# CHALLENGES IN SUPPLYING SKILLED MANPOWER AT ENERSEA RESOURCES SDN BHD

**HISHAM BIN AHMAD**

**EDMA 2-94**



**EXECUTIVE DIPLOMA IN MANAGEMENT**

**(ADMINISTRATION AND OPERATIONS)**

**UNIVERSITY OF MALAYA CENTRE FOR CONTINUING EDUCATION**

**2015**

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**FEBRUARY 2015**

# DECLARATION

This is to certify that this Project Paper entitled "Challenges in Supplying Skilled Manpower at Enersea Resources Sdn Bhd" which is submitted by me in fulfillment of the requirement for the award of Executive Diploma in Management (Administration and Operations), UMCCed, University Malaya, comprises only my original work and due acknowledgement has been made in the text to all other material used. UMCCed is not to be liable for any plagiarism or the misused of information that has been obtained if found during the examination of this Project Paper. This Project Paper which has been submitted to UMCCed will not be returned and will be made as examination materials and reference for future students.



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| Signature | : | …… |
| Name | : | Hisham Ahmad |
| Matrix No. | : | EDMA 2-94 |
| Program | : | Executive Diploma in Management (Administration and Operations) |

# ACKNOWLEDGEMENT

I have taken efforts in this Project Paper. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

I am highly indebted to UMCCed, University Malaya for their guidance and constant supervision as well as for providing necessary information regarding the Project Paper & also for their support in completing the Project Paper.

I would like to express my gratitude towards my parents, lecturers, wife& members of Enersea Resources Sdn Bhd for their kind co-operation and encouragement which help me in completion of this Project Paper.

I would like to express my special gratitude and thanks to Dr. Kuppusamy Singaravelloo for giving me such attention and time.

My thanks and appreciations also go to my colleagues in developing the Project Paper and people who have willingly helped me out with their abilities.

# EXECUTIVE SUMMARY

Enersea Resources Sdn Bhd is one of many Oil & Gas companies in Malaysia that has been established since 1996. It is registered with many organizations and obtaining PETRONAS Licence, *Ministry of Finance* (MOF), *Construction Industry Development Board* (CIDB), *Pusat Khidmat Kontraktor* (PKK) and etc. One of many scopes of the business is Provision of Manpower Supply.

ERSB helps support the industry by providing the needs of major oil & gas companies by solving their manpower shortages issue. This is because an anticipated business growth in the industry is contingent on the availability of skilled manpower in the country. Malaysia's oil and gas sector is likely to require around 40,000 additional professionals in the next five years due to business growth and retirement or attrition in the sector.

Core (technical) disciplines are more likely to account for the required manpower. The upstream[1] sector is expected to see the maximum shortfall, due to high attrition and retirement. In the downstream[2] sector, the refining and petrochemical sectors are witnessing substantial capacity additions that are translating into significant manpower requirements.

The objective of this Project Paper is to determine whether the current number of skilled manpower is adequate or not to supply to the Oil & gas industry. The researcher wants to identify the factors for the influencing the provision of skilled manpower and wants to analyze the effects of inadequate skilled manpower to the company.

[1] The upstream oil sector is also commonly known as the *exploration and production (E&P) sector.*
[2] The downstream sector commonly refers to the refining of petroleum crude oil and the processing and purifying of raw natural gas.

A survey form was created from Google Form to find out the responses from personnel's already working or looking for work in the Oil & Gas industry. The forms were emailed out to all respondents in early January 2015.

For this Project Paper the respondents were asked on what they think is causing organizations' inability to fill key roles. Nearly 27% of respondents associated it with the lacking of working experience. 25% of respondents actually blamed the inability to fill positions with will reduce competitiveness and productivity to the company.

The survey results show that 24% of respondents think that the company should take steps to grow the talent pool and ensure access to the right skills that will help drive business results. Yet only 27% of respondents report that there is a shortage of manpower at the workplace.

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# GLOSSARY

| | |
|---|---|
| AHT | Anchor Handling Tug |
| BCC | Blind Carbon Copy |
| CIDB | Construction Industry Development Board |
| CV | Curriculum Vitae |
| EHT | Electrical Heat Tracing |
| EPC | Engineering, Procurement & Construction |
| EPCIC | Engineering, Procurement, Construction, Installation & Commissioning |
| ERSB | Enersea Resources Sdn Bhd |
| HDD | Horizontal Directional Drilling |
| HSE | Health, Safety & Environment |
| HUC | Hook-up & Commissioning |
| ISO | International Organization for Standardization |
| KPI | Key Performance Indicator |
| MCOT | Miri Crude Oil Terminal |
| MMHE | Malaysia Marine and Heavy Engineering Sdn Bhd |
| MOF | Ministry of Finance |
| MPS | Motivating Potential Score |
| OGP | Oil and Gas Producers |
| O&G | Oil & Gas |
| OIC | Offshore Installation Contractors |
| PETRONAS | Petroleum Nasional |
| PMT | Project Management Team |
| PKK | Pusat Khidmat Kontraktor |
| QA | Quality Assurance |
| QC | Quality Control |
| RAPID | Refinery and Petrochemical Integrated Development |
| SK Energy | SapuraKencana Energy Malaysia Inc. |
| THHE | Tabung Haji Heavy Engineering Sdn Bhd |

# SECTION 1
# INTRODUCTION TO THE STUDY

## 1.1 Background

The discovery of oil in Sarawak in 1910[3] had provided the bedrock for the development of Malaysia's present day oil and gas industry. It created opportunities for many oil companies such as Shell, ESSO (now known as ExxonMobil) and others to invest in the upstream and downstream sectors of the industry provided employment and skills transfer to thousands of Malaysians and changed the economic landscape of the country forever.

The Oil & Gas industry is now demanding higher competent and skilled technical workers to satisfy the sectors' requirements. It is a long term perspective for recruitment companies and manpower agencies to understand the manpower requirements in this sector. As economy has widely opened for globalization and liberalization, industries and firms have to increase their resistance and competitiveness, changing their structure to more organic that are able to develop strategies according to economy environment, and increase their demand for higher disciplines and well trained employees. Unfortunately, shortage in skilled technical manpower has encouraged the industry to bring in labors from other countries.

## 1.2 Problem Statement

Manpower projections for the oil and gas industry are predicting a substantial demand for oil and gas professionals over the next few years. Enersea Resources Sdn Bhd needs to cope with the challenges of attraction and retention efficiently to support current and future operations. One of the common challenges within the oil and gas industry is planning for the sustained availability of a skilled manpower.

[3] http://www.shell.com.my/aboutshell/who-we-are/history/malaysia.html taken on 22/11/2014

## 1.3 Research Question

There are four research questions in this study, namely:

1. What is the rate of shortage of skilled manpower in the Oil & Gas industry for onshore facilities?
2. What factors contribute to skilled manpower shortages?
3. What are the effects of inadequate skilled manpower?
4. What are the solutions to overcome the shortages of skilled manpower?

## 1.4 Objectives of the Study

This study is to attain four main objectives as below:

1. To determine the rate of shortage of skilled manpower in the Oil & Gas industry for onshore facilities.
2. To identify the factors for skilled manpower shortages.
3. To analyse the effects of inadequate skilled manpower.
4. To propose a solution to overcome the shortages of skilled manpower.

## 1.5 Scope of the Study

The study is done at Enersea Resources Sdn Bhd located in Kelana Jaya. The department involved is Manpower and Contracts and the Corporate and Administration. The study is also assisted with the help of one person from the Finance and Human Resource department each.

This study is confined to the period of November 2014 to January 2015.

## 1.6 Significance of the Study

There are a few reasons why this study is significant and will bring benefit to the company. It is beneficial to the management of Enersea Resources Sdn Bhd, as from this study it will project the availability of resources for manpower supply. The study

is also significant to the employee of Enersea Resources Sdn Bhd, especially to the Manpower and Contracts department to improve their service and will be able to achieve the KPI by implementing some of the recommendation in this study. It will be beneficial and significant to the researcher as this study can become one of the references for him in the future.

