely satisfied”. As required by PLS-SEM, the sixth items “Overall, I am satisfied with all aspects of my job” is an additional item developed by the author to be used for redundancy analysis since the construct is formative in nature.

**Table 4.8: Operationalisation of Job Satisfaction Construct**

<b>Indicator</b>	<b>Statement</b>	<b>Source</b>
JS1	“All in all, I am satisfied with my co-workers.”	Adopted from Wright and Cropanzano (1998, p. 488)
JS2	“All in all, I am satisfied with my” total pay.	
JS3	“All in all, I am satisfied with my promotional opportunities”.	
JS4	“All in all, I am satisfied with my” supervisor.	
JS5	“All in all, I am satisfied with the works of my job”.	
JS_G	Overall, “I am satisfied with all aspects of my job”. (Global measure for formative measurement model)	Author

### 4.4.3 Turnover Intention Construct

The measures of turnover intention were selected based on four items parallel to the purpose of this study which analyses turnover intention in terms of likeliness of quitting the job.

The turnover intention is assessed by four items adopted from Porter, Crampon, and Smith (1976); Mowday, Steers, and Porter (1979, p. 228); and Udo, Guimaraes, and Igarria (1997, p. 920). Notably, indicator TI4 utilised a time-linked five-point Likert scale.

**Table 4.9: Operationalisation of Turnover Intention Construct**

Indicator	Statement	Source
TI1	“I often think about quitting”.	Adopted from
TI2	“I will actively look for a new job” in the near term.	Porter, Crampon, and Smith (1976)
TI3	“I feel very little loyalty to my organisation”.	Adopted from Mowday, Steers, and Porter (1979, p. 228)
TI4	“Given everything you know about the company in which you are employed and the type of work you like to do, how long do you think you will continue to work at this company?”	Adopted from Udo, Guimaraes, and Igarria (1997, p. 920)
	(1) = “1 year or less”	
	(2) = “More than 1 year but less than 3 years”	
	(3) = “3 years but less than 5 years”	
	(4) = “5 years but less than 10 years”	
	(5) = “10 years or more or until retirement”	

#### **4.5 Development of Questionnaire**

There are a few factors to consider in the development of questionnaire. First, the aspect of sequence of the questions in the questionnaire needs to be considered because it has a direct influence on the way respondents answer the questions (Malhotra, 2004). With this consideration, this questionnaire was created with all the distinct topics being arranged in a sequential flow. To ease the comprehension of the respondents, the survey items are grouped into sets and each set is labeled accordingly. In addition, the sequence of questions is arranged by placing the general questions first then followed by sensitive questions later to reduce the anxiety of answering the questions.

Second, according to Lindell and Whitney (2001), the length of questionnaire should not be too long to avoid boredom and fatigue. Notably, the length of this questionnaire is kept short to allow the respondents to complete the survey at an approximate duration of 10 to 15 minutes. Moreover, the instructions and the questions for the questionnaire use comprehensible, unbiased, and appropriate wordings to facilitate the process of answering the questionnaire.

Third, the questionnaire in this study entails a mixture of scale-response and closed-ended questions. The first section presented closed-ended questions pertaining to the respondents' general information. Meanwhile, the scale-response questions that are related to the employees' perception of the

people-related TQM practices in their organisation are placed in the subsequent section of the questionnaire. These closed-ended questions are placed in the first section of the questionnaire because closed-ended questions are easier and require less time to answer (Zikmund & Babin, 2007).

Fourth, Lindell and Whitney (2001) suggested incorporating some reverse-worded or reverse-scored items to reduce similar response inclination. Thus, this study has included reverse-scored items in the turnover intention construct.

The aim of this survey is to gather data concerning people-related TQM association with job satisfaction and turnover intention. This survey form comprise seven pages, including a cover page, which explains the purpose of the research, guarantee of respondent's privacy, and the duration required to complete the survey.

This questionnaire is categorised into four section. Section A contains questions regarding demographic factors, for example, marital status, education background, and gender. Section B is concerning respondent's perceptions pertaining to people-related TQM factors. Comprising 38 statements, there are six sections (i.e. leadership, training and development, teamwork, employee involvement, employee empowerment, reward and recognition). Next, Section C consists of six questions relating to job satisfaction and Section D covers four questions on turnover intention.

#### **4.6 Pre-Test**

Pre-test involves evaluation of the questionnaire by experts and academics (Malhotra, 2004; Zikmund et al., 2010) to gauge the validity of the questionnaire before the actual data collection. During the pre-test, the panel of experts would look into issues such as the understandability of the questionnaire, the flow of the questions, the suitability of the wordings, the length of the questionnaire and so forth. A panel of two academics with specialisations in employee attitudes and quality management, and three managers with experience in TQM participated in the pretest of this study.

As per feedback by the panel of experts, overall, the survey questions were comprehensible and appropriate, thus endorsing the measures' face validity. For the questionnaire in English, they agreed to the use of the term "training and development" instead of the original term "education and training" because the term "training and development" is commonly used and understood by Malaysian.

#### **4.7 Pilot Test**

Once the content of survey questionnaire has been confirmed, a pilot test is implemented to check whether further improvement is required (Zikmund, 1997). For the pilot test, 25 employees in E&E industry participated. A full set of questionnaire and a cover letter clarifying research's objectives and requesting respondents to comment whether they face any



difficulty in answering the questions and to provide suggestions for improving the questionnaire, were given to the respondents. Overall, positive comments were received regarding structure and presentation of the questionnaire. Additionally, instructions and wordings were clear and can be understood. Therefore, no changes were required for the questionnaires. The final version of the questionnaire in English is as per Appendix 1.

#### **4.8 Questionnaire Translation**

Once the questionnaire in English has been finalised, the questionnaire is translated into Malay Language and Mandarin. This study used validated questionnaire derived from past studies whereby all the measurements are in English and most of the time the questionnaires are tested predominantly in western nations. This research is conducted in Malaysia and most Malaysians are proficient in English. To provide greater understanding of the questionnaire for some of the respondents who may not have high proficiency in English, the questionnaire is translated before distributing to them. According to Kim and Han (2004), this translation effort is required to minimise any possible variance due to linguistic and cultural differences.

Considerable care needs to be taken when doing the translation because inaccurate translation would affect the reliability and validity of the questionnaire. Due to its extensive application in cross-cultural research, back translation method was utilised in this research as proposed by Brace (2008) and Brislin (1970). Firstly, the original questionnaire in source language

(English) is translated into target language (Malay Language or Mandarin). Then, to validate the translation, the “target language is translated back into source language version” (Brace, 2008; Brislin, 1970).

Once the translation process has completed, the translated versions in Malay Language and Mandarin were then reviewed by two academics who are proficient in the three languages and possess the qualification of degree in translation and interpretation to ensure that the questionnaires have reached an acceptable level of consistency in terms of conceptual and measurement equivalence. The panel of experts indicated that the translation of the questionnaire is comprehensible and the choice of words for the context of management are appropriate. For the translated versions of the questionnaires in Malay Language, the term “empowerment” was suggested to be translated to “pemberian kuasa” instead of “pemeriksaan”. As per comment from the panel of experts, the questionnaire has been amended accordingly. The final version of the translated questionnaire in Malay Language is in Appendix 2 and Mandarin version in Appendix 3.

#### **4.9 Sampling Procedures**

Sampling involves the process of choosing a sample from the research’s whole population and it is required to enable the generation of findings that can represent the whole population (Zikmund, 2003). Sampling allows data collection to be done in lower cost and shorter time in comparison to data collection for the whole population.

Generally, the target respondents for this investigation are the employees in E&E manufacturing companies that have been certified with “ISO 9000 quality system series” in Malaysia. In order to ensure reliable and justifiable responses, two criteria have been imposed on the selection of the E&E companies for this study. The criteria were: (1) the E&E companies must have been certified with ISO 9000 series (2) the E&E companies must be large firms with more than 1,000 employees. These criteria imposed on the E&E companies were considered appropriate based on several reasons. First, ISO-certified E&E companies are selected because according to Sila (2007), the ISO 9000 series are international standard for quality management and part of TQM implementation. Companies that are ISO-certified would have focus on TQM. Second, large E&E companies with more than 1,000 employees were selected because the implementation of TQM in Malaysia is more pervasive, holistic and established in large companies compared to small and medium enterprises (Eng & Yusof, 2003). Generally, large E&E companies would have implemented TQM for many years. According to Dale et al. (2016a), companies require approximately eight to ten years to establish the practice of TQM in their organisations. To ensure reliability and quality of response, data should be collected from companies that have long applied TQM because TQM would be more mature and established in these companies (Jun et al., 2006). Therefore, the selected companies from the FMM Directory can be considered as valid and reliable with regard to its suitability to the purpose of this research.

The E&E companies were selected from the “Directory of Federation of Malaysian Manufacturers (FMM) 2012” edition. Having established for almost 50 years, FMM is Malaysia’s biggest economic organisation, representing more than 2,000 firms of various size and sectors (FMM Directory, 2012). Being an official authoritative publication in the country, FMM directory makes available information about the companies, for example, contact details, achievement of quality standards, number of employees, and yearly sales.

Simple random sampling technique was utilised to select 10 large ISO-certified E&E companies from the list of E&E companies in the FMM Directory (2012). Simple random sampling has the advantage of providing equal chance to be selected in a chosen population, therefore it provides the highest generalisability and least bias (Sekaran & Bougie, 2010). In the FMM Directory (2012), it was estimated that there were 397 ISO-certified E&E companies. Based on the screening criteria, there were 50 ISO-certified E&E companies with more than 1,000 employees. To avoid researcher bias, a random number producer software “Research Randomiser” was utilised to randomly select 10 companies for this study.

#### **4.10 Data Collection Procedures**

The data collection was conducted from April 2014 to July 2014. Prior to survey distribution, a preliminary notification using telephone was made to the senior management of the selected organisations to brief on the purpose of research and to seek approval before mailing the questionnaires. Firms that were not interested to engage in the survey were substituted by next randomly selected firms in the list.

Upon obtaining approval, 100 sets of the questionnaires were mailed to each of the companies. The surveys were mailed to the senior management using cover letters to clarify the purpose of the survey. The companies assigned either the human resource managers or quality assurance managers to serve as contacts for the survey. Random sample of employees from various departments in the E&E organisations were selected to participate in the survey.

To obtain reliable result, the respondents must be full-time staff having work in the present firm for more than six months to ensure they have knowledge about the TQM practices in the organisation. Part-time or contract employees were not included in the sample because they may not have sufficient knowledge to assess the TQM practices in the company. In addition, employees were selected from various departments in the E&E organisation, for example, administration, quality assurance, production, sales

and marketing, and R&D, to enable the analysis of effects of TQM on various groups of employees in the organisations.

To increase the response rates of the mail questionnaires, diligent and close follow-up with the organisations were conducted after the delivery of mail surveys. Participants were allocated one month to reply the surveys. Reminder via phone calls were made two weeks after the initial mailing. The companies were also given self-addressed, stamped return envelopes, to encourage higher reply rate. The contact number and email address of the researcher were also provided in the questionnaires so that the respondents could contact the researcher should they require further information. After the completion of questionnaires, the managers sent all the questionnaires using the returned envelope provided by the researcher.

#### **4.11 Response Rate**

Of the 1,000 questionnaires distributed, 275 reverted, generating 27.5 percent of reply. Nonetheless, 20 questionnaires were having over 25 percent of questions not answered. Moreover, 11 questionnaires were disqualified due to having similar answers to all items. Consequently, there were 244 or 24.4 percent of valid questionnaires. It is worth noting that for such correlational research in Malaysia, the reply percentage is deemed satisfactory (Sekaran, 2003). In addition, Ramayah, Yan, and Sulaiman (2005) stated that regarding mail survey in Malaysia, the reply percentage ranges from 10 to 20. Second, the rate 24.4 percent is higher than the response rate reported in past studies on

quality management and employee attitudes carried out in Malaysia. For example, a reply percentage of 21.9 was reported in a research on TQM in Malaysia's E&E companies (Ahmad & Yusof, 2010). In another study, a reply percentage of 20 was documented in an analysis of TQM in Malaysia (Lam, Lee, Ooi, & Phusavat, 2012).

#### **4.12 Justification of Sample Size for PLS-SEM**

In accordance with Hair, Black, Babin, Anderson, and Tatham (2005), sufficiency of sample size needs to be determined before implementing PLS-SEM. To determine the minimum sample size for this study, four suggestions have been taken into consideration. First, minimum sample size can be ascertained using "10 times rule" (Barclay, Higgins, & Thompson, 1995) meaning "10 times the largest number of structural paths directed at a particular construct in the structural model" (Hair, Hult, Ringle, & Sarstedt, 2014, p. 20). Based on Figure 3.1, there are 13 links: (1) LD → TI, (2) EV → TI, (3) TD → TI, (4) RR → TI, (5) TW → TI, (6) EP → TI, (7) JS → TI, (8) LD → JS → TI, (9) EV → JS → TI, (10) TD → JS → TI, (11) RR → JS → TI, (12) TW → JS → TI, (13) EP → JS → TI. With reference to the 10 times rule,  $10 \times 13 = 130$ . Therefore, the minimum sample size is 130. In addition, for PLS-SEM, Hair et al. (2005) suggested a sample size of 100 to 200 is sufficient.

In ascertaining the minimum sample size in testing multiple correlations in quantitative analysis, Tabachnick and Fidell (2007) suggested a formula,  $N \geq 50 + 8m$ , with  $m$  representing number of exogenous constructs. Seven exogenous constructs are found in the research model: (1) LD, (2) EV, (3) TD, (4) TW, (5) RR, (6) EP, (7) JS. Subsequently,  $50 + 8(7) = 106$ . Thus, based on Tabachnick and Fidell's (2007) study, a minimum sample size of 106 respondents is required.

Fourth, G\*Power, a general power analysis programme to determine the power analyses of a sample size (Erdfelder, Faul, & Buchner, 1996) was used in this study. There are several types of power analysis in G\*Power. This study used *a priori power analysis*. G\*Power, according to Cohen (1988), allows the computation of estimated sample size before conducting a study. Following that, to predict the estimated sample size to obtain 80 percent of statistical power for this study, Cohen (1988) indicated that effect size  $f^2=0.15$ ,  $\alpha=0.05$ , power=0.80, and the number of predictors = 13 should be specified. The calculation by G\*Power using *a priori power analysis* indicated that the required sample size for the present study is  $N = 131$ .

The minimum sample size resulted from the four suggestions are: 130 (10 times rule); 100 to 200 (Hair et al., 2005); 106 (Tabachnick & Fidell, 2007); and 131 (G\*Power). This study obtained 244 valid responses from the data collection, exceeding the minimum requirement of sample size. Thus, the sample size of 244 is considered sufficient for using PLS-SEM as the statistical analysis method.



### **4.13 Ethical Consideration**

With reference to Fontana and Frey (2000), there are three aspects of ethical issues that need to be emphasised by a researcher when conducting a research: (1) protection from harm, (2) confidentiality, and (3) informed consent. Since employees of E&E industry are the subject of this study, there are potential ethical concerns. Therefore, various concerns of ethics are being considered in order to address the potential ethical issues that might arise. This is to protect all the parties from any potential harm or violation of rights.

First, this research study was designed carefully to prevent any risks related to the research procedures especially during data collection, data analysis, and presentation of result of this study. Second, the researcher approached the assigned managers of E&E companies personally, informed them about the purpose of research, and the benefits of this study for Malaysian E&E industry. The researcher explained all the matters pertaining to the employees' participation, confidentiality, and informed consent to the HR managers. Third, due to confidentiality matter, all the companies names in this research were not specified. In addition, the employees' personal information were not identified in the questionnaires. Moreover, the researcher also included the researcher's background, research objectives, personal contact number, and email address in the questionnaires to guarantee safety and confidence of the respondents on their participation in this research. Last but not least, the researcher gave assurance on the privacy of the research and the participation was voluntary.

#### **4.14 Data Analysis Technique**

This research employed “Partial Least Squares (PLS) approach to Structural Equation Modelling” (PLS-SEM) as the primary data analysis technique to estimate the hypothesised relationships among the constructs concurrently (Gefen, Straub, & Boudreau, 2000). Being a second generation multivariate statistical method (Hair, Hult, Ringle, & Sarstedt, 2016), SEM is unlike the first generation techniques, for example, multiple regressions and factor analysis. Compare to the first generation techniques, SEM allows researchers to overcome the weaknesses of first generation methods by its capability to incorporate unobservable constructs that are assessed indirectly by indicators (Hair et al., 2014) Furthermore, simultaneous assessment of links among multiple constructs can be done via SEM (Gefen et al., 2000). In addition, as stated by Chin (1998), SEM also includes measurement error in observed variables.

Basically, approaches to SEM include covariance-based SEM (CB-SEM) and variance-based PLS-SEM. Maximum likelihood function is employed by CB-SEM to minimise the difference concerning sample covariance and the predicted covariance (Hair et al., 2014). This resulted in the estimated parameters reproducing the covariance matrix of the observed values. Conversely, PLS-SEM minimises the variance of all dependent variables. Consequently, lesser requirements on measurement scales and sample size in PLS (Wold, 1985). In accordance with Henseler et al. (2009), PLS-SEM is used for theory building and predictive applications, whereas

CB-SEM is for theory testing. However, they added that PLS-SEM can be used to test theory upon confirmation of a satisfactory global goodness-of-fit. Before implementing CB-SEM, several assumptions need to be fulfilled. For example, CB-SEM requires normal distribution of data and large sample size to obtain precise results (Hair et al., 2011) whereas PLS-SEM has less restrictive assumptions. Comparatively, PLS-SEM is a more robust approach and offers several advantages over CB-SEM. PLS-SEM has less demand on the measurement scale and normality of data, and requires smaller sample size (Tenenhaus, 2008). In addition, PLS-SEM can manage large amount of variables, utilise simpler algorithms and ease the task of estimating formative variables (Diamantopoulos & Winklhofer, 2001).

#### **4.14.1 Concepts of PLS-SEM**

Originally developed by Herman Wold in 1966 (as cited in Chin, 1998), PLS-SEM has evolved into a powerful statistical tool that is used extensively in management and social sciences research. PLS-SEM uses path models to illustrate the hypotheses and variable relationships with a visual diagram. The path model consists of several components. In PLS-SEM, constructs are latent variables that are not directly measured or observable, for example, impacts, perceptions, intentions, or satisfaction (Hair et al., 2014). However, latent variables can be measured by observable indicators. Indicators, also known as items or manifest variables, are directly measured observations (Hair et al., 2014). Independent variables are known as exogenous constructs whereas dependent variables are known as endogenous constructs (Hair et al., 2014).

Structural model, or “inner model”, describes the links between constructs. Meanwhile, measurement model, also called the “outer model”, contains the links between constructs and indicators. Both structural and measurement models are built on theoretical foundations (Hair et al., 2014).

#### **4.14.2 Model Specification**

In PLS-SEM, it is vital to specify the structural and measurement model accurately before designing a questionnaire. The structural and measurement models in PLS-SEM approach are established based on prior knowledge gathered during the literature review phase. For structural model specification, the theoretical foundation illustrated in Chapter Three has determined the causality flow of the constructs and the relationship between the constructs in this study.

For measurement model specification, relationship concerning the constructs and their indicators must be specified correctly in the measurement model to avoid measurement model misspecification (Andreev, Heart, Maoz & Pliskin, 2009; Henseler, Ringle, & Sinkovics, 2009). In general, measurement models can be identified as formative or reflective using four criteria (Jarvis, MacKenzie, & Podsakoff, 2003). The first criteria is the causality path of construct and its indicators. For reflective measurement models, the path is from construct to indicators, meaning indicators are manifestations of the construct. The direction is vice versa for formative measurement model, indicating that indicators are summation of the construct

(Andreev et al., 2009; Coltman, Devinney, Midgley, & Veniak, 2008). The second criteria is the interchangeability of the indicators. Reflective indicators share similar content and therefore are interchangeable whereby adding or removing one of the reflective indicators does not change conceptual aspects of the construct. In the case of formative indicators, they are not interchangeable because each formative indicators represents different dimension of the construct (Andreev et al., 2009; Coltman et al., 2008; Jarvis et al., 2003). The third criteria concerning correlations of indicators. Since reflective indicators measure the same underlying phenomenon, the reflective indicators are highly correlated. In contrast, formative indicators represent independent dimensions of the content of the constructs and thus, the formative indicators are not correlated or highly correlated (Andreev et al., 2009; Jarvis et al., 2003). Lastly, the fourth criteria concerning whether indicators have similar antecedents and consequences. Sharing a common subject, reflective indicators usually have similar antecedents and consequences and vice versa for formative indicators. (Andreev et al., 2009).

The above four criteria are used to determine the reflective and formative measurement model in this study. This study consists of eight constructs: leadership, reward and recognition, teamwork and empowerment, employee involvement, and training and development, turnover intention, and job satisfaction. The six constructs of people-related TQM practices are modelled as having reflective indicators because they fulfil the four criteria mentioned above. Generally, the indicators are viewed as manifestations of the construct and shared a common theme. They are highly correlated and

interchangeable. Thus, it can be concluded that the six constructs of people-related TQM practices are conceptualised as exogenous constructs with 38 reflective indicators.

