ANALYSIS OF THE FACTORS INFLUENCING THE CAREER CHOICE OF UNDERGRADUATE UMP STUDENTS USING ANALYTICAL HIERARCHY PROCESS (AHP)

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Thesis is submitted in fulfilment of the requirements for the award of degree the Bachelor of Industrial Technology Management with Honours

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SUPERVISOR'S DECLARATION

I hereby declare that I have checked this project report and in my opinion this report is satisfactory in term of scope and quality for the award of the degree of Bachelor of Industrial Technology Management with honours.

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STUDENT'S DECLARATION

I hereby declare that the work in this report is my own except for the quotations and summaries which have been duly acknowledged. The report has not been accepted for any degree and is not concurrently submitted for award of other degree.

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DEDICATION

This thesis dedicated to my parent for their continuous encouragement and supports me all the way during this research.

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ABSTRACT

Students have to choose the right career after their graduates. In many case nowadays many fresh graduate get a job not really based on what courses their study in Higher Education College. It can be conclude that choosing the right career is a critical decision in a student's life. Various aspect condition the decision of a students. This paper aim to analyse the factor that affect the career choices of undergraduate engineering and technology students. There are many possible factor that shaping the choices of students are listed based on previous study. The students of 3rd and final year student of UMP Gambang campus surveyed. The survey finds that the most dominating career preference among the students is to be in Industrial and field work. Using a decision making process name analytical hierarchy process. The relative weight of the various factors affecting this trend are found. The expected analysis for a majority of students, personal aptitude, growth prospects and future income are the most dominating factors in the decision making process. Long gestation period was the considered the least important but acceptable as long as more important factors like growth prospect, personal aptitude and future income are favourable in that career option. As the conclusion, this research may benefit the higher education to identify the best development program or attitude motivation for the student as preparation and student may realise the most general factor affecting them in career choices after graduated. This research also may vary the result in the different higher education area as the UMP was a technical area university.

Keywords: Career choice, Students of University Malaysia Pahang, Analytical Hierarchy Process (AHP)

ABSTRAK

Pelajar mempunyai pilihan dalam memilih karier selepas bergraduasi. Dalam beberapa kes yang berlaku sekarang, ramai pelajar yang baru bergraduasi mendapat pekerjaan yang tidak sesuai dgn kursus mereka di institut pengajian tinggi. Sebagai rumusan memilih pekerjaan kerjaya selepas bergraduasi ialah keputusan yang sukar banyak sebab akan mempengaruhi keputusan yang dibuat. Kertas ini bertujuan untuk menanalisis factor yang membentuk keputusan pelajar disenaraikan berdasarkan kajian-kajian sebelum ini. Keberatan banyak factor memberi kesan kepada kaitan setiap faktor dijumpai. Ramalan analisis untuk majority pelajar ialah pengaruh sifat, prospek pembangunan,gaji di masa hadapan. Waktu yang diperlukan untuk menyesuaikan diri merupakan factor paling tidak penting tetapi berlandaskan kaitan yang tinggi daripada tiga factor utama tadi. Sebagai konklusi, kajian in dapat memberi kesan baik kepada institusi tinggi untuk mendapatkan program pembangunan pelajar yang terbaik dan pelajar juga dapat menyedari factor umum dalam memilih kerjaya selepas bergraduasi. Kajian ini mungkin berbeza jika di buat di institut pengajian tinggi yang lain kerana UMP ialah university teknikal. Oleh sebab itu, kecendurangan pelajar lebih kepada memenuhi industri di Malaysia.

Kata Kunci: Pilihan Kerjaya, Pelajar Universiti Malaysia Pahang, Proses Analisis Hierarki (AHP)

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CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

Career choice is a complex decision. Students that intend to pursue the profession they want must be determines what kind of profession they want to work. They going to have a problem of their career choices with their abilities and university performance to try to make career choice while still studying. One of the most important decisions to be made in life is about selection of job. Choosing the right job is very important at this point. During this decision making time period, a lot of criteria are taken into account and evaluated with respect to the possible alternatives. It is shown that from a previous study that that not all of the criteria have the same weights and not all of the alternatives are same with each other with respect to the criteria. A real life research is made to find a solution to this kind problem

With elevation in technology and global village shrinking, career opportunities have expanded multifariously. Students have a vast choice of career fields, and new fields also the best opportunity to them. At the graduation level different opportunities have paved their way for students. Students need to make a well-rounded and informed choice in this scenario. The availability of varieties options has resulted in a slow but promising shift of trend. Students have begun to pick unconventional careers. Nowadays, engineering students are increasingly exposing themselves to non-technical and the fields that they are not related. Multifaceted and complex decision to determine the factors on which final career choices are made. Through research, the final decision patterns of the careers of engineering students are personal aptitude, societal

expectations, growth prospects, specialisation requirements, future income, prestige of work has been prove that the major criteria that dominate.

Subject matter of every individual's choice, environment, and conditions Will determines the degree of importance of each criterion. This paper aims to conduct a survey of University Malaysia Pahang student's undergraduates and understand factors affecting their career selection after their technical degree, considering the various aspects that condition their final choice. Ultimately through Analytical Hierarchy Process (AHP), this paper aims to determine the weighted order of the different career alternatives in order to judge the recent trend of fields chosen by University Malaysia Pahang students and their inclinations towards various deciding factors.

1.1 BACKGROUND OF STUDY

While career development is an important agenda, graduated students nowadays faced many problems in deciding career they want to choose after finished their studies. Inexperienced student in the industries will create a gap and barrier for choosing the best career. To solve this problem AHP is used.

As increasing of unemployment rate of graduate student, students must be prepare for their career. While career development is an important agenda, unemployment problem is an issue nowadays (UMFCD,2005; Abd Rahim Abd Rashid). From the employer perspective, organisations' need for profit has increased and global competition for talent is impacting career opportunities (Colvin, 2006; De Raaf, Dowie & Vincent, 2009; Grobler, Warnich, Carrell, Elbert & Hatfield ,2006).

Consequently, finding the right occupation has become more complex and challenging, causing increased career uncertainty (Trevor-Roberts, 2006). Researchers report that career uncertainty and career indecision is a prevailing problem among students (Amir & Gati, 2006; Trevor-Roberts, 2006). This creates career uncertainty, which has become a widespread problem, particularly for students. When this problem is not addressed, it leads to career indecision, or less optimal choices which could influence career opportunities and quality of life. To solve this problem AHP is used.

AHP splits the overall problem to solve into as many evaluations of lesser importance. Indeed the decision cycle determine the level of important of each criteria from the survey. This research will determine the highest alternatives or option preferred by fresh graduate's students by conducting the survey.

1.2 PROBLEM STATEMENT

There are three problem areas that students face when it comes time to choose a career. According to Pathway Consulting Career, 2001. These are:

1. Nowadays, students in the university especially engineering and technology students begun to join and get a job and start the unconventional career that they are not related with their course study.
2. Most students do not seem to possess that desire, but those that do can and will make the right choices for them when they ready themselves to pick their careers It also takes both and internal and an external desire to make to make a difference in their work.
3. Some students also do not have the interest in moving forward to find balance, creativity, and greater meaning in their work. It is the mix of motivation, parent help, and being in and around parents and teachers, and other teen that fosters the need for balance and meaning in ones chosen work.

1.3 RESEARCH OBJECTIVES

In order to achieve the above objective, the following research objectives were developed for this study.

1. To identify the factors which play a role in the career choice and evaluating the alternatives by using AHP between the students in University Malaysia Pahang
2. To develop a multi criteria model based on AHP for evaluating various selection job alternatives.
3. To study the option or alternatives in which sector the highest preferences the undergraduate students plan to work with.

1.4 RESEARCH QUESTION

1. What were the best criteria of student choice for first job after graduation?
2. What are the factors that influence the choices of graduate students to choose the job?
3. Why this study is important to fresh graduate in determine their career choices?

1.5 SCOPE OF STUDY

Research will conduct in University Malaysia Pahang. Students from various faculty will become a sample of person that gives feedback from a questionnaire given. This research will focus to the 3rd year and final year of undergraduate student. Time taken for to conduct the survey is before the students finish their study and before their industrial training.

1.6 THEORITICAL FRAMEWORK

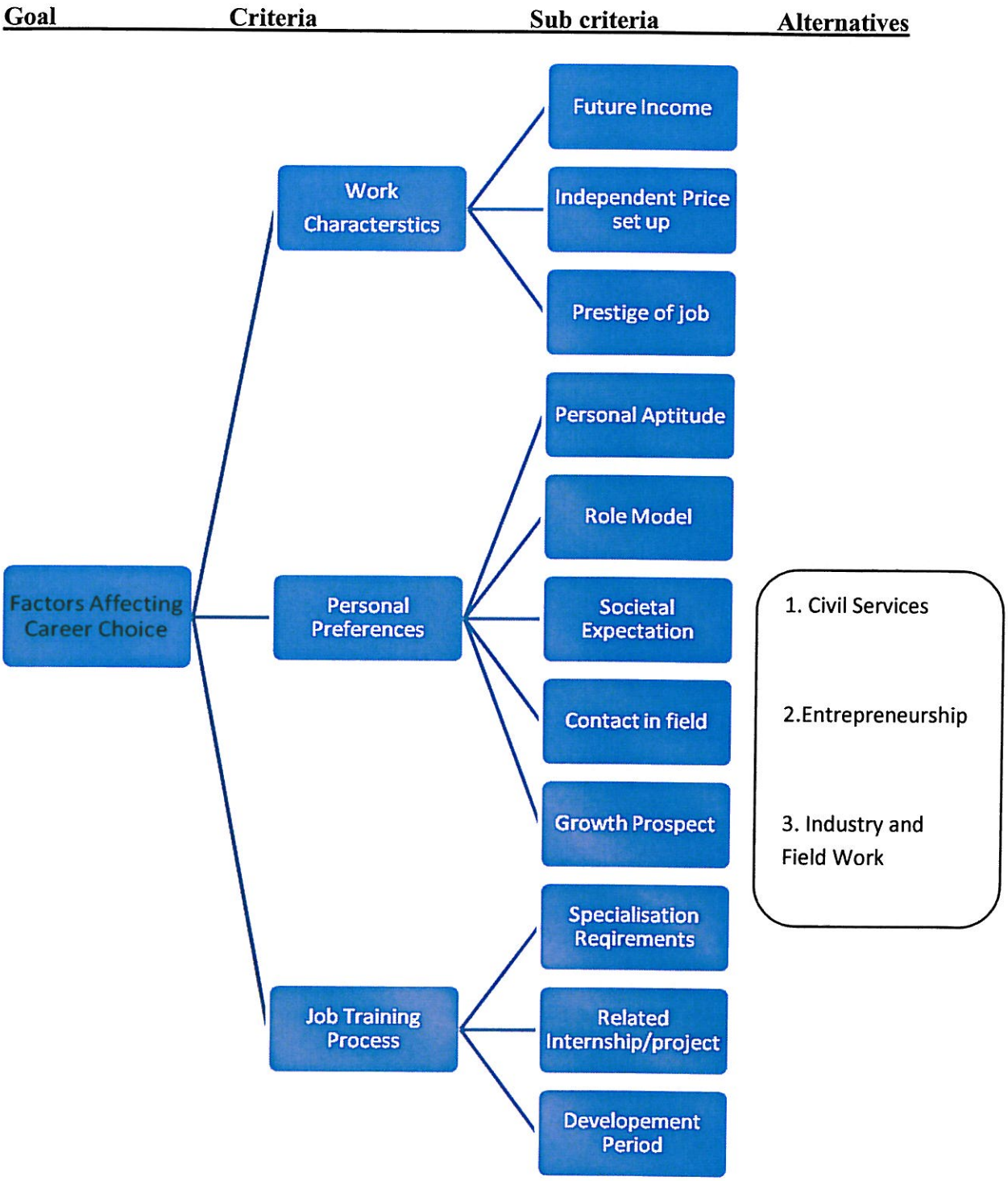

Figure 1.1: Theoretical Framework

Table 1.1: Research descriptions of the criteria of judgement used

Criteria	Description
Personal Priority	2nd tier consist of five criteria: personal aptitude, role model, societal and family expectations, growth prospects, contacts in the field
Personal Aptitude	Self-assessment of factors like personal interest, intelligence, and intellectual capabilities made by a judgment
Role Model	Referring to the behaviour of supervisors and significant personalities that impressed the student
Societal and Family Expectations	Societal expectations, peer encouragement, and family expectations
Growth Prospects	Opportunities for promotions, hikes in financial benefits, etc.
Contacts in the Field	Any prior influential connections in the field
Job Training Process	Composed of three criteria: length and difficulty of training period, time required to establish oneself in the industry after starting work, and the need for specialisation
Related Internships/ Projects	The mandatory need to complete certain projects and internships
Gestation Period	The time needed to establish oneself in industry and gain a reputation after beginning work
Specialisation Requirements	Need for higher degrees like Doctorate for pursuing the chosen career
Job Characteristics	Composed of three criteria: future income, prestige of job, and the prospect of establishing an independent practice or setup
Future Income	Financial rewards relative to other careers
Prestige of Job	Prestige and power connected to the field
Independent Practice/setup	The possibility of having a setup or practice of self-ownership

1.7 OPERATIONAL DEFINITION

Analytical Hierarchy Process

Each of several conflicting criteria used in the decision making process of procedure designed to quantify managerial judgments of the relative importance of

Career

The total of work one does in his/her lifetime

Career choices

Career choice is the deciding or determining on what one wants to do in life or the line of expertise that one wants to follow. It is important to get advice during this step in life as it might determine what you will do to earn a living for the rest of your life.

University Malaysia Pahang students

Students of university Malaysia Pahang from various faculties involve as a sample.

Students

In this study, it refers to those individual who are officially admitted and registered in university system as a full time student.

Multi criteria decision analysis

One of the sub disciplines in research clearly present the many criteria in the environment determine the result. It's always several criteria that conflicting with others to be professionally handled.

Job

A group of paid positions requiring some similar attributes in a single organization. Jobs are task, outcome and organization centered.

1.8 SIGNIFICANCE OF STUDY

This research will reveal the best criteria for student choices for the first job after graduated. As this research used AHP the criteria will be ranking by putting a set of alternatives in order from most to least desirable one. The AHP and its use of pairwise comparisons has inspired the creation of many decision-making methods. In this case it uses to help decide which the best criteria for students in selecting the job and career.

1.9 EXPECTED RESULT

The outcomes of the study suggest that most students are making career choices based on their personal preferences and aptitude assessment. As one of Malaysia Technical Universities Network the tendency of students to choose the job in industrial and fieldwork can be expect. The weighted order of the different career alternatives in order to judge the recent trend of fields chosen by University Malaysia Pahang students and their inclinations towards various deciding factors can be calculated using an AHP method. Otherwise there is also show the alternative or option of area sector UMP students want to be work.

CHAPTER 2

LITERATURE REVIEW

2.0 INTRODUCTION

Students especially the generation Y have adverse job they can join or work for to build the career of their life. While information and communication technologies, increasing globalisation. Increasing competent graduates also increase competition. The rapid changes are all contributing to a dramatic change in working life. This will make an impact on the beginning of graduate's students' career. The concept of a job for life is no longer a reality. Young people now are likely to experience four to seven major career changes in their lives in a variety of industry sectors. They will also be experiencing. More fluid forms of working with increasing especially salary or payment casual, contract and part-time work options According to Department of Education Development, a career includes all the roles you must undertake. The responsibilities carried throughout your life education, training, paid and unpaid work, family, volunteer work, leisure activities and more are also considered as career.

"Career" was formally defines as associated with paid employment. It also referred to a single occupation of the people. In today's world the term career is seen as a continuous process of learning and development. Activities that contribute to a career can include:

- training
- education
- employment
- work experience
- community activities
- enterprise activities

- employment
- different life roles
- volunteer work
- leisure activities

Continuously changing world of work

In the real life, many people are always looking for work/life balance in their lives. They want to maintain the best balance between the hours they spend in paid work and the time devoted to other roles in their lives such as leisure and home and family life. . Lifelong learning is now the norm in the millennials. This is the integration future part of workplaces. It is critical for people to manage their life, learning, and work. This critical part can handle if they are to successfully navigate their way around a dynamic and complex economic landscape.In this new, era in order to accommodate and thrive in workplaces, or to create work for themselves. Each individuals need to be dynamic, innovative, adaptable, , flexible, resilient, self-initiating and collaborative.

2.1 CAREER CHOICES

Making the best career choices criteria:

- know yourself - what your interests, what you are good at ,your skills and abilities, what is important to you as values
- work condition understanding
- how to learn to make informed decisions
- Finding out how to achieve objectives.

2.2 CAREER CHOICES FOR FRESH GRADUATE

For most people, career development, is a lifelong process of engaging the work world through choosing among employment opportunities made available to them. Each individual who make the process was being influence with many factor including the context of where their lives ant personal tendency and level of their studies. In students' lives involves the career choice that they make while in high school is a major turning point. Usually , it is viewed by family and community as a mere start to workplace readiness a decision plays a major role in establishing youth in a career path that opens as well as closes opportunities.

Graduation is an exciting time in one's life but the transition from college to professional life can be tough, and even tougher is to decide the right career choice for oneself. This choice has to be made in a short span of time, and this can be stressful as the rest of the professional life of an individual is guided by what career he/she chooses after graduation. For almost everyone, getting the very first job after graduation can seem a big challenge. With little to no practical experience, you may feel you're in a weak position competing in a job market populated by all sorts of candidates whose varying numbers of work years make them seem more favourable (Rania Oteify, 2013). There are many choices that fresh graduates can choose from.

Career is the progress and actions taken by especially those related to that person's occupations a person throughout a lifetime. Career refer to the the type of job and the reward get from the work that man done in a long time usually. There is a trend that people nowadays keep changing their work more often because the economy and culture also there will stick with one job permanently in their lifes.

Table 2.1: Career selection after graduate

Top Reasons Why Fresh Graduates Were Not Hired (2011 Survey)		
	Employers' Opinion*	Fresh Graduates' Opinion**
1	Asking for unrealistic salary/benefits (64%)	Stiff competition (32%)
2	Poor character, attitude or personality (60%)	Lacking of certain required skills (31%)
3	Poor command of English language (56%)	Poor command of English language (23%)
4	Poor communication skills (52%)	Poor communication skills (22%)
5	Choosy about the job or company (38%)	Do not know Mandarin/Tamil (19%)

Note: Survey conducted by JobStreet.com

**571 human resource personnel participated (October 2011)*

***1,830 fresh graduates participated (November 2011)*

Based on this survey, these are several reason why does the fresh graduates not been hired and still in unemployment phase. According to the job street report in 2011 asking for unrealistic salary/benefits and poor attitude, character or personality make the higher percentage for the reason of the fresh graduates not to be hired. This is show some lacking in mentality and materialistic way of thinking of the fresh graduate where many other important factor was not that important at all.

2.2.1 What employers think is lacking among unemployed graduates

Expectations (64%)

- Should ask not what the company will do for them but what they can do for the company first
- Should know the market value (do research)

Attitude (60%)

- Should demonstrate continuous learning/self learning
- Should demonstrate ownership/commitment etc.

