THE ANALYZING OF SAFETY PERFORMANCE IN PT CHINA WEST DEVELOPMENT INDONESIA

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The Panel of Examiners declare that the skripsi entitled "**THE ANALYZING OF SAFETY PERFORMANCE IN PT CHINA WEST DEVELOPMENT INDONESIA**" that was submitted by Cui Kuan majoring in Management from the Faculty of Business was assessed and approved to have passed the Oral Examination on January 19th , 2019.

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ORIGINALITY

I declare that this skripsi, entitled "**THE ANALYZING OF SAFETY PERFORMANCE IN PT CHINA WEST DEVELOPMENT INDONESIA**" is, to the best of my knowledge and belief, an original piece of work that has not been submitted, either in whole or in part, to another university to obtain a degree.

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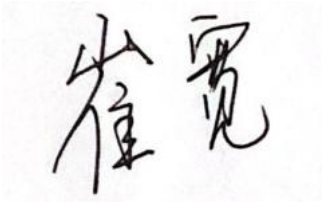

Cui Kuan

ABSTRACT

Safety performance is the basis of the overall safety of enterprises, and good safety performance plays a positive role in realizing the overall safety of enterprises. In order to further explore the influencing factors of safety performance of construction enterprises.The purpose of this study is to analyze the factors affecting safety performance in PT China West Development Indonesia. Quantitative research method was used to deal with this study, and data were collected and analyzed on the basis of questionnaires. The respondents were distributed in PT China West Development Indonesia 33 respondents, all employees of the company, were sampled by non-probabilistic sampling technology. Data analysis techniques that were used are multiple linear regression coefficients and F-testing to test the simultaneous influence with significant of 5% (α = 0.05). And through multiple regression analysis of SPSS 21.0, it is found that in PT China West Development Indonesia, safety communication and safety attitude have a significant influence on safety performance, while safety awareness, safety culture and safety competency have no significant influence on safety performance.

Key words: *Safety Performance, Safety Awareness, Safety Communication, Safety Culture, Safety Attitude, Safety Competency*

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CHAPTER I

INTRODUCTION

1.1 Research Background

Construction industry has a large number of employees ,and the same time, it is a very high proportion of work-related accidents and diseases. It is the most dangerous industry in many countries and has brought huge loss of life and property.(Zhu ,2017)

According to the International Labour Organization (ILO), the total number of major occupational safety accidents in the world in 2003 was 355,000, of which 60,000 (16.9%) occurred in the construction industry. That is to say, there will be a fatal accident in the industry every 10 minutes. (Liu ,2013) In addition, in industrialized countries, the proportion of job-related deaths occurring on construction sites is as high as 25%-40%, while the proportion of the total labor force employed in this industry is 6%-10%.（Chen , 2013）

According to the news released by Ting (2018), the number of fatalities in accidents in the field of safety production has steadily declined since 2013, reflecting the gradual improvement of Chinese overall security situation in the process of urbanization and structural adjustment. It is amazing that the death toll in the construction industry has risen since 2016 when the general trend has improved, and the range is still quite large, which seems to be out of line with the natural law. The following figure is Deaths toll from Accidents in Chinese Construction Industry 2013-2018.

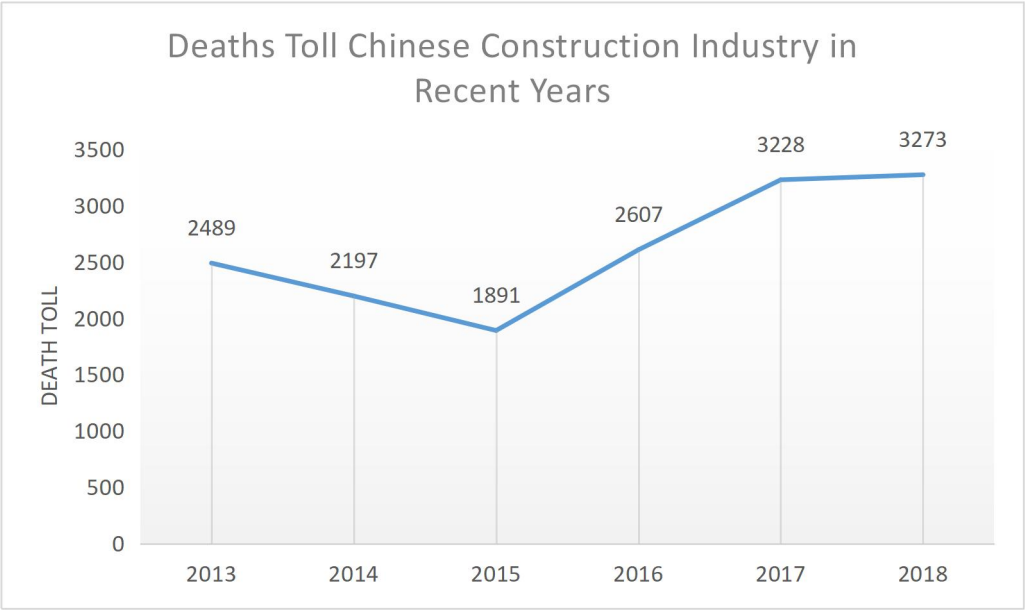

Figure1-1 Deaths from Accidents in Chinese Construction Industry 2013-2018

Source: (Ting, 2018)

From Figure 1-1, it can be seen that the number of deaths from construction accidents in China is declining first and then rising. In recent years, although China has established a safety production management system for construction projects which is more in line with the national conditions, the number of deaths due to construction safety accidents still exceeds 1000 people every year, and the direct economic losses caused by construction safety accidents are more than 10 billion yuan every year. In a word, the reasons for the frequent occurrence of safety accidents are complex, including market environment, enterprise and project management, and construction workers' poor safety performance.

This research mainly studies the safety performance of Chinese construction industry in Indonesia. Therefore, the researchers made statistics on the construction accidents of Chinese enterprises in Indonesia.(Take PT.China West Development Indonesia as an example)

PT.China West Development Indonesia has put into operation the first self-built factory overseas, the Indonesian Mekarta Plant, and the first overseas independent legal person enterprise, the Indonesian Construction West Company, has been formally established, which has broken the long-standing single mode

of technology export development and has milestone significance. And winning the bid for Indonesia's Mekarta project, signed the Jakarta-Bandung high-speed railway strategic agreement with China Hydropower.

With regard to the safety of employees in enterprises, the current situation of safety production is stable. In 2017, the company did not have any major production safety accidents at or above the level, and realized zero death and disaster in safety production. Legal work is strongly guaranteed and audit supervision is steadily promoted.(He, 2017)

Before that, there were some personnel safety incidents at PT China West Development Indonesia This mixing station:

1.In November 2017.Mr Badru, a former employee of the PT China West Development Indonesia Materials Department , fell from the roof of the car because he had to climb up the supplier's car to check the density of the material in mixing station . It led to a fracture of the right leg and was sent to the hospital. After a period of rest and recovery, he could not continue to work.

2.In April 2018. The daily worker that he was working in this area batching plant. he fell accident like the leg touch or crashing bucket wheel loader. on that time, the daily worker did not know that he stand in near unloading place. and the iron of bucket loader little touches the leg of daily worker. and its enough hurt, and his leg bloody because very sharp the iron of bucket loader.

3.In September 2018 .There is a mixer operator to check the internal parts of the car for damage.His arm accidentally touched the high-pressure steam from inside the engine.As a result, the operator's arm was inflamed and injured and went to the hospital for dressing.

Regulations:

PT China West Development Indonesia has some safety regulations for employees. For example, if employees have to do something that has injury they actually must use safety gears such as: helmet, boots, glasses, and vest.

PT China West Development Indonesia also tried to always remind employees about some dangerous effect with some sticker that was put all over the plant. 15km/jam is for the car that goes inside batching plant area. It means they should drive at maximum 15km/hour.

(*Figure1-2: PT China West Development Indonesia human resources department and Office Department. 2018)*

Then, PT China West Development Indonesia has yellow sticker line on the road to mark the lane for car. The route is from production room, to material room, and then to office room.

(*Figure1-3: PT China West Development Indonesia human resources department and Office Department. 2018)*

FIRE TRAINING

PT China West Development Indonesia also has safety training in the event of fire. This training was delivered by Gunawan Adhitama (safety manager). PT China West Development Indonesia employees were taught what to do if the event of fire suddenly occur. This training was also watched under the supervision of state fire department and regional disaster management agency of Bekasi City. Employees was told about type of fire, how to differentiate the type of fire and how to handle such accident. There's two types of method can be used for fire fighting, the traditional way and modern way. PT China West Development Indonesia safety manager were taught the traditional way first using only gunny sack and water. The state fire fighters describe step by step how to extinguish the fire using gunny sack and water. Both the company's employees and outsource employees tried to fought the fire using traditional equipment. Then Gunawan

Adhitama (safety manager) is using the modern way which is using fire extinguisher. Gunawan Adhitama (safety manager) also taught what should employees do if there was a victim in a fire accident. After the training, now all employees understand the basic of fire fighting. They're able to use both the traditional and modern method. PT China West Development Indonesia will provide more and more training to protect all employees from accident that may happens in the workplace.

(*Figure1-4: PT China West Development Indonesia human resources department and Office Department. 2018)*

(*Figure1-5: PT China West Development Indonesia human resources department and Office Department. 2018)*

AS FOR IMPLEMENTATION:

PT China West Development Indonesia employees do wear safety gears when they're working. Especially if they go to project place. And the car also followed yellow line when they go to production room, material room, or office room with the speed of below 15km/hour.

PUNISHMENT:

1.If someone doesn't wear safety gears, their colleagues and manager will keep reminding each other.

2.If someone already got hurt, PT China West Development Indonesia always pay monthly health insurance to the government. This way, the employees will be taken care of at the hospital until their health is fully recovered. So, instead of punishing them, PT China West Development Indonesia takes care of them until they can be fully recovered.

(*Source: PT China West Development Indonesia human resources department and Office Department. 2018)*

In a word, the personal safety of employees is of vital importance to the development of enterprises. Therefore, enterprises also need to be more systematic and responsible for the personal safety of employees. Meanwhile, employees also need to be responsible for their own safety. (Kong, 2018)

In the process of building construction safety management on the one hand, affects the life property safety of the operators and users, on the one hand affect the construction and development of national economy and society, strengthen the efforts in the course of construction, safety management, increase the safety awareness of workers and responsibility consciousness, supplement and improve the safety management system in the process of construction, raising the scientific nature and effectiveness of safety management, in order to promote the sustainable development of construction industry of the country, safeguard the country's social order to make due contributions.(Li, 2014)

1.2 Problem Identification

In recent years, the problem of safety in production has long plagued the stability and development of most construction enterprises. According to the survey and statistics of safety accidents in the construction industry, there will be some potential safety hazards in the construction work of employees, and there will be some personal safety accidents in the construction industry. Because the construction industry is more complex than other industries, various stakeholders are facing constant challenges because of their work needs. Because each job involves many safety and risk factors, each industry needs to establish a quality and safety management system (Mehta, 2010).At the same time, risk factors such as organizational structure, communication, clear instructions, safety culture, norms and standards, training, leadership and responsibility have an influence on the safety performance of the entire workplace. In summary, the personal safety of employees not only affects individuals, but also directly influences the interests of enterprises and related safety management. Therefore, the personal safety performance of employees and the development of enterprises affect each other. (Ismail , 2012)

Based on this situation, this paper focuses on the safety performance in construction enterprises. This paper makes an empirical analysis on the safety performance in construction enterprises and some independent variables influencing safety performance. On the basis of summarizing the research results of scholars on safety performance, this paper divides safety performance into safety awareness, safety communication , personal attitude, safety culture of enterprises, safety competency. And these independent variables influencing the dependent variable of safety performance. (Samad, 2012)

1.3 Statement of Problem

Therefore, the statement of problem was listed as below:

1. Is the safety awareness influences significantly partially, toward safety performance at PT China West Development Indonesia?
2. Is the safety communication influences significantly partially, toward safety performance at PT China West Development Indonesia?
3. Is the safety attitude influences significantly partially, toward safety performance at PT China West Development Indonesia?
4. Is the safety culture influences significantly partially, toward safety performance at PT China West Development Indonesia?
5. Is the safety competency influences significantly partially, toward safety performance at PT China West Development Indonesia?
6. Are safety awareness, safety communication, safety attitude, safety culture , safety competency, these 5 factors influence significantly togetherness, toward safety performance at PT China West Development Indonesia?

1.4 Objective

This research will discuss and get the answer about the impact of factors on safety performance in construction industry. Moreover, the data from: employees in PT China West Development Indonesia were surveyed with questionnaires on their safety performance. During this research, the research objective is tending to:

1. To Find out the influences of safety awareness towards safety performance at PT China West Development Indonesia.
2. To Find out the influences of safety communication towards safety performance at PT China West Development Indonesia.
3. To Find out the influences of safety attitude towards safety performance at PT China West Development Indonesia.

4. To Find out the influences of safety culture towards safety performance at PT China West Development Indonesia.
5. To Find out the influences of safety competency towards safety performance at PT China West Development Indonesia.
6. To Find out the togetherness influence of safety awareness, safety communication, safety attitude, safety culture, safety competency towards safety performance at PT China West Development Indonesia.

1.5 Significance of the Study

This study focuses on the influences of safety awareness, safety communication, safety attitude, safety culture and safety competency on safety performance. The major factors involved in this study for safety performance are expected to be of great significance to the following aspects:

For the company: This study will help PT China West Development Indonesia to have a clearer and more comprehensive understanding of the safety performance of the entire staff. At the same time, let every employee realize the importance of safety performance. It is helpful to improve the safety of the whole company. Reduce the occurrence of future safety accidents.

For future researchers: This study will help future researchers to understand the factors influencing safety performance more comprehensively, and then pay more attention to safety performance. And to increase future researchers' experience in the field of safety performance will help them manage safety performance in their future career.

1.6 Research Limitations

1.6.1 Scope

The research scope of this paper focuses on the safety performance. The safety performance is taken as the research object (dependent variable). The safety awareness, safety communication, safety attitude, safety culture, safety competency are taken as the research objects. These factors are independent variables.

1.6.2 Limitation

The limitation of this study focuses on PT China West Development Indonesia employees. As a result, fewer people were surveyed. And the PT China West Development Indonesia survey can only represent the company's survey data, can not be generalized. Because PT China West Development Indonesia belongs to an overseas company invested by China in Indonesia, it was founded relatively late, so the data collection of some related security information will not be perfect.

1.7 Thesis Organization

Systematic writing of this research is described as follows:

CHAPTER I - INTRODUCTION

This chapter contains the research background, research question, research objectives, scope and limitation, and thesis organization.

CHAPTER II - LITERATURE REVIEW

This chapter describes the theories and literature related to the research. In addition to containing theoretical basis, this chapter also includes previous research and research gap related to this research.

CHAPTER III - METHODOLOGY

This chapter will focus on methodology consisting of research framework and

theoretical framework, hypothesis, operation definition of variable, research method, sampling plan, research design and data analysis.

CHAPTER IV - RESULTS AND DISCUSSIONS

This chapter contains the result and analysis from all the data collected by the researcher including pre-test, respondent's profile, descriptive analysis, multiple regression analysis, classical assumption test and interpretation result.

CHAPTER V - CONCLUSION AND RECOMMENDATION

This chapter contains conclusion and recommendation from the results of the research.

CHAPTER II

LITERATURE REVIEW

Chapter II mainly studies the factors influencing the safety performance . In addition, this chapter also explains the topic through websites, periodicals, related books and so on. Discuss safety performance as a dependent variable. The independent variables are safety awareness, safety communication, safety attitude, safety culture , safety competency. This chapter is focused on how independent variables influence dependent variables and the research gap.

2.1 Safety Performance

Safety performance shows how safe an organization is. High levels of safety performance indicate how well the site is organized to identify the role of safety management activities (Mohamed, 2011). Safety performance can also be referred to as "personal behavior or behavior in almost all jobs to promote the health and safety of workers, customers, the public and the environment" (Burke et al., 2012).