Meanwhile, job satisfaction is defined as an attitudinal variable that portrays the feeling of employees toward various aspects of their jobs (Spector, 2012). Using facet approach, job satisfaction comprises five dimensions, namely, satisfaction with co-workers, total salary, promotional opportunities, supervisor, and works itself. Job satisfaction indicators are defining the characteristics of job satisfaction construct and thus, the causality for job satisfaction flows from indicators to construct. The indicators are independent dimensions and they are not related and interchangeable. Thus, it can be concluded that job satisfaction should be modelled as formative measurement model. Jarvis et al. (2003) and Edwards and Bagozzi (2000) also supported the modelling of facet approach to job satisfaction as formative measurement model. In this study, job satisfaction is hypothesised as antecedent of turnover intention and conceptualised as formative model.

#### **4.14.3 PLS Software Used in This Study**

There are many types of software packages for SEM analysis. CB-SEM uses software such as AMOS and LISREL. PLS-SEM statistical analysis uses software packages such as PLS-Graph (Chin, 2004), SmartPLS 3 (Ringle, Wende, & Becker, 2015), “PLS-GUI” (Li, 2005), and “VisualPLS” (Fu, 2006). Due to positive evaluation of its statistical accuracy,

methodological capability, usability, and availability, this study chose SmartPLS 3 software.

#### **4.14.4 Justification for Using PLS-SEM**

PLS-SEM is chosen as the primary data analysis technique in this study based on the following justifications. First, the research model consists of both reflective and formative measures whereby people-related TQM practices and turnover intention are modelled as reflective measures whereas job satisfaction is modelled as formative measures. PLS-SEM is famously known to be proficient in managing formative and reflective indicators concurrently and effectively without encountering identification problem (Chin, 1998). Comparatively, the use of formative constructs in CB-SEM would usually lead to identification issues (Henseler et al., 2009), thus difficult to explain covariance of all indicators (Chin, 1998). Since PLS-SEM supports the use of formative indicators, it is appropriate to examine current research model using PLS-SEM.

Second, PLS-SEM is capable of working efficiently and achieving high statistical power with small sample sizes (Hair, Hult, Ringle, & Sarstedt, 2014). Additionally, being a flexible method using non-parametric method, it eases the expectations on normality, number of indicators, and sample size. This major strength of PLS-SEM is reflected in the minimum requirement of a sufficient sample size ratio of 1:10 (Hair, Black, Babin, & Anderson, 2010). The valid respondents of this research is only 244. Covariance-based SEM

generally requires large sample size to produce robust parameter estimates. Thus, in terms of statistical power, the better alternative is PLS-SEM analysis method.

Third, PLS-SEM applies blindfolding and bootstrapping to provide accurate estimates for interaction effects (Hair et al., 2014). Since PLS-SEM considers any measurement error that affects the estimated relationships, it provides more accurate estimates for moderating and mediating effects (Chin, Marcolin, & Newsted, 2003). In view of the application of mediating analysis in this study, PLS-SEM data analysis method is the best option.

Fourth, PLS-SEM has evolved recently to incorporate goodness-of-fit measures by using the “standardised root mean square residual” (SRMR) that measures the squared difference between correlations (Hair et al., 2017). This has broaden the capability of PLS-SEM in validating a research model and thus, it can be used for theory testing and confirmation.

Last, this study aims to test the relationships based on prior theoretical knowledge. In view of the ability of PLS-SEM to assess the psychometric properties of the measures and to estimate the correlations between variables (Barclay, Thompson, & Higgins, 1995), PLS-SEM is definitely justified to be the most fitting statistical analysis technique in analysing interaction among the observed constructs in the seven main hypotheses in this study.



#### **4.15 Chapter Summary**

This chapter illustrated and justified the research methodology. The research blueprint were discussed in detail and justified accordingly. It included the selection of research method, sampling method, operationalisation of constructs, research instrument, and data collection processes. Statistical analysis technique was also discussed and justified. Upon collecting the questionnaires, statistical analysis using SPSS and PLS-SEM was carried out and all the results obtained from the statistical tests were presented in the subsequent chapter. The focus group will be discussed in Chapter Six.

## **CHAPTER 5**

### **STATISTICAL ANALYSIS**

#### **5.1 Introduction**

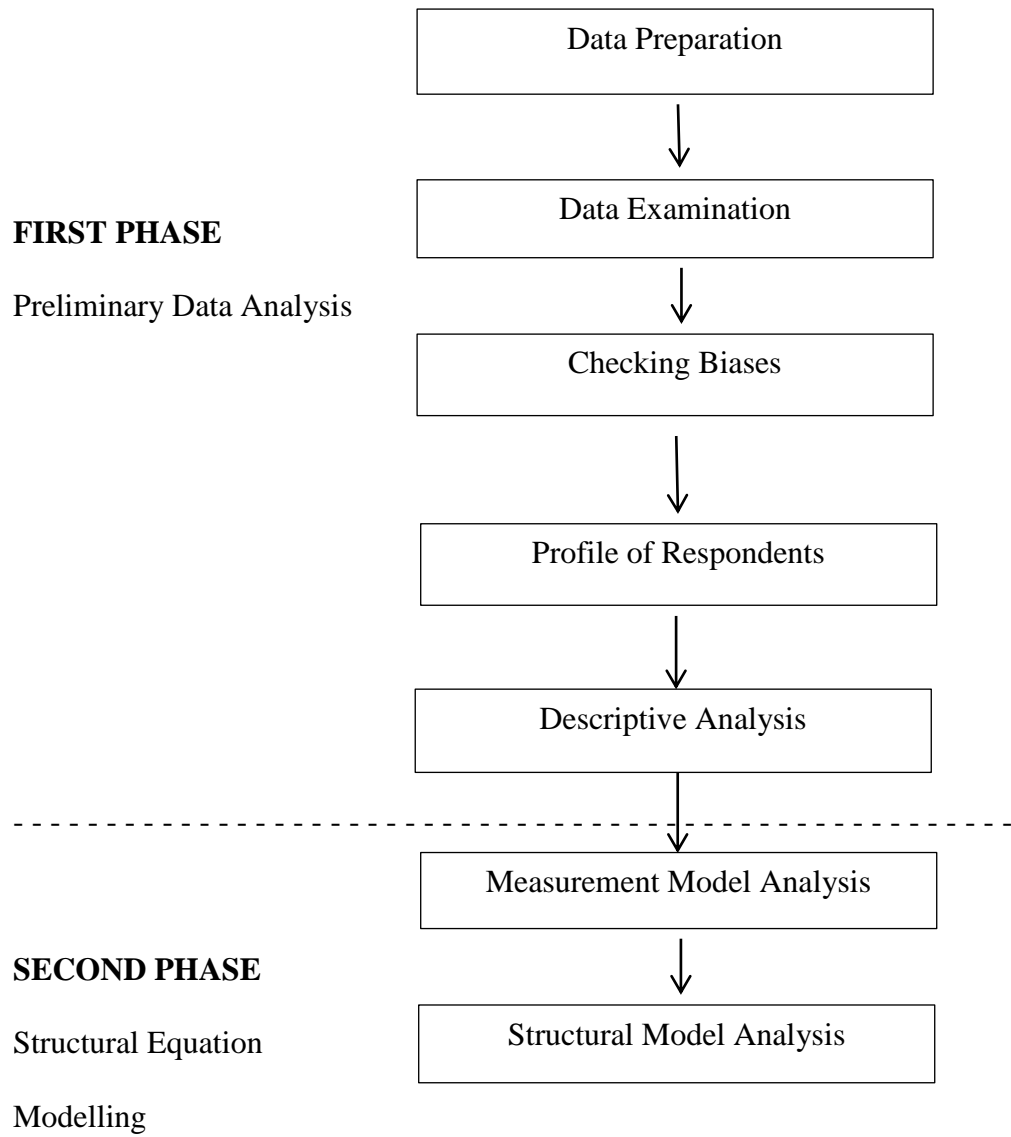
Chapter Five gives a synopsis of statistical analysis implemented and empirical results in relation to the formulated hypotheses. The analysis is conducted using the statistical technique Partial Least Square–Structural Equation Modelling. Starting with preliminary data and biases examination, the profile of respondents is then presented. This is followed by the measurement and structural model analysis. Measurement model analysis involves measuring reliability and validity whereas structural model analysis includes evaluating interactions among the latent constructs. Subsequent section presents the mediating analysis. It concludes with detailed results of hypothesis testing.

#### **5.2 Overview of Statistical Analysis**

Statistical analysis procedure applied in this study consists of two main phases and subdivides into eight stages as illustrated in Figure 5.1. The two main phases are preliminary data analysis and structural equation modelling. Preliminary data analysis gives a critical insight into the characteristics of the

data and ensures that data meet the requirements of the multivariate analysis (Hair, Black, Babin, & Anderson, 2010). Utilising Statistical Package for Social Science (SPSS) version 16, preliminary data analysis was done on collected raw data using following procedures: (1) Data preparation, (2) Data examination, (3) Checking biases, (4) Profile of respondents, and (5) Descriptive analysis.

After conducting the preliminary data analysis, the data is fit to be used for further analysis in the second phase. It encompasses a two-stage structural equation modelling procedures (Anderson & Gerbing, 1988) utilising SmartPLS version 3.0 software to test the hypotheses formulated in Chapter Three. It commences with the appraisal of measurement model that comprises formative and reflective models. Reflective model consists of Leadership, Employee Involvement, Training and Development, Reward and Recognition, Teamwork, Empowerment as well as Turnover Intention whereas formative model comprises Job Satisfaction. When both measurement models shows validity and reliability, one may embark on structural model analysis that encompasses measurement of path interaction among the variables leading to hypotheses testing and mediating analysis (Hair et al., 2014).



**Figure 5.1: Summary of Statistical Analysis Procedures**

### **5.3 Data Preparation**

Data preparation involves screening and coding the raw data followed by entering the cleaned data into SPSS.

#### **5.3.1 Data Screening**

Subsequent to empirical data collection, the returned questionnaires were serialised on top of each questionnaire to ease the identification of late and early respondents. Next, the raw data were screened to detect incompleteness, inaccuracies, inconsistencies and illegibility. Questionnaires that were returned with total or substantial number of items unanswered were discarded. In addition, questionnaires with questionable response patterns, for example, alternating extreme pole responses, diagonal lining and straight lining (Hair et al., 2017), were removed accordingly. In this study, there were 11 questionnaires detected and removed for having straight lining and inconsistency in answers.

#### **5.3.2 Data Coding**

Data coding includes allocating numbers or symbols to the answers so that the data can be converted into numerical code that can be entered into and read by SPSS. Coding can be done before or after data collection (De Vaus, 2002). In this study, variable names and response coding were pre-assigned during the design of questionnaire stage. Variable names were assigned to

each variable in the questionnaire such as LD for leadership and JS for job satisfaction. For part A, the responses to the demographic variables are coded from 1 to 6 for age and length of time with the organisation. Gender and marital status were coded as 1 or 2. Moreover, responses for questions in part B, C and D on turnover intention, job satisfaction and TQM practices were coded utilising the actual number circled by the respondents. Notably, responses to negatively worded questions were reversed to ensure all the answers are in the same direction as the positively worded questions to retain uniformity in the interpretation of a response.

### **5.3.3 Data Entry**

Data entry involves keying in the data into SPSS accordingly. Human errors may occur during the data entry. To ensure the data were entered accurately, the data were proofread and verified against the original data on the questionnaires by another person who did not conduct the data entry. The data were then sent for data examination.

## **5.4 Data Examination**

The quality of a research highly dependent on proper organisation and careful conversion of data into an appropriate form for further analysis (Hair et al., 2010). Thus, data examination is critical and it includes assessment of missing data, response pattern, outliers, and normality before proceeding to further analyses (Hair et al., 2017; Sekaran & Bougie, 2013).

#### **5.4.1 Missing Data**

Respondent's failure in answering some items in a survey leads to a absent data. They may give rise to systematic errors that significantly affect results of statistical analyses (Hair et al., 2017). Therefore, missing data need to be identified and treated accordingly. In view of the seriousness of missing data, the candidate screened the missing data with the use of frequency distributions and descriptive statistics using SPSS. This study's screening outcome indicated that there is less than 5% of missing values per indicator and none of the observation has more than 15% missing values. Therefore, this study adopted mean value replacement method as suggested by Hair et al. (2017) whereby absent data were reinstated with the average valid values of that particular indicator.

#### **5.4.2 Outliers**

An outlier is an exceptionally high or low value in the response to a particular question (Hair et al., 2017). Outliers will need to be deleted from the data to improve the quality of the statistical analysis. There are many methods for detecting outliers. In this study, the outliers was checked using box plots. Examination of box plots indicated that there were no outliers because none of the variables exceeded the stated threshold. Therefore, no removal of observation was required.

### **5.4.3 Normality Test**

Hair et al. (2017) opined that it is not a prerequisite for data to be normally distributed since PLS-SEM applies non-parametric statistical approach. Bootstrapping procedure performs quite robustly even though data are non-normal. However, the data need to be examined to ensure that they are not exceptionally non-normal to prevent inflation of standard errors (Hair et al., 2017). This study assessed the data normality using SPSS statistical software to obtain the value of kurtosis and skewness. Skewness evaluates whether the distribution is balanced whereas kurtosis measures the peakness of distribution. A normal distribution is indicated by values within the range +1 and -1 (Hair et al., 2017). The complete data distribution survey on individual items is presented in Appendix 4. Notably, some of the measures of latent constructs were slightly out of the normality range of +1 and -1. This non-conformity of normality assumption justified the usage of PLS-SEM statistical technique in this study (Henseler et al., 2009).

### **5.5 Checking Biases**

Bias refers to any tendency that prevents impartial consideration of a matter. Bias can happen at any stage of a research and it can threaten the validity of the survey. Thus, addressing issue of biases is crucial.



### **5.5.1 Common Method Variance**

This study collected data via self-administered questionnaires and used a single respondent to generate the data on both dependent and independent constructs. In such situation, common method variance needs to be examined (Podsakoff et al., 2003). This study used Harman's one-factor test to detect common method variance. According to Podsakoff et al. (2003), evidence method bias exists when a single factor emerges from the factor analysis, or one general factor accounts for the majority of the covariance among the measures. In this analysis, the results returned a six-factor solution, with the first factor explained 47% which is less than the 50% threshold. This justifiably conclude that common method bias did not affect this study.

### **5.5.2 Non-Response Bias**

Having potential in threatening validity of research, non-response bias has to be examined accordingly (Armstrong & Overton, 1977). Employing independent samples t-test, responses of early participants (59%) were compared with late participants (41%) who responded after the final reminder. The outcome was shown in Appendix 5. The results indicated non-significant dissimilarity among the constructs. It is justified that the responses are valid representation of target population.

## 5.6 Profile of Respondents

After conducting the preliminary examination of data, the profile of respondents is analysed as per Table 5.2. The sample totalling 244 respondents with 132 (54.1%) female, and 112 (45.9%) male. With reference to age groups, majority of the respondents (26.6%) are above 41 years old. This is followed by 22.1% for 21-25 age group, 17.2% for 31-35 age group, 16.8% for 26-30 group, 16.4% for 36-40 group, and 0.8% for those below 21 years old. It is shown that 59.8% of them are married and 40.2% are single.

In terms of educational level, 16.4% of the respondents have no college degree, 18% of the respondents have achieved a Diploma level qualification, 59.17% of the 244 respondents possessed a degree or professional qualification and 6.5% have postgraduate degree. Regarding duration they work with existing firms, 54 (22.1%) of them have worked for 11-20 years, followed by 51 (20.9%) for 6-10 years, 46 (18.9%) for 1-2 years, 35 (14.3%) for 3-5 years, 33 (13.5%) for less than one year but more than six months, and the rest 25 (10.2%) have worked for more than 20 years.

Majority of the respondents hold the position as executive (56.1%). The remaining respondents work as non-executive (23.0%) and Manager and above (20.9%). Among the collected survey, 53 (21.7%) of the respondents are working in the production department, 16 (6.6%) in research and development, 11 (4.5%) in sales and marketing, 26 (10.7%) in administration, 14 (5.7%) in finance, 42 (17.2%) in human resource, 6 (2.5%) in information

technology, 9 (3.7%) in procurement, 48 (19.7%) in quality assurance, 13 (5.3%) in engineering, and 6 (2.4%) in logistics and supply chain management.

**Table 5.1: Profile of Respondents**

<b>Demographic Factors</b>	<b>Categories</b>	<b>Frequency (n=244)</b>	<b>Percentage (%)</b>
<b>Gender</b>	Male	112	45.9
	Female	132	54.1
<b>Age</b>	Below 21	2	0.8
	21–25	54	22.1
	26–30	41	16.8
	31–35	42	17.2
	36–40	40	16.4
	41 and above	65	26.6
<b>Marital Status</b>	Single	98	40.2
	Married	146	59.8
<b>Education Level</b>	No College Degree	40	16.4
	Diploma	44	18.0
	Bachelor Degree / Professional Qualification	144	59.1
	Master Degree	14	5.7
	PhD	2	0.8
<b>Length of Employment</b>	Less than 1 year	33	13.5
	1–2 years	46	18.9
	3–5 years	35	14.3
	6–9 years	51	20.9
	10–20 years	54	22.1
	Above 20 years	25	10.2
<b>Job Position</b>	Non-executive	56	23.0
	Executive	137	56.1
	Manager and above	51	20.9
<b>Type of Work</b>	Research and Development	16	6.6
	Production	53	21.7
	Marketing	11	4.5
	Administration	26	10.7
	Finance	14	5.7
	Human Resource	42	17.2
	Information Technology	6	2.5
	Procurement	9	3.7
	Quality Assurance / Quality Control	48	19.7
	Engineering	13	5.3
	Logistics / Supply Chain Management	6	2.4

## 5.7 Descriptive Analysis

Descriptive analysis is conducted to examine the mean and standard deviation of all variables. The mean of the data refers to the value derived from the central point of the random variable (Hair et al., 2010). It is computed based on summation of all the data values in the measured variable divided by the number of items. Meanwhile, standard deviation refers to the extent of variation from the mean.

Table 5.2 summarises the means and standard deviations for all the constructs in this study. The mean score for people-related TQM varied between 3.617 (RR) and 3.901 (EP), showing extensive implementation of people-related TQM in these companies. Result showed that empowerment has the highest mean score among the people-related TQM practices. This implies that the employees perceived themselves to be highly empowered in quality management activities. Notably, the mean score of 3.617 for reward and recognition is lowest among the six people-related TQM dimensions. Nevertheless, the mean score of 3.617 is considered above average. In conclusion, the implementation of people-related TQM practices is considered above average in the surveyed companies.

**Table 5.2: Summary of Means and Standard Deviations for Constructs**

<b>Constructs</b>	<b>Items</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b><u>PEOPLE-RELATED TOM</u></b>			
Leadership (LD)	8	3.827	0.6808
Employee Involvement (EV)	8	3.696	0.6188
Training and Development (TD)	6	3.738	0.6459
Reward and Recognition (RR)	6	3.617	0.5973
Teamwork (TW)	6	3.759	0.6030
Empowerment (EP)	4	3.901	0.7297
Job Satisfaction (JS)	5	3.705	0.5903
Turnover Intention (TI)	4	2.109	0.8692

Note: Five-point scale: 1= “strongly disagree”; 5 = “strongly agree”

## **5.8 Stage One: Measurement Model Analysis**

After performing the preliminary data analysis, the cleaned data were later converted to the .csv file format to be used by SmartPLS 3 (Ringle, Wende, & Becker, 2015). PLS-SEM results are evaluated using systematic procedures. The systematic evaluation of the PLS-SEM research model in this study adheres to a two-stage procedures comprising assessments of measurement and structural models.

For assessment of measurement models, there are reflective and formative model analysis. Regarding this study, the research model consists of seven latent variables with reflective measurement models (i.e. LD, EV, TD,

RR, TW, EP and TI) and one latent variable with formative measurement model (JS). Notably, reflective and formative measurement models require different procedures and evaluation criteria to determine the reliability and validity of the model.

### **5.8.1 Assessment of Reflective Measurement Models**

Confirming the reliability and validity of constructs is the aim of reflective measurement models analysis. The process is illustrated in the subsequent subsections as follows:

#### **5.8.1.1 Indicator Reliability**

Indicator reliability refers to the “square of a standardised indicator’s outer loading” and it denotes the degree of “variation in an item explained by the construct” (Hair et al, 2017, p. 319). Henseler et al. (2009) proposed a minimum of 50% variation is explained by the construct. According to Hair et al. (2017), indicator loadings should exceed 0.70.

Table 5.3 shows the loading for each indicator. It is noted that four indicators i.e. EV2, EV8, RR2 and RR4 have values below 0.700, thus, discarded from subsequent assessment. Moreover, remaining indicators surpassed the suggested threshold of 0.700 with loadings between 0.713 and 0.883.

