# The factors affecting technical innovation in Malaysia

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**Abstract**— Purpose - The purpose of this paper is to study the impact of organizational culture, internal integration, organizational learning, and management involvement on technological innovation (TI) in Malaysia. In the process, the status and trends of technological innovation in the world and Malaysia are also introduced.

Design/Method/Approach - Based on data collected from some schools, businesses, and government agencies in Kuala Lumpur, Malaysia, using quantitative research methods, data analyzed through SPSS Statistics for organizational culture, internal integration, organizational learning, management engagement, and technological innovation The impact between the analysis was made.

Findings - Research found that organizational culture, internal integration, organizational learning, and management involvement have positive impacts on technological innovation. Research results reach research goals.

Practice impact - technological innovation has a practical impact on individual career development planning, company market competitiveness, and government competitive advantage.

Originality/value - most previous research addresses the relationship between culture, quality management and technological innovation at the product service practice level. In this paper, organizational culture, internal integration, organizational learning and management participation are put together to study the impact on technological innovation so that management can better promote technological innovation.

Index Terms— Technical innovation, Organisational culture, Internal integration, Organisational learning, Management involvement.



#### **1** INTRODUCTION

#### 1.1 introuction

In the early twenty-first Century, innovation emerged in people's lives in a completely new way. It now appears in different properties and effects, at different speeds and in

different positions. It is no longer confined to the traditional track of the past centuries. Recent innovations in nanotechnology, biotechnology, information and communications technology and new materials show that they do have so many common features (competitiveness Committee, 2005).

Each is multi-disciplinary, and it is a global phenomenon. Each is an innovating multiplier, creating innovation in other fields. It also comes from the intersection of different fields or activities. Innovation not only produces "value chain", but also produces rich ecosystem. Each has its own elements of existence and openness. Its spread is determined by many independent activities, not by companies or entities. Each of us has transformative potential and strength.

It not only changed the market or industry, but also changed way of life, work, and society. Various disciplines and research efforts are the essence of innovation. Innovation requires major changes and investments in management and coordination. The main obstacle to the potential of science, engineering and technology is that each discipline simply maintains and strengthens its own turf. Recently, the most exciting developments seem to have come from a gap between two or more fields.

It is therefore, many countries realize that science, technology and innovation are important tools for development. These countries need to learn to strike a balance between short-term competitiveness and long-term economic progress and dynamism. In short, they need to focus on the use and innovation of existing science and technology, thus laying the foundation for long-term research, and development activities.

Many enterprises emphasize through science, technology and innovation to create new knowledge, at the same time continue to develop incentives and industrial policy, emphasized the narrow set of existing manufacturing capacity, often in the extended value chain low-end. The best way to change this is to strengthen technological innovation, adjust the industrial structure, and allow technology to create new productivity, reduce costs and increase capacity.

Malaysia, one of the most dynamic emerging economies in Southeast Asia, has sustained more than 6.4% of its annual economic growth since 1970, but it has also faced new challenges, especially since the Asian financial crisis in the 90s last International Journal of Scientific & Engineering Research Volume 10, Issue 1, January-2019 ISSN 2229-5518

century. In 2012, Malaysia's per capita national income reached US \$2280. In 2013, the government implemented the national science, technology and innovation policy (NSTIP) (2013-20).

By 2020, the policy provided an investment and strategic approach to the transformation of Malaysia to an innovative economy. The scientific action plan for implementing NSTIP (S2A) is one of the major strategic priorities of Malaysia's eleventh plan (2016-2020). Technology and innovation are among Malaysia's best performing sectors.

In the first few months of 2012, the technology sector grew at double-digit rates. Excellent economic performance has attracted the attention of global technology companies and will be further concerned. With the economy surpassing the lower labor costs, the development, R & amp; D and innovation of industrial technology are becoming more and more important for sustainable economic growth.

The Ministry of science and technology is the major policy making department in the field of science, technology and innovation. MOSTI has also implemented many projects promoting science and technology and national research and development. Public research institutions, important central government agencies, universities and the private sector are the representative bodies of the Committee.

The committee meets at least three to four times a year to study and examine matters related to science, progress and innovation. The relevant departments recognize that R & amp; D and technological innovation are crucial to the knowledge economy strategy and sustainable development strategy of Malaysia government.MOSTI promotes the industry through ambitious plans, including several technology development foundations.

The 12-national key economic zones (NKEA), identified by the Malaysia economic transformation programme (ETP), cover two key areas of development, in which technology and innovation are the most active industries in Southeast Asia. Thanks to the encouragement and support of the government, the industry is developing rapidly, with the best educational facilities, extensive investment opportunities and good market prospects. Malaysia's extraordinary economic performance is being noted by global technology companies.

#### 1.2 Background of study

Science is the premise of technology, technology is the basis of industry, scientific principles find technological innovation, technological innovation determines industrial innovation, they are interdependent and complement each other. Technology is changing fast. The world is at the stage of in-depth application of information technology and a new round of technological revolution.

Innovation refers to the idea that is different from ordinary or ordinary people. It is a new thing or a new way of thinking in accordance with the ideal needs and improving or creating the existing thinking mode. These improved or created results usually have a positive effect. Innovation is a kind of practical ability, which is unique and cognitive. It is a high-level expression of human subjective initiative and an inexhaustible motive to promote the progress of the country and the development of the society.

If a nation does not have innovative thinking, it can not walk in the forefront of the times. Human beings cannot stop all kinds of innovation. The important role of innovation lies not only in the aspects of economy, technology, architecture and sociology, but also in every aspect of our life. Innovation is essentially the materialization, externalization and formalization of the blueprint of innovative thinking.

Innovation includes not only technological innovation, theoretical innovation, but also institutional innovation and cultural innovation (Lengnick-Hall, 1992; Galende del Canto, 2002; Vidal and Alcami, 2005). Technology innovation refers to the application of new technology development. This paper mainly studies technological innovation. According to global between technological innovation and economic growth for every five hundred and sixty years as a law of cycles, in the past 200 years,

the global experience, the steam engine, electric machine industry and heavy machinery, internal combustion engine and its application, five times technology such as information technology revolution. The fifth technological revolution, still marked by information and communications technology, began in the 1970s. After more than two hundred and thirty years of development,

the 2000 Internet bubble burst in the information technology revolution and the international financial crisis of 2008 have entered a wide and deep stage application, which will promote a lot of new technologies, new industry, at the same time, also is a new technology revolution. In terms of specific industries, digital communication and computer technology have become the fastest growing and most applied fields in the world.

In 2012, American scholars proposed in the Wall Street journal that big data, intelligent manufacturing and wireless revolution will change this century. Significant progress has been made in shale gas technology. Biology, materials and other fields are also brewing a number of important potential new technologies. 3D printing, intelligent robot, artificial intelligence and other cross - fusion technologies have become research and development hotspots.

Among the surrounding countries, Malaysia's technology and innovation industries are most active. It has the best educational facilities and a wide range of investment opportunities. It is a thriving industry. As countries report themselves in response to the OECD 2014 policy questionnaire, hot issues are the major policy priorities for national technological innovation. The hot issues in Malaysia include: Strengthening public R&D capacity and infrastructures, Encouraging business innovation and innovative entrepreneurship, Improving overall human resources and skills, Improving the innovation system and the governance of the innovation policy.

#### **1.3 Problem statement**

The first problem is the source of the capital for the technological innovation. The technological innovation and development cannot be conducted without the resources, especially the capital resource. Usually the technical innovation has to be spent large amount of money. For instance, the capitals of the technological innovation fund by BCF in Malaysia in 2011 and 2012 are 5 million RM and 10 million RM respectively then it increased to 45.6 million RM in 2013.

With the increasing amount capital invested, it is easier to develop the technological innovation. After the arrival of funds, we should also do a good job in internal management and internal integration, so as to effectively use funds and maximize the role of funds. After resources and funds are managed and integrated, technicians use their expertise to do a good job in technical innovation.

The second problem is to sustain the local talent and attract the international talent. The technological innovation has to be done by the people, especially the talent. Without the talent, the good idea cannot be found and the action cannot be taken. For instance, Mr. Lee Kuan Yew took the actions to sustain their local talent and attract the global talent, and this made Singapore have a great innovation and development including the technology area.

Accordingly, technical innovation cannot leave talent. After the introduction of talents, organizational culture and organizational learning are essential. More training and learning are given to talents, and good management involvement is given to talents. Only in this way can talents have more team spirit and take part in technological innovation in a down-to-earth manner and better play the role of talents.

The third problem is to seize opportunities and challenges. Opportunities and challenges are fleeting, and if not grasped, technological innovation will be affected. Especially for the technological innovation of the company, if the company fails to make good use of the coming opportunities and challenges, the company will lose profits, which may directly lead to the company's failure. Therefore, opportunities and challenges cannot be separated from management participation. Without a good management participation, opportunities and challenges will be lost.

#### 1.4 Research questions and research objectives

1.4.1 Research questions

1. What is the relationship between organizational culture and technical innovation?

- 2. What is the relationship between internal integration and technical innovation?
- 3. What is the relationship between organizational learning and technical innovation?
- 4. What is the relationship between management involvement and technical innovation?

#### 1.4.2 Research objectives

- 1. To identify the relationship between organizational culture and technical innovation
- 2. To examine the relationship between internal integration and technical innovation
- 3. To show the relationship between organizational learning and technical innovation
- 4. To confirm the relationship between management involvement and technical innovation

#### 1.5 Significance of study

Technology and innovation have a very important impact on the development of a country. Technological innovation plays an important role in leading social development and is the core of innovation-driven development strategy. Today, scientific and technological innovation has become a key factor in determining the balance of world political and economic forces and the future and destiny of a country, and a revolutionary force for social change.

"Science is the nervous system of our time," gorky said. "there is nothing more powerful and invincible than science." Deng stressed that "science and technology are productive forces." Technical innovation is the strategic support for improving social productivity and comprehensive national strength. Technical innovation must be placed at the core position of national development and global position, and clarifying the technical innovation in the core position in the development of society as a whole organization, highlight the important role of technology innovation in social productivity.

#### The significance for research

Technological innovation is to do work that has not been done before. It is also a new starting point for scientific and technological exploration. We should understand the research of technology innovation dynamics, check if someone has done the related research, if someone has been to explore, but also to further research the depth and breadth of understanding others. The technological innovation we are carrying out is not to follow the old path of others or repeat the work of others.

Otherwise, there will be no innovation results and no technological progress. The purpose of technological innovation is to better create wealth and economic value, so as to effectively serve the society and mankind. Therefore, technological innovation should be considered in an important position to combine the economic and social benefits of technological innovation.

Operability is also important for technological innovation. In

the process of innovation, there should be a plan, a specific method of operation, and a result analysis. Otherwise, technological innovation is a piece of empty talk, which makes many people who want to participate in technological innovation feel at a loss to do so and lose their interest in technological innovation.

#### The significance for enterprises

Times are changing, technology is constantly innovating, enterprises need to play the role of production technology, and actively improve production technology. From the market point of view, enterprises as an important subject, can accurately grasp the market demand, the enterprise by science and technology innovation, perfect to build up the technical innovation system, not only can grasp the development direction of technology innovation effectively, can also prompt the innovation of science and technology industry pattern formation time was significantly shortened.

At the same time, the market also promotes the development of enterprise scientific and technological innovation, and the market mechanism plays the driving force of enterprise scientific and technical innovation. At the same time, the enterprise technology innovation as the main body, organic perfect the innovation system, can effective change on technology innovation, change the status of research institutions closed, effective docking technology innovation and practical application.

Not a long time to be able to use the latest achievements of scientific and technological innovation in enterprise production, expand the scope of application. Enterprises are driven by the market, so as to enhance their innovation awareness, and organically integrate economic system innovation and technological innovation of enterprises. So as to improve the enterprise innovation ability and enhance the enterprise efficiency.

#### The significance for government

The implementation of the technology innovation strategy is of strategic significance for a country and government to form new advantages in international competition and strengthen the long-term impetus for development. For a country to develop in the long run, it cannot rely on the low-cost advantage of labor force and resource environment. Compared with the advantages of low cost, technological innovation is not easy to imitate and has high added value. The innovation advantage thus established lasts a long time and has strong competitiveness.

Implementing the technology innovation development strategy and accelerating the transformation from low cost advantage to innovation advantage can provide strong impetus for the sustainable development of the government. The implementation of technological innovation strategy is of practical significance for improving the efficiency of economic growth and speeding up the transformation of economic development mode. Science and technology innovation has a multiplier effect, not only can directly into realistic productivity, but also can enlarge the osmosis through science and technology the productivity of the factors of production, improve the level of social overall productivity. Scientific and technological innovation strategy has a strong impact on improving the government's economic growth, and helps to accelerate the transformation of the mode of economic development.

#### 1.6 Assumptions of the study

First, it is assumed that the questionnaires filled out by the participants are honest. If this assumption is true, the contents of these questionnaires are authentic and effective, and the results are of high reference value. This study did not do nothing but play its role. Second, assume that the population surveyed by the researchers is a high quality population. Although the investigators randomly sampled the questionnaires, they were also screened. Not everyone gave them, but found that his or her age and occupation met the survey criteria before the questionnaire was given. The data thus obtained will have reference value.