In occupational safety literature, safety performance is considered to be multidimensional. It is measured by lag, advance and other indicators. The number of accidents/injuries and near misses is the most significant indicator of safety performance (Hinzeet al.,2015). As accidents are unpredictable and rarely occur in the workplace, they are relatively insensitive to safety performance as a lagging indicator (Zahoor et al., 2017). Considering the above situation, the use of damage as a lack of safety performance predictor promoted the attempt to use qualitative indicators (e.g., safety behavior) of measuring safety performance (Hon, 2012).

2.2 Independent Variable

2.2.1 Safety Awareness

Safety Awareness means that production must be based on people's safety consciousness. In production activities, people are alert to various external environmental conditions that may cause damage to themselves or others. Safety Awareness also refers to the sum of psychological activities carried out by people's physical and mental conditions and the state not affected by adverse factors. People are in a state of vigilance and vigilance in production activities, under various conditions that may cause casualties or other accidents for themselves and others. (Bai, 2017)

The Australian Mining Commission [MCA] (2014) defines safety awareness as a state of mind in which people are constantly aware of the possibility of injury and have been taking appropriate actions. This means continuous and conscious efforts to understand working conditions, especially their associated risks, such as through safety audits, safety inspections and the sharing of safety information, including through means of mitigating hazards such as safety meetings and briefings, and often acting safely in hammocks.

The Oxford Advanced Learning Dictionary defines consciousness as having knowledge, interest and understanding of something. According to (Meager, 2012) when a person is fully informed of a topic, he will realize its existence and its wider theme. (Meager et al, 2014) View knowledge as a stronger "concept" than consciousness, because without substantive knowledge of the subject, consciousness can be displayed, and vice versa.

2.2.2 Safety Communication

Safety communication refers to the exchange of information about security issues between two or more workers in the workplace (Hoffmann et al., 2014). The purpose

of this safety communication is to enable people, tasks, processes and systems to interact purposefully and collaboratively to achieve health, safety and environment (HSE) objectives. The way people interact will determine whether they can understand and participate in the security process (Vecchio, 2013). Safety communication (an open, free-flowing communication, frequent interaction on safety issues) has a significant influences on accident attribution, employee safety behavior, safety commitment and safety performance (Hoffmann et al., 2014). Therefore, it is necessary to further study this kind of safety communication in order to better understand its relationship with other safety results.

According to Vecchio (2013), effective security communication should include: "[a] clear communication and open discussion on security issues with all employees from different levels in one or more organizations, [b] encouragement of security behavior by providing feedback and [c] implementing security programs based on lessons learned". In addition, effective communication mechanisms are essential for employees to participate in safety activities, to gain cooperation and support, and to maintain a positive culture (Cigularov et al., 2010). Therefore, clear and constructive safety communication can improve safety knowledge, deepen the understanding of safety behavior, reduce risk behavior and strengthen safety work practice. Researchers Alsamadani et al. (2014) point out that safety communication can be modeled as formal or informal communication, with many types, such as policies and procedures, incident reporting, workplace access, and performance statistics. Formal safety communication involves sharing security knowledge through pre-established channels dedicated to security-related work, such as formal communications from superior managers (i.e., weekly meetings), formal written communication (i.e., posters, signs and bulletin boards), and toolbox conversations (i.e., briefings on instr). Simple rules and training (i.e. training new employees to ensure they understand and understand the working environment and how to deal with safety-related issues) before completing tasks or tasks. There is also an informal communication between employees, namely temporary communication (Alsamadani et al., 2013).

Communication is the medium of forming, cultivating and maintaining beneficial communication between leaders and subordinates. Effective leadership occurs when communication between leaders and followers is characterized by mutual trust, respect and commitment (Northouse, 2010).

2.2.3 Safety Attitude

Safety attitudes refer to employees' beliefs, opinions and values about workplace safety (Cox, 2013). Security attitudes reflect individuals' perceptions of security policies, procedures and practices (Rundmo, 2014), including personal obligations and responsibilities for security. Safety attitudes are clearly related to the safety climate at the group or organizational level (Neal, 2014) or to the common employee perception of safety-related organizational policies, systems and practices, but separated from it, this can be summarized as a precedent for safety over productivity (Zohar, 2012).

Safety attitudes are considered to be the key proximal determinants of safety violations or compliance, which have been established in previous studies (Guo, 2016). Individuals tend to adjust their security attitudes to suit their social environment, where the more vulnerable their colleagues are to violations, the worse their personal security attitudes are. When people expect perceived social support and production pressure to form personal safety motivation, through this contradiction in security attitudes, safety violations are in turn affected (Guo, 2016). Perceived social support may promote individual behavior to be safer, while perceived production pressure may reduce individual safety attitudes. (Huakang , 2018)

2.2.4 Safety Culture

The term safety culture was first formally used in the preliminary report on the Chernobyl accident (IAEA, 2013). There is no dispute about the relevance of safety culture to safety operations (Flin, 2014). Reason, indeed, regards it as a concept that "its time has come". The British Health and Safety Commission (HSC) endorsed this

position and defined the concept as "... Individual and group values, attitudes, perceptions, abilities and behavioral patterns are the products of which, consequently, provide a number of characteristics expected in a positive safety culture, which determine the commitment, style and attitude to safety culture. Organizational health and safety management. Organizations with a positive security culture are characterized by communication based on mutual trust, a common understanding of the importance of security and confidence in the effectiveness of preventive measures.

Most definitions of safety culture summarize the common beliefs, values and attitudes of a group. Since human behaviour (and therefore safe or unsafe behaviour at the individual level) is partially guided by personal beliefs, values and attitudes (Fazio, 2013), sustainable workplace safety may be individual-based and construct a common belief that safety is important in the organization. The obvious theme in the definition of safety culture provided is the subject of individual norms. (Ostrom, 2015) argue that a culture is made up of social norms that are self-evident rules of conduct that, if not followed, lead to sanctions. An example of positive safety practices may be that employees report all procedural violations. (Reason, 2013) argues that this norm can only develop under what he calls a "reporting culture" in which employees are free to report their mistakes and misses to management without being unfairly punished. An example of a less positive safety specification might be working on live equipment without isolation equipment when under time pressure. Understanding the overall safety culture of an organization, site or working group may be difficult, but identifying and understanding key safety specifications may be a more manageable way to address specific issues. (Muthuyadav, 2015)

2.2.5 Safety Competency

The word competence means the ability to perform skills or tasks in a way that is mastered or expertise. Competence is a defined behavior or group of behaviors that promote sustained job performance. Specifically, competence is a kind of knowledge, skill or ability, including personal comprehensive work experience and professional

knowledge. Competence is a description that defines effective or successful performance of roles and responsibilities. (Beyer, 2017)

To improve safety awareness and legislate the safety competency of occupational health and safety awareness, employers not only require employees to complete their work tasks, but also to fulfill many safety requirements at the same time. Employees must not only independently complete work tasks and achieve the standard quality level, but also complete work tasks in a safe and timely manner.(Kangari, 2015)

A key safety competency is the ability to identify and optimize human and environmental factors that enable and support optimal human performance. Human factors such as personal knowledge, skills, experience, risk tolerance and attitudes influence safety performance. (Birnberg, 2012)

2.3 Previous Research

According to several factors influencing the safety performance in the construction industry. Table 2.1 include some previous similar literature research for reference.:

Table 2.1 The Previous Research

NO	AUTHORS	TITLE	Variables	Results
1.	Mohd Nasrun Mohd Nawi, Siti Halipah Ibrahim, Rohaida Affandi, Nor Azalina Rosli, Fazlin Mohamad Basri	Factor Affecting Safety Performance Construction Industry (2016)	Independent: Management, Safety Culture, Behaviour, Awareness Dependent: Safety Performance	Through qualitative analysis, the types of accidents on construction site and the factors affecting safety performance are determined, and the ways to reduce the accidents with low safety performance are put forward. Falling is the most common type of major accidents. Awareness and management are the main problems faced by the construction personnel, resulting in poor safety performance. At the same

				time, awareness and management have a greater impact on employee performance. Safety culture has moderate influence on employees' safety performance. Employee behavior has little effect on employee safety performance.
2.	Zubaidah Ismail , Samad Doostdar, Zakaria Harun	Factors influencing the implementation of a safety management system for construction sites (2012)	Independent: Resources, Management, Personal, HRM/Incentive, Relationship, Dependent: Safety Management System	This study found that among the factors affecting the success of the safety management system, personal factors have the greatest impact, and safety awareness is the most important factor among the sub-factors constituting the team. They are all concerned about the needs of management so that their employees can better understand and understand security issues. Resources and management factors had moderate impact, HRM/incentive and relationship factors had less impact.
3.	A.R. Rafidah, M.N.Shahrina, S. Rohani, A.M. Mumtaz	The Relationship of Safety Communication, LMX and Safety Commitment : Conceptual Model (2014)	Independent: Safety Commitment, Safety Compliance, Safety Participation, Safety Climate	This paper conceptually explores the relationship between safety communication, leadership communication and employee safety commitment in key safety organizations. The main purpose of this study is to establish the relationship between variables in order to strengthen concepts by critically reviewing and reviewing the literature in

			Dependent: safety performance , safety culture	the context of security. From extensive discussions, It is found that safety communication, leadership communication and safety commitment are interrelated and have a significant influence on the development of organizational safety performance and safety culture.In important security organizations, communication plays a critical role in ensuring safety performance.
4.	Nayef Saad	The Influence of Safety Culture on Safety Performance in Saudi Arabian Construction Industry (2016) Skripsi	Independent: organizational culture; safety cultural; Safety Policies; Dependent: Safety Performance	The conclusion of this study is that in the whole study, the government's participation in ensuring construction safety has not received enough attention. However, their role is actually very critical because they are the parties drafting, formulating and implementing safety regulations. Secondly, the safety culture has no significant impact on Saudi construction industry, just because the safety culture is very poor. In addition, safety culture is not supported by safety-related standards, nor is there a clear conscious attitude or behavior to support safety.
5.	Chia-Kuang Lee, Yusmin Jaafar	Prioritization of Factors Influencing Safety Performance on	Independent: Management Activities on Site , Incentives, Policy,	This study starts with factors, in which management activities are the main factors, and safety inspection has a significant impact on safety

		Construction Sites: A Study Based on Grade Seven (G7)Main Contractors' Perspectives (2012)	Personnel, Technical, Process Dependent: Safety Performance	performance. Incentives have the least impact on safety performance. The rest are Policy, Personnel, Technology, Process. These factors have moderate impact on safety performance.

Source: Constructed by Researcher (2018)

2.4 Research Gaps

Compared with previous studies, this study focuses on a specific company, and analysis some factors influencing safety performance through internal analysis. In this study, quantitative methods were used to collect data by designing questionnaires, and the influencing factors were analyzed by SPSS software. Focusing on observing which independent variables have significant influences on dependent variables, while previous studies have focused on explaining how independent variables influences dependent variables. Moreover, this study mainly studies safety performance factors, which are different from other external factors that have been studied in the past. Through the safety awareness, safety communication, safety attitude, safety culture and safety competency of these independent variables for specific analysis. At the same time, some important independent variables relative to the safety performance were added. Help future researchers to provide a more specific research direction.

Because PT China West Development Indonesia is a construction company from overseas investment in China to Indonesia. The company mainly produces all kinds of concrete required by the construction industry. There are some safety problems in the process of producing concrete. Because PT China West Development Indonesia has had some employee safety incidents before, so employee safety has always been the main concern of the company. Therefore, this research mainly studies the safety performance at PT China West Development Indonesia, and finds out the main factors influencing the safety performance. Employees working at PT China West Development Indonesia were asked to fill out safety performance questionnaires

one by one. At the same time, the safety questionnaire will be distributed to all employees in paper form.

CHAPTER III

METHODOLOGY

Chapter III includes research framework, theoretical framework, hypothesis, operational definition, Research design, Sampling plan, validity and reliability test, classical assumption test, multiple linear regressions, hypothesis test and coefficient of determination.

3.1 Research Framework

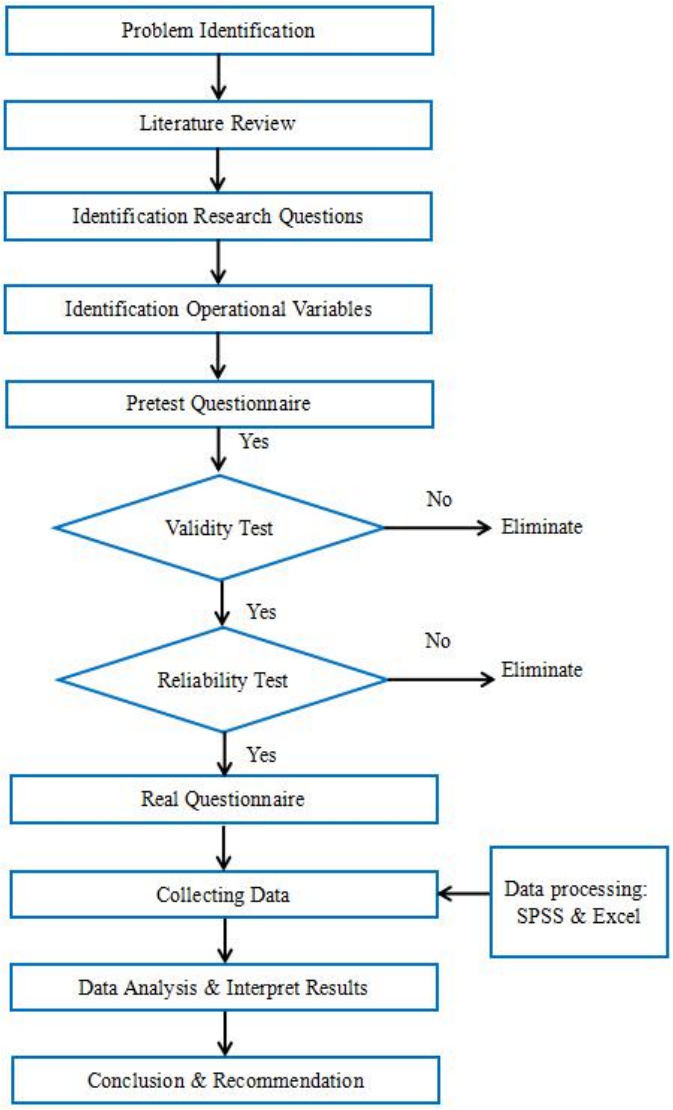

Figure3.1 Research framework

Source: Constructed by Researcher (2018)

The main purpose of this paper is to study the factors affecting the safety performance. Researchers will analyze the impact of safety awareness, safety communication, safety attitudes, safety culture and safety capabilities on safety performance. The results will be analyzed through the above steps.

3.2 Theoretical Framework

Theoretical framework was developed to generate more understanding of the research. As shown in the figure below, there are five independent variables and one dependent variable.