## 1.7 Structure of the Report

This study comprises of the six main sections as below:

Section 1: Introduction to the Study
Section 2: Background of the Organization
Section 3: Review of Theories and Past Findings
Section 4: Methodology of Study
Section 5: Analysis
Section 6: Conclusions and Recommendations

# SECTION2
# BACKGROUND OF THE ORGANIZATION

## 2.1 Background of Enersea Resources Sdn Bhd

Enersea Resources Sdn Bhd (ERSB), as a Bumiputera-owned engineering company, commenced operations in 1996. To support its vision, the Company started its initial operations with the provision of technical manpower, of which the Company later had widened its scope of services into diversified areas of engineering, project management, procurement, fabrication, construction and commissioning of oil & gas, marine & infrastructure facilities, covering mainly the provision of engineered products, the provision of technical manpower, the provision of marine services and construction & fabrication[4].

Equipped with the globally-recognised PETRONAS license and registration, the Company has the credentials to provide comprehensive and miscellaneous services to operators, consultants and fabricators in various areas of project development of the oil & gas, marine and construction industries.

The company is also a registered Contractor with *Pusat Khidmat Kontractor* (PKK) and *Construction Industry Development Board* (CIDB), thus providing it with the platform to undertake not only government and government-related agencies, but also private contracts.

With its internal operations fully committed and based on ISO9001:2008 quality standards, the Company has now established itself as having industry-recognised best practice of internal quality standards with world-wide recognition and establishment, and also in compliance to the international quality in all of its past, present and future projects.

[4] www.enersea.com.my taken on 11/12/2014

## 2.2 Products and Services of the Company

In the Oil & Gas industry, ERSB has formed numerous strategic alliances with local fabricators for onshore & offshore fabrication works, oil & gas design consultants and other contractors for onshore & offshore EPCIC works, including offshore installation contractors (OIC) and offshore hook-up & commissioning (HUC) contractors, in order to allow for flexibility in performing the various forms of oil & gas contracts, either offshore or onshore.

In the marine industry, the Company has also formed strategic partnership with various foreign marine vessel-owned companies for local and international tenders for the provision of marine vessels and services. Its partners, on its own merit, are one of the major players in marine industries for South-East Asia, thus allowing the Company to tap the market of becoming one of the marine suppliers for all type of oil & gas upstream activities, from maintenance and shutdown to installation and hook-up works in Malaysia and throughout the world.

In the construction industry, the Company has also formed strategic partnership with an Asia Pacific-based construction company, capable of undertaken any sort of infrastructure or building works without any limit for contract value. This has greatly enhanced the company's capability in construction and fabrication services, thus, enable us to participate in any local and international tenders, to the extent that all types of contracts, even turnkey or privatization works are now with its reach.

With these alliances, the Company has also increased its capability and expertise in the specialist areas of expertise and aims to command a sizeable market share in the areas of Provision of Engineered Products, Provision of Technical manpower, Provision of Marine Services and Construction & Fabrication.

### 2.2.1 Engineered Products

ERSB's experience covers all aspects of project development, from feasibility studies through project execution works until maintenance and support services. Following the completion of the projects, the Company continues to provide its

services under a number of general services, upgrading, retrofit or maintenance contracts. Whilst the majority of the work was carried out in Malaysia, the Company is continuing to develop a track record in the Asia Pacific region.

Over the years, the Company has fast becoming a major force in the provision of engineered products to the oil & gas industry.

The Company is fast becoming one of the leading supplier and distributor in Malaysia for a wide range of engineered products that it represents for the oil and gas industry. The Company specializes in the engineering and supply of Electrical and Instrumentation engineered products to oil and gas and petrochemical related industries. With the support from its principals, it has the wide range of products. It also supplies Mechanical & Piping and Pipeline & Structural engineering products for the oil & gas industry.

In general, the Company supplies various other engineered products, namely:

- Electrical Heat Tracing (EHT)
- Cathodic Protection System
- Rockshield
- Casing Insulator
- Gas Meter
- Leak Detection
- Horizontal Directional Drilling (HDD)
- Heating Technology
- Control and Connection Equipment
- Heat Shrink Sleeve
- Cold Applied Tape
- Corrosion Protection
- Cables; Cable Support System
- Explosion-Proof Enclosures
- Electrical Equipment
- Lighting & Fixtures
- Dispenser Pump

- Stainless Steel Flanges; Fitting & Components
- Instrument Valves & Manifolds
- Monoflanged Block/Bleed Valves
- Double Block/Bleed Valves &Regulators
- Tubing & Fittings

### 2.2.2 Technical Manpower

It is ERSB's goal to become among the leader for technical manpower agency in this region, creating and delivering services that enable its clients to strive in the ever-changing world of business. The Company offers employers a wide range of services for the entire employment and business cycle including permanent, temporary and contract recruitment; employee assessment and selection; training; outplacement; outsourcing and consulting.

The focus of the Company's work is on raising productivity through improved quality, efficiency and cost-reduction across their total workforce, enabling clients to concentrate on their core business activities.

PETRONAS has stringent requirements for highly specialized and experienced personnel, and thus appointed the Company to provide for the required competent personnel as part of their team of support, technical and professional personnel covering:

- Project Managers
- Project Engineers
- Engineering Managers
- Construction Managers
- Engineers – Civil, Structural, Mechanical, Piping, Electrical, Instrument, Process, etc.
- Project Planner & Control
- Field Engineers – Civil, Structural, Mechanical, Piping, Electrical, Instrument, etc.
- Procurement Managers

- Procurement & Expediting Officers
- Contract Managers
- Quantity Surveyors & Contract Officers
- QA Managers
- QC Inspectors – Civil, Structural, Mechanical, Piping, Electrical, Instrument, etc.
- HSE Managers
- Safety Inspectors
- Office & Miscellaneous Support Staffs

### 2.2.3 Marine Services

ERSBis in the midst of comprehensively involved in the supply of marine services to major clients in the oil & gas industry, particularly for PETRONAS, Shell, ExxonMobil, etc.

The Company is the sole shipping agent for a number of international marine vessel-owned companies. Its principal is mainly involved in the provision of marine transportation and support services, as well as marine engineering and maintenance services for companies operating in the oil and gas industry and related offshore sectors. One of its principal is among the largest owner and operator of offshore support vessels in South East Asia, and is truly an established and trusted marine service partner in the oil and gas industry. With the wide range of fleet fabricated and owned by its principal, the Company is poised to become one of the major players for offshore marine support services.

The Company is flexible in allowing for short and long-term charter contracts for the following types of marine vessels:

- Anchor Handling Tug (AHT) boat
- Anchor Handling Tug & Supply (AHTs) boat
- Tug boat and Harbor Tug boat
- Crew boat
- Supply boat

- Accommodation vessel
- Workboat & Work barge
- General/Multi-purpose/Utility vessel

### 2.2.4 Construction and Fabrication

The construction and fabrication experience undertaken by ERSB involves different facets of oil & gas and construction industries. The Company has been involved in the building of roads, buildings, plants, pipelines, offshore platforms, ports, bridges, water & wastewater facilities, etc. from a project management role to a full Engineering, Procurement, Construction, Installation & Commissioning (EPCIC/EPCIC/EPCC/EPIC, EPC/Turnkey) scope of works for the oil & gas and infrastructure works.