#### 1.7 Limitations of the study

There are three main aspects in the limitations of the research. First, the geographical limitations. Because the geographical scope of this study is Malaysia, it can only represent the situation in Malaysia and cannot adapt to Africa or other countries and regions. Second, the time limit, only one month to submit the paper, the time is very urgent, there is not much time to modify the paper is perfect.

Third, the restrictions of the crowd, these people around Kuala Lumpur have actually been limited, good or bad are these people, the part of the population to be investigated represents their status and opinions, and does not represent all the people, it can not be all The state of human opinion is expressed, and these are mainly the limitations of the study.

#### 1.8 Structure of Dissertation

The structure consists of five parts. The first part mainly explains the introduction and the problem statement, the second part is the study of independent variables and dependent variables. The third part is the research method and data analysis. The fourth chapter mainly uses SPSS for data analysis. The fifth chapter mainly summarizes the research content, including research methods, meaning, contribution and suggestions for practice and future. Let me introduce them separately.

#### Chapter 1: Introduction and problem statement

In the first chapter, it mainly includes introduction, background of study, problem statement, research questions and research objectives, research significance and summary. In the introduction and background of study, research mainly expounded what is technical innovation, the current situation of world technical innovation and the current situation of technological innovation in Malaysia. In the problem statement, I introduced the capital source, talent introduction, opportunities and challenges.

#### Chapter 2: Literature Review

In the second chapter of the literature review, the researcher mainly introduce the four IV and DV of this paper. the four independent variables: organizational culture, internal integration, organizational learning and management involvement, a dependent variable, the definition of technical innovation, interviews, and past studies are introduced in detail, especially focus on the four dependent variable and one of the independent variables are introduced in the past. At the same time, the framework and theoretical application are introduced. The independent variable gap internal management is explained.

#### Chapter 3: Research Method and data analysis

In the third chapter, the research methods and data analysis are introduced. Exploratory, Descriptive and Explanatory methods are especially introduced. Questionnaires design, measurement, procedure and Normality, Reliability, Validity and Correlation in data analysis were introduced. Meanwhile, Population and unit of analysis, Sampling frame, technique and size, analysis technique - Multiple Regression are described.

Chapter 4: Findings and Discussion

In the fourth chapter mainly uses SPSS Statistics to analyze the data of the questionnaire.

The content includes data entry and coding, data screening, respondents' demographic profile, etc. In this process, the first 50 copies of data are tested, the results are reliable, and all IV and DV are analyzed normally. In Chapter 4, the findings and discussions are key and will be analyzed in detail.

Chapter 5: Summary, Conclusion, Implications and Recommendations

The content of the fifth chapter mainly includes summary of the study, containment, implications(study, organization, theory)and recommendations. The fifth chapter is mainly the part that summarizes the full text, the significance and contribution produced after the research, the researcher will do In detail, the recommendations given to the study are important, and the researchers will focus on the practical recommendations and future research.

#### 1.9 Chapter summary

In this chapter, researchers mainly introduced the introduction, background of study, problem statement, research significance and paper structure of the first chapter, and also introduced the status and trend of technical innovation in Malaysia and the world in detail. Through the study of this chapter, we can have a deep understanding of these knowledge and make preparations for the study of the next chapter.

#### **2** LITERATURE REVIEW

#### 2.1 Introduction

In the second chapter, it is mainly introduced research's independent and dependent variable, Independent Variables include organizational culture, internal integration, organizational learning and management involvement. Delimitation, overview, and past research for each independent variable and dependent variable are described in this section. Also introduce Proposed Framework, Theory Used and Hypothesis.

#### 2.2 Research's Independent and Dependent Variable

These four independent variables are organizational culture, internal integration, organizational learning and management involvement, one dependent variable is technical innovation,. The following is a detailed introduction from the four independent variables and one dependent variable, definition, overview and past research, so that readers can fully understand what the researcher is studying

### 2.2.1 Independent Variable -- organizational culture

#### 2.2.1.1 Definition

Culture is composed of workpiece (also known as practice), belief, value and the basic assumptions that the organization members share in appropriate behavior (Schwartz and Davies, 1981; Gordon and DiTomaso, 1992; stone, 1992). Culture exists in different levels, beliefs and behaviors, and is reflected in the broad characteristics of organizational life (Hofstede et al., 1990). Of course, organizational culture is a set of common beliefs, assumptions, values and practices, which guide the attitude, behavior and formation of the members of the organization. (Wilson, 2001; O'Reilly and Chatman, 1996; Kotter and Heskett, 1992; Denison, 1990; Davis, 1984;).

#### 2.2.1.2 Overview

Organizational culture will have an impact on people's goal setting, task execution and resource management. The way organizational culture affects people's conscious and subconscious thinking and decision making, and ultimately the way they feel, perceive, and act (stone, 1990; Hansen and Wernerfelt, 1989). Peters and Waterman (1982) and Deal and Kennedy (1982) suggest that organizational culture can have a considerable impact on the organization, especially in the fields of commitment and performance.

Organizational culture includes organizational expectations, experiences, philosophies, and values that guide the behavior of members, and is expressed in terms of members' self-image, internal operation, interaction with the external world and future expectations. Culture is based on common attitudes, beliefs, customs, and written and unwritten rules that are considered valid over time (business dictionary).

Organizational culture is a common set of assumptions that guide what happens in an organization by defining appropriate behavior for each situation (Ravasi&Schultz, 2006). Organizational culture influences the way people interact with International Journal of Scientific & Engineering Research Volume 10, Issue 1, January-2019 ISSN 2229-5518

groups, customers and stakeholders. In addition, organizational culture may affect employees' recognition of their organization (Schrodt, 2002).

#### 2.2.1.3 Past research

Organizational culture researchers also put forward different types or forms of culture. For example, Goffee and Jones (1998) have suggested four types of organizational culture (i.e. fragmentation, networking, communalization and mercenary). Martin (1992) treats organizational culture (i.e. differentiation, division and integration) from three perspectives.

Some mature organizational culture will make the financial performance of the organization excellent (Harris and Ogbonna, 2000). Many practitioners and scholars believe that the extent to which cultural values are widely shared determines the performance of an organization (Scott, 1978; Denison, 1990). The role of culture in creating competitive advantages promotes the idea of linking organizational culture with performance (Scholz, 1987).

Frost and Krefting (1985) believe that individual interactions can be promoted by the defined boundaries by the organizational culture. It is believed that big sharing and strong values enable managers to predict employees' responses to certain strategic choices, thus reducing the scope of undesired consequences (widely and Ogbonna, 2000; Ogbonna, 1993).

The sustainable competitive advantage comes from the creation of organizational capabilities by the theorists, which are unmatched by competitors. For this reason, some people think that the main advantage of an organizational culture lies in its uniqueness. In fact, many scholars believe that organizations and researchers have taken advantage of all the advantages that culture can offer (Johnson, 1992).

In general, the document on organizational culture is varied. Many researchers believe that culture is related to organizational performance. Although some theorists question the universality of cultural performance connections, there is ample evidence that organizational culture is related to organizational performance. In the organization knowledge management mechanism, in order to get the effective operation,

the organization should attach importance to the implementation of the knowledge management culture and give full play to the true effect of the knowledge management effect (Bhatt, 2000). Therefore, knowledge accumulation and organizational innovation will have different performance according to different organizational culture.On the contrary, if the quality culture plays a leading role in the organizational culture of an enterprise, then the quality exploration practice is significantly related to the performance.

Gimenez-Espin et al (2010) found that the influence of collective leadership culture, information quality, process control, CI, quality tool training, team cooperation, supplier relationship and customer orientation on quality management is not significant, while the influence of rational and hierarchical culture is not significant. Quality culture is also an important factor that cannot be ignored.

It is situated between development and group culture, with both external and internal dual directions and higher flexibility. These findings indicate that the specific measures for quality management are very clear. Besides, in addition to how to achieve business performance, the literature illustrates the significant positive impact of quality management on business performance.

### **2.2.2 Independent Variable -- internal integration** 2.2.2.1 Definition

Internal integration refers to the combination and improvement of the practice of internal resources and information organization, so that all departments or functions can share knowledge and complete the organizational plan (Kim, 2013). In addition, internal integration is an activity or strategy that enables manufacturers to collaborate and collaborate with suppliers in meeting their customers' needs (Flynn et al, 2010). Organizational performance and internal integration can be improved through mutual planning, information sharing and group work to meet needs and achieve targets on time.

In addition, internal integration refers to how enterprises engaged in manufacturing are dealing with, practicing and longterm planning, forming organized and parallel processes to meet customer preferences and effectively dealing with suppliers (Kotcharin et al, 2012). The purpose of internal integration is to consume the lowest cost but to present the maximum value for the customers at the fastest speed, while information, products, resources and funds will also be circulated at a faster rate (Flynn et al, 2010).

#### 2.2.2.2 overview

Internal integration mainly includes information system integration and data, demand information and operation, supply real-time query, and activities integration of different departments. Internal integration includes working across different functions or cross functional collaboration in improvement of the process as well. Internal integration acknowledges that different functions within the company need to be part of the integration process.

Internal integration includes integration of functions and different departments within the organization to achieve the customer needs (Lotfi et al., 2013). This means that cooperation among functional departments should be further considered, such as procurement, production, logistics, inventory, distribution and sales. This coordination between departments has created an integrated system to work together to meet customer needs and improve the performance of manufacturers (Lotfi et al., 2013).

Abdallah et al (2014) believes that internal integration is the

most important element in making a positive contribution to the efficiency of SC. To sum up, internal integration acknowledges the importance of organizational functions and cooperation between departments to achieve maximum value through cooperation. Through cooperation, internal integration makes a positive contribution to SC efficiency.

#### 2.2.2.3 Past Research

From previous studies, it is easy to see that there is a positive correlation between internal integration and business performance. It is founded by Larcker and Ittner (1997) that integration is positively correlated with organizational performance. Gomes et al. (2003) pointed out that there is a positive correlation between internal integration and operational performance.

The results show that the participation of customers and suppliers has a positive impact on internal integration. From this perspective, companies need to strengthen internal integration when implementing customer and supplier involvement. In addition, customer participation has greater impact on internal integration than that of supplier. Another point is that internal integration has a significant impact on business performance.

Business performance is affected by internal integration. This result was corroborated in previous results (Flynn et al. 2010; Saeed et al. 2005). Therefore, many literatures believe that internal integration has a significant impact on improving operational performance. Many studies link the relationship between external customers and suppliers to internal processes. The results show that the participation of suppliers and customers is important and has a significant impact on enterprise performance. In addition, it is also a difficult task to mention the involvement of customers and suppliers in the literature.It is appropriate to manage such complex problems in areas where internal integration is relatively high. Therefore, the development of large-scale internal integration plays a very important intermediary role in helping customers to participate in the relationship between suppliers and operational performance.

It can also be said that their relationship has been moderated to a certain extent by internal integration. This shows that internal integration is essential for enterprises to achieve performance improvement by involving suppliers and customers. That SCI provided competitive advantages and enhanced the process of innovation and innovation was founded by some researchers (for example, Cambra-Fierro and bordonaba-juste , 2009).

Process integration and information exchange with customers are important means for organizations to develop new products. Miozzo and Dewick (2004) believe that the interaction and relationships between suppliers and organizations, designers and customers play an essential role in the process of production and innovation. Bengtsson and Von Haartman (2015) use samples from 679 manufacturing enterprises in Europe,

the United States and Canada to find out the factors that have a positive impact on product innovation, such as supplier integration and proficiency. Gomes and the others. (2003) through the use of different functions in the organization (such as production, marketing, marketing, etc.), it is found that there is an important relationship between internal integration and product innovation to promote product innovation.

Flynn and the others. (2010) take 617 manufacturing enterprises in China as samples to investigate the impact of suppliers, customers and internal integration on business performance. They found that supplier and internal integration significantly affect operational performance. In addition, the study also shows that vendor and customer integration does not affect business performance, and the impact of internal integration is the most significant.

#### 2.2.3 Independent Variable -- organizational learning

#### 2.2.3.1 Definition

Generally speaking, organizational learning refers to the development of new knowledge and insights through the study of the common experience of the personnel within the organization, which may affect the behavior and improve the ability of the enterprise (Lyles and Fiol, 1985; Senge, 1990; Huber, 1991; Narver and Slater, 1995). Brown and Duguid (1991) describe organizational learning as a "bridge between work and innovation".

#### 2.2.3.2 Overview

Huber (1991) believes that the following steps should be taken to complete organizational learning. First, the members of the organization need to acquire knowledge through various channels, and then allocate the knowledge within the organization, as well as to explain it, and then store them for future use. This process will promote the development of organizational knowledge, mainly in the use of theory, information database and psychological model of sharing. (Narver and Slater, 1995).

Organizational learning is a field organization and a branch of organizational research. As an organizational aspect, organizational learning is a process of creating, preserving and transferring knowledge. Knowledge creation, knowledge retention and knowledge transfer can be regarded as an adaptive process of experience function. Organizational learning is a process improvement that can improve efficiency, accuracy and profitability.

