UNIVERSITY OF WESTERN SYDNEY, HAWKESBURY

FACULTY OF ENVIRONMENTAL MANAGEMENT AND AGRICULTURE

A Study on the Competencies required for Registered Safety Officers (RSO) in Hong Kong Construction Industry

by

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Declaration of Originality

The following work has been completed by the author as coursework research project report in the Master of Applied Science (Safety Management) at the University of Western Sydney, Hawkesbury in conjunction with the Hong Kong Polytechnic University under the supervision of Mr. Fenkins L.Y. Chow and Mrs. Sue Reed.

I hereby declare that the research and report are my own work and that, to the best of my knowledge and belief, it contains no material that has previously published or written by another person. The material submitted has not been accepted for the award of any other degree or diploma of a university or other institute of higher learning, except where due acknowledgement has been made in the text.

Ng Cheuk Ping

Abstract

To meet the legal, contractual and social obligations, registered safety officers (RSO) working in the Hong Kong Construction Industry play a very important role in enhancing and ensuring safety and health at work but their competencies have not been identified and analysed so far.

The purpose of my study is to identify and analyse the competencies required for RSO in Hong Kong Construction Industry and develop a Conceptual Framework of RSO Competencies for the stakeholders to target their improvement efforts at meeting the changing political, social, economic, technological and task environments.

Through the relevant literature review and research design, I have developed a Conceptual Framework of RSO Competencies as well as the survey letter and questionnaire. I have then sent the survey letters and questionnaires to my stratified samples who were registered safety officers and members of the Society of Registered Safety Officers.

Based on the returned questionnaires, I have presented and analysed the results using descriptive statistics. The research and analyses indicated the competencies considered necessary by RSO and their ranking of importance.

Based on the results and analyses, I have concluded that the competencies required for RSO should include the four domains namely Safety and Health Practice, Personal Credibility, Management Competencies and Business Knowledge and the identified competencies under the four domains are necessary for RSO. I have also concluded that the Conceptual Framework of RSO Competencies developed for this study is valid but the four domains have different ranking in terms of importance considered by RSO with Safety and Health Practices ranked the highest.

Based on the conclusions, I have recommended that the major stakeholders including RSO, their employers, training providers, safety associations and the government may base on the competencies required for RSO to identify and bridge the competency gap and / or target their improvement efforts at meeting the environmental changes. I have also recommended that similar research from other stakeholders' perspectives using a large sample and additional measures should be conducted for aligning the interests of stakeholders and enhancing the reliability and validity of the results.

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1 Introduction

1.1 The Problem

At present, the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations, Chapter 59Z, Law of Hong Kong specifies :

i. the requirement for employment of a Registered Safety Officer (RSO) for Hong Kong construction sites or shipyards where 100 persons or more are employed ;

ii. the qualifications for registration as a safety officer ;

iii. the responsibilities of a registered safety officer.

The qualifications for registration as a safety officer have been defined in terms of specified training and relevant experience instead of the RSO competencies. Although the Labour Department conducted an opinion survey concerning the RSO duties and training in 1996 and proposed an amendment in the regulations in 1997, the RSO competencies which will be more appropriate and useful to the major stakeholders in bridging the competency gap and targeting the improvement efforts have not been identified and analysed so far.

1.2 Rationale for the Study

The Hong Kong Government has been promoting the self-regulation initiatives and the safety management approach since 1995. Under the Factories and Industrial Undertakings Ordinance and its subsidiary Regulations in Hong Kong, both employers and employees in the construction industry have to fulfil their general duties of care and their safety responsibilities for enhancing and ensuring safety and health at work.

As reported by the Labour Department, the number of accidents in Hong Kong construction industry in 1995, 1996 and 1997 was 15268, 16469 and 19051 respectively and has been comparatively higher than those in other industries. Registered safety officers working in the construction industry have the legal, contractual and social obligations in enhancing and ensuring safety and health at work and therefore play a very important role in accident prevention.

‘ Competent Person ’ has been used in some safety regulations such as Construction Sites (Safety) Regulations but the required competencies for the competent person have not been identified. Only the term has been defined as a person who is-

(a) appointed for that purpose by the contractor required by these regulations to ensure that the duty is carried out by a competent person; and

(b) by reason of substantial training and practical experience, competent to perform the duty.

It will be difficult to decide on the required training and experience if the competencies required for performing the duty have not been clearly identified. However, not much have been done in identifying the competencies for competent person and RSO so far despite the importance and increasing use of competencies in human resource management and the International Standard ISO 9000:2000 drafted by the International Organisation for Standardisation (1999).

In 1998, the Institute of Human Resource Management conducted the Human Resource Competencies Study in Hong Kong for developing a competency model to target the improvement efforts but no study on the competencies required for registered safety officers in Hong Kong Construction Industry has been conducted yet.

Viljoen (1991) stated that the environmental influences on organisational activities included :

i. macroenvironment such as the geographic, political, social, technological and economic environments ;

ii. task environment such as the customers, suppliers, competitors, creditors and labour.

The RSO competencies are useful to the major stakeholders in bridging the competency gap and targeting the improvement efforts to meet the following environmental changes in Hong Kong :

i. Political change

RSO have to enhance their competencies in both management and safety and health practices for meeting the requirements in new or amended ordinance and regulations in connection with occupational safety and health e.g. the proposed Factories and Industrial Undertakings (Safety Management) Regulations ;

ii. Social change

RSO have to enhance their personal credibility as well as competencies in safety and health practices for meeting the increasing demand for better safety and health protection at work by the public and their colleagues as well as increasing public awareness of the criminal and civil liabilities arising from negligence at work

iii. Economic change

RSO have to enhance their competencies in both management and safety and health practices for meeting the intense construction activities and tight work schedules.

iv. Technological change

RSO have to enhance their competencies in both business knowledge and safety and health practices for meeting the adoption of new technology, equipment, materials, methods and tasks in the constructions works.

v. Increased customer concern and expectation

RSO have to enhance their competencies in safety and health practices e.g. devising and implementing safety plans for meeting the safety specifications of some customers e.g. the Hong Kong Government and the Mass Transit Railway Corporation.

I therefore have decided to conduct this research study because the results of my study will be useful to the major stakeholders including :

i. the registered safety officers for continuing professional development and meeting the environmental changes ;

ii. the employers for human resource management and meeting the environmental changes ;

iii. the training providers for course design and evaluation and meeting the environmental changes ;

iv. the safety associations for member accreditation and meeting the environmental changes ;

v. the government for reviewing the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations and meeting the environmental changes.

Moreover, I hope my study will arouse the concern about identifying and developing competencies for the benefits of all concerned.

1.3 Aims and Objectives of Study

The main aims and objectives of the study are to :

i. identify and analyse the competencies required for registered safety officers in Hong Kong Construction Industry ;

ii. develop a Conceptual Framework of RSO Competencies for the major stakeholders to target their improvement efforts at meeting the changing political, social, economic, technological and task environments.

The research questions with respect to the Hong Kong Construction Industry include :

i. What competencies do registered safety officers require ?

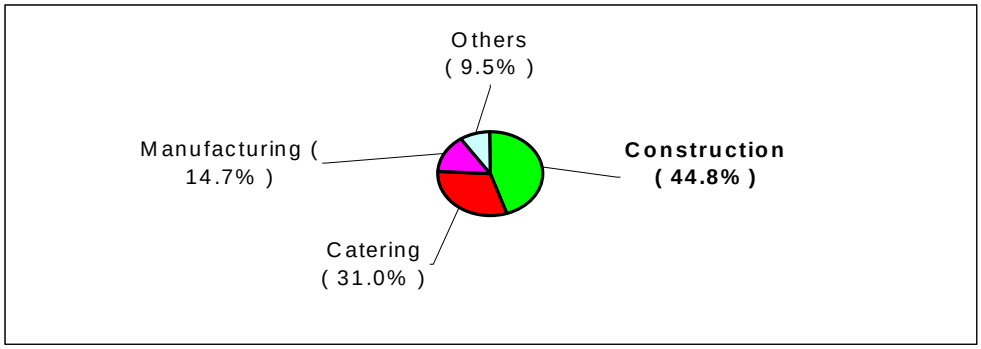
ii. How do the registered safety officers rate the competencies ?

iii. Which competencies do registered safety officers consider most important ?

1.4 Scope of Study

As revealed in the Labour Department reports, the number of accidents in the construction industry in Hong Kong over the past years has been comparatively higher than those in other industries. The distribution of industrial accidents in Hong Kong for the first two quarters of 1998 reported in the Labour Department Construction Safety Newsletter March 1999 was shown in Fig 1.

Fig. 1 : Distribution of Industrial Accidents in Hong Kong



Period : Jan. – June 1998

Moreover, the majority of registered safety officers are working in the construction industry.

To cope with the limited resources available, I have focused my scope of study to those RSO selected from the construction industry in Hong Kong because :

i. they play a very important role in accident prevention ;

ii. they should be the best ones to describe their duties and the competencies required.

Although my study was on the perspectives of RSO in the construction industry, I have reviewed the requirements of other stakeholders including the government, employers and safety associations and incorporated them in the survey questionnaire where appropriate such that the survey questionnaire may be used for further research from all stakeholders' perspectives if resources allow.

1.5 Definition of Terms

The terms used in this study are listed in alphabetical order and defined below :

AS/NZS 4804:1997

Australian / New Zealand Standard : Occupational Health and Safety Management Systems - General Guidelines on Principles, Systems and supporting Techniques

BS 8800:1996

British Standard : Guide to Occupational Health and Safety Management Systems

Competencies / Competences

Individual's knowledge, skills, abilities or behaviours that add value to business success.

Construction site

A place where construction work is undertaken and also any area in the immediate vicinity of any such place which is used for the storage of materials or plant used or intended to be used for the purpose of the construction work.

Environmental Changes

Changes in macroenvironment including geographic, political, social, technological and economic environments as well as task environment including customers, suppliers, competitors, creditors and labour.