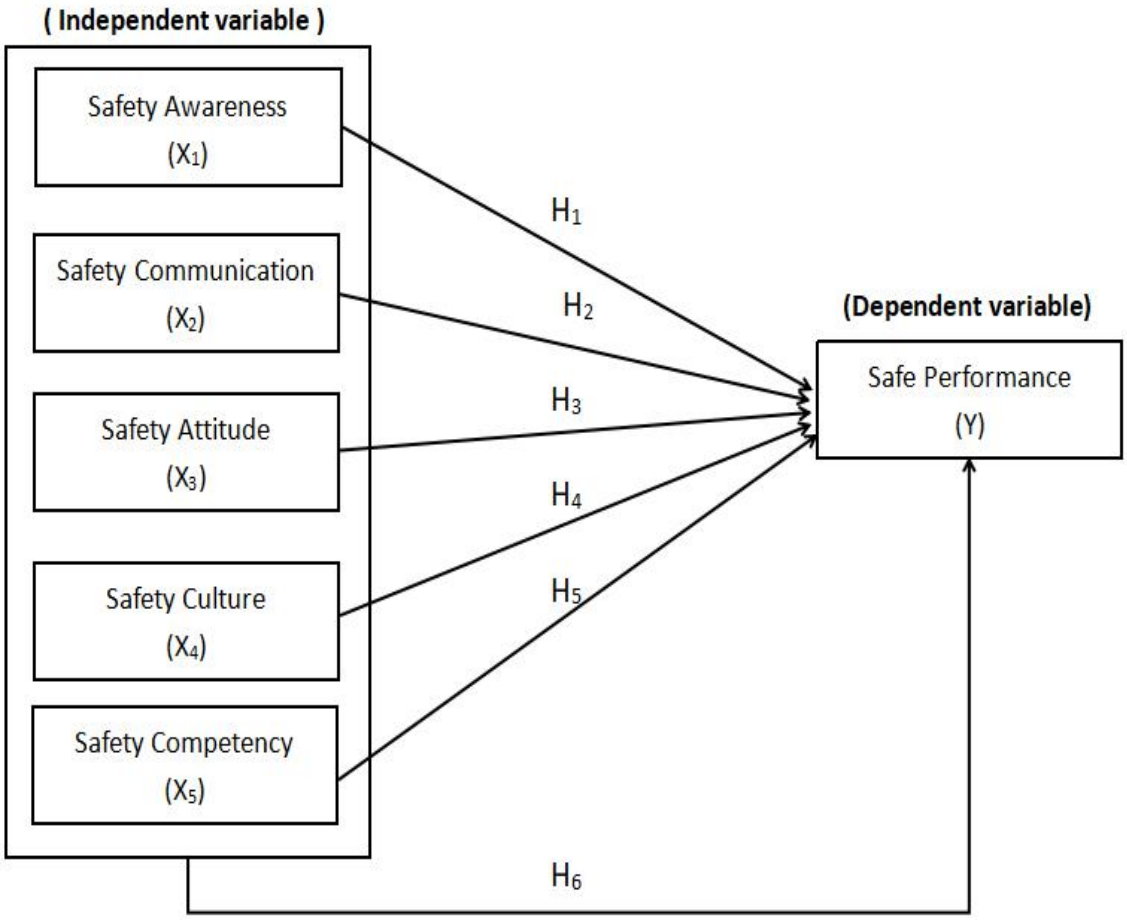

Figure 3.2 The Theoretical Framework

Source: (Ismail, Samad D and Zakaria H, 2012)

Based on the theoretical framework of Figure 3.2 above, this study takes safety performance as a dependent variable (Y). Five independent variables safety awareness

(X_1), safety communication (X_2), safety attitude (X_3), safety culture (X_4) and safety competency (X_5) are explained to construct the framework of this study. In order to prove this theory, this study uses effective methods comprehensively, systematically and scientifically, which provides a basis for future data analysis.

3.3 Hypothesis

Therefore, the following hypothesis are proposed:

Hypothesis 1: There is a significant influences of safety awareness toward the safety performance at PT. China West Development Indonesia.

Hypothesis 2: There is a significant influences of safety communication toward the safety performance at PT. China West Development Indonesia.

Hypothesis 3: There is a significant influences of safety attitude toward the safety performance at PT. China West Development Indonesia.

Hypothesis 4: There is a significant influences of safety culture toward the safety performance at PT. China West Development Indonesia.

Hypothesis 5: There is a significant influences of safety competency toward the safety performance at PT. China West Development Indonesia.

Hypothesis 6: There are simultaneously significant influence of safety awareness, safety communication, safety attitude, safety culture, safety competency toward the safety performance at PT. China West Development Indonesia.

3.4 Operational Definition

Table 3.1 Definition of Terms

No	Variables	Definition	Indicator
1.	Safety Awareness (X_1)	Safety Awareness means that production must be based on people's safety consciousness. In production activities, people are alert to various external environmental conditions that may cause damage to themselves or others.(Bai, 2017)	Psychological activities; Mental conditions; Personal awareness
2.	Safety Communication (X_2)	Safe communication refers to the process of exchanging information on security-related issues between two or more people in the workplace (Hoffmann, 2014).	Interact purposefully; Collaboratively; Exchanging information
3.	Safety Attitude (X_3)	Safety attitudes are considered to be the key proximal determinants of safety violations or compliance, which have been established in previous studies (Guo, 2016).	Individuals positive; Negative ; Safety violations; Compliance
4.	Safety Culture (X_4)	Safety culture provided is the subject of individual norms. (Ostrom, 2015) argue that a culture is made up of social norms that are self-evident rules of conduct that, if not followed, lead to sanctions.	Common beliefs; Values attitudes; Individual norms

5.	Safety Competency (X_5)	A key security Competency is the ability to identify and optimize human and environmental factors that enable and support optimal human performance. Human factors such as personal knowledge, skills, experience, risk tolerance and attitudes affect personal safety performance. (Birnberg, 2012)	Optimize human; Safety training; Adequate and Effective
6.	Safety Performance (Y)	Safety performance shows how safe an organization is. High levels of safety performance indicate how well the site is organized to identify the role of safety management activities (Mohamed, 2011). Safety performance can also be referred to as "personal behavior or behavior in almost all jobs to promote the health and safety of workers, customers, the public and the environment" (Burke et al., 2012).	Organization Public and environment; Behavior; Safety management

Source: Constructed by Researcher (2018)

3.5 Research Design

This study adopts quantitative research methods. Quantitative research generally uses deductive method to infer: hypothesis is based on theoretical development, and then collect data to test hypothesis. So it shifts from theory to data. Quantitative research is generally normative: it focuses on generalization and devotes itself to the development of universal statements or norms. Therefore, the data collected are often aggregated among individuals (e.g.by comparing group averages). This study was completed by quantitative method. In this study, we use SPSS to analyze and process data.

In this study, researchers used questionnaires to conduct quantitative research and

collect data. Here, everything in the research process - goals, designs, samples, and questions raised by researchers' plans are predefined. It is more appropriate to quantify changes to determine the extent of problems or phenomena.

Variables include dependent and independent variables. The dependent variables are safety performance, and the independent variables are safety awareness, safety communication, safety attitude, safety culture and safety capability. Because there are more than one independent variable and dependent variable, this study uses standard multiple regression analysis and stepwise multiple regression analysis with 5% error margin (95% confidence level) to test the hypothesis proposed in the previous chapter. Multivariate regression is a regression with two or more independent variables on the right side of the equation (Baker, 2014).

3.6 Sampling Plan

In this study, researchers used non-probabilistic sampling technology. Questionnaires will be distributed randomly within the company. For all the respondents, the opportunity of the questionnaire survey is equal. The total number of samples in this study is based on PT China West Development Indonesia employees. Therefore, non-probabilistic sampling technology is adopted in this study. Selecting the right sample can provide accurate data or information and prove the result quickly.

3.6.1 Population

Population is the sum of all the common features and cosmic elements that share research objectives (Malhotra, 2010). According to this study, it was mainly conducted in PT China West Development Indonesia. So in this research, the population are employees who work in PT. China West Development Indonesia.

Because PT China West Development Indonesia is a construction concrete company from China to Indonesia. Therefore, the main employees in the company are:

42 Indonesian employees .

3 Indonesian interns (Indonesian 3) and 3 Chinese interns (Chinese 3).

15 Chinese employees (Chinese 15 all managers).

Source: PT China West Development Indonesia human resources department (2018)

3.6.2 Sampling Size

Sample size refers to the statistical data of a single sample or observation. The selection of sample size is a key determinant of the project. During the organizational sampling survey, the sampling error directly affects the size of representative samples (Jon Zamboni, 2014).

According to the statistics of PT China West Development Indonesia Human Resources Department. There are about 63 employees in this company. Because of the limited number of employees in the company, non-probabilistic sampling method is adopted in this study, which mainly surveys the front-line employees of the construction industry, rather than the top employees of the work management leadership. Therefore, in order to determine the sample size, PT China West Development Indonesia was selected as the sample size for 33 respondents.

3.6.3 Data Collection method

Quantitative data collection methods rely on random sampling and structured data collection tools, which adapt different experiences to predetermined response categories. They produce results that are easy to summarize, compare and summarize.

Researchers collect sample data information through questionnaires, and the sampling technique used by researchers is non-probabilistic sampling, which means that some people drawn from the population have no chance to be selected as the subject of the sample (Sekaran, 2010). Otherwise, researchers use purposeful sampling, a technique for determining samples based on specific considerations and criteria (Sugiyono,2013). Researchers use paper forms to develop questionnaires and fill out questionnaires.

This means that in this study, researchers take the company as a whole. Researchers selected representative employees from all departments to conduct questionnaires. The questionnaire was filled out in paper form. In order to facilitate Indonesian employees to fill out the questionnaire, the Indonesian version of the questionnaire is specially produced, because some Indonesians' English level is not particularly good.

Therefore, n = 33 will be used in this study and n= 15 will be used for pre-test. Researchers will use data from human resources departments in PT. China West Development Indonesia. Total personnel statistics for PT. China West Development Indonesia by December 2018.

3.6.3.1 Pre-test

Pre-test is done to determine the validity and reliability of the questionnaire that has been arranged. In general, sample sizes for trials are between 15 and 500 respondents, as these numbers are considered representative enough for many researchers (Sekaran , 2010)**.** The pre-test in this research was conducting by distribute the questionnaires directly to 15 respondents in purpose to know whether the question can be used or not for the research

3.7 Validity and Reliability Test

3.7.1 Validity test

The valid direct representation of data is the valid number. The second is the test method for generating data. In the evaluation test method, it can be: accuracy, precision, linear range, detection limit, quantitative limit, etc., so that the lower the effectiveness, the worse the indication of measurement results. There are three ways to test effectiveness. Used for individual and total validity analysis. This method is used to measure the content validity of the scale. The content validity, also known as the surface validity or logical validity, refers to the content or topic that the scale is

designed to measure. For the validity of evaluation criteria, it is correlation analysis or difference significance test. Meanwhile, for structural validity, it refers to the degree of correspondence between structure and measured values (Smith, 2015).

The validity of Pearson correlation analysis data in SPSS is used. This is to determine the relationship and importance of each problem and variable. If the result r computation > r table, the statement is valid, and if the result r computation < r table, the statement is invalid. In this study, the r table value is 0.441, because df = n-2 (15-2 = 13), which is significant in the single-tail test of 0.05.

3.7.2 Reliability Test

Reliability refers to the consistency of the results obtained by repeated measurements of the same object in the same way. Cronbach's alpha method is the most commonly used method, which can be accepted when the result is 0.60 or higher.

For measurement reliability, the study uses will use Cronbach Alpha formula, the formula is as follows:

$$\alpha = \frac{N \cdot \bar{r}}{1 + (N-1) \cdot \bar{r}}$$

Source: (Fang. YU 2015)

Where:

α=instrument reliability's coefficient

r= mean correlation coefficient between variables

N=number of question

Table 3.2 Cronbach's Alpha Internal consistency

Cronbach's Alpha	Internal consistency
$\alpha \geq 0.9$	Excellent (High – Stakes testing)
$0.7 \leq \alpha < 0.9$	Good (Low – Stakes testing)
$0.6 \leq \alpha < 0.7$	Acceptable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Source: (Fang. YU 2015)

3.8 Data Analysis

3.8.1Descriptive Analysis

According to (Sugiyono ,2013), descriptive statistics are statistics that serve to describe or give an idea of the object under study through sample data or population as it is, without doing analysis and making conclusions that apply to the public. In descriptive statistics include the presentation of data through mean and standard deviations. The researcher used descriptive statistics to present the data in statistical measurement through tables, pie charts, and histogram, so the data will be easier to read and understand.

3.8.1.1 Likert Scale

Likert Scale uses five point scales to let people respond how much they agree on or disagree on the particular statement. The five scales are "Strongly Agree (SA)", "Agree (A)", "Uncertain (UN)", "Disagree (DA)", and "Strongly Disagree (SDA)". The research gives the number to those five options. 1 means "Strongly Disagree", 2 means "Disagree", 3 means "Uncertain", 4 means "Agree", and 5 means "Strongly Agree". (Judith, 2016)

Table 3.3 Grade Statement

Degree	Scale
Strongly Disagree (SDA)	1
Disagree (DA)	2
Uncertain (UN)	3
Agree (A)	4
Strongly Agree (SA)	5

Source: Likert Scale

3.8.1.2 Mean

Mean is used to imply the average of the correspondent data, and it is the sum of the set of data divided by the number of data registered. Mean will be used for analyzing the average of the data from the respondent's responses.

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$$

Source: (Levine, Stephan, Krehbiel, & Berenson, 2008)

Where:

$\bar{x}$: Mean value

Σx : The sum of the observations

n : The total number of observations

The number of interval scales is the highest minus the lowest, and then divides by 5 according to the Likert 5-Point Scale. The mean score is explained as follows:

No.	Interval Scale	Information
1.	1.00-1.80 represents	Very low level
2.	1.81-2.60 represents	Low level
3.	2.61-3.40 represents	Moderate level
4.	3.41-4.20 represents	High level
5.	4.21-5.00 represents	Very High level

Source: (Amal, 2017)

3.8.1.3 Standard deviation

Standard deviation is to measure how spread out number, and for calculating sample of quantity analysis in each variable in this research (Sugiyono, 2013). A standard deviation is used to measure risk, which is the large deviation between expected value (mean) and the actual value. The formula of standard deviation:

$$s = \sqrt{\frac{\sum(x - \bar{x})^2}{n - 1}}$$

Source: (Levine, Stephan, Krehbiel, & Berenson, 2008)

Where:

s = Sample standard deviation

n = Number of scores in a sample

n-1 = Degrees of freedom or Bessel's correction

x = Value of a sample

$\bar{x}$ = Mean or average of the sample

3.8.2Multiple Linear Regressions

Multiple regression analysis (MRA) is a powerful and flexible statistical technique, which can establish mathematical relationships between a measure of related variables and two or more independent variables (Malhotra, 2010). It is used to analyze the relationship between independent variables and dependent variables. If the results show that this relationship exists, it means that the information we get in the independent variable can improve the accuracy of predicting the value of the independent variable.

According to Malhotra (2010), the study of regression analysis defines dependent variables with at least one independent variable, and the analysis of dependent variables with multiple independent variables is defined as multiple regression, which is a case in which at least two linear independent variables are used. Regression

analysis. Researchers will use multiple regression formulas to assist and support the results between dependent variables and five independent variables.

$$Y = \beta o + \beta 1 X_1 + \beta 2 X_2 + \beta 3 X_3 + \beta 4 X_4 + \beta 5 X_5 + \varepsilon$$

Where:

Y = Safety Performance (Dependent Variable)

βo = Y intercept

β1 – β5 = Regression Coefficient for X_1, X_2, X_3, X_4, X_5

X_1 = Safety Awareness (Independent variable)

X_2 = Safety Communication (Independent Variable)

X_3 = Safety Attitude (Independent Variable)

X_4 = Safety Culture (Independent Variable)

X_5 = Safety Competency (Independent Variable)

ε = Random Error

3.8.3 Classical Assumption Testing

3.8.3.1 Normal testing

Normality test is used to determine the distribution of samples and data, while normality test is used to analyze a group of data. If the normal distribution mathematical model and graph meet the standard, it is used in statistical process. (Elliott, 2007) Normality test was used to determine whether the variables in this study were normal. Bell histogram shows that the data are normally distributed

3.8.3.2 Heteroscedasticity test

Heteroscedasticity test is a necessary test for researchers to understand whether the residual variance between a variable and other variables is the same. The requirement of regression model is that the variance of residual data is equal to that of another

fixed data. Heteroscedasticity refers to inhomogeneous dispersion, which is a systematic variation of residual dispersion within the measurement range. Heteroscedasticity produces a unique sector or cone in the residual graph. In order to check heteroscedasticity, researchers need to evaluate the residual, especially by fitting the value map. The scatter plot can show whether there is heteroscedasticity. The standardized residuals are on the vertical axis and oriented to dependent variables on the horizontal axis. Random distribution of data means that there is no heteroscedasticity, if there is a specific pattern, such as the regular formation of existing circles into a specific pattern (wavy, widened, narrowed), heteroscedasticity will occur.(Fang, 2015)

3.8.3.3 Multilinearity test

Multivariate test is to test whether there is correlation between independent variables. A good regression model should not be correlated among variables. This experiment was used to infer the regression coefficients of individual and individual effects on dependent variables. When two or more variables in the regression model are correlated with each other, it is said that there are multiple collinearities in the regression model. (Fang, 2015) Discrimination of multiple collinearity:

Tolerance and variance inflation factor (VIF).