#### 2.2.3.3 Past Research

Through the relationship between innovation and organizational learning, it is easy to see that innovative behavior will provide competitive advantages for organizations or individuals (Stata, 1989; Dodgson, 1993; Gavin, 1993). At the same time, some literature points out that organizational culture is International Journal of Scientific & Engineering Research Volume 10, Issue 1, January-2019 ISSN 2229-5518

also one of the determinants of organizational learning.

Many studies believe that culture is an essential factor in organizing the learning process (Argote et al., 2003; Davenport, 1998; De Long and Fahey, 2000; Lee and Chen, 2005) because culture has a strong influence on the behavior of employees. Therefore, if organizational culture cannot promote learning, it will probably become a major obstacle to the values it advocates.

Although most organizations have been clearly aware of the importance of these problems, so far, few studies have been made on the links between learning, organizational culture and literary innovation, especially from the perspective of experience (Forrester, 2000; drok and McNaugton, 2002; Zhang Chengze et al. 2002; Scarbrough, 2003).

We have sufficient evidence to believe that organizational learning is related to innovation, but only a few studies pay attention to influence or innovation (Leona, 2004; Li Hechen, 2005; Chang and Li, 2007). Spain is much less concerned about these issues, and there is little research on the relationship between learning and organizational culture (Perez et al., 2004).

In addition, cultural background and society are dependent on learning and organizational culture (Hofstede, 1980). Therefore, the study of the links between these variables in Spanish Company will help to study how to improve innovation in this context. A lot of research on organizational culture and innovation. Some scholars believe that these results play a guiding role in the implementation of technological innovation (Stata, 1989; Mcgee, 1992; Fichman Kemerer, 1997).

A lot of literature has mentioned that only individuals can share the knowledge that they have acquired in an organization to make up innovation (Levine and Cohen, 1990; Nonaka Fujiro, 1995; Hage, 1999). Salavou et al. (2003), knowledge acquisition and external information acquisition (Chang and Cho, 2008) contribute to knowledge acquisition.

The ability of a company to absorb new ideas allows the company to acquire knowledge from the outside. In a word, the ability of the company for business purposes depends on the absorption, understanding and application of new external knowledge (Cohen and Levinthal, 1990). Organizational learning also improves the company's ability to assimilate.

For individuals or companies, innovation is not a simple and isolated process, but a systematic project in which the cross and role of companies, customers, competitors, suppliers and other public organizations and individuals is obvious and important. In this process, understanding the role of knowledge and organizational learning in promoting or restraining innovation has also become crucial (Lam, 2005; Fagerberg, 2005).

Without a deep understanding of learning, and knowledge, it is impossible to understand the innovation process, and without an analysis of social relations and organizational structure, it is impossible to explain economic performance (Lundvall and Christensen, 2004). Technological innovation is affected by knowledge application, knowledge creation and knowledge sharing. Social interaction also positively affects technological complexity and uncertainty.

Powell and Grodal (2005) believed that when science and technology develop rapidly and knowledge sources are widely distributed, network could promote innovation. But will the web help innovation when technology is not changing fast? Pacitti (2005) identified two general innovation processes, namely, harmonizing and integrating professional knowledge and learning under uncertain conditions.

But that ending is also extrapolated from the research, which focuses on huge companies in Japan, United States and Europe. Will there be any different innovation processes in less developed areas? When discussing the challenges of innovation theory and research, Lundvall and Christensen (2005) believe that, one of the important roles of innovation social dimension is difficult to develop, the commonly theory of interactive learning and innovation.

### 2.2.4 Independent Variable -- management involvement

#### 2.2.4.1 Definition

Management involvement refers to the participation of senior managers in innovative activities. High level management refers to those who can make decisions in the organization. They are responsible for formulating feasible plans and policies to promote the development of projects. (Ko and Atuahene-Gima, 2001; Hassan and Luo, 2009). They have the ability to create the right organization culture, system and structure of people, and at the same time can provide enough resources and motivation to deliver projects.

#### 2.2.4.2 Overview

Management participation innovation refers to the degree of participation of top managers in innovative projects, as visionary people to assistant employees' opportunities for innovation, planning, leadership, control and innovation activities, and providing needful incentives and changes to the future (De Brentani et al., 2010; Anderson, 2004). Through extensive participation, senior managers will be able to better exchange information, identify problems early and introduce innovative plans more smoothly. At the same time, they also need to make regular disclosure on matters related to innovation decisions.

#### 2.2.4.3 Past Research

Previous studies have shown that management involvement plays an important role in the development of internal innovation environment in enterprises Lægreid et al. 2011. Although the company's HC policy and management settings will inevitably have a variety of impacts on innovation, these policies and settings depend mainly on the strategic positioning and attitude of senior managers. (Joshi and Chawla, 2011). Only the senior managers have the right to redesign HC policies and administrative measures and optimize incentive plans to promote. Management involvement is essential for an organization because innovation is inherently expensive, dangerous and unpredictable (Damanpour et al., 2009). It should be pointed out that not all innovations can bring products or services with commercial feasibility.

An innovative product, a process or a plan is not enough to guarantee successful innovation. Therefore, management support and integration must be combined. For example, the right resources can directly integrate innovative ideas into products or processes. Alternatively, the first correct marketing strategy has been put in place to promote innovative marketing (Layton, 2002; Tang, 1998).

The senior management of the successful company knows very well that it takes a lot of painstakingly efforts to achieve innovation (Luo and Hassan, 2009; Atuahene-Gima and Ko, 2001). In a systematic innovation, P & amp; G has modified its strategic development or review process to make its "chief executive, chief technical officer and CFO explicitly link the company business, innovation strategy" to ensure strategic cohesion, the best resource allocation and effective utilization of marketing, and the promotion of new products.

Senior management should be able to get important information about the company and its market directly with its prominent position. Their positions enable them to see or adopt the trend that will affect the future of the company (Elenkov et al., 2005). Because innovation itself has risks, management participation plays a crucial role in reducing the risks associated with innovation.

They are people who can create institutional culture and correct structure. They are those who can provide enough resources and motivation, and are able to provide projects. Management participation in innovation refers to the degree of participation of senior managers in innovative projects. As a visionary, it helps and supports employees to explore innovation 713 opportunities, plan, lead, control and organize innovation implementation.

Provide and activities and the essential changes and incentives for the future (Andersen, 2004; De Brentani et al., 2010).Such participation requires open and regular communication and cooperation on matters related to innovation decision-making. Broad participation has facilitated better information exchange, earlier problem discovery and resolution, and thus more successful introduction of innovative initiatives. the innovation of the administrative procedure may produce considerable setup change and costs the built way of working (Teece, 1980). All these changes or costs, if not managed by senior management, may undermine business operations or even disrupt innovation efforts

### 2.2.5 Dependent Variable -- technical innovation

#### 2.2.5.1 Definition

Technical innovation is defined as changes introduced to improve the functional characteristics or technical standards of products or processes (Nadler and Tushman, 1986). Technical innovation is the process of incorporating new ideas related to practical knowledge or experience into the production process. Technological innovation focuses on the application of scientific knowledge to production processes.

#### 2.2.5.2 Overview

Technical innovation can be further divided into process innovation and product innovation (Mavondo et al., 2005). Process innovation refers to the change of product manufacturing or service delivery mode, and product innovation refers to the change of the name and nature of the product or service provided by the enterprise. (Nadler and Tushman, 1986).

The process innovation makes the enterprise gain the cost advantage, product innovation makes the enterprise different from the competitor (Nassimbeni, 2003; Kash and Rycoft, 2000). The benefits of introducing these two innovations make the company advantageous in the market competition and strengthen its business base line by bringing new earning or / or improving cost efficiency.

#### 2.2.5.3 Past Research

The author believes that organizational culture encourages technological innovation, and organizational culture and technological innovation are interrelated. So suppose culture has no direct impact on innovation. However, this letter also indicates that culture may not indirectly affect innovation. In reality, literature on the determinants of innovation organizations, together with organizational design, emphasizes cultural issues (Mumford, 2000; Crossan Apaydin, 2010).

It has been measured by Technical Innovation in various ways (Faems et al., 2005, Jaskyte and Kisieliene, 2006). According to Manu (1992) point of view, and innovation oriented and output (e.g., a new product or new process), input (e.g., R and D spending) and timing (such as pioneer, quick seconds or late followers). According to Manu, each innovation (process and product) uses 5 point scales. They cover the amount of innovation, the active or passive nature of innovation, and the efforts of enterprises in resources devoted to innovation.

Technological innovation is regarded as a secondary structure, including product innovation. Different classification methods be used by different scholars to classify the relationship between antecedents and innovation or consequences of innovation (Avermaete et al, 2003; Daft, 1978; Tidd et al., 1997). In the electronic manufacturing environment, these relationships are divided into three classifications: marketing innovation, organizational innovation, technological innovation (villar-lopez and Camison, 2011).

Evan and Damanpour, 1984; Johne, 1999 A; The OECD, 2005;

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Tidd et al., 1997). All of these types of relationships are supposed to help the company's competitive advantage, make the company more flexible and effective way of dealing with technology, market and the challenges of internal and external business environment change and dynamic (Damanpour, 1991; Johne, 1999A).

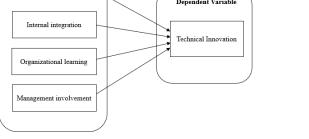
Some people believe that the innovation category mentioned above is neither independent nor separate, but connected and complementary. (Coyne, 2001; Anthony et al, 2008; Garud et al, 2011). For example, in a manufacturing environment, there is no "simple" innovation in technology, because technology can create value only if developers have the necessary application capabilities (Chen et al, 2011; Wonglimpiyarat, 2010).

In other words, without appropriate product or human resources departments or correct administrative support to organize, lead and support marketing activities, market innovation cannot be introduced (Brettel et al., 2011; Acur et al., 2012). Organizational innovation does not directly affect performance, unlike innovation, because the profit of organizational innovation is indirect rather than direct and significant (Damanpour, 1991).

Among all managers, only senior executives have the right to redesign huicong's policies and administrative measures and optimize incentives to promote innovation activities (Anuntiyo et al., 2008). Innovation is the new fields of innovation research. Their role as performance drivers was recognized only in 2005 (OECD, 2005). By studying the causes and consequences of administrative innovation and human resource innovation, we have a deeper understanding of the behavior of organizational innovation variables.

These results also verify that organizational innovation links technological innovation and management together, but there is no such effect between management input and marketing innovation. It is not difficult to see that management participation has a positive impact on organizational innovation, and it can further expand the process and results of technological innovation.

**2.3 Proposed Framework and Theory Used** *2.3.1 Proposed Framework* 



Figures 2.3.1 Proposed Framework

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#### 2.3.2 Research Gap

In this article, I find the gap is management involvement, the use of management involvement, as in this paper, there are two main reasons for the gap, and the organizational culture, organizational learning, and internal integration as the influence factors of technology innovation, all of these IV belongs to the factors of management, management involvement also belong to class IV, in a previous study, no previous management involvement with organizational culture and organizational learning as the influence factors of technology innovation. therefore, I study the involvement management as the gap of this paper.

Second, the concept of management involvement proved to be more common, but will it linked to technology innovation, as a factor to promote the innovation and also no one to study, based on the article of George A. Zsidisin, Lisa M. Ellram, (2001). in the article, the limitation is the management involvement only in supplier alliances that the technical innovation has not been researched and analyzed.

Based on the article of Olle Viktor Olsson, Håkan Aronsson, Erik Sandberg, (2017). This article only explains the role of management involvement in patient processes and does not address technological innovation. I looked for many other articles and found no link between management involvement and technical innovation. I discover that it is a blank, and have a big space to study, because nobody went to study, innovative, so I choose management involvement as gap to study of my thesis.

#### 2.4. Theory Model

#### 2.4.1 The Theory Used

This paper used the theory of has two, one is the management theory, the other one is absorptive capacity. This is the theory of management, which sets out the general rules governing enterprises or organizations. Management theory emphasizes how managers and organizers motivate employees to establish contacts with their organizations. Managers are required to achieve the highest standards by understanding goals and implementing effective means to achieve goals.

From the perspective of management theory (Dean et al,1994, Lillian Do Nascimento Gambi et al, 2015), are all the principles, practices and technologies of quality management thriving? All cultures, or companies, need to find the right fit between their culture and the quality management system to meet the best results. This article IV of the organizational culture, internal integration, organizational learning, participation in management theory and management, connect, promote each other, seek agreement between them, promote technological innovation, achieve the best performance results.

Therefore, one of the theoretical support of this paper is management theory. The term "absorptive capacity" is used to identify the ability of an organization to absorb, transform, and apply valuable external knowledge. This theory has been gradually popularized and the term has been widely used at the organizational level to analyze the impact of innovation process and organizational learning on the creation of sustainable competitive advantage.