Factories and Industrial Undertakings (hereafter abbreviated as FIU) Ordinance

The Law of Hong Kong, Chapter 59, relating to factories and industrial undertakings and to the employment of women, young persons and children therein. As revealed from the Bilingual Laws Information System maintained by the Department of Justice in Hong Kong, the 28 subsidiary regulations under this ordinance include :

Chapter 59A : FIU Regulations

Chapter 59B : FIU (Confined Spaces) Regulations

Chapter 59C : FIU (Blasting by Abrasives) Special Regulations

Chapter 59D : FIU (First Aid in Notifiable Workplaces) Regulations

Chapter 59E : FIU (Notification of Occupational Diseases) Regulations

Chapter 59F : Quarries (Safety) Regulations

Chapter 59G : FIU (Woodworking Machinery) Regulations

Chapter 59H : FIU (Electrolytic Chromium Process) Regulations

Chapter 59I : Construction Sites (Safety) Regulations

Chapter 59J : FIU (Lifting Appliances and Lifting Gear) Regulations

Chapter 59K : FIU (Cargo and Container Handling) Regulations

Chapter 59L : FIU (Abrasive Wheels) Regulations

Chapter 59M : FIU (Work in Compressed Air) Regulations

Chapter 59N : FIU (Spraying of Flammable Liquids) Regulations

Chapter 59O : FIU (Goods Lifts) Regulations

Chapter 59P : FIU (Dry Batteries) Regulations

Chapter 59Q : FIU (Guarding and Operation of Machinery) Regulations

Chapter 59R : FIU (Cartridge-operated Fixing Tools) Regulations

Chapter 59S : FIU (Protection of Eyes) Regulations

Chapter 59T : FIU (Noise at Work) Regulations

Chapter 59V : FIU (Fire Precautions in Notifiable Workplaces) Regulations

Chapter 59W : FIU (Electricity) Regulations

Chapter 59Z : FIU (Safety Officers and Safety Supervisors) Regulations

Chapter 59AA : FIU (Carcinogenic Substances) Regulations

Chapter 59AB : FIU (Dangerous Substances) Regulations

Chapter 59AC : FIU (Suspended Working Platforms) Regulation

Chapter 59AD : FIU (Asbestos) Regulation

Chapter 59AE : FIU (Confined Spaces) Regulation

Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations

Enacted under the FIU Ordinance, the regulations apply to construction sites and shipyards. Those regulations related to the safety officers include :

Regulation 1 : Citation Regulation:

Regulation 2 : Interpretation

Regulation 3 : Application

Regulation 4 : Safety Officer Advisory Committee

Regulation 5 : Qualifications for registration as safety officer

Regulation 6 : Register of safety officers

Regulation 7 : Application for registration as safety officer

Regulation 8 : Commissioner to serve notice of decision on applicant

Regulation 9 : Cancellation of registration

Regulation 10 : Suspension of registration

Regulation 11 : Notice of cancellation or suspension of registration

Regulation 12 : Appeals

Regulation 13 : Publication of cancellation or suspension of registration

Regulation 14 : Employment of safety officer

Regulation 15 : Duties of safety officer

Regulation 19 : Facilities to be provided by proprietor

Regulation 19A : Display of notice

Regulation 20 : Action to be taken on reports

Regulation 21 : Production of reports to Commissioner

Regulation 22 : Offences by proprietor and penalties for offences

Regulation 23 : Forms

Schedule 1 : Industrial undertakings to which regulations apply

Schedule 2 : Qualifications for registration as safety officer

Schedule 3 : Scheduled qualifications

Labour Department

A government department in Hong Kong with the following mission :

- to improve the utilisation of human resources by providing a range of employment services to meet changes and needs in the labour market;
- to ensure that risks to people's safety and health at work are properly managed by legislation, education and promotion;
- to foster harmonious labour relations through promotion of good employment practices and resolution of labour disputes; and
- to improve and safeguard employees' rights and benefits in an equitable manner.

Occupational Safety & Health Council (hereafter abbreviated as OSHC)

Occupational Safety & Health Council was set up in 1988 following the enactment of the Occupational Safety and Health Ordinance on 21 July 1988. It is a statutory body responsible for upgrading safety and health standards in Hong Kong.

Registered Safety Officers (hereafter abbreviated as RSO)

Safety officers registered under the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations.

Stakeholders

In this study, they refer to the RSO, RSO employers, training providers, associations, the government and the public who have concern about the RSO performance.

2 Literature Review

I have undertaken the literature review in two stages as elaborated below :

i. Stage 1 : General Overview

This is the general overview of information about registered safety officers and competencies studies using secondary sources such as general textbooks, ordinance, regulations and research reviews which include the relevant topics for limiting the research problem and defining it better.

Through the general overview, I am able to review the various perspectives and methods in competencies study for structuring my research in the right direction.

ii. Stage 2 : Specific and Structured Review

This is the specific and structured review involving primary sources of salient research such as related research reports and journal articles for guiding and informing the current study as well as identifying research possibilities.

Through the specific and structured review, I can review the perspective, method and result of similar research such that I am able to plan my research carefully and redesign it if necessary for meeting the purpose of my study.

The findings from my literature review and their impacts on my research design were shown in the following sections 2.1 to 2.3.

2.1 Competencies

2.1.1 Definition, Development and Applications

Initially, I have reviewed the definitions of competencies from different parties as shown below :

i. Yeung (1998) defined competency as an individual's knowledge, skills, abilities or behaviours that add value to business success.

ii. Cited in Croner's Office Health and Safety (1997) :

(a) the National and Scottish Vocational Qualifications in Occupational Health and Safety Practice define competence as the ability to perform to the standards required in employment across a range of circumstances and to meet changing demands.

(b) the Department for Education and Employment defines competence as the ability to perform the activities within an occupation or function to the standards expected in employment.

iii. Miller (1995) cited that competencies were the knowledge, skills, or attitudes needed to accomplish specific tasks within an occupation.

iv. Lloyd & Cook (1993) cited that competence was the ability to perform activities to the level expected within employment.

vi. Boak (1991) cited that competency as an underlying characteristic of a person which results in effective and / or superior performance in a job. He stated that the American and, following them, some British writers had used the words ‘ competency ‘ and ‘competencies ‘ more loosely than Klemp to refer to the qualities and skills of competent managers. Moreover, he defined competences as the relevant qualities and skills that lead to effective job performance and stated that throughout his book the word ‘ competency ‘ had been used to mean the same thing.

vii. Sanford (1989) cited the following Professional Competence (PC) Matrix :

PC	Intrinsic	Contextual
Knowledge	- Generic - Specific	- Ethical - Legal - Economic
Skills	- Problem solving	- Inter-personal - Communication
Attitudes	- Peer group	- Community - Society

In order to find the best definition of competency, I have contrasted the different definitions below where V represented the coverage :

Competency	Yeung	Croner	Miller	Lloyd & Cook	Boak
Knowledge	V		V		
Skills	V		V		V
Abilities	V	V		V	
Behaviour	V				
Attitude			V		
Qualities					V

Among the definitions, I have chosen Yeung's definition for use in my study because it encompasses the essences and is oriented toward adding value to business success. Competent RSO add value to business success by reducing the accident costs and thereby improving the competitive position. The definition also helped to focus my attention in designing the survey questionnaire.

After choosing the definition, I have also reviewed the literatures and articles on competency development and applications to support and facilitate my study. The reviews and their contributions to my study were elaborated below :

The outline map on Competence, Training and Certification updated by the Health & Safety Executive (1999) in U.K. is intended to give an overview of requirements for competence and training in health and safety legislation e.g. the competence-based qualifications accredited by Qualifications and Curriculum Authority and Scottish Qualifications Authority are required for the person who assists the employer in undertaking measure to comply with the Management of Health and Safety at Work Regulations 1992.

Lloyd & Cook (1993) introduced the National Vocational Qualifications (NVQs) and Scottish Vocational Qualifications (SVQs) which had been put in place in the United Kingdom (UK) to support the efforts of employers and their employees to raise standards of performance in the workplace and improve the UK's competitive position in domestic and international markets.

The NVQs and SVQs are based on a new approach to describing and assessing people's performance, i.e. competence. The essence of these competence-based qualifications is that people should be able to demonstrate what they can do within the workplace.

Competence has two main characteristics. First, it should be demonstrable, based on actual performance requirements in the day-to-day work environment. Second, standards of competence are concerned with the results of activity (the outcome) rather than the inputs that were needed to achieve it.

Standards of competence mean :

i. better performance at work ;

ii. can do qualifications ;

iii. self development breakthroughs ;

iv. objective, needs-driven assessment.

The Management Development Centre of the Vocational Training Council in Hong Kong has been promoting the use of NVQs and the associated National Management Standards in enhancing the management performance in Hong Kong.

I have reviewed and incorporated the NVQ's National Management Standards in my survey questionnaire (see Appendix 1) as shown below because management competencies are essential for maintaining effective and efficient performance at work and especially for RSO who are responsible for safety management :

Management Competencies	Survey Questionnaire
	Section 3 : Management Competencies
Manage operations	Sections 3.2.1 & 3.2.2
Manage finance	Sections 3.2.3 & 3.2.4
Manage people	Sections 3.2.5 to 3.2.8
Manage information	Sections 3.2.9 & 3.2.10

Moreover, Lloyd & Cook (1993) stated that the standards of competence could be used :

i. as a basis for job descriptions ;

ii. to identify training needs ;

iii. to develop training programmes ;

iv. as a basis for assessment and reward ;

v. as benchmarks for development.

I have included the above applications where appropriate in making my recommendations (see section 6).

Apart from U.K., the Worksafe Western Australia has also developed national guidelines for integrating occupational health and safety competencies into national industry competency standards. Although the guidelines are not regulations or a cross-industry standard and do not prescribe the competencies which must be incorporated in industry competence standards, they set out generic competencies which provide a basis for the inclusion of occupational safety and health in Industry Competency Standards. The generic competencies include the following competencies required to implement an effective occupational health and safety management system :

i. task skills ;

ii. task management skills ;

iii. job/role environment skills.

William (1994) cited managing for employee competence as one of the four major people-related business issues and described the use of competency profiling which was an approach that started with the definition of qualities critical to a job by studying outstanding performers in that job and then using selection techniques that measured these qualities.

Fletcher (1993) also outlined the key issues and implications involved in national competence-based system and the company specific system which had particular benefits such as competences linked directly to business performance.

Moreover, the American Society of Safety Engineers (1999) reported that the Criteria for Establishing Levels of Competence in Certification in the Safety Profession were under development.

The growing trend in competency development and applications was revealed from the above review. To keep in pace with the trend, RSO should identify and develop the required competencies to meet the environmental changes accordingly.