Good communication skills (English) – 56% & 52%

- Should be able to communicate & articulate well in the business language
- Should be able to work as part of a team
- Should show confidence

Choosy (38%)

- Should know the market outlook
- Should be realistic about the ideal first job/ company

General Expectations from Companies of a Good Graduate/ Hire

- Good values(e.g. honest, confident yet humble, innovative and creative);
- Positive attitudes(e.g. proactive, hardworking, high motivation and curiosity driven);

General Expectations from Companies of a Good Graduate/ Hire

- Work-related skills (e.g. communication, entrepreneurship andleadership skills)
- Preparedness to work(e.g. industry-ready skills and ability to perform well in a working environment).

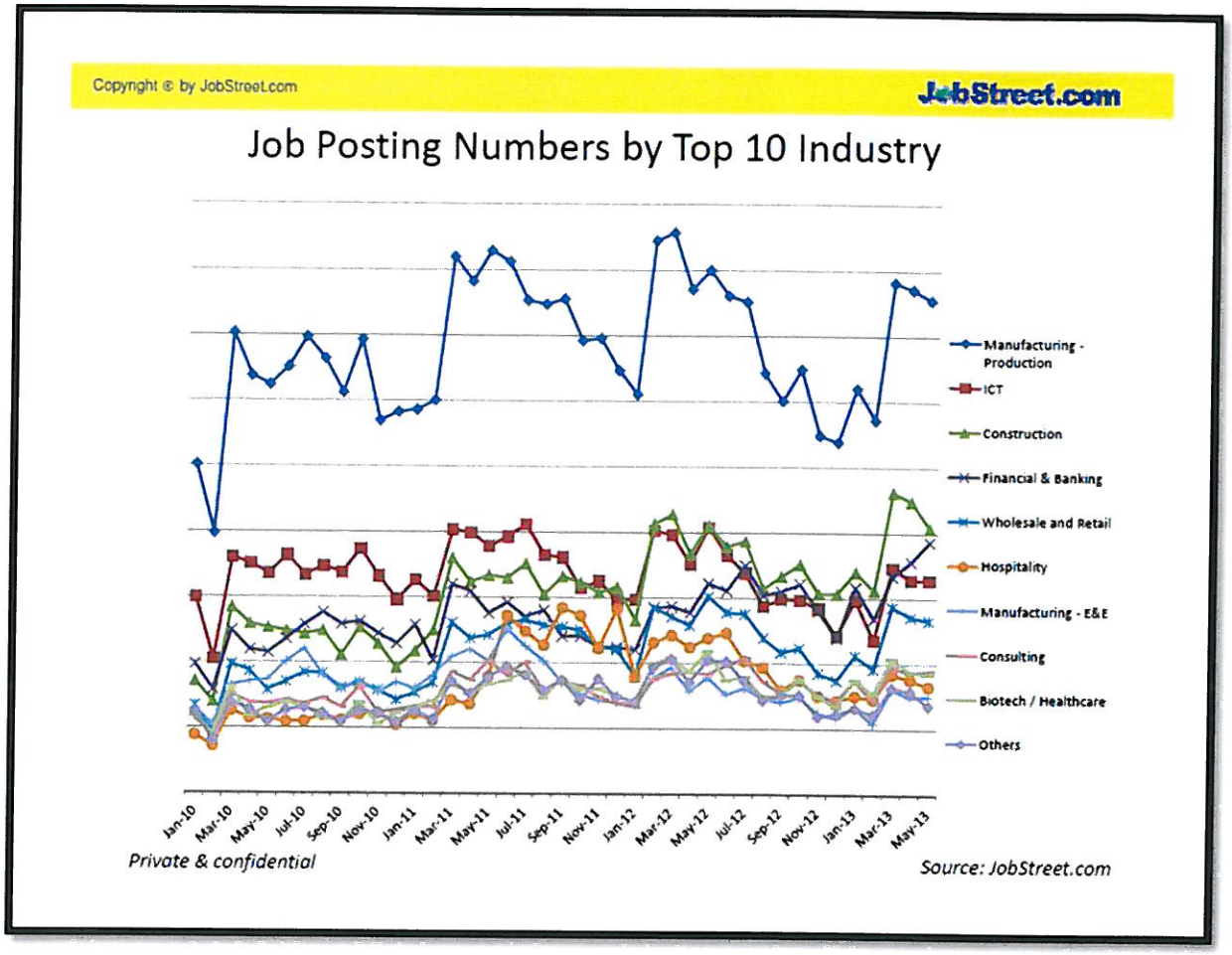

Figure 2.1: Job posting graph current years in Malaysia

Job posting is an arrangement (with their descriptions and requirements) in which a firm internally posts a list of open positions so that the existing employees who wish to move to different functional areas may apply. Posting a jobs online and use the Web for recruiting is the trend of recruitment now. These days Job posting in the classified section of the local newspaper is likely to produce mostly electronic resumes and applications.Online job posting was easily customizable, free, and paperless. But its may increase the competition for fresh graduates to apply and pass the interview session as they are many applicants will apply for the job in this era of fast communication.

2.2.2 Factors Affecting Career choices

New graduates students all over the world are usually faced with a dilemma in making a career choice decision in their lives prove by several studies.It was a nightmare for prospective undergraduate students to make a choice in subsequent career. Most often, the career in future is choosing by the right subject combination leading to the right profession can make the difference between enjoying and detesting. Each individual undergoing the process of making a career choice is influenced by such factors as the context in which they live, their educational attainment and personal aptitudes.

From the previous study, the boys aspiring more investigative and girls more social type occupations. In his study, Ngesi (2003) found that poor financial base of students from disadvantaged communities deter choices of appropriate educational programmes and careers. Such students tend to avoid careers which appear to them to require long period of training their finance cannot support (Ngesi 2003). This suggests that students from lower socio-economic families are not given adequate space to make independent decisions on their careers. It is clear from these findings that despite the limited state resources available, the shortage of high level skills and a pressing need to raise income levels among the poor, high student drop-out and failure rates are a major problem. Southwick (2000) observed the trend towards a decline in graduate enrolments in health-related fields and in science and engineering.

Similarly, Sax (1994) examined students' initial interest in science careers, factors influencing career choice during college, and how these factors differ between men and women students. Sax found that men who abandon career aspirations appear to be driven by financial concerns while women were more concerned with the social good of their career choice. In a similar vein, Perry (2006) asserts that adolescent career choice is influenced by life context, personal attitudes, and educational.

Several studies (Knowles 1998; Mau and Bikos 2000; Wilson and Wilson 1992) have found that college students and young adults cite parents as an important influence on their choice of career. In a similar vein, some studies have found that the family

plays a critical role in a child's career development (Guerra and Braungart-Rieker 1999; Mickelson and Valasco 1998; Otto 2000). Some of the variables that influence students' occupational goals include the family, level of parental education, school, peers, personality, and socioeconomic status (Crockett and Binghham 2000; Wilson and Wilson 1992). There are varying opinions and findings, however, as to which specific family characteristics influence career aspirations. For instance, conflicting data exist regarding the influence of socioeconomic variables. Other studies (Mau and Bikos 2000) suggest that both parent education and income influence career aspirations, whilst other studies (Hossler and Stage 1992; Wilson and Wilson 1992) show that only parent education is an influence. Other family variables that have been shown to influence career aspirations include the parents' occupation (Trice 1991) and family size (Downey 1995; Marjoribanks 1997; Singh et al. 1995). The father's occupational status is highly correlated with his son's occupation (Blau 1992; Conroy 1997). Family size also appears to influence adolescent career aspirations because parents with large families tend to have less money to aid the older children in attending college, while younger children may receive more financial assistance since the financial strain is less once the older children leave home (Schulen berg et al. 1984). On the contrary, other studies (Boatwright et al. 1992), found that each of these family variables to be insignificant in influencing aspirations. In a similar vein, some studies suggest that children are influenced in their career choice by socio-demographic factors and these factors include family, school and peers (Kniveton 2004; Mathombela 1997; Salami 2006). In his study, Salami (2006) found that family involvement as the most significant predictor of career choice in gender-dominated occupations.

Similarly, Kniveton (2004) found that the family provides information and guidance directly or indirectly and influences young people's career choice. For example, parents offer appropriate support for certain occupational choices which tend to follow their own (Small and McClean 2002). The school where one is educated plays an important influence on one's career choice (Weishew and Penk 1993). In his study, Garrahy (2001) noted that schools are social institutions that reinforce gender-appropriate behaviour, interests and occupations. Such constructs including curricular subjects, quality of teaching, student participation in school activities, school practices and policies and learning materials for the student were found to impact on career

choice among learners (Bojuwoye and Mbanjwa 2006). In his study, Spade (2001) found that gender difference in the learners' experiences starts at pre-school and continues throughout their educational careers. Teachers like parents are viewed as key players in the career paths that young people eventually pursue especially girls (Barnett 2007). In her study in Nigeria, Denga (2004) found that sex-role stereotypes exist among boys and girls in primary schools as they aspire to traditional occupations. This implies that parents' and teachers' beliefs influence their children's self-perceptions of ability and consequently career choice.

Other studies show that peers play a major role in career choice of students (Bojuwoye and Mbanjwa 2006; Stuart 2000). For example, Stuart (2000) found that peers' attitudes toward gender and ethnicity may increase or decrease a person's confidence in pursuing a career. Adolescents are easily influenced by their peers because they rely on their friends to provide validation of the choices that they make including career decisions. On the contrary, Bojuwoye and Mbanjwa (2006) found that peers were reported not to be marginally influential in career decision making among university students.

Extensive studies have been conducted in the field of career-selection criteria and their relative importance, as regarded by undergraduate students while deciding their careers after completing graduation. Previous research papers have reached varying results, as far as the degree of importance of the career-selection criteria are concerned. The choice of occupation is affected by personal choices, such as value system, aim, and personal ability as well as societal strata and structure, thereby constricting the gamut of careers which an individual can pursue.as suggested by the research of Ginsberg et al.(1951) and Super(1957).

High income is observed as the most important criterion in the research of Bai (1998). However, person's ability can be validated by the amount of salary he or she receives suggested by Lau and Pang (1995). The opportunity for advancement is found to be of the most importance criteria in career selection based on many research studies and literature (Moy and Lee, 2002; Boswell et al., 2003;Wilkinson, 1996). On the other hand, according to Chan and Simon (2000) training and examination assistance are the

important factors. Stephen A. Butler et al.,(2000) have found that growth prospects and work stability are given the highest weight age by students. A study by Kyriacou et al., (2002) the available career paths and the opportunities for growth in them reveals that the choices made are moulded. The most highly weighted factors affecting the choices are their interest in their career fields, their desire to be leaders, and their performance in the university's entrance exams found by Ozkale et al., (2004) after surveyed around 400 undergraduate students.

A study by Aycan and Pasa (2003) examines consequence of their cultures and backgrounds as the variation in the students' career choices. While Moy and Lee (2002), rank it highest-but-two. Work location and conditions are identified as important criteria in the research of both Wilkinson (1996) and Boswell et al., (2003).

"Loving the job" is the highest weighted criterion by faculty and male and female students by another research conducted by Hüseyin SelçukKılıç and Emre Çevikcan (2011). The most important factor is the development prospects followed by the working conditions as research by Ming Lu (2012) for college students choosing their future careers,. Ethington Feldman, and Smart (2000) use the "theory of careers"(Holland, 1966; 1985),to find that a primary resonating with the students' personal is an appealing factor in their choice making. Demographic factors like gender are also key factors in the criteria selection process as Chan and Simon (2000) suggestion. Aytaç and Bayram (2001) reveal that even though the ordering of the factors is alike for both genders, the corresponding weights of the factors, which areindicative of the degree of their importance, are different formales and females.

However, Ozkale et al., (2004) indicate reasonable variation in the choices of males and females. Females are influenced by inspiring figures of any gender while males are primarily inspired only by idolised, dynamic, and influential males. Brainard and Carlin (1998) discuss the impact of society, family, and family relatives on the engineering choices of students of either gender. They note that females are affected more by their peers and relatives as compared to their male counterparts. Similar results have been obtained in context of a few other nations (Brainard and Carlin, 1998).

Social Cognitive Career Theory (SCCT)

Theoretical consideration of factors affecting career choice is based on Social Cognitive Career Theory , which was developed from Bandura"s general social cognitive theory and has been applied to career choices made by Information Systems (IS) students (Akbulut & Looney, 2007, 2009; Looney & Akbulut, 2007) and IT students (Smith, 2002). Bandura's general social cognitive theory Social cognitive theory (SCT) emphasizes the bi-directional interactions between three elements, namely person, environment and behaviour. The intrinsic, personal factors include cognitive ability, affective and physical attributes. Environment involves extrinsic factors such as economic and social circumstances. Overt behaviour is influenced by these intrinsic and extrinsic factors but people are not "just mechanical responders to deterministic forces" (Lent et al., 1994, p. 84). Individuals reflect on and regulate their own behaviour, and are aware of their environment. Hence a person"s actions, and assessment of the outcomes of those actions, will influence his or her attitudes and opinions and may also impact on the environment. Individuals develop constantly and contexts are always changing. In addition, people can be proactive and hence anticipation, planning and conscious attempts to predict consequences and to understand the impact of behaviour on the environment are all important aspects recognized by SCT.

Three particularly relevant socio-cognitive mechanisms have been identified by Lent and Brown in the development of the model (Figure 1) which underlies their social cognitive career theory (SCCT). These are self-efficacy beliefs, outcome expectations and goal representations.

Self-efficacy beliefs

Self-efficiency defined by Bandura as someone capabilities in manage and execute the several action in order to achieve the designated plan set up. Since the effectiveness of that course was influence by the abilities that the person have at much. It also believe that this was the main factor in the training process phase in starting the job at the beginning.

Outcome expectations

The second mechanism that features predominantly in the SCCT model is that of outcome expectations. This is defined as imagined consequences of performing particular behaviours and Bandura (1986 cited by Lent et al., 1994) distinguishes between three types of outcomes. There is namely, physical (for example, job opportunities), social (image, status) and most importantly self-evaluative (self-satisfaction). In detail, personal expectations can make a change quite dramatically. Over time, individuals will give different values or preferences to outcomes based on their tendency Furthermore, different individuals value the same outcome differently. Hence, outcome expectations incorporate the concept of values.

Goal representations

The third mechanism, goals, is defined as "the determination to hold in a particular activity and to effect a particular future outcome". Since goals refer to the future, they embody the mechanism mentioned earlier. act as means of self-motivation and include aspects of personal standards. Hence, they are an essential component for the self-regulatory and reflexive aspects (personal agency) of SCT. The more specific goals are, and the shorter the time span between setting the goal and its expected realization, the greater the commitment to the goal is expected to be.

Interest

SCCT analyse that three aspects of career development, namely, career-relevant interests, selection of career choice options, and performance and persistence in pursuing the proposed career. Interest has been identified as an essential criteria to career choice. The interest, self-efficacy, outcome expectations and goals are inter-related via various paths in the SCCT model, with interest playing an important intermediate role. Interest has proven to be the major, direct influence in goal setting, although both self-efficacy and outcomes contribute directly to goals to some extent (Zhang, 2007).

As conclusion of SCT, the effect of self-efficacy on the ultimate choice of career is because it not only contributes directly to goal formation, but to a greater extent contributes to the development of interest. Self-efficacy affects outcome expectation, as

belief in one's ability to achieve in a particular field makes one more hopeful of benefiting in a meaningful way from the positive outcomes one associates with the career. Outcome expectations also contribute to development of interest and, to a limited extent, directly to goal formation.

2.2.3 Current challenge for students to choose the best career

There are such big differences in the work trends for 19th and 20th century's graduate's students. As the students now have many career can be choose from in many industry. But they are also faced many challenge as the career that they want may have restrict them to being a part.

New economy was a new challenge. All of these factors have contributed to rising inequality in the Malaysia labour market. From the late 1970s through the mid-1990s, the gap in earnings between the top and bottom wage earners grew substantially. New economy might change the demand of fresh graduates in the work payment to be higher than 10 years ago. Skill was a ticket to get a satisfied career. In the information-based, skills-intensive economy of the twenty-first century, one thing is clear: knowing means growing.While many workers will continue to be in occupations that do not require a bachelor's degree, the best jobs will be those requiring education and training. In fact, the 20 occupations with the highest earnings all require at least a bachelor's degree. Throughout the economy, occupations that require a college degree are growing twice as fast as others.

In the twenty-first century, the most successful workers will be those who are able to choose the employment relationship that gives those sufficient wages and benefits, and ability to care for their families. The challenge will come in ensuring that future workers who prefer non-traditional options have on-the-job protections. Today, many do not fresh graduates also may get into the dilemma whether to choose the best benefit without high payment or vice versa.

Today's non-traditional workers receive less training and fewer benefits. Only seven percent of agency temp workers receive employer-provided healthcare benefits, and just one in ten is eligible for an employer-sponsored pension plan. Non-traditional work arrangements can raise practical and legal questions about the statutory

protections available to workers. Workers may be unsure of their rights, and firms may be unsure of their obligations. Government agencies, in turn, will need to understand the nature of a work arrangement before deciding how best to enforce a particular law.

2.3 CONCLUSION

Why we must explore the career choices? Most people want more than just a paycheck; they also want fulfilment in their careers. More and more people need the satisfaction of achievement, rewards for their efforts, advancement possibilities, and recognition that what they are doing is really important. Malaysia have more freedom of choice than in many other countries. Individuals are relatively free to do what they want, work in any type of job, industry or location, change careers and adopt any lifestyle they wish. Change has always been a fact in our lives, but we deal with it with varying degrees of success. Some of us adjust well to change and others will find changes traumatic. Being afraid to change is natural.

However, sometimes desire for routine can lead to miss out on many possibilities in life, including enjoyable and rewarding careers. Perhaps the most difficult part of the career process is figuring out your options and then identifying a career goal. Often, adults feel ashamed to admit they are confused about their career options. Continuously make changes in our life, in terms of likes and dislikes, values, and even in our philosophy of life. Therefore, the career goals need to change continuously. The possibilities are there, but students need to know the process of how to go about finding the career to fit for them. The future may be somewhat unpredictable, but it is something students can shape for their self. By understanding "self" and the present students can then develop a clear vision of where their want to go. But most important of all, you should develop and implement a plan of action for making your dream career come true. The best careers are those that emerge from a person's strongest drives and aspirations. Begin not by looking for "endings", but knowing that career planning and management are lifelong processes.

CHAPTER 3

RESEARCH METHODOLOGY

3.0 INTRODUCTION

Every day we make a decision for ourselves and even for others. But it can be the result of consciously and unconsciously made. Therefore, developing a good information is crucial to make a good decision. This is because the judgement discussed may not be wrong or false in action. In developing the decision not all information is useful. Is there is a good what if the decision made intuitively. What we need was the truth decision by a good judgement.

The criteria may be impalpable. The criteria must have a good link with the alternative of the respondent. In order to weigh the priorities of the alternatives the criteria must have a measurements to serve as a guide to rank the alternatives, and creating priorities for the criteria. It can challenging task to add over all the criteria to obtain the desired overall ranks of the alternatives. But how? We can only cover some of the essentials of multi criteria decision making in the limited space we have. It defied human understanding the measurement of intangible factors in decisions has for a long time. Mathematics is essential to science and number and measurement are the core of mathematics. Mathematics have a good formula and can be assume from infinity negative number to positive infinitive number calculate by using a formula. How does the social problem want to be calculate as example? Thus, the AHP is one of the process that combined the mathematics and priorities together.all this can be predicted into because the assumption that one has the essential factors and all these factors are measurable. But there are many factor despite a social problem want to be calculated.