Absorptive capacity goes far beyond the obvious facts about the microclimate of corporate operations. On the contrary, it needs to take a macroscopic view of an enterprise and its competitive position. It appreciates all the factors that can affect change, good or bad, and makes the organization truly aware of its market position. Research shows that with high absorption capacity is a foreign-oriented business strategy,

which encourage employees, especially managers become the boundary spanner, namely their knowledge collected from many different types of sources, not just the obvious. It has some understanding of what's going on in the market and can use this wider insight to get ahead of its competitors. In the end, it will be enterprise in front, and provide them with knowledge and help them to understand their position in the competitive landscape, and see the impact of political, economic, social, technical, environmental and legal factors.

The absorptive capacity (Heba Fawzi Ayoub et al, 2017) encourages employees to absorb more knowledge and transform it into innovation ability to promote the development of enterprises. In article IV, organizational culture and organizational learning require employees to absorb knowledge and transform it into productivity. All of these can promote innovation and remain competitive.

With the organizational culture, organizational learning, these factors, combined with the internal integration and management involvement in the participation of these factors, can effectively promote technology innovation, keep the enterprise competitive power and creativity, make enterprises in an impregnable position. Therefore, the supporting theory of this paper is management theory and absorptive capacity theory.

#### 2.4.2 The Theoretical Framework of the study

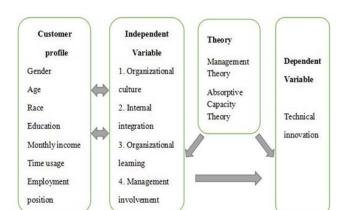


Figure 2.4.2 The Theoretical Framework of the study

#### 2.5. Hypothesis

The main tools we use in our study are assumptions. Presenting new observations and experiments is the main function of the hypothesis. In fact, In order to test the hypothesis, a lot of experiments have been carried out. The quantitative hypothesis refers to a prediction of the relationship between variables. Based on the data collected from the samples, they estimate the total value. Statistical procedures are used for hypothesis testing, and researchers draw inferences about population from research samples.

### H<sub>a</sub>1: There is a positive relationship between organizational culture and technical innovation.

Numerous studies have shown that innovation-oriented organizational culture leads to positive efficiency of organizational innovation. Liu (1998) emphasized that innovative organizational culture can promote organizational innovation. organizational culture is a set of common beliefs, assumptions, values and practices, which guide the attitude, behavior and formation of the members of the organization. (Wilson, 2001; O'Reilly and Chatman, 1996; Kotter and Heskett, 1992; Denison, 1990; Davis, 1984;).

Cheng (2002), in addition to the organization by the fact that organizational culture to realize its organizational innovation target, it can also be through knowledge sharing within the organization staff to enhance organizational innovation creation. Therefore, on the basis of previous studies, it can be seen that there is a positive relationship between organizational culture and technical innovation.

### $H_a 2$ : There is a positive relationship between internal integration and technical innovation.

There has been a lot of literature to prove that there is a significant and positive correlation between internal integration and technological innovation (Huang et al, 2013; Baharanchi, 2009), especially Koufteros et al (2005), which points out that internal integration can indirectly influence product creation through some ways. However, the conclusions of previous studies do not confirm this result (for example: Boon-itt, 2009; Danneels, 2002).

These studies found that internal integration has a positive impact on technological innovation. Gomez et al. (2003) by using different function in the organization (e.g., production, marketing and sales), found that there are important relations between the internal integration and product innovation, to

IJSER © 2019 http://www.ijser.org strengthen product innovation. The data of this research question come from 244 manufacturing enterprises in many industries.

The results show that internal integration has a positive impact on product innovation, quality and ultimately profitability. Product innovation is based on technological innovation, there is no technological innovation is product innovation, based on the above theory and research, can assume that for internal integration and there is a positive relationship between technical innovation.

## H<sub>a</sub>3: There is a positive relationship between organizational learning and technical innovation.

The innovation of products and processes can be strengthened and enhanced through organizational learning (Forrester, 2002; Scarbrough, 2003). Some quantitative methods research also provide positive evidence for product innovation and overall OL process or organizational learning ability (Alegre and Chiva, 2008). Murat and Baki (2011) find that process innovation is influenced by organizational learning ability, and this effect is positive.

In addition, one stage in the process of organizational learning and the impact on product or process innovation in this stage are also concerned by some research. For example, yli-renko et al (2001) found that knowledge acquisition was positively correlated with product innovation. Last but not least, Chang and Cho (2008) suggest that innovation can also be stimulated by other ways.

For example, knowledge is preserved by sharing memories with others and choosing the right procedures. Although the study uses a variety of perspectives to look at the relationship between organizational learning and innovation, it is still not difficult to see that there is a positive relationship between them. Therefore, we can draw the following assumption: there is a positive correlation between organizational learning and technological innovation.

## $H_a$ 4: There is a positive relationship between management involvement and technical innovation.

Because innovation itself has risks, management participation plays a crucial role in reducing the risks associated with innovation. Previous studies have shown that management involvement plays an important role in the development of internal innovation environment in enterprises (Lægreid et al. 2011). Innovation is a behavior with high risk and high cost, but the benefits it brings are immeasurable, so we can reduce this risk by managing participation.

The role of management is mainly involved in three aspects. First, it could ensure that every effort can be combined into a more visual subscription for all stakeholders; Second, the process of transforming ideas into products requires appropriate resources; Third, it will provide correct strategies and innovative ideas for marketing. Management involvement will improve technological innovation and marketing innovation by establishing a start using environment for innovation.

This ambient partially influenced by innovation of HC system, the system can meet the demands of companies to innovate to attract and retain talents, partly through the innovation of the nimble adequacy to other types of innovation management system. That is to say, management participation in innovation activities can enhance organizational innovation, thus promoting technological and marketing innovation. Therefore, suppose: there is a positive relationship between management involvement and technical innovation.

#### 2.6 Chapter Summary

This chapter mainly introduces 3 points. The first point is the detailed introduction of IV organizational culture, internal integration, organizational learning, management involvement and DV technological innovation by researchers, which is also the focus of this chapter. The second part introduces the theory used and proposed Framework, especially the Gap management involvement.

The third point postulates the relationship between each independent variable and the dependent variable. The researchers found in previous studies and their own research process that the relationship between each independent variable and the dependent variable is positive, and the independent variable has a positive influence on the dependent variable, which is also introduced in a larger space.

#### **3** RESEARCH METHODOLOGY

#### **3.1 Introduction**

The third chapter introduces research methods, population and analysis units, sampling frames, techniques and scales, data collection and data analysis. In the research approach, including exploratory, descriptive and explanatory, in the data collection, including the questionnaires design, measurement, procedure content normality, reliability, validity, correlation and multiple regression will be highlighted.

### 3.2 Research Approach: Exploratory, Descriptive, Explanatory

#### 3.2.1 Exploratory

Exploratory research is also called formula consider. The major purpose of these studies is to formulate a problem for more accurate expedition or working hypothesis from the perspective of operation. The main focus of these studies is to discover ideas and insights, to provide a broader idea for research, to enlighten and inspire researchers (C R Kothari. Gaurav Garg,2014).

Exploratory research is a preliminary study that analyzes data and explores the possibility of obtaining as many relationships between variables as possible without knowing the final application (R. Panneerselvam, 2004). This is the purpose of a study that explores both a little-known field and the possibility of specific research (Ranjit Kumar, 2014).

This paper is to use as the research methods of questionnaire and hypothetical problem, find out the article IV and DV, determine a good gap, looking for a good questionnaire, completes the hypothetical question and in-depth and profound analysis, find out the evidence and arguments, evidence that the positive relationship between IV and DV, and the current business, industry, or social positive impact and significance. This kind of research belongs to exploratory research, and this research belongs to exploratory research.

#### 3.2.2 Descriptive

Descriptive study refers to the study of the characteristics of a particular individual or group, while the diagnostic study determines the frequency of a thing or its relationship with other things. Studies on the correlation of certain variables are examples of diagnostic studies. On the contrary, studies on specific predictions, facts and characteristics of individual groups or situations are examples of descriptive studies (C R Kothari. Gaurav Garg, 2014).

As the name implies, descriptive research "describes" may be a phenomenon, a set of current situations or characteristics of organizations, people, etc. Descriptive research aims to describe things such as market potential and acceptance. Demographics and attitudes of new restaurant concepts or consumers visiting restaurants. In other words, descriptive research answers questions about the subject, content, place, time and manner of a particular question or situation.

When researchers have quite a good knowledge of existing literature, when the documents have relevant information about a problem or situation, the researchers of the role is to add more information when you describe it in more detail, especially on the characteristics of the problem or situation (Mukesh Kumar, Salim Abdul Talib, T. Ramayah 2013).

#### 3.2.3 Explanatory

Interpretive studies attempt to transparent why and how to establish a relationship between two sides of a situation or appearances. In an explanatory study, the main focus is to clarify why and how to establish relationships between two aspects of a situation or phenomenon. In clarifying and building relationships and maintaining relationships forever. (Ranjit Kumar, 2014)

#### **3.3 Research Method**

The research method can be understood as the transmission of all those methods/techniques/studies used (C R Kothari. Gaurav Garg,2014). Quantitative methods are rooted in rationalist philosophy. Explore by following a strict, structured, and predetermined assembly (Ranjit Kumar, 2014). Quantitative research examines the relationship between variables by collecting and analyzing digital or fractional dada using standardized measuring instruments (Vickil. Plano Clark Nataliya V. Lvankova , 2016). The qualitative method is rooted in the philosophy of empiricism. Investigate in an open, flexible, and unstructured way (Ranjit Kumar, 2014). Hybrid approach study: during the study, researchers combine quantitative and qualitative methods of data collection and analysis to best understand the purpose of the study. The way this process is carried out in a particular study is through a hybrid approach that takes into account factors and the researchers' personal, interpersonal, and social backgrounds (Vickil. Plano Clark Nataliya V. Lvankova , 2016).

#### 3.4 Population and unit of analysis

Population is the person to be studied by the target interviewee or researcher. All projects in any space of investigation constitute "the universe" or "the population". A complete enumeration of all items in a population is called a census or census. Clearly, for any study or survey, a census is not feasible (CR. Kothari, et al, 2014).Population is the entire population, event, or thing that researchers want to investigate. The researcher must define the target population based on the sample data to be collected.

Second, researchers must develop sampling frameworks, sampling methods and sample sizes. Third, when designing the questionnaire, we must take into account the age of the target interviewee, education and other demographic information, so as to ensure that the characteristics of the sample are similar to those of the target population (Mukesh Kumar, Salim Abdul Talib, T. Ramayah 2013).

In this paper, mainly in the organizational culture, organizational learning, internal integration and management involved in technology innovation, therefore the investigation object is required, the elderly, children, no large, medium and primary school students is a part of the work does not belong to the research object of this paper. The survey subjects in this paper are mainly working professionals aged between 25 and 60, and there is no gender difference between men and women. Therefore, the population in this study is the employees who are between 25 and 60 in Malaysia companies and the unit of the analysis is the individual of these employees in the companies.

#### 3.5 Sampling frame, technique and size

Sample framework: when you can discriminate all element substances of the study group, the list of all elements is called the sampling framework (Ranjit Kumar, 2014). The list of sampling units is called a frame or a sampling frame. The sampling frame contains the names of all the items in the universe. The size of the sample is the number of items that are composed of samples selected from the universe.

The sample size should neither be too large nor too small. It should be the best. The best samples are those that meet the requirements of efficiency, representativeness, reliability and flexibility (CR. Kothari, et al, 2014). This is the most critical

factor in any decision making process in business research because we have extended our results across the population based on our study of the selected sample.

The sample composition and size should be samples that they represent the entire population. It is usually a combination of theory, practical limitations and experience that produces the best sampling plan for any given study (Mukesh Kumar, et al, 2013). The sample is a subset of the whole. Each member of the example is called a theme. The total number of subjects in the sample is called sample size and is represented by "n".

It's a complete list of people who are interested in taking samples from it. All members of the sampling framework have the probability of being selected. Without some kind of sample framework, it is impossible to have a random sample of population except for a very small population. Sampling a sufficient number of factors from the population, so this research of the samples and the understanding of nature or characteristics will enable us to sum up these attributes or features as an overall element (Mukesh Kumar, T. Ramayah 2013).

On the sampling technique and the sampling size, this study will use the software GPower in 3.0 Version to determine the sampling size in the research. The sampling technique used in this study is convenience sampling and random sampling. To make sure the research can be conducted with a high accuracy, based on the GPower and the past research, the samples is set with the size around 200 and these can be collected in the organizations, such as schools, businesses and government agencies, preferably in technology companies.

## 3.6 Data collection (questionnaires design, measurement, procedure)

The research of data acquisition can be divided into two parts, one is the main data collection, the other is the two-data acquisition. (Mukesh et al 2013). When we use quantitative research methods, the questionnaire will be used in my research. In other words, quantification is the research method using the questionnaire. (T. Ramayah 2013).

#### 3.6.1 Questionnaires design (Instrumentation)

The design of the questionnaire depends on the purpose of data collection. This depends on whether researchers aim to collect qualitative or quantitative information (Salim Abdul Talib, T. Ramayah 2013). A questionnaire is a written list of questions and answers. In the questionnaire, since no one explained the meaning of the question to the interviewee, it is important to understand the question clearly (Ranjit Kumar, 2014).