2.1.2 Studies

Although there has been no study on RSO competencies in Hong Kong so far, I have read the following reports on competencies studies before designing my research and survey questionnaire because they were useful references for my research design and report presentation and their contributions to my study were elaborated below :

i. Human Resource Competencies in Hong Kong :

Research Findings and Application Guide by Yeung (1998)

I have adapted the Conceptual Framework of Human Resource Competencies used in the captioned research for my study after reviewing and revising the following four domains of competencies as necessary :

a. Business Knowledge

Business Knowledge was retained in the framework because it would enable RSO to communicate and perform better at work.

b. Personal Credibility

Personal Credibility was retained in the framework because it would enable RSO to get necessary support and trust from their stakeholders.

c. Management Competencies

Management Competencies were retained in the framework because they would enable RSO to perform effectively and efficiently.

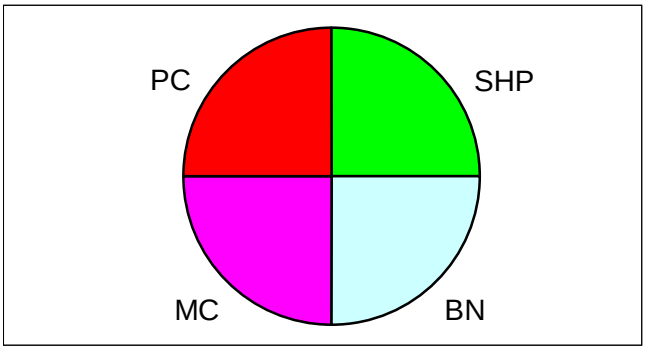
d. Human Resource Practices

Human Resource Practices were replaced with Safety and Health Practices applicable to RSO.

The Conceptual Framework of RSO Competencies adapted from the Conceptual Framework of Human Resource Competencies and with continuous learning and development added for meeting the environmental changes was shown in the following Figure 2.

Figure 2 : Conceptual Framework of RSO Competencies

Continuous Learning & Development to meet Environmental Changes



Continuous Learning & Development to meet Environmental Changes

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Legend :

Four domains of RSO Competencies are :

SHP = Safety and Health Practices

BN = Business Knowledge

MC = Management Competencies

PC = Personal Credibility

ii. DuPont Executive Safety News (1999)

I have reviewed the 10 critical competencies identified for safety, health and environmental professionals from the Green Tree Project and incorporated them in my survey questionnaire (see Appendix 1) as shown below :

Identified Critical Competencies	Survey Questionnaire
Information seeking ; negotiation skills ; involving others ; perceptual objectivity and planning	Section 3.2 : Management Competencies Sections 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.7, 3.2.8, 3.2.9, 3.2.10
Impact and influence ; order, accuracy and clarity ; conceptual thinking ; perceptual objectivity ; analytical thinking and achievement orientation	Section 3.3 : Personal Credibility Sections 3.3.2, 3.3.4, 3.3.5, 3.3.6

iii. Future Hiring Practices & Required Competencies for Professional Position within the Apparel Industry by Miller (1995)

I have reviewed the captioned report and adopted the research methodology for my study where appropriate (see section 3).

iv. Professional Development : Competencies for the Solo Librarian by Henry (1997)

I have reviewed the checklist of professional development needs in the captioned report and taken them into consideration when designing my survey questionnaire (see Appendix 1) as shown below :

Professional Development Needs Checklist	Survey Questionnaire
Subject knowledge	Section 2 : Your Present Job Duties (Safety & Health Practices)
Organisational culture & Information technology	Section 3.1 : Business Knowledge
Management skills, Interpersonal skills, Communication, Information skills, Networking & Personal development	Section 3.2 : Management Competencies

v. Measuring Continuing Education Needs and Results Competency for Century the 21st by Henry (1997)

I have reviewed the action research described in the captioned report and adopted the methods such as questionnaire design and data gathering for my study (see section 3).

vi. Competencies for Growing Small Business Organisations into Larger Ones : A Study of Hong Kong Enterprises by Snell & Lau (1994)

I have reviewed the captioned report and learned the different approach in competency study.

Moreover, I have reviewed the following methods to facilitate the selection of the appropriate one for my study :

i. Sharon (1994) stated the use of a Task Competences Matrix listing the tasks carried out, the names of job holders and their skill levels for identifying gaps in the skill levels of job holders in a department.

ii. Hong Kong Productivity Council presented in a Human Resource Management Seminar in April 1999 the different tools in analysing competencies including questionnaires, expert panels, focus groups, benchmarking, critical incident techniques, behavioural event interviewing and repertory grid.

iii. Lloyd & Cook (1993) cited the functional analysis which is a method to identify competences by beginning with a definition of the key purpose of any given occupational area and breaking it down into constituent functions and further dividing these into units and elements of competence which have the associated performance criteria and range statements defined accordingly.

Among the different methods for identifying competencies, I have chosen the use of questionnaires because it is appropriate for my study and comparative cheaper and easier to administer.

2.2 Registered Safety Officer

2.2.1 Statutory Requirements

Under Regulation 14 of the FIU (Safety Officers and Safety Supervisors) Regulations, the proprietor of a construction site / shipyard :

i. shall employ a person as a full time safety officer when the number of persons employed in the construction site / shipyard is 100 or more ;

ii. shall not employ any person as a safety officer -

   (a) unless that person is registered under regulation 7 and is not for the time being suspended from registration under regulation 10 ; and

   (b) for any purpose other than the discharge of the duty under regulation 15, of a person employed as a safety officer.

Under Regulation 15 of the FIU (Safety Officers and Safety Supervisors) Regulations, the duty of a person employed as a safety officer shall be to assist the proprietor of the industrial undertaking in promoting the safety and health of persons employed therein. The RSO duties specified in the regulation have been reviewed and incorporated in my survey questionnaires (see Appendix 1) as shown below :

RSO Duties specified in the regulation	Survey Questionnaire
Advising the proprietor as to measures to be taken in the interest of the safety and health of persons employed in the industrial undertaking and, with the approval of the proprietor, implementing such measures	Section 2 : Your Present Job Duties (Safety & Health Practices)
Inspecting the industrial undertaking, or directing any person employed as a safety supervisor therein to inspect the industrial undertaking for the purpose of determining whether or not there is any machinery, plant, equipment, appliance or process or any description of work carried on in the industrial undertaking which is of such a nature as to be liable to cause risk of bodily injury to any person employed in an industrial undertaking	Sections 2.3 & 2.6
Reporting the findings of any inspection carried out to the proprietor and recommending what measures, if any, ought to be taken as a result of that inspection	Sections 2.12
Assisting in the supervision of any person employed as a safety supervisor in the industrial undertaking	Section 2.3
Advising the proprietor in the interest of the safety and health of persons employed in the industrial undertaking of any repairs or maintenance that ought to be carried out	Section 2.12
Investigating and reporting to the proprietor, or causing to be investigated and reported to the proprietor, the circumstances of any accident, or dangerous occurrence in the industrial undertaking and making recommendations to the proprietor to prevent similar accidents or dangerous occurrences	Section 2.8

Investigating and reporting to the proprietor, or causing to be investigated and reported to the proprietor, the circumstances of the suffering of any bodily injury by any person employed in the industrial undertaking and making recommendations to the proprietor to prevent similar suffering of any bodily injury	Section 2.8
Investigating and reporting to the proprietor every fatal accident in the industrial undertaking and making recommendations to the proprietor to prevent similar fatal accidents	Section 2.8
Receiving, discussing and countersigning every report submitted to him under regulation 17(1)(b)(iv) by a person employed as a safety supervisor	Sections 2.3 & 2.6
On or before the last day in every month preparing and submitting to the proprietor a report in the approved form.	Section 3.2 : Management Competencies Sections 3.2.9 & 3.2.10

2.2.2 Employers' Requirements

The employers' requirements for safety officer in the construction industry consolidated from the job advertisements in one of Hong Kong's leading newspapers, South China Morning Post, in August, 1999 have been reviewed and incorporated in my survey questionnaire (see Appendix 1) as shown below :

Employers' Requirements	Survey Questionnaire
Registered safety officer	Section 1 : Participant Profile Section 1.1
Higher Certificate in Civil Engineering or equivalent and relevant experience in construction sites / works	Section 3.1 : Business Knowledge
Good communication, interpersonal and supervisory skills	Section 3.2 : Management Competencies Sections 3.2.3, 3.2.6, 3.2.7, 3.2.8 & 3.2.10
Responsible for : (a) performing safety officer duties stipulated in the FIU (Safety officers and Safety Supervisors) Regulations ; (b) ensuring health and safety of site staff and advising on safety matters ; (c) formulating / implementing safety policy ; (d) promoting and monitoring the compliance of safety standard at work and ensuring that they are in compliance with the government requirement ; (e) safety management, accident investigation and prevention, training and promotion and site safety inspection.	Section 2 : Your Present Job Duties (Safety & Health Practices) Section 2 Sections 2.1 Sections 2.5 & 2.13 Sections 2.2, 2.4, 2.6, 2.8 & 2.13

2.2.3 Safety Associations' Requirements

One of the requirements for admission to the class of member to some of the safety associations in Hong Kong e.g. the Society of Registered Safety Officer and Hong Kong Occupational Safety & Health Association are RSO but the competencies required for RSO have not been specified.

However, I have reviewed the scope of the Professional Safety Position (Board of Certified Safety Professionals, 1997) and incorporated those appropriate to the RSO in my survey questionnaire (see Appendix 1) as shown below :

Scope of the Professional Safety Position	Survey Questionnaire
Safety professionals must have education, training and experience in a common body of knowledge	Section 1 : Participant Profile Section 1.1
Professional safety studies include industrial hygiene and toxicology, design of engineering hazard controls, fire protection, ergonomics, system and process safety, safety and healthy program management, accident investigation and analysis, product safety, construction safety, education and training methods, measurement of safety performance, human behaviour and safety, health, and environmental laws, regulations and standards.	Section 2 : Your Present Job Duties (Safety & Health Practices) and Section 3.1 : Business Knowledge
Many safety professionals have backgrounds or advanced study in other disciplines, such as management and business administration, engineering, education, physical and social sciences and other fields.	Section 3.1 : Business Knowledge and Section 3.2 : Management Competencies

Not only must safety professionals acquire the knowledge and skill to perform their functions effectively in their employment context, through continuing education and training they stay current with new technologies, changes in laws and regulations, and changes in the workforce, workplace and world business, political and social climate. As part of their positions, safety professionals must plan for and manage resources and funds related to their functions. They may be responsible for supervising a diverse staff of professionals.	Section 3.2 : Management Competencies Sections 3.2.1, 3.2.6, 3.2.9 & 3.2.10 Sections 3.2.3, 3.2.4, 3.2.6 & 3.2.7

Moreover, I have reviewed the functions of the Professional Safety Position (the American Society of Safety Engineers, 1993) and incorporated those appropriate to the RSO in my survey questionnaire (see Appendix 1) as shown below :

