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Research paper

Investigating Undergraduates' Perceptions on Employability Skills in the UAE: an Analytic hierarchy Process Model in Engineering and Business Students

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Abstract

This study aims to provide a platform of undergraduates' employability skills in non-Western context, specifically, in the UAE. Undergraduates who have completed 90 credit hours of the courses in bachelor studies from business and engineering colleges was randomly sampled in the biggest private university in Abu Dhabi. Questionnaires were distributed with an explanation of the purpose of the elements in the questionnaire to propose an AHP model for employability skills. Consistent with prior studies, communication skills, teamwork, problem solving, and technology was found to be significant and are considered as the upmost important employability skills for business and engineering undergraduates. The significant of the study is also discussed.

Keywords: *Employability; Skills; AHP; Undergraduate students; UAE*

1. Introduction

Economists and policy makers have documented the economic role of human capital as part of cost benefit analysis to measure the value-added of competitive advantages in businesses for decades [1]. Similarly, education has been seen as the fundamental of the human capital development. Researcher views educational system as an effective vehicle for producing the skills set required by a specific country-based sectors and industries; particularly to maintain growth in the economy. The versatile effect of education on planning, developing, establishing and polishing undergraduate students to possess a specified skills set is vital for policy framework in developing counties.

Most of the previous studies on investigating graduates' or undergraduates' perceptions on employability skills have been conducted in western countries and very few were in the Arab world [1]. Recent studies argued that graduates in Gulf Cooperation Council (GCC) member states have lack essential work related skills such as teamwork and communication skills (e.g. [2, 3, 4]). Therefore, it is required to examine undergraduates' perceptions in non-Western context, specifically, in the United Arab Emirates (UAE).

In the context of the UAE, the government of Abu Dhabi, took the commitment as part of its economic vision 2030 to focus on four key priorities and one of them is Social and Human Resources Development. The initiative emphasizes on mismatch skills and knowledge between education and labor market demand amongst Emirati; involving series of education reform to address the skill gap and to ensure the supply of suitability qualified employees to meet the shifting requirements of the private sector [5]. It was reported that Abu Dhabi Emirate has more than 25 percent deficit in labor market demand over higher education specialization supply in the area of business and engineering [6]. With over-supply of administration, sciences, and humanities, and law specialization; the government of Abu Dhabi set a target to reduce unemployment among the national population to 5% by the year 2030 [5], which indicates the importance of employability skills of business and engineering undergraduates. This study will be a platform to further understand the business and engineering undergraduates' employability skills in the context of the UAE; specifically Abu Dhabi Emirate. This study will investigate business and engineering undergraduates' perceptions towards employability skills in the private university in Abu Dhabi through the implementation of Analytic Hierarchy Process (AHP) model. The following section is a review of the relevant literature focusing on employability skills for business and engineering undergraduates. Then, the results and analysis followed by conclusion and limitations.

2. Literature Review

Employability has becoming one of the important issues in different sectors in the UAE and considered as one of the major topics among advanced economies. It was explained that employability has been given different interpretations that may vary from a simple meaning of getting employed to more in-depth scholarly definitions [1]. According to [5] employability is about having the capability to gain initial employment, maintain employment and obtain new employement if required. [2], [3] have agreed that concern on employability becomes more critical when it related to undergraduate; even though some have understood employability from more conservative perspective that detached from modern thinking.

The concern on employability becomes more critical when it relates to business and engineering undergraduates. Even though western countries have shared the same concern, however, the

socio-demographic differences provide a distinctive perspective due to employability-related support system [7]. Earlier studies contended that stakeholders in higher education must prioritize their action plans in order to enhance graduate employability [1, 8, 9]. This includes series of studies to explore and test the effectiveness of strategies to enhance employability skills and the key themes emerged from the investigations. Although with the inclusion of employability-related support in undergraduate programs; the challenges in predicting the needs of employers of the future and the gaps between university's strategies, student's perceptions, and realities have yet to be research due to the dearth of studies that have been conducted in the GCC; specifically, in the UAE. Thus this study is emphasizing on exploring the student's perceptions of generic skills or disciplinary skills required to be employed and sustained in business and engineering sectors in Abu Dhabi.