How to measure such factors? Knowing how could conceivably lead to new and important theories that rely on many more factors. Intangible factors also can be use as a criteria factor. Clearly, it a must numerical measurement interpreted for meaning and usefulness base on the priority for that kind of problem. Therefore, we need to learn about how to derive relative priorities in decision making.

Conflict resolution is the search to represent participants from a problem arising. Group discussion always tend to lead to argument. By using AHP concept this argument can be solve by discuss the best criteria and set the important level at each of the criteria. This is one of the effectiveness in using AHP.

3.1 DATA ANALYSIS TECHNIQUE

3.1.1 Morgan Sampling Method

Easy reference which could have been constructed using the following formula.

Table 3.1: Sample size Formula

	Formula
s	$2NP\,(1-P) \div d\,2\,(N-1) + X\,2P\,(1-P).$
s	Required sample size.
*X*2	the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).
N	The population size.
P	the population proportion (assumed to be .50 since this would provide the maximum Sample size).
d	The degree of accuracy expressed as a proportion (.05).

No calculations are needed to use Table 4. For example, one may wish to know the sample size required to be representative of the opinions of 9000 high school teachers relative to merit pay increases. To obtain the required sample size enter Table 4

at N = 9000. The sample size representative of the teachers in this example is 368. Table 4 is applicable to any defined population.

The relationship between sample size and total population is illustrated in Figure 1. It should be noted that as the population increases the sample size increases at a diminishing rate and remains relatively constant at slightly more than 380 cases.

Table 3.2: Given Population Determining Sample Size Table used.

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

3.2 GEOMETRIC MEAN

The geometric mean is a type of mean or average. Which indicates the central tendency or typical value of a set of numbers by using the product of their values (as

opposed to the arithmetic mean which uses their sum). The geometric mean is defined as the nth root (where n is the count of numbers) of the product of the numbers. The geometric mean is well defined only for sets of positive real numbers. This is calculated by multiplying all the numbers (call the number of numbers n), and taking the nth root of the total. A common example of where the geometric mean is the correct choice is when averaging growth rates.

Table 3.3: Geometric Mean Formula

	Formula
Geometric Mean	$((X_1)\ (X_2)(X_3).....(X_N))^{1/N}$
Where X	Individual score N = Sample size (Number of scores)

3.3 THE ANALYTIC HIERARCHY PROCESS

To make a decision in an organised way to generate priorities we need to decompose the decision into the following general steps.

1. Define the problem and determine the kind of knowledge sought.
2. Structure the decision hierarchy from the top with the goal of the decision, then the objectives from a broad perspective, through the intermediate levels (criteria on which subsequent elements depend) to the lowest level (which usually is a set of the alternatives).
3. Construct a set of pairwise comparison matrices. Each element in an upper level is used to compare the elements in the level immediately below with respect to it.
4. Use the priorities obtained from the comparisons to weigh the priorities in the level immediately below. Do this for every element. Then for each element in the level below add its weighed values and obtain its overall or global priority. Continue this process of weighing and adding until the final priorities of the alternatives in the bottom most level are obtained.

3.3.1 Basics of AHP

In using the AHP, one constructs a hierarchy (consisting of goal, criteria and alternatives). Then makes judgments (or performs measurements) on pairs of elements with respect to a controlling element. Ratio scales are derived from these judgments and then synthesized throughout the structure to select the best alternative. In this research the judgement was deciding by a respondent with answering a questionnaire given.

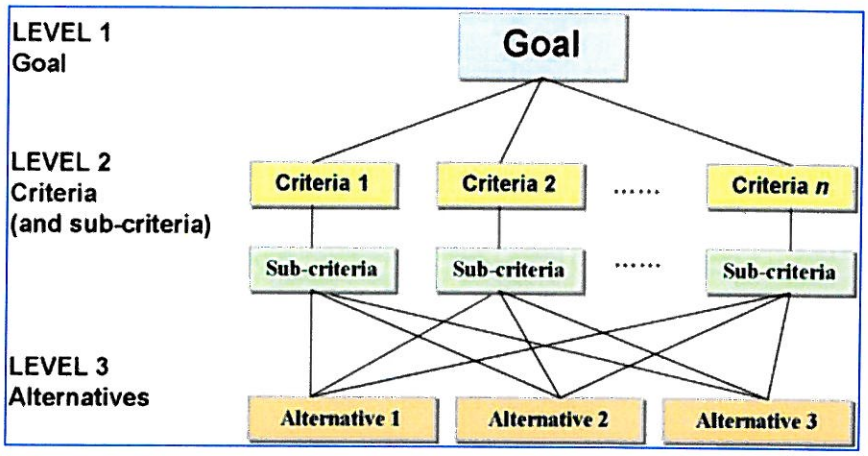

Figure 3.1: A decision problem in a hierarchy structure

3.3.2 Structuring the Hierarchy

In applying the AHP to a decision problem one structures the problem in a hierarchy with a goal at the top and then criteria (and often sub criteria at several levels, for additional refinement) and alternatives or option of choice at the bottom. The criteria can be subjective by a group discussion and priority or objective depending on the means of evaluating the contribution of the elements below them in the hierarchy. Each of the criteria was not depending on the criteria below them in this hierarchy. From the observation of Satty an individual cannot simultaneously compare more than seven objectives (plus or minus two) without becoming confused. Indeed, the number of alternatives should be reasonably small because there would then be a problem with improving the consistency of the judgments. In the rating mode, in addition to the three general levels in a simple hierarchy of the objective, the criteria and the alternatives, an extra level above the alternatives consisting of intensities, which are refinements of the criteria governing the alternatives by creating a scale for each intensity, is included.

Saaty (1980) and Saaty and Ozdemir (2003) proved that the maximum number to compare should be no more than seven..The rating mode of the AHP may be used if the number of alternatives is more than seven. In a nutshell, when constructing hierarchies in applying AHP must include enough relevant details to represent the problem as thoroughly as possible. But not so much as to include the whole big concept in a small decision. Person involve needs to consider the environment surrounding the problem. Identify the issues or attributes that one feels influence, contribute to the solution. Lastly, identify the participants associated with the problem.

Arranging the goals, attributes, issues, and stakeholders in a hierarchy serves three purposes:

1. It provides an overall view of the complex relationships inherent in the problem situation.
2. It summaries the spread of influence from the more important and general criteria to the less important ones.
3. It permits the decision maker to evaluate whether he or she is comparing issues of the same order of magnitude in weight or impact on the solution.

3.3.3 The Prioritization Procedure

Using a pairwise comparison each element at each level are compare with respect to the level of important. The number of square matrices is starting at the top of the hierarchy and working down. It's called preference matrices. Preference matrices are created in the process of comparing elements at a given level. Judgments of preference are made on pairs of elements in the structure using what Saaty defines as "the fundamental scale of AHP (Saaty 1996) which is reproduced in Table 3.4. AHP enables the respondents to gather and use experience and knowledge. In an intuitive and natural way the fundamental scale used in. Decision maker must minimizing the effect of uncertainty in evaluations this scale is insensitive to small changes. AHP is an absolute scale in which people use numbers to express how much one element dominates another with respect to a common criterion. The scale derived from these absolute numbers is a ratio scale.

Table 3.4: Analytic Hierarchy Process important scale

Scale	Description
1	A is equally important as B
3	A is moderately more important than B
5	A is strongly more important than B
7	A is very strongly more important than B
9	A is extremely more important than B
2,4,6,8	are the intermediates scales

3.3.4 Synthesizing

The process moves to the third step of deriving relative weights for the various elements after forming the first preference matrices. The relative weights of the elements of each level with respect to an element in the next higher level are calculated as the components of the normalized eigenvector associated with the largest eigenvalue of their comparison matrix. The composite weights of the decision alternatives are then determined by aggregating the weights throughout the hierarchy. This is done by following a path from the top of the hierarchy to each alternative at the lowest level and multiplying the weights along each segment of the path. The outcome of this aggregation is a normalized vector of the overall weights of the options. AHP can be used to make relative measurements through paired comparisons of criteria and of alternatives as discussed above. AHP also capable to make rating measurements of the alternatives with respect to the criteria. The ratings mode includes pairwise comparison of the criteria with respect to the goal.

Then rating levels, such as excellent, very good, good, average, poor, and very poor, are specified for each criterion collected from the survey or discussion. Pairwise comparisons among the rating levels of each criterion are then conducted. This is to yield a set of priorities (weights) for these levels. For each criterion, the rating level priorities are divided by the maximum rating weight of that criterion to yield scaled

weights. Within each criterion, each alternative is assigned a rating level and the associated scaled weights. The final score of an alternative is the sum of the product of the criterion weights times the scaled weight with respect to that criterion, where the sum is taken across all the criteria (Saaty, 1996).

3.4 SUBJECTS OF RESEARCH

This study surveyed pre-final and final-year students of University Malaysia Pahang students, regarding the dominant trend in choosing their careers and the factors affecting the choices made. The questionnaire was distributed among two hundred students undertaking their third and fourth year of study.

3.5 DESIGNING THE AHP QUESTIONNAIRE

In order to establish the important factors affecting students' choice of a career, the study first reviewed the aforementioned literature dealing with a similar research goal. The tiers of the AHP questionnaire were then constructed using these factors. The first tier gauged the three aspects of *Personal Priority*, *Job Training Process*, and *Work Characteristics*. The second tier gauged leading eleven criteria: personal intelligence/aptitude, influence of role model, opportunity to establish an independent setup, future income, growth prospects, prestige of job, contacts in the field, related internship and projects, gestation period, societal and family expectations, and speciality requirements. The glossary consists of the description of these criteria. Students were first made to choose their career choice out of the nine fields given in the third tier. The AHP Consistency Test proposed by Saaty was applied to analyse data integrity, and the questionnaires succeeding in the consistency test were considered valid.

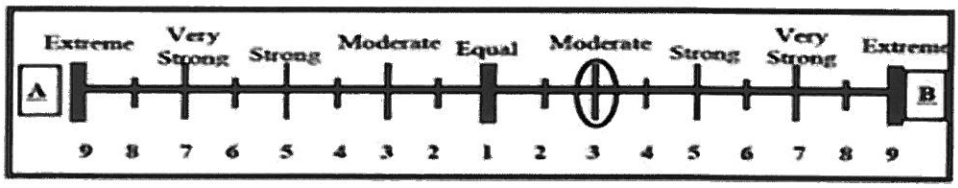

Figure 3.2: Pairwise comparison tools used in questionnaire

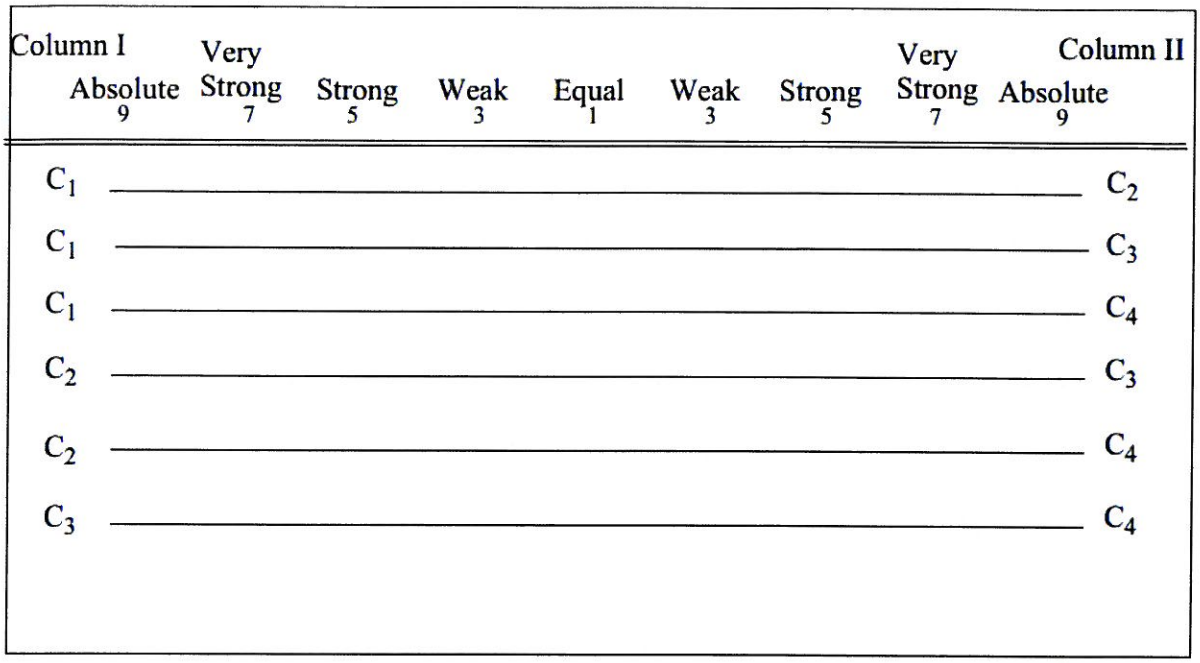

Figure 3.3: AHP survey technique

3.6 STEP OF AHP USING IN JOB SELECTION CAREER

In 1970, Saaty, expounded the AHP technique as a measure for making cogent judgements and reaching an informed solution from varied judgements. In this study, students assigned their own values (judgements) after comparing among a set of criteria. The mean of all the values assigned by students depicts their preferencesin each factor and notions on the given criteria. The course followed for establishing an AHP model was as follows:

Step 1

In this study, based on a literature review, the hierarchy system was established and later modified according to the opinions of experienced professors and three preliminary surveys.The problem was decomposed into a hierarchy of complementary factors in order to setup a hierarchy system.

Step 2

A pair wise comparison matrix was generated in order to calculate the relative weight age among the given criteria involved.

Step 3

The opinions of each student were synthesized and comparative weights were estimated.

Step 4

In order to generate a preference order for the various alternatives average relative weights of the criteria were determined. Principal eigen vector of the pair wise comparison matrix was used by Saaty. To calculate the relative weight age among the attributes of the tree structure. To compare 'n' attributes pair wise as per their relative weight age, represent the attributes by a1,a2,...,an and their corresponding weights by *W1, W2,..., Wn.*

Let, $W = (W1, W2,..., Wn)T$, the pair wise analysis may be shown by matrix Masfollows

$$(m- \lambda maxI)W = 0 \quad \text{--a-}$$

In Equation (a) M= positive reciprocal matrix of comparison. Eigenvector W with respective

λmax must be calculated to find out the priority eigen vector. λmax must satisfy $MW=\lambda maxW$.

Consistency Index was suggested by Saaty to test the consistency of innate judgement. Generally, the Consistency Index with the value less than or equal to 0.1 is tolerable.

$$Consistency\ index = (\lambda max - n)/(n - 1)$$

Summary

- All the calculation can be calculated manually or use in excel
- If this ratio is very large (Saaty suggests > 0.10), then we are not consistent enough and the best thing to do is go back and revise the comparisons.
- All of this work concludes the first step in the procedure. The next step is to use similar pair wise comparisons to determine the
- Now, continue for the other sub-criteria. It can easily do this by copying this sheet into other sheets and then simply changing.

CHAPTER 4

DATA ANALYSIS

4.0 INTRODUCTION

The objective of this study is to examine the factor affect career job choice among UMP students. In order to achieve the objectives of this study, the students were given a AHP questionnaire to evaluate the factors. Discussion continuously reporting the calculation of factors influencing the career choice of undergraduate UMP students using AHP. Research based questionnaire is given to all participate from all faculty in Gambang, Pahang campus. Participant's respondent also comes from different years of study and different courses taken. This data analysis was presented in various forms as in discussion and table. All the result of every criteria must be valid using a consistency index (CI) ratio for verification.

4.1 DATA COLLECTION

The data was collected in Gambang Campus, UMP. The questionnaire was given randomly among undergraduate students. A total of 250 questionnaire were returned out of which 220 were conclusive. Incomplete questionnaires or those that failed the consistency test were rejected. The accepted questionnaires were then divided according to gender and career preference. There were 13 not valid entries from male students and 17 from their female counterparts. The trend in career selection was seemingly similar in both male and female students.

4.2 DEMOGRAPHIC TABLE

Demographic Variable		Frequency
Age	≤19	54
	21-24	180
	≥25	16
Status	Single	217
	Married	3
	Total	220
Gender	Male	104
	Female	116
	Total	220
Faculty	Industrial management	80
	Engineering Technology	21
	Civil Engineering and Earth Resources	40
	Chemical engineering and Natural Resources	34
	Computer system and software engineering	30
	Industrial science and technology	15

4.3 DATA ANALYSIS

Data from respondent was analyse using a Microsoft silver light. This software will calculate and automate correctly the consistency index (CI) of the data.