Section	Items	Questions	Sources
А	Dependent variable		Manu (1992)
	Technical innovation	6	
в	Independent variable:		
	1. Organizational culture	16	Cameron and Quinn (1999)
	2. Internal integration	5	Narasimhan and Kim (2002) and Zhao et al. (2008)
	3. Organizational learning	12	Perez et al. (2004)
	4. Management involvement	4	Atuahene-Gima and Ko
			(2001).
С	Demographic profile	6	
	Total questions		

### Table 3.6.1 Instrumentation 3.6.2 Operationalization and Measurement

In operationalization, the researchers divide the operationalization level into five levels, each of which has different strengths. 1 is strongly disagree, 2 is strongly disagree, 3 is neutrally, 4 is strongly agree, 5 is strongly agree. With the strength and weakness, the respondents will be clear when filling out the questionnaire, so that their opinions can be accurately and effectively expressed.

Measurement is defined as the process of associating a number or symbol with the observed results obtained in the study. These observations can be qualitative or quantitative. (CR. Kothari, et al, 2014). Quantitative research is based on quantitative measurement of some characteristics. It applies to phenomena that can be expressed in quantities. On the one hand, qualitative research involves qualitative phenomena, that is, phenomena related to quality or type or involved (C R Kothari. Gaurav Garg,2014).

Research of Qualitative inquire into manners, behaviors, It gets in-depth and useful information through interviews or focus group experience participants. Quantitative research USES methods such as questionnaire survey or structured interview to generate statistical data through large-scale survey research (Salim Abdul Talib, T. Ramayah 2013).

#### 3.6.3 Procedure

A set of fixed activities or processes of action (with clear starting and ending points) must follow the same sequence in order to perform the task correctly. A repeating process is called a routine. Program diagram: describes the graphics or vision of the study process of activities in the hybrid method study (Vickil. Plano Clark Nataliya V. Lvankova , 2016).

#### 3.7 Data analysis

Data analysis is the process of extracting information from data. It involves multiple phases, including building data sets, preparing to process data, applying models, identifying key findings, and creating reports. After collecting the data, the study turned to the task of analyzing them. Create a classification and apply them to the original data by coding, tabulation, and statistical inference, which are closely related to the analysis of the data. (C R Kothari. Gaurav Garg,2014)

#### 3.7.1 Normality

Normality is an index that conforms to the normal distribution. Researchers detect the data and determine that the data conforms to the normal range. As a social construction, norms are first put forward in social sciences. in the interactive identity work of Goffman (1959,1961,1983). (Goffman, E. 1959), Encounter: two cities in interactive sociology, bobb-merrill, Indianapolis. Goffman, E. (1983).

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For Goffman, the key component of interaction sequence is normality. Normality is related to the order of interaction. "What ought to be" is defined in a specific social system. (Ryan, 2011). The normal hypothesis is one of the most misunderstood of all statistics. In multivariate regression, only the assumed interference terms of normal distribution are required.

It is the random error of the relation between independent variable and dependent variable in regression model. There is a different random variable in the sample, which explains the distinct between the survey value and the predicted value produced by the regression equation, and it is the interference term or noise distribution in all cases. It should be a sample of a normal distribution.

#### 3.7.2 Reliability

If the research tool is stable and consistent and can predict accurately, then it is reliable. This kind of meaning with similar research tools is called reliability. The higher the consistency and stability of the instrument, the higher its reliability. (Ranjit Kumar, 2014). Reliability: how consistent and repeatable the scores produced by a particular measurement program are. (Vickil. Plano Clark Nataliya V. Lvankova , 2016).

By way of determine the reliability of the data, when the Cronbach Alpha test is carried out for the project under each variable, If the result is below the standard level of 0.7, the data is not reliable for the input of this study, and it can not guarantee its accuracy. Conversely, When the Cronbach 's Alpha value is greater than 0.7, the collected data is accurate and reliable, and there is no need to collect reliable data again.

#### 3.7.3 Validity

Effectiveness is the ability of a tool to measure its design metrics: "effectiveness is defined as the degree to which research measures the degree to which it measures" (Smith 1991:106). Effectiveness is above all benchmark, indicating the extent to which apparatus measurements should be made.

Effectiveness can also be considered utility program. Another explanation, validity refers to the degree to the difference between what is found and what is found by the measuring instrument reflects the real difference between the subjects. (CR. Kothari, et al, 2014) . Validity: the degree to which accurate inferences are made based on test scores or other measures. (Vickil et al, 2016).

Effectiveness refers to the extent to which any measurement tool measures its expected consumption (Thatcher, 2010). Kaiser- meyer-olkin sampling adequacy measurements will be used in this study to make clear the applicability of the data which was collected to structural gauging. Represents variance ratio of variables that may touch off by potential elements. If the value is less than 0.5, the result of factor analysis may not be very effective. If the high value (close to 1) usually indicates that factor analysis may be useful for the collected data.

#### 3.7.4 Correlation

The terms of the relationship between the two variables are called correlation. Weak or lower correction means that variables are almost irrelevant, and strong or high means that there is a strong relationship between two or more variables. (Charton, 2007). Cevisions study: it mainly make used of study the relation between two or more variables (Ranjit Kumar, 2014). As with all statistical techniques, Some types of data are adapted to relevance only.

Correlation is applicable to measurable data of a meaningful amount, usually a certain amount. Simple classified data can't be used. The correlation coefficient (or "R") is identified as the relevant main result. Range from -1.0 to +1.0. If Range is hard upon 0, that means there is no flash between variables. If Range is aspiring, that signify when one variable gets bigger and the other variable gets bigger. If R was subtractive, that purport when one got bigger, another got littler.

#### 3.7.5 Analysis technique - Multiple Regression

A counting technique that can be used to analyze the relationship between multiple independent variables and a single dependent variable (measure) is called multivariate linear regression analysis (measure). but in some cases, some independent variables may also be nominal data. In the case of nominal independent variables, Dummy variables (usually carrying values 0 and 1) are introduced in the case of nominal variables. (T. Ramayah 2013)

Multivariable technology is mainly veteran and deals with flesh. They can analyze sophisticated data. According to most application, behavior studies, we usually use multivariate analysis techniques to obtain real results. In addition to being a tool for data analysis, multivariate techniques can contribute to multifarious types of decisions. (CR. Kothari, et al, 2014)

In SPSS, the researchers made multiple regression by selecting regression from the analysis menu. From regression, the researchers chose the "linear" option. When a linear regression dialog box appears, the researchers enter a numerical dependent variable, two or more independent variables, and he will eventually perform multiple regression in the SPSS.

#### **3.8 Chapter Summary**

In this chapter, the Exploratory, Descriptive and Explanatory methods in Research Approach are defined. Population and unit of analysis in this paper are defined. The Sampling frame, technique and size are explained. Three methods of questionnaires design, measurement and procedure in the Data collection are introduced in detail. In Data analysis, Normality, Reliability, Validity, Correlation and Multiple Regression methods are also included. In this department, every data analysis method is important, which will be the basis for the fourth part to use SPSS data analysis.

#### 4 DATA ANALYSIS, DISCUSSION AND FINDINGS

#### 4.1 Introduction

According to the requirements of the researcher's DV and the content of the survey, the data of 200 valid questionnaires should be collected at least. On this basis, the researcher distributed 240 questionnaires and recovered 225 questionnaires, among which 216 valid questionnaires, 90% of which were valid questionnaires, meeting the questionnaire survey standards.

In this chapter, research use SPSS statistics to collect the data of validity, reliability, descriptive, correlation and regression analysis. The analysis is divided into two categories. The first category is population analysis. For example, Gender, Age, Race, Academic qualification, Monthly income and Employment position. The second is IV (organisational culture, internal integration, organisational learning, Analysis of management involvement and DV(technical innovation), and chart comparison of the above data.

#### 4.2 Coding and data entry

In using SPSS data analysis, the data of the questionnaire should be coded and input first, so that the data can be entered more conveniently and the reliability and accuracy of the data investigated can be ensured. The questionnaire data here not only contains the questionnaire itself, but also contains the data content in the questionnaire. After the coding is done, the data is input in a smooth sequence.

#### 4.2.1 Coding

The researcher coded the data to be used, for example by gender, male code 1 and female code 2 for ease of use and viewing. For another example, in Race, the Malay code is 1, the Chinese code is 2, the India code is 3, and the Others code is 4. Meanwhile, the researcher codes the strength of identity, 1 is strongly disagree, 2 is strongly disagree, 3 is neutrally, 4 is strongly agree, 5 is strongly agree. By coding, research can effectively input data and prevent data errors.

#### 4.2.2 Data entry

Data entry can be done by hand or by machine, and researchers use manual entry. During the process of input, the completeness and validity of the questionnaire can be checked. After coding the 216 questionnaires, the researchers typed data one by one into a computer. Because there are many questions in this questionnaire, the input process may be wrong or missing data, but it will be completed carefully to ensure the accuracy of the data.

#### 4.3 Data screening

Data screening is the process of checking and analyzing the data that has been input and encoded according to the need of analysis. The process of data screening is very important. If the data is wrongly input or inaccurately input, there will be errors, which will affect the validity and accuracy of the data. Therefore, we should do a good job in the early screening.

#### 4.3.1 Check data error

The purpose of data error checking is very clear. It is to check whether there are errors in the input data, so as not to affect the accuracy of the questionnaire. There are two ways to check the data error. One is to observe whether the input error data is correct. For example, in the gender column, there are only two Numbers 1 and 2. Another way to do this is to check it by using the built-in tool in the Excel table, using "CTRL F ".

#### 4.3.2 Missing data

It is also very important to identify the missing data. If the data is incomplete, this questionnaire cannot play the result of the survey. If the data is lost, the final result of the data will also be affected. Therefore, before data entry, the first thing to check is whether each part of the questionnaire is complete, and the data complete questionnaire is coded into. When data entry, it should be carefully and carefully, so as to prevent data not being recorded.

#### 4.3.3 Pilot test

Table 4.3.sample	Table 4.3.3 pre-testing of the research instrument with 50 sample									
	Processing	g Summary	Reliabi	lity Statistics						
Variables	cases	valid	N of	Cronbach's						
			Items	Alpha						
TI	50	100%	6	.862						
OC	50	100%	16	.917						
II	50	100%	5	.778						
OL	50	100%	12	.895						
MI	50	100%	4	.752						

The first 50 copies of data were tested. The test results are as follows. Technical innovation has 6 problems, Cronbach's Alpha is 0.862, organizational culture has 16 problems, Cronbach's Alpha is 0.917, internal integration has 5 problems, Cronbach's Alpha is 0.778, organizational learning has 12 problems, Cronbach's Alpha is 0.895, management involvement has 4 problems, Cronbach's Alpha was 0.752, and the Reliability Statistics for each variable was greater than 0.7, which met the criteria. Therefore, the reliability test of the first 50 questionnaires provides data and samples for the following tests, and the data are reliable.

#### 4.3.4 Normality text

Normality is an index that conforms to the normal distribution. Researchers detect the data and determine that the data conforms to the normal range. For Goffman, the key component of interaction sequence is normality. Normality is related to the order of interaction. "What ought to be" is defined in a specific social system. (Ryan, 2011). The normal hypothesis is one of the most misunderstood of all statistics. In multivariate regression, only the assumed interference terms of normal distribution are required.

		ue 1, January-2019					
	Kolmog	gorov-Smir	mov <sup>a</sup>	s	hapiro-Wilk	:	
	Statistic	df	Sig.	Statistic	df	Sig.	
TI	.125	216	.000	.964	216	.000	2-
OC	.084	216	.001	.977	216	.002	
II	.081	216	.001	.981	216	.006	ormal
OL	.081	216	.002	.986	216	.004	Expected Normal
MI	.115	216	.000	.971	216	.000	

a. Lilliefors Significance Correction

In order to prove whether the IV and DVD amount data are normally distributed, the normal distribution detection of IV and DV is performed. In normal detection, the closer the Statistic value is to 0, the more normal the sample data will be. Statistic value, TI, OC, II, OL and MI values in table 1 are all close to 0, indicating that the probability of normal distribution of this data is very high, so the p value (Sig.) should be compared.

According to the P value (Sig.) is greater than 0.05, which proves that the data is normal. As shown in table 1, the values of TI, OC, II, OL and MI are all less than 0.05, so it is suspected to be non-normal distribution. Therefore, in order to explore whether the data is normal, researchers also need to analyze histograms and Q-Q Plot.

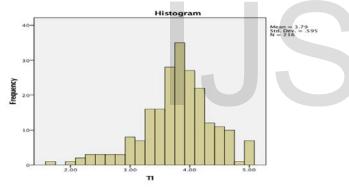


Figure 4.3.4-1a The Histogram illustration for Technical Innovation

This is the histogram of DV technical innovation. According to the intuitive judgment, the Mean value is 3.79 >3. Therefore, the trend is to the left. However, the researcher found that the trend was distributed symmetrically, so it was probably normal.