Studies conducted in Japan and Australian on employability skills of business undergraduates found that communication, teamwork, problem-solving and technology savvy have gain attention as vital skills required [8, 9, 10]. However, [10] contended that further assessment of core skills set in business sector is required to recognize the demanding and new skills set within the context of knowledge, different competencies block and essential abilities. Studies found that employers place more emphasis on soft skills of undergraduates combined with the ability to deal with job demands [1, 3, 4]. On the other hand, evidence suggested that business undergraduates have unrealistic expectations in the volatility business environment and stereotypically absence of interpersonal skills. Consistent with study by [11] that realized the value of hard business-related knowledge and skills, the usefulness of soft-business-related-skills and competencies and work experiences are vital.

Later study by [7] established the significant variations exist between the percpetion of business undergraduates and employers on the importance skills set in particular business and technical skills in the industry. It was concluded that attitudinal change is needed when step foot into job market. Employers expectation of fulfilling responsibilities and meet their appointments at work is greater than before. However, not much attention has been given students awareness on the expectation of the current job market. Earlier studies have empirically evidenced that business knowledge, business-related skills and abilities are desired by employers, however, these generic requirement only meant for entry-level business employee. Sophistication in displaying the capacity to work in groups, demonstrating leadership capability and charisma, commitment and being innovative are then mandatory to sustain employment or to climb the employement ladder [11]. Being at the management level, an examplar verbal expression, presenttaion skills, listening skills and keen on instructions are paramount.

Different studies indicated that engineering undergraduates should focus on hard skills and engineering related skills set. Unlike business-related students, engineering sector requires more technical knowledge, skills and abilities [12]. The study conducted on engineering undergraduates has proven differently. It was proven that that identifying problems, identifying essential components of the problem, prioritizing problems, adapting to situations of change, verbal communication skills are perceived important by potential employers [4]. Study established that problem-solving, time management, working on a team, effective communication, critical thinking and strong interpersonal skills are very desirable by employers even in engineering sector [13]. [3] evidenced that engineering undergraduate are equipped with skills like interpersonal, communication, problem-solving, technology, and decision-making and management skills; however, the utilization of the skills are limited based on the nature of work and industry.

Prior study recognized that challenging engineering sector effects engineering undergraduates' skills set [10], but the consequences of this effect will be only value when it reaches the management hierarchy in the organization. Even though much benefit were given to engineering personnel to switch from technical to management job as part of dual-career ladder initiatives; the inattentive of interpersonal skills that valuable in soft-management-related skills will create an inevitable skills gap that are much difficult to be rectified. Employers placed greater weight on the ability of undergraduates to demonstrate their responsibilities during the interview session, but the less emphasized given for them to exhibit their soft-skills [9]. It also showed that undergraduates in engineering fell short of the ability in beyond the scope of hard engineering skills at workplace [8].

This evidence have highlighted the value of hard-related knowledge and skills, the usefulness of soft-related skills and competencies assisted with significant years of work experience are vital aspects of employability prospects. It is important to establish the significant variations that exist between the perception of students and expectations of employers on skills set in business and engineering in the industry. Employers placed greater emphasis on the ability of students to fulfil their responsibilities and meet their appointments [9], while students fell short of the ability to fulfil the responsibility, manage time and improve on knowledge upon graduation [8]. The awareness between the expectation of employers and perception of students offers a platform for skills development opportunities at the university level to meet the expectation of the current job market. It is proven that the need to display the capacity to work in groups, demonstrate leadership, commitment, and initiation, supported by perceived verbal expression, presentation skills, listening and keen on instructions to be paramount competencies desired by employers [12].

Consistent with earlier studies that argue soft skills and hard technical vocational skills are becoming more important [13, 14]. Employers found to rank soft skills are the most sought-after skills for undergraduates than hard technical skills for the purpose of employability [15, 16]. Communication skills are the most influential and required skills for undergraduates and teamwork skills ranked as second and professionalism as third [16, 17, 18]. Table 1 summarized the criteria and sub-criteria from the literature.