**Table 5.3: Outer Loading of Indicators**

<b>Construct</b>	<b>Indicator</b>	<b>Loading</b>
Leadership (LD)	LD1	0.786
	LD2	0.810
	LD3	0.774
	LD4	0.816
	LD5	0.776
	LD6	0.822
	LD7	0.737
	LD8	0.741
Employee Involvement (EV)	EV1	0.772
	<b>EV2</b>	<b>0.571</b>
	EV3	0.789
	EV4	0.728
	EV5	0.785
	EV6	0.802
	EV7	0.755
	<b>EV8</b>	<b>0.685</b>
Training and Development (TD)	TD1	0.780
	TD2	0.779
	TD3	0.713
	TD4	0.753
	TD5	0.725
	TD6	0.729
Reward and Recognition (RR)	RR1	0.753
	<b>RR2</b>	<b>0.651</b>
	RR3	0.764
	<b>RR4</b>	<b>0.659</b>
	RR5	0.763
	RR6	0.854
Teamwork (TW)	TW1	0.820
	TW2	0.802
	TW3	0.792
	TW4	0.811
	TW5	0.768
	TW6	0.798
Empowerment (EP)	EP1	0.881
	EP2	0.885
	EP3	0.841
	EP4	0.851
Turnover Intention (EP)	TI1	0.871
	TI2	0.865
	TI3	0.844
	TI4	0.883

### **5.8.1.2 Internal Consistency Reliability**

Internal consistency reliability investigates “consistency of results across items on the same test” (Hair et al., 2017, p. 320). It evaluates whether “the scores of all indicators of a construct or latent variable have the same range and meaning” (Cronbach, 1951). Cronbach’s alpha tends to underestimate the internal consistency reliability of constructs (Hair et al., 2017). Contrariwise, composite reliability likely to overvalue the internal consistency reliability (Hair et al., 2017). Therefore, Hair et al. (2017) suggested reporting both Cronbach’s alpha and composite reliability. The recommended threshold for both values are 0.700 and above. However, Straub et al., (2004) stated that care must be taken if Cronbach’s alpha and composite reliability values are relatively high because values over 0.950 may indicate possible common method bias.

Table 5.4 reports that the Cronbach’s alpha values are between 0.828 and 0.910 and the composite reliability ranges from 0.883 to 0.927. Both composite reliability and Cronbach’s alpha are over 0.700. Evidently, the indicators attained satisfactory internal consistency reliability.



**Table 5.4: Composite Reliability and Cronbach's Alpha**

<b>Construct</b>	<b>Composite Reliability</b>	<b>Cronbach's Alpha</b>
LD	0.927	0.910
EV	0.904	0.872
TD	0.883	0.841
RR	0.885	0.828
TW	0.913	0.886
EP	0.922	0.887
TI	0.923	0.889

### **5.8.1.3 Convergent Validity**

Convergent validity is “the degree to which individual items reflecting a construct converges in comparison to items measuring different constructs” (Urbach & Ahlemann, 2010, p. 19). The convergent validity of reflective measurement model is tested using average variance extracted (AVE) value. Bagozzi and Yi (1988) stated that AVE of 0.500 and above is deemed satisfactory. Table 5.5 indicates AVE values range from 0.610 to 0.750, proving adequate convergent validity for all constructs.

**Table 5.5: Average Variance Extracted (AVE)**

<b>Construct</b>	<b>Average Variance Extracted</b>
LD	0.614
EV	0.610
TD	0.558
RR	0.659
TW	0.638
EP	0.748
TI	0.750

#### 5.8.1.4 Discriminant Validity

Urbach and Ahlemann (2010, p. 19) define discriminant validity as “the degree to which the measures of different constructs differ from one another”. Also, it evaluates how much indicators truly denote only a single construct (Hair et al., 2017). In this study, discriminant validity was appraised utilising heterotrait-monotrait ratio (HTMT). HTMT is a method using multitrait-multimethod matrix whereby HTMT indicates the “heterotrait-heteromethod correlations” which denotes “mean of all correlations of indicators across constructs measuring different constructs” (Hair et al., 2017, p. 318), comparative to the “geometrical monotrait-heteromethod correlations” which refer to “mean of the average correlations of indicators measuring the same construct” (Hair et al., 2017, p. 318).

Discriminant validity can be evaluated using criterion or statistical test via HTMT. For criterion test, discriminant validity is proven when HTMT values are below 0.90 (Gold et al., 2001). For statistical test, according to Hair et al. (2017), it involves testing of null hypothesis against alternative hypothesis. Discriminant validity is proven when confidence interval does not comprise 1 in any of the constructs. Results below confirmed that all the values satisfied the criteria of HTMT value lower than  $HTMT_{.90}$  (Gold et al., 2001) and the confidence interval of the  $HTMT_{Interence}$  do not include 1. The two tests confirmed that there is discriminant validity in the reflective measurement models.

**Table 5.6: Discriminant Validity using Heterotrait-Monotrait (HTMT)**

<b>Construct</b>	<b>LD</b>	<b>EV</b>	<b>TD</b>	<b>RR</b>	<b>TW</b>	<b>EP</b>	<b>TI</b>
Leadership (LD)							
Employee Involvement (EV)	0.888						
Training and Development (TD)	0.874	0.871					
Reward and Recognition (RR)	0.746	0.848	0.798				
Teamwork (TW)	0.799	0.880	0.882	0.897			
Empowerment (EP)	0.798	0.781	0.845	0.818	0.855		
Turnover Intention (TI)	0.881	0.803	0.861	0.771	0.842	0.823	

**Table 5.7: Confidence Intervals for HTMT**

<b>Path</b>	<b>Original Sample</b>	<b>Sample Mean</b>	<b>Bias</b>	<b>95% Bias Corrected Confidence Interval</b>	<b>HTMT confidence interval does not include 1</b>
<b>EV → LD</b>	0.888	0.888	0.000	[0.839, 0.929]	Yes
<b>TD → LD</b>	0.874	0.873	-0.001	[0.817, 0.918]	Yes
<b>TD → EV</b>	0.871	0.869	-0.002	[0.810, 0.919]	Yes
<b>RR → LD</b>	0.746	0.745	-0.001	[0.661, 0.815]	Yes
<b>RR → EV</b>	0.848	0.846	-0.001	[0.780, 0.897]	Yes
<b>RR → TD</b>	0.798	0.796	-0.002	[0.717, 0.860]	Yes
<b>TW → LD</b>	0.799	0.798	-0.001	[0.740, 0.849]	Yes
<b>TW → EV</b>	0.880	0.879	-0.001	[0.826, 0.923]	Yes
<b>TW → TD</b>	0.882	0.880	-0.001	[0.827, 0.923]	Yes
<b>TW → RR</b>	0.897	0.896	-0.001	[0.843, 0.944]	Yes
<b>EP → LD</b>	0.798	0.797	-0.001	[0.739, 0.847]	Yes
<b>EP → EV</b>	0.781	0.780	-0.001	[0.713, 0.835]	Yes
<b>EP → TD</b>	0.845	0.844	-0.001	[0.785, 0.891]	Yes
<b>EP → RR</b>	0.818	0.817	-0.001	[0.744, 0.877]	Yes
<b>EP → TW</b>	0.855	0.853	-0.002	[0.793, 0.901]	Yes
<b>TI → LD</b>	0.881	0.880	-0.001	[0.828, 0.902]	Yes
<b>TI → EV</b>	0.803	0.802	-0.001	[0.742, 0.853]	Yes
<b>TI → TD</b>	0.861	0.860	-0.001	[0.808, 0.903]	Yes
<b>TI → RR</b>	0.771	0.769	-0.002	[0.691, 0.834]	Yes
<b>TI → TW</b>	0.842	0.840	-0.002	[0.783, 0.883]	Yes
<b>TI → EP</b>	0.823	0.821	-0.002	[0.764, 0.870]	Yes

### **5.8.1.5 Summary of Results for Reflective Measurement Models**

Generally, the reflective measurement model in this study demonstrated satisfactory reliability and validity. First, all item loadings are greater than 0.7 except EV2, EV8, RR2 and RR4 which have been removed to improve the model's reliability. Furthermore, Cronbach's Alpha and Composite Reliability values are above 0.70. The AVE values for all constructs are above 0.50. HTMT values are lower than 0.90 and HTMT confidence level did not include 1 indicates that the discriminant validity has been proven. In short, all the criteria are within the recommended threshold. It can be concluded that the reflective measurement models exhibited discriminant validity, convergent validity, and internal consistency reliability. The summary of results of reflective measurement models is shown below.

**Table 5.8: Summary of Results for Reflective Measurement Models**

Construct	Item	Convergent Validity			Internal Consistency Reliability		Discriminant Validity
		Loadings	Indicator Reliability	AVE	Cronbach's Alpha	Composite Reliability	HTMT Confidence Interval does not include 1
		> 0.70	> 0.50	> 0.50	>0.70	>0.70	<0.90
<b>Leadership</b>	LD1	0.786	0.617	0.614	0.910	0.927	Yes
	LD2	0.810	0.656				
	LD3	0.774	0.599				
	LD4	0.816	0.665				
	LD5	0.776	0.602				
	LD6	0.822	0.675				
	LD7	0.737	0.543				
	LD8	0.741	0.549				
<b>Employee Involvement</b>	EV1	0.772	0.596	0.610	0.872	0.904	Yes
	EV3	0.789	0.622				
	EV4	0.728	0.529				
	EV5	0.785	0.616				
	EV6	0.802	0.643				
	EV7	0.755	0.570				
<b>Training and Development</b>	TD1	0.780	0.608	0.558	0.841	0.883	Yes
	TD2	0.779	0.606				
	TD3	0.713	0.508				
	TD4	0.753	0.567				
	TD5	0.725	0.525				
	TD6	0.729	0.531				
<b>Reward and Recognition</b>	RR1	0.753	0.567	0.659	0.828	0.885	Yes
	RR3	0.764	0.583				
	RR5	0.763	0.582				
	RR6	0.854	0.729				
<b>Teamwork</b>	TW1	0.820	0.672	0.638	0.886	0.913	Yes
	TW2	0.802	0.643				
	TW3	0.792	0.627				
	TW4	0.811	0.657				
	TW5	0.768	0.590				
	TW6	0.798	0.637				
<b>Empowerment</b>	EP1	0.881	0.776	0.748	0.887	0.922	Yes
	EP2	0.885	0.783				
	EP3	0.841	0.707				
	EP4	0.851	0.724				
<b>Turnover Intention</b>	TI1	0.871	0.759	0.750	0.889	0.923	Yes
	TI2	0.865	0.748				
	TI3	0.844	0.712				
	TI4	0.883	0.780				

**Note: EV2, EV8, RR2 and RR4 have been removed.**

## **5.8.2 Assessment of Formative Measurement Model**

The main aim in this analysis is to confirm the validity of the construct's formative measures. Conceptually different from reflective measurement model, formative measurement model requires separate assessment using different criteria and aspects (Bagozzi, 1994; Bollen, 1989). For formative measures, reliability may not be relevant (Diamantopoulos, 2006; Mathieson, Peacock, & Chin, 2001). In retrospect, Henseler et al. (2009) emphasised that validity is important. Subsequent section elaborates the testing of quality of the formative measures via collinearity, convergent validity and significance of outer weights.

### **5.8.2.1 Multicollinearity of Formative Indicators**

Multicollinearity occurs when the formative indicators are highly correlated (Hair et al., 2017). In fact, Hair et al. (2017) highlighted that statistical significance will be affected when high multicollinearity is detected. In this study, multicollinearity is tested utilising “variance inflation factor (VIF)” (Diamantopoulos & Siguaw, 2006). Urbach and Ahlemann (2010) describe VIF as “how much of an indicator's variance is explained by other indicators on the same construct”. VIF value should not exceed the value of 5 to ensure non-existence of multicollinearity (Hair et al., 2017).

Table 5.9 shows the result for VIF values for formative indicators. The formative indicators have the VIF values between 1.756 and 2.037 that are lower than 5. Therefore, multicollinearity does not exist.

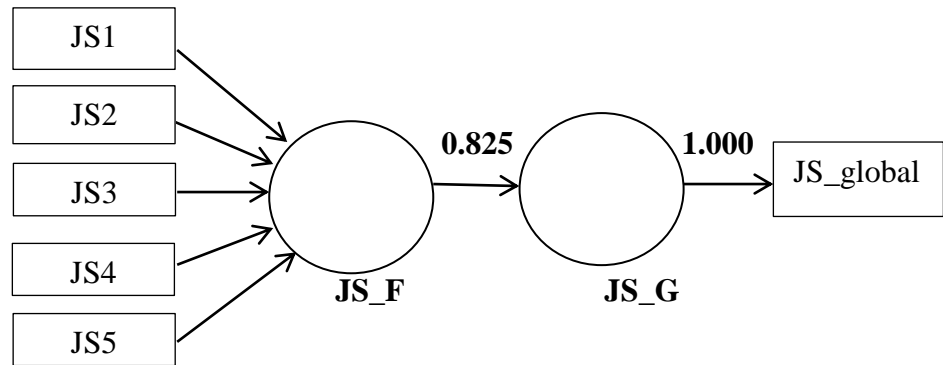
**Table 5.9: Multicollinearity Assessment for Formative Measurement Model**

<b>Formative Constructs</b>	<b>Formative Indicators</b>	<b>Outer VIF Values</b>
Job Satisfaction	JS1	1.816
	JS2	1.756
	JS3	1.884
	JS4	1.769
	JS5	2.037

#### 5.8.2.2 Convergent Validity

Convergent validity is “degree to which the formatively measured construct correlates positively with an alternative measure of the same construct” (Hair et al, 2017, p. 315). A global item that captures the gist of construct is created to test convergent validity (Sarstedt, Wilczynski, & Melewar, 2013). Therefore, an additional statement, “Overall, I am satisfied with all aspects of my job” has been developed using 1 (extremely unsatisfied) to 5 (extremely satisfied). This statement is utilised to validate the formative measurement of job satisfaction (JS). This endogenous single-item construct is named as JS\_G and served as a proxy for the JS construct.

Figure 5.2 shows the result for the redundancy analysis for JS construct which is labeled as JS\_F. The convergent validity is confirmed if the path coefficient exceeds 0.70. The analysis indicated a path coefficient of 0.825. This showed that convergent validity is supported.



**Figure 5.2: Redundancy Analysis Assessment for Formative Measurement Model**

### 5.8.2.3 Significance of Outer Weights

Significance of formative indicators' outer weights denotes "its relevance for the construction of formative index" (Urbach & Ahlemann, 2010, p. 20). Using bootstrapping method in PLS (Hair et al., 2017), this study determines the significance of outer weights via *t*-value criterion. Andreev et al. (2009) stated that, in a *t*-test, it is important to have significant path coefficients from indicators to construct. To obtain adequate validity level for formative measurement model, the significance level or *p*-value should be below 0.050 (Chin, 1998; Urbach & Ahlemann, 2010).



Table 5.10 shows the result of outer weights significance test. All the formative indicators are significant at a 5% level. Thus, all formative indicators in the JS construct are retained.

**Table 5.10: Formative Constructs Outer Weights Significance Testing**

Formative Constructs	Formative Indicators	Outer Weights (Outer Loadings)	<i>t</i> Value	<i>p</i> Value	95% BCa Confidence Interval	Significance ( <i>p</i> < 0.05)?
Job Satisfaction	JS1	0.249 (0.792)	5.106	0.000	[0.171, 0.331]	Yes
	JS2	0.139 (0.696)	2.909	0.002	[0.058, 0.214]	Yes
	JS3	0.143 (0.728)	2.909	0.002	[0.060, 0.221]	Yes
	JS4	0.340 (0.826)	6.624	0.000	[0.260, 0.429]	Yes
	JS5	0.371 (0.866)	6.843	0.000	[0.280, 0.459]	Yes

#### 5.8.2.4 Model Fit

Model fit in SEM-PLS is assessed using “Standardised Root Mean Square Residual” (SRMR) and “Root Mean Square Residual Covariance” ( $RMS_{\theta}$ ). SRMR refers to the standardised difference between “observed correlations and the model-implied correlations” (Hair et al., 2017, p. 328). Meanwhile,  $RMS_{\theta}$  refers to the difference “between the observed covariance and the model-implied correlations” (Hair et al., 2017, p. 327). Henseler et al. (2014) suggest that SRMR and  $RMS_{\theta}$  have the capabilities to identify a range of model misspecifications. In this study, SRMR was run to examine the model fit. SRMR is the only one measure for model fit that is

available in SmartPLS 3 (Ringle et al., 2015). Value below 0.064 is usually considered a good fit (Hu & Bentler, 1999). For this study, SRMR value is 0.055, showing substantial good fit. In addition,  $RMS_{\theta}$  value is 0.116 which is below the suggested value of 0.12, supporting a model fit (Henseler et al., 2014). In conclusion, the research model is deemed valid.

## **5.9 Stage Two: Structural Model Analysis**

This phase aims to evaluate the interactions among the constructs and to assess its predictive abilities (Götz, Liehr-Gobbers, & Kraft, 2010). In the first stage, both the analysis for reflective and formative measurement models demonstrated satisfactory validity and reliability. Subsequently, this study proceeds to stage two whereby the structural model is tested using the following analyses: multicollinearity assessment, coefficient of determination, path coefficients, hypothesis testing,  $f^2$  and  $q^2$  effect size, and predictive relevance.

### **5.9.1 Multicollinearity Assessment**

Multicollinearity arises when the constructs are highly correlated, thus posing problems to the structural assessment. The first step in structural model assessment procedure is to inspect multicollinearity problems by assessing VIF values of “each set of predictor constructs” (Hair et al., 2017, p. 192).

The result shows that Inner VIF values of all sets of endogenous constructs and corresponding exogenous constructs i.e. LD, EV, TD, RR, TW, EP as predictors of JS and LD, EV, TD, RR, TW, EP, and JS as predictors of TI, are below the threshold value of 5. Consequently, the structural model is not threatened by multicollinearity problems.

**Table 5.11: Multicollinearity Assessment (VIF Values)**

<b>Construct</b>	<b>JS</b>	<b>TI</b>
Leadership (LD)	3.522	4.016
Employee Involvement (EV)	3.807	3.832
Training and Development (TD)	3.369	3.381
Reward and Recognition (RR)	2.911	3.277
Teamwork (TW)	4.065	4.332
Empowerment (EP)	3.025	3.146
Job Satisfaction (JS)		4.574

### 5.9.2 Coefficient of Determination

The coefficient of determination ( $R^2$  value) is “a measure of the proportion of an endogenous constructs’s variance that is explained by its predictor constructs” (Hair et al., 2017, p. 313). Additionally, the structural model’s ability to predict is intensified by a larger  $R^2$  value. Subsequently,  $R^2$  is a vital criterion for examining structural model’s explanatory power.

Table 5.12 showed the  $R^2$  values of the endogenous construct JS and TI. It was found that LD, EV, TD, RR, TW, EP were capable to explain 78.1% of the variance towards endogenous construct of job satisfaction. Meanwhile, LD, EV, TD, RR, TW, EP, and JS explained 75% of the variance in turnover intention. It was recommended that  $R^2$  values of 0.25, 0.50, or 0.75 are correspondingly justified as weak, moderate or substantial (Hair, Ringle, & Sarstedt, 2011). Evidently,  $R^2$  values of JS (0.781) and TI (0.750) are considered substantial.

**Table 5.12: Coefficient of Determination ( $R^2$ )**

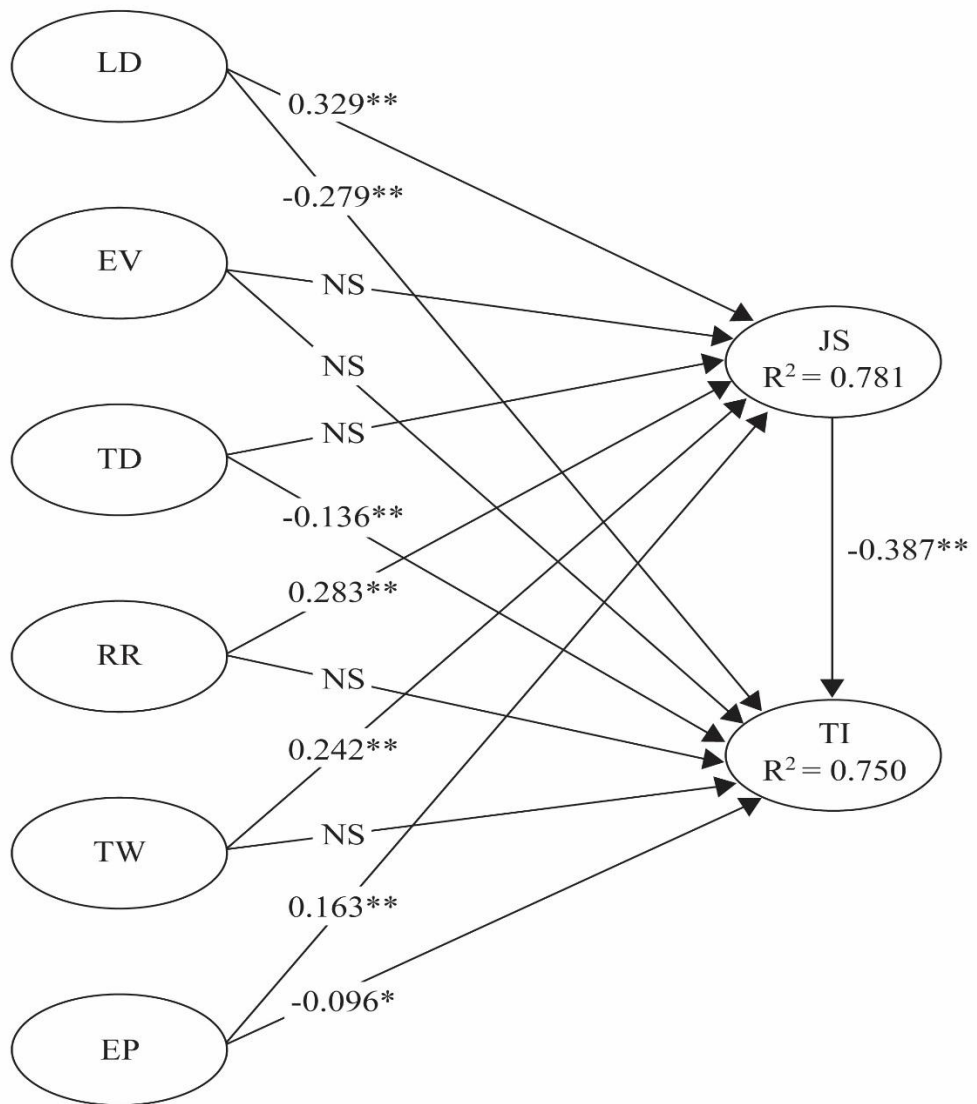
<b>Endogenous Construct</b>	<b><math>R^2</math> Value</b>
Job Satisfaction	0.781
Turnover Intention	0.750

### 5.9.3 Path Coefficient ( $\beta$ )

Path coefficient ( $\beta$ ) refers to “the estimated path relationships between the constructs in the structural model” (Hair et al., 2017, p. 324). The path coefficients provide the evaluation of the validation of the theoretically assumed links concerning exogenous and endogenous constructs. It is recommended that path coefficient value should achieve minimum 0.100 to justify for a certain effect in a structural model (Hair et al., 2011).