Functions of the Professional Safety Position	Survey Questionnaire
The major areas relating to the protection of people, property and the environment are to : a. anticipate, identify and evaluate hazardous conditions and practices ; b. develop hazard control designs, methods, procedures and programs ; c. implement, administer and advise others on hazard controls and hazard control programs ; d. measure, audit and evaluate the effectiveness of hazard controls and hazard control programs.	Section 2 : Your Present Job Duties (Safety & Health Practices) Sections 2.6, 2.7, 2.8, 2.12, 2.15 & 2.16

2.2.4 Studies

In 1996, the Labour Department conducted a study to review the duties and training of the safety officers and published the relevant report with recommendations in January 1997. I have reviewed the following recommendations from this report and incorporated them in my survey questionnaire (see Appendix 1) as shown below :

Recommended RSO duties	Survey Questionnaire
(a) formulating safety and health policy ; (b) organising safety and health training ; (c) implementing safety and health plans ; (d) establishing in-house safety regulations and rules ; (e) establishing safety committee ; (f) conducting risk assessment ; (g) organising safety and health promotional activities.	Section 2 : Your Present Job Duties (Safety & Health Practices) Sections 2.1, 2.2, 2.4, 2.5, 2.10, 2.12 & 2.13

In 1998, Mr. Chow Lap Yan, my Project Supervisor, conducted a study on the Applicability of RSO Training Course and published a report in December 1998. I have reviewed the recommendations in his report and incorporated those related to RSO duties in my survey questionnaire (see Appendix 1) as shown below :

Recommendations	Survey Questionnaire
To effectively promote safety management, the Government needs to consider making safety management and auditing as legal requirements	Section 2 : Your Present Job Duties (Safety & Health Practices) Sections 2.2 & 2.16

2.3 Occupational Safety & Health Management

2.3.1 Systems

As revealed from section 2.2, RSO are responsible for establishing, implementing and maintaining effective occupational safety and health management systems for enhancing and ensuring safety and health at work. To keep abreast of the latest occupational safety and health management approach, I have reviewed the following guidelines / approaches and incorporated the proactive, system and continuous improvement approaches when designing my survey questionnaire (see section 2 of Appendix 1) :

i. AS/NZS 4804:1997

The occupational health and safety management model incorporates the following five principles within an upward spiral of continual improvement as part of an organisation's overall management system :

Principle 1 : Commitment and Policy

Principle 2 : Planning

Principle 3 : Implementation

Principle 4 : Measurement and Evaluation

Principle 5 : Review and Improvement

ii. BS 8800:1996

The occupational health and safety (OHS) management system elements based on different approaches were contrasted below :

Based on the HS(G)65	Based on the BS EN ISO 14001
Initial status review	Initial status review
OHS policy	OHS policy
Organising, Planning and Implementing	Planning, Implementation and Operation
Measuring performance and Audit	Checking and corrective action
Periodic status review	Management review
Continual improvement	Continual improvement

iii. Stranks (1994) elaborated the pro-active management strategies and the following management approaches to health and safety :

(a) the legalistic approach ;

(b) the socio-humanistic approach ;

(c) the financial-economic approach ;

(d) the human factors approach.

2.3.2 Curriculum

To keep abreast of the development in RSO training, I have reviewed the curriculum for occupational safety and health (OSH) management and incorporated those applicable to RSO in my survey questionnaire (see Appendix 1) as shown below :

Curriculum	Survey Questionnaire
The International Labour Office (1998) outlined the following syllabus for an OSH study programme :	
1. Safety & Health Practices The management of occupational safety and health, Occupational health management, Occupational hygiene, Ergonomics, Safety and health law, Risk management & Accident investigation	Section 2 : Your Present Job Duties (Safety & Health Practices) Sections 2.2, 2.5, 2.7, 2.8, 2.12, 2.14, 2.15
2. Statistics and information systems	Section 3 : Management Competencies Sections 3.2.9 & 3.2.10

Chow (1998) compared and contrasted the syllabi of three RSO training providers viz. The Hong Kong Polytechnic University, the Construction Industry Training Authority and the City University of Hong Kong under the following subject categories :	Section 2 : Your Present Job Duties (Safety & Health Practices)
- Legislation	Section 2.5
- Hygiene	Sections 2.7, 2.12 & 2.15
- Safety technology	Sections 2.3 to 2.16
- Safety management	Sections 2.1 & 2.2
The Open University of Hong Kong (1999) outlined the following syllabus for the Diploma in Occupational Health and Safety Programme :	Section 2 : Your Present Job Duties (Safety & Health Practices)
- Introduction to occupational health and safety	Sections 2.1 & 2.2
- Legislative context in occupational health and safety	Section 2.5
- Health and safety management	Section 2.2
- Prevention of hazards and risk management	Section 2.12
- Audits and inspection	Sections 2.6 & 2.16
Engineering, construction and contractor safety (elective course)	Sections 2.1 to 2.16

2.3.3 Statutory Requirements

Green Cross (9/99), a publication of Occupational Safety & Health Council, reported the status of the proposed FIU (Safety Management) Regulations which was proposed in 1995 by the Labour Department for improving and enhancing the safety performance.

If the regulations come in operation, proprietors having construction sites employing 100 persons or more will be required to establish, implement and maintain a safety management system which consists of 14 key elements.

To be proactive, I have incorporated the 14 key elements in my survey questionnaire (see Appendix 1) as shown below :

Key Elements of Safety Management System	Survey Questionnaire
Safety policy	Section 2.1
Safety organisation	Section 2.3
Safety training	Section 2.4
In-house safety rules and regulations	Section 2.5
Safety committee	Section 2.10
Programme for inspection of hazardous conditions	Section 2.6
Personal protective programme	Section 2.7
Accident / incident investigation	Section 2.8
Evaluation, selection and control of sub-contractors	Section 2.11
Emergency preparedness	Section 2.9
Job hazard analysis	Section 2.12
Safety promotion	Section 2.13
Process control programme	Section 2.14
Health assurance programme	Section 2.15

3 Methodology

3.1 Research Design and Procedures

I have taken the following procedures for the research after my literature review :

i. Reflect on the discrepancies

Reflect on the discrepancies between the past and current situations. The discrepancies highlight the area which require further study i.e. the RSO competencies not yet identified and analysed.

ii. Define the purpose of study

Define the purpose of study such that the scope of study can be defined and appropriate methods for the study can be chosen.

iii. Define the scope of study

Define the scope of study with reference to the purpose of study.

iv. Select the method of study and design the survey questionnaire

Select appropriate method of study with available resources and cost-effectiveness of different methods taken into consideration and then draft the survey letter and questionnaire based on the information processed throughout the literature review (see section 2) and with the environmental changes affecting the RSO (see section 1.2) taken into consideration.

v. Conduct the pilot test and refine the survey letter and questionnaire

Conduct the pilot test and refine the survey letter and questionnaire based on the results from the test to ensure completeness and understanding (see section 3.4).

vi. Conduct the study and record the results

Conduct the study by sending the survey questionnaires together with a covering letter (see Appendix 1 and section 3.5) to explain the purpose of survey and record the results in appropriate forms such as tables to facilitate analysis and validation.

vii. Analyse and validate the results

Analyse and validate the results by using qualitative methods and quantitative methods such as descriptive statistics where appropriate. Other uncontrolled variables which may be present to affect the results and the limitations of study will be taken into consideration carefully. Based on the results, I have drawn the conclusions and made my recommendations.

viii. Report the result

Prepare the written report which comprise of the sections for introduction, literature review, methodology, results and analyses, discussion and conclusions, recommendations, reference and appendices.

3.2 Sample Selection

The Labour Department (July 1996) reported that the estimated number of practising RSO in different industries was about 289 as at the end of June 1996. My target population was those registered safety officers working in the Hong Kong construction industry and the estimated number as at the end of August 1999 was over 300.

Due to limited resources and the constraints imposed by the Personal Data (Privacy) Ordinance, the Law of Hong Kong Chapter 486, it is impossible for me to conduct a survey of everyone in the population. I therefore have decided to use stratified sampling for my survey instead and requested Mr. Eric C.Y. Lee, the Vice-President of the Society of Registered Safety Officers, for assistance. Mr. Lee has kindly agreed to help me in distributing my survey questionnaires to all 200 members who were registered safety officers.

To cater for the possible low response rate of the mailed survey questionnaire, I have sent the survey letters and questionnaires to all 200 members of the Society of RSO and adopted appropriate measures to increase the response rate as elaborated in section 3.3.

3.3 Data-gathering Instrument

Based on the Conceptual Framework of RSO Competencies and the information processed throughout my literature review (see Figure 2 and section 2), I have drafted the survey questionnaire which contains closed-ended, open-ended and multiple choice questions and notes for my pilot test before the survey. The questionnaire was divided into the following 4 sections :

i. Section 1 : Participant Profile

This section was used to screen for the appropriate participants and gather their personal information including the RSO status, industry served, their gender, RSO course taken, years of RSO registration and number of employees in their companies for analysis but excluding their names and Hong Kong Identity Card Numbers for protecting their personal privacy.

ii. Section 2 : Your Present Job Duties (Safety and Health Practices)

This section was used to gather the information about the participants' present job duties for identifying the required competencies in safety and health practices.

Your Present Job Duties (Safety and Health Practices) include the 14 key safety management system elements required under the proposed Factories and Industrial Undertakings (Safety Management) Regulations (see section 2.3.3), safety audits for performance review and improvement and others which may be specified by the participants if necessary.

iii. Section 3 : Other Competencies

This section was used to gather the participants' opinion about the required competencies other than those in safety and health practices for further analysis.

Other competencies include the Business Knowledge and Personal Credibility adapted from the Human Resource Competencies in Hong Kong : Research Findings and Application Guide (see section 2.1.2), the Management Competencies from the National Management Standards of NVQ (see section 2.1.1) and others may be specified by the participants if necessary.

iv. Section 4 : Overall Rating

This section was used to gather the participants' opinion about the importance of the identified competencies in sections 2 and 3 for further analysis.

Although the response rate of mailed survey questionnaire is comparatively lower than other means e.g. interviews, I have used the mail-out survey because it is less time-consuming, comparatively cheaper and easier to administer.

Moreover, I have taken some practical suggestions for increasing response rate of mail-out surveys from Edwards (1997) such as :

i. using the up-to-date address labels ;

ii. including a cover letter with purpose of study and appeals to complete it ;

iii. making sure respondents know that their help is important ;

iv. explaining that their data will be kept confidential and will never be reported except in aggregate form ;

v. keeping the survey short (e.g. 4 pages or fewer) when possible ;

vi. minimising open-ended questions ;

vii. including a stamped and preaddressed return envelope for the mail-back survey.