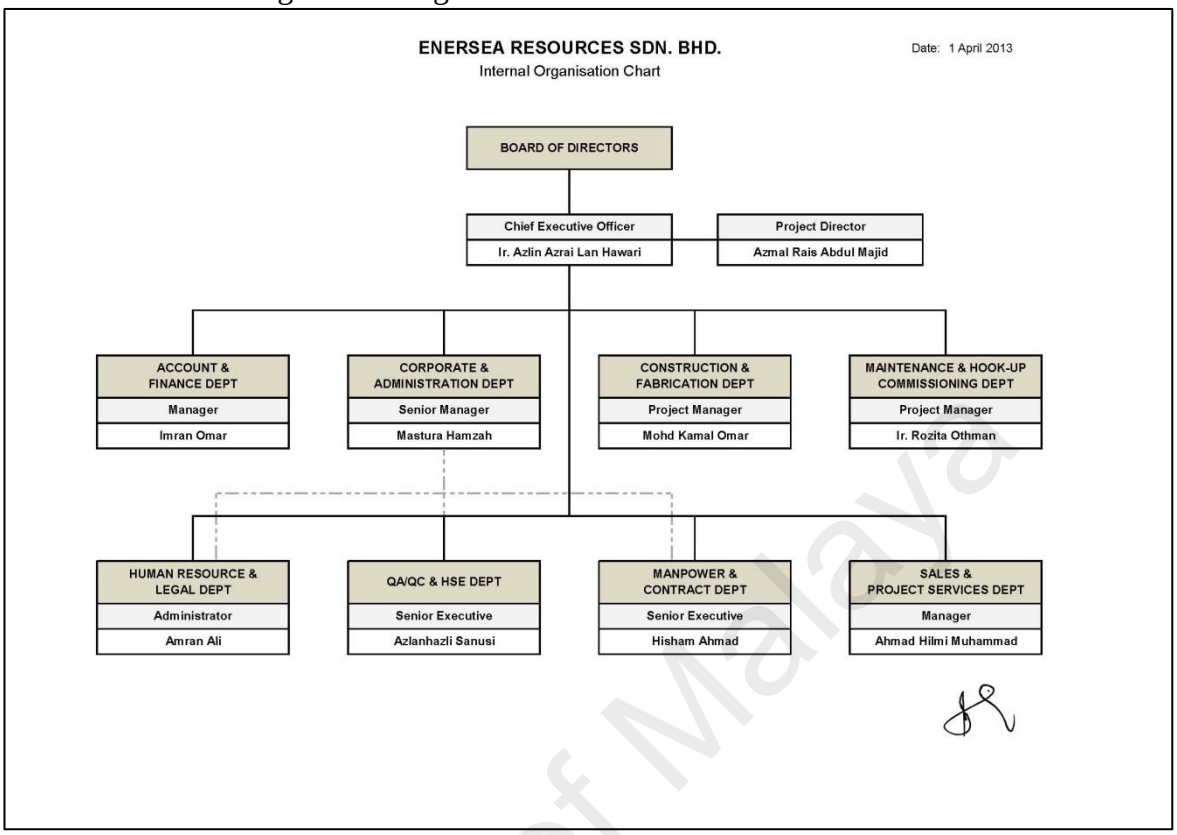
The scope of works includes:

- Project Management & Technical (PMT) services
- Procurement & expediting services
- Construction and fabrication services, covering: site preparation, civil & structural, piping & mechanical, electrical & instrumentation works, scaffolding, painting & blasting, etc.
- Commissioning services
- Contract implementation and post-contract services

## 2.3 The Management of the Company

The company is spearheaded by Ir. Azlin Azrai Lan Hawari as the Chief Executive Officer (CEO). Three department reports to the CEO also reports to the Corporate and Administration department. The three departments are Human Resource & Legal department, QA/QC & HSE department and the Manpower & Contracts department. Figure 2.1 shows ERSB internal organizational structure.

Figure 2.1: Organizational Structure for ERSB




Source: ERSB HR Department

### 2.3.1 ERSB Vision

To become the leader in the fields of Engineered Equipment, Technical manpower, Marine Services and Fabrication & Construction by harnessing the strengths of a high technology-based qualified engineering team to deliver competitive, value-added engineering products and services to meet and exceed the needs of the Oil & Gas, Marine and Construction industries in Malaysia and throughout the world.

### 2.3.2 ERSB Mission

In trying to make the mission come alive, ERSB is promising its customers/clients that the products and services is to be delivered on time without affecting its quality. To focus on its core area of expertise by continuously innovating, enhancing and developing professional standards.

1. ERSB shall deliver the desired quality products and services to its clients by providing all the required and value-added resources in a safe, timely and professional manner.
2. ERSB shall have mutually beneficial and strong strategic partnerships with its clients, partners, subcontractors and suppliers.
3. ERSB shall focus its efforts on its core areas of expertise in line with its business interest by continuously innovating, enhancing and developing its professional standards to promote the state-of-the-art solutions to engineering problems.
4. ERSB shall create value for its shareholders, business and social communities, with equal emphasis on promotion and care for public health, safety and environment as paramount consideration for work culture.
5. ERSB shall value its human resources as the greatest asset of the company and ensure the well-being of its workforce in the short and long term

### 2.3.3 ERSB Objective

It is ERSB's goal to become among the leader for technical manpower agency in this region, creating and delivering services that enable its clients to strive in the ever-changing world of business. The Company offers employers a wide range of services for the entire employment and business cycle including permanent, temporary and contract recruitment; employee assessment and selection; training; outplacement; outsourcing and consulting.

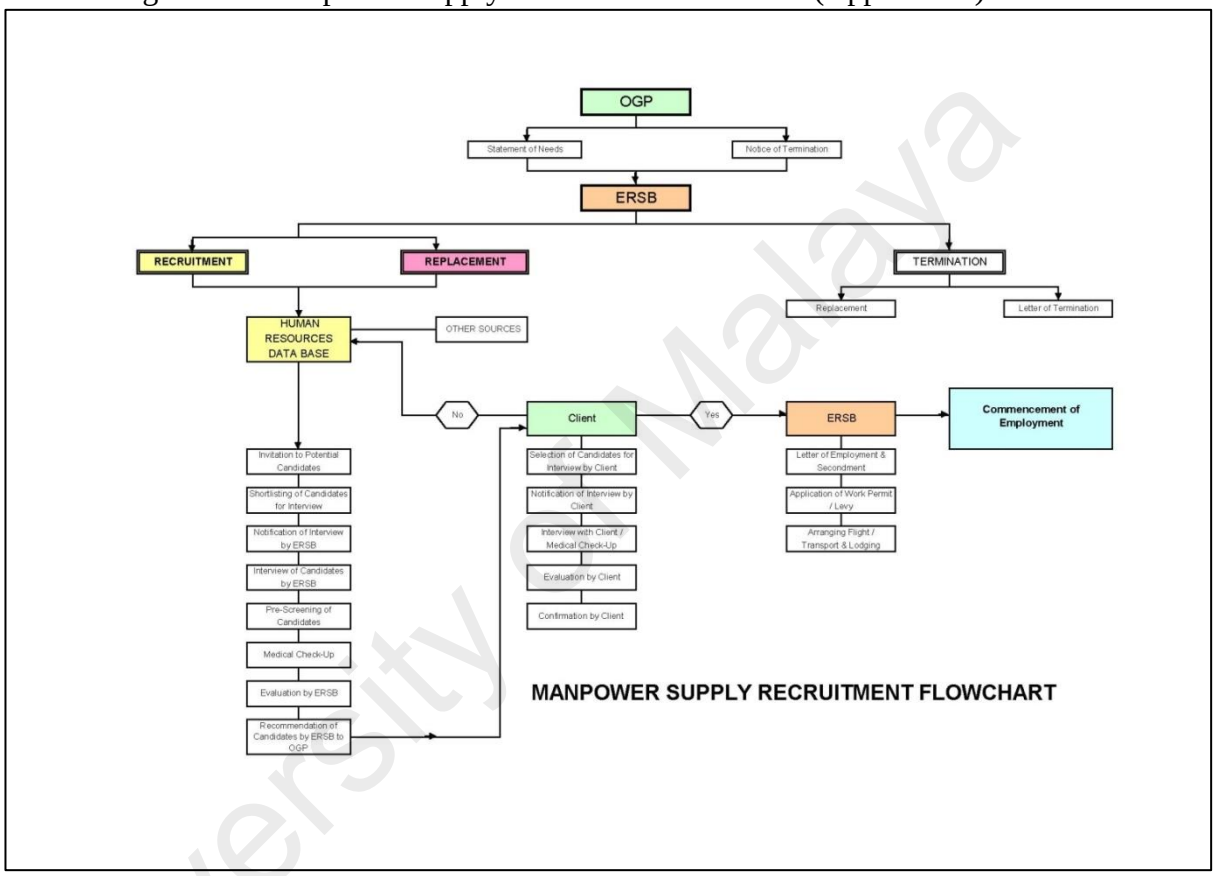
The focus of the Company's work is on raising productivity through improved quality, efficiency and cost-reduction across their total workforce, enabling clients to concentrate on their core business activities.

## 2.4 The Manpower Department

Manpower Department is one of the departments at ERSB. There are 3 main scopes to the manpower department's activities. Figure 2.2 shows the process flow for manpower recruitments.

1. Manpower Supply - Sourced, contracted and managed by ERSB.
2. Manpower Placement - Sourced by ERSB; Contracted and managed by client.
3. Manpower Management - Sourced by client; Contracted and managed by ERSB.

Figure 2.2: Manpower Supply Recruitment Flowchart (Appendix 4)




Source: ERSB Manpower Department

## 2.5 Human Resource Content

The number of staffs at ERSB is 10, where 9 are at the executive level position and only 1 is non-executive level. However, the current position for QA/QC & HSE is empty as sheen in Table 2.1.