4.3.1 AHP Calculation

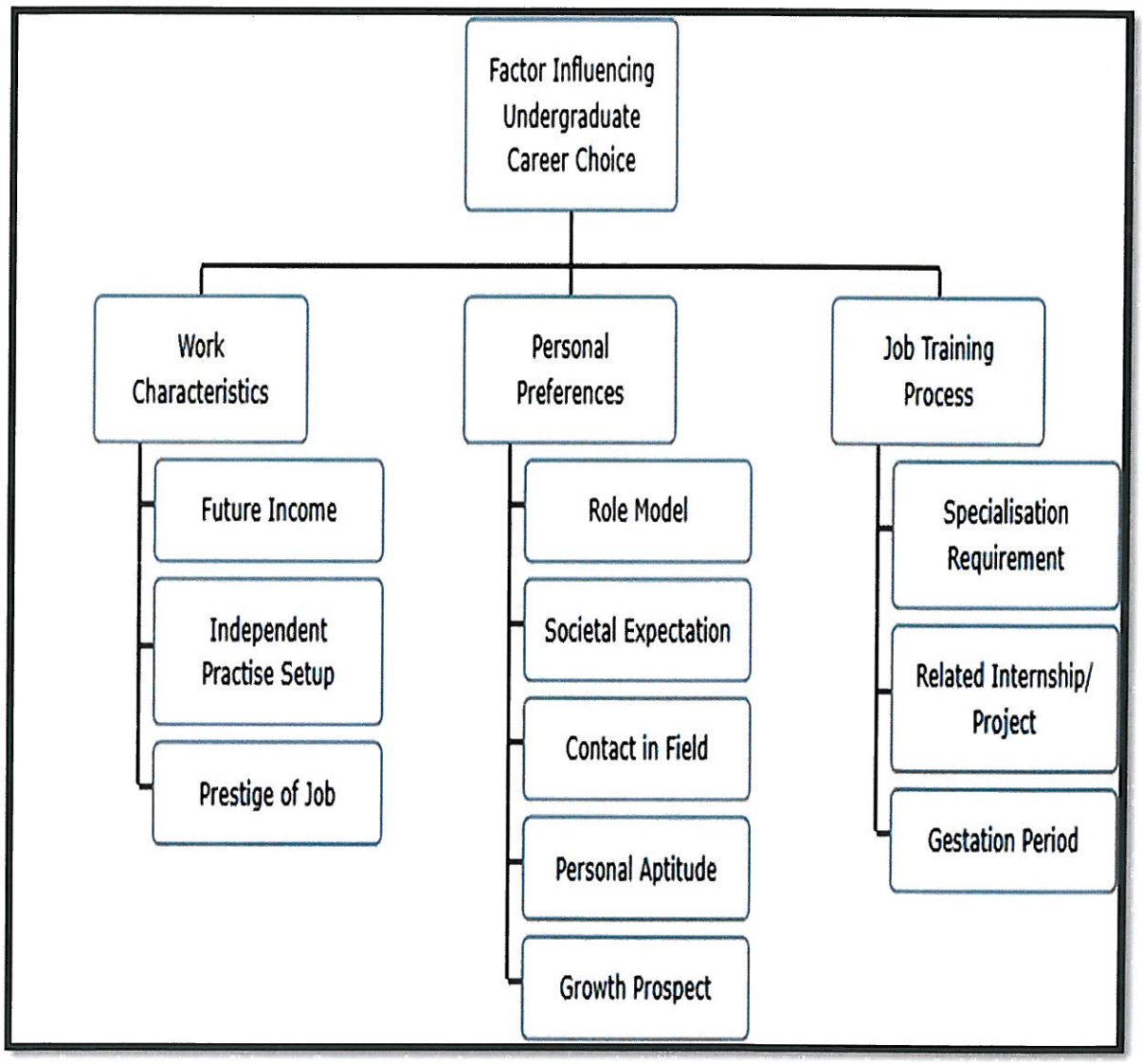

Figure 4.1: The AHP framework modelling the factor for career selection

4.4 RESULT

4.4.1 Alternative Ranking

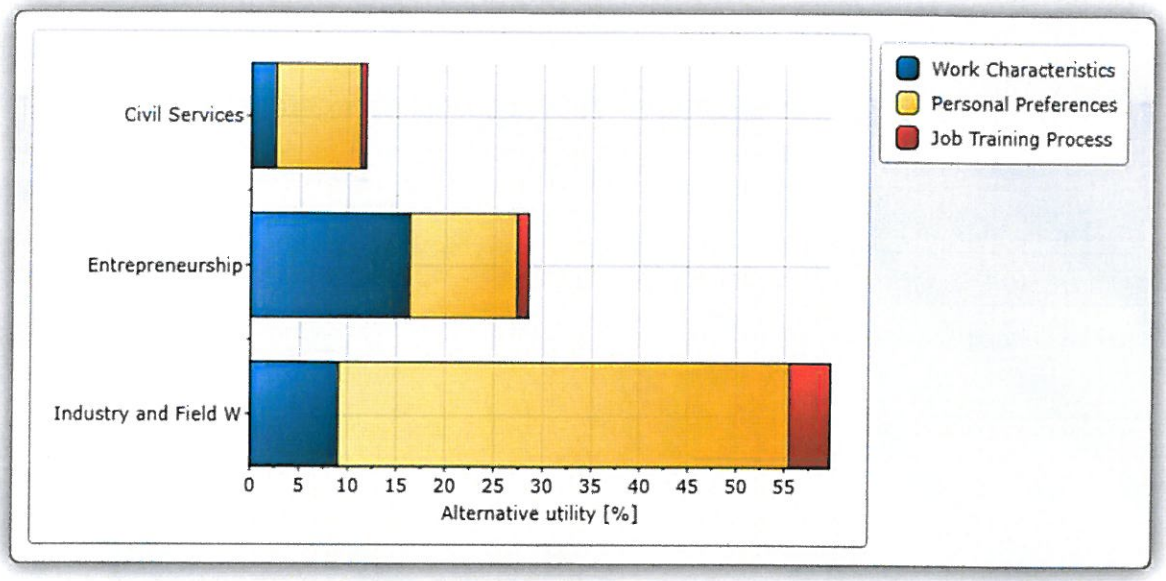

Figure 4.2: Alternative Ranking Percentage (%)

Table 4.1: Alternative Ranking Table

Alternative	Total	Work Characteristics	Personal Preferences	Job Training
Industry and Field Work	59.71	8.99	46.56	4.15
Entrepreneurship	28.55	16.33	11.05	1.16
Civil Services	11.75	2.52	8.68	0.54

From table 4.1, respondent were classified by their first choice career alternative highest percentage by industry and field work following it entrepreneurship and Civil Services.

4.4.2 Alternative Comparison

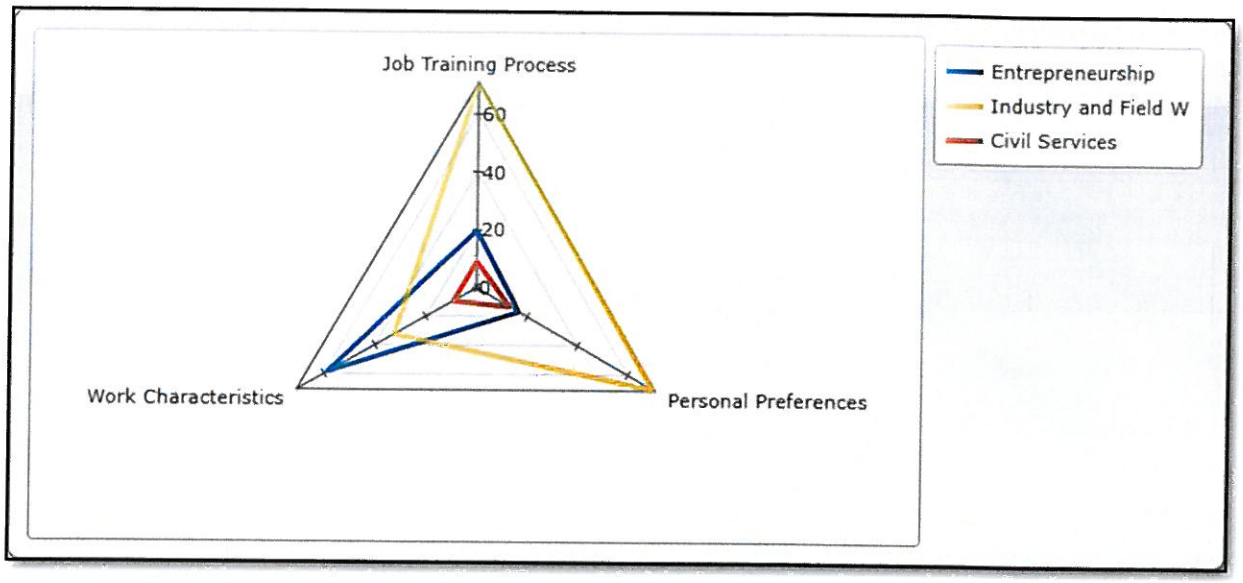

Figure 4.3: Alternative Comparison

Table 4.2: Alternative Comparison

Criteria	Entrepreneurship	Industry and field work	Civil Services
Job Training Process	19.82	70.97	9.22
Personal Preferences	16.67	70.23	13.1
Work Characteristics	58.65	32.29	9.06

For this figure 4.3 show those 3 alternative comparison by the first criteria choices. For the job training process and personal preferences show the same trend, industry and field work has the highest percentage followed by entrepreneurship and civil services. Third, criteria of work characteristics shown that entrepreneurship have the highest percentage followed by industry and field work and civil services.

4.4.3 Sub criteria Weight

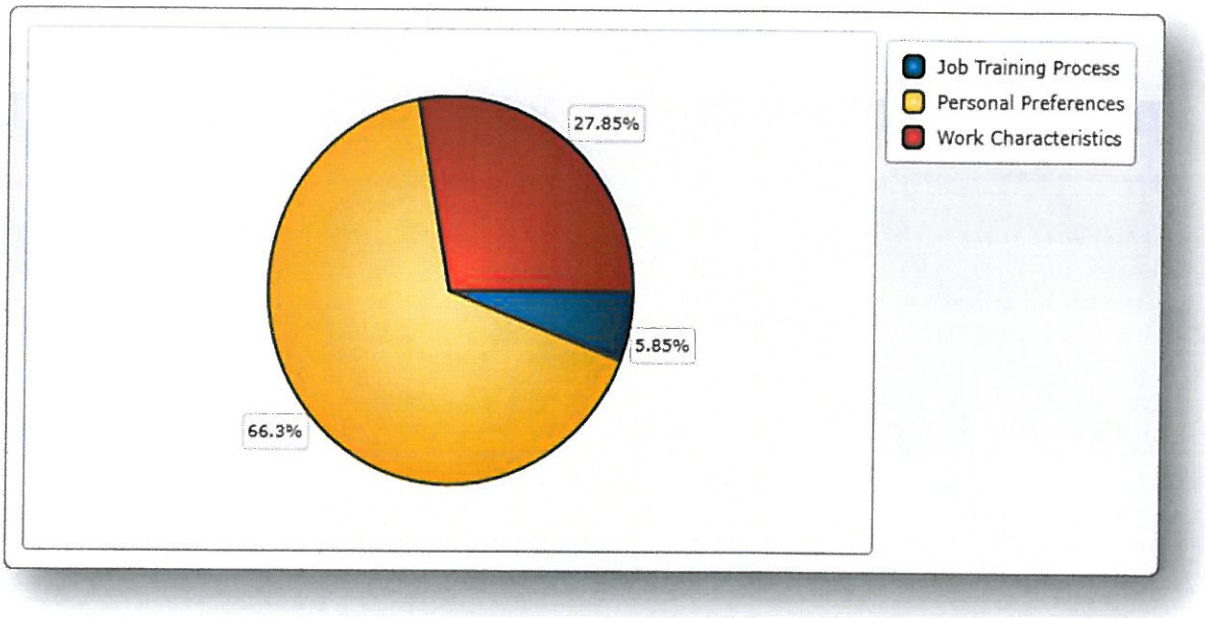

Figure 4.4: Sub criteria Weight

Table 4.3: Sub criteria Weight

Criteria	Weight
Job Training Process	5.85
Personal Preferences	66.3
Work Characteristics	27.85

After using a pairwise comparison the result of the first criteria raking is personal preferences, work characteristics and job training process.

4.5 Evaluation in context of Factor Influencing Undergraduate Career Choice

Table 4.4: Ratio of the first criteria

First Tier Criteria	Ratio
Personal Preferences vs. Work Characteristics	3:1
Personal Preferences vs. Job Training Process	9:1
Work Characteristics vs. Job Training Process	6:1

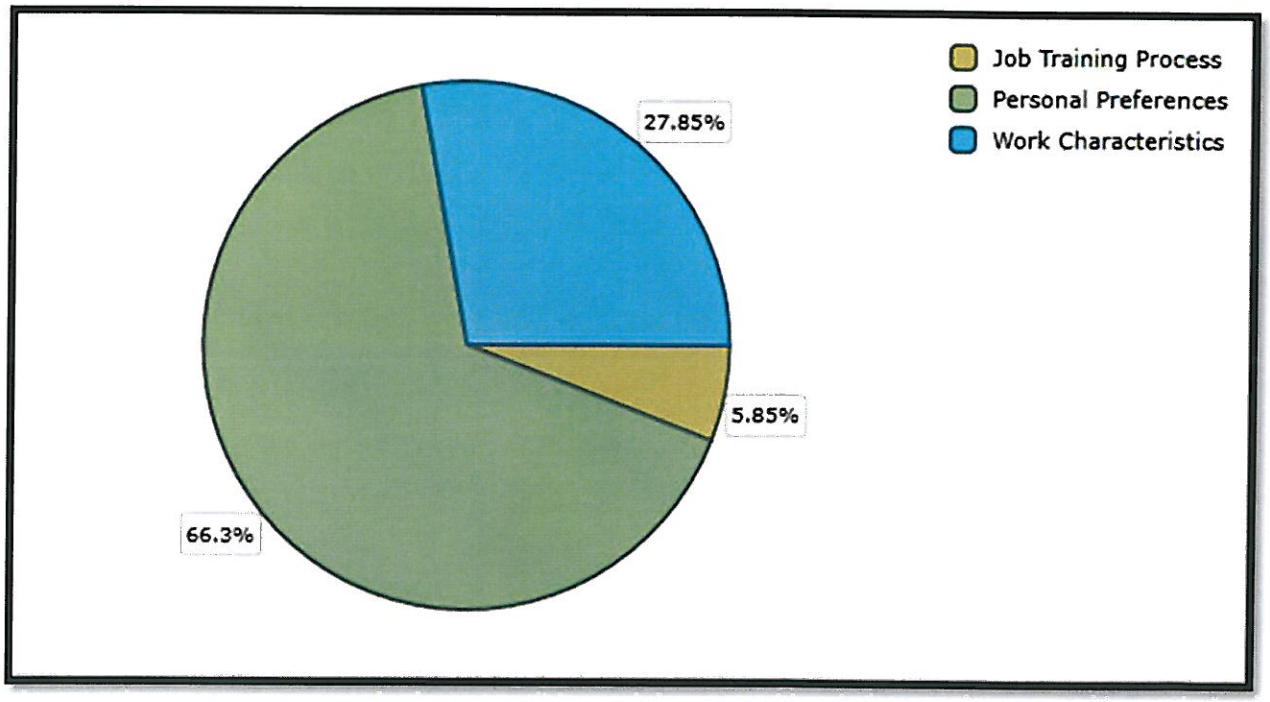

Figure 4.5: Weightage of the first criteria

Analysis of the accepted samples, among the three criteria in the first criteria, Personal Preferences had the highest weight of 66.3%, followed by Work Characteristics having a weight of 27.85% and job Training Process having a weight of 5.85%

4.5.1 Evaluation in context of Work Characteristics

Table 4.5 Work Characteristics Ratio

Sub Criteria	Ratio
Future Income vs. Independent Practise Setup	6:1
Future Income vs. Prestige of Job	6:1
Independent Practise Setup vs. Prestige of Job	2:1

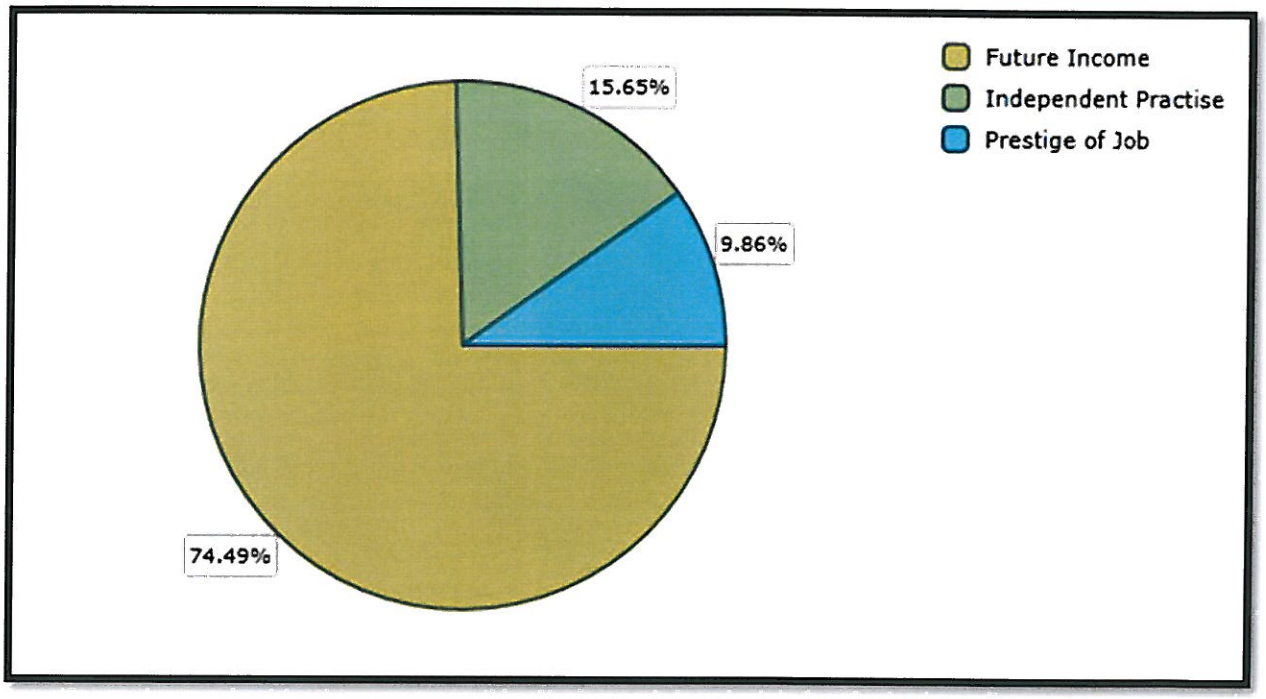

Figure 4.6: Work Characteristics

Table 4.6: Work Characteristics Percentage

Criteria	Percentage (%)
Future Income	74.49
Independent Practise	15.65
Prestige of Job	9.86

4.5.2 Evaluation in context of Future Income

Table 4.7: Future Income Ratio

Alternative	Ratio
Entrepreneurship vs. Industry and Field Work	3:1
Entrepreneurship vs. Civil Services	6:1
Industry and Field Work vs. Civil Services	5:1

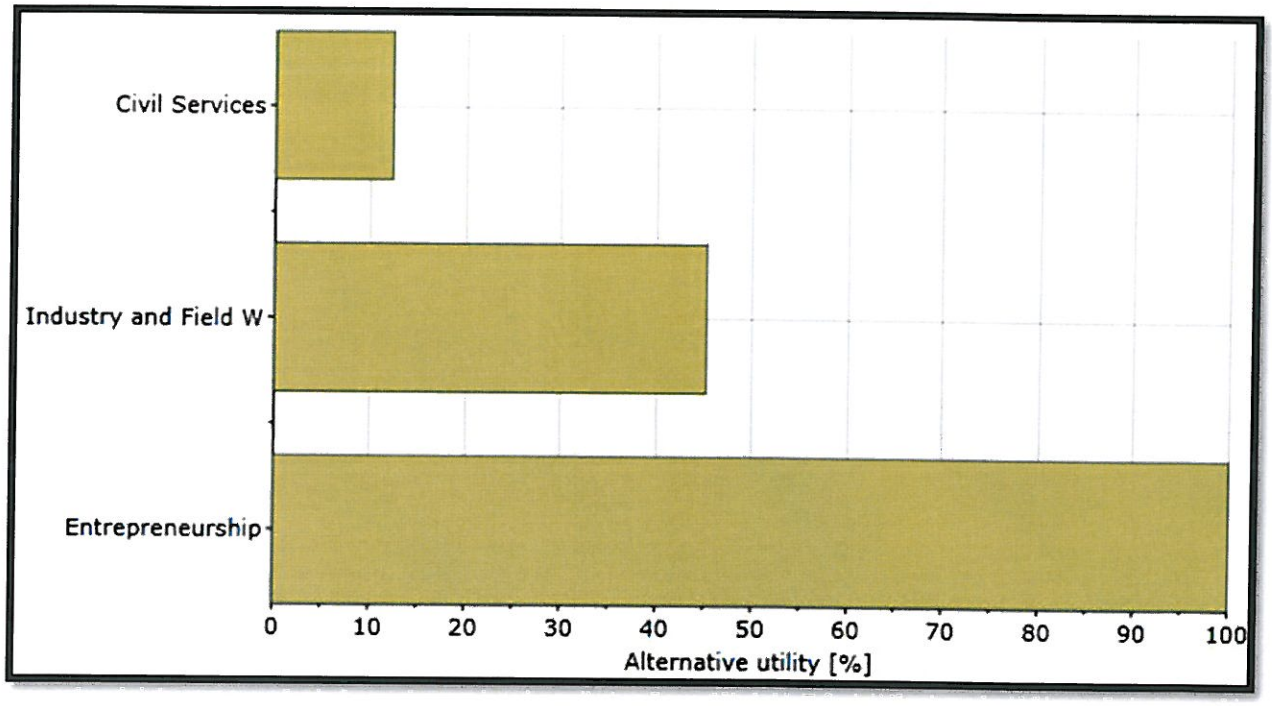

Figure 4.7: Future Income Percentage

To build up the career in entrepreneurship the students must take a higher risk as the higher risk always make a good payment. This the best explanation as the entrepreneurship was the best alternative utility for future income followed by industry and field work and civil services.