Figure 5.3 demonstrates the path coefficient ( $\beta$ ) of structural model. A detailed result extracted from SmartPLS 3 is in Appendix 6. With reference to the relative importance of the exogenous driver constructs for job satisfaction (JS), leadership (LD) is the most significant driver, followed by reward and

recognition (RR), teamwork (TW) and empowerment (EP). In contrast, training and development (TD) and employee involvement (EV) have little impact on job satisfaction. Also, leadership is the most important driver for turnover intention (TI), followed by teamwork, training and development, and empowerment. However, reward and recognition and employee involvement have no influence on turnover intention because the path coefficient estimates are lower than 0.10. Job satisfaction has the strongest prediction on turnover intention. To assess whether these relationships are significant, bootstrapping procedure is required as explained in the following subsection.



Note: NS = Not significant,  $p < 0.05^*$ ,  $p < 0.01^{**}$

**Figure 5.3: Path Coefficients of Structural Model**

#### 5.9.4 Hypotheses Testing

Hypotheses testing is the validation of the proposed explanations for constructs that state the path relationships in the structural model. In order to evaluate the significance of the hypothesised path, this study employed bootstrapping procedure with 5,000 subsamples (Hair et al., 2017). Bootstrapping, according to Hair et al. (2017, p. 313), “is a resampling technique that draws a large number of subsamples from the original data (with replacement) and estimates models for each subsample”. The bootstrapping result provides details including path coefficient estimates,  $t$  values,  $p$  values and confidence intervals. In this study, significance of hypothesis is considered satisfactory only if its  $t$  values are higher than 1.645 since all the proposed hypotheses are directional in one tail. In terms of significance level, the path coefficient is significant at least at 0.050, that is,  $p < 0.05$  and the confidence intervals should not include zero in the interval (Hair et al., 2017). All the three criteria, namely, confidence intervals,  $p$  values, and  $t$  values, would generate same outcome for significance of path coefficients.

Table 5.13 demonstrates results of each hypothesis testing. The PLS-SEM bootstrapping results reported that exogenous constructs of LD ( $\beta = 0.329$ ,  $p < 0.01$ ), RR ( $\beta = 0.283$ ,  $p < 0.01$ ), TW ( $\beta = 0.242$ ,  $p < 0.01$ ) and EP ( $\beta = 0.163$ ,  $p < 0.01$ ) significantly influence job satisfaction, with LD demonstrating the largest impact. Evidently, H1a, H4a, H5a, and H6a were endorsed. Conversely, EV ( $\beta = -0.074$ ,  $p > 0.05$ ) and TD ( $\beta = 0.051$ ,  $p > 0.05$ )

are non-significant predictor in influencing job satisfaction. Thus, H2a and H3a were not supported. The findings indicated that four out of six people-related TQM practices, namely, LD, RR, TW and EP have significant impact on job satisfaction.

With reference to Table 5.13, as for turnover intention, LD ( $\beta = -0.279$ ,  $p < 0.01$ ), TD ( $\beta = -0.136$ ,  $p < 0.01$ ) and EP ( $\beta = -0.096$ ,  $p < 0.05$ ) are reported to be significant and negative predictors of TI. JS ( $\beta = -0.387$ ,  $p < 0.01$ ) has strong and inverse prediction on TI. Therefore, H1b, H3b, H6b and H7 are supported. However, TW ( $\beta = -0.105$ ,  $p > 0.05$ ), EV ( $\beta = 0.000$ ,  $p > 0.05$ ) and RR ( $\beta = 0.058$ ,  $p > 0.05$ ) have non-significant link with TI. Thus, H2b, H4b, and H5b are not supported. Based on these results, it was found that three out of six people-related TQM practices, namely, LD, TD and EP have significant impact on turnover intention.



**Table 5.13: Results of Hypotheses Testing**

Hypothesis	Path	Path Coefficients	t-Values	p-Values	95% Confidence Intervals	Significance (p < 0.05)?
H1a	LD → JS	0.329**	5.272	0.000	[0.225, 0.429]	Yes
H1b	LD → TI	-0.279**	4.937	0.000	[-0.368, -0.182]	Yes
H2a	EV → JS	-0.074	1.165	0.122	[-0.177, 0.034]	No
H2b	EV → TI	0.000	0.007	0.497	[-0.117, 0.104]	No
H3a	TD → JS	0.051	0.944	0.173	[-0.042, 0.137]	No
H3b	TD → TI	-0.136**	2.595	0.005	[-0.223, -0.051]	Yes
H4a	RR → JS	0.283**	4.811	0.000	[0.179, 0.373]	Yes
H4b	RR → TI	0.058	0.966	0.167	[-0.035, 0.163]	No
H5a	TW → JS	0.242**	3.676	0.000	[0.141, 0.361]	Yes
H5b	TW → TI	-0.105	1.472	0.070	[-0.215, 0.022]	No
H6a	EP → JS	0.163**	3.014	0.001	[0.075, 0.250]	Yes
H6b	EP → TI	-0.096*	1.717	0.043	[-0.189, -0.004]	Yes
H7	JS → TI	-0.387**	5.717	0.000	[-0.510, -0.285]	Yes

Note: p < 0.05\*, p < 0.01\*\*

### 5.9.5 Effect size $f^2$

The relative influence of exogenous construct on endogenous construct is measured by effect size  $f^2$  (Chin, 1998; Hair et al., 2017). It can be examined utilising the formula recommended by Cohen (1988). Effect size  $f^2$  is calculated based on the increase in  $R^2$  of endogenous construct relative to

the endogenous construct's proportion of unexplained variance (Cohen, 1998).

Following is the equation used to calculate the effect size:

$$f^2 = \frac{R^2 \text{ included} - R^2 \text{ excluded}}{1 - R^2 \text{ included}}$$

$R^2$  included refers to the explained variance of the endogenous construct, including the particular exogenous construct whose effect is being examined, and  $R^2$  excluded refers to the unexplained variance of the same endogenous construct when exogenous construct is omitted from the model. However, this study obtained the effect size  $f^2$  straight from the SmartPLS 3.

Table 5.14 presents the effect size of each exogenous construct on its endogenous construct in this study. According to Cohen (1988), the  $f^2$  values of 0.02, 0.15, and 0.35 is respectively considered as small, medium, and large effect. Therefore, it can be concluded that LD and RR have medium effects on JS. Meanwhile, TW and EP have small effects on JS. On other hand, LD and JS have medium effects on TI. TD has small effects on TI.

**Table 5.14:  $f^2$  effect size**

<b>Construct</b>	<b>JS</b>	<b>TI</b>
Leadership (LD)	0.140	0.078
Employee Involvement (EV)	0.007	0.000
Training and Development (TD)	0.004	0.022
Reward and Recognition (RR)	0.126	0.004
Teamwork (TW)	0.066	0.010
Empowerment (EP)	0.040	0.012
Job Satisfaction (JS)		0.131

### 5.9.6 Predictive Relevance $Q^2$

Predictive Relevance  $Q^2$  is the predictive power of model. The predictive relevance of endogenous construct can be assessed utilising “Stone-Geisser’s  $Q^2$  test” (Geisser, 1975; Stone, 1974). In SmartPLS 3,  $Q^2$  value is obtained via blindfolding procedure. Blindfolding is “a sample reuse technique that omits part of the data matrix and uses the model estimates to predict the omitted parts” (Hair et al., 2017, p. 312). In other words, it examines whether a model correctly predicts data that are not used in estimation of model parameters. From the SmartPLS 3, the  $Q^2$  values are obtained from the Construct Crossvalidated Redundancy estimates.

Table 5.15 shows the  $Q^2$  values examined for JS and TI. The  $Q^2$  value has to be more than zero for predictive relevance to be assumed satisfactory (Stone, 1974; Geisser, 1974). Hence, both JS (0.439) and TI (0.522) have satisfied the predictive relevance of endogenous construct.

**Table 5.15: Construct Crossvalidated Redundancy**

<b>Endogenous Construct</b>	<b><math>Q^2</math> Value</b>
Job Satisfaction	0.439
Turnover Intention	0.522

### 5.9.7 Effect Size $q^2$

Effect Size  $q^2$  is “a measure to assess the relative predictive relevance of a predictor construct on an endogenous construct” (Hair et al., 2017, p. 325). The SmartPLS 3 does not provide  $q^2$  values. Therefore, the  $q^2$  values were calculated manually using the following formula:

$$q^2 = \frac{Q^2 \text{ included} - Q^2 \text{ excluded}}{1 - Q^2 \text{ included}}$$

Table 5.16 shows the result for effect size  $q^2$ .  $q^2$  values of 0.35, 0.15, and 0.02 correspondingly denote large, medium, and small predictive relevance (Hair et al., 2017; Henseler et al., 2009). Based on the  $q^2$  values result, LD and RR have small predictive prevalence on JS. Meanwhile, LD and JS have small predictive prevalence on TI.

**Table 5.16:  $q^2$  Effect Size**

<b>Construct</b>	<b>JS</b>	<b>TI</b>
Leadership (LD)	0.026	0.027
Employee Involvement (EV)	-0.001	-0.002
Training and Development (TD)	0.000	0.008
Reward and Recognition (RR)	0.023	0.000
Teamwork (TW)	0.014	0.004
Empowerment (EP)	0.007	0.004
Job Satisfaction (JS)		0.046

## 5.10 Mediation Analysis

Mediating analysis aims to analyse a structure of relationship which involves an exogenous construct affecting a mediator variable which subsequently affecting an endogenous construct (Hair et al., 2017; Nitzl, Roldan, & Cepede, 2016). Mediation arises when there is an interference by a mediator variable in the relationship between two other related constructs. Mediating effects is a type of relationship commonly occurs in PLS path modelling. Recently, the mediation tests have evolved to become more advanced. The traditional approach to mediation analysis employing the approach by Baron and Kenny (1986) has received extensive feedback and comment on its weaknesses. Moving forward, Preacher and Hayes (2004, 2008), Nitzl, Roldán, and Cepeda (2016), and Zhao, Lynch, and Chen (2010), suggest using new procedures to replace Baron and Kenny's (1986) method.

In this study, mediator variable (i.e. job satisfaction) was hypothesised to mediate the relationship between the people-related TQM dimensions (i.e. LD, EV, TD, RR, TW and EP) and TI. The mediation analysis was performed employing the new method established by Zhao et al. (2010). This new method uses three steps to test the mediating effects in PLS as illustrated in Hair et al. (2017). First, the significance of indirect effect via mediator is evaluated using bootstrapping procedure. Second, the significance of the direct effect is tested. Third step involves determining the type of mediation. Generally, there are three types of mediation. Hair et al. (2017) noted that when both indirect and direct effects are significant, it is partial mediation, and

vice versa for non-mediation. When indirect effect is significant but direct effect is insignificant, full mediation occurs.

Table 5.17 shows the significance analysis of direct and indirect effects and its outcome. Results reported that job satisfaction has full mediating effect on the link connecting reward and recognition and turnover intention, as well as between teamwork and turnover intention. This is based on the outcome that indirect effect of the link connecting reward and recognition and turnover intention, and between teamwork and turnover intention are significant but the direct effect are insignificant. Therefore, H4c (LD → JS → TI) and H5c (TW → JS → TI) are supported. In addition, based on the significance of both direct and indirect effects, two partial mediations occur, i.e. between leadership and turnover intention, as well as empowerment and turnover intention. Therefore, H1c (LD → JS → TI) and H6c (EP → JS → TI) are supported.

**Table 5.17: Significance Analysis of Direct and Indirect Effects**

Path	Direct Effect	95% Confidence Interval of the Direct Effect	t-Value	Significance (p < 0.05)?	Indirect Effect	95% Confidence Interval of the Indirect Effect	t-Value	Significance (p < 0.05)?	Mediation
<b>LD → TI</b>	-0.244	[-0.377, -0.192]	4.937	Yes	-0.127	[-0.186, -0.076]	3.720	Yes	<b>Partial</b>
<b>EV → TI</b>	0.025	[-0.112, 0.108]	0.007	No	0.029	[-0.011, 0.077]	1.077	No	No
<b>TD → TI</b>	-0.109	[-0.223, -0.051]	2.595	Yes	-0.020	[-0.055, 0.017]	0.898	No	No
<b>RR → TI</b>	0.052	[-0.042, 0.155]	0.966	No	-0.110	[-0.165, -0.065]	3.586	Yes	<b>Full</b>
<b>TW → TI</b>	-0.130	[-0.223, 0.011]	1.472	No	-0.094	[-0.153, -0.046]	2.801	Yes	<b>Full</b>
<b>EP → TI</b>	-0.091	[-0.193, -0.009]	1.717	Yes	-0.063	[-0.103, -0.028]	2.669	Yes	<b>Partial</b>

### **5.11 Summary of Results of Hypotheses**

After conducting a series of statistical analysis that involved hypotheses and mediation testing, the findings indicated that hypotheses 1a, 1b, 1c, 3b, 4a, 4c, 5a, 5c, 6a, 6b, 6c, and 7 are significantly supported while hypotheses 2a, 2b, 2c, 3a, 3c, 4b and 5b are not supported.

**Table 5.18: Summary of Results of Hypotheses**

<b>Hypotheses</b>	<b>Description</b>	<b>Decision</b>
<b>H1a</b>	<i>Leadership is positively linked to job satisfaction among employees in Malaysia's E&amp;E industry.</i>	Supported
<b>H1b</b>	<i>Leadership is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported
<b>H1c</b>	<i>Job satisfaction mediates the link between leadership and turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported (Partial Mediation)
<b>H2a</b>	<i>Employee involvement is positively linked to job satisfaction among employees in Malaysia's E&amp;E industry.</i>	Not supported
<b>H2b</b>	<i>Employee involvement is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Not supported
<b>H2c</b>	<i>Job satisfaction mediates the link between employee involvement and turnover intention among employees in Malaysia's E&amp;E industry.</i>	Not supported
<b>H3a</b>	<i>Training and development is positively linked to job satisfaction among employees in Malaysia's E&amp;E industry.</i>	Not supported
<b>H3b</b>	<i>Training and development is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported
<b>H3c</b>	<i>Job satisfaction mediates the link between training and development and turnover intention among employees in Malaysia's E&amp;E industry.</i>	Not supported
<b>H4a</b>	<i>Reward and recognition is positively linked to job satisfaction among employees in Malaysia's E&amp;E industry.</i>	Supported
<b>H4b</b>	<i>Reward and recognition is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Not supported
<b>H4c</b>	<i>Job satisfaction mediates the link between reward and recognition and turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported (Full Mediation)
<b>H5a</b>	<i>Teamwork is positively linked to job satisfaction among employees in Malaysia's E&amp;E industry.</i>	Supported
<b>H5b</b>	<i>Teamwork is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Not supported
<b>H5c</b>	<i>Job satisfaction mediates the link between teamwork and turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported (Full Mediation)
<b>H6a</b>	<i>Empowerment is positively linked to job satisfaction among employees in Malaysia's E&amp;E industry.</i>	Supported
<b>H6b</b>	<i>Empowerment is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported
<b>H6c</b>	<i>Job satisfaction mediates the link between empowerment and turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported (Partial Mediation)
<b>H7</b>	<i>Job satisfaction is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported



## 5.12 Chapter Summary

Statistical analysis and research results of present study are presented. Initially, preliminary data analysis is conducted to examine the data, address biases, and evaluate the descriptive and respondent analysis. Employing PLS-SEM approach, measurement and structural model as well as the mediation test are assessed accordingly via SmartPLS 3 software (Ringle et al., 2015). Evidently, the reflective and formative measurement model demonstrated satisfactory reliability and validity. Furthermore, validation of structural model exhibited positive results with  $R^2$  values indicated strong explanatory power. Based on the path coefficient and hypotheses assessment, eight proposed paths within the structural model are supported. For mediating analysis, the structural model exhibited four significant mediating relationships with two full mediations and two partial mediations. Overall, there are 12 out of 19 hypotheses supported in this study. The subsequent chapter presents discussion on the research findings, specifically those that provide new insights to the current E&E industry.

## **CHAPTER 6**

### **DISCUSSION OF RESEARCH FINDINGS**

#### **6.1 Introduction**

Chapter Six deliberates the outcome of the statistical analysis. It provides a detailed discussion on the 19 hypotheses tested. It also presents the outcome of a focus group and the formation of a framework for E&E industry practitioners. Following that, recommendations for major stakeholders, namely, E&E organisations, E&E managers, and policymakers, are presented. Finally, it includes a discussion on the achievement of research objectives.

#### **6.2 Discussion on Hypotheses**

The results of hypotheses testing based on the statistical analysis computed in Chapter Five are discussed in the subsequent subsections.

##### **6.2.1 Hypotheses 1a, b, c**

For the three hypotheses (i.e., H1a, H1b, and H1c) on leadership, an assessment of the coefficients shows that all hypotheses are supported. Leadership is positively associated with job satisfaction, confirming

hypothesis H1a. Similarly, hypothesis H1b is statistically supported because leadership significantly influences turnover intention. As anticipated, the confirmation of hypothesis H1c is evidenced by the result of job satisfaction partially mediates the link connecting leadership and turnover intention.

The result indicated that leadership has a significant and positive relationship with job satisfaction, showing that hypothesis 1a is supported. The result is coherent with Prajogo and Cooper (2010), Ugboro and Obeng (2000), Jha and Kumar (2012), and Ijaz et al. (2012), which established that leadership highly influences job satisfaction. This finding revealed that leadership or top management in TQM companies plays a vital role in motivating the employees towards achievement of quality goals and vision of the companies. Based on the path coefficients of the indicators of LD constructs, respondents scored highly on the participation of top management in quality management activities, particularly, frequent discussion of quality-related matters in management meetings. Leaders were perceived to allocate resources for training, encourage employee involvement and empowerment, focus on quality and pursue long-term organisational success. All these positive leadership have contribute greatly to the job satisfaction of the employees. Nevertheless, the outcome is incoherent with Ooi et al. (2008), whereby result showed that leadership have insignificant link with job satisfaction among production workers in a manufacturing firm in Malaysia. It is thus essential for leaders to set the direction of the company towards achieving success in the implementation of TQM. Sharma and Kodali (2008) concurred that leadership is the fundamental step toward effective TQM.

In relation to hypothesis 1b, result has confirmed that leadership has inverse association with turnover intention. The outcome is agreeable with the findings in Boselie and Wiele (2002) who conducted an empirical research to study individual employee perceptions of an organisation in Netherlands in which leadership contributed to the reduction of turnover rates. When leaders develop and communicate the shared vision of TQM effectively to the employees, the employees will be motivated to achieve the strategic goals. Leaders play significant roles in shaping the direction of the organisation by being a role model in championing the quality initiatives, building the quality culture, nurturing a supportive work environment, and facilitating the change process in the organisation. All in all, effective leadership will diminish the intention to leave the organisation among the employees.

The result also showed that job satisfaction partially mediated the link connecting leadership and turnover intention experienced by employees, therefore supporting hypothesis H1c. The outcome is similar with findings by Sellgren et al. (2007) whereby leadership behaviour on staff turnover was found to be intervened by job satisfaction. In a nutshell, effective leadership will enhance the employees job satisfaction, hence lowering their turnover intention. Conclusively, leadership, being a major dimension of TQM, contributes greatly to enhancing job satisfaction and lowering turnover intention in the ISO-certified E&E manufacturing companies in Malaysia. With regard to the findings, the hypotheses H1a, b, c were justified.

### 6.2.2 Hypotheses 2a, b, c

Since TQM highly involves employees in their implementation of quality activities, the finding in this study is surprising. It is discovered that employee involvement is not a significant contributor to job satisfaction. Likewise, employee involvement is found to be insignificant to turnover intention. Correspondingly, job satisfaction did not have mediating effect on employee involvement and turnover intention. Thus, hypotheses H2a, b, and c are not substantiated.

The outcomes are inconsistent with Prajogo and Cooper (2010) and Ooi et al. (2006) that observed that employee involvement has positive impact on job satisfaction. Findings in current research can be justified by possible shift of mindset, attitudes and values of the employees towards employee involvement. Traditionally perceived as high power distance country (Hofstede, 2005), Malaysian employees are generally described as obedient and submissive to higher authority or leaders and may not be receptive towards the idea of employee involvement. However, due to globalisation exposure brought by the introduction of TQM implementation, Malaysian employees, especially those in the high-technology and knowledge-based E&E organisations, may experience a change of mindset, attitudes and values. In a TQM environment, management are encouraged to cultivate an organisational culture that encourages employees to involve in the quality improvement, problem solving and decision-making activities. Employee involvement is perceived as the main pillar in TQM organisations whereby

organisations are encouraged to build a culture of open communication and strong participation among their employees so that there is joint responsibility in achieving success in TQM implementation.