Table 2.1: Human Resource content at ERSB

| No | Department | Staffs | | Total Staffs |
|---|---|---|---|---|
| | | Executive | Non-Executive | |
| 1 | Management | 2 | | 2 |
| 2 | Corporate & Administration | 1 | | 1 |
| 3 | Construction & Fabrication | 1 | | 1 |
| 4 | Maintenance & Hook-Up Commissioning | 1 | | 1 |
| 5 | Sales & Project Services | 1 | | 1 |
| 6 | Manpower & Contract | 1 | | 1 |
| 7 | Account & Finance | 2 | | 2 |
| 8 | QAQC & HSE | 1 | | 1 |
| 9 | Human Resource & Legal | | 1 | 1 |
| | | | | |
| | Total | 10 | 1 | 11 |

Source: ERSB HR Department

## 2.6 Company Experience and Achievements

It has the experience, technical knowledge and service support to meet client demand including installation and commissioning of its engineering products.

In a major provision of technical manpower services ever taken by the Company, a subsidiary of PETRONAS had entrusted the Company with a term contract entitled "Appointment of manpower Supply Agencies for the Provision of Manpower "to support its operations effective from 2009 onwards.

In a significant onshore-based oil & gas project sub-contracted by the Company, the Company undertook part of the Contract No.: CH2/C1/2003/DDP/13 entitled "Provision of Construction and Relocation of Facilities Affected by Lutong Refining Company Sdn. Bhd. Closure (Phase 1) at *Miri Crude Oil Terminal* (MCOT), Miri, Sarawak for Petronas Carigali Sdn. Bhd. in March 2004.

The project is located at the MCOT plant owned by Petronas Carigali Sdn. Bhd. in Miri, Sarawak. All fabrication activities are performed at a fabrication yard, leased by the Company, adjacent to the MCOT plant. The sites activities are performed during live operations of the plant, and thus, require stringent quality and safety measures.

Another landmark project implemented by the Company is located at the second refinery (PSR-2) owned by Petronas Penapisan Melaka Sdn. Bhd. in Sungai Udang, Melaka. All construction and fabrication activities were performed in-situ at the work site. The range of service is Engineering, Procurement, Construction and Commissioning (EPCC) of Electrical Heat Tracing System with associate tie-ins for Warga Hikmat Kejuruteraan Sdn. Bhd.

## 2.7 ERSB Quality Policy

It is the written policy of ERSB to provide its clients with the quality that exceeds the specifications set out by the client. In lieu of this, the Company has made a strong commitment in achieving a high level of quality for its products and services which shall, not only conform to contract and regulatory requirements and fit for its intended purpose, but also exceed the expectations of the client.

To ensure that its clients shall be completely satisfied with the level of services it provide, the Company operates a fully documented Quality System in its daily operations, which was planned and developed with its management system throughout the organization.

The Company Quality Assurance programme follows the recommendation of and complies with the minimum requirements of ISO 9001:2008. Conformance to operational practices and to contractual and regulatory requirements is determined on the basis of objective evidence of compliance with system requirements. As such, the programme strictly ensures that all types of works are performed in a systematic manner, non-conformance is automatically identified with the necessary effective remedial measures taken to prevent recurrence, and performance is continually assessed with any improvements to be identified and implemented continuously.

"ERSB shall deliver its products and services to its valued customers with the highest professional standards with the agreed schedule with paramount consideration towards care for public health, safety and environment."

"ERSB, as a commitment to quality, is dedicated to continuous improvement throughout the organization, strives to analyze and remedy problems in service and product performance by monitoring key processes and making appropriate changes as and when necessary, and shall achieve the quality objectives by implementing a documented quality assurance programme that is consistent with the disciplines of ISO9001:2008."

# SECTION 3
# REVIEWS OF THEORIES AND PAST FINDINGS

## 3.1 Definition

The review of literature is to relate all the issues of the research findings to the known and available information. Some of the theories chosen for the Project Paper shall be Maslow's Hierarchy of Needs, Herzberg's Two-factor Theory, Goldthorpe's Research, Hackman and Oldham job characteristics model and Expectancy Theory.

### 3.1.1 Maslow's Hierarchy of Needs

Abraham Maslow (1908–1970) cast doubt on the simplicity of scientific management. He argued that there was a hierarchy of employee needs. Although economic needs are a major motivating factor, other higher-order needs are important to people at work.

Figure 3.1: Maslow's Hierarchy of Needs


Source: Motivation and personality (1954)

### 3.1.2 Herzberg's two-factor Theory

Herzberg et al. (1959) offered a two-factor theory of motivation, where research was done on what factors can affect job satisfaction levels. Two categories were developed. The first set is called hygiene factors, which are the elements needed to prevent dissatisfaction. They include salary, security and supervision. The second set is called motivation factors, which are the elements that affect satisfaction levels but that cannot lead to dissatisfaction. These include recognition, responsibility and advancement.

Figure 3.2: Herzberg's Two-factor Theory


Source: The Motivation to Work (1959)

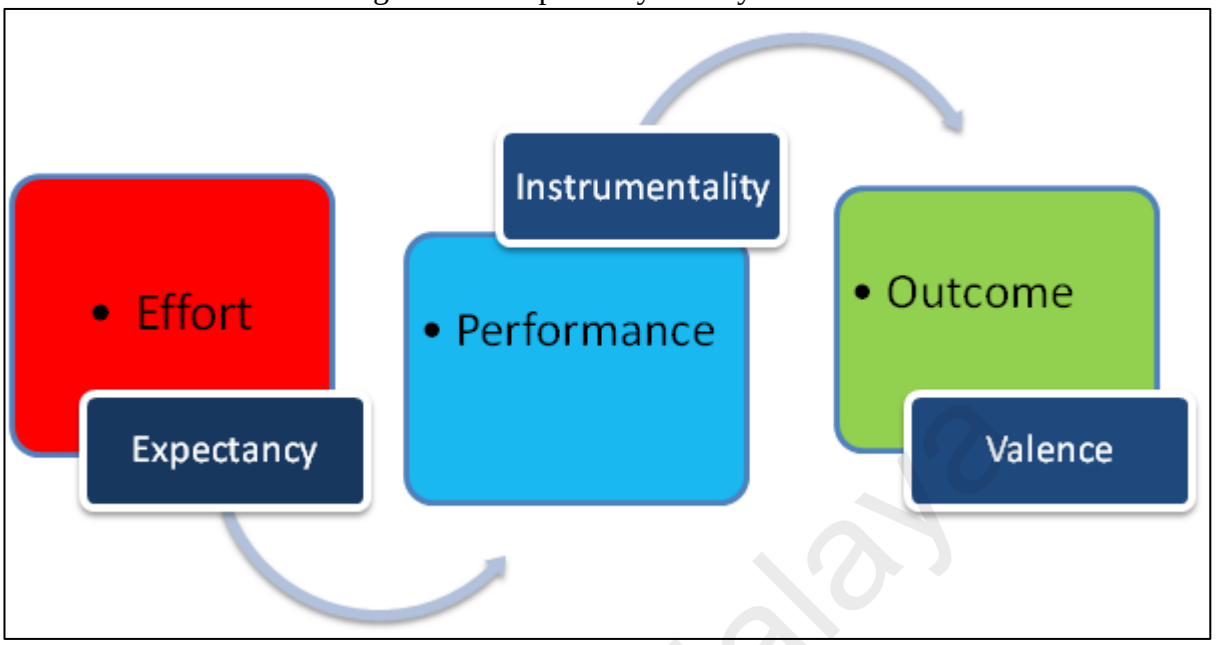
### 3.1.3 Goldthorpe's Research

Goldthorpe et al. (1968) made a sociological study of the workplace. The main findings were that motivation could be influenced by factors outside of work, so different workers will be motivated in different ways.

### 3.1.4 Expectancy Theory

A different type of theory is offered by Vroom (1964): the expectancy theory. This theory stresses that understanding how employees perceive possible outcomes is vital for knowing how to motivate them. Vroom uses the term 'valence' to describe what the employee anticipates will be the satisfaction gained from the outcome of a particular action. Two categories of outcomes are possible, either performance-related or need-related.