4.5.3 Evaluation in context of Independent Practise Setup

Table 4.8: Independent Practise Setup Ratio

Alternative	Ratio
Entrepreneurship vs. Industry and Field Work	3:1
Entrepreneurship vs. Civil Services	6:1
Industry and Field Work vs. Civil Services	3:1

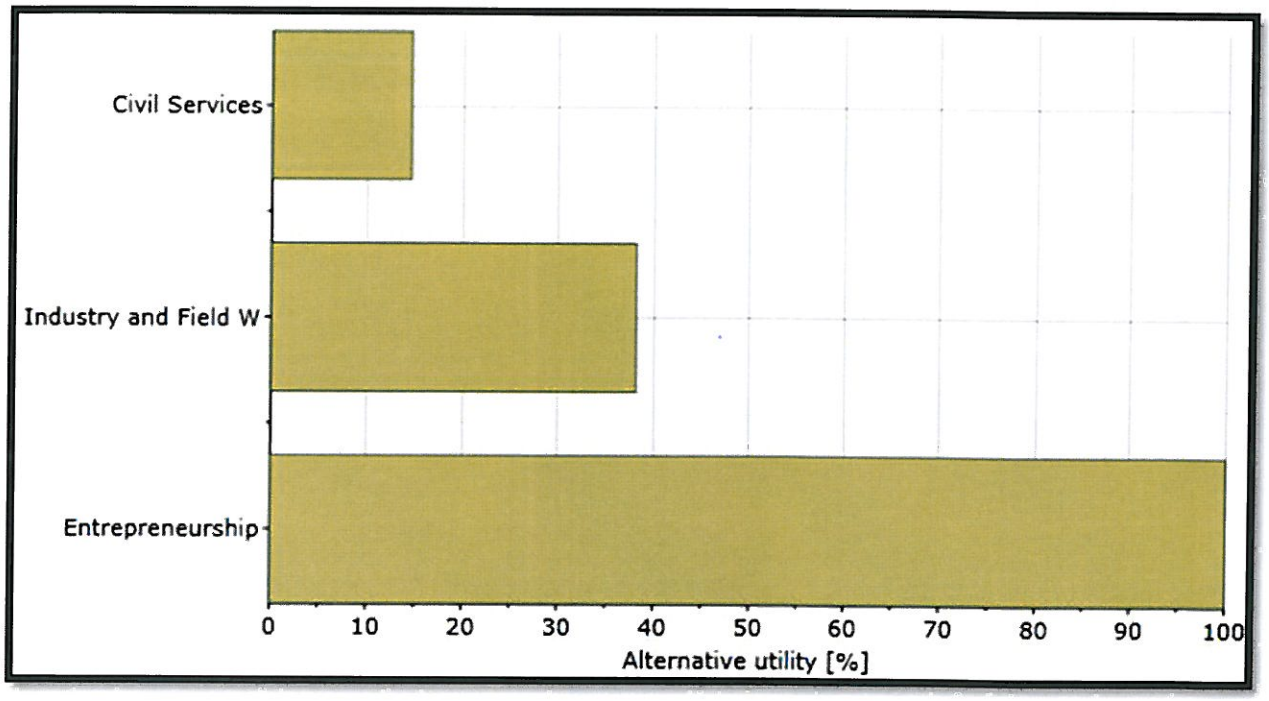

Figure 4.8: Independent Practise Percentage

4.5.4 Evaluation in context of Prestige of Job

Table 4.9: Prestige of Job Ratio

Alternatives	Ratio
Industry and Field Work vs. Entrepreneurship	5:1
Civil Services vs. Entrepreneurship	2:1
Industry and Field Work vs. Civil Services	5:1

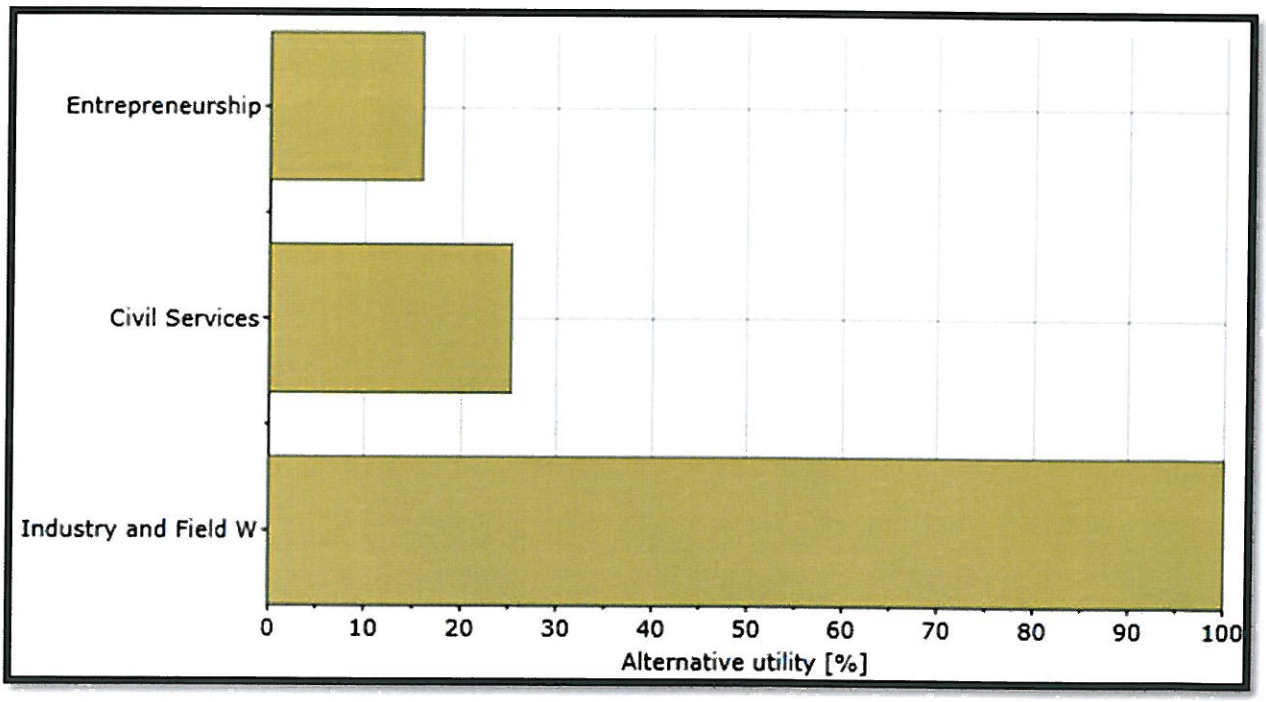

Figure 4.9: Prestige of Job Percentage

4.5.5 Evaluation in context of Personal Preferences

Table 4.10: Personal Preferences Ratio

Criteria	Ratio
Role Model vs. Societal Expectation	1:1
Contact in Field vs. Role Model	3:1
Contact in Field vs. Societal Expectation	3:1
Personal Aptitude vs. Role Model	8:1
Personal Aptitude vs. Societal Expectation	6:1
Personal Aptitude vs. Contact in Field	6:1
Growth Prospect vs. Role Model	6:1
Growth Prospect vs. Societal Expectation	3:1
Personal Aptitude vs. Growth Prospect	2:1
Growth Prospect vs. Contact in Field	6:1

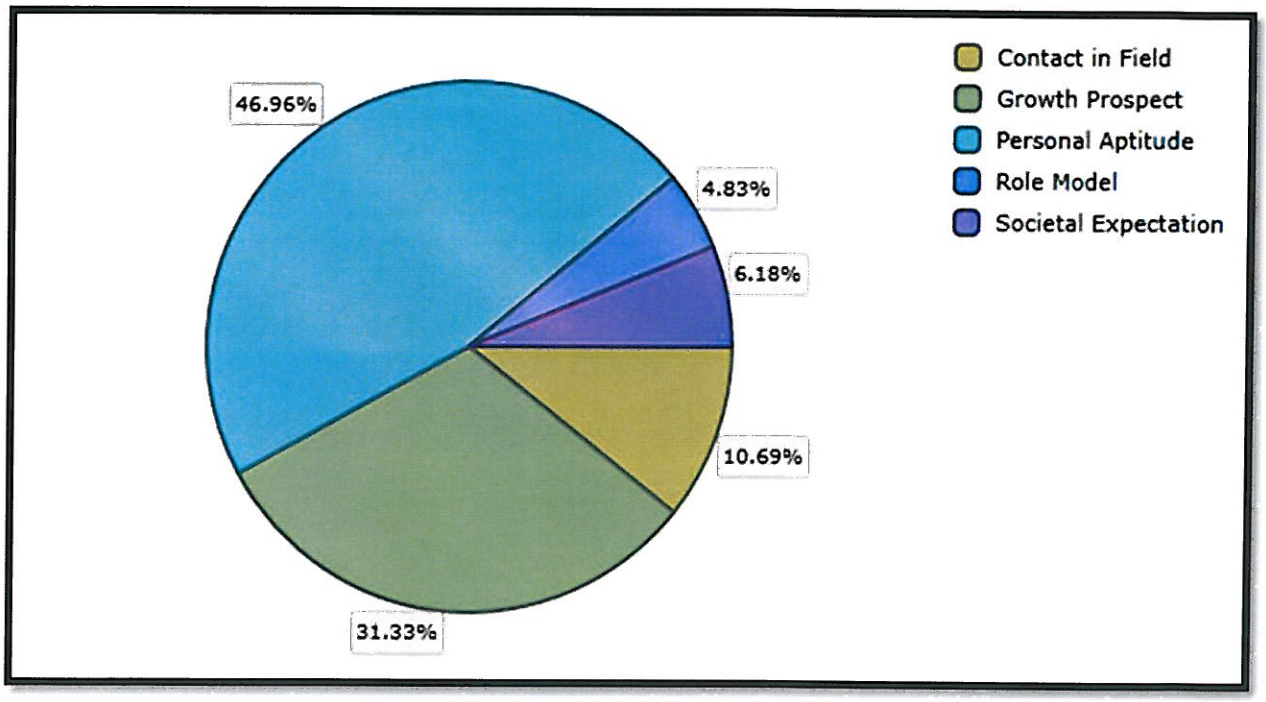

Figure 4.10: Personal Preferences Percentage

4.5.6 Evaluation in context of Role Model

Table 4.11: Role Model Ratio

Alternative	Ratio
Industry and Field Work vs Entrepreneurship	3:1
Entrepreneurship vs. Civil Services	5:1
Industry and Field Work vs. Civil Services	6:1

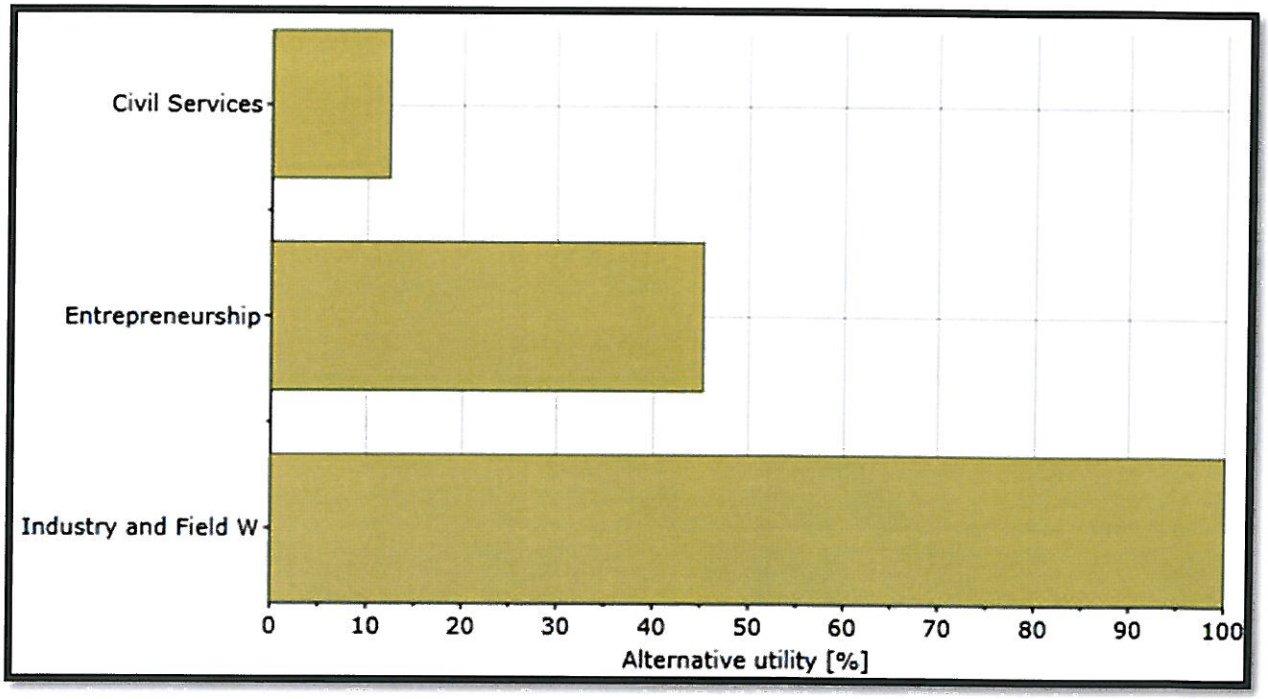

Figure 4.11: Role Model Percentage

4.5.7 Evaluation in context of Societal Expectation

Table 4.12: Societal Expectation Ratio

Alternative	Ratio
Industry and Field Work vs. Entrepreneurship	5:1
Civil Services vs. Entrepreneurship	2:1
Industry and Field Work vs. Civil Services	6:1

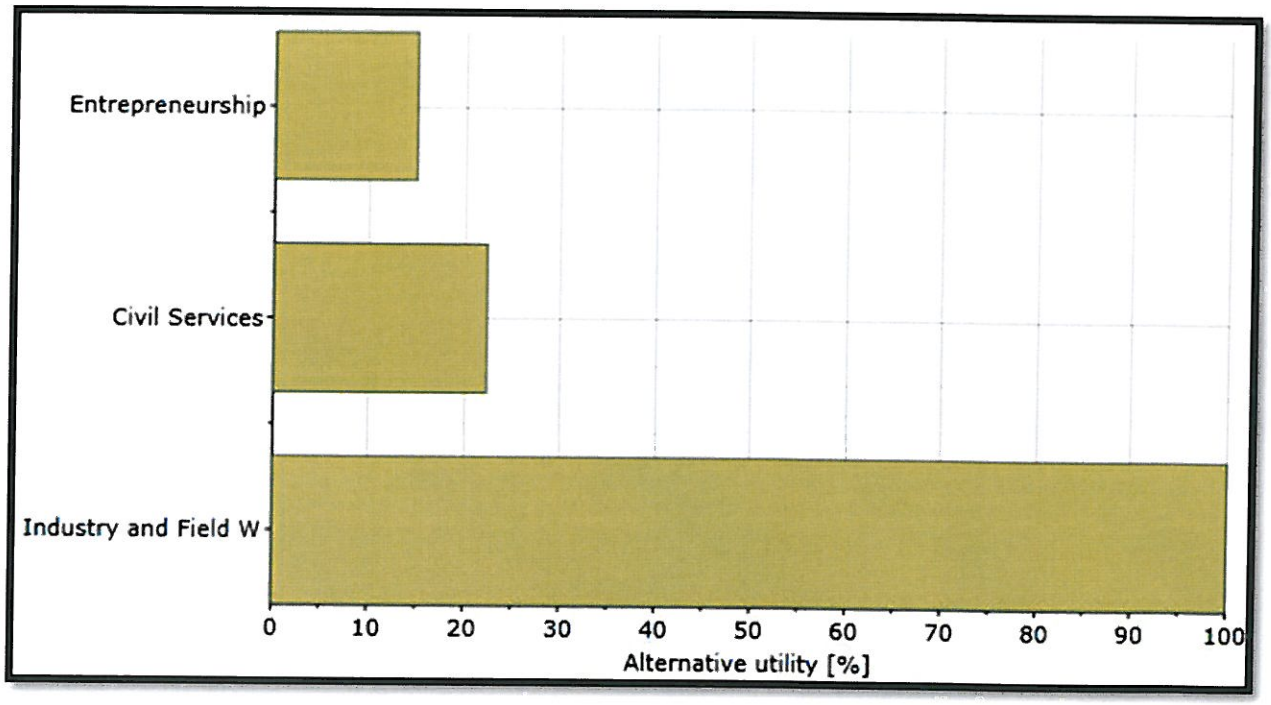

Figure 4.12: Societal Expectation Percentage

4.5.8 Evaluation in context of Contact in Field

Table 4.13: Contact in Field Ratio

Alternative	Ratio
Industry and Field Work vs. Entrepreneurship	6:1
Civil Services vs. Entrepreneurship	3:1
Industry and Field Work vs. Civil Services	4:1

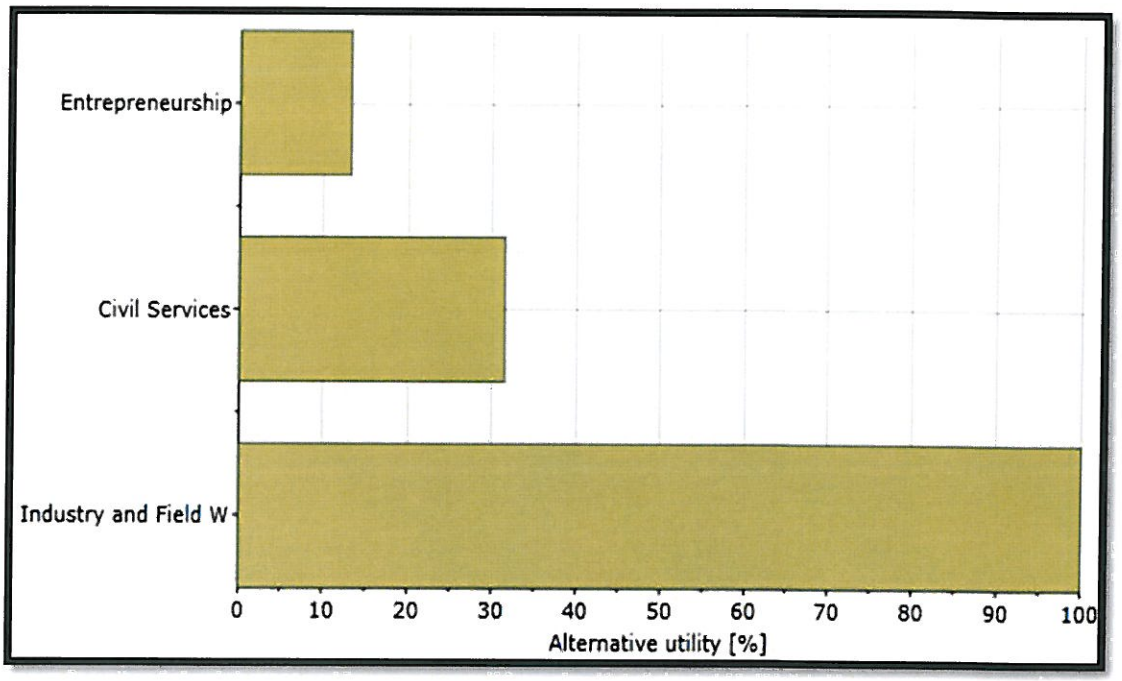

Table 4.13: Contact in Field Percentage

4.5.9 Evaluation in context of Personal Aptitude

Table 4.14: Personal Aptitude Ratio

Alternatives	Ratio
Industry and Field Work vs. Entrepreneurship	4:1
Entrepreneurship vs. Civil Services	3:1
Industry and Field Work vs. Civil Services	6:1