Increasing employee involvement is a long-term process that integrates both commitment from the management and initiative from the employees and involves total culture transformation. Thus, through long-term culture conditioning ingrained by TQM implementation, employees may perceive employee involvement as part of their responsibilities, organisational culture and norm, and not as a contributor to job satisfaction or resignation. Evidently, employee involvement is unlikely to influence turnover intention and job satisfaction among employees in Malaysian E&E companies. Likewise, job satisfaction does not act as a mediator influencing the link connecting employee involvement and turnover intention.

### **6.2.3 Hypotheses 3a, b, c**

The result shows that training and development do not associate significantly to job satisfaction. Likewise, job satisfaction does not have mediating effect on training and development and turnover intention. Consequently, H3a and H3c were not justified. Nonetheless, training and development are significantly and negatively relate to turnover intention. Therefore, hypothesis H3b was ratified.

Evidently, training and development reduce the employees' desire to resign. Similarly, Rahman and Nas (2013) found that appropriate training and development would motivate employees to perform better in their job and thus lower turnover intention. For example, upskilling training which provides additional skills and expansion in capabilities to the employees is important in an E&E industry which is characterised by fast pace working environment and continuous evolution of technology in the industry. Thus, with appropriate training and development, employees perceive advancement in their career and unlikely to leave the organisation.

Contrariwise, training and development is insignificant in increasing job satisfaction. In the similar vein, Ooi et al. (2008) and Zhang (2000) reported that training and development is not significantly related to job satisfaction. In their discussions, it is explained that, though training and development is vital in TQM, it tends to necessitate long-term commitment and the outcomes were not instantly achieved. Thus, the value of training and development should not be inflated. Another point of interest is that training and development should be provided at an appropriate level to the employees in order to deliver job satisfaction. Too many trainings might frustrate the employees especially if the training is perceived as not beneficial to their career advancement or the time taken for training affects their productivity. Organisations should provide trainings that suit the needs of the individual employees. Conclusively, this research confirmed that training and development is unlikely to create job satisfaction but may contribute to resignation among the employees in Malaysian E&E companies. Likewise,

job satisfaction does not appear to be a mediator influencing both training and development and turnover intention.

#### **6.2.4 Hypotheses 4a, b, c**

All hypotheses except one are as postulated pertaining to reward and recognition. Supporting hypothesis H4a, reward and recognition is positively associated with job satisfaction. Contrary to H4a, reward and recognition is not significant to turnover intention. Evidently, job satisfaction is a full mediator in the link concerning reward and recognition and turnover intention, as confirmed by the mediation test for H4c.

Parallel to the findings by Brief and Weiss (2002), Alsughayir (2014), and Lee and Lee (2014), it is confirmed that employees enjoy greater amount of satisfaction when the employees' efforts are rewarded and recognised by the organisation. In the context of a TQM environment, both recognition and rewards are believed to provide strong motivation to employees and management uses reward and recognition to promote TQM values and practices.

Moreover, it is revealed that reward and recognition has an indirect influence on turnover intention via job satisfaction. Similarly, Guzman's (2007) investigation noted that job satisfaction fully mediated the reward and recognition-turnover intention link. In a TQM organisation, reward and recognition systems are synergised with quality strategy. Therefore,



achievements resulted from both individual and teamwork effort are recognised and rewarded. Employees who put in extra efforts to achieve outstanding result would feel satisfied towards their jobs when their efforts are being recognised and rewarded, and thus decrease the possibility of their intention to resign from their companies.

### **6.2.5 Hypotheses 5a, b, c**

The findings supported hypothesis H5a whereby teamwork positively influence job satisfaction. Contrariwise, H5b was not validated due to insignificant link associating teamwork and turnover intention. Pertaining to H5c, job satisfaction fully mediated the link associating teamwork with turnover intention.

Studies by Ijaz et al. (2012), Kabak et al. (2014), and Karia and Asaari (2006) showed that teamwork has positive impact on employee satisfaction. Being a key feature in the implementation of TQM, teamwork is inevitable in carrying out quality activities. Teams such as project teams and quality circles are some common types of teams in a TQM context. Working as a team leads to higher commitment towards TQM and increased job satisfaction among the employees.

The association concerning teamwork and turnover intention is mediated by job satisfaction was supported by H5c. Apparently, the presence of teamwork in a manufacturing environment facilitates the implementation of

TQM particularly problem solving and change management (Dale et al., 2016a). In addition, teamwork provides opportunities for the development of employees in terms of leadership, communication skills, and decision making skills. These positive developments would increase job satisfaction and lessen the desire to turnover.

#### **6.2.6 Hypotheses 6a, b, c**

For the three hypotheses (i.e., H6a, H6b, and H6c) on empowerment, an assessment of the coefficients shows that all hypotheses are supported. Empowerment is positively associated with job satisfaction, confirming H6a. Similarly, hypothesis H6b is statistically supported because empowerment significantly affect turnover intention. As anticipated, job satisfaction partially mediated the empowerment-turnover intention link, thus validating H6c.

The fact that empowerment is significantly related to increased job satisfaction is parallel to the result of past studies (Prajogo & Cooper, 2010; Jayasuriya & Wedage, 2016; Ugboro & Obeng, 2000). This indicates that E&E companies in this present survey empower their employees by giving certain degree of control and autonomy on quality of output. This is one of the most desirable characteristics of the work and it is considered to influence positively on job satisfaction. Undeniably, ability to make work-related decisions provides empowered employees with greater job satisfaction.

The present findings confirmed the significant effect of empowerment on turnover intention. This is coherent with Kim and Fernandez's (2017) study. When employees are empowered, they experience higher self-motivation and increased commitment towards their organisations. Consequently, they will exert extra effort in their work, leading to better performance and lower turnover intention (Thomas & Velthouse, 1990).

Furthermore, job satisfaction is a partial mediator in the empowerment-turnover intention link. Past studies such as Oluwaseun (2016) and Wong Humborstad and Perry (2011) also supported the intervening role of job satisfaction in the empowerment-turnover intention link. With reference to the findings, there is adequate empowerment in the implementation of TQM in the E&E companies, resulting in higher levels of job satisfaction and lower levels of turnover intention. Based on the demographic profile of the respondents, 77% of the respondents are executives and managers compared to 23% of them are non-executives. 65% of them are degree and postgraduate degree holders. Generally, employees at managerial and executive levels are given more power to make decision compared to non-executives. Therefore, the perception of the respondents on the level of empowerment are generally higher. Conclusively, the E&E companies should continue the culture of empowerment in the firms to overcome attrition problems.

### **6.2.7 Hypotheses 7**

A significant and negative link connecting job satisfaction and turnover intention was established in this study, thus, supporting hypothesis H7. This outcome is coherent with the past studies by Boselie and Wiele (2002), Tian-Foreman (2009), Hom et al. (1992), and Hellman (1997) that established a moderate mean correlation between the two variables. The result of this study implies that the greater the job satisfaction experienced by employees, the lower the turnover intention the employee will perceive.

Mitchell, Holtom, Lee, Sablinski, and Erez's (2001) job embeddedness theory explains why highly satisfied employees remain in an organisation. In other words, employees become "embedded in their jobs". Generally, "embeddedness" are affected by links, fit, and sacrifice. Based on the demographic profile of the respondents, 53% of the respondents have been working in the organisations for more than six years. Therefore, they may have feel embedded in their job due to the strong connections and relationships with other colleagues, superiors, groups, and the communities they live in. Employees would find it more embedded and difficult to leave if they need to sacrifice more to leave the organisation. Therefore, these factors will have affect the decision to stay in an organisation.

Employees' perceptions of organisational quality initiatives is greatly associated with employee affective responses, with those perceiving greater organisational quality initiatives demonstrating improved attitudes such as

higher satisfaction and sequentially lesser desire to resign (Carlopio & Gardner, 1996). With reference to current research, people-related TQM practices are proven to increase job satisfaction and consecutively, diminish turnover intention.

From the viewpoint of social exchange theory, TQM organisations show their concern to the employees by investing in its human resources through training and development, providing attractive total rewards scheme, and motivating employees with empowerment and teamwork. In accordance with the reciprocal principle in the social exchange theory, employees would respond positively to such benefits, welfare, and investments, by contributing productively to the organisations and developing long-term job commitment with the organisations (Avanzi, Fraccaroli, Sarchielli, Ullrich, & van Dick, 2014; Biron & Boon 2013; Gould-Williams & Davies, 2005; Malik, Abbas, Kiyani, & Waheed, 2011; Omar, Salessi, & Urteaga, 2017; Rahman & Nas 2013; Sinniah & Kamil, 2017). This will yield positive outcomes for both organisations and employees whereby organisations enjoy greater performance and profitability, and employees experience greater job satisfaction, thus leading to lower turnover. Conclusively, employee-focus organisations enhanced with people-related TQM practices would witness greater job satisfaction and lower level of turnover intention among their employees.

### **6.3 Focus Group**

A focus group consisted of five senior managers from the E&E industry was conducted to present and discuss the findings of this study and seek their opinion on the recommendations for improvement. The purpose of using focus group in this study is to integrate qualitative inputs with the survey approach that provides a holistic representation of inputs from industry leaders/managers and employees. It aims to enhance the validity of findings and capture a more comprehensive practical insights of the study.

The focus group aims to gauge observations related to quality and human capital management efforts in the E&E organisations. The focus group findings showed generally people-related TQM practices such as training and development, leadership, employee involvement, employee empowerment, reward and recognition, and teamwork, were implemented in the E&E organisation. Some of the best practices concerning employees implemented by the organisations are continuous encouragement for employee involvement through improvement plan and team projects, emphasis on zero accidents for employee occupational safety, open communication between employees and immediate supervisors, conduct of employee satisfaction surveys on regular basis, and provision of various type of training. The organisations also implement some non-financial rewards such as flexible working hours, company trips, and special awards for high performing employees. However, emphasis was also on increasing productivity and improving competitiveness based on cost reduction. Therefore, some companies may control the cost for

external training and development, employee benefits package, and other benefits. Subsequently, the people-related TQM practices were implemented at varying degree at different type of organisations. It was noted that multinational corporations (MNCs) were more matured in their TQM practices compared to local E&E companies in Malaysia.

Most of the E&E managers agreed that employee turnover is a critical challenge that can impact the strategic development of E&E organisations. However, most of them observed that their organisations may not be managing employee turnover effectively. This phenomenon might be due to limited understanding of employee turnover as part of human capital risk by top management and low priority accorded to human capital risk management in terms of resource and budget allocations.

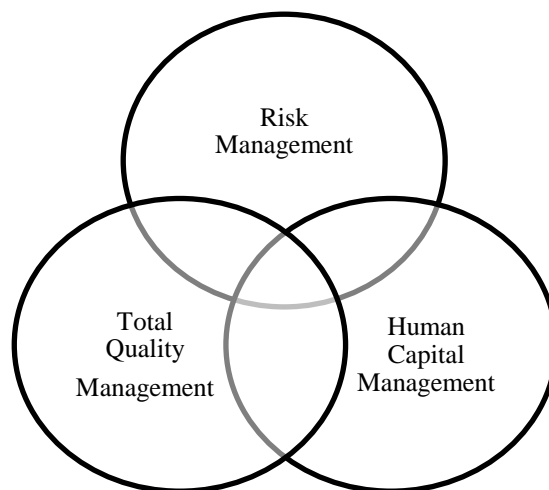
#### **6.4 Recommendations**

Based on the outcome of both focus group and survey, recommendations are proposed to E&E organisations, E&E managers and policymakers.

### 6.4.1 E&E Organisations

Today's E&E industry leaders are battling with a wide-range of human capital issues, heightened by a demanding and rapidly changing business landscape. As they become more concerned about people-related challenges such as high employee turnover, retention of skilled talents, low employee productivity, and skill gaps, it is increasingly important to adopt a comprehensive human capital risk management approach that aligns human capital risks with enterprise risk management and broader strategic quality objectives and long-term business needs.

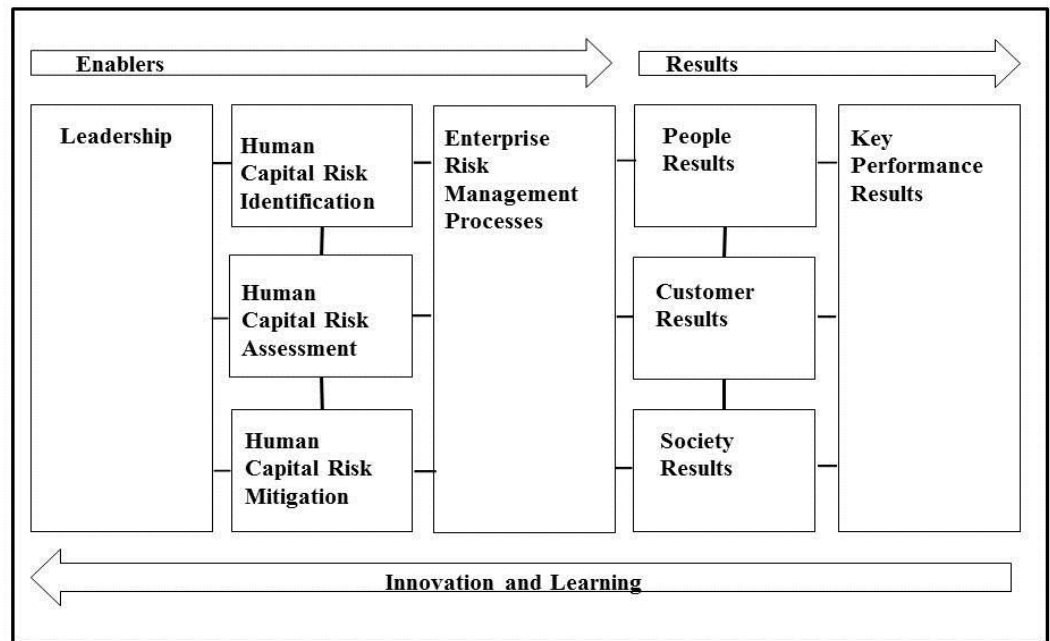
In order to manage human capital risk effectively, it is recommended that risk management be incorporated into the current dimension of quality management and human capital management as shown in Figure 6.1.



**Figure 6.1: Strategic Integration of Quality Management, Human Capital Management, and Risk Management**



The strategic integration of TQM, human capital management, and risk management would provide a comprehensive approach to manage human capital risk effectively. Thus, a framework is proposed for E&E organisations as shown in Figure 6.2.



Source: Adapted from European Foundation for Quality Management (EFQM) Excellence Model 2013 from <https://www.efqm.org/index.php/efqm-model-2013/>

**Figure 6.2: Strategic Human Capital Risk Management Framework**

The Strategic Human Capital Risk Management Framework is adapted from the European Foundation for Quality Management (EFQM) Excellence Model. The three stages of Human Capital Risk Management, namely, human capital risk identification, human capital risk assessment, and human capital risk mitigation is based on the foundations of risk management in the

ISO 31000:2018 Risk Management. The Strategic Human Capital Risk Management Framework is based on the premise that results such as customer satisfaction, employee satisfaction, impact on society, financial and other key performance results, are achieved by integrating the management of human capital risks with the enterprise risk management, guided by committed and proactive leadership.

Leadership plays significant role in the implementation of Strategic Human Capital Risk Management. Senior management should lead and initiate the planning, organising and controlling of human capital risk management. Setting up a human capital risk committee is a crucial step in initiating the tasks. Senior management should provide support in terms of allocation of budget and resources for the successful implementation of human capital risk management. Senior management should ensure the human capital risk management is integrated with the Enterprise Risk Management and all organisational activities and aligned with the organisational strategic plan. Appropriate training in human capital risk management is provided to all levels of employees to ensure successful implementation of risk management. To encourage commitment of the employees towards risk management, substantial communication and awareness need to be cultivated.

Human capital risks are risks associated with the workforce and human capital management practices that can affect the ability of workforce to perform productively due to various external and internal factors. External factors include emerging technologies, competition, globalisation, regulation,

political climate, economy, and natural disasters. Internal factors include people management practices, processes, systems, organisational culture, and leadership. Therefore, the human capital risk management process starts with risk identification. To identify potential human capital risks, organisations can utilise a range of tools and approaches such as Political, Economic, Social, and Technological (PEST) analysis, Strengths, Weaknesses, Opportunities, and Weaknesses (SWOT) analysis, process mapping, operational modelling, flow charting, systems analysis, team-based brainstorming, surveys, and historical reports and incidents analysis.

Human capital risks can be categorised into risks related to employees and risks related to human capital management practices (Becker & Smidt, 2016). Examples of risks related to employees are employee turnover, productivity, employee health and wellbeing, financial, and legal. Examples of risks related to human capital management practices are compensation, staffing, performance management, and change management.

In the second stage, risk assessment is being conducted. The identified human capital risks are rated and ranked based on the probability of occurrence and the extent of possible impact. This would create a human capital risk profile. The human capital risk profile would assist the organisation in formulating risk mitigation strategies.

The third stage involves the development of risk mitigation strategies. Risk mitigation strategies involves identifying the most appropriate risk response to reduce the risk level to an acceptable level within the risk tolerance of the organisation. Some of the risk mitigation strategies are preventive controls, risk transfer, risk elimination, risk sharing, and risk acceptance. Risk response and the effectiveness of control measures to manage risk need to be monitored on an ongoing basis. Continuous improvement, learning, and innovation are required to identify new risk mitigation strategies and to improve on current risk assessment process.

Finally, customer satisfaction, employee satisfaction, impact on society, and other key performance results are achieved by synergising the management of human capital risks with enterprise risk management and organisational strategy, with the support of a committed and proactive leadership.

#### **6.4.2 E&E Managers**

The findings discovered that people-related TQM practices contributed to decreased intent to leave in E&E sector. The resignation tendency is minimised by manifestation of people-related TQM factors via heightened job satisfaction. Specifically, the findings in this study provide the management with insights on strategies to retain talented and skilled employees in the current competitive market and achieve sustainable success for their companies.

Given that enhanced employees' job satisfaction and minimal turnover are significant to operational success of E&E companies, this study provides insights to the management of E&E companies on which TQM practices warrant more concern. The statistical outcomes pointed out that leadership has the most impact on job satisfaction, followed by reward and recognition, teamwork and empowerment. However, employee involvement and training and development is non-significant to job satisfaction.

The empirical findings showed that leadership is a dominant TQM practice in influencing resignation desire and job satisfaction. In addition, the leadership-turnover intention link is partially mediated by job satisfaction. Undeniably, leadership plays a gigantic role in spearheading the planning, organisation, implementation and evaluation of TQM process in the organisations. Leaders also influence and motivate employees to accomplish the organisational quality goals effectively. To promote successful implementation of TQM, leaders must be a role model in initiating all the quality efforts in the organisations. Conversely, toxic leadership or ineffective leadership would lead to absteemism, withdrawal and finally, turnover (Metha & Maheshwari, 2013). With effective leadership, employees are committed to contribute their best efforts towards organisational excellence, allowing them to enjoy greater amount of job satisfaction, in turn, bring about diminished resignation.

Secondly, in view of the confirmed positive association concerning reward and recognition and job satisfaction, managers should not neglect the importance of rewarding and showing appreciation to the employees for a job well done. For long term employees retention strategy, management is recommended to look into the holistic view of rewards. Undoubtedly, providing attractive and competitive salaries and other compensation packages will retain the employees, especially high performing employees. More specifically, management should link rewards to performance that leads to ultimate accomplishment of organisational goals. For example, management can use gainsharing to reward teams for quality improvement and profit sharing to incentivise individuals for organisational performance. However, it is noted that the employees of today's market, especially the generation Y, appreciate the total compensation package that include non-monetary benefits such as flexi-hour, working from home, and work-life balance. In addition, simple acts such as personalised thank you notes from the management team, special rewards for completion of large projects and celebration of professional milestones will have positive impact on the employees that the management recognises their contribution and efforts. Satisfied and committed employees would have high intention to remain in the companies. Evidently, it reinforces the findings that job satisfaction has full mediating impact on the link connecting reward and recognition and turnover intention.

Furthermore, having an effective teamwork in the workplace is seen as important to the employees. Teamwork is proven to have significant association with job satisfaction. Moreover, job satisfaction has full

intervening impact in the link connecting teamwork and turnover intention. Mutual respect and trust among the team members are foundation of a good teamwork. Employees in E&E manufacturing companies are constantly required to work in various teams to accomplish their projects. Thus, management is suggested to allocate resources and time in teambuilding activities to promote camaraderie among the employees. In addition, management is recommended to use 360 degree performance appraisals that include feedback from colleagues in order to encourage teamwork focus. Furthermore, management can reward teams with bonuses for improvement the teams make in quality, productivity, or cost reduction. On the other hand, management is recommended to be sensitive to any arising conflicts among the team members and take prompt action to resolve the conflicts because conflicts can bring detrimental effects on job satisfaction.