Tolerance: The coefficients of the linear regression model obtained when the tolerance of one variable is equal to 1 minus the dependent variable and the other k-1 independent variable is the predictive variable. The smaller the tolerance is, the more serious the multiple collinearity is. It is generally believed that when tolerance is less than 0.1, there exists serious multi-collinearity.

Variance enlargement factor: reciprocal of tolerance. Therefore, the bigger the VIF, the more serious the multi-collinearity. It is generally believed that when the value of VIF is greater than 10, there is a serious multi-collinearity. If VIF < 10 : There is no multicollinearity

3.9 Testing the Hypothesis

Hypothesis testing is a statistical assessment of statements or ideas about population.The hypothesis is a statement of the value of the overall parameter level developed to test a theory or belief. The hypothesis is based on the population parameters to be tested, such as the average population value. Hypothesis test adopts standard regression and stepwise fitting two kinds of multivariate linear regression methods. Multivariate regression analysis is a statistical technique that develops powerful and flexible mathematical relationships between measurement dependent variables and two or more independent variables .(Malhotra, 2010)

Hypothesis testing procedures, based on sample statistics and probability theory, are used to determine whether a hypothesis is a reasonable statement and should not be rejected or if it is an unreasonable statement and should be rejected.(Fang, 2015)

3.9.1 The T-Test

When hypothesis testing, the choice between using a critical value based on the t-distribution or the z-distribution depends on sample size, distribution of the population, and whether or not the variance of the population is known.The t-test is a widely used hypothesis test that employs a test statistic that is distributed according to a t-distribution. Use the t-test if the population variance is unknown and either the following conditions exist:

a. The sample is large (n>=30)
b. The sample is small (less than 30) but the distribution of the population is normal or approximately normal.

If the sample is small and the distribution is non-normal, we have no reliable statistical test.The computed value for the test statistic based on the t-distribution is referred to as the t-statistic. For hypothesis tests of a population mean, a t-statistic with n-1 degree of freedom is computed as:

$$t_{n-1} = \frac{\bar{x} - \mu_0}{s / \sqrt{n}}$$

where:
$\bar{x}$ = sample mean
μ_0 = hypothesized population mean (i.e., the null)
s = standard deviation of the sample
n = sample size

Formula 3.9.1 The t-Test

Source:(Fang, 2015)

To conduct a t-test, the t-statistic is compared to a critical t-value at the desired level of significance with the appropriate degree of freedom.In the real world, the underlying variance of the population is rarely known, so the t-test enjoys widespread application. To determine the partial relation between independent variables coefficient and dependent variable, the T-test is applied. The significant level for $\alpha = 0.05$, if the T-test is low then we have to reject H_0 and it means there is a significant effect.

Then for this research, the indicator for T-test will be:

1. **$H_0$1: $\beta 1 = 0$, if significant value > 0.05, H_o accepted**

   (Safety awareness has no significant Influences on safety performance toward PT. China West Development Indonesia).

   H_a1: $\beta 1 \neq 0$, if significant value < 0.05, H_o rejected

   (Safety awareness has significant Influences on safety performance toward PT. China West Development Indonesia).

2. **$H_0$2: $\beta 2 = 0$, if significant value > 0.05, H_o accepted**

   (Safety communication has no significant Influences on safety performance toward PT. China West Development Indonesia).

   H_a2: $\beta 2 \neq 0$, if significant value < 0.05, H_o rejected

   (Safety communication has significant Influences on safety performance toward PT. China West Development Indonesia).

3. **$H_0$3: $\beta 3 = 0$, if significant value > 0.05, H_o accepted**

   (Safety attitude has no significant Influences on safety performance toward PT. China West Development Indonesia).

   H_a3: $\beta 3 \neq 0$, if significant value < 0.05, H_o rejected

(Safety attitude has significant Influences on safety performance toward PT. China West Development Indonesia).

4. H_o4: β4 = 0, if significant value > 0.05, H_o accepted

(Safety culture has no significant Influences on safety performance toward PT. China West Development Indonesia).

H_a4: β4 ≠ 0, if significant value < 0.05, H_o rejected

(Safety culture has significant Influences on safety performance toward PT. China West Development Indonesia).

5. H_o5: β5 = 0, if significant value > 0.05, H_o accepted

(Safety competency has no significant Influences on safety performance toward PT. China West Development Indonesia).

H_a5: β5 ≠ 0, if significant value < 0.05, H_o rejected

(Safety competency has significant Influences on safety performance toward PT. China West Development Indonesia).

3.9.2 F-test

Testing the equality of the variances of two normally distributed populations, based on two independent random samples.

The hypotheses concerned with the equality of the variances of two populations are tested with an F-distributed test statistic. Hypothesis testing using a test statistic that follows an F-distribution is referred to as the F-test. The F-test is used under the assumption that the populations from which samples are drawn are normally distributed and that the samples are independent.(Sekaran, 2013).

The test statistic for the F-test is the ratio of the sample variances. The F-statistic is computed as:

$$F = \frac{(R^2/k)}{[(1 - R^2)/(n - k - 1)} \qquad \text{Df} = n - k$$

With:

F : Statistic test for F distribution

R^2 : Coefficient of determination

k : Number of independent variables in the model

n : Number of period

Formula 3.9.2 F-test

Source:(Fang, 2015)

$H_0 6$. $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5$, if the significance of F > 0.05(significant level α), it means that H_0 is accepted. So the result is that the independent variables have no significant influence toward dependent variable at PT. China West Development Indonesia

$H_a 6$. At least when $\beta_i \neq 0$, if the significance of F < 0.05(significant level α), it means that H_a is accepted. So the result is that the independent variables have simultaneously significant influence toward dependent variable at PT. China West Development Indonesia.

3.9.3 Coefficient of Determination (R^2)

The deterministic coefficient (R^2) is defined as the percentage of total variation in dependent variables interpreted by independent variables. For simple linear regression (i.e. an independent variable), the determination coefficient R^2 can be calculated by simply squaring the correlation coefficient r. In other words, for regression with an independent variable, $R^2 = r^2$. This method is inappropriate when multiple independent variables are used in regression. (Fang, 2015)

The deterministic coefficient R^2 gives the ratio of variance (fluctuation) of a variable, which can be predicted from other variables. It is a measure that allows us to determine how a person is determined when predicting from a model/chart. Coefficient of determination is the ratio of explained variation to total variation. The determination coefficient is $0 < R^2 < 1$, indicating the intensity of linear correlation between x and y, and the determination coefficient represents the percentage of data closest to the best fitting line (Samuel, 2015).

CHAPTER IV

RESULTS AND DISCUSSIONS

Chapter IV will explain about data analysis and result on the research objective.And describes data analysis by explaining descriptive analysis and Inferential analysis. In this part, SPSS 21.0 (Linda, 2013) are used to analyze the data .

4.1 Descriptive Analysis

4.1.1 Pre-test

This research conducted a Pre-test of the safety questionnaire to determine whether the data collected were valid and reliable. For the Pre-test of the questionnaire, 15 employees were selected from PT. China West Development Indonesia. Questionnaires were sent out to collect the respondents from employees, and use SPSS 21.0 to do validity and reliability test.

4.1.2 Validity Test

The validity of Pearson correlation analysis data in SPSS is used. This is to determine the relationship and importance of each problem and variable. If the result r computation > r table, the statement is valid, and if the result r computation < r table, the statement is invalid. In this study, the r table value is 0.441, because df = n-2 (15-2 = 13), which is significant in the single-tail test of 0.05.

The following table shows the results of comparing the r calculated values generated from SPSS 21.0 with the r table values.

Table 4.1 The Validity Test （Pre-test）

Variable	R- Compute Value	R- Table Value	Pass
SA1	0.215	0.441	Invalid
SA2	0.431	0.441	Invalid

SA3	0.711	0.441	Valid
SA4	-0.171	0.441	Invalid
SA5	0.884	0.441	Valid
SA6	0.697	0.441	Valid
SC1	0.513	0.441	Valid
SC2	0.614	0.441	Valid
SC3	0.14	0.441	Invalid
SC4	0.707	0.441	Valid
SC5	0.549	0.441	Valid
PSA1	0.305	0.441	Invalid
PSA2	0.755	0.441	Valid
PSA3	0.393	0.441	Invalid
PSA4	0.538	0.441	Valid
PSA5	0.6	0.441	Valid
PSA6	0.293	0.441	Invalid
PSA7	-0.03	0.441	Invalid
PSA8	0.6	0.441	Valid
SCU1	0.526	0.441	Valid
SCU2	-0.005	0.441	Invalid
SCU3	0.501	0.441	Valid
SCU4	0.767	0.441	Valid
SCU5	0.574	0.441	Valid
SCU6	0.593	0.441	Valid
SCU7	0.48	0.441	Valid
PSC1	0.324	0.441	Invalid
PSC2	0.22	0.441	Invalid
PSC3	0.758	0.441	Valid
PSC4	0.729	0.441	Valid
PSC5	0.253	0.441	Invalid
PSC6	0.55	0.441	Valid
PSC7	0.454	0.441	Valid
SP1	0.36	0.441	Invalid
SP2	0.586	0.441	Valid
SP3	0.669	0.441	Valid
SP4	-0.255	0.441	Invalid
SP5	0.511	0.441	Valid

Data Source: Primary Data from SPSS 21.0.

The data show that there are some valid and invalid sentences in 38 statements in the

test questionnaire. R- Compute Value less than 0.441 represents invalid statements, R-Compute Value greater than 0.441 represents valid statements, with a list of SPSS 21.0 results for validity test.

4.1.3 Reliability Test

Reliability refers to the consistency of the results obtained by repeated measurements of the same object in the same way. Cronbach's alpha method is the most commonly used method, which can be accepted when the result is 0.60 or higher. The reliability test in this study is based on cronbach's alpha in SPSS 21.0. (Malhotra, 2010). This is the result of SPSS 21.0 reliability:

Table 4.2 The Reliability Test （Pre-test）

Reliability Statistics

Cronbach's Alpha	N of Items
.843	24

Data Source: Primary Data from SPSS 21.0.

The reliability test in this study is based on cronbach's alpha in SPSS 21.0. The Cronbach’s coefficient alpha in the table 4.2 is 0.843, which shows that the reliability of internal consistency is satisfactory.

4.1.4 Descriptive Statistics Analysis

Table 4.3 Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
RATE(SP)	33	1.00	5.00	4.01	.212
RATE(SA)	33	1.00	5.00	4.04	.351
RATE(SC)	33	1.00	5.00	3.89	.258
RATE(PSA)	33	1.00	5.00	4.03	.335
RATE(SCU)	33	1.00	5.00	4.20	.214
RATE(PSC)	33	1.00	5.00	4.09	.240
Valid N (listwise)	33				

Data Source: SPSS 21.0 results.

The table 4.3 shows the minimum and maximum of the survey results, as well as the

average and standard deviation of the survey results. The standard deviation shows the variation or dispersion of the mean value. Normalization coefficient eliminates the influence of independent variable unit. Its size can measure the influence of each independent variable on dependent variable. Generally speaking, the greater the absolute value of standardization coefficient, the greater the influence of independent variable on dependent variable.(James, 2018)

According to table 4.3, the results show that the maximum and minimum values of influence safety performance (SP) are 1.00 and 5.00 respectively, follow Likert Scale uses five point scales. According to table 4.3 and interval scales, the average values of all independent and dependent variables are between 3.41 - 4.20 represents, all of which belong to High Level. The standard deviation shows that the maximum standard deviation is 0.351 of safety awareness (SA). The results show that safety awareness is the key factor influencing safety performance.

4.1.5 Analysis of Multiple Linear Regression

In order to find out the correlation between independent variables and dependent variables, this study uses multiple regression formula to assist and support the results between independent variables and dependent variables. SPSS 21.0 software carried out multiple regression analysis, showing the correlation of variables in this study, the results are as follows:

Table 4.4 Multiple Regression Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.962	1.119		4.433	.000		
	RATE(SA)	-.183	.100	-.304	-1.833	.078	.896	1.117
	RATE(SC)	.321	.138	.390	2.329	.028	.877	1.140
	RATE(PSA)	-.261	.102	-.412	-2.559	.016	.948	1.055
	RATE(SCU)	-.196	.158	-.198	-1.246	.223	.970	1.031
	RATE(PSC)	.102	.145	.115	.703	.488	.920	1.087

a. Dependent Variable: RATE(SP)

Data Source: SPSS 21.0 results

According to the results of table 4.4 significant, there are five independent variables that influence the dependent variables. This means that X_2, X_3 and Y (Safety Performance) have a significant influence. The multiple regression model in the following formula:

$$\mathbf{Y= 4.962+0.321\ X_2-0.261\ X_3}$$

Where

Y = Safety Performance

X_2 = Safety Communication

X_3 = Safety Attitude

The results in Table 4.4 show that the significant regression coefficient should be (< 0.05). There are two independent variables that have significant influence on safety performance and three independent variables that have no significant influence on safety performance. Therefore, the values of X_1, X_4 and X_5 are not included.

Details are as follows:

1. The coefficient of safety awareness was -0.183, Meaning: If safety awareness increase 1 unit, and safety performance will decrease 18.3%,but the relationship not significant influences on Y (Safety Performance).
2. The coefficient of safety communication was 0.321, Meaning: If safety communication increase 1 unit, and safety performance will increase 32.1%,and the relationship have significant influences on Y (Safety Performance).
3. The coefficient of safety attitude was -0.261, Meaning: If safety attitude increase 1 unit, and safety performance will decrease 26.1%,and the relationship have significant influences on Y (Safety Performance).
4. The coefficient of safety culture was -0.196, Meaning: If safety awareness increase 1 unit, and safety performance will decrease 19.6%,but the relationship not significant influences on Y (Safety Performance).
5. The coefficient of safety competency was 0.102, Meaning: If safety competency increase 1 unit, and safety performance will increase 10.2%,but the relationship not significant influences on Y (Safety Performance).

4.2 Inferential Analysis

4.2.1 Classic Assumption Test

4.2.1.1 Normality Test

Normality test means that many statistical tests (such as t-test) require data to be normal distribution, which is an important probability distribution. In order to test the normality of the data used in the study, it is necessary to use statistical tools for multiple regression. In this study, histogram is used to test the normality of each data.

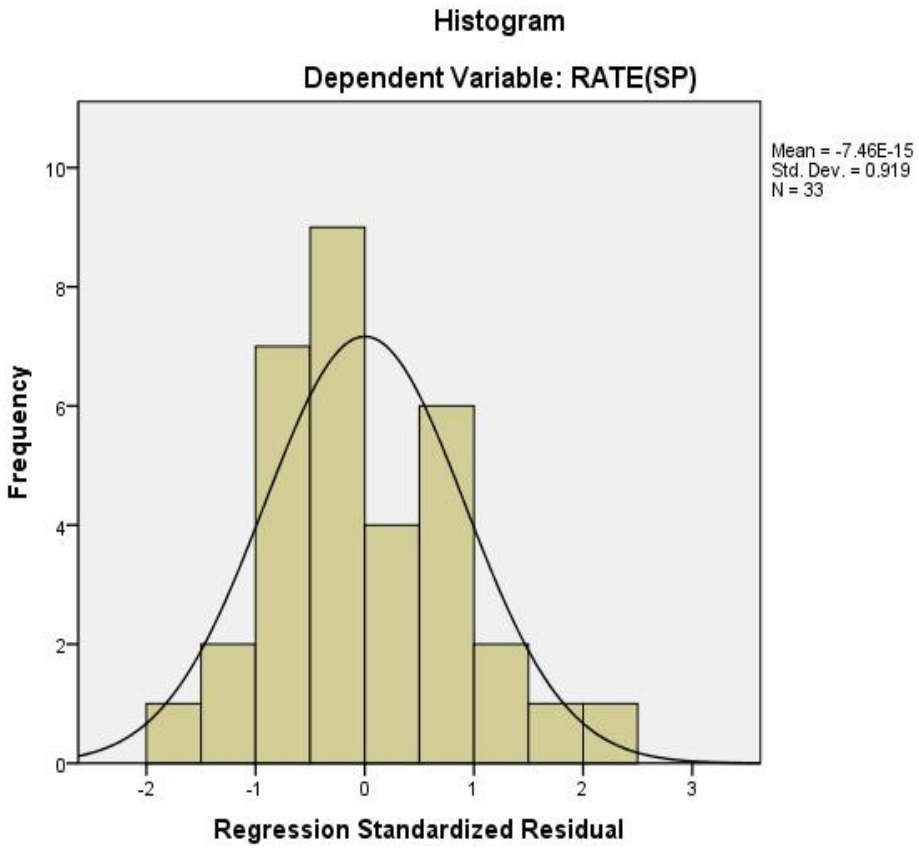

Figure4.4 Histogram

Data Source: SPSS 21.0 results

As can be seen from Figure 4.4, the data are basically normal distribution. Although the data is not perfect, because the distribution of the data is bell-shaped, the data is considered normal distribution. Because X is regression standardization residuals and Y is frequency, most of the data are below the curve. The line of the histogram is bell-shaped and the line is symmetrical.