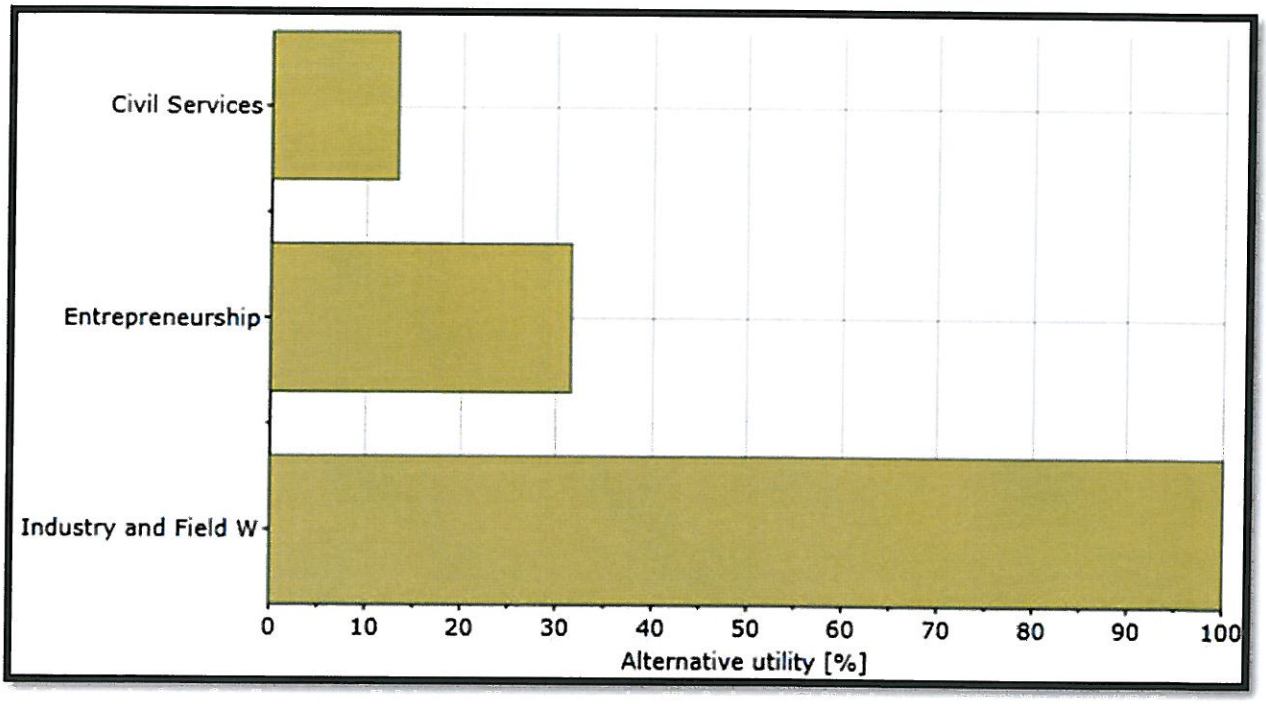

Figure 4.14: Personal Aptitude Percentage

4.5.10 Evaluation in context of Growth Prospect

Table 4.15: Growth Prospect Ratio

Alternatives	Ratio
Industry and Field Work vs. Entrepreneurship	5:1
Civil Services vs. Entrepreneurship	2:1
Industry and Field Work vs. Civil Services	6:1

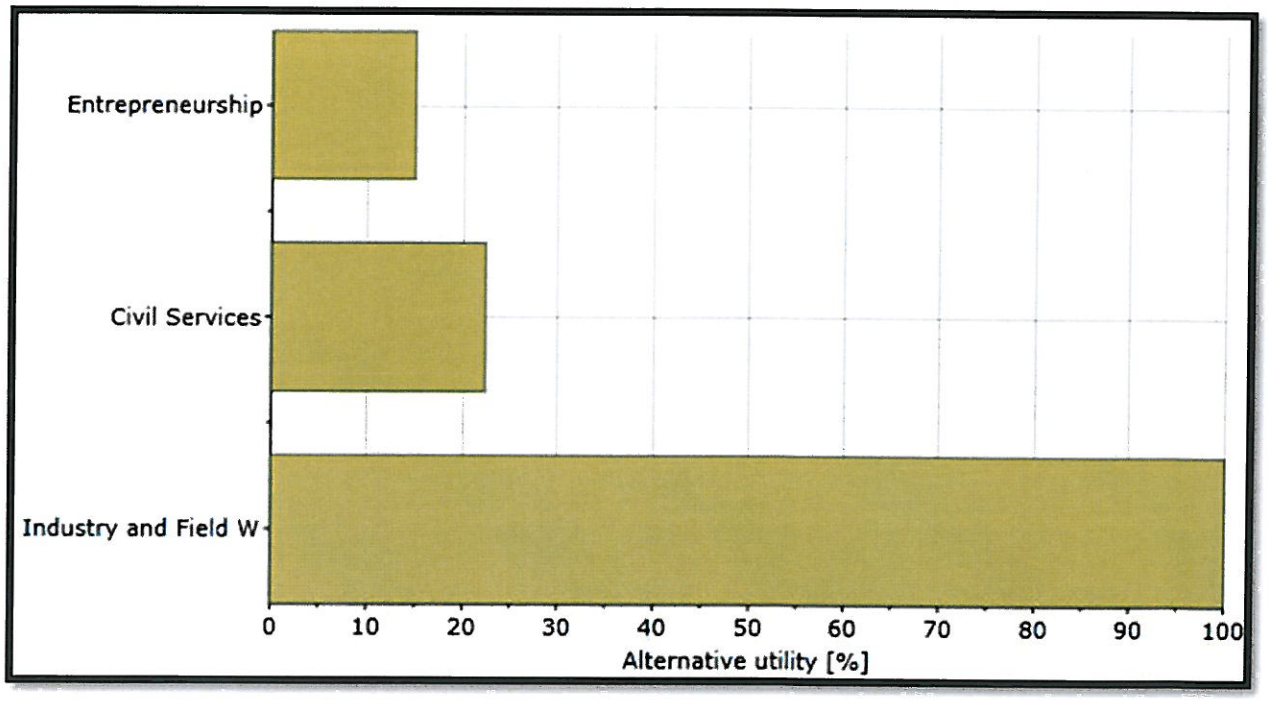

Figure 4.15: Growth Prospect Percentage

4.5.11 Evaluation in context of Job Training Process

Table 4.16: Job Training Process Ratio

Criteria	Ratio
Specialisation Requirement vs. Related Internship/ Project	2:1
Specialisation Requirement vs. Gestation Period	6:1
Related Internship/ Project vs. Gestation Period	6:1

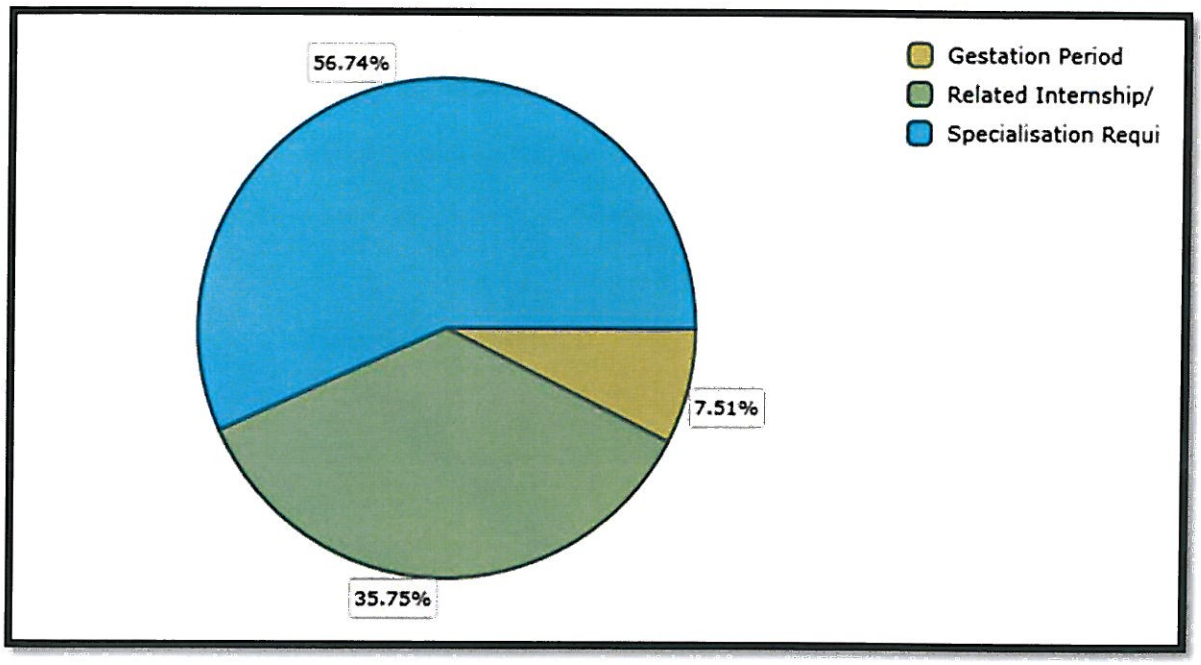

Figure 4.16: Job Training Process Percentage

4.5.12 Evaluation in context of Specialisation Requirement

Table 4.17: Specialisation Requirement Ratio

Criteria	Ratio
Industry and Field Work vs. Entrepreneurship	5:1
Entrepreneurship vs. Civil Services	3:1
Industry and Field Work vs. Civil Services	6:1

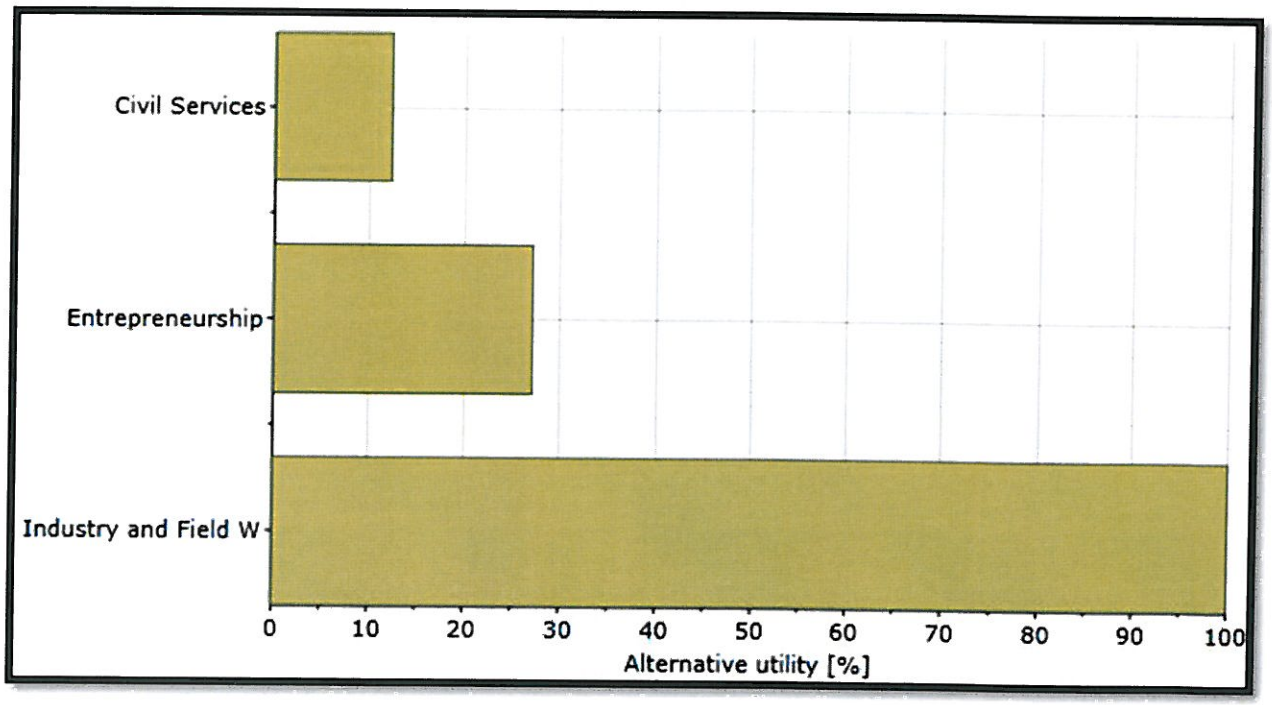

Table 4.17: Specialisation Requirement Percentage

4.5.14 Evaluation in context of Related Internship/ Project

Table 4.18: Related Internship/ Project Ratio

Alternatives	Ratio
Industry and Field Work vs. Entrepreneurship	6:1
Entrepreneurship vs. Civil Services	2:1
Industry and Field Work vs. Civil Services	6:1

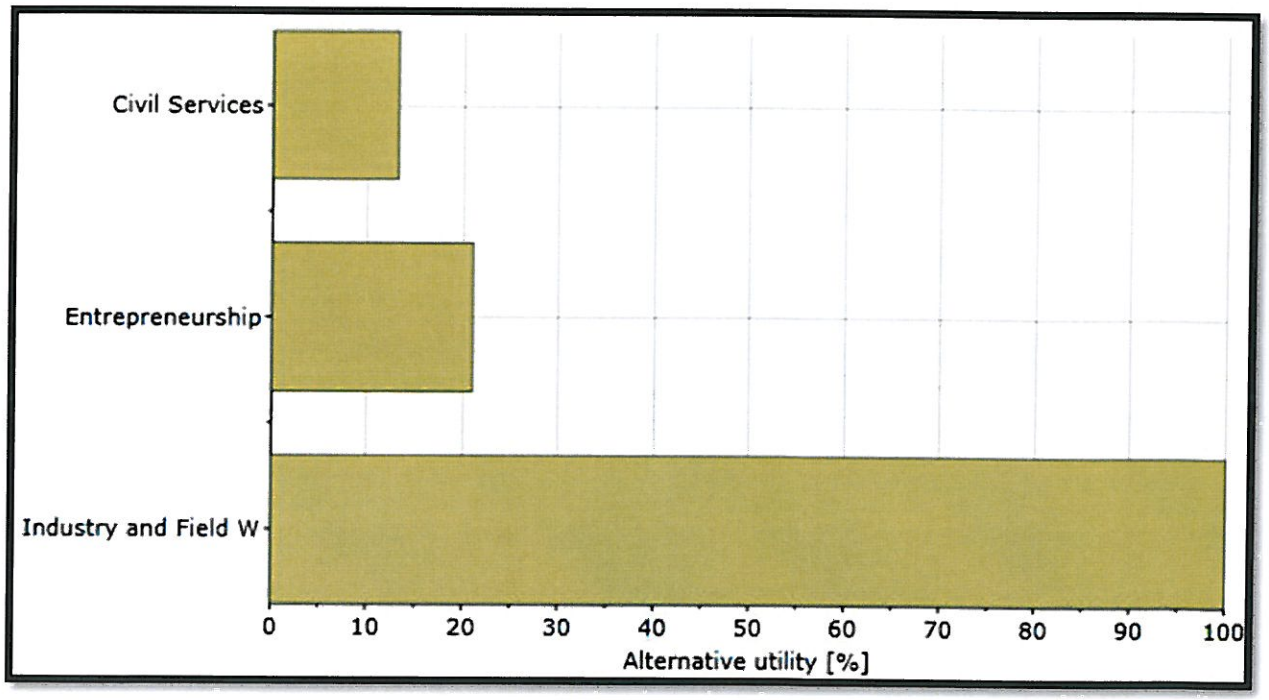

Figure 4.18: Related Internship/ Project Percentage

4.5.15 Evaluation in context of Gestation Period

Table 4.19: Gestation Period Ratio

Alternative	Ratio
Entrepreneurship vs. Industry and Field Work	1:1
Entrepreneurship vs. Civil Services	4:1
Industry and Field Work vs. Civil Services	6:1

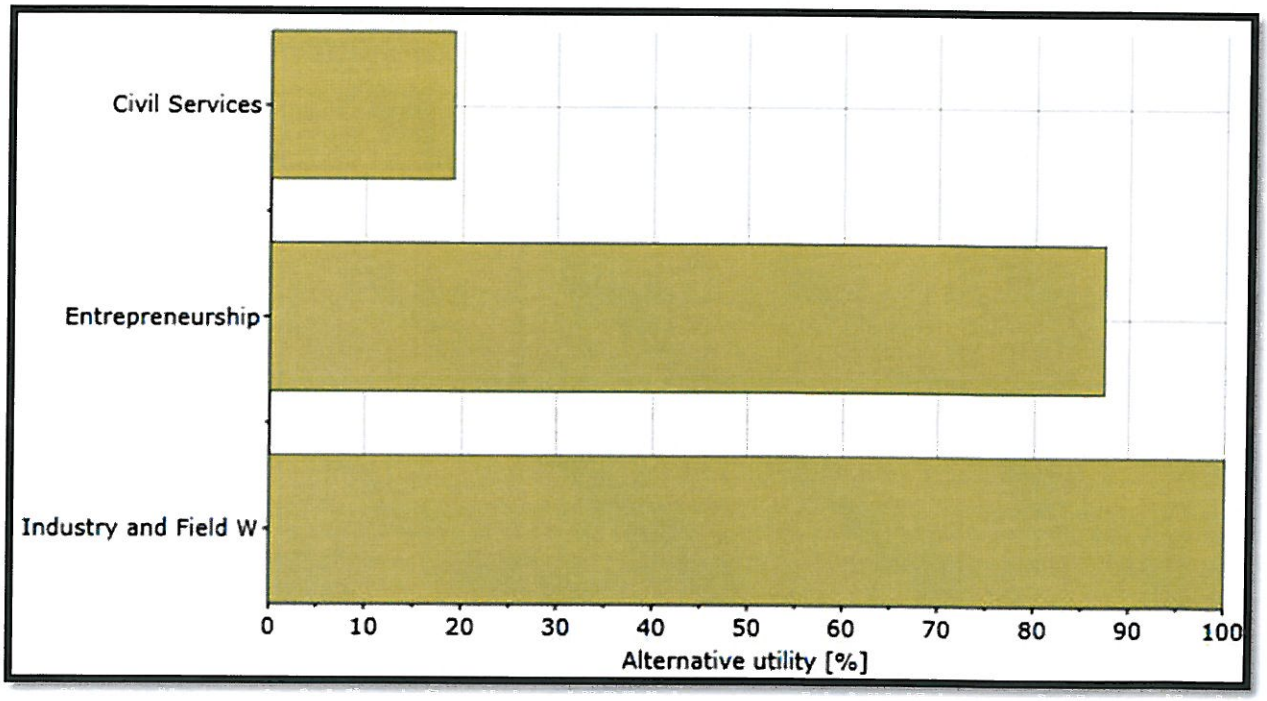

Figure 4.19: Gestation Period Percentage

Table 4.20: Weight of Sub criteria of work characteristics

Criterion	Global Weight (%)	Local Weight (%)
Personal Preferences	66.30	66.30
Personal Aptitude	31.44	46.96
Work Characteristics	27.85	27.85
Growth Prospect	20.77	31.33
Future Income	20.75	74.49
Contact in Field	7.09	10.69
Job Training Process	5.85	5.85
Independent Practise Setup	4.36	15.68
Societal Expectation	4.10	6.18
Specialisation Requirement	3.32	56.74
Role Model	3.20	4.83
Prestige of Job	2.75	9.86
Related Internship/ Project	2.09	35.75
Gestation Period	0.44	7.51