3.4 Pilot Test and Refinement of the Instrument

Before mailing the survey letter and questionnaires, I have conducted a pilot test by inviting my classmates and project supervisor to complete the draft questionnaire and comment on the draft questionnaire and letter such that I was able to refine them before the actual survey.

After receiving their comments and the completed questionnaires, I have reviewed the draft letter and questionnaire and refined them by highlighting important notes and eliminating ambiguity for better results. The refined letter and questionnaire were shown in Appendix 1.

3.5 Data Collection

To collect relevant data for my study, I mailed the survey letters and questionnaires (see Appendix 1) to 200 members of the Society of Registered Safety Officers together with the stamped return envelopes in early September 1999 and requested them to return the completed questionnaires to me on or before 28 September 1999.

To encourage a higher response rate, I have mentioned in the survey letter that I would send a copy of my thesis (research report) to the Society of Registered Safety Officers for information after completing my research.

3.6 Data Analysis

I have analysed the data obtained from the returned questionnaires using qualitative and quantitative methods such as descriptive statistics where appropriate.

To facilitate the comparison and analysis of data, I have computed the mean of the samples using the following formula suggested by Burns (1997) for tabulating the descriptive statistics :

$$\text{Mean} = \frac{\text{Sum of all scores}}{\text{Number of scores}} \quad (1)$$

Details of the results and analyses were shown in the following section.

4 Results and Analyses

4.1 Participant Profile

Out of the 200 questionnaires sent, a total of 38 have been received i.e. a response rate of 19% which was slightly below my expectation. As revealed from the returned questionnaires, all 38 respondents were registered safety officers. Among them, 32 working in the construction industry were the target samples and their distribution (excluding one participant who has not completed Section 1 : Participant Profile of the survey questionnaire) by different categories were tabulated and analysed below :

Table 1 : Distribution of Participants by Gender

Gender	Number	% of Total
Male	30	**97**
Female	1	3
Total	31	100

Remark :

(a) As revealed in Table 1, 97% of the participants were male.

Table 2 : Distribution of Participants by Age

Age	Number	% of Total	
Below 26	0	0	0
26 – 35	8	26	
36 – 45	17	55	**100**
Above 45	6	19	
Total	31	100	100

Remark :

(a) As revealed in Table 2, all participants were aged above 25.

Table 3 : Distribution of Participants by Years since Registration as RSO

Years since Registration as RSO	Number	% of Total	
Below 2 years	3	10	10
2 - 5 years	8	26	**90**
6 - 10 years	7	22	
Over 10 years	13	42	
Total	31	100	100

Remark :

(a) As revealed in Table 3, 90% of the participants have been registered as safety officers for 2 years or above.

Table 4 : Distribution of Participants by Present Post

Present Post	Number	% of Total
Safety Consultant (a)	2	7
Safety Officer (b)	10	**32**
Safety Manager	10	32
Others (c)	9	29
Total	31	100

Remarks :

(a) One Safety Consultant also assumed the Safety Officer duties for his client.

(b) One Safety Officer also assumed the Quality Officer duties.

(c) Others included Safety Auditor, Health, Safety & Environmental Manager, Senior Project Manager, Project Manager, Construction Manager, Assistant to Project Manager and Clerk of Works.

(d) As revealed in Table 4, only 32% of the participants held the post of Safety Officer.

Table 5 : Distribution of Employees in Participant's Company by Number

Total Employees	Number	% of Total	
Below 100	9	29	29
100 – 200	2	6	**71**
Above 200	20	65	
Total	31	100	100

Remark :

(a) As revealed in Table 5, 71% of the participants had more than 99 employees in their companies.

4.2 Present Job Duties (Safety & Health Practices)

Among the 32 target samples, only 31 have completed section 2 : Your Present Job Duties (Safety & Health Practices) and the number of samples was therefore 31.

To facilitate the comparison, I have computed the mean scores of the 31 samples based on a scale of 0 - 5 in terms of extent of agreement (where 0 = Not agree / Not applicable, 1 = To very little extent, 2 = To little extent, 3 = To some extent, 4 = To large extent, 5 = to very large extent) for tabulating the Descriptive Statistics of Safety and Health Practices by descending order of mean score in Table 6 (the higher the mean score, the larger extent to which the participants agreed that the safety and health practices described their present job duties and vice versa).

Table 6 : Descriptive Statistics of Safety and Health Practices

Safety and Health Practices	Mean Score
Devising / implementing / reviewing safety management system and / or plans	**3.74 (Highest)**
Formulating / implementing / reviewing safety & health policy to meet the statutory, contractual and social obligations	3.61
Organising / facilitating safety committees	3.45
Conducting accident and incident investigation and making recommendations for preventing their recurrence	3.42
Organising teams for safety programmes and activities	3.32
Devising / implementing / reviewing programmes for inspection of hazardous condition	3.29
Establishing / implementing / reviewing procedures for emergency preparedness	3.26
Identifying / evaluating / controlling risks at work	3.23
Establishing / enforcing the safety rules and regulations	3.13
Conducting safety audits	3.03
Devising / implementing / reviewing personal protective programmes	3.00
Devising / implementing / reviewing process control programmes	2.94
Arranging / conducting safety training to meet the identified training needs	2.90
Assisting in the evaluation / selection / control of subcontractors	2.81
Devising / implementing / reviewing safety promotion programmes	2.81
Devising / implementing / reviewing health assurance programmes	2.52
Others (a)	0.45 (Lowest)

Remarks :

(a) Three participants specified in the ‘ Others ’ column of the survey questionnaire that the environmental control and audit, dangerous licence application and RSO duties were their present job duties.

(b) As revealed in Table 6, ‘ Devising / implementing / reviewing safety management system and / or plans ’ got the highest mean score while ‘ Others ’ got the lowest mean score.

(c) As revealed in Table 6, the competencies under ‘ Safety and Health Practices ’ except ‘ Others ’ got a mean score above 2.5.

Among the 32 target samples, only 29 have ranked the competencies in safety and health practices in order of importance and the number of samples was therefore 29.

To facilitate the comparison, I have computed the mean score of each competency based on a scale of 1 - 3 in terms of ranking of importance (where 1 = No.3 ranking, 2 = No.2 ranking, 3 = No.1 ranking) for tabulating the Descriptive Statistics of Ranking of Competencies in Safety & Health Practices by descending order of mean score in Table 7 (the higher the mean score, the higher the ranking and importance and vice versa).

Table 7 : Descriptive Statistics of Ranking of Competencies in SHP

Competencies in Safety & Health Practice (SHP)	Mean	Ranking
Devising / implementing / reviewing safety management system and / or plans	**1.57 (Highest)**	**1**
Arranging / conducting safety training to meet the identified training needs	0.70	2
Identifying / evaluating / controlling risks at work	0.57	3
Formulating / implementing / reviewing safety & health policy to meet the statutory, contractual and social obligations	0.50	4
Conducting safety audits	0.43	5
Establishing / enforcing the safety rules and regulations	0.37	6
Conducting accident and incident investigation and making recommendations for preventing their recurrence	0.30	7
Devising / implementing / reviewing process control programmes	0.30	7
Devising / implementing / reviewing programmes for inspection of hazardous condition	0.23	8
Organising teams for safety programmes and activities	0.13	9
Devising / implementing / reviewing personal protective programmes	0.13	9
Organising / facilitating safety committees	0.13	9
Establishing / implementing / reviewing procedures for emergency preparedness	0.10	10
Assisting in the evaluation / selection / control of subcontractors	0.10	10
Devising / implementing / reviewing safety promotion programmes	0.10	10
Devising / implementing / reviewing health assurance programmes	0.07	11
Others (a)	0.03	12

Remarks :

(a) Three participants specified in the ‘ Others ’ column of the survey questionnaire that the environmental control and audit, dangerous licence application and RSO duties were their present job duties.

(b) As revealed in Table 7, ‘ Devising / implementing / reviewing safety management system and / or plans ′ got the highest mean score and was therefore considered the most important one among the Safety and Health Practices.

4.3 Other Competencies

4.3.1 Business Knowledge

All 32 target samples have completed section 3.1 : Business Knowledge of the survey questionnaire and the number of samples was therefore 32.

To facilitate the comparison, I have computed the mean score of the 32 samples based on a scale of 0 - 5 in terms of extent of agreement (where 0 = Not agree / Not applicable, 1 = To very little extent, 2 = To little extent, 3 = To some extent, 4 = To large extent, 5 = to very large extent) and tabulated the Descriptive Statistics of Business Knowledge necessary for RSO by the extent to which the participants agreed that business knowledge was necessary for RSO in Table 8.

Table 8 : Descriptive Statistics of Business Knowledge necessary for RSO

Extent of Agreement	Number	% of Total	
To very large extent (5)	6	19	**91**
To large extent (4)	9	28	
To some extent (3)	14	44	
To little extent (2)	2	6	9
To very little extent (1)	0	0	
Not agree / Not applicable (0)	1	3	
Total (a)	32	100	100
Mean Score of Overall Sample		**3.5**	

Remark :

(a) As revealed in Table 8, the mean score of the overall sample was 3.5 and 91% of the participants agreed that business knowledge was necessary for RSO to the extent ranged between ‘ to some extent ’ and ‘ to very large extent ’.

4.3.2 Management Competencies

All 32 target samples have completed section 3.2 : Management Competencies of the survey questionnaire and the number of samples was therefore 32. To facilitate the comparison, I have computed the mean scores of the 32 samples based on a scale of 0 - 5 in terms of extent of agreement (where 0 = Not agree / Not applicable, 1 = To very little extent, 2 = To little extent, 3 = To some extent, 4 = To large extent, 5 = To very large extent) for tabulating the Descriptive Statistics of Management Competencies for RSO by descending order of mean score in Table 9 (the higher the mean score, the larger extent to which the participants agreed that the competency was necessary for RSO and vice versa).