4.2.1.2 Heteroscedasticity test

Heteroscedasticity refers to inhomogeneous dispersion, which is a systematic variation of residual dispersion within the measurement range. Heteroscedasticity produces a unique sector or cone in the residual graph. In order to check heteroscedasticity, researchers need to evaluate the residual, especially by fitting the value map. The scatter plot can show whether there is heteroscedasticity. The standardized residuals are on the vertical axis and oriented to dependent variables on the horizontal axis. Random distribution of data means that there is no heteroscedasticity, if there is a specific pattern, such as the regular formation of existing circles into a specific pattern (wavy, widened, narrowed), heteroscedasticity will occur;The results of heteroscedasticity test are as follows:

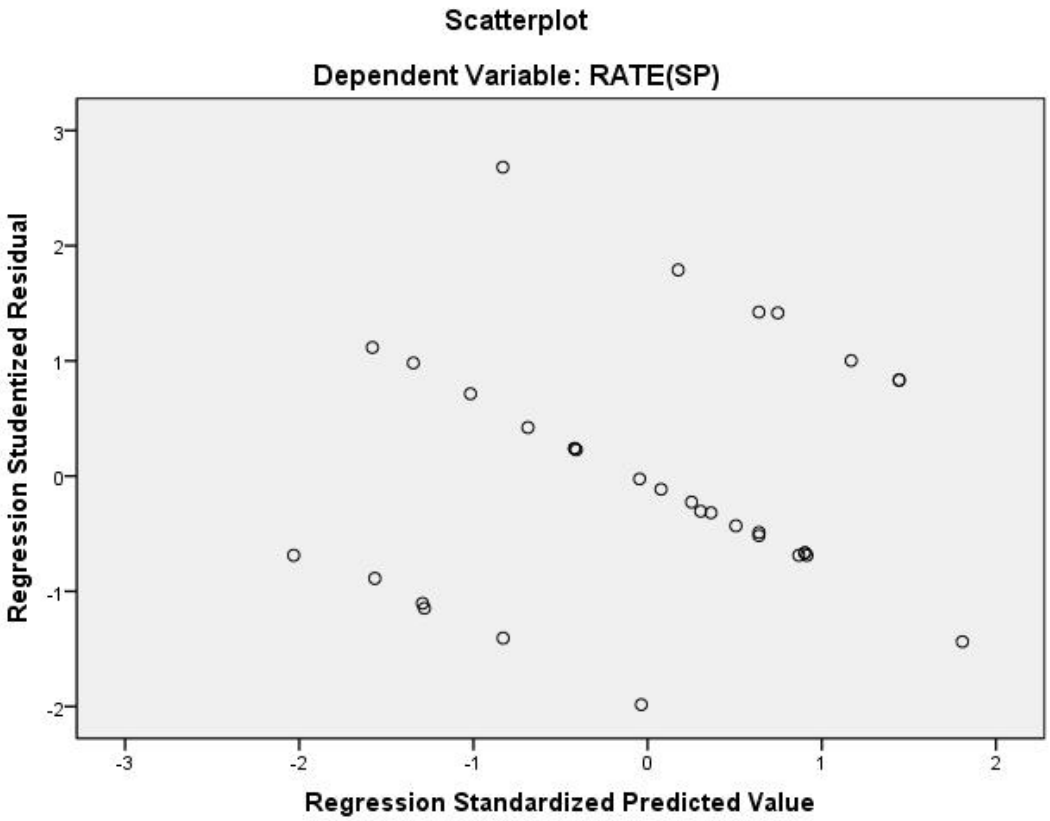

Figure 4.5 Scatterplot

Data Source: SPSS 21.0 results

According to Figure 4.6, the results regularly form a specific pattern, only a small part of the random distribution, so there is heteroscedasticity.

4.2.1.3 Multicollinearity test

Multicollinearity means that the two variables are linear combinations. When more than two variables are involved, it is usually called Multicollinearity test. Multivariate linear test in regression model can be seen from its variance inflation factory (VIF) and tolerance. Based on (Susanto, 2013), no correlation between independent variables is considered as a good regression model. If the variance expansion factor (VIF) is between 1 and 10, and the tolerance is close to 1. According to the table below, tolerances and VIF values are already required for good regression models. The results of Multicollinearity experiments in this study are as follows:

Table 4.5 Multicollearity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.962	1.119		4.433	.000		
	RATE(SA)	-.183	.100	-.304	-1.833	.078	.896	1.117
	RATE(SC)	.321	.138	.390	2.329	.028	.877	1.140
	RATE(PSA)	-.261	.102	-.412	-2.559	.016	.948	1.055
	RATE(SCU)	-.196	.158	-.198	-1.246	.223	.970	1.031
	RATE(PSC)	.102	.145	.115	.703	.488	.920	1.087

a. Dependent Variable: RATE(SP)

Data Source: SPSS 21.0 results

From Table 4.5. The tolerance of each variable is between 0.01 and 1, which shows that there are no Multicollinearity problems in safety awareness, safety communication, safety attitude, safety culture and safety competency. For VIF values, all independent variables are greater than 0.1 and less than 10, so there is no Multicollinearity problem, and there is a high correlation between independent variables.

4.2.2 Hypotheses Testing

4.2.2.1 T-Test

T-test confirms the significance of independent variables in multivariate regression analysis. T-test is probably the most commonly used statistical analysis method in hypothesis test. In order to explore the factors influencing SP, this paper chooses SP as dependent variable Y, SA as X_1, SC as X_2, PSA as X_3, SCU as X_4, PSC as X_5, which are independent variables, and establishes a multiple regression model.By using t table, df =31 and α = 5% significance level so get 1.696 from t table.

Table 4.6 T-Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.962	1.119		4.433	.000		
	RATE(SA)	-.183	.100	-.304	-1.833	.078	.896	1.117
	RATE(SC)	.321	.138	.390	2.329	.028	.877	1.140
	RATE(PSA)	-.261	.102	-.412	-2.559	.016	.948	1.055
	RATE(SCU)	-.196	.158	-.198	-1.246	.223	.970	1.031
	RATE(PSC)	.102	.145	.115	.703	.488	.920	1.087

a. Dependent Variable: RATE(SP)

Data Source: SPSS 21.0 results.

1. Safety awareness (X_1)

($H_0$1) : There is no significant influence of Safety awareness towards Safety Performance.

(Ha1) : There is significant influence of Safety awareness towards Safety Performance.

The significant value of Safety awareness is 0.078, which is more than α (0.05). Therefore, there is no significant influence towards the Safety Performance. Meaning, $H_0$1 is accepted and Ha1 is rejected.

2. Safety communication (X_2)

($H_0$2) : There is no significant influence of Safety communication towards

Safety Performance .

(Ha2) : There is significant influence of Safety communication towards Safety Performance .

The significant value of Safety communication is 0.028, which means less than α (0.05). Therefore, there is a significant influence towards the Safety Performance. Meaning, Ha2 is accepted and $H_0$2 is rejected.

3. Safety attitude (X_3)

($H_0$3) : There is no significant influence of Safety attitude towards Safety Performance.

(Ha3) : There is significant influence of Safety attitude towards Safety Performance.

The significant value of Safety attitude is 0.016, which means less than α (0.05). Therefore, there is a significant influence towards the Safety Performance. Meaning, Ha3 is accepted and $H_0$3 is rejected.

4. Safety culture (X_4)

($H_0$4) : There is no significant influence of Safety culture towards Safety Performance.

(Ha4) : There is significant influence of Safety culture towards Safety Performance.

The significant value of Safety culture is 0.223, which means more than α (0.05). Therefore, there is no significant influence towards the Safety Performance. Meaning, $H_0$4 is accepted and Ha4 is rejected.

5. Safety competency (X_5)

($H_0$5) : There is no significant influence of Safety competency towards Safety Performance.

(Ha5) : There is significant influence of Safety competency towards Safety Performance.

The significant value of Safety competency is 0.488, which means more than α (0.05). Therefore, there is no significant influence towards the Safety Performance. Meaning, $H_0$5 is accepted and Ha5 is rejected.

4.2.2.2 F-Test

F test is a statistical test to determine the equality of variance between two normal populations. F-test for the significance of the observed multiple correlation coefficients. Measure whether all independent variables have an influence on independent variables. The F test is designed to test whether 5 independent variables (safety awareness, safety communication, safety attitude, safety culture, safety competency) have significant influence on dependent variables (safety performance).

Table 4.7 F-test

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.486	5	.097	2.744	.040[b]
	Residual	.956	27	.035		
	Total	1.441	32			

a. Dependent Variable: RATE(SP)

b. Predictors: (Constant), RATE(PSC), RATE(SCU), RATE(PSA), RATE(SA), RATE(SC)

Data Source: SPSS 21.0 results.

Table 4.7 shows the results of the F-test. As can be seen from Table 4.7, P value (significant level) is 0.040, which is less than significant level 0.05, so it is acceptable. The value of F table is found in F table, df1 = 5, df2 = 28, so the value of F table is 2.558, and the value of F in graph is larger than that of F table (2.744 > 2.558). Therefore, safety awareness, safety communication, safety attitude, safety culture and safety competency have significant influence on safety performance. Therefore, Null Hypothesis (Ho6) is rejected and Alternate Hypothesis (Ha6) is accepted.

H_o6. There is no a simultaneously significant influence of safety awareness, safety communication, safety attitude, safety culture and safety competency towards the Influences of safety performance.

Ha6. There is a simultaneously significant influence of safety awareness, safety communication, safety attitude, safety culture and safety competency towards the Influences of safety performance.

4.2.2.3 Coefficient of Determination (R^2)

Determined coefficients, also known as R^2, are used to analyze how differences between dependent variables are explained by differences between independent variables. R squared is the percentage variance of the explanatory variable. Independent variables can be added simply by adding more variables. The value of R square can be between 0 and 1 ($0 \leq R^2 \leq 1$), so adjusting R square is one of the important indicators to measure the effect of the model. The R squares calculated by SPSS are shown in Table 4.8.

Table 4.8 Coefficient Determination (R^2)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.580[a]	.337	.214	.188	.337	2.744	5	27	.040	2.690

a. Predictors: (Constant), RATE(PSC), RATE(SCU), RATE(PSA), RATE(SA), RATE(SC)

b. Dependent Variable: RATE(SP)

Data Source: SPSS 21.0 results

As Coefficient Determination test. The range of values is (0, 1). The closer to 1, the better the fitting influence; the closer to 0, the worse the fitting influence. According to (James, 2018), there are four variables more than two variables in the study, and R-squared has its limitations, because if the independent variable increases, R-squared will increase even if the independent variable is useless. Therefore, the adjusted R-squared will be used in the study instead of R-squared. Table 4.8 shows that the adjusted R square is 0.214. This value defines independent variables (safety awareness, safety communication, safety attitude, safety culture, safety competency) that can explain the variables the change of dependent variables (safety performance). The determination of the magnitude coefficient shows that the explanatory rates of safety awareness, safety communication, safety attitude, safety culture and safety

competency to safety performance are 21.4%, and the remaining 78.6% are influenced by other variables not involved in this study. Therefore, the relationship between independent variables and dependent variables in this study is lower than the average. Perhaps because PT. China West Development Indonesia was founded too short and most employees worked in the company for a short time, the company's safety culture is not perfect, the company's overall safety education and staff safety performance are insufficient. Moreover, some employees have low educational level and can not fully understand the information of all the questions in the questionnaire, which leads to large deviation in filling out some of the questionnaires.

4.3 Interpretation of results

In PT China West Development Indonesia, the safety awareness of independent variables, safety communication, safety attitude, safety culture and safety competency have less influence on the personal safety performance of employees depending on variables.

4.3.1 Safety Awareness (X_1) Towards Safety Performance

The results of hypothesis test 1 show that safety awareness has no significant influences on safety performance. The statistical analysis of SPSS version 21 supports this hypothesis. The t-test result of safety awareness was -0.183, and the significant value was 0.078, which was higher than 0.05. Therefore, the $H_0 1$ is accepted and shows that safety awareness has no significant influences on safety performance. However, consciousness, as the transmission way of other factors, is the most important individual factor influencing the safety performance of construction personnel. The safety awareness of construction workers has a significant positive influences on safety performance. (Chen, 2017) Although the study found that this variable was inconsistent with the findings of some other researchers. Because some people think that safety awareness is just a way of people's safety awareness, it will not have a great influence on safety performance. Because of this, everyone has

different views on safety awareness. Some people value safety awareness, while others think safety competency is more convincing.(Emily, 2013)

4.3.2 Safety Communication (X_2) Towards Safety Performance

The results of Hypothesis Test 2 show that safety communication has a significant influences on safety performance. This hypothesis is supported by the statistical analysis results of SPSS version 21. The t-test result of safety communication was 0.321, the significant value was 0.028, lower than 0.05. Therefore, the acceptance of Ha2 indicates that safety communication has a significant influences on safety performance. However, communication between leaders and workers on safety issues has little direct impact on workers' safety-related incidents (Michael et al., 2014). At the same time, (Siu et al. 2014) considered that communication had no significant relationship with safety performance. But, depends on (Pinchao, 2014) opinion. Therefore, safety communication has a significant influence on cognitive safety performance. Assuming that there is enough safety communication, safety communication is a very important variable influencing safety performance. And safety performance depends directly on the communication that exists in the firm and indirectly on management's commitment (Fernandez, 2011).

4.3.3 Safety Attitude (X_3) Towards Safety Performance

The results of Hypothesis Test 3 show that safety attitude has a significant influence on safety performance. The statistical analysis of SPSS version 21 supports this hypothesis. The t-test result of safety attitude was -0.261, and the significant value was 0.016, which was lower than 0.05. Therefore, the acceptance of Ha3 indicates that safety attitude has a negative significant influence on safety performance. (Xu, 2015) research results show that democratization and humanization of team leaders have significant positive cross-level influences on safety attitudes and safety performance of construction workers, and safety attitudes can positively and significantly influencing safety performance. (Elyas, 2017) stated that beliefs and

attitudes contribute to safety and the performance of process safety management systems.The results of the study are not consistent with those of the exploration. The main reason is that the results of this study are negatively significant. Because some employees in PT China West Development Indonesia have a relatively low level of education, they may not attach great importance to safety attitudes, but pay more attention to the impact of other aspects on safety performance.

4.3.4 Safety Culture (X_4) Towards Safety Performance

The results of Hypothesis Test 4 show that safety culture has no significant influences on safety performance. The statistical analysis of SPSS version 21 supports this hypothesis. The t-test result of safety culture was -0.196, and the significant value was 0.223, which was higher than 0.05. Therefore, the acceptance of Ho4 indicates that safety culture has no significant influences on safety performance. Moreover, this result is consistent with that of the study (Brown et al., 2010). The results of the study show that although safety culture can improve the overall safety awareness of the company, it has little influences on safety performance. And (Kerstan, 2013) argues that safety culture has no significant relationship with safety performance.