Figure 3.3: Expectancy Theory



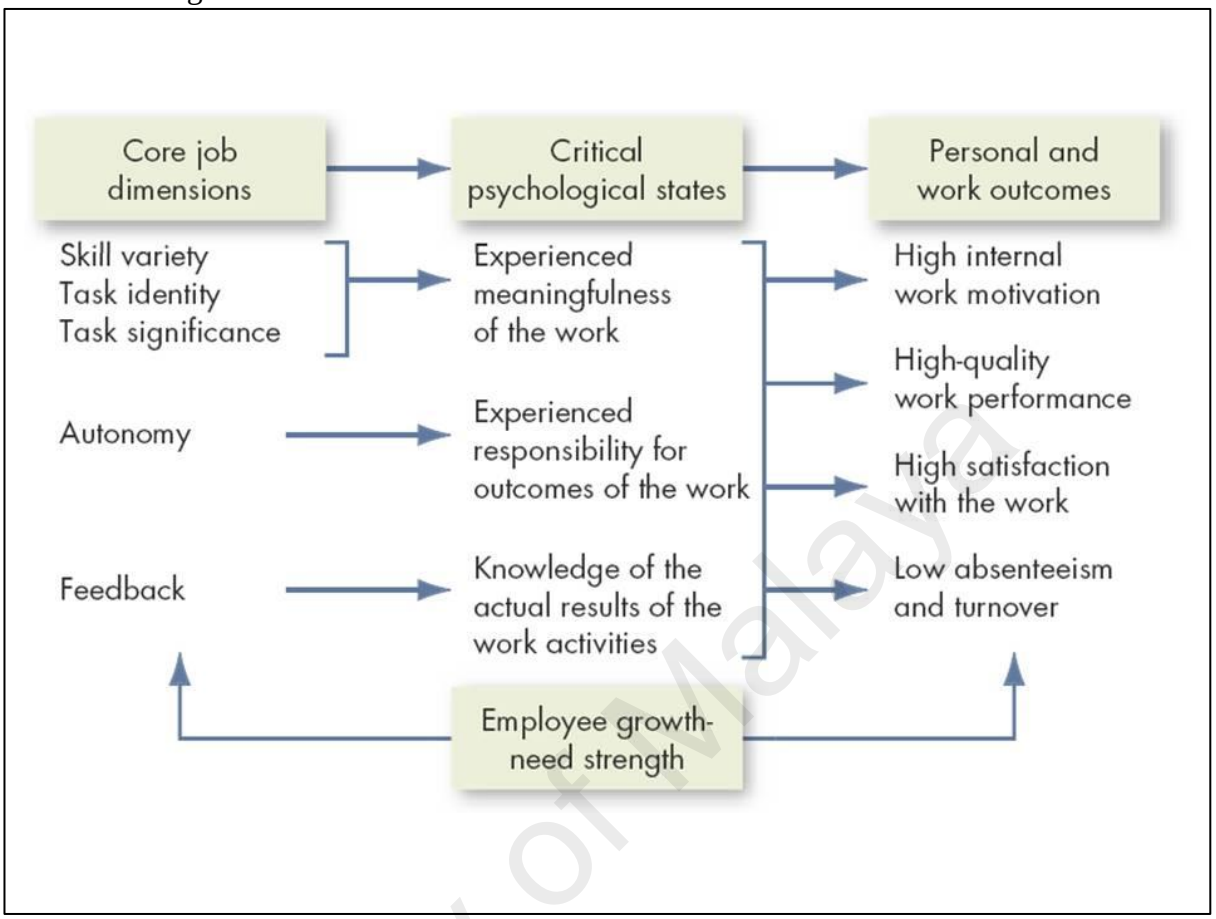

Source: Victor H. Vroom (1964)

### 3.1.5 Hackman and Oldham Job Characteristics Model

The job characteristics model, designed by Hackman and Oldham, is based on the idea that the task itself is the key to employee motivation. Specifically, a boring and monotonous job stifles motivation to perform well, whereas a challenging job enhances motivation. Variety, autonomy and decision authority are three ways of adding challenge to a job. Job enrichment and job rotation are the two ways of adding variety and challenge.

It states that there are five core job characteristics (skill variety, task identity, task significance, autonomy, and feedback) which impact three critical psychological states (experienced meaningfulness, experienced responsibility for outcomes, and knowledge of the actual results), in turn influencing work outcomes (job satisfaction, absenteeism, work motivation, etc.). The five core job characteristics can be combined to form a motivating potential score (MPS) for a job, which can be used as an index of how likely a job is to affect an employee's attitudes and behaviors.

Figure 3.4: Hackman and Oldham Job Characteristics Model




Source: Work Redesign (1980)

## 3.2 Review of Theories

There are many theories which can help explain the human attitude, health and emotional disorder. Below are reviews of some selected theories related to the issue in this Project Paper.

### 3.2.1 Maslow's Hierarchy of Needs

Each category of need is seen as a different level and these have to be satisfied in order of importance. These include a range of needs: physiological, safety, love, esteem, and finally the need for self-actualization.

### 3.2.2 Herzberg's Two-factor Theory

Hygiene factors are seen to be the most crucial, but both types have to be present together to motivate workers fully.

### 3.2.3 Goldthorpe's Research

This makes the role of the manager as a motivator particularly difficult. However, three main types of workers were described and could be identified as:

1. Affluent workers – instrumental in approach to work and so motivated by money
2. Professional workers – bureaucratic in approach and so motivated by position
3. Traditional workers – feeling solidarity with each other; as a result they are motivated by a sense of belonging.

### 3.2.4 Expectancy Theory

The theory suggests that motivational force results from the combination of anticipated outcomes (performance and need-related) and the expectancy the subordinate has that the predicted outcome will actually be realized.

### 3.2.5 Hackman and Oldham Job Characteristics Model

Hackman and Oldham's job characteristics theory proposes that high motivation is related to experiencing three psychological states whilst working:

1. Meaningfulness of work - That labor has meaning to you, something that you can relate to, and does not occur just as a set of movements to be repeated. This is fundamental to intrinsic motivation.
2. Responsibility - Which you have been given the opportunity to be a success or failure at your job because sufficient freedom of action has given you. This would include the ability to make changes and incorporate the learning you gain whilst doing the job.

3. Knowledge of outcomes - This is important for two reasons. Firstly to provide the person knowledge on how successful their work has been which in turn enables them to learn from mistakes. The second is to connect them emotionally to the customer of their outputs, thus giving further purpose to the work (e.g. I may only work on a production line, but I know that the food rations I produce are used to help people in disaster areas, saving many lives).

In turn, each of these critical states is derived from certain characteristics of the job:

1. Meaningfulness of work - The work must be experienced as meaningful (his/her contribution significantly affects the overall effectiveness of the organization). This is derived from:

    a. Skill variety - Using an appropriate variety of your skills and talents: too many might be overwhelming, too few, boring.
    b. Task Identity - Being able to identify with the work at hand as more whole and complete, and hence enabling more pride to be taken in the outcome of that work (e.g. if you just add one nut to one bolt in the same spot every time a washing machine goes past it is much less motivating than being the person responsible for the drum attachment and associated work area (even as part of a group).
    c. Task Significance - Being able to identify the task as contributing to something wider, to society or a group over and beyond the self. For example, the theory suggests that I will be more motivated if I am contributing to the whole firm's bonus this year, looking after someone or making something that will benefit someone else. Conversely I will be less motivated if I am only making a faceless owner wealthier, or am making some pointless item (e.g. corporate give-away gifts).

2. Responsibility - Responsibility is derived from autonomy, as in the job provides substantial freedom, independence and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out)

3. Knowledge of outcomes - This comes from feedback. It implies an employee awareness of how effective he/she is converting his/her effort into performance. This can be anything from production figures through to customer satisfaction scores. The point is that the feedback offers information that once you know; you can use to do things differently if you wish. Feedback can come from other people or the job itself.

Knowing these critical job characteristics, the theory goes, it is then possible to derive the key components of the design of a job and redesign it:

1. Varying work to enable skill variety
2. Assigning work to groups to increase the wholeness of the product produced and give a group to enhance significance
3. Delegate tasks to their lowest possible level to create autonomy and hence responsibility
4. Connect people to the outcomes of their work and the customers that receive them so as to provide feedback for learning

### 3.3 Past Finding Research

Ahmad Rizal Madar, Mohd Yusop Ab.Hadi, Abdul RasidRazzaq and Mohamad Zaid Mustafa (2011) found that there were significant competitions among trainees by their interest in courses. There were a high number of challengers or market players producing skill workers for industrial sector. They proposed that the company or employer should increase their awareness to reduce the sectors' reliance on foreign workforces.

Anne Martensen and Lars Grønholdt (2006) say that, it is important to manage and improve job satisfaction and employee loyalty. They stated that there is a link between employees' job satisfaction, and loyalty to its determinants, and, in turn, to its consequences: perceived contribution to the company value.