Table 9 : Descriptive Statistics of Management Competencies for RSO

Management Competencies	Mean Score
Creating, maintaining and enhancing effective working relationship	**3.56 (Highest)**
Exchanging information to solve problems and make decisions	3.47
Planing, allocating and evaluating work carried out by teams, individuals and self	3.47
Seeking, evaluating and organising information for action	3.31
Initiating and implementing change and improvement in company services, products and systems	3.19
Securing effective resource allocation for activities, programmes and projects	3.19
Developing teams, individuals and self to enhance performance	3.16
Monitoring and controlling the use of resources	3.16
Recruiting and selecting personnel	2.94
Monitoring, maintaining and improving company service and product delivery	2.91
Others (a)	0.44 (Lowest)

Remarks :

(a) Three participants specified in the 'Others' column of the survey questionnaire the competencies in securing support from top management and assisting in fulfilling legal obligations.

(b) As revealed in Table 9, ' Creating, maintaining and enhancing effective working relationship ' got the highest mean score while ' Others ' got the lowest mean score.

(c) As revealed in Table 9, the competencies under ‘ Management Competencies ’ except ‘ Others ’ got a mean score above 2.9.

Among the 32 target samples, only 26 have ranked the management competencies in order of importance and the number of samples was therefore 26.

To facilitate the comparison, I have computed the mean score of each competency based on a scale of 1 - 3 in terms of ranking of importance (where 1 = No.3 ranking, 2 = No.2 ranking, 3 = No. 1 ranking) for tabulating the Descriptive Statistics of Ranking of Management Competencies by descending order of mean score in Table 10 (the higher the mean score, the higher the ranking and importance and vice versa).

Table 10 : Descriptive Statistics of Ranking of Management Competencies

Management Competencies	Mean Score	Ranking
Exchanging information to solve problems and make decisions	**1.12 (Highest)**	**1**
Creating, maintaining and enhancing effective working relationship	1.08	2
Initiating and implementing change and improvement in company services, products and systems	0.81	3
Securing effective resource allocation for activities, programmes and projects	0.58	4
Seeking, evaluating and organising information for action	0.58	4
Planing, allocating and evaluating work carried out by teams, individuals and self	0.50	5
Developing teams, individuals and self to enhance performance	0.38	6
Monitoring, maintaining and improving company service and product delivery	0.35	7
Recruiting and selecting personnel	0.35	7
Others (a)	0.15	8
Monitoring and controlling the use of resources	0.12	9

Remarks :

(a) Three participants specified in the 'Others' column of the survey questionnaire the competencies in securing support from top management and assisting in fulfilling legal obligations.

(b) As revealed in Table 10, 'Exchanging information to solve problems and make decisions ' got the highest mean score and was therefore considered the most important one among the Management Competencies.

4.3.3 Personal Credibility

All 32 target samples have completed section 3.3 : Personal Credibility of the survey questionnaire and the number of samples was therefore 32.

To facilitate the comparison, I have computed the mean scores of the 32 samples based on a scale of 0 - 5 3 in terms of extent of agreement (where 0 = Not agree / Not applicable, 1 = To very little extent, 2 = To little extent, 3 = To some extent, 4 = To large extent, 5 = to very large extent) for tabulating the Descriptive Statistics of Personal Credibility necessary for RSO by descending order of mean score in Table 11 (the higher the mean score, the larger extent to which the participants agreed that the competency was necessary for RSO and vice versa).

Table 11 : Descriptive Statistics of Personal Credibility necessary for RSO

Personal Credibility	Mean Score
Demonstrating honesty and professional integrity	**4.28 (Highest)**
Performing accurate work	3.84
Instilling confidence in self and others	3.84
Meeting commitments	3.81
Having track record of results	3.66
Providing alternative insights on business issues	3.31
Others (a)	0.41 (Lowest)

Remarks :

(a) Three participants specified in the 'Others' column of the survey questionnaire the team credibility and competencies in creating image and performing as consultant to advise on safety with minimum spending to achieve the safety target.

(b) As revealed in Table 11, 'Demonstrating honesty and professional integrity ' got the highest mean score while ' Others ' got the lowest mean score.

(c) As revealed in Table 11, the competencies under ' Personal Credibility ' except ' Others ' got a mean score above 3.3.

Among the 32 target samples, only 24 have ranked the personal credibility and the number of samples was therefore 24.

To facilitate the comparison, I have computed the mean score of each competency based on a scale of 1 - 3 in terms of ranking of importance (where 1 = No.3 ranking, 2 = No.2 ranking, 3 = No. 1 ranking) for tabulating the Descriptive Statistics of Ranking of Personal Credibility by descending order of mean score in Table 12 (the higher the mean score, the higher the ranking and importance and vice versa).

Table 12 : Descriptive Statistics of Ranking of Personal Credibility

Personal Credibility	Mean Score	Ranking
Demonstrating honesty and professional integrity	**2.29 (Highest)**	**1**
Performing accurate work	0.96	2
Instilling confidence in self and others	0.92	3
Meeting commitments	0.71	4
Having track record of results	0.58	5
Providing alternative insights on business issues	0.38	6
Others (a)	0.17	7

Remarks :

(a) Three participants specified in the 'Others' column of the survey questionnaire the team credibility and competencies in creating image and performing as consultant to advise on safety with minimum spending to achieve the safety target.

(b) As revealed in Table 12, ‘ Demonstrating honesty and professional integrity ’ got the highest mean score and was therefore considered the most important one among those competencies under Personal Credibility.

4.4 Overall Rating of Competencies

All 32 target samples have completed section 4 : Overall Ranking of the survey questionnaire and the number of samples was therefore 32.

To facilitate the comparison, I have computed the mean score of the competencies based on a scale of 1 - 4 in terms of importance (where 1 = least important and 4 = most important) as well as the percentage of total for tabulating the Descriptive Statistics of Overall Ranking of Competencies by descending order of mean score in Table 13 (the higher the mean score, the higher the ranking and importance and vice versa) and presenting the results in Figure 3 and Figure 4.

Table 13 : Descriptive Statistics of Overall Ranking of Competencies

Competencies	Mean Score	% of Total	Ranking
Safety and Health Practices	**3.8**	30	**1**
Personal Credibility	3.4	27	2
Management Competencies	3.0	24	3
Business Knowledge	2.4	19	4
Total	12.6	100	

Remarks :

(a) As revealed in Table 13, 'Safety and Health Practices 'got the highest mean score and was therefore considered the most important one among the 4 domains of competencies.

(b) As revealed in Table 13, all four domains of competencies got a mean score not less than 2.4.

Figure 3 : RSO Competencies and their Ranking

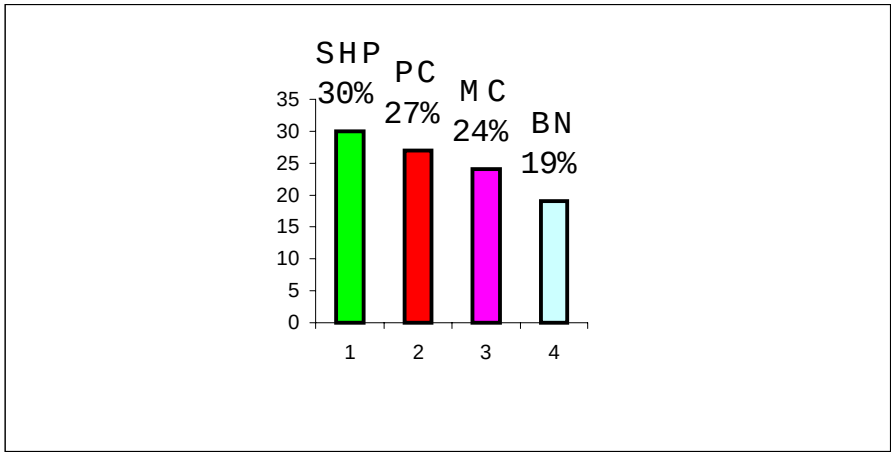
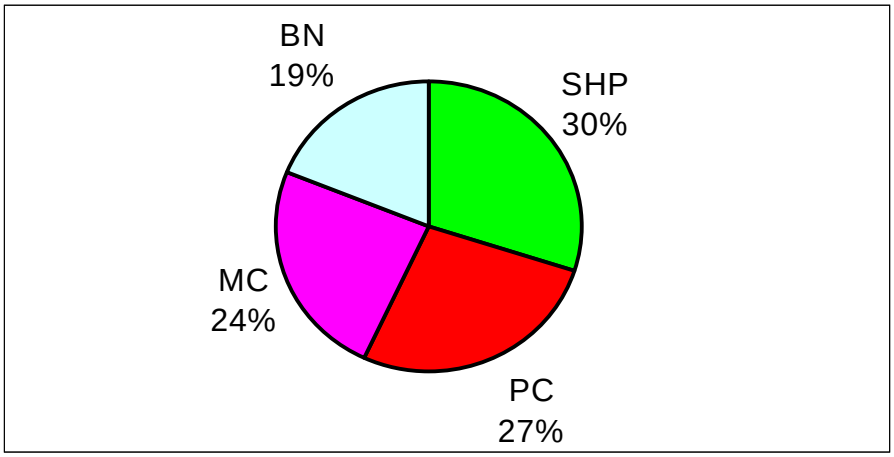


Figure 4 : RSO Competencies and their Relative Importance



Legend :

SHP = Rank No. 1 : Safety and Health Practices (30%)

PC = Rank No. 2 : Personal Credibility (27%)

MC = Rank No. 3 : Management Competencies (24%)

BN = Rank No. 4 : Business Knowledge (19%)

5 Discussion & Conclusions

5.1 Overall Rating of Competencies

My discussion and conclusions on the findings and analyses in section 4 about the four domains of competencies ranked by RSO were shown below :

i. Safety and Health Practices

Based on a scale of 1 – 4 in terms of importance, ' Safety and Health Practices ' got a mean score of 3.8 which was above the mid score and were ranked no. 1.

It was vital that RSO should keep in pace with the development in safety and health practices for meeting the environmental changes and performing their RSO duties competently. I therefore concluded that Safety and Health Practices were considered necessary for RSO and should be incorporated in the Conceptual Framework of RSO Competencies.

ii. Personal Credibility

Based on a scale of 1 – 4 in terms of importance, ' Personal Credibility ' got a mean score of 3.4 which was above the mid score and was ranked no. 2.

It was inevitable that employees having good personal credibility would gain the trust and support from their employer, superiors and colleagues for performing their duties effectively. I therefore concluded that Personal Credibility was considered necessary for RSO and should be incorporated in the Conceptual Framework of RSO Competencies.

iii. Management Competencies

Based on a scale of 1 – 4 in terms of importance, ‘ Management Competencies ′ got a mean score of 3.0 which was above the mid score and were ranked no.3. The result also revealed that one of the RSO major duties included ‘ Devising / implementing / reviewing safety management system and / or plans ′.