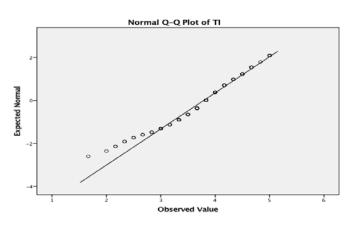


Figure 4.3.4-1b The Normal Q-Q Plot of Technical Innovation

This is the Q-Q diagram of DV technical innovation. According to the intuitive judgment, most of them are on the theoretical line, and researcher can determine that DV is suspected to be normal.

In order to study whether the data of the IV organizational culture is normal distribution, the normal distribution of the organizational culture is detected. In normal detection, the closer the Statistic value is to 0, the more normal the sample data will be. Statistic OC value in table 2 are all close to 0, indicating that the probability of normal distribution of this data is very high, so the p value (Sig.) should be compared. According to the P value (Sig.) is greater than 0.05, which proves that the data is normal. As shown in table 2, the values of OC are all <0.05, so they are suspected to be non-normal distribution. Therefore, in order to explore whether the data is normal, researcher also need to analyze histograms and Q-Q Plot.

4.4.3-2 Organisational Culture

	Table 4.3.4-2 Tests of Normality									
	Kolmog	orov-Sm	irnov <sup>a</sup>	Shapiro-Wilk						
	Statistic	df	Sig.	Statistic	df	Sig.				
OC1.1	.228	216	.000	.883	216	.000				
OC1.2	.241	216	.000	.873	216	.000				
OC1.3	.278	216	.000	.852	216	.000				
OC1.4	.274	216	.000	.847	216	.000				
OC2.1	.245	216	.000	.848	216	.000				
OC2.2	.237	216	.000	.875	216	.000				
OC2.3	.252	216	.000	.863	216	.000				
OC2.4	.259	216	.000	.849	216	.000				
OC3.1	.243	216	.000	.861	216	.000				
OC3.2	.257	216	.000	.856	216	.000				
OC3.3	.252	216	.000	.840	216	.000				
OC3.4	.277	216	.000	.839	216	.000				
OC4.1	.212	216	.000	.854	216	.000				
OC4.2	.274	216	.000	.856	216	.000				
OC4.3	.247	216	.000	.854	216	.000				
OC4.4	.277	216	.000	.832	216	.000				

a. Lilliefors Significance Correction

This is the histogram of IV organisational culture. According to the intuitive judgment, the Mean value is 3.80 >3. Therefore, the trend is to the left. However, the researcher found that the trend was distributed symmetrically, so it was probably normal.

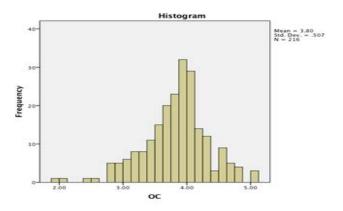


Figure 4.3.4-2a The Histogram illustration for Orgnisational Culture

This is the histogram of IV organisational culture. According to the intuitive judgment, the Mean value is 3.80 >3. Therefore, the trend is to the left. However, the researcher found that the trend was distributed symmetrically, so it was probably normal.

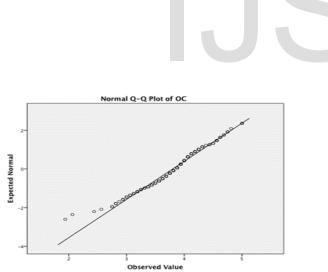


Figure 4.3.4-2b The Normal Q-Q Plot of Orgnisational Culture

#### 4.3.4-3 Internal Integration

	Table 4.3.4-3 Tests of Normality									
	Kolmogorov-Smirnov <sup>a</sup> Shapiro-Wilk									
	Statistic	df	Sig.	Statistic	df	Sig.				
II1	.235	216	.000	.853	216	.000				
II2	.269	216	.000	.861	216	.000				
II3	.247	216	.000	.860	216	.000				

II4	.248	216	.000	.873	216	.000
II5	.284	216	.000	.851	216	.000

a. Lilliefors Significance Correction

In order to prove whether the data of IV internal integration is normal distribution, the normal integration detection of internal integration is carried out. In normal detection, the closer the Statistic value is to 0, the more normal the sample data will be. Statistic II values in table 3 are all close to 0, indicating that the probability of normal distribution of this data is very high, so the value of p (Sig.) should be compared.

According to P value (Sig.) is greater than 0.05, and the criterion of normality of the data is proved. In table 3, it can be seen that II values are all less than 0.05, so it is suspected to be nonnormal distribution. Therefore, in order to explore whether the data is normal, researcher also need to analyze histograms and Q-Q Plot.

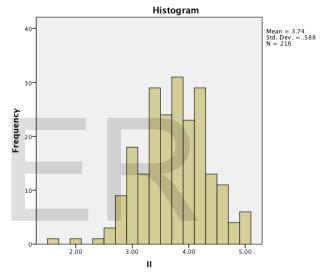


Figure 4.3.4-3a The Histogram illustration for Internal Integration

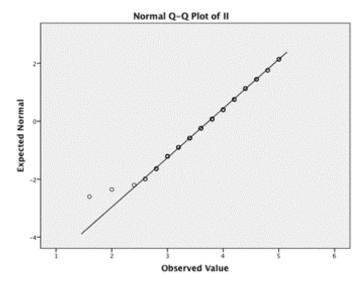


Figure 4.3.4-3b The Normal Q-Q Plot of Internal Integration

This is the Q-Q Plot of IV internal integration. According to the intuitive judgment, most of them are on the theoretical line, and researcher can determine that internal integration is suspected to be normal.

In order to prove whether the data of IV organization learning is normal distribution, the normal distribution detection of organizational learning is performed. In normal detection, the closer the Statistic value is to 0, the more normal the sample data will be. Statistic OL values in table 4 are all close to 0, indicating that the probability of normal distribution of this data is very high, so the value of p (Sig.) should be compared.

4.3.4-4	Organisational	Learning
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Table 4.3.4-4 Tests of Normality									
	Kolmogo	orov-Sn	nirnov <sup>a</sup>	Shapiro-Wilk					
	Statistic	df	Sig.	Statistic	df	Sig.			
OL1.1	.250	216	.000	.859	216	.000			
OL1.2	.248	216	.000	.858	216	.000			
OL1.3	.283	216	.000	.841	216	.000			
OL2.1	.241	216	.000	.863	216	.000			
OL2.2	.290	216	.000	.846	216	.000			
OL2.3	.233	216	.000	.867	216	.000			
OL3.1	.253	216	.000	.859	216	.000			
OL3.2	.249	216	.000	.866	216	.000			
OL3.3	.275	216	.000	.845	216	.000			
OL4.1	.261	216	.000	.842	216	.000			
OL4.2	.260	216	.000	.856	216	.000			
OL4.3	.269	216	.000	.831	216	.000			

a. Lilliefors Significance Correction

According to the P value (Sig.) is greater than 0.05, which proves that the data is normal. As shown in table 4, all OL values are 0 less than 0.05, so it is suspected to be non-normal distribution. Therefore, in order to explore whether the data is normal, researcher also need to analyze histograms and Q-Q Plot. Shown below:

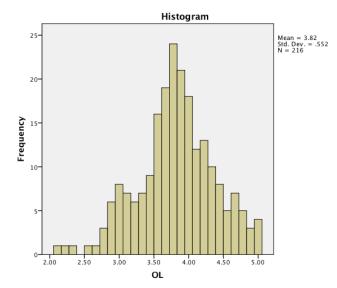


Figure 4.3.4-4a The Histogram for Organisational Learning

This is the histogram of IV organisational learning. According to the intuitive judgment, the Mean value is 3.82 >3. Therefore, the trend is to the left. However, the researcher found that the trend was distributed symmetrically, so it was probably normal.

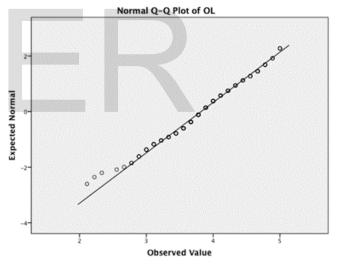


Figure 4.3.4-4b The Normal Q-Q Plot of Organisational Learning

This is the Q-Q Plot of IV organisational learning. According to the intuitive judgment, most of them are on the theoretical line, and researchers can determine that organisational learning is suspected to be normal.

	Table 4.3.4-5 Tests of Normality										
	Kolmog	gorov-Sm	irnov <sup>a</sup>	Shapiro-Wilk							
	Statistic	df	Sig.	Statistic	df	Sig.					
MI1	.267	216	.000	.857	216	.000					
MI2	.264	216	.000	.857	216	.000					
MI3	.274	216	.000	.833	216	.000					
MI4	.275	216	.000	.837	216	.000					

#### 4.3.4-5 Management Involvement

a. Lilliefors Significance Correction

In order to prove whether the data of IV management involvement is normal distribution, the normal distribution detection of management involvement is carried out. In normal detection, the closer the Statistic value is to 0, the more normal the sample data will be. Statistic MI values in table 5 are all close to 0, indicating that the probability of normal distribution of this data is very high, so the value of p (Sig.) should be compared.

According to the P value (Sig.) is greater than 0.05, which proves that the data is normal. As shown in table 5, all MI values are 0 less than 0.05, so it is suspected to be non-normal distribution. Therefore, in order to explore whether the data is normal, researcher also need to analyze histograms and Q-Q Plot.

This is the histogram of IV management involvement. According to the intuitive judgment, the Mean value is 3.87 >3. Therefore, the trend is to the left. However, the researcher found that the trend was distributed symmetrically, so it was probably normal.

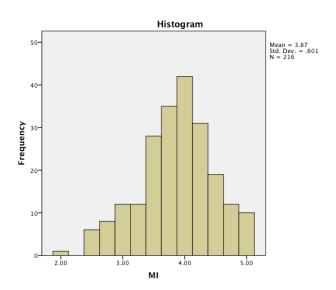


Figure 4.3.4-5a The Histogram illustration for Management Involvement

This is the Q-Q Plot of IV management involvement. According to the intuitive judgment, most of them are on the theoretical line, and researcher can determine that management involvement is suspected to be normal.

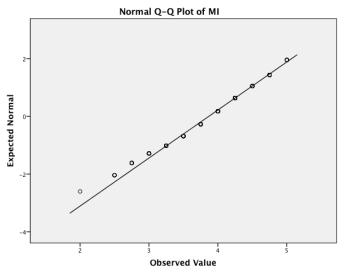


Figure 4.3.4-5b The Normal Q-Q Plot of Management Involvement

#### 4.4 Respondents' demographic profile

In this section of the analysis, the main demographic analysis of the chart, including, Gender, Age, Race, Academic qualification, Monthly income and Employment position.

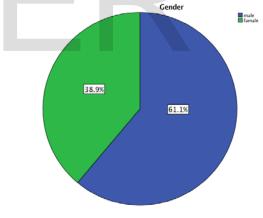


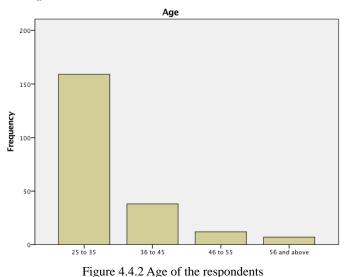
Figure: 4.4.1 Gender

Table 4.4.1 Gender								
Frequency Percent Valid Cumulative								
			Percent	Percent				
Valid male	132	61.1	61.1	61.1				
Female	84	38.9	38.9	100.0				
Total	216	100.0	100.0					

The survey of industry technological innovation, on gender and no special requirements, as long as the healthy body, age matched between 25 to 60 years old, can investigate, from the results of the survey, the proportion of men to engage in techInternational Journal of Scientific & Engineering Research Volume 10, Issue 1, January-2019 ISSN 2229-5518

nical innovation is larger, accounts for 61.1% of the total survey population, women make up 38.9% of the proportion of the survey, men more than women in the technology innovation industry.





In ages survey need to investigate the age is between 25 to 60 professional, researcher will be in this age group is divided into four parts, the first part for 25 to 35 years old, the second part is 36 to 45 years old, the third part is the 46 to 55 years old, the fourth part is 56 years of age or older, from the perspective of the result of survey, 25 to 35 years old population proportion is the largest, a total of 159 people, accounted for 73.6%,

followed by 36 to 45 years old, a total of 38 people, accounting for 17.6%, again for 46 to 55 years old man, a total of 12 people, accounting for 5.6%, with a minimum of 56 years of age or older, people only 7 people, accounting for 3.2%. It shows the main force of young people's technological innovation industry. Of course, the technical innovation industry also needs young people to make better innovations.