# SECTION 4
# METHODOLOGY OF STUDY

## 4.1 Defining Method of Study

The purpose of this study is to examine the perceptions of people working in the Oil & Gas sector regarding the challenges that arise for the supply of technical manpower at ERSB.

## 4.2 Research Approach

A qualitative research methodology was used for this study. A survey was sent out to a selected sample from ERSB's manpower database. The term 'survey' is commonly applied to a research methodology designed to collect data from a specific population, or a sample from that population, and typically utilizes a questionnaire or an interview as the survey instrument
(Robson, 1993).

Surveys are used to obtain data from individuals about themselves, their households, or about their perception on his or her surroundings. Sample surveys are an important tool for collecting and analyzing information from selected individuals. They are widely accepted as a key tool for conducting and applying basic social science research methodology (Rossi, Wright, and Anderson, 1983).

According to Leary (1995), there are distinct advantages in using a questionnaire vs. an interview methodology: questionnaires are less expensive and easier to administer than personal interviews; they lend themselves to group administration; and, they allow confidentiality to be assured. Robson (1993) indicates that mailed surveys are extremely efficient at providing information in a relatively brief time period at low cost to the researcher.

For these reasons, a qualitative research and a questionnaire survey was used to assess the perceptions of selected technical skilled manpower regarding the challenges that arises in supplying technical manpower at ERSB.

## 4.3 Sources of Data

There are two types of sources of data that are collected which is by Primary and Secondary Data. Primary Data is first hand data which is obtained from the survey form which was sent out in early January 2015.

For this study, 1000 samples were selected and email addresses of those samples were obtained from ERSB's manpower database.

Secondary data is existing data available such as from the HR Department, library or journals.

### 4.3.1 Primary Data

Primary data is information that is collected specifically for the purpose of a research project. For this research, a survey form will be emailed out to the intended recipient. The recipients are those in search for jobs in the Oil & Gas industry in Malaysia. The email addresses of the candidates were obtained from ERSB manpower database.

### 4.3.2 Secondary Data

Secondary Data were also used for this research. Information of available candidates searching for jobs was readily available in the Manpower Department database.

## 4.4 Method Used in the Study

In this study, survey forms which consist of 24 questions were used. The forms were made on Google Forms which were made easy for the intended personnel to tick only answers applicable to him or her.

The intended recipients for the forms are people already working or plan to work in the Oil & Gas industry in Malaysia. The forms are sent out by email in early January 2015 to various trades of technical personnel's. Email addresses of all the technical personnel's were obtained from ERSB manpower database. One thousand forms were sent out by email using the BCC option.

## 4.5 Limitations of Study

There are limitations to this research since the feedback for the questionnaires were only satisfactory. The HR Department for ERSB had also retracted some information that's was earlier given out as the data is considered confidential by the management.

The short period given to do this research also contributed to the factors that limited the flow of information obtained.

# SECTION 5
# ANALYSIS OF STUDY

## 5.1 Background

This section will be presenting the Primary Data that was collected from early January 2015 till mid-January 2015. The Primary Data consist of 81 respondents that participated in the survey. The number of people responding to the survey was quite disappointing where only 81 people responded out of 1000 survey forms that were sent out.

A self-administered questionnaire was emailed to the respondents. Self-administered questionnaires offer the following advantages:

a. No interviewer bias;
b. Less time spent on administration;
c. Easier questioning of larger numbers of people;
d. More leisurely, this may permit more careful responding;
e. Perceived as more anonymous and may therefore yield more accurate data on sensitive issues.

The respondents were given closed-ended questions which were given a limited number of answers, leaving no room for additional information to be entered; they require only recognition and a choice from among answer options. The advantages of closed-ended questions is that it gives greater precision, uniformity, easier recall for the respondent, easier coding and easier analysis than open-ended questions.

## 5.2 Respondents Demography

The sample population consist of personnel's which are working or intend to work in the Oil & Gas industry in Malaysia which have submitted their CV's to ERSB's Manpower Department. For this research, the researcher only obtained 8.1% from

the total sample population but a sampling error of 0.7% has incurred. The sampling error is the difference between a sample statistic used to estimate a population parameter and the actual but unknown value of the parameter (Bunns & Grove, 2009).

Based on Table 5.1, the research population consists of 89.2% male, this shows that most female in Malaysia are more prone toward soft-skill jobs rather than hard-skills. The locals populate the respondents with a 93.3% high comparing to foreigners. This suggests that over skilled expats does not populate the O&G workforce in Malaysia.

The data obtained for salary level shows that 59.2% earn less than RM3,000 a month, 22.4% earn from RM3,001 to RM5,000, 13.2% earns from RM10,000 to 19,999 and only 1.3% earns above RM20,000. This is a bit alarming as it also indicates that mostly younger people are in the market for jobs and do not have sufficient technical skills.

The education level for the respondents shows that 29.3% have a Diploma, 37% have a Degree. This is seen as positive since the combined would give more that 66% of the workforce looking for jobs is highly educated, thus easier to train.

The classification for respondents shows that 45.3% are at the Executive level. This is consistent with the age group where the sample population consists of a stunning 85.6% between 21 till 30. The respondent's employment terms obtained shows that almost half which is 45.2% are Permanent hire. The preferred working location is rather equally divided as the result shows 51% of respondents prefer working Offshore and 49% prefer working Onshore.

Table 5.1: Respondents demography

| **Description** | **No** | **Percentage (%)** |
|---|---|---|
| Sex | | |
| a. Male | 69 | **89.6** |
| b. Female | 8 | 10.4 |
| Nationality | | |
| f. Local | 70 | **93.3** |
| g. Foreign | 5 | 6.7 |
| Salary | | |
| a. Less than RM3,000 | 45 | **59.2** |
| b. RM3,001 – RM5,000 | 17 | 22.4 |
| c. RM5,001 – RM9,999 | 10 | 13.2 |
| d. RM10,000 – RM19,999 | 3 | 3.9 |
| e. Above RM20,000 | 1 | 1.3 |
| Qualification | | |
| a. SPM | 15 | 16.3 |
| b. Technical Certificate | 14 | 15.2 |
| c. Diploma | 27 | 29.3 |
| d. Degree | 34 | **37.0** |
| e. Master / PhD | 2 | 2.2 |
| Position | | |
| a. Manager | 1 | 1.3 |
| b. Supervisor | 9 | 12.0 |
| c. Technician | 22 | 29.4 |
| d. Executive | 34 | **45.3** |
| e. Semi-Skill | 9 | 12.0 |
| Age | | |
| a. Below 20 | 2 | 2.6 |
| b. 21 – 30 | 65 | **85.6** |
| c. 31 – 40 | 7 | 9.2 |
| d. 41 – 55 | 1 | 1.3 |
| e. 56 and above | 1 | 1.3 |
| Employment terms | | |
| a. Permanent | 38 | **45.2** |
| b. Contract | 25 | 29.8 |
| c. Freelance | 8 | 9.5 |
| d. Unemployed | 13 | 15.5 |
| Preferred working location | | |
| a. Offshore | 53 | 51.5 |
| b. Onshore | 50 | 49.5 |

## 5.3 Whether the current manpower is adequate

The questions relating to whether the available manpower is adequate or not is taken from the survey form which comprises of several questions. Based on the survey for the 81 respondents, the research found that majority of respondents is new to the Oil & Gas industry since 85.6% were only aged from 21 to 30. These younger generations were the most in the market for jobs but they are the ones which switch jobs a lot as can be seen from the survey conducted. This can be seen in Table 5.1 & Table 5.2.

From the survey that was conducted and as shown in Table 5.2, 73.3% of the respondents are new to the Oil & Gas industry and only 2.7% have 10 to 15 years' experience. This supports the issue that skilled manpower is on the low ground.

The turnover rate for the respondents is every one year, which is 39.2% of the respondents. This is very alarming as it affects the process of retaining and retraining of skill workers.

When the respondents were asked whether the company they work in has a shortage on manpower, the result was almost equal as 50.7% said YES and 49.3% said NO. The result is currently acceptable but if there is a shift in demand for skilled manpower, the numbers might not be adequate.

Currently companies have enough experienced manpower as 73.0% agrees that there are no shortages in skilled manpower.

When asked about future developments such as RAPID and whether there would be adequate manpower since 40,000 workers[5] would be needed for this project, there was an equally amount of people who agree that there would be adequate manpower and the people that don't know, that is 43.0% said YES and MAYBE.