It was essential that RSO should continuously enhance their management competencies for performing their duties effectively and efficiently. I therefore concluded that Management Competencies were considered necessary for RSO and should be incorporated in the Conceptual Framework of RSO Competencies.

iv. Business Knowledge

Based on a scale of 1 – 4 in terms of importance, ‘ Business Knowledge ′ got a mean score of 2.4 which was near the mid score and was ranked no. 4. Moreover, 91% of the participants agreed that business knowledge was necessary for RSO.

With the growing trend of integration of different management systems, it was essential that RSO should enhance their business knowledge for coping with the business trend and needs. I therefore concluded that Business Knowledge was considered necessary for RSO and should be incorporated in the Conceptual Framework of RSO Competencies.

Based on the above findings, analyses and conclusions, I have come to the following conclusions :

i. the competencies required for RSO should include the four domains viz. Safety and Health Practices, Personal Credibility, Management Competencies and Business Knowledge ;

ii. the Conceptual Framework of RSO Competencies (see Figure 2) developed for this study is valid but the four domains of competencies have different ranking in terms of importance considered by RSO (see Figure 4).

5.2 Competencies in Safety and Health Practices

My discussion and conclusions on the findings and analyses in section 4.2 about the competencies in Safety and Health Practices were shown below :

i. Based on a scale of 0 to 5 in terms of extent of agreement, the job duties under ' Safety and Health Practices ' except ' Others ' in Table 6 got a mean score above 2.5 which was above the mid score.

   It was vital that RSO should perform these job duties competently for enhancing the safety performance. I therefore concluded that the competencies in these job duties were considered necessary for RSO and should be categorised as Safety & Health Practices.

ii. Based on a scale of 1 to 3 in terms of ranking of importance, ' Devising / implementing / reviewing safety management system and / or plans ' got the highest mean score of 1.57 among the other job duties.

This job duty was the most comprehensive one among the others. I therefore concluded that the competency in ' Devising / implementing / reviewing safety management system and / or plans ' was considered as the most important one among the Safety and Health Practices.

iii. Among the 31 participants, three specified that they were required to perform other duties including environmental control and audit and dangerous licence application in addition to the RSO duties.

Although ' Others ' in Table 6 got a mean score of 0.45 which was far below the mid score, the growing trend of integration of different management systems and the importance of meeting legal, contractual and social obligations should not be overlooked. I therefore concluded that :

(a) RSO should be competent in ' Devising / implementing / reviewing safety management system and / or plans to meet the legal, contractual and social obligations ' ;

(b) RSO should enhance their business knowledge for coping with the business trend and needs.

5.3 Other Competencies

5.3.1 Business Knowledge

My discussion and conclusions on the findings and analyses in section 4.3.1 about the Business Knowledge were shown below :

i. Based on a scale of 0 to 5 in terms of extent of agreement, the mean score of the overall sample was 3.5 which was above the mid score.

It was essential that RSO should enhance their business knowledge to meet the business trend and needs for their career development. I therefore concluded that Business Knowledge was considered necessary for RSO.

5.3.2 Management Competencies

My discussion and conclusions on the findings and analyses in section 4.3.2 about the Management Competencies were shown below :

i. Based on a scale of 0 to 5 in terms of extent of agreement, the competencies under ‘ Management Competencies ’ except ‘ Others ’ in Table 9 got a mean score above 2.9 which was above the mid score.

It was essential that RSO should continuously enhance their management competencies for performing their duties effectively and efficiently. I therefore concluded that the competencies under ‘ Management Competencies ’ except ‘ Others ’ in Table 9 were considered necessary for RSO and should be categorised as Management Competencies.

ii. Based on a scale of 1 to 3 in terms of ranking of importance, ‘Exchanging information to solve problems and make decisions ′ got the highest mean score of 1.12 among the other competencies.

It was essential that RSO should gather adequate and appropriate information for their problem solving and decision making at work. I therefore concluded that ‘ Exchanging information to solve problems and make decisions ′ was considered as the most important one among the Management Competencies.

iii. Among the 32 participants, three specified that other competencies including securing support from top management and assisting in fulfilling legal obligations were necessary and important.

Although ‘ Others ’ in Table 9 got a mean score of 0.44 which was far below the mid score based on a scale of 0 to 5 in terms of extent of agreement, the competencies specified were essential for effective safety management and should not be neglected. I therefore concluded that these competencies were considered important and had been incorporated in other competency domains as elaborated below :

(a) ‘ Securing support from top management ′ has been incorporated in ‘ Securing effective resource allocation for activities, programmes and projects ′ under the Management Competencies ;

(b) ‘ Assisting in fulfilling legal obligations ′ has been incorporated in ‘ Devising / implementing / reviewing safety management system and / or plans ’ under the Safety and Health Practices for meeting the legal, contractual and social obligations.

5.3.3 Personal Credibility

My discussion and conclusions on the findings and analyses in section 4.3.3 about the Personal Credibility were shown below :

i. Based on a scale of 0 to 5 in terms of extent of agreement, the competencies under ‘ Personal Credibility ’ except ‘ Others ’ in Table 11 got a mean score above 3.3 which was above the mid score.

It was inevitable that employees having good personal credibility would gain the trust and support from their employer, superiors and colleagues for performing their duties effectively. I therefore concluded that the competencies under ‘ Personal Credibility ’ except ‘ Others ’ in Table 11 were considered necessary for RSO and should be categorised as Personal Credibility.

ii. Based on a scale of 1 to 3 in terms of ranking of importance, ‘ Demonstrating honesty and professional integrity ′ got the highest mean score of 2.29 among the other competencies.

It was vital that all employees should demonstrate honesty and professional integrity for gaining necessary trust and support of their employers, superiors and colleagues at work. I therefore concluded that ‘ Demonstrating honesty and professional integrity ′ was considered as the most important one under the Personal Credibility.

iii. Among the 32 participants, three specified that other competencies including team credibility, competencies in creating image and performing as consultant to advise on safety with minimum spending to achieve the safety target were necessary and important.

Although ‘ Others ’ in Table 11 got a mean score of 0.41 which was far below the mid score based on a scale of 0 to 5 in terms of extent of agreement, the competencies specified were essential for effective safety management and should not be neglected. I therefore concluded that these competencies were considered important and had been incorporated in other competency domains as elaborated below :

(a) ‘ Team credibility and creating image ′ has been incorporated in ‘ Developing teams, individuals and self to enhance performance ′ under the Management Competencies ;

(b) ‘ Performing as consultant to advise on safety with minimum spending to achieve the safety target ′ has been incorporated in ‘ Monitoring and controlling the use of resources ′ under the Management Competencies.

5.4 Other Findings

My discussion and conclusions on the findings and analyses in section 4.1 about the Participant Profile were shown below :

i. Only 32% of the participants held the post of Safety Officer while others held different posts including Safety Consultant, Safety Auditor, Health, Safety & Environmental Manager, Senior Project Manager, Project Manager, Construction Manager, Assistant to Project Manager and Clerk of Works. Moreover, one Safety Officer had to assume the Quality Officer duties in addition to RSO duties.

These indicated the diverse career development and duties of RSO. I therefore concluded that RSO should enhance their competencies in safety and health practices as well as business knowledge, management competencies and personal credibility to meet the business trend and needs for their career development.

ii. This study was based on a small sample (18 % of the members of the Society of Registered Safety Officer) and from the perspectives of RSO working in the Hong Kong construction industry. Although the results revealed some members' opinions, they may not reflect the opinions of the rest and other stakeholders. I therefore concluded that :

(a) the results had their limitations and should be used with care and their limitations taken into consideration ;

(b) further research with larger samples from all stakeholders' perspectives would be necessary to align the interests of the stakeholders and enhance the reliability and validity of the results.

5.5 Summary of Major Conclusions

The major conclusions summarised from sections 5.1 to 5.4 were listed below :

i. the competencies required for RSO should include the four domains namely Safety and Health Practices, Personal Credibility, Management Competencies and Business Knowledge ;

ii. the Conceptual Framework of RSO Competencies (see Figure 2) developed for this study is valid but the four domains of competencies have different ranking in terms of importance considered by RSO (see Figure 4) with Safety and Health Practices ranked the highest ;

iii. the elements under the four domains of competencies in the survey questionnaire (see Appendix 1) except others are considered necessary for RSO ;

iv. the competency in ' Devising / implementing / reviewing safety management system and / or plans ' is considered as the most important one among the Safety and Health Practices ;

v. the competency in ‘ Exchanging information to solve problems and make decisions ′ is considered as the most important one among the Management Competencies ;

vi. ‘ Demonstrating honesty and professional integrity ′ is considered as the most important one under the Personal Credibility.

vii. RSO should enhance their competencies in safety and health practices as well as business knowledge, management competencies and personal credibility to meet the business trend and needs for their career development ;

viii. the results of this study should be used with care and their limitations taken into consideration ;

ix. further research with larger samples from all stakeholders’ perspectives will be necessary to align the interests of the stakeholders and enhance the reliability and validity of the results.

6 Recommendations

6.1 Recommendations for Major Stakeholders

Based on my conclusions in section 5, I have made the following recommendations for the major stakeholders :

i. RSO

Based on the identified RSO competencies, RSO may identify and bridge their competency gap as necessary to meet the environmental changes by :

(a) pursuing further occupational safety and health training e.g. Postgraduate Scheme in Occupational Safety & Health offered by the University of Western Sydney, Hawkesbury in conjunction with the Hong Kong Polytechnic University to enhance their competencies in Safety and Health Practices ;

(b) pursuing further management training e.g. management courses offered by the leading universities, the Management Development Centre of Vocational Training Council, the Hong Kong Productivity Council and the Hong Kong Management Association to enhance their management competencies ;

(c) pursuing other business related training e.g. quality and environmental management training to enhance their business knowledge ;

(d) enhance their personal credibility by continuous learning and improvement ;

(e) benchmarking their performance with the performance of others on the four domains of competencies and initiating continuous improvement and development through continuous learning to meet the environmental changes.

ii. Employer

Based on the identified RSO competencies, the employer may :

(a) review and revise the RSO job specification and description if necessary to facilitate RSO recruitment, selection, career development and performance management ;

(b) identify and bridge the competency gap of existing and new RSO by arranging training and experience sharing e.g. through the benchmarking activities organised by the Green Cross Group of Occupational Safety & Health Council for enhancing their performance to meet the environmental changes in the interests of the stakeholders concerned ;

(c) benchmark the performance of RSO on different domains of competencies to facilitate performance management and succession planning.

iii. Training Providers

Based on the identified RSO competencies, the major training providers such as the Hong Kong Polytechnic University, the City University of Hong Kong and the Construction Industry Training Authority may :

(a) review and revise their course curriculum if necessary to meet the RSO needs and the environmental changes ;

(b) devise appropriate learning objectives and evaluation measures for enhancing the RSO competencies ;

(c) conduct course evaluation for continuous course refinement.

iv. Safety Associations

Based on the identified RSO competencies, the safety associations may :

(a) review and revise the evaluation criteria if necessary for member accreditation to enhance the membership standard ;

(b) identify and bridge the competency gap of existing members by arranging training and experience sharing for enhancing their performance to meet the environmental changes in the interests of the stakeholders concerned ;

(c) benchmark the performance of their members with those in other safety associations on different domains of competencies and initiating continuous improvement and development.

v. Government

Based on the identified RSO competencies, the Labour Department may :

(a) review the need of publishing the RSO Code of Practice with RSO competencies specified to supplement the FIU (Safety Officers and Safety Supervisors) Regulations ;

(b) review and revise the FIU (Safety Officers and Safety Supervisors) Regulations regularly by adding and updating the RSO competencies in line with the changing political, social, economic, technological and task environments ;

(c) review and evaluate the applicants' competencies before RSO registration if necessary to ensure that they are competent.