4.3.5 Safety Competency (X_5) Towards Safety Performance

The results of hypothesis test 5 show that safety competency has no significant influences on safety performance. Statistical analysis of SPSS version 21 supports this hypothesis. The t-test result of safety competency was -0.102, and the significance value was 0.488, higher than 0.05. Therefore, Ho5 is accepted, indicating that safety competency has no significant influences on safety performance. (Chang, 2012) pointed out in the article of building the safety competency of safety professionals that the safety competency plays a significant role in safety performance. (Choudhry et al., 2014) Confirmed the necessity of employee safety attitude and safety behavior on personal safety performance, but the study confirmed that safety competency had no significant influences on safety performance. (LI, 2015)

CHAPTER V

CONCLUSION AND RECOMMENDATION

This chapter is composed of conclusions and suggestions, describing the analysis, explanation and corresponding summary of the previous chapters.

5.1 Conclusion

Based on the research results in chapter VI, the researchers draw the following conclusions based on the scope and limitations:

1. Safety awareness has no significant influences on safety performance.
2. Safety communication has a significant influences on safety performance.
3. Safety attitude has a significant influences on safety performance.
4. Safety culture has no significant influences on safety performance.
5. Safety competency has no significant influences on safety performance.
6. Safety awareness, safety communication, safety attitude, safety culture and safety competency have significant influence on safety performance at the same time.

5.2 Recommendation

According to this research of the factors influence employee personal safety performance in PT China West Development Indonesia , the study comes up with some suggestions for the whole study:

1. For PT. China West Development Indonesia

Employees attach more importance to the safe communication between leaders and subordinates, as well as with colleagues. Companies need to strengthen the safe

communication between employees, leaders and employees. This can not only enhance the emotions between colleagues, leaders and employees, but also improve the overall safety atmosphere of the company. At the same time, companies need to raise their employees' safety awareness (for example, holding regular meetings to discuss their safety standard operating procedures). Make every employee aware of the importance of safety awareness. The company needs to improve the company's internal corporate safety culture, but also to strengthen the export of each employee's corporate safety culture. Let employees know more about the company's corporate safety culture. Companies need to further develop employees' safety competency and improve their attitudes towards safety. (For example, reasonable safety education and safety training)

2. For future researchers:

Because the researchers mainly studied the variables of safety awareness, safety communication, safety attitude, safety culture and safety competency, the impact on safety performance was small, only 21.4%, while the other variables influencing safety performance were 78.6%. Therefore, future researchers can find other variables that affect safety performance from other aspects. Other variables can be a very sensitive data for PT. China West Development Indonesia. Such as work safety environment, company safety management, positive groups and so on.

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APPENDICES

Appendix I - Questionnaire

QUESTIONNAIRE (English)

Dear respondent:

Hello everyone, My name is Cui Kuan. And my name is Guo Jinqian, we are student from the President university of Indonesia.At the same time, we are also the members of PT China West Development Indonesia. Now we at the stage of writing a thesis. For Cui Kuan focus on the safety performance of employees in the construction industry. For Guo Jinqian focus on the communicate is important skill in work and social. So we made this questionnaire all of you. We hope that by filling in your questionnaire, Just help us to show your own opinion.

Thanks for your attention and cooperation

Basic Information:

1. Please write down your name and put √ in the appropriate column to show your choice.

Gender : Male ☐ Female ☐

Age: 20-35 ☐ 36-45 ☐ 46-55 ☐ >56 ☐

Highest Education : Senior High school ☐ Bachelor's degree ☐

Bachelor degree or above ☐

Position: Material department ☐ Technology department ☐

Production department ☐ Marketing department ☐

Office department ☐ Human resources department ☐

others ☐

Working time in enterprise <1 years ☐ 1 - 3 years ☐ >3 years ☐

Citizenship : Chinese ☐ Indonesia ☐ Indonesia- Chinese ☐

2.please put X in the appropriate column to show your choice.

Rating	Definition
SDA -- 1	Strongly Disagree
DA -- 2	Disagree
UN -- 3	Uncertain
A -- 4	Agree
SA -- 5	Strongly Agree

Safety Performance	1	2	3	4	5
A. Safety Awareness					
1.Do you agree to be sure to wear labor insurance supplies at work?					
2.Wear protective equipment consciously before entering the work area.					
3.You will pay attention to protective measures and emergency access at the construction site.					
B. Safety communication					
1.You will also pay attention to the safety of others during joint operations:					
2.You modestly listen to others about safety issues related to your own work.					
3.Do you agree that you focus on collaboration at work?					
4.When a worker is found to be unsafe or even misbehaving, you immediately stop him.					
C. Personal safety attitude					
1.You treat production safety as your own business.					
2.Do you agree that it is important to sign up for job safety responsibility?					
3.You can take the initiative to attend safety knowledge education training at work.					
4.After being aware of the illegal operation, I will seriously reflect on myself.					
D. Safety culture					
1.Do you think company safety education works?					

2.Do you agree that your management and supervisors have provided adequate safety training to protect you from danger?					
3.Do you agree that enterprises should pay for safety training?					
4.The safety protection facilities and personal protective equipment provided by the enterprise can protect your safety.					
5.The enterprise's safety management system is feasible and can help improve the enterprise's safety performance.					
6.The emergency rescue plan established by the enterprise can respond to the enterprise's safety emergency.					
E.Personal safety competency					
1.You will be good at learning at work and constantly acquire safety knowledge and skills.					
2.You have comprehensive safety management knowledge and skills at work.					
3.In your work, you know exactly how to do each step correctly.					
4.In case of equipment failure or accident, you will take the most effective measures to minimize the loss.					
F. Safety Performance					
1.Do you agree that there will be times when security checks are not in place at work?					
2.Do you agree that you sometimes have an unsafe mental state at work?					
3.Do you agree that all site personnel conduct assessments should be combined with their safety practices, including middle and upper management?					

QUESTIONNAIRE (Bahasa)

Safety Performance	1	2	3	4	5
A. Safety Awareness					
1.Apakah Anda setuju untuk memastikan mengenakan perlengkapan asuransi tenaga kerja di tempat kerja					
2. Kenakan peralatan pelindung secara sadar sebelum memasuki area kerja.					
3. Anda akan memperhatikan langkah-langkah perlindungan dan akses darurat di lokasi konstruksi.					
B. Safety communication					
1. Anda juga akan memperhatikan keselamatan orang lain selama operasi gabungan:					
2. Anda sedikit mendengarkan orang lain tentang masalah keamanan yang terkait dengan pekerjaan Anda sendiri.					
3 Apakah Anda setuju bahwa Anda fokus pada kolaborasi di tempat kerja?					
4. Ketika seorang pekerja ditemukan tidak aman atau bahkan berperilaku buruk, Anda segera menghentikannya.					
C. Personal safety attitude					
1. Anda memperlakukan keamanan produksi sebagai bisnis Anda sendiri.					
2. Apakah Anda setuju bahwa penting untuk mendaftar untuk tanggung jawab keselamatan kerja?					
3. Anda dapat mengambil inisiatif untuk mengikuti pelatihan pendidikan pengetahuan keselamatan di tempat kerja.					
4. Setelah menyadari operasi ilegal, saya akan serius merenungkan diri sendiri.					
E. Safety culture					

1. Apakah menurut Anda pendidikan keselamatan kerja perusahaan?					
2. Apakah Anda setuju bahwa manajemen dan penyelia Anda telah memberikan pelatihan keamanan yang memadai untuk melindungi Anda dari bahaya?					
3. Apakah Anda setuju bahwa perusahaan harus membayar untuk pelatihan keselamatan?					
4. Fasilitas perlindungan keamanan dan alat pelindung diri yang disediakan oleh perusahaan dapat melindungi keselamatan Anda.					
5. Sistem manajemen keselamatan perusahaan adalah layak dan dapat membantu meningkatkan kinerja keselamatan perusahaan.					
6. Rencana penyelamatan darurat yang ditetapkan oleh perusahaan dapat menanggapi keadaan darurat keselamatan perusahaan.					
E. Personal safety competency					
1. Anda akan pandai belajar di tempat kerja dan terus-menerus memperoleh pengetahuan dan keterampilan keselamatan.					
2. Anda memiliki pengetahuan dan keterampilan manajemen keamanan yang komprehensif di tempat kerja.					
3. Dalam pekerjaan Anda, Anda tahu persis bagaimana melakukan setiap langkah dengan benar.					
4. Dalam kasus kegagalan atau kecelakaan peralatan, Anda akan mengambil tindakan yang paling efektif untuk meminimalkan kerugian.					
F. Safety Performance					
1.Apakah Anda setuju bahwa akan ada saat-saat ketika pemeriksaan keamanan tidak dilakukan di tempat kerja?					
2. Apakah Anda setuju bahwa Anda kadang-kadang memiliki kondisi mental yang tidak aman di tempat kerja?					
3. Apakah Anda setuju bahwa semua penilaian perilaku personil situs harus dikombinasikan dengan praktik keselamatan mereka, termasuk manajemen menengah dan atas?					

Appendix II - Data collection of Pre-test and Real test questionnaire

Data collection of pre-test questionnaire (15 Respondents)

NO	SA1	SA2	SA3	SA4	SA5	SA6	SC1	SC2	SC3	SC4	SC5	PAS1	PSA2	PSA3	PSA4	PSA5	PSA6	PSA7	PSA8	SCU1	SCU2	SCU3	SCU4	SCU5	SCU6	SCU7	PSC1	PSC2	PSC3	PSC4	PSC5	PSC6	PSC7	SP1	SP2	SP3	SP4	SP5
1	4	3	4	4	3	4	4	4	3	5	2	4	3	5	5	4	2	4	3	1	4	2	5	5	5	4	4	3	4	5	3	3	3	4	4	5	1	4
2	4	4	3	4	1	1	2	3	3	2	4	4	2	3	4	2	4	4	2	2	4	2	4	4	2	2	4	4	3	2	4	2	2	1	4	4	4	1
3	3	2	5	5	2	4	3	2	4	4	4	4	4	2	4	4	5	5	4	1	4	2	2	3	4	4	3	4	4	2	4	4	4	4	4	3	1	4
4	3	3	4	4	4	4	4	4	4	3	5	4	4	1	4	5	5	5	3	4	3	3	4	3	3	3	5	5	5	4	3	4	3	3	3	3	2	2
5	4	4	5	4	5	5	4	4	4	4	5	4	4	4	4	4	4	4	4	4	4	5	5	4	4	4	3	3	4	3	4	4	4	4	4	4	1	3
6	3	4	4	4	4	5	3	4	5	5	5	5	5	5	4	3	5	4	4	4	4	2	5	5	4	4	4	4	5	5	5	5	5	4	5	4	1	5
7	5	4	4	4	4	3	3	4	5	3	3	5	3	2	3	3	4	5	3	2	4	2	5	5	4	5	3	3	4	4	5	5	3	3	4	1	1	4
8	4	4	5	4	4	3	4	3	5	3	2	4	3	2	3	3	5	5	3	2	2	4	4	5	4	4	5	3	5	4	3	5	3	3	4	1	1	4
9	4	4	5	3	5	4	4	4	3	5	4	3	4	1	4	4	5	4	5	3	4	4	4	4	4	4	3	3	4	3	3	5	5	4	3	3	1	3
10	4	4	4	4	4	4	4	4	4	4	4	4	3	2	4	3	4	3	4	3	3	4	4	3	4	4	4	4	4	4	4	4	5	4	3	2	2	3
11	4	4	5	4	4	4	4	5	3	3	4	4	3	2	3	4	4	3	4	3	4	3	3	4	3	3	4	3	5	5	4	3	5	4	3	3	2	3
12	4	4	5	4	5	5	3	4	5	5	5	5	3	2	3	3	4	5	3	2	4	2	4	4	2	2	5	3	5	4	3	5	3	1	4	4	4	1
13	3	4	4	4	4	5	3	4	5	3	3	4	3	2	3	3	5	5	3	1	4	2	2	3	4	4	3	3	4	3	3	5	5	4	4	3	1	4
14	4	4	5	5	4	3	4	4	5	3	3	5	3	2	4	4	4	5	4	2	4	3	5	5	4	4	3	5	4	4	4	5	3	3	4	4	2	5
15	4	4	5	4	3	5	5	5	3	5	4	5	3	3	5	5	5	3	5	4	4	2	5	5	4	2	4	4	4	4	4	5	4	4	3	1	1	5

Data collection of Real test questionnaire (33 Respondents)

NO	SA1	SA2	SA3	SC1	SC2	SC3	SC4	PAS1	PSA2	PSA3	PSA4	SCU1	SCU2	SCU3	SCU4	SCU5	SCU6	PSC1	PSC2	PSC3	SP1	SP2	SP3
1	4	5	5	4	3	4	5	4	4	4	3	4	4	5	4	3	4	4	4	4	4	5	4
2	4	4	4	4	4	4	4	3	4	4	4	3	5	4	5	4	4	4	4	4	4	4	4
3	4	4	4	4	4	4	4	3	4	4	4	4	5	4	4	4	4	4	4	4	4	4	4
4	3	5	3	3	4	3	5	3	4	4	5	4	4	4	5	5	4	3	5	4	5	3	4
5	4	3	4	3	3	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4
6	5	4	5	4	5	4	4	5	4	4	5	5	5	5	3	4	4	4	4	4	4	4	3
7	3	4	4	4	4	4	3	4	4	4	5	4	4	5	5	5	5	4	4	5	5	3	5
8	4	4	4	4	3	4	5	4	4	4	4	5	5	4	3	4	3	4	5	4	4	4	4
9	4	4	4	4	3	4	5	4	3	4	4	4	3	3	5	5	4	4	5	4	4	5	4
10	4	5	4	4	3	4	4	4	3	4	5	4	5	5	5	4	4	3	4	4	4	3	5
11	4	3	5	4	4	5	3	5	3	4	3	4	4	5	4	3	4	4	5	3	4	4	5
12	4	4	4	4	5	4	4	3	3	4	4	4	5	4	4	4	4	3	4	4	4	4	4
13	4	3	5	4	4	4	3	4	4	3	4	4	4	4	5	4	4	4	4	4	4	4	4
14	4	3	4	4	3	4	5	5	4	4	5	4	4	3	5	4	4	4	4	4	3	5	4
15	5	4	5	4	5	5	3	4	5	4	5	5	5	5	3	4	4	4	4	5	4	4	4
16	3	4	4	4	3	4	4	4	4	4	4	4	4	5	5	5	4	4	5	4	4	4	3
17	4	4	4	4	4	5	3	3	4	4	4	5	5	4	3	4	3	4	5	4	5	4	4
18	4	3	4	3	3	4	4	3	3	4	5	4	4	3	4	4	5	4	4	5	3	5	4
19	5	4	5	4	5	4	4	4	4	3	4	5	5	4	5	4	4	4	5	4	4	4	4
20	3	4	4	4	4	4	3	5	4	4	5	4	4	5	3	5	5	4	5	4	4	4	3
21	4	4	4	4	4	4	3	4	5	4	5	5	5	4	3	4	3	3	4	4	5	4	3
22	4	4	4	4	3	4	5	4	4	4	4	4	3	3	5	5	4	4	5	3	4	4	4
23	4	4	4	4	4	4	5	4	4	3	4	4	5	5	5	4	4	3	4	4	4	5	4
24	4	5	4	4	3	4	4	5	4	4	5	4	4	5	4	3	4	4	4	4	5	3	3

25	4	3	5	4	4	4	4	4	4	5	4	5	5	4	5	4	4	4	4	4	4	4	4	
26	5	4	5	3	4	3	3	3	3	4	5	4	4	5	3	5	5	4	4	5	4	4	3	
27	3	4	4	3	3	4	4	4	4	3	4	5	5	4	3	4	3	4	5	4	4	4	5	
28	4	4	4	4	5	4	4	5	4	4	5	4	3	3	5	5	4	4	5	4	5	3	4	
29	4	4	4	4	3	5	4	4	4	5	5	4	4	5	4	4	4	4	5	4	4	4	4	
30	5	4	5	4	3	4	4	4	4	4	3	5	5	3	5	4	4	3	4	4	4	4	3	
31	3	4	4	4	4	5	3	4	4	3	4	4	4	5	4	5	5	4	4	4	4	4	4	
32	4	4	4	3	4	5	4	5	4	4	5	5	5	4	3	4	3	4	4	4	4	4	4	
33	4	3	4	3	3	4	4	4	5	3	5	5	5	4	3	4	3	4	4	5	3	5	4	