4.5.16 Ranking in context of Factor Influencing Undergraduate Career Choice

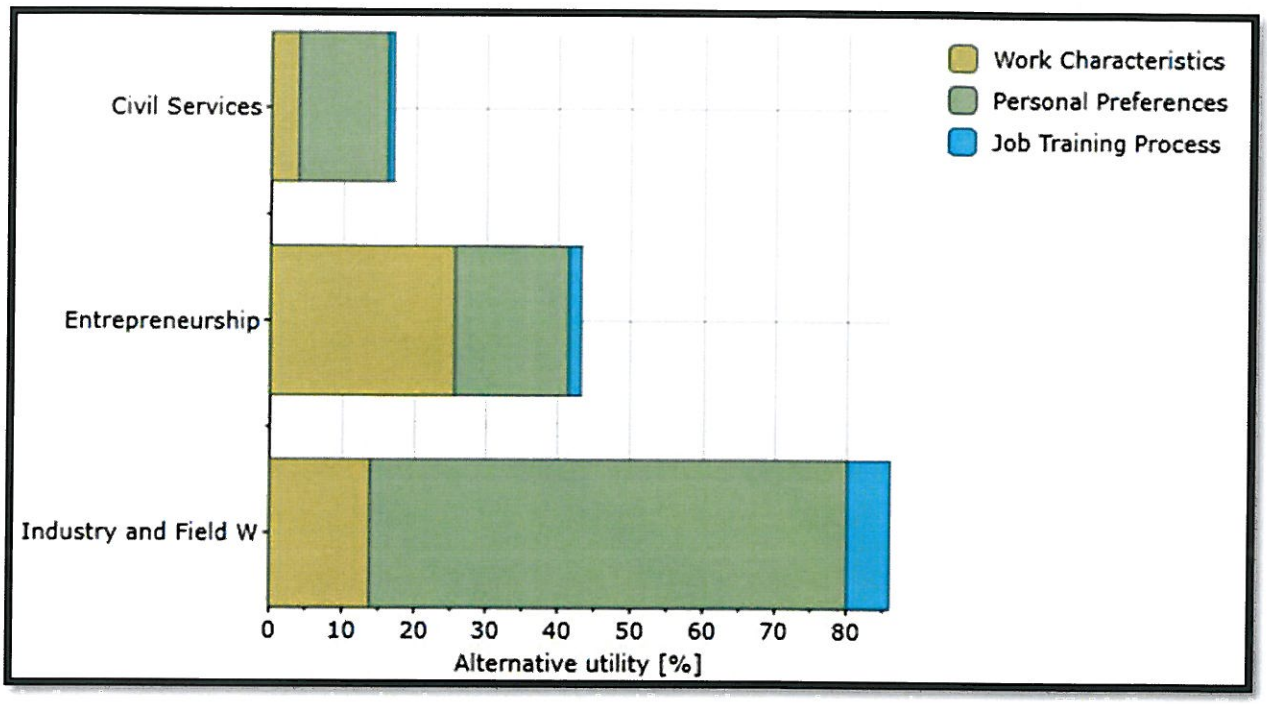

Figure 4.20: Ranking in context of Factor Influencing Undergraduate Career Choice Ratio

Table 4.21: Ranking in context of Factor Influencing Undergraduate Career Choice Ratio

Alternative (%)	Entrepreneurship	Industry and Field Work	Civil Services
Total	43.18	85.94	16.94
Work Characteristic	25.54	13.79	3.87
Personal Preferences	15.91	66.3	12.30
Job Training Process	1.72	5.85	0.77

4.5.17 Ranking in context of Work Characteristics

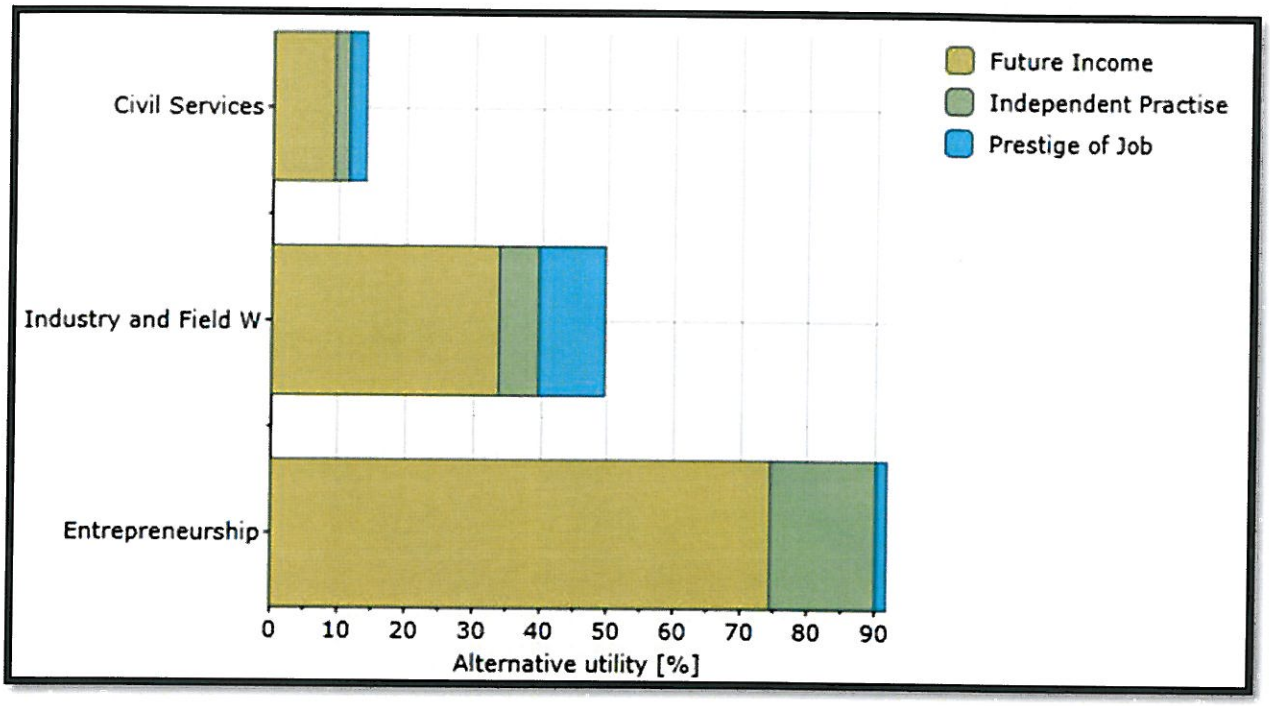

Figure 4.21: Ranking in context of Work Characteristics

4.22: Ranking in context of Work Characteristics

Alternative (%)	Entrepreneurship	Industry and Field Work	Civil Services
Total	91.71	49.53	13.91
Future Income	74.49	33.70	9.15
Independent Practise	15.65	5.97	2.28
Prestige of Job	1.57	9.86	2.49

4.5.18 Ranking in context of: Personal Preferences

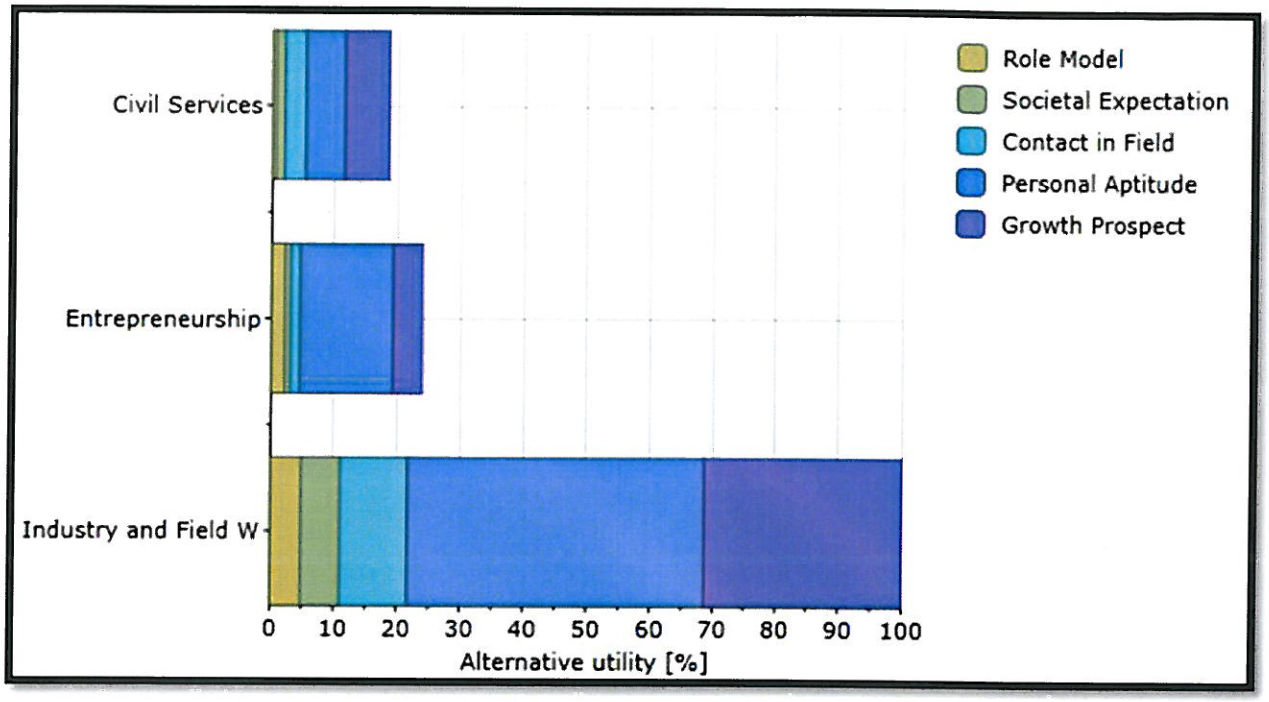

Figure 4.22: Ranking in context of Personal Preferences

Table 4.23: Ranking in context of: Personal Preferences

Alternative (%)	Entrepreneurship	Industry and field network	Civil Services
Total	24	100	18.55
Role Model	2.19	4.83	0.59
Societal Expectation	0.92	6.18	1.38
Contact in Field	1.41	10.69	3.37
Personal Aptitude	14.8	46.96	6.22
Growth Prospect	4.68	31.33	6.99

4.5.19 Ranking in context of: Job Training Process

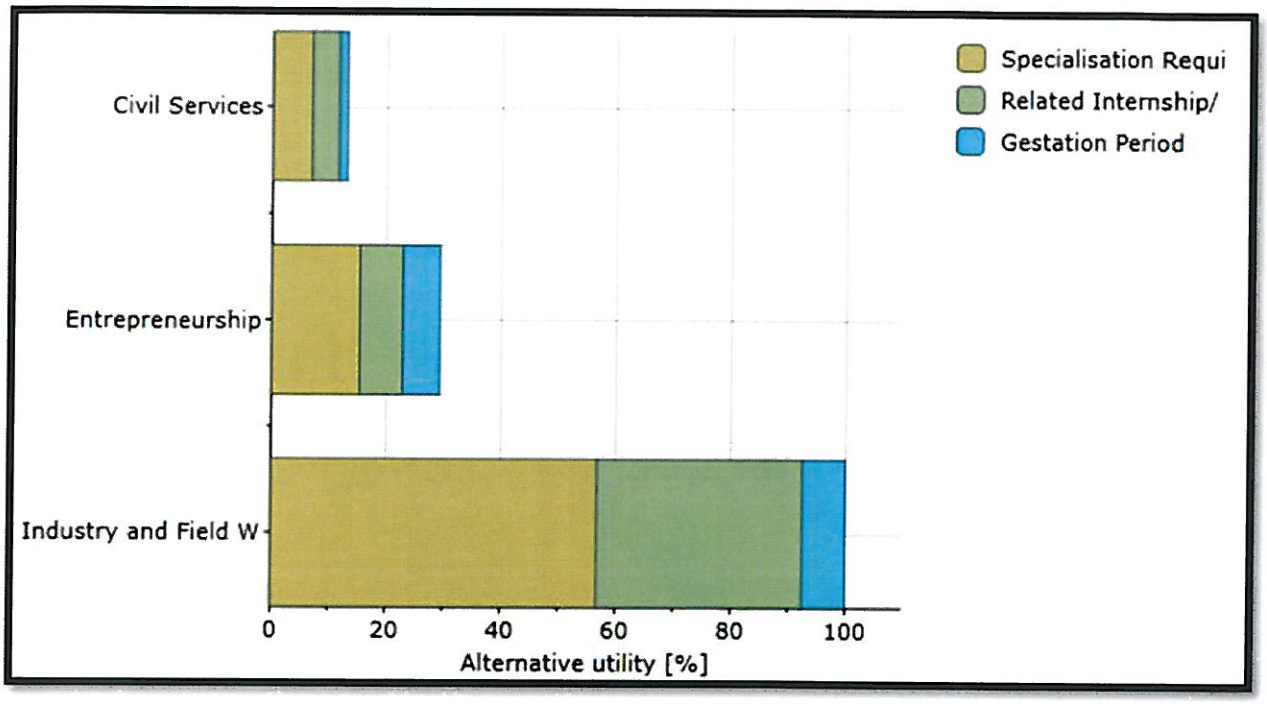

Figure 4.23: Ranking in context of Job Training Process

Table 4.24: Ranking in context of Job Training Process

Alternatives (%)	Entrepreneurship	Industrial and Field Work	Civil Services
Total	29.47	100	13.13
Specialisation Requirement	15.4	56.74	6.97
Related Internship/ job	7.51	35.75	4.73
Gestation Period	6.56	7.51	1.43

4.6 COMPARISON IN THE CRITERIA CONTEXT

4.6.1 Comparison in context of factor influencing undergraduate career choice

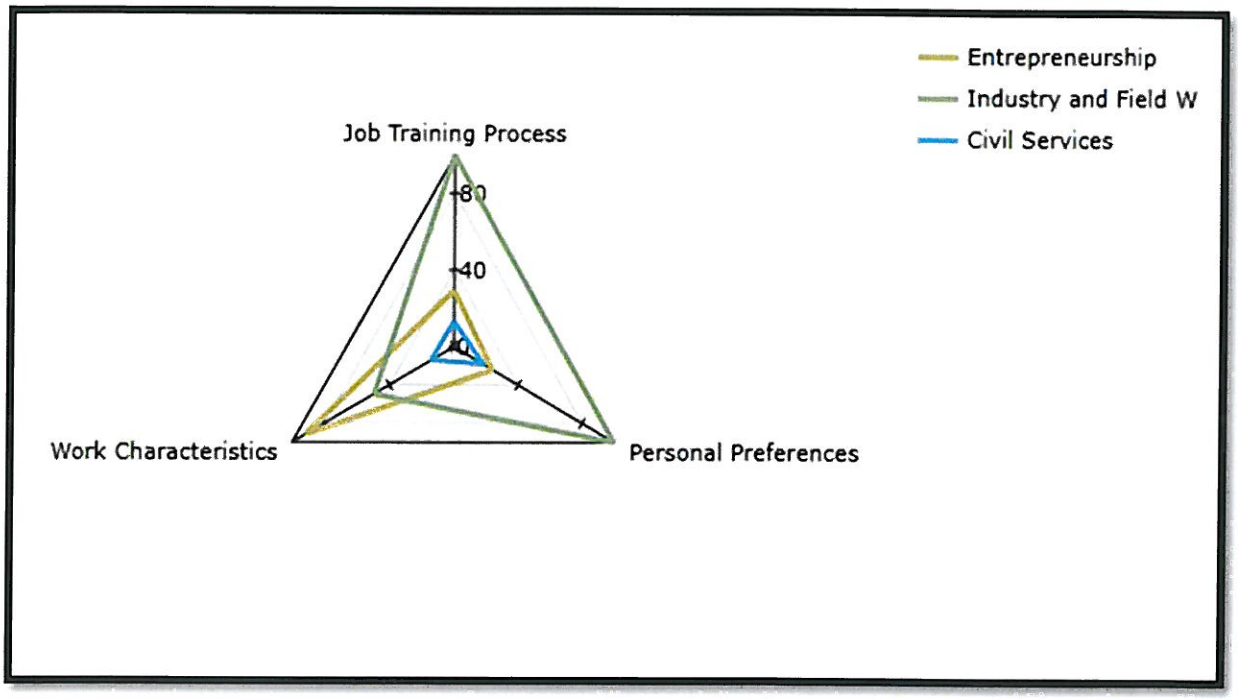

Figure 4.24: Comparison in context of factor influencing undergraduate career choice

Table 4.25: Comparison in context of factor influencing undergraduate career choice

Criterion	Work Characteristic	Personal Preferences	Job Training Process
Entrepreneurship	91.71	24	29.47
Industry and Field Work	49.53	100	100
Civil Services	13.91	18.55	13.13

Respondent were classified by making a comparison to determine the highest factor influencing job choice. The highest alternative or job the students choose for

work characteristic criteria is entrepreneurship. For personal preferences and job training process the job in industry and field work has the highest result for each of them.

4.6.2 Comparison in context of: Work Characteristics

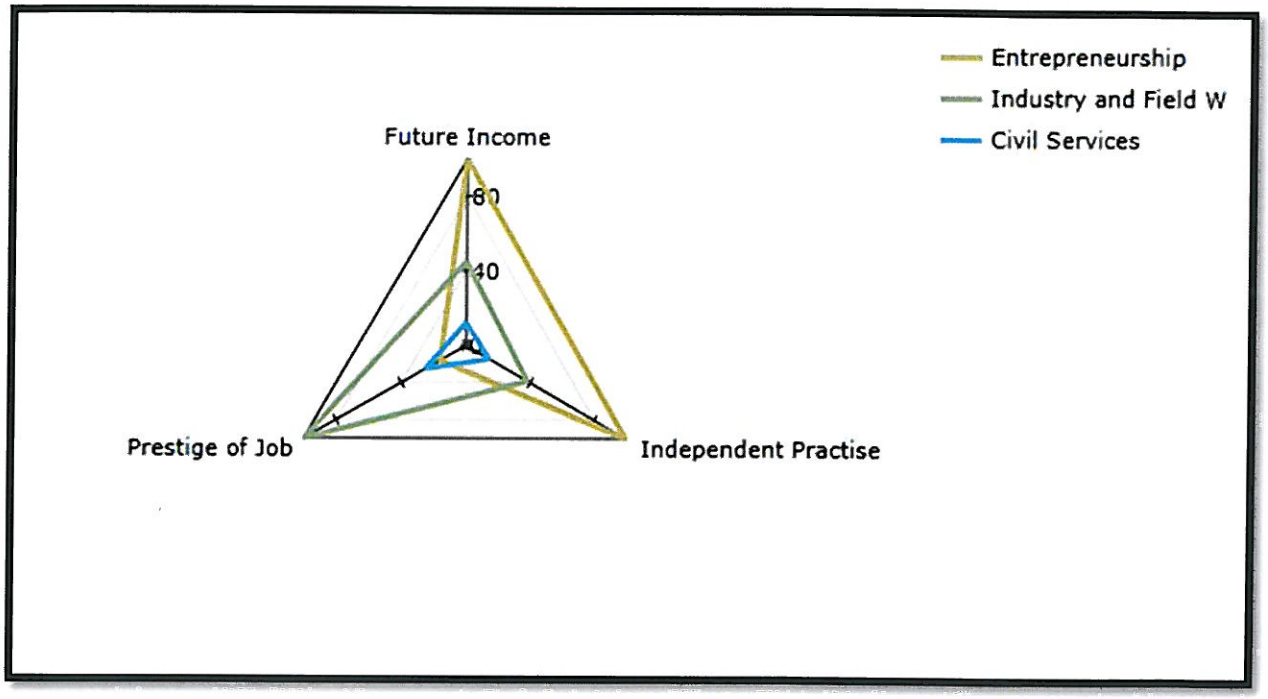

Figure 4.25: Comparison in context of Work Characteristics

Table 4.26: Comparison in context of Work Characteristics

Criterion	Future Income	Independent Practise	Prestige of Job
Entrepreneurship	100	24	15.88
Industry and Field Work	45.24	100	100
Civil Services	12.28	18.55	25.51

In the first criterion, for future income, the entrepreneurship has the highest percentage as the choice of career, followed by industry and fieldwork and civil

services. In independent practise student choice to be in industrial followed by entrepreneurship and civil services.