[5] http://www.theborneopost.com/2012/05/14/rapid-to-create-various-job-opportunities-in-pengerang/ taken on 25/11/2014

The respondents were asked how much they think would be the available manpower for RAPID, 50.6% said at least 50%. The perspective of this is that, most respondents think the future numbers for skilled manpower is enough to the support the surge in demand when RAPID starts.

The respondents were also asked if they think other onshore facilities such as SK Energy, THHE or MMHE would be affected by the RAPID project, 27.3% said only 30% would be affected. The respondents do not see the serious implication if there is a surge in manpower demand where skilled manpower would run towards better salary environment and would leave other companies with less skilled manpower.

Table 5.2: Industry availability on skilled manpower

| Description | No | Percentage (%) |
|---|---|---|
| Years working in O&G | | |
| a. 0 – 2 | 55 | **73.3** |
| b. 3 – 5 | 12 | 16.0 |
| c. 6 – 9 | 6 | 8.0 |
| d. 10 – 15 | 2 | 2.7 |
| e. More than 15 years | 0 | 0 |
| Frequency switching jobs | | |
| a. 0 – 1 | 31 | **39.2** |
| b. 2 – 3 | 18 | 22.7 |
| c. 4 – 5 | 10 | 12.7 |
| d. 6 years and above | 1 | 1.3 |
| e. Never | 19 | 24.1 |
| If current company have experience workers | 54 | **73.0** |
| a. Yes | 20 | 27.0 |
| b. No | | |
| Perspective on RAPID if manpower was adequate | | |
| a. Yes | 34 | 43.0 |
| b. No | 11 | 14.0 |
| c. Maybe | 34 | 43.0 |
| Perspective on available manpower for RAPID | | |
| a. Less than 10% | 5 | 6.3 |
| b. 20% | 4 | 5.1 |
| c. 30% | 17 | 21.5 |
| d. 40% | 13 | 16.5 |
| e. At least 50% | 40 | **50.6** |
| Perspective if other companies would be affected by RAPID | | |
| a. Less than 10% | 15 | 19.5 |
| b. 20% | 16 | 20.8 |
| c. 30% | 21 | **27.3** |
| d. 40% | 7 | 9.1 |
| e. At least 50% | 18 | 23.3 |

## 5.4 Factors influencing for the provision of skilled manpower

To find out the factors affecting the provision of skilled manpower, various questions and scenarios were asked to the respondents. The respondents were asked what their main reason is for leaving the company, majority which is 36.5% said to gain new experience and only 2.1% said because they were transferred. This shows that

younger workers would need to constantly leave the current company to gain greater experience in the O&G industry. Table 5.3 below shows the tabulation of results.

The respondents were also asked if they think if it's fair that expats are getting paid more than locals, 48.7% said YES and 51.3% said NO. The results show that the salary is equally fair.

Further questions were asked to the respondents, they were asked why they think companies have difficulty filling jobs 24.8% says many applicants seek for more pay than is offered, 26.9% says the applicants lack experience.

The respondents were then asked why they think the company suffers a shortage in manpower, 42.5% says the other company pays better.

Table 5.3: Factors affecting manpower supply

| Description | No | Percentage (%) |
|---|---|---|
| Reason for leaving company | | |
| a. Better salary | 35 | 24.1 |
| b. To gain new experience | 53 | **36.5** |
| c. To seek a new working environment | 30 | 20.7 |
| d. Current working conditions not up to expectations | 13 | 9.0 |
| e. Termination of contract | 11 | 7.6 |
| f. Transferred here | 3 | 2.1 |
| Fairness in salary: Local Vs Expat | | |
| a. Fair | 38 | 48.7 |
| b. Unfair | 40 | 51.3 |
| Difficulty in filling jobs for companies | | |
| a. Lack technical competencies | 32 | 22.1 |
| b. Lack workplace competencies | 22 | 15.2 |
| c. No applicants | 16 | 11.0 |
| d. Looking for more pay than offered | 36 | 24.8 |
| e. Lack of experience | 39 | **26.9** |
| Perspective on cause of manpower shortages | | |
| a. People seeking job abroad | 18 | 16.9 |
| b. Other company pays better | 45 | **42.5** |
| c. A lot of people retiring | 11 | 10.4 |
| d. The company is cutting cost | 32 | 30.2 |

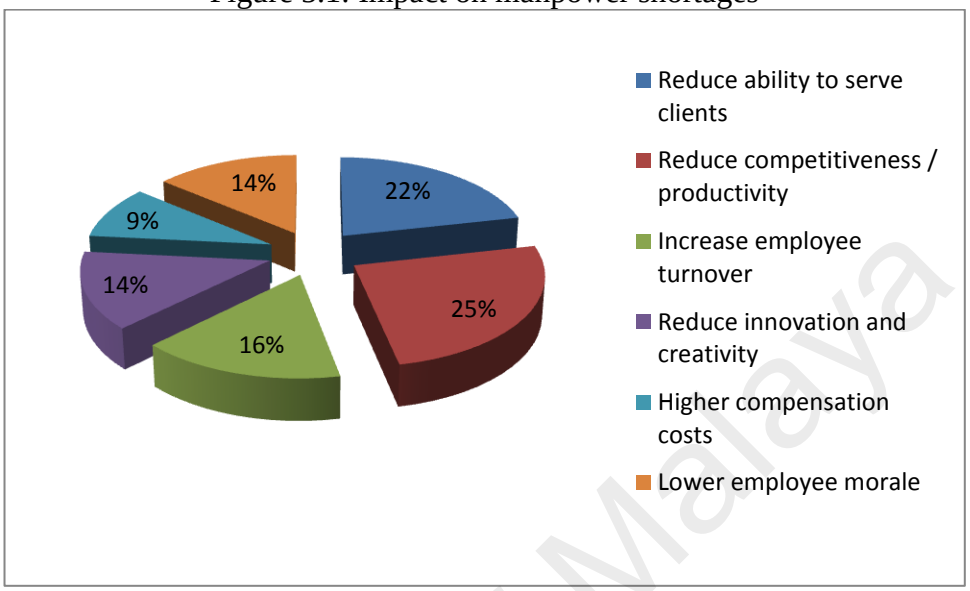
## 5.5 The effects of inadequate skilled manpower to ERSB

It is important to analyze the affects that has cause by the inadequate of manpower. The respondents were asked how the manpower shortages impact the company, 21.5% says it reduces the ability to serve its clients, 25.3% says it reduces the competitiveness or the companies productivity, 15.8% says that it would increase the employee turnover, 13.9% says that it would reduce innovation and creativity at the company, 9.6% says that the company would incur higher compensation costs and 13.9% says that it will lower the employee morale.

If the company does not have the capability to attain to the needs of the clients effectively, it would not be able to retain its customer-client relationship. Other

companies with similar scope of business will emerge and the competitive edge of the company will decline. Figure 5.1 shows the impact on manpower shortages.

Figure 5.1: Impact on manpower shortages

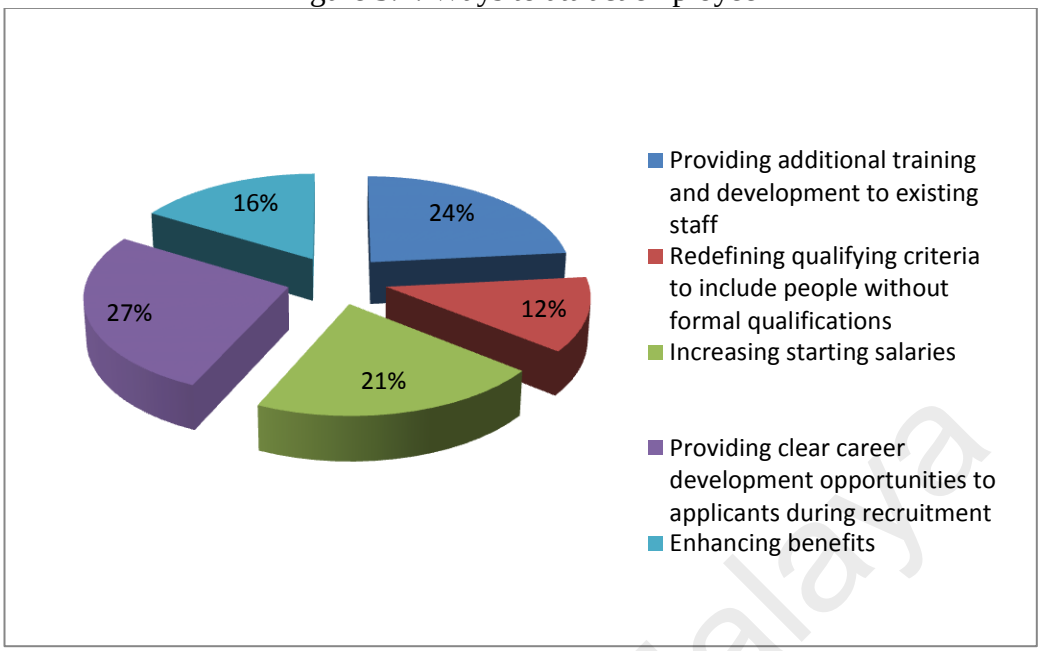



## 5.6 Perception and expectations of workers

Based on Figure 5.2, respondents were asked what they thought would be the best way to attract potential employee, 26.8% wanted the company to provide a clearer development opportunity to be laid out during the recruitment process while 23.4% wanted the company to provide additional training and development to existing staffs.