6.2 Recommendations for Further Research

In addition to the above-mentioned recommendations, I have also made the following recommendations for further research :

i. similar research using larger samples from all stakeholders' perspectives should be conducted for aligning the interests of the stakeholders and enhancing the reliability and validity of the results ;

ii. the survey questionnaire for this study should be reviewed and revised in line with the environmental changes before using it for further research ;

iii. additional measures e.g. follow-up questionnaires should be considered for improving the response rate ;

iv. additional incentives e.g. souvenirs for participants should be considered for improving the response rate ;

v. further research on the performance criteria for measuring the level of competencies in safety and health practices, personal credibility and business knowledge should be conducted.

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Appendix 1 : Survey Letter and Questionnaire

24 J, Tower 3
Greenwood
Terrace
Chai Wan
Hong Kong

10 August 1999

Dear Sir / Madam

Research Study on Competencies required for Registered Safety Officers in Hong Kong Construction Industry

Registered safety officers in Hong Kong Construction Industry play an important role in enhancing and ensuring safety and health at work but no study on the competencies required for registered safety officers in Hong Kong Construction Industry has been conducted so far.

I therefore have decided to conduct the captioned study and would like to express my sincere gratitude to Mr. Eric C.Y. Lee, the Vice-President of the Society of the Registered Safety Officers, who has kindly agreed to assist me by arranging distribution of the survey questionnaires. The main aims of this study are to identify and analyse the required competencies for registered safety officers in Hong Kong Construction Industry and to develop a competency model for the stakeholders to target their efforts at meeting the changing political, social, economic, technological and task environments. The results of this study will be published in my Master of Applied Science (Safety Management) thesis and a copy of the thesis will be sent to the Society of the Registered Safety Officers for information.

I would like to invite you to participate in this study by completing and returning the enclosed questionnaire to me by post on or before 28 September 1999 using the enclosed envelope. If you require further information about this study, please feel free to contact me at 9654 8929. I look forward to having your participation and support which are vital to the success of this study and your participation and support will be greatly appreciated.

Yours faithfully

NG Cheuk Ping
Student
University of Western Sydney, Hawkesbury /
Hong Kong Polytechnic University

Encl.

Survey on Competencies required for Registered Safety Officers
in Hong Kong Construction Industry

Notes :

1. To protect your personal privacy, you **are not** required to fill in your name and HKID no. in this questionnaire.

2. By completing this questionnaire, you agree that you are willing to participate in this survey and allow the results of the survey be published.

3. This questionnaire consists of 4 pages.

4. Please tick the appropriate box for the answers to the questions in section 1 and circle the appropriate number for the answers to the questions in sections 2, 3 and 4 as necessary.

5. Thank you very much for your participation and support by completing and returning this questionnaire to me by post **on or before 28 September 1999** using the enclosed stamped envelope.

Section 1 : Participant Profile

		Yes	**No**
1.1	Are you a Registered Safety Officer ?	[ ]	[ ]
1.2	Are you working in the Hong Kong Construction Industry ?	[ ]	[ ]

***** Please proceed if the answers to above questions 1.1 and 1.2 are Yes.

1.3 Your gender ?
[ ] Male [ ] Female

1.4 Your age ?
[ ] below 25 [ ] 26-35 [ ] 36-45 [ ]above 45

1.5 Which organisation's local safety officer course have you taken ?
[ ] CITA [ ] City University of H.K. [ ] H.K. Polytechnic University [ ] Nil

1.6 How long have you been a registered safety officer ?
[ ] below 2 years [ ] 2-5 years [ ] 6-10 years [ ] over 10 years

1.7 Your present post ?
[ ] Safety Consultant [ ] Safety Officer [ ] Safety Manager
[ ] Others (Please specify : _____)

1.8 No. of employees in the company you are working for ?
[ ] below 100 [ ] 100 - 200 [ ] above 200

Section 2 : Your Present Job Duties (Safety and Health Practices)

Please indicate the extent to which you agree that the following safety and health practices describe your present job duties and delete the underlined items which are inappropriate. The extent ranges from 0 to 5 as elaborated below :

0 - Not agree / Not applicable ; 1 - To very little extent ; 2 - To little extent
3 - To some extent ; 4 - To large extent ; 5 - To very large extent

	Your Present Job Duties (Safety and Health Practices)	**Extent**
2.1	Formulating / implementing / reviewing safety & health policy to meet the statutory, contractual and social obligations	0 1 2 3 4 5
2.2	Devising / implementing / reviewing safety management system and / or plans	0 1 2 3 4 5
2.3	Organising teams for safety programmes and activities	0 1 2 3 4 5
2.4	Arranging / conducting safety training to meet the identified training needs	0 1 2 3 4 5
2.5	Establishing / enforcing the safety rules and regulations	0 1 2 3 4 5
2.6	Devising / implementing / reviewing programmes for inspection of hazardous condition	0 1 2 3 4 5
2.7	Devising / implementing / reviewing personal protective programmes	0 1 2 3 4 5
2.8	Conducting accident and incident investigation and making recommendations for preventing their recurrence	0 1 2 3 4 5
2.9	Establishing / implementing / reviewing procedures for emergency preparedness	0 1 2 3 4 5
2.10	Organising / facilitating safety committees	0 1 2 3 4 5
2.11	Assisting in the evaluation / selection / control of subcontractors	0 1 2 3 4 5
2.12	Identifying / evaluating / controlling risks at work	0 1 2 3 4 5
2.13	Devising / implementing / reviewing safety promotion programmes	0 1 2 3 4 5
2.14	Devising / implementing / reviewing process control programmes	0 1 2 3 4 5

2.15	Devising / implementing / reviewing health assurance programmes	0 1 2 3 4 5
2.16	Conducting safety audits	0 1 2 3 4 5
2.17	Others (Please specify : _____)	0 1 2 3 4 5

Amongst the above-mentioned safety and health practices i.e. 2.1 to 2.17, please rank the top three which you consider most important for a registered safety officer to have the competencies in.

1. ____ 2. ____ 3. ____

Section 3 : Other Competencies

Please indicate the extent to which you agree that the following competencies are necessary for a registered safety officer in addition to those competencies in safety and health practices. The extent ranges from 0 to 5 as elaborated below :

0 - Not agree / Not applicable ; 1 - To very little extent ; 2 - To little extent
3 - To some extent ; 4 - To large extent ; 5 - To very large extent

3.1.	**Business Knowledge**	**Extent**
	Knowledge of business practices other than safety and health practices e.g. operation, financial, human resource, quality and environmental management practices	0 1 2 3 4 5
3.2	**Management Competencies**	
3.2.1	Initiating and implementing change and improvement in company services, products and systems	0 1 2 3 4 5
3.2.2	Monitoring, maintaining and improving company service and product delivery	0 1 2 3 4 5
3.2.3	Monitoring and controlling the use of resources	0 1 2 3 4 5
3.2.4	Securing effective resource allocation for activities, programmes and projects	0 1 2 3 4 5
3.2.5	Recruiting and selecting personnel	0 1 2 3 4 5
3.2.6	Developing teams, individuals and self to enhance performance	0 1 2 3 4 5
3.2.7	Planing, allocating and evaluating work carried out by teams, individuals and self	0 1 2 3 4 5
3.2.8	Creating, maintaining and enhancing effective working relationship	0 1 2 3 4 5
3.2.9	Seeking, evaluating and organising information for action	0 1 2 3 4 5

3.2.10	Exchanging information to solve problems and make decisions	0 1 2 3 4 5
3.2.11	Others (Please specify : _____)	0 1 2 3 4 5

Amongst the above-mentioned management competencies i.e. 3.2.1 to 3.2.11, please rank the top three which you consider most important for a registered safety officer.

1. ____ 2. ____ 3. ____

Please indicate the extent to which you agree that the following competencies are necessary for a registered safety officer in addition to the above-mentioned competencies. The extent ranges from 0 to 5 as elaborated below :

0 - Not agree / Not applicable ; 1 - To very little extent ; 2 - To little extent
3 - To some extent ; 4 - To large extent ; 5 - To very large extent

3.3.	**Personal Credibility**	**Extent**
3.3.1	Demonstrating honesty and professional integrity	0 1 2 3 4 5
3.3.2	Meeting commitments	0 1 2 3 4 5
3.3.3	Having track record of results	0 1 2 3 4 5
3.3.4	Performing accurate work	0 1 2 3 4 5
3.3.5	Instilling confidence in self and others	0 1 2 3 4 5
3.3.6	Providing alternative insights on business issues	0 1 2 3 4 5
3.3.7	Others (Please specify : _____)	0 1 2 3 4 5

Amongst the above-mentioned personal credibility i.e. 3.3.1 to 3.3.7, please rank the top three which you consider most important for a registered safety officer.

1. ____ 2. ____ 3. ____

Section 4 : Overall Rating

Please indicate your overall rating for the following competencies in order of importance for a registered safety officer (1 for least important and 4 for most important).

		Rating
4.1	Competencies in Safety and Health Practices (please see section 2)	1 2 3 4
4.2	Business Knowledge (please see section 3.1)	1 2 3 4
4.3	Management Competencies (please see section 3.2)	1 2 3 4
4.4	Personal Credibility (please see section 3.3)	1 2 3 4

End of Questionnaire. Thank you very much for your support.