The findings proved that employee empowerment is significantly linked to job satisfaction and turnover intention. Furthermore, job satisfaction has partial intervening impact on the link connecting employee empowerment and turnover intention. Empowerment has capacity to build employees' self-efficacy which improves productivity. It is a powerful strategy for E&E organisations competing to retain skilled and talented employees. As for employee empowerment, management is recommended to equip employees with authority to accomplish their tasks. In the context of TQM, management provides an environment that promotes the development and utilisation of employees' knowledge and expertise for the benefits of organisation and employees themselves. Allocating resources and delegating authority to

employees would enable them to take initiatives to identify and solve quality-related problems. Employees are encouraged to make quality improvement decisions. Furthermore, management is recommended to give employees flexibility and freedom to take charge of their works. Empowerment is vital especially to high performing employees who highly value the freedom and flexibility in taking charge of their work.

Apart from that, the findings revealed non-significant link concerning training and development and job satisfaction. Conversely, significant link connecting training and development and turnover intention is reported. Subsequently, managers of E&E companies are recommended to review the types of training offered to the employees. Managers is proposed to plan training and development of the employees based on training need analysis so that the training match the needs of the employees. For example, E&E industry is now moving toward Industry 4.0. New skills such as integration of Internet of Things, cloud computing, data integration and other technological advances into the production and manufacturing systems are vital for the employees to gain the necessary expertise for Smart Manufacturing and Industry 4.0. Employees would experience job satisfaction if they find that training and development especially upskilling trainings provide added value to their career advancement.

This study also noted that though employee involvement has non-significant association with turnover intention and job satisfaction, it provides long-term benefits for quality improvement. For employee involvement,



information sharing and effective two-way management-employee communication are some of the best practices for successful TQM. TQM approach requires everyone to have full comprehension of their roles and responsibilities in the strategic improvement system. The more employees understand the expectations required from them, employees would be more motivated to involve, manage and improve the quality processes.

Last but not least, one of the major conclusions is that job satisfaction showed evidence of mediation in the link associating people-related TQM practices and turnover intention. These findings showed that job satisfaction totally intervenes the link associating reward and recognition and turnover intention, as well as teamwork and turnover intention. Also, it partially mediates the link concerning leadership and turnover intention, and empowerment and resignation desire of the E&E employees. Therefore, this study also serves to encourage the management to identify methods to continuously heighten the job satisfaction of their employees. Companies are encouraged to conduct annual employee satisfaction survey to track and monitor their level of satisfaction. Therefore, it is necessary for the management to enhance all aspects of employee satisfaction and degree of job satisfaction to lessen turnover problems.

In summary, this study brings to spotlight the importance of continuous appraisal of TQM application by management to be in congruent with the psychological well-being among the employees. In order to build an organisational environment that aims towards enhancing job satisfaction and

reducing turnover intention, people-related TQM practices should be utilised as instruments by managers. Thus, it is proposed that the elements of leadership, employee empowerment, teamwork, reward and recognition, training and development, and employee involvement, be emphasised by the Malaysian E&E companies to further improve the retention of employees.

### **6.4.3 Policymakers**

High turnover has detrimental effects on both the industry and national economy. It will further shrink the existing limited pool of skilled and talented human capital, particularly in E&E industry. Recognising the importance of E&E industry as the main engine of growth for Malaysia, Malaysian Government, together with its agencies, are required to work hand in hand with the industry to alleviate the crucial shortage of quality human capital in E&E industry.

Firstly, the present study has provided a people-related TQM framework to reduce turnover. People-related TQM practices have been found to enhance satisfaction and reduce desire to leave. Malaysia's economic transformation efforts heavily depend on the quality and capacity of its workforce. A good management of people-related TQM practices would contribute to greater employee satisfaction and lesser turnover rate. A research by Phusavat, Anussornnitisarn, Rassameethes, and Kess (2009) showed that when employees are psychologically well-taken care of and find satisfaction in better quality of work life, organisations would achieve higher

level of productivity and efficiency in the long term. As the E&E industry shifts from low value to high value-added manufacturing, a pool of skilled and talented workforce is vital to increase productivity, competitiveness and technological advancement.

The Government, specifically, the Ministry of Human Resources, should enhance the aspect of training and development by increasing training and development fund and incentives available to E&E industry as training and development requires high investment. Upskilling and reskilling training for the existing workforce is especially crucial in view of the the skills gaps in the existing workforce in the E&E industry as the industry shifts to complex high value-added manufacturing activities. For long term human capital development, the Government should be more aggressive in spearheading the “Technical Vocational Education and Training” (TVET) and “Science, Technology, Engineering, and Mathematics (STEM) Education” to fill the lacuna in the production of STEM talents. Students, from young, need to be educated in terms of their interest in STEM and awareness of the importance of STEM to enhance national competitiveness. The Public Service Department should consider providing more scholarships to potential talents in STEM especially those critical industries consistent with the vision of the country. Furthermore, public and private universities should enhance the employability of graduates by implementing industry-academia collaboration to produce industry-ready graduates. Industry-ready graduates refers to graduates who are well-equipped with high-end knowledge, sophisticated

technical skills, professional competence and soft-skills that enable the graduates to hit the ground running when they enter the employment market.

Talent Corporation Malaysia also plays important role in attracting, nurturing and retaining human capital of the country. Some of the programmes implemented by Talent Corporation Malaysia are Career Comeback Programme, Structured Internship Programme and Returning Expert Programme. These programmes have contributed to the improvement of current human capital scenario in Malaysia. A point of interest would be the identification of careers in E&E industry as one of the critical occupational lists in Malaysia (TalentCorp, 2017). Government incentives should focused on critical industries that have high potential to push for a quantum leap in productivity such as E&E industry. In short, the talent retention issues facing the E&E industry require involvement of all stakeholders.

Moving forward, good synergy between various government agencies such as Ministry of Science, Technology and Innovation, Ministry of Human Resources, Ministry of International Trade and Industry, Malaysia Investment Development and Authority, Economic Planning Unit, and Performance Management and Delivery Unit, will continue to drive the efforts to transform the E&E industries in Malaysia to the next level of excellence.

## 6.5 Achievement of Research Objectives

A summary of the research findings and hypotheses linking to research objectives is demonstrated below.

**Table 6.1: Summary of Research Objectives and Hypotheses**

<b>Research Objectives and Hypotheses Statements</b>	<b>Result</b>
<b>RO1:</b> To determine the relationship between people-related TQM practices (i.e. leadership, employee involvement, training and development, reward and recognition, teamwork, and empowerment) and job satisfaction among employees in Malaysia's E&E industry.	
H1a <i>Leadership is positively linked to job satisfaction among employees in Malaysia's E&amp;E industry.</i>	Supported
H2a <i>Employee involvement is positively linked to job satisfaction among employees in Malaysia's E&amp;E industry.</i>	Not supported
H3a <i>Training and development is positively linked to job satisfaction among employees in Malaysia's E&amp;E industry.</i>	Not supported
H4a <i>Reward and recognition is positively linked to job satisfaction among employees in Malaysia's E&amp;E industry.</i>	Supported
H5a <i>Teamwork is positively linked to job satisfaction among employees in Malaysia's E&amp;E industry.</i>	Supported
H6a <i>Empowerment is positively linked to job satisfaction among employees in Malaysia's E&amp;E industry.</i>	Supported
<b>RO2:</b> To investigate the relationship between people-related TQM practices (i.e. leadership, employee involvement, training and development, reward and recognition, teamwork, and empowerment) and turnover intention among employees in Malaysia's E&E industry.	
H1b <i>Leadership is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported
H2b <i>Employee involvement is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Not supported
H3b <i>Training and development is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported
H4b <i>Reward and recognition is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Not supported
H5b <i>Teamwork is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Not supported
H6b <i>Empowerment is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported

<b>Research Objectives and Hypotheses Statements</b>	<b>Result</b>
<b>RO3:</b> To evaluate the mediating role of job satisfaction between people-related TQM practices (i.e. leadership, employee involvement, training and development, reward and recognition, teamwork, and empowerment) and turnover intention among employees in Malaysia's E&E industry.	
H1c <i>Job satisfaction mediates the link between leadership and turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported (Partial Mediation)
H2c <i>Job satisfaction mediates the link between employee involvement and turnover intention among employees in Malaysia's E&amp;E industry.</i>	Not supported
H3c <i>Job satisfaction mediates the link between training and development and turnover intention among employees in Malaysia's E&amp;E industry.</i>	Not supported
H4c <i>Job satisfaction mediates the link between reward and recognition and turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported (Full Mediation)
H5c <i>Job satisfaction mediates the link between teamwork and turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported (Full Mediation)
H6c <i>Job satisfaction mediates the link between empowerment and turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported (Partial Mediation)
<b>RO4:</b> To assess the link between job satisfaction and turnover intention among employees in Malaysia's E&E industry.	
H7 <i>Job satisfaction is negatively linked to turnover intention among employees in Malaysia's E&amp;E industry.</i>	Supported
<b>RO5:</b> To develop recommendations and a framework for industry practitioners and policymakers in Malaysia's E&E industry.	
Recommendations and a framework are developed for industry practitioners as per Section 6.4 in Chapter Six.	

The first research objective RO1 aims to assess the association concerning people-related TQM practices and job satisfaction experienced by employees in the Malaysia's E&E industry. This research findings showed that people-related TQM practices, sepecifically, leadership, reward and recognition, teamwork and empowerment, positively associated with job satisfaction in Malaysia's E&E industry. However, employee involvement and training and development were insignificantly associated with job

satisfaction. Therefore, the first research objective RO1 has been attained accordingly.

The second research objective RO2 aims to investigate the relationship between people-related TQM practices and turnover intention experienced by employees in the Malaysia's E&E industry. It was confirmed that people-related TQM practices, in particular leadership, training and development, and empowerment, have been confirmed to be significantly and negatively associated with job satisfaction in Malaysia's E&E industry. However, other people-related TQM constructs, such as employee involvement, reward and recognition, and teamwork, were insignificantly associated with turnover intention. Based on these findings, the second research question RO2 for this study has been duly addressed.

The third research objective RO3 aims to evaluate the mediating role of job satisfaction between people-related TQM practices and turnover intention experienced by employees in the Malaysia's E&E industry. It was confirmed that leadership and empowerment were partially mediated by job satisfaction, whereas reward and recognition and teamwork were fully mediated by job satisfaction. Other constructs such as training and development and employee involvement were not significantly mediated by job satisfaction. Subsequently, the third research objective RO3 has been addressed accordingly.

The fourth research objective RO4 aims to evaluate the job satisfaction-turnover intention link as experienced by workers in Malaysia's E&E industry. It is confirmed that job satisfaction is significantly and negatively related to turnover intention. Evidently, greater job satisfaction would result in lesser turnover intention. Irrefutably, the fourth research objective RO4 for this study has been addressed accordingly.

The fifth research objective RO5 aims to develop recommendations and a framework for industry practitioners and policymakers in the E&E industry in Malaysia. This research objective has been achieved through the recommendations provided in Section 6.4 of Chapter Six.

## **6.6 Chapter Summary**

Chapter Six deliberates the outcome of the statistical analysis. It provides a detailed discussion on the 19 hypotheses tested. It also presents the outcome of a focus group and recommendations for E&E industry practitioners. Following that, recommendations for major stakeholders, namely, E&E organisations, E&E managers, and policymakers, were presented. A new framework has been developed for the successful implementation of human capital risk management. Finally, it includes a discussion on the achievement of research objectives.



## **CHAPTER 7**

### **CONCLUSION**

#### **7.1 Introduction**

Chapter Seven presents a summary of the key findings for this research. It highlights the contributions of research to the literature and the practitioners in the E&E industry in Malaysia. Next, the limitations and suggestions for future research are addressed accordingly. This chapter concludes with closing remarks for the study.

#### **7.2 Summary of Key Findings**

A three-pronged link among turnover intention, job satisfaction and people-related TQM practices forms the main investigation of this research. The foundation of the research model is built on comprehensive literature review as illustrated in Chapter Two. Chapter Three illustrates the integration of Social Exchange Theory and Job Embeddedness Theory that forms the theoretical foundation of the study. Chapter Four details the research procedures implemented and Chapter Five entails the statistical analysis that compute the results acquired from SPSS and PLS-SEM.

Chapter Six presents the discussion of the research findings and the hypotheses tested. The first, second, third, and fourth research objectives are addressed via the 19 hypotheses. Results indicated that greater leadership, reward and recognition, teamwork, and empowerment contributed to greater job satisfaction. In addition, higher level of leadership, training and development, and empowerment would reduce turnover intention. Job satisfaction is found to be fully mediated the link connecting: reward and recognition and turnover intention; teamwork and turnover intention. Furthermore, job satisfaction partially mediated the link between leadership and turnover intention and between empowerment and turnover intention. Additionally, job satisfaction is found to be negatively associated with turnover intention.

Additionally, to address the fifth research objective, this study has conducted a focus group to present and discuss the findings with the industry practitioners. Subsequently, this study has provided several recommendations and a new framework for industry practitioners and policymakers to address the human capital challenges.

### **7.3 Contributions of Study**

The contributions of this study with regard to theoretical and practical perspectives are illustrated below.

### **7.3.1 Theoretical Contributions**

The major contribution of this study is the validation of the people-related TQM practices–attitude–behaviour relationship using the theoretical foundation of Social Exchange Theory linking with Job Embeddedness Theory. Generally, connection concerning an organisation and its employees is formed through reciprocity and job embeddedness. It explains the positive outcomes of people-related TQM practices and job satisfaction among employees in E&E industry. Employees appreciate the people-related TQM practices implemented by their organisations that emphasise on the well-being of the employees, while employers seek for commitment and performance in the employees' work. The principle of reciprocity is at the core of enhancing job satisfaction of the employees, and thus, diminishing the turnover intention. The win-win relationship between organisation and employee can be expanded to include wider connections and links within the organisation and within the community. In the perspective of the Job Embeddedness Theory, employees become embedded in their jobs through three types of connections, namely, links, fit, and sacrifice. These three factors would have an impact on the decision to stay or leave the organisation.

Second, the introduction of a new framework, namely, Strategic Human Capital Risk Management Framework (see Figure 6.2 in Chapter Six) is based on the integration of quality management, human capital management, and risk management. Therefore, this study has generated new knowledge for

the literature in risk management, human capital management, and quality management.

Third, the present study contributes to TQM literature by being the first few practical studies that validates the multipronged links among turnover intention, job satisfaction, and people-related TQM practices, using the empirical data from the employees in the local ISO-certified E&E. This study extends the boundary of past studies by developing a conceptual model (see Figure 3.1 in Chapter Three) for the investigation of the links among the three major constructs. Highlighting the human dimension of quality management, this study strikes a balance in the TQM sphere that largely emphasise organisational performance.

Fourth, this study has broadened the horizon of present literature by incorporating job satisfaction as a mediating variable in the link connecting people-related TQM practices and turnover intention, thus filling a major lacuna in the literature. Furthermore, only a handful of investigation analyse both indirect and direct effects of people-related TQM factors on turnover intention via job satisfaction. Subsequently, outcomes of this research will enrich awareness of psychological well-being of employees linking to TQM in the organisations. The mediation analysis in this research confirms that job satisfaction, to a certain extent, has mediating effects on people-related TQM practices (i.e. leadership, reward and recognition, teamwork and empowerment) and turnover intention. Conclusively, the conception of multipronged links concerning six people-related TQM practices, job

satisfaction and turnover intention advances the knowledge pool, by providing a Malaysian perspective on this crucial topic.

Fifth, findings of this study have endorsed the universality standpoint for the constitution of people-related TQM practices. Notably, many of the empirical associations among the six constructs of people-related TQM practices, turnover intention, and job satisfaction, are also found valid in this study, specifically, among Malaysia's E&E manufacturing companies. Thus, it strongly confirms the world-wide applicability of people-related TQM practices as a holistic management philosophy.

Sixth, this study used PLS-SEM analysis which carried out a robust research methodology that provides rigorous statistical validation of the association among turnover intention, job satisfaction and people-related TQM practices. With regard to this study, new methods of PLS-SEM statistical analysis such as discriminant validity using Heterotrait-Monotrait and model fit using "Standardised Root Mean Square Residual" (SRMR) and "Root Mean Square Residual Covariance" ( $RMS_{\theta}$ ) are being applied. Since PLS-SEM is an evolving research method, the use of new methods would confirm its applicability and advance the body of knowledge. In general, the conceptualisation and operationalisation of exogeneous, endogenous and mediating constructs were supported. PLS-SEM has the advantage of handling reflective and formative measurement models simultaneously and thus, has greater statistical power. The use of PLS-SEM has certainly contributed greatly to instrument validation and theory building. Particularly,

this study has also benefitted from the utilisation of PLS-SEM. Generally, this study provides a strong and valid support for the hypothesised relationships and promotes a justifiable evidence for holistic perspective of people-related TQM practices.

### **7.3.2 Practical Contributions**

The practical contribution of this study is the conduct of a focus group that have provided inputs from the industry practitioners. The focus group has created better understanding of the people-related TQM practices and challenges faced by the managers in the E&E industry. Based on the findings from the focus group, a new framework, namely, Strategic Human Capital Risk Management has been developed. The Strategic Human Capital Risk Management Framework provides a systematic approach to manage human capital risks effectively. The proposed three stages of human capital risk management, namely, risk identification, risk assessment, and risk mitigation, provides guidelines on the implementation of human capital risk management process to the E&E managers.

The level of adoption of Enterprise Risk Management (ERM) by Malaysian companies are considered low. Only 53 percent of 754 Malaysian public listed companies adopted ERM in their organisations (Togok, Isa, & Zainuddin, 2016). Comparatively, 77 percent of developed nations such as United States of America, United Kingdom, and Germany adopted ERM based on an analysis of empirical studies on ERM implementation from 2003

to 2013 (Togok, Isa, & Zainuddin, 2014). Apparently, Malaysian companies are still skeptical on the implementation of risk management.

Based on a survey on 97 organisations in India, Willis Towers Watson (2016) reported that even though 62 percent of respondents view human capital risk as an urgent concern, only 35 percent of them have a structured risk management in place. Additionally, it was reported that the major obstacles in implementing a successful human capital risk mitigation plan are lack of human capital risk specialists, insufficient collaboration between human resource and risk management functions, limited understanding of human capital risks by senior leaders, and limited resources to invest due to tight budgets. In another survey among senior leaders from 13 countries around the world, Deloitte (2014) reported that there was limited focus on people in the ERM frameworks, insufficient leadership in championing risk culture, lack of synergy between compensation and rewards with performance management to align with the risk framework, and inadequate organisational trust and employee support in achieving risk culture.

Based on the findings from the focus group conducted in this study, generally Malaysian companies encountered similar obstacles in human capital risk management as compared with other countries in the world. Therefore, this study is significant due to its development of the Strategic Human Capital Risk Management Framework that could assist the industry practitioners to manage human capital risk effectively. Additionally, the role of leadership in championing risk culture is important to ensure employee

involvement and support in achieving successful implementation of human capital risk management.

This study will also enhance the understanding and awareness on the importance of human capital risk management among the industry practitioners. There is an increasing recognition that one of the key risks in a business is human capital (Hinton, 2003). Recognising the uncertainties and challenges pertaining to human capital in E&E industry, this study has contributed greatly in improving the effectiveness of human capital management in managing human capital risks effectively.

The validation of the people-related TQM practices–attitude–behaviour relationship using the theoretical foundation of Social Exchange Theory linking with Job Embeddedness Theory has garnered recognition of the importance of sustainable human capital management. In view of an increase in the number of millennials of Generation Y, employers are required to provide greater work/life balance in their jobs. Generally, connection concerning an organisation and its employees is formed through reciprocity and job embeddedness. Apart from financial rewards, the millennials are seeking meaning and purpose in their jobs. Thus, organisations have to create a sense of purpose in their mission and vision. Maintaining high levels of employee involvement and employee empowerment are pertinent to improving employee engagement that will ultimately lead to sustainable success of the organisation.



#### **7.4 Limitations of Study**

Inevitably, several notable findings presented in this research contribute to the existing world of literature and enhance the knowledge of industrial practitioners. However, there are certain constraints that must be given attention to when interpreting the results of this study.

First, the limitation of this study is the generalisability of the findings. Generalisability refers to whether the research findings are applicable to other settings besides its original setting. The present study analysed data derived from employees in Malaysia's ISO-certified E&E manufacturing companies. The results gathered may constraint the generalisability of the findings due to the specific focus on the samples in Malaysian E&E industry. Having said that, nonetheless, the present study has provided a strong foundation for future research.

The second limitation related to the usage of cross-sectional research that might limit the intensity of causal effects among observed constructs. Since TQM implementation requires long term commitment of five to ten years to actually obtain positive results, the continuous implementation of people-related TQM practices may bring about changes in the levels of job satisfaction and turnover intention. However, changes affecting the hypothesised links are not captured in cross-sectional research.

## **7.5 Suggestions for Future Research**

As illustrated in the earlier section, there were some limitations identified in this study. The limitations have presented several avenues for future research as discussed in the following subsections.