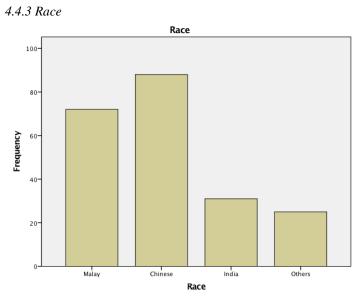


Figure 4.4.3 Race of the respondents

	Table 4.4.3 Race of the respondents									
				Valid	Cumulative					
		Frequency	Percent	Percent	Percent					
Valid	Malay	72	33.3	33.3	33.3					
	Chinese	88	40.7	40.7	74.1					
	India	-31	14.4	14.4	88.4					
	Others	25	11.6	11.6	100.0					
	Total	216	100.0	100.0						

Malaysia is a multi-ethnic country, these three ethnic Malays, Chinese, Indians crowd mainly formed in this country, in the race, the three ethnic groups account for the largest proportion, among them, the Malays to 72 people, accounting for 33.3% of the total population, the Chinese people, 88 people, accounting for 40.7% of the total population, India for 31 people, accounting for 14.4% of the total population, and other ethnic groups or countries for 25 people, accounting for 11.6% of the total population.

#### 4.4.4 Academic Qualification

In the academic Degree survey, researcher set 7 grades: SPM, STPM, Diploma, Degree, Master, PHD and Other. According to the results of the survey, Degree and Maser were the largest, with 92 and 74 respectively, accounting for 42.6% and 34.3% of the total survey, 1 respectively for SPM and STPM, and 9 for PHD, 4.2%, and 6 respectively, accounting for 2.8% of the total survey. The results show that the majority of people with Degree and Master have knowledge, and those with higher education have knowledge to lay the foundation for them to apply what they have learned to their work, so as to give better play to their ability and meet the requirements of technical innovation industry.

#### 4.4.5 Monthly Income

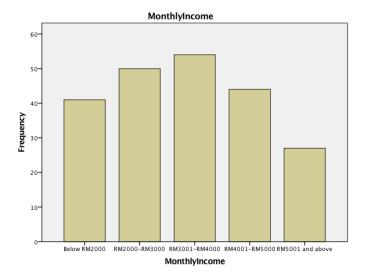


Figure 4.4.5 Monthly Income of the respondents

	Table 4.4.5 Monthly Income of the respondents								
		Frequency	Percent	Valid Percent	Cumulative Percent				
Valid	Below RM2000	41	19.0	19.0	19.0				
	RM2000- RM3000	50	23.1	23.1	42.1				
	RM3001- RM4000	54	25.0	25.0	67.1				
	RM4001- RM5000	44	20.4	20.4	87.5				
	RM5001 and above	27	12.5	12.5	100.0				
	Total	216	100.0	100.0					

In the Monthly Income survey, there were 41 people in the belowRM2,000 group, accounting for 19.0% of the total number of respondents, 50 people in the RM2,000-RM3,000 group, accounting for 23.1% of the total number of respondents, 54 people in the RM3,001-RM4,000 group, accounting for 25.0% of the total number of respondents, and 44 people in the RM4,001-RM5,000 group, accounting for 20.4% of the total number of respondents.

There were 27 people with monthly income of RM5,001 and above, accounting for 12.5% of the total survey. The results showed that the people engaged in technical innovation industry had a relatively balanced income, and the people above the middle income accounted for the majority, which is also

one of the reasons that this industry attracts young people.

4.4.6	Empl	loyment	Position
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Table 4.4.6 Employment Position of the respondents								
Valid Cum								
		Frequency	Percent	Percent	Percent			
Valid	Executive	60	27.8	27.8	27.8			
	Manager	57	26.4	26.4	54.2			
	Others	99	45.8	45.8	100.0			
	Total	216	100.0	100.0				

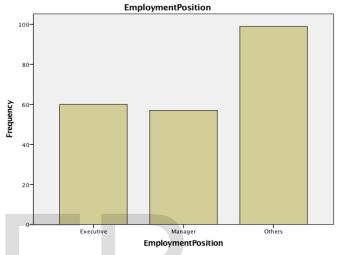


Figure 4.4.6 Employment Position of the respondents In the Employment Position survey, there are 60 employees who hold Executive positions, accounting for 27.8% of the total number of respondents; 57 employees who hold Manager positions, accounting for 26.4% of the total number of respondents; 99 employees who hold Others positions, accounting for 45.8% of the total number of respondents. The results show that the proportion of grassroots staff is larger, which is also in line with the proportion of workplace staff.

#### 4.5 Preliminary Data Analysis

In this part, Validity, Reliability, Descriptive, Correlation and Multiple Regression were mainly analyzed, as follows.

#### 4.5.1 Validity

	Table 4.5.1 KMO and Bartlett's Test								
			OC	II	OL	MI			
Kaiser-Meyer-Olkin		.875	.929	.791	.909	.772			
Measure of Sampling Adequacy.									
Bartlett's Test of	Approx. Chi-Square	439.086	1117.086	249.532	919.541	201.094			
Sphericity df		15	120	10	66	6			
	Sig.	.000	.000	.000	.000	.000			

In the Table 4.5.1 KMO and Bartlett's Test analysis of Technical Innovation, the value is 0.875, in the organisational culInternational Journal of Scientific & Engineering Research Volume 10, Issue 1, January-2019 ISSN 2229-5518

ture analysis, the value is 0.929, in the internal integration analysis, the value is 0.791, in the organisational learning, the value is 0.909, in the management involvement analysis. The value is 0.772, and the above values are all greater than 0.6, which conforms to the KMO analysis standard, and the value is all validity.

4.5.2 Reliability

Table 4.5.2 Reliability Statistics						
variables Cronbach's Alpha N of Items						
TI	0.842	6				
OC	0.894	16				
II	0.772	5				
OL	0.884	12				
MI	0.764	4				

In the Table 4.5.2 Reliability Statistics, the value of technical innovation is 0.842, the value of organisational culture is 0.894, the value of internal integration is 0.772, the value of organisational learning is 0.884, and the value of management involvement is 0.764. All the above values are higher than the standard of 0.7. According to the test results, this set of data is valid and accurate, so the reliability of this set of data conforms to the standard.



4.5.3 Descriptive

	Table 4.5.3 Descriptive Statistics									
	Ν	Minimum	Maximum	Mean	Std. Deviation					
TI	216	1.67	5.00	3.7917	.59525					
OC	216	1.94	5.00	3.7998	.50720					
II	216	1.60	5.00	3.7417	.58804					
OL	216	2.11	5.00	3.8194	.55201					
MI	216	2.00	5.00	3.8681	.60083					
Valid										
Ν	216									
(list-	210									
wise)										

In this Table 4.5.3 Descriptive Statistics, "N" represents the number, and a total of 216 questionnaires are entered. "Minimum" represents the Minimum value. For example, in the Technical innovation variable, the consent value given is 1.67, between 1 and 2. The "Maximum" represents the Maximum value, and the Maximum value given by the five variables is 5. In the "Mean", for example, the Mean value obtained from the organisational culture is 3.7998. In std. Deviation, take internal integration as an example, and the obtained value is 0.58804.

#### 4.5.4 Correlation Analysi

	Table 4.5.4 Correlations							
		TI	OC	II	OL	MI		
TI	Pearson Cor- relation	1	.732**	.600**	.683**	.613**		
	Sig. (2-tailed)		.000	.000	.000	.000		
	Ν	216	216	216	216	216		
OC	Pearson Cor- relation	.732**	1	.664**	.821**	.734**		
	Sig. (2-tailed)	.000		.000	.000	.000		
	Ν	216	216	216	216	216		
Π	Pearson Cor- relation	.600**	.664**	1	.651**	.578**		
	Sig. (2-tailed)	.000	.000		.000	.000		
	Ν	216	216	216	216	216		
OL	Pearson Cor- relation	.683**	.821**	.651**	1	.752**		
	Sig. (2-tailed)	.000	.000	.000		.000		
	Ν	216	216	216	216	216		
MI	Pearson Cor- relation	.613**	.734**	.578**	.752**	1		
	Sig. (2-tailed)	.000	.000	.000	.000			
	N	216	216	216	216	216		
**. C	orrelation is sig	nificant at 1	the 0.01 le	evel (2-tai	led).			

In the table 4.5.4 Correlations, the Pearson Correlation of the organizational culture is 0.732, the Pearson Correlation of the internal integration is 0.600, the Pearson Correlation of the organizational learning is 0.683, and the Pearson Correlation of the management involvement is 0.613. The value of each group is greater than 0.6. The stronger the value, the stronger the correlation between DV and 4 IV.

In the table 4.5.4 Correlations, the Sig values of the organizational culture, internal integration, organizational learning and management involvement are all 0.000, and the value of each group should be less than 0.05. The values of this group are all in accordance with the standard, which are correct and effective, indicating DV and 4 The correlation between IV is correct and effective.

4.5.5 Multiple Regression Analysis

	Table 4.5.5-1 Model Summary								
Mod	Mod R Std. Error of the Esti-								
el	R	Square	Adjusted R Square	mate					
1	1 .758 <sup>a</sup> .574 .566 .39219								
a. Pree	dictors: (	a. Predictors: (Constant), MI, II, OC, OL							

	Table 4.5.5-2 ANOVA <sup>a</sup>								
Mod	el	Sum of Squares	df	Mean Square	F	Sig.			
1	Regres- sion	43.725	4	10.931	71.06 7	.000 <sup>b</sup>			
	Residual	32.455	211	.154					

Total	76.181	215	
a. Dependent Vari	iable: TI.		

b. Predictors: (Constant), MI, II, OC, OL

	Table 4.5.5-3 Coefficients <sup>a</sup>									
		Unstai	ndardized Co-	Standardized						
		e	fficients	Coefficients						
Μ	odel	В	Std. Error	Beta	t	Sig.				
1	(Con- stant)	.274	.211		1.300	.004				
	OC	.511	.100	.435	5.081	.000				
	Π	.162	.063	.160	2.575	.001				
	OL	.175	.094	.162	1.867	.003				
	MI	.078	.071	.079	1.093	.006				

a. Dependent Variable: TI

In Multiple Regression Analysis, the table Model Summary, R Square, was 0.574, converted to a percentage of 57.4%, which indicated that the influence of 4 IV on DV in the paper was 57.4%, and that the influence was over 50%. The higher the value, the better the influence. Therefore, there was strong positive Regression between DV and 4 IV.

In the ANOVA<sup>a</sup> table, the Sig value is 0.000, less than the standard value of 0.05. Therefore, in this analysis, the value of ANOVA<sup>a</sup> is correct and valid. Coefficients in table, constant Sig value is 0.000, organisational culture of Sig value is 0.000, internal integration of Sig value is 0.001, organisational learning Sig value is 0.003, management involvement of Sig value is 0.006, Each value is less than the standard value of 0.05, so all values in this table are correct and valid

#### 4.6 Research objective: findings and discussion

The main focus of this research is technological innovation. Therefore, it is very important to analyze whether organizational culture, internal integration, organizational learning and management involvement have an impact on technical innovation. This is because when IV and DV are not in a positive relationship, there is no impact on DV. So researcher need a positive correlation between IV and DV to have an effect on DV.

Therefore, this study identified organizational culture, internal integration, organizational learning and management participation as four factors that influence technical innovation. Therefore, this study identified the organizational culture, internal integration, organizational learning and management involvement as the four factors affecting technological innovation through the use of learning and quantitative methods of previous researchers and the results of SPSS data analysis.

#### 4.6.1 Organizational culture and technical innovation.

The first study showed a positive relationship between organizational culture and technological innovation. Many scholars have also proved the relationship between the two (Harris and Ogbonna, 2000, Cheng 2002). The organizational culture of each enterprise is different, which in turn shows the uniqueness of the organizational culture of the enterprise.

Only when enterprises have a strong organizational culture can they promote a good management within the enterprise. Between strong management, employees can cooperate with each other to make the work more efficient, and better promote technological innovation. On the contrary, it will hinder technological innovation. The emphasis on organizational culture by managers will increase the uniqueness of organizational culture, increase the emphasis on product technology, and the innovation of technology will improve the efficiency of enterprises, thus bringing profits to enterprises.

In the table 4.5.4 Correlations, taking the 216 people in the survey as an example, 73.2% of them believed that there was a positive correlation between organizational culture and technical innovation. In the Table 4.5.1 KMO and Bartlett's Test, the value of organizational culture is 92.9%. According to the validity analysis, there is a strong correlation between organizational culture and technological innovation, which indicates that there is a positive relationship between organizational culture and technological innovation. Therefore, this result is established.

#### 4.6.2 Internal integration and technical innovation

The second research goal is to study the relationship between internal integration and technological innovation. There has been a lot of literature to prove that there is a significant and positive correlation between internal integration and technological innovation (Huang et al, 2013; Baharanchi, 2009), especially Koufteros et al (2005). In the enterprise, the integration of knowledge, technology, products, services and other resources will bring greater value to enable innovation to play a role.

Any fragmented, unconsolidated resource can't deliver its maximum value, so internal integration is an important factor in technological innovation. In the relationship between internal integration and technical innovation , the value of internal integration in table 4.5.2 Reliability Statistics is 0.772, which is greater than the standard of 0.7, indicating that there is a positive relation between the two.

In the Table 4.5.4 Correlations, there are 60% of the investigators believe there is positive correlation between technology innovation and internal integration. Therefore, it can be proved that there is a positive relationship between internal integration and technical innovation. The results show that the positive relationship between the two is established.