Appendix III - Pre-test Result of Reliability and Validity Test

Pre-test

Reliability Tests

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	15	100.0
	Excluded[a]	0	.0
	Total	15	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.843	24

Validity Tests

1. Safety Awareness

Correlations

		SA1	SA2	SA3	SA4	SA5	SA6	RATESA
SA1	Pearson Correlation	1	.472	.080	-.223	.139	-.371	.215
	Sig. (2-tailed)		.076	.778	.425	.621	.174	.442
	N	15	15	15	15	15	15	15
SA2	Pearson Correlation	.472	1	-.025	-.456	.430	-.029	.431
	Sig. (2-tailed)	.076		.929	.088	.109	.918	.108
	N	15	15	15	15	15	15	15
SA3	Pearson Correlation	.080	-.025	1	.130	.494	.453	.711**
	Sig. (2-tailed)	.778	.929		.644	.061	.090	.003
	N	15	15	15	15	15	15	15
SA4	Pearson Correlation	-.223	-.456	.130	1	-.388	-.132	-.171
	Sig. (2-tailed)	.425	.088	.644		.153	.638	.542
	N	15	15	15	15	15	15	15
SA5	Pearson Correlation	.139	.430	.494	-.388	1	.575*	.884**
	Sig. (2-tailed)	.621	.109	.061	.153		.025	.000
	N	15	15	15	15	15	15	15
SA6	Pearson Correlation	-.371	-.029	.453	-.132	.575*	1	.697**
	Sig. (2-tailed)	.174	.918	.090	.638	.025		.004
	N	15	15	15	15	15	15	15
RATESA	Pearson Correlation	.215	.431	.711**	-.171	.884**	.697**	1
	Sig. (2-tailed)	.442	.108	.003	.542	.000	.004	
	N	15	15	15	15	15	15	15

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

2. Safety Communication

Correlations

		SC1	SC2	SC3	SC4	SC5	RATESC
SC1	Pearson Correlation	1	.548*	-.285	.363	-.115	.513
	Sig. (2-tailed)		.035	.303	.183	.684	.051
	N	15	15	15	15	15	15
SC2	Pearson Correlation	.548*	1	-.203	.246	.152	.614*
	Sig. (2-tailed)	.035		.468	.376	.590	.015
	N	15	15	15	15	15	15
SC3	Pearson Correlation	-.285	-.203	1	-.143	-.064	.140
	Sig. (2-tailed)	.303	.468		.610	.821	.619
	N	15	15	15	15	15	15
SC4	Pearson Correlation	.363	.246	-.143	1	.236	.707**
	Sig. (2-tailed)	.183	.376	.610		.397	.003
	N	15	15	15	15	15	15
SC5	Pearson Correlation	-.115	.152	-.064	.236	1	.549*
	Sig. (2-tailed)	.684	.590	.821	.397		.034
	N	15	15	15	15	15	15
RATESC	Pearson Correlation	.513	.614*	.140	.707**	.549*	1
	Sig. (2-tailed)	.051	.015	.619	.003	.034	
	N	15	15	15	15	15	15

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

3. Safety Attitude

Correlations

		PSA1	PSA2	PSA3	PSA4	PSA5	PSA6	PSA7	PSA8	RATEPSA
PSA1	Pearson Correlation	1	-.055	.277	-.036	-.058	-.049	.141	-.058	.305
	Sig. (2-tailed)		.844	.318	.900	.837	.862	.617	.837	.269
	N	15	15	15	15	15	15	15	15	15
PSA2	Pearson Correlation	-.055	1	.185	.146	.358	.403	.082	.477	.755**
	Sig. (2-tailed)	.844		.510	.604	.191	.136	.770	.072	.001
	N	15	15	15	15	15	15	15	15	15
PSA3	Pearson Correlation	.277	.185	1	.475	-.125	-.468	-.297	-.055	.393
	Sig. (2-tailed)	.318	.510		.074	.658	.078	.283	.845	.147
	N	15	15	15	15	15	15	15	15	15
PSA4	Pearson Correlation	-.036	.146	.475	1	.485	-.259	-.423	.357	.538*
	Sig. (2-tailed)	.900	.604	.074		.067	.352	.116	.191	.039
	N	15	15	15	15	15	15	15	15	15
PSA5	Pearson Correlation	-.058	.358	-.125	.485	1	.106	-.151	.583*	.600*
	Sig. (2-tailed)	.837	.191	.658	.067		.708	.591	.022	.018
	N	15	15	15	15	15	15	15	15	15
PSA6	Pearson Correlation	-.049	.403	-.468	-.259	.106	1	.183	.317	.293
	Sig. (2-tailed)	.862	.136	.078	.352	.708		.515	.250	.290
	N	15	15	15	15	15	15	15	15	15
PSA7	Pearson Correlation	.141	.082	-.297	-.423	-.151	.183	1	-.475	-.030
	Sig. (2-tailed)	.617	.770	.283	.116	.591	.515		.073	.916
	N	15	15	15	15	15	15	15	15	15
PSA8	Pearson Correlation	-.058	.477	-.055	.357	.583*	.317	-.475	1	.600*
	Sig. (2-tailed)	.837	.072	.845	.191	.022	.250	.073		.018
	N	15	15	15	15	15	15	15	15	15
RATEPSA	Pearson Correlation	.305	.755**	.393	.538*	.600*	.293	-.030	.600*	1
	Sig. (2-tailed)	.269	.001	.147	.039	.018	.290	.916	.018	
	N	15	15	15	15	15	15	15	15	15

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4. Safety Culture

Correlations

		SCU1	SCU2	SCU3	SCU4	SCU5	SCU6	SCU7	RATESCU
SCU1	Pearson Correlation	1	-.093	.413	.459	.071	-.104	-.226	.526*
	Sig. (2-tailed)		.743	.126	.085	.801	.713	.417	.044
	N	15	15	15	15	15	15	15	15
SCU2	Pearson Correlation	-.093	1	-.451	.031	.077	-.049	-.114	-.005
	Sig. (2-tailed)	.743		.092	.912	.785	.862	.686	.986
	N	15	15	15	15	15	15	15	15
SCU3	Pearson Correlation	.413	-.451	1	.150	-.135	.173	.277	.501
	Sig. (2-tailed)	.126	.092		.594	.631	.539	.318	.057
	N	15	15	15	15	15	15	15	15
SCU4	Pearson Correlation	.459	.031	.150	1	.735**	.198	.035	.767**
	Sig. (2-tailed)	.085	.912	.594		.002	.480	.901	.001
	N	15	15	15	15	15	15	15	15
SCU5	Pearson Correlation	.071	.077	-.135	.735**	1	.280	.087	.574*
	Sig. (2-tailed)	.801	.785	.631	.002		.313	.757	.025
	N	15	15	15	15	15	15	15	15
SCU6	Pearson Correlation	-.104	-.049	.173	.198	.280	1	.733**	.593*
	Sig. (2-tailed)	.713	.862	.539	.480	.313		.002	.020
	N	15	15	15	15	15	15	15	15
SCU7	Pearson Correlation	-.226	-.114	.277	.035	.087	.733**	1	.480
	Sig. (2-tailed)	.417	.686	.318	.901	.757	.002		.070
	N	15	15	15	15	15	15	15	15
RATESCU	Pearson Correlation	.526*	-.005	.501	.767**	.574*	.593*	.480	1
	Sig. (2-tailed)	.044	.986	.057	.001	.025	.020	.070	
	N	15	15	15	15	15	15	15	15

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

5. Safety Competency

Correlations

		PSC1	PSC2	PSC3	PSC4	PSC5	PSC6	PSC7	RATEPSC
PSC1	Pearson Correlation	1	.100	.590*	.403	-.367	-.115	-.327	.324
	Sig. (2-tailed)		.723	.021	.136	.179	.683	.234	.238
	N	15	15	15	15	15	15	15	15
PSC2	Pearson Correlation	.100	1	-.065	-.061	.193	-.040	-.210	.220
	Sig. (2-tailed)	.723		.817	.830	.491	.886	.452	.431
	N	15	15	15	15	15	15	15	15
PSC3	Pearson Correlation	.590*	-.065	1	.634*	-.160	.367	.214	.758**
	Sig. (2-tailed)	.021	.817		.011	.570	.178	.445	.001
	N	15	15	15	15	15	15	15	15
PSC4	Pearson Correlation	.403	-.061	.634*	1	.099	.160	.161	.729**
	Sig. (2-tailed)	.136	.830	.011		.727	.569	.566	.002
	N	15	15	15	15	15	15	15	15
PSC5	Pearson Correlation	-.367	.193	-.160	.099	1	.007	.120	.253
	Sig. (2-tailed)	.179	.491	.570	.727		.980	.670	.363
	N	15	15	15	15	15	15	15	15
PSC6	Pearson Correlation	-.115	-.040	.367	.160	.007	1	.278	.550*
	Sig. (2-tailed)	.683	.886	.178	.569	.980		.315	.034
	N	15	15	15	15	15	15	15	15
PSC7	Pearson Correlation	-.327	-.210	.214	.161	.120	.278	1	.454
	Sig. (2-tailed)	.234	.452	.445	.566	.670	.315		.089
	N	15	15	15	15	15	15	15	15
RATEPSC	Pearson Correlation	.324	.220	.758**	.729**	.253	.550*	.454	1
	Sig. (2-tailed)	.238	.431	.001	.002	.363	.034	.089	
	N	15	15	15	15	15	15	15	15

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

6. Safety Performance

Correlations

		SP1	SP2	SP3	SP4	SP5	RATESP
SP1	Pearson Correlation	1	-.192	-.163	-.870**	.683**	.360
	Sig. (2-tailed)		.494	.561	.000	.005	.187
	N	15	15	15	15	15	15
SP2	Pearson Correlation	-.192	1	.384	-.038	.241	.586*
	Sig. (2-tailed)	.494		.158	.892	.387	.022
	N	15	15	15	15	15	15
SP3	Pearson Correlation	-.163	.384	1	.327	-.263	.669**
	Sig. (2-tailed)	.561	.158		.235	.343	.006
	N	15	15	15	15	15	15
SP4	Pearson Correlation	-.870**	-.038	.327	1	-.789**	-.255
	Sig. (2-tailed)	.000	.892	.235		.000	.358
	N	15	15	15	15	15	15
SP5	Pearson Correlation	.683**	.241	-.263	-.789**	1	.511
	Sig. (2-tailed)	.005	.387	.343	.000		.052
	N	15	15	15	15	15	15
RATESP	Pearson Correlation	.360	.586*	.669**	-.255	.511	1
	Sig. (2-tailed)	.187	.022	.006	.358	.052	
	N	15	15	15	15	15	15

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix IV - Regression Output Using SPSS 21.0

Descriptive Statistics

	Mean	Std. Deviation	N
RATE(SP)	4.01	.212	33
RATE(SA)	4.04	.351	33
RATE(SC)	3.89	.258	33
RATE(PSA)	4.03	.335	33
RATE(SCU)	4.20	.214	33
RATE(PSC)	4.09	.240	33

Correlations

		RATE(SP)	RATE(SA)	RATE(SC)	RATE(PSA)	RATE(SCU)	RATE(PSC)
Pearson Correlation	RATE(SP)	1.000	-.239	.210	-.334	-.198	.050
	RATE(SA)	-.239	1.000	.279	-.011	.145	-.169
	RATE(SC)	.210	.279	1.000	.129	.107	-.176
	RATE(PSA)	-.334	-.011	.129	1.000	-.031	.159
	RATE(SCU)	-.198	.145	.107	-.031	1.000	-.089
	RATE(PSC)	.050	-.169	-.176	.159	-.089	1.000
Sig. (1-tailed)	RATE(SP)	.	.091	.120	.029	.135	.392
	RATE(SA)	.091	.	.058	.476	.211	.174
	RATE(SC)	.120	.058	.	.238	.277	.163
	RATE(PSA)	.029	.476	.238	.	.431	.188
	RATE(SCU)	.135	.211	.277	.431	.	.311
	RATE(PSC)	.392	.174	.163	.188	.311	.
N	RATE(SP)	33	33	33	33	33	33
	RATE(SA)	33	33	33	33	33	33
	RATE(SC)	33	33	33	33	33	33
	RATE(PSA)	33	33	33	33	33	33
	RATE(SCU)	33	33	33	33	33	33
	RATE(PSC)	33	33	33	33	33	33

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	RATE(PSC), RATE(SCU), RATE(PSA), RATE(SA), RATE(SC)[b]	.	Enter

a. Dependent Variable: RATE(SP)

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.580[a]	.337	.214	.188	.337	2.744	5	27	.040	2.690

a. Predictors: (Constant), RATE(PSC), RATE(SCU), RATE(PSA), RATE(SA), RATE(SC)

b. Dependent Variable: RATE(SP)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.486	5	.097	2.744	.040[b]
	Residual	.956	27	.035		
	Total	1.441	32			

a. Dependent Variable: RATE(SP)

b. Predictors: (Constant), RATE(PSC), RATE(SCU), RATE(PSA), RATE(SA), RATE(SC)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.962	1.119		4.433	.000		
	RATE(SA)	-.183	.100	-.304	-1.833	.078	.896	1.117
	RATE(SC)	.321	.138	.390	2.329	.028	.877	1.140
	RATE(PSA)	-.261	.102	-.412	-2.559	.016	.948	1.055
	RATE(SCU)	-.196	.158	-.198	-1.246	.223	.970	1.031
	RATE(PSC)	.102	.145	.115	.703	.488	.920	1.087

a. Dependent Variable: RATE(SP)

Collinearity Diagnostics[a]

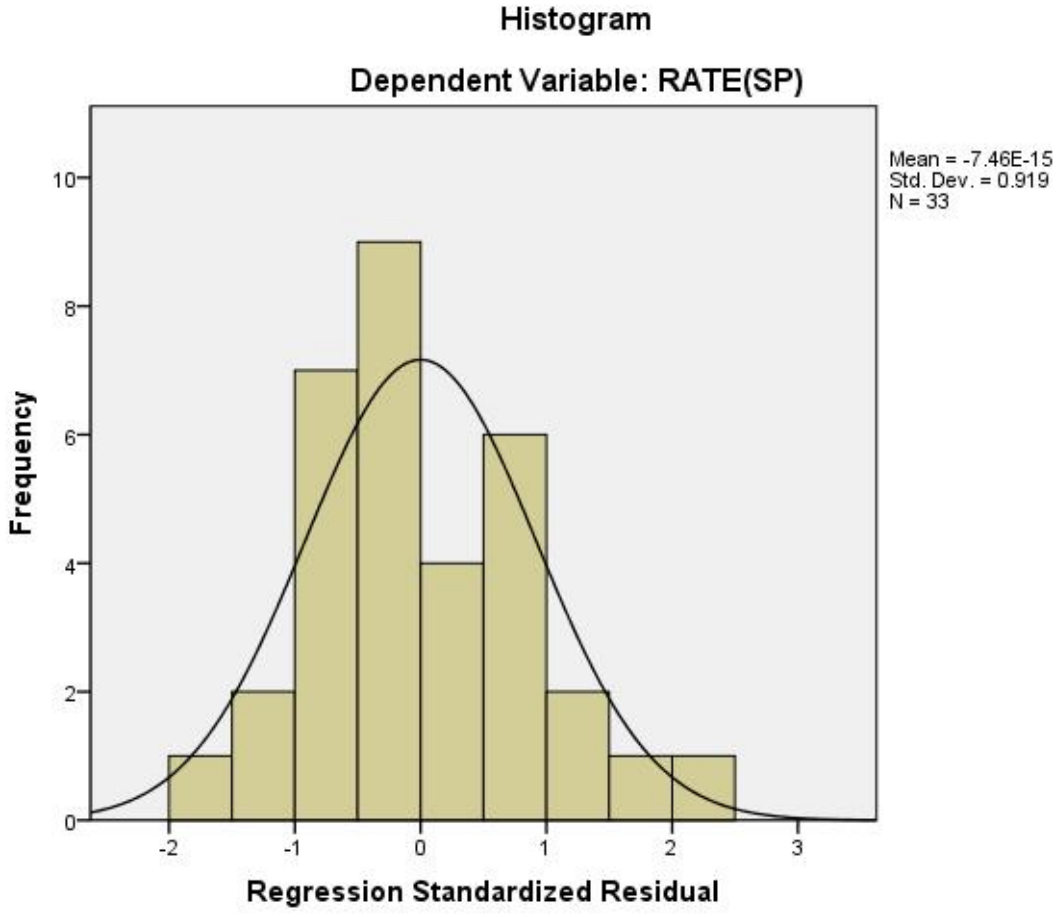
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions					
				(Constant)	RATE(SA)	RATE(SC)	RATE(PSA)	RATE(SCU)	RATE(PSC)
1	1	5.981	1.000	.00	.00	.00	.00	.00	.00
	2	.008	27.935	.00	.44	.02	.26	.00	.05
	3	.005	35.459	.01	.10	.01	.63	.06	.17
	4	.004	40.250	.00	.41	.60	.03	.02	.11
	5	.003	48.323	.00	.01	.24	.06	.55	.27
	6	.001	94.189	.99	.04	.13	.03	.36	.40