To improve generalisability and external validity of the instrument, additional studies would be required. For example, the sample size can be increased to include employees from other industries in the manufacturing sector such as textile, food, machinery, and chemical industries. Furthermore, the sample size can be expanded to include employees from the service sector. The expansion of sample size can also be based on geographical diversity and cultural setting. To obtain a more comprehensive view of global E&E industry, further empirical studies in other geographical locations are recommended. For example, the geographical diversity can be expanded to include other countries in the Southeast Asia such as Indonesia, Thailand, and Vietnam; other developing countries such as South Africa, Saudi Arabia, and Philippines; and other developed countries such as Singapore, Canada, and Germany. This also would enable the conduct of a comparative study to analyse the position of Malaysia in terms of the advancement of implementation of TQM. Moreover, the impact of people-related TQM practices may be different in diverse cultural and social contexts. As globalisation advances, it is becoming increasingly important to know the cultural difference in the workplace. Thus, it is recommended to conduct research in different cultural settings such as Western, Asian, Japanese and

American culture. To determine consistency of the model's constructs, future research in different countries and cultures are needed. Generally, generalisation of results can only be accepted after model is tested in different countries, cultures, industries and sectors.

Second, since cross-sectional method poses limitation on the findings, future research may consider longitudinal approach in data collection. Longitudinal approach may be useful in investigating causal effects of the observed constructs because it examines the same set of sample over a duration of time. Longitudinal method would allow researchers to evaluate changes of employees' behaviour and attitude during a length of time, thus giving an in-depth study. Particularly, longitudinal approach may be applied in this study because it has the ability to capture the changes in employee attitudes in response to implementation of people-related TQM practices over a period of time.

This study discusses six elements of the people-related TQM practices as independent variables. Due to wide scope of people-related TQM practices, the elements of the people-related TQM practices may not be limited to the six elements of the people-related TQM practices. Future studies may explore other major people-related TQM variables such as organisational trust, communication and organisational culture to further test their associations with employee job satisfaction and turnover intention. Additionally, an extensive spectrum of employee attitudes, for example, organisational commitment, role conflict, and career satisfaction, can be included.

Alternatively, it can be tapped into various aspects of job satisfaction and turnover intention by developing more items and better measures for these dependent variables. Future research may consider inserting moderating factors, for instance, level of education, gender, and age to gain further understanding on the impact of moderating factors. In addition, future research would be valuable if both moderating and mediating effects can be explored simultaneously to obtain wider scope on their effects on people-related TQM practices.

## **7.6 Closing**

A research model analysing multitrangled links among people-related TQM practices, job satisfaction and turnover intention in Malaysia's E&E industry is the central focus of this study. Recognising the importance of E&E industry, Malaysia continues to elevate the industry into higher-end applications. However, Malaysia is currently facing high turnover that is further amplified by limited talent and skill pool of human capital in the E&E industry. In order to compete for this scarce skilled and talented human resources, E&E manufacturing companies need to develop strategies for attracting and recruiting the right people and at the same time retaining their current skilled and high performing workers.

Given the great influence of people-related TQM practices on job satisfaction and turnover intention, management may implement current people-related TQM strategies to increase the level of job satisfaction and

reduce the level of turnover intention. This study offered theoretical and practical insights on strategies that various parties in the E&E industry can apply for strategic decision making. Two major contributions of this study are the validation of the people-related TQM practices–attitude–behaviour relationship based on Social Exchange Theory linking with Job Embeddedness Theory and the development of Strategic Human Capital Risk Management Framework for the industry practitioners to manage the human capital risks effectively. Most importantly, all of these research findings would assist the management in formulating and implementing long term strategies to enrich the performance as well as well-being of employees. Conclusively, a holistic TQM strategy is essential to attain organisational excellence in this competitive business environment.

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## APPENDICES

## **APPENDIX 1: SURVEY QUESTIONNAIRE (ENGLISH)**

### **Total Quality Management (TQM) Survey**

#### **Objective:**

The purpose of this survey is pertaining to your organisation's Total Quality Management (TQM) practices and its relationship with job satisfaction and turnover intention. Please answer all questions to the best of your knowledge. All responses are completely confidential.

#### **Instructions:**

- 1) There are **FOUR (4)** sections in this questionnaire. Please answer **ALL** questions in **ALL** sections.
- 2) Completion of this form will take you approximately 10 to 15 minutes.
- 3) The contents of this questionnaire will be kept **STRICTLY CONFIDENTIAL**.

Thank you for your kind assistance.

## Section A: Demographic Profile

In this section, we are interested in your background in brief. Please tick (✓) your answer and your answers will be kept strictly confidential.

QA1: Gender:

- Male
- Female

QA2: Age:

- Below 21 years old
- 21 - 25 years old
- 26 - 30 years old
- 31 - 35 years old
- 36 - 40 years old
- 41 years old and above

QA3: Marital status:

- Single
- Married

QA4: Highest education completed:

- No College Degree
- Diploma
- Bachelor Degree/Professional Qualification
- Master Degree
- PhD Degree

QA5: Length of time with your organisation:

- Less than 1 year
- 1 - 2 years
- 3 - 5 years
- 5 - 10 years
- 10 - 20 years
- Above 20 years

QA6: Your job position:

- Non-executive
  - Executive (e.g. Assistant Manager, System Analyst, Engineer etc)
  - Manager
  - Other (please specify):
- 

QA7: Your primary job scope:

- Research & Development
  - Production
  - Marketing
  - Administration
  - Finance
  - Human Resource
  - Information Technology
  - Procurement
  - Other (please specify):
-

## Section B: Total Quality Management Practices

This section is seeking your opinion regarding the Total Quality Management (TQM) practices in your organization. Respondents are asked to indicate the extent to which they agreed or disagreed with each statement using 5 Likert scale. Please **CIRCLE** one answer to each of the following statement.

- (1) = Strongly disagree      (2) = Disagree      (3) = Neutral  
 (4) = Agree      (5) = Strongly agree

### 1. Leadership

LD1	Top management actively participates in quality management activities.	1	2	3	4	5
LD2	Top management learns quality-related concepts and skills.	1	2	3	4	5
LD3	Top management strongly encourages employee involvement in quality management activities.	1	2	3	4	5
LD4	Top management empowers employees to solve quality problems.	1	2	3	4	5
LD5	Top management arranges adequate resources for employee training and development.	1	2	3	4	5
LD6	Top management discusses many quality-related issues in top management meetings.	1	2	3	4	5
LD7	Top management focuses on product quality rather than yields.	1	2	3	4	5
LD8	Top management pursues long-term business success.	1	2	3	4	5

### 2. Employee Involvement

EV1	Our firm has cross-functional teams.	1	2	3	4	5
EV2	Our firm has several quality control circles (within one function).	1	2	3	4	5
EV3	Employees are actively involved in quality-related activities.	1	2	3	4	5
EV4	Our firm implements suggestion activities extensively.	1	2	3	4	5
EV5	Most employees' suggestions are implemented after an evaluation.	1	2	3	4	5
EV6	Employees are very committed to the success of our firm.	1	2	3	4	5
EV7	Employees are encouraged to fix problems they find.	1	2	3	4	5
EV8	Reporting work problems is encouraged in our firm.	1	2	3	4	5

### 3. Training and Development

TD1	Employees are encouraged to accept training and development in our firm.	1	2	3	4	5
TD2	Resources are available for employees' training and development in our firm.	1	2	3	4	5
TD3	Most employees in our firm are trained on how to use quality management methods (tools).	1	2	3	4	5
TD4	Quality awareness training is given to employees.	1	2	3	4	5
TD5	Specific work-skills training is given to all employees.	1	2	3	4	5
TD6	Employees are regarded as valuable, long-term resources worthy of receiving training and development throughout their career.	1	2	3	4	5

### 4. Reward and Recognition

RR1	Our firm improves working conditions in order to recognise employee quality management efforts.	1	2	3	4	5
RR2	Our firm has a salary promotion scheme to encourage employee participation in quality management.	1	2	3	4	5
RR3	Position promotions are based on work quality in our firm.	1	2	3	4	5
RR4	Excellent suggestions are financially rewarded.	1	2	3	4	5
RR5	Employees' rewards and penalties are clear.	1	2	3	4	5
RR6	Recognition and reward activities effectively stimulate employee commitment to quality management.	1	2	3	4	5

### 5. Teamwork

TW1	Clearly identifiable teams are utilised as the primary means to organise the work, as opposed to individual job functions or independent work stations.	1	2	3	4	5
TW2	All team members, managers, supervisors, and technical and support people have been formally introduced to the concepts of high-performance work teams through educational experience.	1	2	3	4	5
TW3	The roles/jobs have been formally structured to support the work team approach.	1	2	3	4	5
TW4	Each team has developed a clearly defined charter/mission and operation guidelines.	1	2	3	4	5
TW5	The work teams and the functions they perform are almost entirely self-contained and managed by the group itself. Group members rely on one another for cross-training, problem solving, handling of administrative duties, and mutual support	1	2	3	4	5
TW6	Each team meets regularly and frequently to solve problems and explore opportunities in its work area.	1	2	3	4	5



## 6. Empowerment

EP1	The work I do is very important to me.	1	2	3	4	5
EP2	I am confident about my ability to do my job.	1	2	3	4	5
EP3	I have significant autonomy in determining how I do my job.	1	2	3	4	5
EP4	My impact on what happens in my department is large.	1	2	3	4	5

## Section C: Overall Job Satisfaction

This section is seeking your opinion regarding the overall job. Please **CIRCLE** one answer to each of the following statement.

- (1) = Extremely unsatisfied      (2) = Unsatisfied      (3) = Neutral  
 (4) = Satisfied      (5) = Extremely satisfied

### Job Satisfaction

JS1	All in all, I am satisfied with my co-workers.	1	2	3	4	5
JS2	All in all, I am satisfied with my total pay.	1	2	3	4	5
JS3	All in all, I am satisfied with my promotional opportunities.	1	2	3	4	5
JS4	All in all, I am satisfied with my supervisor.	1	2	3	4	5
JS5	All in all, I am satisfied with the works of my job.	1	2	3	4	5
JS_G	Overall, I am satisfied with all aspects of my job.	1	2	3	4	5

## Section D: Turnover Intention

This section is seeking your opinion regarding turnover intention. Please **CIRCLE** one answer to each of the following statement.

(1) = Strongly disagree      (2) = Disagree      (3) = Neutral  
 (4) = Agree      (5) = Strongly agree

### Turnover Intention

TI1	I often think about quitting.	1	2	3	4	5
TI2	I will actively look for a new job in the near term.	1	2	3	4	5
TI3	I feel very little loyalty to my organisation.	1	2	3	4	5
TI4	<p>Given everything you know about the company in which you are employed and the type of work you like to do, how long you think you will continue to work at this company?</p> <p>(1) = 1 year or less            (2) = More than 1 year but less than 3 years            (3) = 3 years but less than 5 years            (4) = 5 years but less than 10 years            (5) = 10 years or more or until retirement</p>	1	2	3	4	5

*Thank you for your time, opinions and comments.  
 ~ The End ~*

## **APPENDIX 2: SURVEY QUESTIONNAIRE (MALAY LANGUAGE)**

### **Penyelidikan Pengurusan Kualiti Menyeluruh (TQM)**

#### **Objektif:**

Tujuan kajian ini adalah untuk menyelidik tentang amalan pengurusan kualiti menyeluruh (TQM) dan kaitannya dengan kepuasan kerja dan niat pusing ganti pekerja dalam organisasi anda. Sila jawab semua soalan. Semua jawapan adalah sulit.

#### **Arahan:**

- 4) Terdapat **EMPAT (4)** bahagian dalam soal selidik ini. Sila jawab **SEMUA** soalan pada **SEMUA** bahagian tersebut.
- 5) Borang soal selidik ini akan mengambil masa anda kira-kira 10 hingga 15 minit untuk siap diisikan.
- 6) Kandungan soal selidik ini adalah **SULIT**.

Terima kasih atas bantuan anda.

## Bahagian A: Profil Demografi

Dalam bahagian ini, kami ingin mendapatkan maklumat latar belakang anda secara ringkas. Sila tandakan (✓) jawapan anda. Jawapan anda adalah sulit.

QA1: Jantina:

- Lelaki
- Perempuan

QA2: Umur:

- Di bawah umur 21 tahun
- 21 - 25 tahun
- 26 - 30 tahun
- 31 - 35 tahun
- 36 - 40 tahun
- 41 tahun dan ke atas

QA3: Status Perkahwinan:

- Bujang
- Sudah berkahwin

QA4: Pendidikan tertinggi yang diperoleh:

- Tidak berijazah
- Diploma
- Ijazah Sarjana Muda/Kelayakan Profesional
- Ijazah Sarjana
- Ijazah PhD

QA5: Tempoh masa yang telah anda kerja di organisasi anda:

- Kurang daripada 1 tahun
- 1 - 2 tahun
- 3 - 5 tahun
- 5 - 10 tahun
- 10 - 20 tahun
- Lebih daripada 20 tahun

QA6: Jawatan pekerjaan anda:

- Jawatan bukan eksekutif
  - Eksekutif (cth: Penolong Pengurus, Juruanalisis, Jurutera dan lain-lain)
  - Pengurus
  - Lain-lain (sila nyatakan):
- 

QA7: Skop kerja utama anda:

- Penyelidikan dan Pembangunan
  - Pengeluaran
  - Pemasaran
  - Pentadbiran
  - Kewangan
  - Sumber Manusia
  - Teknologi Maklumat
  - Pemerolehan
  - Lain-lain (sila nyatakan):
-

## Bahagian B: Amalan Pengurusan Kualiti Menyeluruh

Bahagian ini bertujuan mendapatkan pendapat anda mengenai amalan Pengurusan Kualiti Menyeluruh (TQM) dalam organisasi anda. Responden diminta memberikan pandangan anda tentang sejauh manakah anda bersetuju kepada kenyataan tersebut berdasarkan skala Likert. Bagi setiap kenyataan, sila BULATKAN satu jawapan sahaja.

(1) = Sangat tidak setuju      (2) = Tidak setuju      (3) = Tidak pasti  
 (4) = Setuju      (5) = Sangat setuju

### 1. Kepimpinan (LD)

LD1	Pengurusan atasan melibatkan diri secara aktif dalam aktiviti-aktiviti pengurusan kualiti.	1	2	3	4	5
LD2	Pengurusan atasan belajar tentang konsep dan kemahiran berkaitan kualiti.	1	2	3	4	5
LD3	Pengurusan atasan amat menggalakkan penglibatan pekerja dalam aktiviti pengurusan kualiti.	1	2	3	4	5
LD4	Pengurusan atasan memberi kuasa dan hak kepada pekerja untuk menyelesaikan masalah berkaitan dengan kualiti.	1	2	3	4	5
LD5	Pengurusan atasan menyediakan sumber latihan dan pembangunan yang mencukupi kepada pekerja.	1	2	3	4	5
LD6	Pengurusan atasan membincangkan banyak isu berkaitan dengan kualiti dalam mesyuarat pengurusan atasan.	1	2	3	4	5
LD7	Pengurusan atasan memberi tumpuan kepada kualiti produk dan bukannya hasil.	1	2	3	4	5
LD8	Pengurusan atasan mengejar kejayaan perniagaan jangka panjang.	1	2	3	4	5

### 2. Penglibatan pekerja (EV)

EV1	Syarikat saya mempunyai pasukan bersilang fungsian.	1	2	3	4	5
EV2	Syarikat saya mempunyai beberapa bulatan Kawalan Kualiti (semua mempunyai fungsi yang sama).	1	2	3	4	5
EV3	Pekerja melibatkan diri secara aktif dalam aktiviti-aktiviti berkaitan dengan kualiti.	1	2	3	4	5
EV4	Syarikat saya melaksanakan aktiviti memberikan cadangan secara meluas.	1	2	3	4	5
EV5	Kebanyakan cadangan yang diberikan oleh pekerja akan dilaksanakan selepas penilaian.	1	2	3	4	5
EV6	Pekerja-pekerja syarikat saya adalah amat komited untuk menjayakan syarikat tersebut.	1	2	3	4	5
EV7	Pekerja digalakkan untuk menyelesaikan masalah yang ditemui oleh mereka.	1	2	3	4	5
EV8	Dalam syarikat saya, pekerja digalakkan untuk melaporkan masalah kerja mereka.	1	2	3	4	5

### 3. Latihan dan Pembangunan (TD)

TD1	Pekerja digalakkan untuk menerima latihan dan pembangunan dalam syarikat saya.	1	2	3	4	5
TD2	Pekerja boleh mendapatkan sumber latihan dan pembangunan dalam syarikat saya.	1	2	3	4	5
TD3	Kebanyakan pekerja dalam syarikat saya dilatih untuk menggunakan kaedah pengurusan kualiti (alat-alat).	1	2	3	4	5
TD4	Pendidikan berkenaan dengan kesedaran kualiti telah diadakan untuk pekerja.	1	2	3	4	5
TD5	Latihan kemahiran kerja yang khusus telah diadakan untuk semua pekerja.	1	2	3	4	5
TD6	Pekerja amat dihargai oleh syarikat saya dan mereka dianggap sebagai sumber jangka panjang syarikat. Pekerja berlayak untuk menerima latihan dan pembangunan sepanjang masa mereka bekerja dalam syarikat saya.	1	2	3	4	5

### 4. Ganjaran dan pengiktirafan (RR)

RR1	Syarikat saya memperbaiki keadaan kerja sebagai tanda penghargaan terhadap usaha pekerja dalam pengurusan kualiti tersebut.	1	2	3	4	5
RR2	Syarikat saya mengadakan skim kenaikan gaji untuk menggalakkan pekerja supaya menyertai dalam pengurusan kualiti.	1	2	3	4	5
RR3	Kenaikan pangkat pekerja dijalankan berdasarkan penilaian kualiti kerja perkerja dalam syarikat saya.	1	2	3	4	5
RR4	Pekerja yang memberikan cadangan yang sangat baik akan diberi ganjaran kewangan.	1	2	3	4	5
RR5	Peraturan-peraturan untuk ganjaran dan hukuman adalah jelas.	1	2	3	4	5
RR6	Aktiviti menghargai dan mengganjar pekerja mendorong pekerja untuk mempunyai komitmen terhadap pengurusan kualiti.	1	2	3	4	5

### 5. Kerja berkumpulan (TW)

TW1	Fungsi kumpulan pekerja khusus adalah berbeza daripada fungsi tugas individu atau stesen kerja bebas di mana fungsi utama kumpulan pekerja khusus adalah mengurus dan mengatur kerja.	1	2	3	4	5
TW2	Syarikat saya telah memperkenalkan konsep kerja berkumpulan prestasi tinggi secara rasmi kepada semua pekerja, pengurus, penyelia dan pembantu dan staf teknikal melalui cara pendidikan.	1	2	3	4	5
TW3	Peranan/pekerjaan pekerja telah distrukturkan secara rasmi supaya dapat memperkukuhkan pendekatan kerja berkumpulan yang dibentuk.	1	2	3	4	5
TW4	Setiap kumpulan telah menubuhkan piagam/misi dan garis panduan operasi yang jelas.	1	2	3	4	5
TW5	Kumpulan kerja dan fungsi kerja berkumpulan adalah hampir berserba lengkap dan mereka menguruskan mereka sendiri. Semua ahli kumpulan bergantung kepada satu sama lain untuk merentas latihan, menyelesaikan masalah, mengendalikan tugas-tugas pentadbiran dan menyokong satu sama lain.	1	2	3	4	5
TW6	Setiap kumpulan akan berkumpul dengan kerap untuk menyelesaikan masalah dan meneroka peluang perkembangan dalam lingkungan tugasnya.	1	2	3	4	5

## 6. Pemberian Kuasa (EP)

EP1	Saya berasa tugas saya adalah sangat penting.	1	2	3	4	5
EP2	Saya yakin dengan keupayaan saya untuk melakukan kerja saya.	1	2	3	4	5
EP3	Saya mempunyai kuasa autonomi dalam menentukan cara saya untuk melakukan kerja.	1	2	3	4	5
EP4	Apa yang saya lakukan dalam pekerjaan saya akan membawa kesan besar kepada jabatan saya.	1	2	3	4	5

### Bahagian C: Kepuasan Kerja Secara Keseluruhan

Bahagian ini bertujuan untuk mendapatkan pandangan anda mengenai kerja anda secara keseluruhan. Bagi setiap kenyataan, sila BULATKAN satu jawapan sahaja.

(1) = Sangat tidak berpuas hati (2) = Tidak berpuas hati (3) = Tidak pasti  
(4) = Berpuas hati (5) = Sangat berpuas hati

### Kepuasan Kerja (JS)

JS1	Secara keseluruhan, saya berpuas hati dengan rakan sekerja saya.	1	2	3	4	5
JS2	Secara keseluruhan, saya berpuas hati dengan gaji saya.	1	2	3	4	5
JS3	Secara keseluruhan, saya berpuas hati dengan peluang kenaikan pangkat saya.	1	2	3	4	5
JS4	Secara keseluruhan, saya berpuas hati dengan penyelia saya.	1	2	3	4	5
JS5	Secara keseluruhan, saya berpuas hati dengan tugas yang diberikan kepada saya.	1	2	3	4	5
JS_G	Secara keseluruhan, saya berpuas hati dengan semua aspek pekerjaan saya.	1	2	3	4	5



## Bahagian D: Niat Meletak Jawatan

Bahagian ini bertujuan untuk mendapatkan pandangan anda mengenai niat pusing ganti. Bagi setiap kenyataan, sila BULATKAN satu jawapan sahaja.