#### 4.6.3 Organisational learning and technical innovation

The third goal relates to the relationship between organizational learning and technological innovation. The innovation of products and processes can be strengthened and organizational learning (Forrester, 2002; Scarbrough, 2003). Some quantitative methods research also provide positive evidence for product innovation and overall OL process or organizational learning ability (Alegre and Chiva, 2008).

Murat and Baki (2011) find that process innovation is influenced by organizational learning ability, and this effect is positive. Any organization in any enterprise must treat learning as an important factor. No matter whether it is an individual or an organization, without learning, without the acceptance and absorption of knowledge, it is impossible to have a long-term development, let alone innovation, so organizational learning plays an important role in technological innovation, and we must pay full attention to an important factor of organizational learning as technical innovation

In the chart of the Table 4.5.4 Correlations, among the 216 people surveyed, 68.3% of people think that there are positive correlation between organizational learning and innovation. In the KMO chart, the value is 0.909, close to 1, which is a high percentage of positive relationships. In Reliability Statistics, the value of organizational learning is 0.884, far exceeding the standard of 0.6. From the three charts, it can be concluded that there is a positive relationship between organisational learning and technical innovation and result is established

#### 4.6.4 Management involvement and technical innovation

The fourth study shows that there is a positive relationship between management engagement and technological innovation. Senior management should be able to get important information about the company and its market directly with its prominent position. Their positions enable them to see or adopt the trend that will affect the future of the company (Elenkov et al., 2005).

Because innovation itself has risks, management participation plays a crucial role in reducing the risks associated with innovation. Previous studies have shown that management involvement plays an important role in the development of internal innovation environment in enterprises (Lægreid et al. 2011). Although the company's HC policy and management settings will inevitably have a variety of impacts on innovation, these policies and settings depend mainly on the t strategic positioning and attitude of senior managers (Joshi and Chawla, 2011).

Management involvement and implementation can play a regulatory role, have a positive impact on internal technological innovation, allow enterprises to generate more profits and promote enterprise development. On the contrary, the management participation is not good, the employees are not suitable for each other, and there is no team spirit, which will inevitably affect the normal operation of the enterprise. Naturally, technological innovation cannot be discussed. Therefore, the factors of management participation are also very important.

In the Table 4.5.1 KMO and Bartlett's Test, the value of Management Involvement is 0.772, which is greater than 0.6, indi-

cating a positive relationship between the two. In the Reliability Statistics table, the value of Management Involvement is 0.764, which is also a positive relationship. In the Correlations table, 61.3% of respondents believe that there is a positive correlation between Management Involvement and technological innovation. The above three sets of data fully confirm the positive relationship between Management Involvement and technological innovation. Therefore, the result is established.

#### 4.7 The overall hypotheses testing results

Table 4.7 The overall hypotheses testing results				
Hypothesis	Finding			
There is a positive relationship between organi-	supported			
zational culture and technical innovation.				
There is a positive relationship between internal	supported			
integration and technical innovation.				
There is a positive relationship between organi-	supported			
zational learning and technical innovation.				
There is a positive relationship between man-	supported			
agement involvement and technical innovation.				

#### 4.8 Chapter summary

In this chapter, researchers introduced coding and data entry, data screening, and tested the first 50 pieces of data to get reliability answers. Normality text was carried out for the article data, and the normal distribution of IV and DV was introduced in detail. This chapter will focus on the use of SPSS software on the data collected by the gnosis.xml. validity, reliability, descriptive, correlation and multiple regression analysis, and to make the results analyzed. Chapter 4 is also a very important part of the whole paper, and the researchers also used valid data to fully prove the relationship between IV and DV.

## 5 SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter mainly summarizes the research of this paper, introduces the methods used in the research process and the conclusions of the research. State the implications for the research field, the implications for organization and theory, and finally give practical and future research advice. Suggestions for future research are the most important and should be enlightening to later researchers

#### 5.2 Summary of the study

In this paper, the first chapter mainly introduces the background of technological innovation and puts forward the problem statement and research objective of the research. The contribution to the research is also introduced. Of course, the research is not perfect, there are limitations, limitations are also explained.

In the second chapter, the researchers explained definition,

overview and past research in detail on DV technical innovation, IV organizational culture, internal integration, organizational learning, and management involvement, as well as the effects generated.

In chapter 3, methods used in the study, population and data collection, research framework, the variables of this study and research design are introduced. The methods used in data analysis are detailed in terms of normality, reliability, validity and correlation.

The fourth chapter mainly uses SPSS Statistics to analyze the data of the questionnaire. The content includes data entry and coding, data screening, respondents' demographic profile, etc. In this process, the first 50 copies of data are tested, the results are reliable, and all IV and DV are analyzed normally. In chapter 4, Findings and Discussion are the key parts and have been analyzed in detail.

The fifth chapter mainly summarizes the research, including the research method, significance, contribution and Suggestions for practice and future. Researcher hope this article can contribute to practice and enlighten future researchers. Nearly 20,000 words were used to prove the positive effect and significant influence of organizational culture, internal integration, organizational learning and management involvement on technical innovation. Of course, there will be some deficiencies, which need to be continued by later researchers, and different methods can be used to demonstrate the positive relationship and impact of other IV on technological innovation.

#### 5.2.1 Methodology

Research methods mainly include quantitative, qualitative and mixed methods. In this paper, researchers mainly use quantitative research methods. Quantitative research examines the relationship between the variables by collecting and analyzing digital or fractional dada using standardized measuring instruments (Vickil. Plano Clark Nataliya V. Lvankova, 2016).

The researcher made 240 questionnaires, investigated relevant personnel, and analyzed the collected and screened data with SPSS Statistics, including normality, reliability, validity and correlation. This method is in line with the research method of this paper, which makes the research of this paper have a deeper process and plays a positive role in helping the research of this paper.

#### 5.2.2 The summary of the findings of the present study

In Chapter 4, Research objective: findings and discussion, researcher has studied and used SPSS data analysis to fully demonstrate that there is a strong positive relationship between organizational culture, internal integration, organizational learning, management participation, and technological innovation. And prove that IV has a significant impact on DV,

proving that the positive relationship between IV and DV is established. The results are as follows: there is a positive relationship between organizational culture, internal integration, organisational learning, management involvement and technical innovation. Therefore, the research results are established and the research is effective and achieve the purpose of this study

#### 5.3 Conclusions

The purpose of this paper is to prove that there is a positive relationship between IV organizational culture, internal integration, organizational learning, management involvement and DV technology innovation, and IV has a positive and significant impact on DV. Through the analysis and research in this paper, the results show that IV is positive to DV, and the effect of IV on DV is positive and significant, which achieves the purpose of this study and provides a reference for future research.

#### **5.4 Implications**

Science and technology are productivity, and technological innovation is a strategic support for improving social productivity and overall national strength. Through the research in this paper, technological innovation has a positive impact on organizations or enterprises, rising to a strategic level, technological innovation should be placed in the core position of social development, highlighting the important role of technological innovation in social productivity.

#### 5.4.1 Implications on the field of study

Research on technological innovation is also a research in emerging industries. Many scholars have already become interested in it and started research in many aspects. In the course of this research, we found that the technological innovation we are doing is not following the old path of others or repeating the work of others. Otherwise, there will be no innovations and no technological advances. The purpose of technological innovation is to better create wealth and economic value, thus effectively serving society and humanity.

Therefore, technological innovation should be considered as an important place to combine the economic and social benefits of technological innovation. At the same time, operability is also important for technological innovation. In the process of innovation, there should be plans, specific methods of operation and analysis of results. Otherwise, technological innovation is an empty talk, which makes many people who want to participate in technological innovation feel overwhelmed and lose interest in technological innovation.

#### 5.4.2 Implications for organizations

Technological innovation is done in an organization and will inevitably have a good or bad impact on the organization. In an organization, especially a company, products must be constantly updated. Without innovation, it is easy to imitate others, imitate more, and without their own innovative products, this organization will lose its vitality and competitiveness. Without competitiveness, it is difficult for the enterprise to survive in the market. Therefore, technological innovation should make the organization, especially the management, pay full attention to, coordinate the cooperation of various business departments in product production, strengthen cooperation between product lines, create better products to strengthen competitiveness, and create a virtuous circle, thus allowing this organization More energetic to participate in market competition and contribute to the field of technological innovation in the entire society.

#### 5.4.3 Implications for theory

In the theoretical study of this paper, the two theories of the management theory (Dean et al, 1994) and absorptive capacity (Cohen and Levinthal 1990) are both studied and adopted by predecessors. The continuous development and change of society is dynamic, and these theories were put forward long ago, and they are relatively static. It is necessary to find out whether these theories are still applicable to the current state of development and change.

Has anybody developed and revised these theories? It has been found in theoretical studies (Lillian Do Nascimento Gambi et al, 2015) that the management theory has been revised and expanded. (Heba Fawzi Ayoub et al, 2017) has extended the absorptive capacity theory, and the theory has not been in a static state. There have been researchers constantly updating and correcting, which is the significance and contribution to theoretical research.

#### **5.5 Recommendations**

Good advice can bring more researchers to the reference value, so that more researchers can take less detours. In the research process of this paper, the researchers conducted indepth thinking and discussion, mainly giving advice on practice and future research. In addition, good Suggestions can bring inspiration, let technological innovation play its role better, promote enterprises to produce better products and provide better services, bring convenience to people's life and contribute to human development.

### 5.5.1 Recommendations for practice **First: to the individual**

It is suggested that individuals acquire technological innovation ability to promote personal career development. Any individual in achieving certain levels of knowledge, skills and master a foreign technology, is very important in the career development, the company is very recognition of technology innovation ability, and this part of the people as a key object to develop the company, so suggest that people who want to have a better career development, to study the technology innovation ability, become a bright spot in the personal career development.

#### Second: to the enterprise

It is suggested that enterprises adopt technological innovation to improve market competitiveness. The times are changing, technology is constantly innovating, and companies need to play the role of production technology and actively improve production technology. From the perspective of the market, as an important subject, enterprises can accurately grasp the market demand.

Through technical innovation and perfection of establishing a technological innovation system, enterprises can not only effectively grasp the development direction of technological innovation, but also promote the innovation mode of science and technology industry. The formation time is significantly shortened. Therefore, it is recommended that enterprises be market-oriented, enhance their sense of innovation, and combine economic system innovation with enterprise technology innovation to improve their innovation capabilities and enhance their market competitiveness.

#### Third: to the government

It is recommended that the government adopt technological innovation to make the country more advantageous to the forefront of the world. In the competition of comprehensive national strength, technological innovation accounts for a very large proportion. Implementing a technical innovation strategy is of strategic significance for a country and government to form new advantages in international competition and enhance long-term development momentum.

If a country wants to develop in the long run, it cannot rely on the low cost advantage of the labor and resource environment. Compared with the advantages of low cost, technological innovation is not easy to imitate and has high added value. The innovative advantages thus established last long and are highly competitive. Implementing a technology innovation development strategy, accelerating the transformation of low-cost advantages into innovative advantages,

and providing a powerful impetus for the sustainable development of the government. Implementing a technology innovation strategy is of practical significance for improving economic growth efficiency and accelerating the transformation of economic development. Therefore, it is recommended that the government adopt technological innovation to make the country more advantageous.

#### 5.5.2 Recommendations for future research

There is no end to research, and perfect research is also imperfect, this is also the source of ideas and input for future researchers. Only by constantly exploring, exploring more ideas, providing more Suggestions and implementing more research practices in future research can we make contributions to the development of human beings. Researchers offer future research recommendations from the following three aspects:

#### **One: for terms of population**

In terms of population recommendations, the study is not limited to staff, but can also be adapted to students. Science and technology are changing with each passing day. The education department in Malaysia has launched a science and technology practice course among students, which can enable students to participate in the survey, make the population survey more extensive and make the parameters more theoretical.

#### Two: for IV factor selection

1.In IV factor selection, other factors can be selected. There are many factors influencing technical innovation. In this study, researcher choose organizational culture, internal integration, organizational learning, management involvement, and other factors influencing technological innovation, such as value, science policy, research investment, talent training and education, and so on. Different factors will have different effects and technical parameters. Therefore, researchers need to carefully choose.

2.Whether there is a regulatory relationship in the choice of IV should be discussed by future researchers. Among the four IV's in this paper, Gap management involvement plays a regulatory role. In an organization or enterprise, if there is no good management participation, no good leadership level, even a good enterprise will be scattered. If there is no good management in an organization, technological innovation is out of the question. Therefore, in the selection of IV, whether there are regulatory factors can be used as a reference, which can make the relationship between IV closer and better influence and promote DV.

3.At the same time, it is also possible to explore the depth of IV and DV. During the research process, many IVs were found to have an impact on DV. Which ones are suitable for which ones are not suitable, and which ones have large impacts. When choosing, you need to think carefully before making conclusions. The depth of IV and DV will inevitably affect the results of DV. Therefore, the depth of IV and DV should also be considered.

#### Three: for the sample

It is recommended to set a sample in the future measurement, setting the same ratio of male to female, which can reduce the possibility of obtaining gender bias results, which makes the data more convincing and the data parameters more valuable, which is also for future researchers. future research is still a long way off, and more researchers are needed to explore.

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