4.6.3 Comparison in context of Personal Preferences

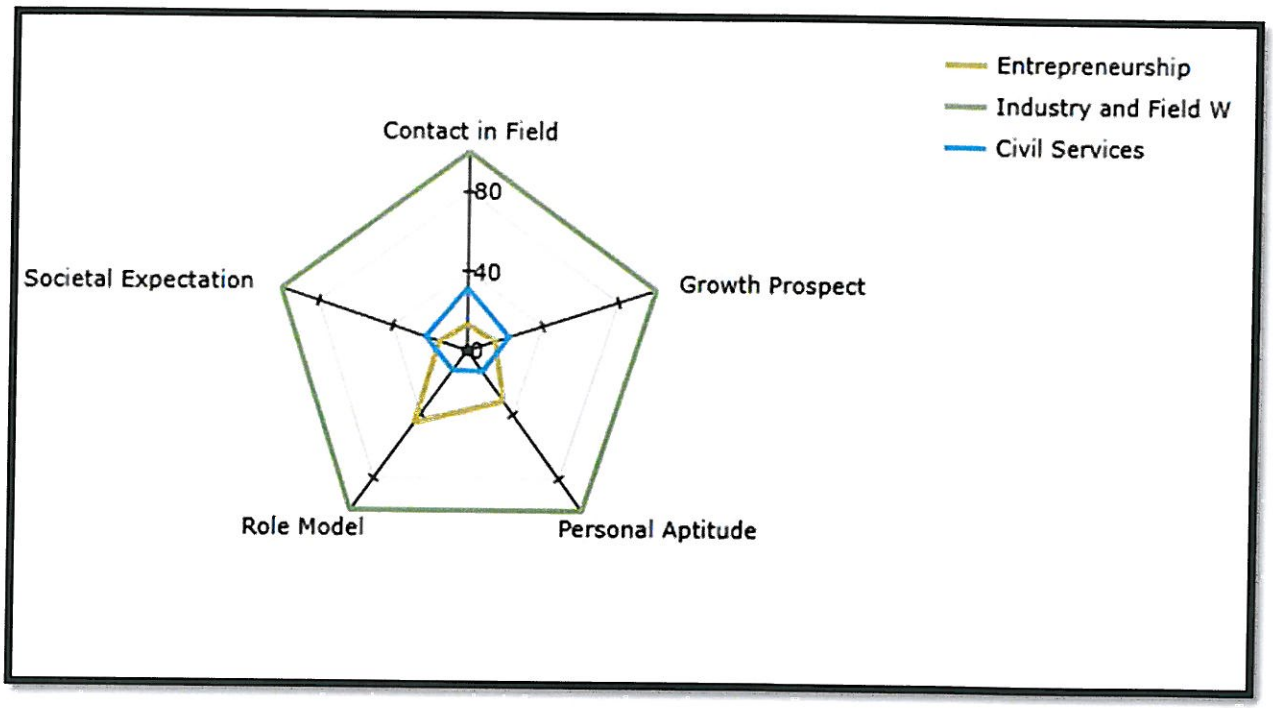

Figure 4.26: Comparison in context of Personal Preferences

Table 4.27: Comparison in context of Personal Preferences

Criterion	Role model	Societal Expectation	Prestige of Job
Entrepreneurship	45.24	14.94	13.24
Industry and Field Work	100	100	100
Civil Services	12.28	23.31	31.51

As the highest ranking in the first criteria, industry and fieldwork has the highest ranking for all three sub criteria followed societal expectation and prestige of job except for role model.

4.6.4 Comparison in context of Job Training Process

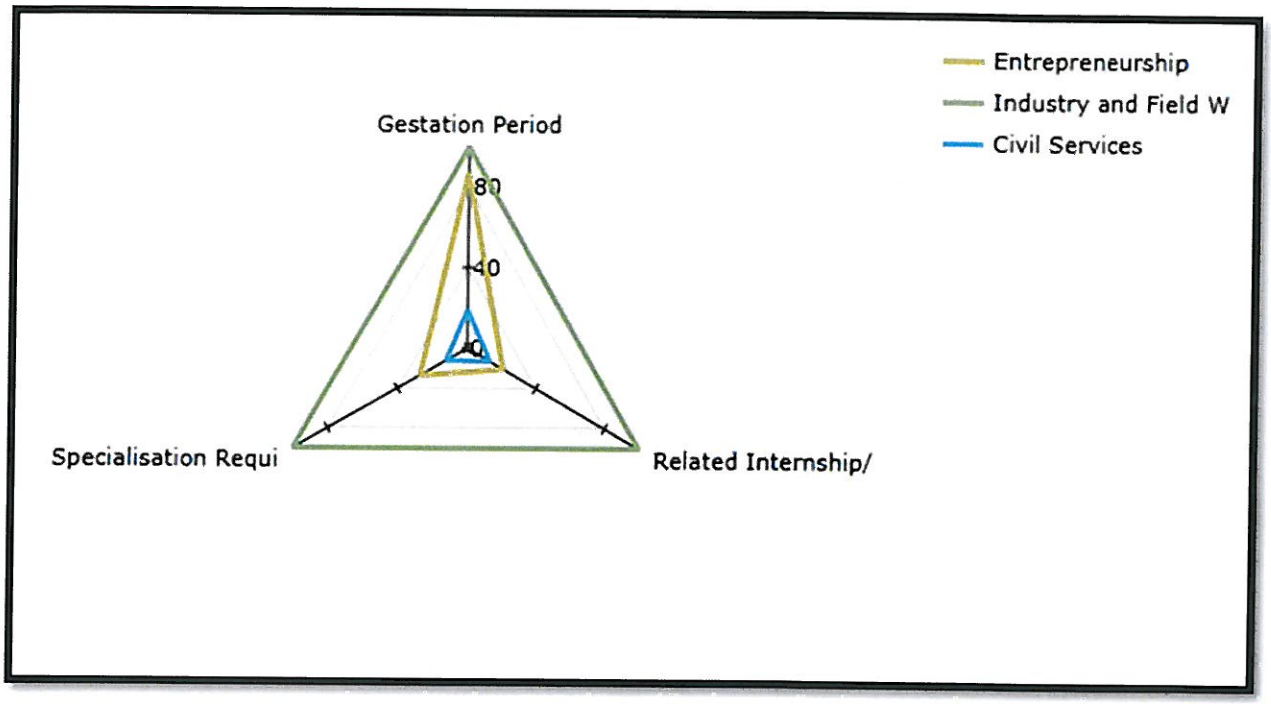

Figure 4.27: Comparison in context of Job Training Process

Table 4.28: Comparison in context of Job Training Process

Criterion	Special Requirement	Related Internship	Gestation Period
Entrepreneurship	27.14	21.01	87.36
Industry and Field Work	100	100	100
Civil Services	12.28	13.23	19.08

Job training process criteria also shown that industry and field work has the highest percentage for all three sub criteria followed by entrepreneurship and civil services.

4.7 DISCUSSION

The main objective of this study was to find out factors influencing career choice among undergraduate UMP students. The analysis of the study was based on the following the AHP framework. The outcomes of the study suggest that most students are making career choices based on their personal preferences and aptitude assessment. This is shown by higher percentage in comparison with their partner criteria. These results support the findings of Ginsberg et al. (1951), Super(1957), and Lau and Pang (1995). Contrary to some studies in past that indicate that students' preferences lean towards pay scale (Bai, 1998) and job security (Phillips et al., 1994; Karl and Sutton, 1998) over personal aptitude, these results indicate a trend of independent thinking and decision making among the students. The need for fulfilment in the work has gained importance over security and stability. Interviews with few students, professors, and human resource (HR) representatives of certain industries revealed a common observation that employees working in their areas of interest are more productive and self-motivated, thus creating a win-win relationship for both the enterprise and the individual. Though the general trend has been towards personal aptitude, a considerable number of students have given high priority to other criteria as well.

The booming industrial at many sector in Malaysia and the many of job availability in this field have succeeded in pulling a respectable number of students towards jobs in the industry and field works. A study by Kyriacou et al. (2002) suggests that the availability of various options of growth in a career field moulds the decision pattern of students. In accordance to Kyriacou et al. and this study, the students from various branches and departments of engineering were found to be inclined towards engineering and technology.

From an employer's point of view, the ability of the field to accommodate masses would influence the candidate employees' willingness to opt or to not opt for the field. The weight age to future income was mostly much lower as compared to personal aptitude and growth prospects for a majority of the students. This observation is backed by the research of Kuei-Ing Wang et al. (2007) according to which, students who were yet to enter the professional world give less priority to monetary incentives. A stark contrast was observed in the case of students willing to pursue in civil sevices who had largely given future income the highest priority. When this perspective of the students

was discussed with the HR representatives of certain companies, it was found that though the high pay scales in industry and field work jobs is a popular notion, not all positions are so glamorous and high-paying.

It was found that students choosing entrepreneurship gave high weight age to *Role Model* showing that a positive figure in their lives working in similar area had encouraged them to choose this career. The existence of contacts in the field was given high priority by students willing to pursue in industrial and field work. Though the most important factors assessed by students aspiring to be entrepreneurs were the personal aptitude, and the opportunity to have an independent practice or setup; having contacts in the field was evaluated as an important criteria.

Interviews with these students revealed that they hold a perception that the contact might help them get a head-start in establishing their placement in early job. Students pursuing industry and field work find internships and project work very important. The exposure to actual groundwork is crucial in shaping the understanding of the job. Therefore, if industrial training is provided by academic institutions, students' inclination towards this area might increase. Moreover, traditionally, industry and field work has been perceived as men's domain. Fieldwork has been regarded as a tough and grandiose activity, characteristic of masculinity (Sparke, 1996;Rose, 1993).Moreover, Stoddart(1986) has described fieldwork as being "much about the physical challenge." Despite such results in the past, this study revealed a growing trend of females opting for field work. About 15% of students choosing this area were women, showing that even though the numbers are still low, women have started considering industry and field work as a career option.

The choice patterns also varied according to cultural and gender differences. Results of this study, along with the results of the studies by William J. Bigoness(1986),Brenner and Tomkiewiecz (1982), and Bartol and Manhardt(1979) convey that among women, a pronounced shift is taking place in the preference of job attributes. Over the years, instead of giving less weight age to job attributes (as suggested by the results of earlier research [Jurgensen, 1978; Schuler, 1975]), females are emphasising more on the opportunity for demanding and growth-oriented work. The study shows that women are now actively participating in the professional world and are

contributing at par with men. Despite these findings, it was also observed that women still lay more emphasis on Societal and Family Expectations. This is suggestive of the fact that though women are prospering on the professional front, it is being appended to their traditional roles and not replaced by them.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.0 CONCLUSION

All of us wants to have a very prestigious job at the end of our education for which we spend a great amount of time on account of the fact that a job that makes us happy enables our life meaningful and productive. Student may overcome the problem to define the best choice of job after graduate. This is where the idea come at the first place. This research emphasize that the best criteria and alternative that the students can be benefit from it. I have argued that several of the questionnaire was not consistent as the disadvantage of using AHP. All those 3 objective achieved. Every process was handled properly. Key in a data based on the questionnaire result. By using an online software of AHP the result was more accurate and error can be avoided. The result taken was an average or mean taking to put data in to the software. This research shown the students nowadays more to get more independent by selecting the personal preferences was the first choice of factor to choose the job after graduate that linked with the syllabus of their studies. In the context of engineering students, like UMP the first choice of option or alternative they choose was to get a job in the industry and work field as the first choice. This courses basically get the student to set their minds to work in the industry to fulfil their dream job after graduate.

The results also showing that the alternatives chosen by students was industry and field work. This is due to the understanding of students the industry is the best choice of the job instead of work in civil services or as entrepreneur. Malaysia normally also have a mind-set that industry will going to pay a good amount of money instead of civil services. And lack of interested in business as it also a high risk choices.

To summarise, using the AHP model, it is possible to recognize factors that affect students when they choose a career. We can also identify the relative weights of each factor pondered upon in the decision-making process. Also, the study shows that despite the fact that all of these students are pursuing engineering, a fair share of them wish to pursue careers unrelated to their present area of study. Academic institutions should make their curriculum more interactive and industry-oriented to make more students interested in their fields. Also, students should be encouraged to undertake more internships, as characteristics and potentials of their field can be thoroughly understood by students during the internship. The experienced professionals that students meet during internships can guide them to choose the most appropriate careers. Since this will help students in evolving the views of various fields, they might modify their choices later.

This study suggests that industries/companies should emphasize more on a wholesome and innovative incentive structure that will create an influential and inspiring milieu in which fresh talent can pursue their own interests and genius and have scope for further

5.1 RECOMMENDATION

In using Analytical Hierarchy Process, the crucial step was in the beginning of the process. Developing hierarchy of problem in graphical representation. This is because this framework determine the overall goal of research with the criteria and attributes are in different level of hierarchy. After the questionnaire given get the average or mean of each factor and criteria to construct a pairwise comparison matrix which mean two criteria are compared at each time to find out which one is more important. There many approach in solving AHP either manually or using a software. Calculation can be done manually and check it using a software such as excel or online software in the internet. After that, the data will undergo consistency test to check whether the judgment of decision makers is consistent. This test must be done at all judgement in each level. After all criteria and attributes in each criterion compared develop overall priority ranking.

That criteria and alternative will be different if the research taken at the other place with different samples. The questionnaire must be developed followed by the use of Delphi Technique by consulting a group of ten Final-Year students from assorted departments to review and modify in developing the questionnaire. This will make the framework of research clarified and more precise thou.

Research contribution can be tell will give a benefit for undergraduates students to evaluate their priority in order to choose the best job after graduate. Students have to get the right start in order to get the best job career that they are interested and have passion in it. The factor such personal preferences always a good factor for generation now because there are many choices and industry that they can really applied with many benefit from the company. This research also may contribute to the higher level education at any kind of university as by using AHP the factor of alternatives and criteria may vary but still using the same flowchart.

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APPENDIX A

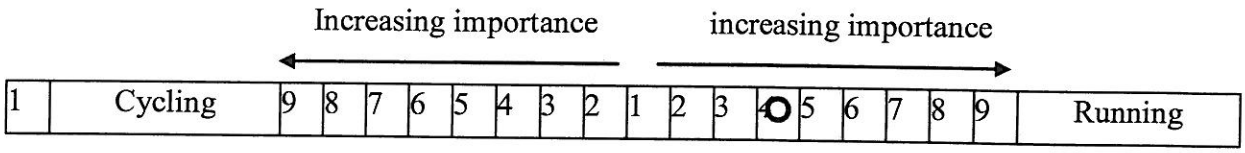
QUESTIONNAIRE

PLEASE EXAMPLES BELOW

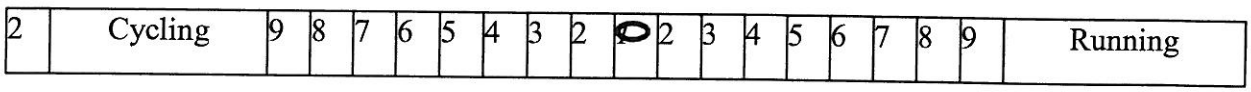
Please mark or circle the criteria number (code) that you assess more or equal important than other, with respect to the goal: "selection of career after graduates of Ump students" and express on the verbal scale the importance of the more or equal important criteria over the other. You can use mark (*X*) or circling (*O*) the answer.

Example

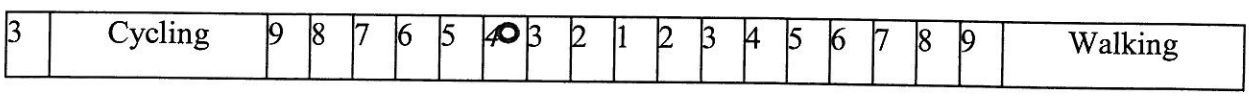
If you mark or circle "4" in the following question, means that "Running" is 4 times more important in your expert opinion than the "Cycling."



Conversely, marking or circling the number "1" in the following question, means that "cycling" is as important as "Running."



Moreover, marking or circling "4" in the following question means that "Cycling" is 4 times more important than the "Walking."



BAHAGIAN A: Demografi

PART A: Demography

Silatandakan(√) satujawapandaripadasetiapsoalan yang telahdiberikan

Please tick (√) one answer from each question is given.

1. Jantina/Gender

1) Male ☐ 2) Female ☐

2. Umur/Age

1) Under 19 ☐ 2) 20-21 / 20-21 ☐

3) 22-23 / 22-23 ☐ 4) 24-25 / 24-25 ☐

5) Over 25 ☐

3.Bangsa/Race

1) Malay ☐ 2) Indian ☐

3) Chinese ☐ 4) Others ☐

4.Status Perkhawinan/Marital status

Single ☐

Married ☐

5.Fakulti/Faculty

1) Kejuruteraan Kimia &SumberAsli ☐

2) KejuruteraanAwam&SumberAlam ☐

3) SistemKomputer&KejuruteraanPerisian ☐

4) Sains&TeknologiIndustri ☐

5) Teknologi ☐

BAHAGIAN B: KRITERIA

PART B: Criteria

Question1. Please mark or circle the criteria number (code) that you assess more or equal important than other, with respect to the goal: "factor of selecting career after graduates."

Increasing importance ← → increasing importance

1	Work Characteristic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Personal Preferences
2	Work Characteristic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Job training proces:
3	Personal Preferences	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Job training proces:

Personal Preferences

		Increasing importance									increasing importance								
1	Role Model	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Personal Aptitude
2	Role Model	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Societal and Family Expectations
3	Role Model	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Growth Prospects
4	Role Model	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Contacts in the Field
5	Personal Aptitude	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Societal and Family Expectations
6	Personal Aptitude	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Growth Prospects
7	Personal Aptitude	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Contacts in the Field
8	Societal and Family Expectations	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Growth Prospects
9	Societal and Family Expectations	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Contacts in the Field
10	Growth Prospects	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Contacts in the Field

Job Training Process

		Increasing importance									increasing importance								
1	Specialisation Requirements	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Related Internship/project
2	Specialisation Requirements	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Development period
3	Development period	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Related Internship/project

Job Characteristics

		Increasing importance ←									increasing importance →								
1	Future Income	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Prestige of Job
2	Future Income	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Independent Practice/setup
3	Prestige of Job	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Independent Practice/setup