- (1) = Sangat tidak setuju      (2) = Tidak setuju      (3) = Tidak pasti  
 (4) = Setuju      (5) = Sangat setuju

### Niat untuk meletakkan jawatan (TI)

TI1	Saya sering berfikir untuk meletakkan jawatan.	1	2	3	4	5
TI2	Saya akan mencari pekerjaan baru secara aktif dalam tempoh terdekat ini.	1	2	3	4	5
TI3	Saya kurang setia terhadap syarikat saya.	1	2	3	4	5
TI4	Memandangkan anda telah memperoleh semua pengetahuan tentang syarikat anda dan kemahiran pekerjaan anda, berapakah lama akan anda teruskan berkerja di syarikat ini?  (1) = 1 tahun atau kurang daripadanya (2) = Lebih daripada 1 tahun tetapi kurang daripada 3 tahun (3) = 3 tahun tetapi kurang daripada 5 tahun (4) = 5 tahun tetapi kurang daripada 10 tahun (5) = 10 tahun atau lebih daripadanya atau sehingga persaraan	1	2	3	4	5

*Terima kasih atas masa anda, pendapat anda dan komen anda.  
 ~ Tamat ~*

## APPENDIX 3: SURVEY QUESTIONNAIRE (MANDARIN)

### 全面质量管理调查

#### 调查目的:

本调查的目的是关于您的组织的全面质量管理（TQM）的做法及其与工作满意度和更替意向的关系。请尽您所能回答所有问题。您提供的信息将被一切保密。

#### 填写说明:

- 1) 本调查问卷中有四(4)个部分。请回答所有部分中的所有问题。
- 2) 填写此表格大约需要十(10)至十五(15)分钟。
- 3) 本调查问卷的内容必将被**严格保密**。

谢谢您的合作。

## 部分 A: 人口概况

本部分的目的是要取得您的简要背景资料。请勾选 (✓) 您的答案。您的答案将被严格保密。

问题 A1: 性别:

- 男
- 女

问题 A2: 年龄:

- 21 岁以下
- 21 至 25 岁
- 26 至 30 岁
- 31 至 35 岁
- 36 至 40 岁
- 41 岁以上

问题 A3: 婚姻状况:

- 单身
- 已婚

问题 A4: 最高学历:

- 无大学学位
- 文凭
- 学士学位/专业资格
- 硕士学位
- 博士学位

问题 A5: 留在此组织的时间:

- 不到 1 年
- 1 至 2 年
- 3 至 5 年
- 5 至 10 年
- 10 至 20 年
- 20 年以上

问题 A6: 职位:

- 非执行
  - 执行 (例如经理助理, 系统分析师, 工程师等)
  - 经理
  - 其他 (请在此写明):
- 

问题 A7: 主要工作范围:

- 研究开发
  - 生产
  - 营销
  - 管理
  - 财务
  - 人力资源
  - 信息技术
  - 采购
  - 其他 (请在此写明):
-

## 部分 B: 全面质量管理推行

本部分的目的是要寻求您对贵公司推行的质量管理（TQM）有何意见。我们希望您能以李克特五点选项量表表达您对以下说明的同意程度。请在每句评论圈出一个您的意见。

- (1) = 强烈反对                      (2) = 不同意                      (3) = 即不同意也不反对  
 (4) = 同意                              (5) = 坚决同意

### 1. 领导能力 (LD)

LD1	最高管理层积极参与质量管理活动。	1	2	3	4	5
LD2	最高管理层学习与质量相关的概念和技能。	1	2	3	4	5
LD3	最高管理层踊跃鼓励员工参与质量管理活动。	1	2	3	4	5
LD4	最高管理层授权员工解决质量问题。	1	2	3	4	5
LD5	最高管理层为员工安排足够的培训与发展资源。	1	2	3	4	5
LD6	最高管理人员会在高层管理会议里讨论许多与质量相关的问题。	1	2	3	4	5
LD7	最高管理层注重于产品质量而不是产量。	1	2	3	4	5
LD8	最高管理层追求长期的业务成功。	1	2	3	4	5

### 2. 员工参与 (EV)

EV1	我们的公司有跨职能团队。	1	2	3	4	5
EV2	我们的公司有几个质量控制圈（共拥有一个功能）。	1	2	3	4	5
EV3	员工积极参与质量相关的活动。	1	2	3	4	5
EV4	我们的公司广泛实施建议性活动。	1	2	3	4	5
EV5	大多数员工的建议都会在评估之后才实施。	1	2	3	4	5
EV6	员工非常致力于我们公司的成功。	1	2	3	4	5
EV7	我们的公司鼓励员工去解决他们发现的问题。	1	2	3	4	5
EV8	我们的公司鼓励员工报告工作上的问题。	1	2	3	4	5

### 3. 培训与发展 (TD)

TD1	我们的公司鼓励员工接受公司内的培训与发展。	1	2	3	4	5
TD2	我们的公司为员工提供培训与发展的资源。	1	2	3	4	5
TD3	大多数员工在我们的公司都接受过有关质量管理方法的培训。	1	2	3	4	5
TD4	我们的公司让员工进行质量意识培训。	1	2	3	4	5
TD5	我们的公司让所有员工进行具体的工作技能培训。	1	2	3	4	5
TD6	我们的公司都视重员工们为长期资源，并且认为员工在此职业应该被提供培训与发展。	1	2	3	4	5

### 4. 奖励和表彰 (RR)

RR1	为了珍赏员工对质量管理的努力，我们的公司改善了工作条件。	1	2	3	4	5
RR2	我们的公司拥有一个薪酬激励方案，以便鼓励员工参与在质量管理中。	1	2	3	4	5
RR3	我们的晋升机会是基于我们在公司里的工作质量。	1	2	3	4	5
RR4	如果员工能为质量管理提供优胜意见，员工将得到金钱有关的奖励。	1	2	3	4	5
RR5	我们公司对员工都是赏罚分明的。	1	2	3	4	5
RR6	我们公司赏识员工的方式能有效地激发员工投入于质量管理。	1	2	3	4	5

### 5. 团队合作 (TW)

TW1	我们的公司应用杰出团队去策划工作，而不认可独立工作职能或独立工作站。	1	2	3	4	5
TW2	我们的公司以教育方式在各层员工如团队成员，经理，主管和技术支援员工里推进高绩效工作系统。	1	2	3	4	5
TW3	每个工作岗位的结构都为了支援和推进团队工作的做法。	1	2	3	4	5
TW4	每个工作团队都制定了明确的使命和操作指南。	1	2	3	4	5
TW5	每个工作团队和他们的职能几乎都是独立的，并由自我内部管理。团队成员必须互相依靠，进行交叉训练，协力解决问题和处理行政职责，以及互相支持。	1	2	3	4	5
TW6	每个工作团队都会定期开例会，以便解决工作上的问题及探索工作领域上的机会。	1	2	3	4	5

## 6. 赋权 (EP)

EP1	对我而言，我的工作岗位非常重要。	1	2	3	4	5
EP2	我相信我的工作能力。	1	2	3	4	5
EP3	我能决定我的工作的方式。	1	2	3	4	5
EP4	我能为我的部门带来很大的影响。	1	2	3	4	5

## 部分 C: 员工对整体工作满意度

本部分正在寻求您对整体工作的意见。请在每句评论圈出一个您的意见。

- (1) = 非常不满意                      (2) = 不满意                      (3) = 一般  
(4) = 满意                              (5) = 非常满意

### 对工作的满足感 (JS)

JS1	总而言之，我对我的同事感到满意。	1	2	3	4	5
JS2	总而言之，我很满意我的总薪酬。	1	2	3	4	5
JS3	总而言之，我对我的升值机会感到满意。	1	2	3	4	5
JS4	总而言之，我很满意我的上司。	1	2	3	4	5
JS5	总而言之，我对我的工作感到满意。	1	2	3	4	5
JS_G	总括来说，我对我工作的各方面都很满意。	1	2	3	4	5

## 部分 D: 更替意向

本部分正在寻求您对组织的更替意向。请在每句评论圈出一个您的意见。

- (1) = 强烈反对                      (2) = 不同意                      (3) = 即不同意也不反对  
 (4) = 同意                              (5) = 坚决同意

### 辞职的意向 (TI)

TI1	我经常想着辞职。	1	2	3	4	5
TI2	我将在短期内积极寻找一份新工作。	1	2	3	4	5
TI3	我对我的组织不太忠心。	1	2	3	4	5
TI4	针对着您对您所在的了解以及您喜爱的工作类型，您认为您还会在这公司工作多久？  (1) = 1 年以下 (2) = 超过 1 年但不到 3 年 (3) = 超过 3 年但不到 5 年 (4) = 超过 5 年但不到 10 年 (5) = 10 年以上或直到退休	1	2	3	4	5

*感谢您的时间，意见和评论。*

~ 完 ~



#### APPENDIX 4: NORMALITY TEST

Variables	Min	Max	Skewness	Kurtosis
<b>LD1</b>	1	5	-0.872	<b>1.075</b>
<b>LD2</b>	1	5	-0.734	0.674
<b>LD3</b>	1	5	-0.510	0.177
<b>LD4</b>	1	5	-0.705	0.585
<b>LD5</b>	1	5	-0.795	<b>1.170</b>
<b>LD6</b>	1	5	-0.573	0.270
<b>LD7</b>	1	5	-0.416	0.366
<b>LD8</b>	1	5	-0.889	0.856
<b>EV1</b>	1	5	-0.525	<b>-0.116</b>
<b>EV2</b>	1	5	-0.431	0.177
<b>EV3</b>	1	5	-0.691	0.492
<b>EV4</b>	1	5	-0.716	<b>1.158</b>
<b>EV5</b>	1	5	-0.299	0.055
<b>EV6</b>	1	5	-0.476	0.308
<b>EV7</b>	1	5	-0.666	<b>1.011</b>
<b>EV8</b>	1	5	-0.652	<b>1.383</b>
<b>TD1</b>	1	5	-0.663	0.420
<b>TD2</b>	1	5	-0.588	0.448
<b>TD3</b>	1	5	-0.438	0.655
<b>TD4</b>	1	5	-0.667	0.511
<b>TD5</b>	1	5	-0.649	0.609
<b>TD6</b>	1	5	-0.605	0.235
<b>RR1</b>	1	5	-0.348	0.544
<b>RR2</b>	1	5	-0.278	0.297
<b>RR3</b>	1	5	-0.382	0.247
<b>RR4</b>	1	5	-0.375	0.181
<b>RR5</b>	1	5	-0.286	<b>-0.100</b>
<b>RR6</b>	1	5	-0.446	0.338
<b>TW1</b>	1	5	-0.707	0.920
<b>TW2</b>	1	5	-0.685	<b>1.075</b>
<b>TW3</b>	1	5	-0.905	<b>1.690</b>

<b>TW4</b>	1	5	-0.579	0.705
<b>TW5</b>	1	5	-0.658	0.762
<b>TW6</b>	1	5	-0.573	0.641
<b>EP1</b>	1	5	-0.736	0.518
<b>EP2</b>	1	5	-0.717	0.261
<b>EP3</b>	1	5	-0.683	0.597
<b>EP4</b>	1	5	-0.531	0.151
<b>JS1</b>	1	5	-0.835	<b>1.665</b>
<b>JS2</b>	1	5	-0.464	-0.097
<b>JS3</b>	1	5	-0.580	0.144
<b>JS4</b>	1	5	-0.850	<b>1.058</b>
<b>JS5</b>	1	5	-0.616	0.431
<b>TI1</b>	1	5	0.857	0.521
<b>TI2</b>	1	5	<b>1.161</b>	<b>1.442</b>
<b>TI3</b>	1	5	0.870	0.204
<b>TI4</b>	1	5	<b>1.266</b>	<b>1.006</b>

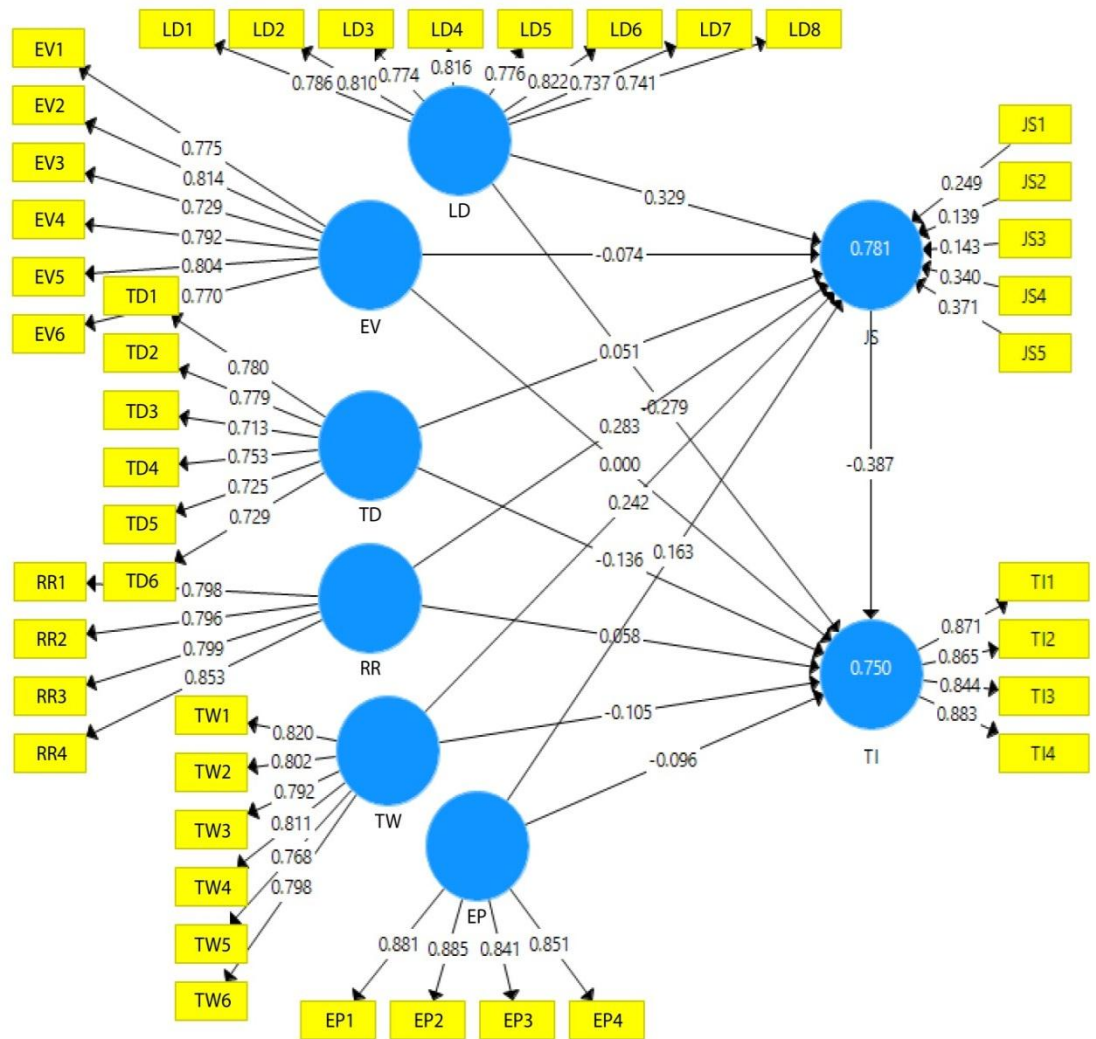
**APPENDIX 5: T-test**

	Resp	N	Mean	Std. Deviation	Std. Error Mean
<b>LD1</b>	1	144	4.0694	.83333	.06944
	2	100	3.6500	.85723	.08572
<b>LD2</b>	1	144	3.9444	.87528	.07294
	2	100	3.4700	.89279	.08928
<b>LD3</b>	1	144	3.8472	.85542	.07128
	2	100	3.5000	.92660	.09266
<b>LD4</b>	1	144	3.8472	.87960	.07330
	2	100	3.8200	.90319	.09032
<b>LD5</b>	1	144	3.8958	.82546	.06879
	2	100	3.8700	.86053	.08605
<b>LD6</b>	1	144	4.0000	.82784	.06899
	2	100	3.4300	.90179	.09018
<b>LD7</b>	1	144	3.6806	.82490	.06874
	2	100	3.6500	.83333	.08333
<b>LD8</b>	1	144	4.1111	.84548	.07046
	2	100	4.1000	.77198	.07720
<b>EV1</b>	1	144	3.8333	.88500	.07375
	2	100	3.2900	1.05692	.10569
<b>EV2</b>	1	144	3.7847	.77697	.06475
	2	100	3.3100	.86100	.08610
<b>EV3</b>	1	144	3.8681	.77772	.06481
	2	100	3.8800	.94580	.09458
<b>EV4</b>	1	144	3.7500	.77999	.06500
	2	100	3.8200	.79620	.07962
<b>EV5</b>	1	144	3.6250	.83520	.06960
	2	100	3.2300	.90849	.09085
<b>EV6</b>	1	144	3.7153	.76335	.06361
	2	100	3.3200	.90877	.09088
<b>EV7</b>	1	144	3.7639	.69951	.05829
	2	100	3.7700	.83913	.08391
<b>EV8</b>	1	144	3.9028	.68265	.05689
	2	100	3.9800	.80378	.08038
<b>TD1</b>	1	144	3.9444	.86726	.07227
	2	100	3.9400	.82658	.08266
<b>TD2</b>	1	144	3.7917	.84353	.07029
	2	100	3.8000	.87617	.08762

<b>TD3</b>	<b>1</b>	144	3.6042	.77747	.06479
	<b>2</b>	100	3.7400	.79924	.07992
<b>TD4</b>	<b>1</b>	144	3.8889	.79431	.06619
	<b>2</b>	100	3.4400	.96735	.09673
<b>TD5</b>	<b>1</b>	144	3.7986	.81575	.06798
	<b>2</b>	100	3.8200	.89194	.08919
<b>TD6</b>	<b>1</b>	144	3.7431	.88299	.07358
	<b>2</b>	100	3.2000	.96400	.09640
<b>RR1</b>	<b>1</b>	144	3.6944	.80451	.06704
	<b>2</b>	100	3.8200	.78341	.07834
<b>RR2</b>	<b>1</b>	144	3.3819	.80206	.06684
	<b>2</b>	100	3.4300	.89052	.08905
<b>RR3</b>	<b>1</b>	144	3.6111	.74900	.06242
	<b>2</b>	100	3.7600	.87755	.08776
<b>RR4</b>	<b>1</b>	144	3.6319	.81718	.06810
	<b>2</b>	100	3.6900	.89550	.08955
<b>RR5</b>	<b>1</b>	144	3.6111	.72044	.06004
	<b>2</b>	100	3.7100	.75605	.07561
<b>DRR6</b>	<b>1</b>	144	3.5833	.77999	.06500
	<b>2</b>	100	3.5600	.86830	.08683
<b>TW1</b>	<b>1</b>	144	3.7431	.75490	.06291
	<b>2</b>	100	3.6600	.85540	.08554
<b>TW2</b>	<b>1</b>	144	3.8056	.71231	.05936
	<b>2</b>	100	3.7200	.88854	.08885
<b>TW3</b>	<b>1</b>	144	3.8750	.79223	.06602
	<b>2</b>	100	3.8200	.75719	.07572
<b>TW4</b>	<b>1</b>	144	3.7292	.74062	.06172
	<b>2</b>	100	3.7700	.72272	.07227
<b>TW5</b>	<b>1</b>	144	3.7431	.72658	.06055
	<b>2</b>	100	3.7400	.76038	.07604
<b>TW6</b>	<b>1</b>	144	3.7708	.74532	.06211
	<b>2</b>	100	3.6800	.83943	.08394
<b>EP1</b>	<b>1</b>	144	3.9583	.81828	.06819
	<b>2</b>	100	3.9300	.84393	.08439
<b>EP2</b>	<b>1</b>	144	3.9931	.84038	.07003
	<b>2</b>	100	3.9300	.95616	.09562
<b>EP3</b>	<b>1</b>	144	3.8611	.79870	.06656
	<b>2</b>	100	3.9400	.80177	.08018
<b>EP4</b>	<b>1</b>	144	3.7569	.80424	.06702
	<b>2</b>	100	3.8500	.93609	.09361

<b>JS1</b>	<b>1</b>	144	3.8681	.71200	.05933
	<b>2</b>	100	3.9300	.70000	.07000
<b>JS2</b>	<b>1</b>	144	3.5139	.76630	.06386
	<b>2</b>	100	3.4900	.79766	.07977
<b>JS3</b>	<b>1</b>	144	3.5347	.72819	.06068
	<b>2</b>	100	3.5400	.77094	.07709
<b>JS4</b>	<b>1</b>	144	3.7847	.74948	.06246
	<b>2</b>	100	3.8000	.76541	.07654
<b>JS5</b>	<b>1</b>	144	3.7847	.73058	.06088
	<b>2</b>	100	3.8200	.77041	.07704
<b>TI1</b>	<b>1</b>	144	2.1181	.97877	.08156
	<b>2</b>	100	2.4700	.94767	.09477
<b>TI2</b>	<b>1</b>	144	2.0417	.92271	.07689
	<b>2</b>	100	2.1800	.95748	.09575
<b>TI3</b>	<b>1</b>	144	2.0972	.97033	.08086
	<b>2</b>	100	1.9700	1.02942	.10294
<b>TI4</b>	<b>1</b>	144	1.9167	1.06764	.08897
	<b>2</b>	100	2.1900	1.13436	.11344

## APPENDIX 6: RESULT OF STRUCTURAL MODEL



## **PUBLICATION**

### **Journal Publication Related to Thesis**

Yue, J.W., Ooi, K.B., & Choong C.K. (2011). The relationship between people-related TQM practices, job satisfaction and turnover intention: A literature review and proposed conceptual model. *African Journal of Business Management*, 5(15), 6632-6639.