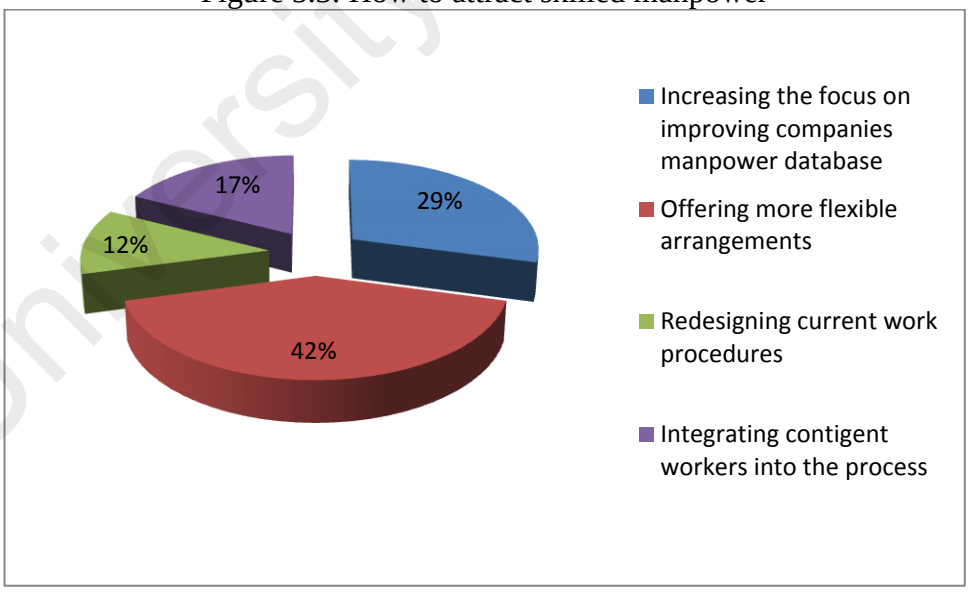
The dilemma here with new employees, companies are unable to expect or predict new employees skills, attitude or motivation until they employ the candidate. Cost of training and development are also an issue to some companies with new hires because they don't feel the need to increase employee morale.

Figure 5.2: Ways to attract employee



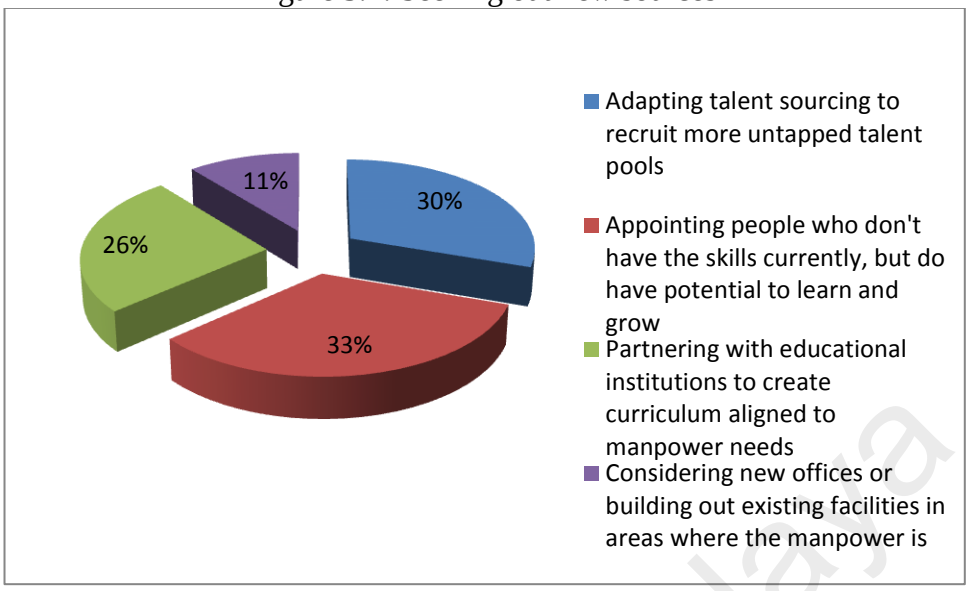

Based on Figure 5.3, the respondents were then asked what they think would be the best way to attract skilled manpower. A majority of 41.7% is in favor that the company offers a more flexible arrangement to the work environment.

Figure 5.3: How to attract skilled manpower




Based on Figure 5.4, the research wanted to know from the respondents on what they think would be the best way to seek out new sources. A majority of 33.3% agree that the company should appoint people currently without skills but have potential to grow.

Figure 5.4: Seeking out new sources



# SECTION 6
# CONCLUSION AND RECOMMENDATIONS

## 6.1 Introduction

Skilled technical manpower shortages are one of the most serious problems afflicting the entire Oil & Gas industry in Malaysia. The problem is particularly becoming evident in most organizations where the situation is aggravated due to their inability to meet rapidly growing market demand.

This is where ERSB comes to play where the company becomes a solutions provider by offering clients a wide range of services for the entire employment and business cycle including permanent, temporary and contract recruitment; employee assessment and selection; training; outplacement; outsourcing and consulting.

Manpower supply has its challenges since it deals with human emotions, attitudes and lifestyle. The researcher wants to establish whether the current number of skilled manpower is really adequate to support any surge in demand to the industry. The researcher wants to identify what factors affecting the supply of manpower to the industry by analyzing the effects of inadequate manpower to the company.

## 6.2 Conclusions

Based on the study that was conducted, the researcher concluded that the majority of people seeking work consist of younger generations which are about 85.6% and is age between 21 to 30.Because there were a majority of younger people, 73.3% were new to the Oil & Gas industry. There was not really a shortage in manpower currently as the survey shows the results almost equally in numbers where 50.7% agree and 49.3% does not. About 73.0% of respondents agree that currently companies have many experienced workers.

The research also indicates that younger generations will constantly change or switch jobs, where 39.2% change jobs every year. This will definitely affect the company's turnover rate. The large gap between male and female respondents also suggests that most female prefer a more soft-skilled position which is outside of the Oil & Gas industry. One of the main reasons why job seekers move to a different company is that they want to gain new experience. Some other factors why companies are short of manpower is because other companies pay better. The reason why companies are having a hard time filling up jobs is because the majority of applicants lack experience.

Most respondents did know about future developments in the industry, as the RAPID project was asked. The feedback was on the middle line where 50.6% thinks that there will be at least 50% of available manpower when the RAPID project starts. The effects if the company does not have the capability to attain to the needs of the clients effectively, it would not be able to retain its customer-client relationship. Other companies with similar scope of business will emerge and the competitive edge of the company will decline.

### 6.3 Recommendations

Following the results from the survey conducted, the researcher recommends that the ERSB take the proper steps and measures. ERSB should seek new manpower sources such as having a joint-venture with other manpower agencies or companies and initiate a program targeting Oil & Gas personnel's.

ERSB should attract new employees by providing a clearer career development opportunity to applicants during the recruitment process. ERSB could attract more skilled manpower by offering personnel's a more flexible work arrangement such as working clock-in time to start after peak hours or allowing employees to work from home unless it is really necessary to come into the office.

ERSB should also seek new manpower sources by appointing people who don't have skills currently, but have potential to learn and grow. The company should seek

partnership with local institutions to ensure the curriculum is aligned with the talent needs.

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