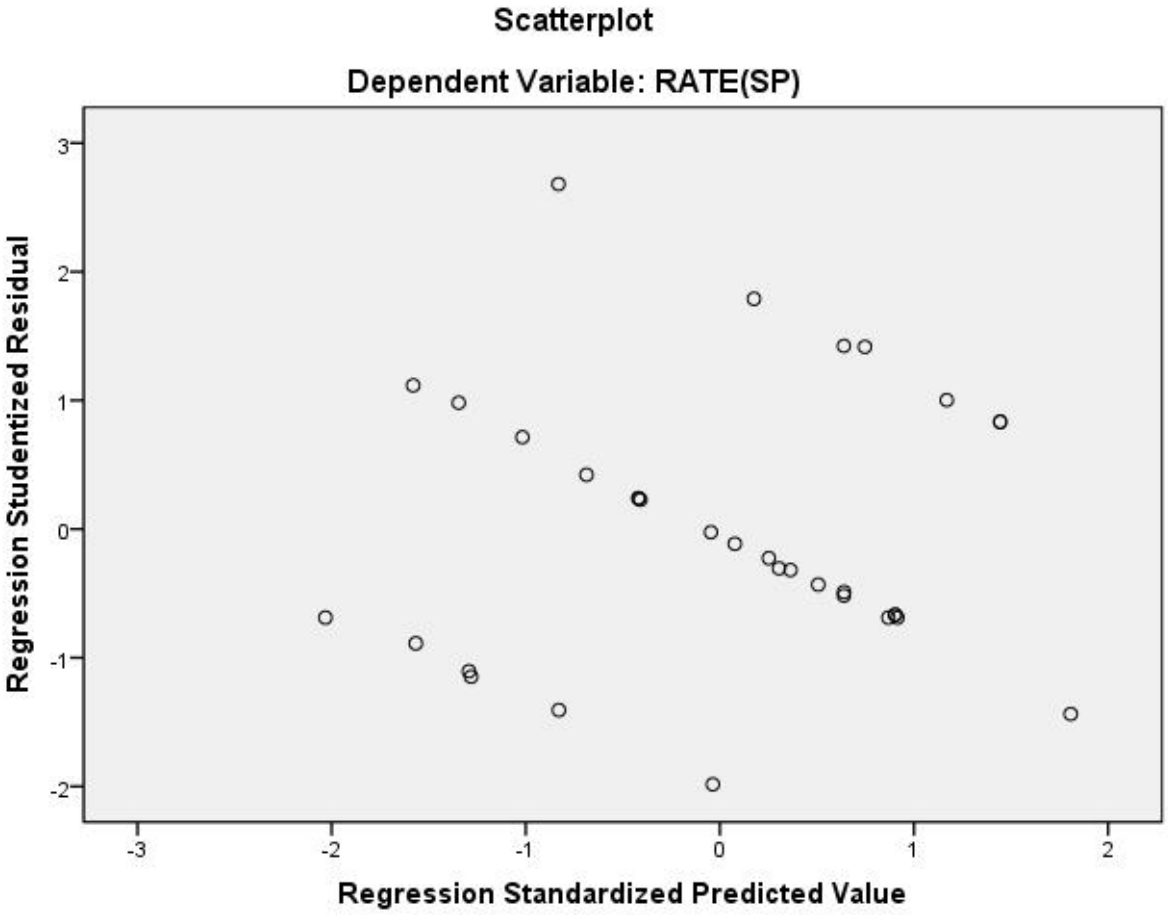
a. Dependent Variable: RATE(SP)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.76	4.23	4.01	.123	33
Std. Predicted Value	-2.032	1.807	.000	1.000	33
Standard Error of Predicted Value	.047	.131	.078	.019	33
Adjusted Predicted Value	3.74	4.31	4.01	.133	33
Residual	-.339	.426	.000	.173	33
Std. Residual	-1.802	2.263	.000	.919	33
Stud. Residual	-1.984	2.681	.004	1.038	33
Deleted Residual	-.411	.598	.001	.221	33
Stud. Deleted Residual	-2.107	3.072	.015	1.086	33
Mahal. Distance	1.047	14.469	4.848	2.817	33
Cook's Distance	.000	.484	.050	.089	33
Centered Leverage Value	.033	.452	.152	.088	33

a. Dependent Variable: RATE(SP)




Scatterplot
Dependent Variable: RATE(SP)
Regression Studentized Residual
Regression Standardized Predicted Value
3
2
1
0
-1
-2
-3
-2
-1
0
1
2

Appendix V

F-Table

Appendix 4a

5 per cent Points of the *F*-distribution

Column represents degrees of freedom (ν_1) for numerator of *F*-test
Row represents degrees of freedom (ν_2) for denominator of *F*-test

	1	2	3	4	5	6	7	8	9	10	12	24	∞
1	161.4	199.5	215.7	224.6	230.2	234.0	236.8	238.9	240.5	241.9	243.9	249.1	254.3
2	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38	19.40	19.41	19.45	19.50
3	10.13	9.552	9.277	9.117	9.013	8.941	8.887	8.845	8.812	8.785	8.745	8.638	8.526
4	7.709	6.944	6.591	6.388	6.256	6.163	6.094	6.041	5.999	5.964	5.912	5.774	5.628
5	6.608	5.786	5.409	5.192	5.050	4.950	4.876	4.818	4.772	4.735	4.678	4.527	4.365
6	5.987	5.143	4.757	4.534	4.387	4.284	4.207	4.147	4.099	4.060	4.000	3.841	3.669
7	5.591	4.737	4.347	4.120	3.972	3.866	3.787	3.726	3.677	3.637	3.575	3.410	3.230
8	5.318	4.459	4.066	3.838	3.688	3.581	3.500	3.438	3.388	3.347	3.284	3.115	2.928
9	5.117	4.256	3.863	3.633	3.482	3.374	3.293	3.230	3.179	3.137	3.073	2.900	2.707
10	4.965	4.103	3.708	3.478	3.326	3.217	3.135	3.072	3.020	2.978	2.913	2.737	2.538
11	4.844	3.982	3.587	3.357	3.204	3.095	3.012	2.948	2.896	2.854	2.788	2.609	2.405
12	4.747	3.885	3.490	3.259	3.106	2.996	2.913	2.849	2.796	2.753	2.687	2.505	2.296
13	4.667	3.806	3.411	3.179	3.025	2.915	2.832	2.767	2.714	2.671	2.604	2.420	2.206
14	4.600	3.739	3.344	3.112	2.958	2.848	2.764	2.699	2.646	2.602	2.534	2.349	2.131
15	4.543	3.682	3.287	3.056	2.901	2.790	2.707	2.641	2.588	2.544	2.475	2.288	2.066
16	4.494	3.634	3.239	3.007	2.852	2.741	2.657	2.591	2.538	2.494	2.425	2.235	2.010
17	4.451	3.592	3.197	2.965	2.810	2.699	2.614	2.548	2.494	2.450	2.381	2.190	1.960
18	4.414	3.555	3.160	2.928	2.773	2.661	2.577	2.510	2.456	2.412	2.342	2.150	1.917
19	4.381	3.522	3.127	2.895	2.740	2.628	2.544	2.477	2.423	2.378	2.308	2.114	1.878
20	4.351	3.493	3.098	2.866	2.711	2.599	2.514	2.447	2.393	2.348	2.278	2.082	1.843
21	4.325	3.467	3.072	2.840	2.685	2.573	2.488	2.420	2.366	2.321	2.250	2.054	1.812
22	4.301	3.443	3.049	2.817	2.661	2.549	2.464	2.397	2.342	2.297	2.226	2.028	1.783
23	4.279	3.422	3.028	2.796	2.640	2.528	2.442	2.375	2.320	2.275	2.204	2.005	1.757
24	4.260	3.403	3.009	2.776	2.621	2.508	2.423	2.355	2.300	2.255	2.183	1.984	1.733
25	4.242	3.385	2.991	2.759	2.603	2.490	2.405	2.337	2.282	2.236	2.165	1.964	1.711
26	4.225	3.369	2.975	2.743	2.587	2.474	2.388	2.321	2.265	2.220	2.148	1.946	1.691
27	4.210	3.354	2.960	2.728	2.572	2.459	2.373	2.305	2.250	2.204	2.132	1.930	1.672
28	4.196	3.340	2.947	2.714	2.558	2.445	2.359	2.291	2.236	2.190	2.118	1.915	1.654
29	4.183	3.328	2.934	2.701	2.545	2.432	2.346	2.278	2.223	2.177	2.104	1.901	1.638
30	4.171	3.316	2.922	2.690	2.534	2.421	2.334	2.266	2.211	2.165	2.092	1.887	1.622
35	4.121	3.267	2.874	2.641	2.485	2.372	2.285	2.217	2.161	2.114	2.041	1.833	1.558
40	4.085	3.232	2.839	2.606	2.449	2.336	2.249	2.180	2.124	2.077	2.003	1.793	1.509
50	4.034	3.183	2.790	2.557	2.400	2.286	2.199	2.130	2.073	2.026	1.952	1.737	1.438
60	4.001	3.150	2.758	2.525	2.368	2.254	2.167	2.097	2.040	1.993	1.917	1.700	1.389
80	3.960	3.111	2.719	2.486	2.329	2.214	2.126	2.056	1.999	1.951	1.875	1.654	1.325
100	3.936	3.087	2.696	2.463	2.305	2.191	2.103	2.032	1.975	1.927	1.850	1.627	1.283
120	3.920	3.072	2.680	2.447	2.290	2.175	2.087	2.016	1.959	1.910	1.834	1.608	1.254
∞	3.841	2.996	2.605	2.372	2.214	2.099	2.010	1.938	1.880	1.831	1.752	1.517	1.000

Example: $F_{(5,9,5\%)} = 3.482$ means that the probability of an *F*-value greater than 3.482 is 5% for (5, 9) df.

https://www.slideshare.net/RioneDrevale/f-distribution-table

R-Table

Table R Critical Values of the Correlation Coefficient

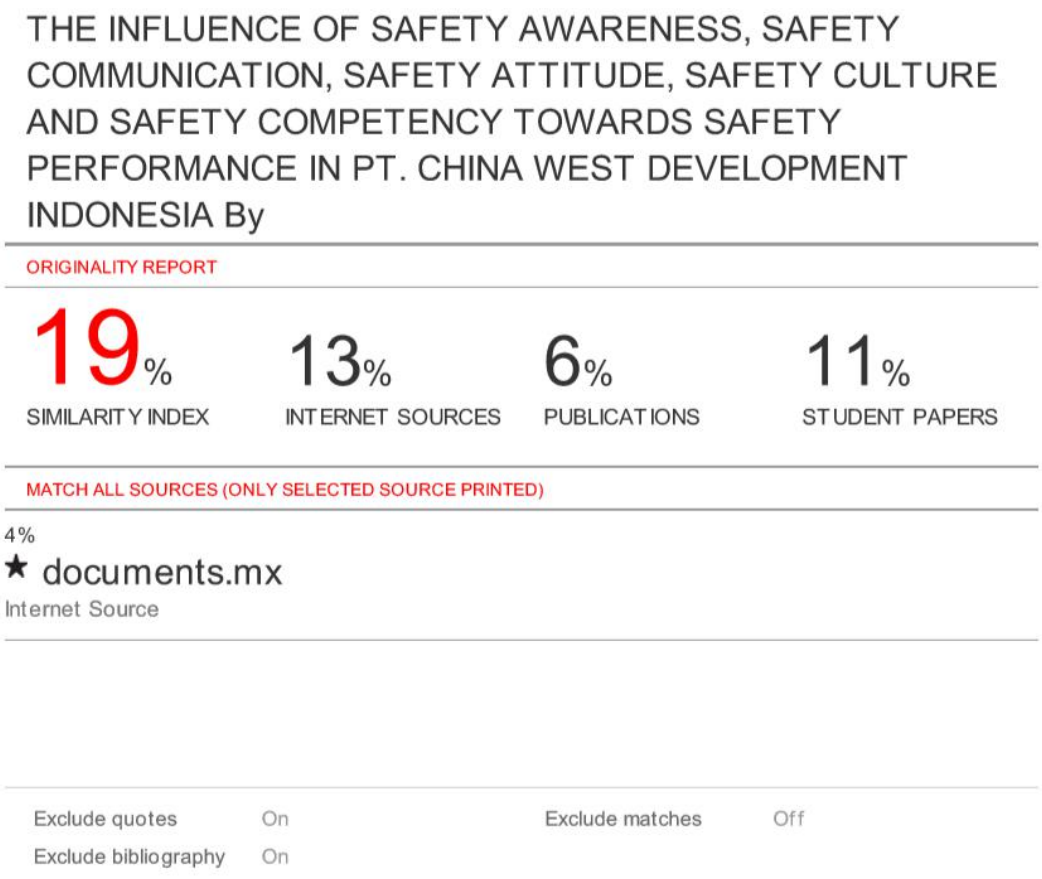
	Levels of Significance for a One-Tailed Test			
	.05	.025	.01	.005
	Levels of Significance for a Two-Tailed Test			
df	.10	.05	.02	.01
1	.988	.997	.9995	.9999
2	.900	.950	.980	.990
3	.805	.878	.934	.959
4	.729	.811	.882	.917
5	.669	.754	.833	.874
6	.622	.707	.789	.834
7	.582	.666	.750	.798
8	.549	.632	.716	.765
9	.521	.602	.685	.735
10	.497	.576	.658	.708
11	.476	.553	.634	.684
12	.458	.532	.612	.661
13	.441	.514	.592	.641
14	.426	.497	.574	.623
15	.412	.482	.558	.606
16	.400	.468	.542	.590
17	.389	.456	.528	.575
18	.378	.444	.516	.561
19	.369	.433	.503	.549
20	.360	.423	.492	.537
21	.352	.413	.482	.526
22	.344	.404	.472	.515
23	.337	.396	.462	.505
24	.330	.388	.453	.496
25	.323	.381	.445	.487
26	.317	.374	.437	.479
27	.311	.367	.430	.471
28	.306	.361	.423	.463
29	.301	.355	.416	.456
30	.296	.349	.409	.449
32	.287	.339	.397	.436
34	.279	.329	.386	.424
36	.271	.320	.376	.413
38	.264	.312	.367	.403
40	.257	.304	.358	.393
42	.251	.297	.350	.384

(continued)

https://www2.palomar.edu/users/rmorrissette/lectures/stats/correlation/correlation.htm

Statistics for the Behavioral Sciences / Lesson 7 Correlation (**Roger N. Morrissette, PhD)**

Appendix VI - Turnitin detection result report



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