Table 1: The criteria and sub-criteria

Main Criteria	Sub Criteria	Authors
Communication (COM)	1. Oral communication (COM1) 2. Written communication (COM2)	[3, 4, 7, 12, 16, 17, 18]
Teamwork (TW)	1. Effective as team member (TW1) 2. Effective as team leader (TW2)	[7, 12, 13, 14, 16, 17, 18]
Problem-solving (PS)	1. Identification of problems (PS1) 2. Development of practical solutions (PS2)	[3, 4, 7, 13, 14, 15, 18]
Technology (TEC)	1. Being competent in using relevant technology to workplace (TEC1) 2.Being competent in the use of information technology (TEC2)	[3, 7, 13, 14, 15, 16]

3. Model and Analysis

All 131 undergraduates from business and engineering colleges were randomly sampled in the biggest private university in Abu Dhabi; completed 90 credit hours because they have experienced most of the courses offered in undergraduate studies. The data were collected via distributing the questionnaires with an explana-

tion of the purpose of the elements in the questionnaire to propose an AHP model to measure the business and engineering undergraduate student's employability skills in the context of private universities in the UAE.

Figure 1 illustrates the steps for this study. After defining the problem, the hierarchical structure was developed as shown in Figure 2. This study applied a nine-point scale for a pair-wise comparison for the criteria [19], in which if a participant, for instance, evaluated Communication Skills (COM) as strongly important than Technology Skills (TEC), then they are rated '5' and '1/5' respectively. This is applied for the rest of comparisons as well. Consistency index and consistency ratio were utilized to measure the pattern of employability skills possess by the undergraduates.

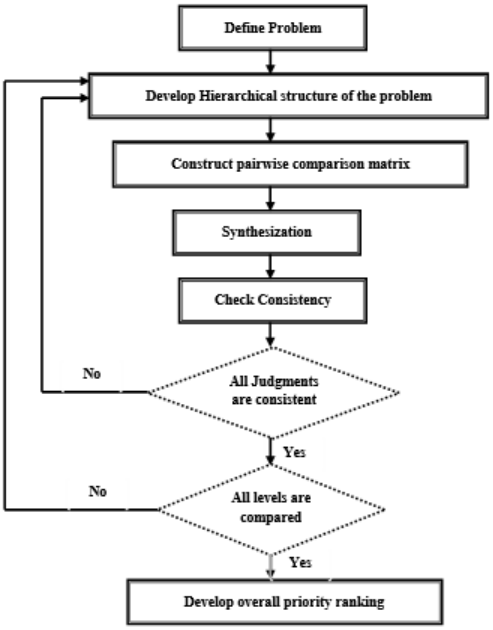

Figure 1: Outline of AHP step in this study

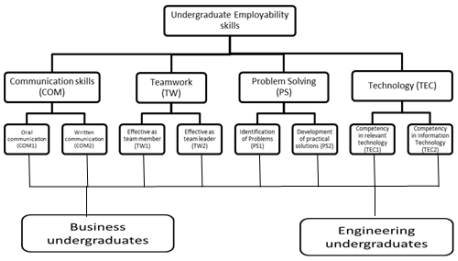

Figure 2: AHP Model of undergraduate employability skills

The developed model in this paper (Figure 2) targets the undergraduate perception on employability skills. According to the reviewed literature, four main skills were found as criteria which are communication skills, teamwork skills, problem solving and technology skills. Each criteria has two sub-criteria that are, respectively, Oral communication, written communication, effective as team member, effective as team leader, identification of problems, development of practical solutions, competency in relevant technology, competency in information technology.

4. Results and Discussion

Results show that the consistency of responses for both business and engineering undergraduates was within the acceptable range of consistency ratio. The business undergraduates perceived communication skills as the most important employability skill with a priority weight of 50%.; followed by teamwork (33%), problem-solving (12%) and technology (5%). For clarity, pair-wise comparisons were conducted for the sub-criteria. It was evidenced that business undergraduates perceived Oral Communication (COM1) as more important than Written Communication (COM2) with priority weight of 88% and 13% respectively. The similar patterns were proven for team work (TW); team member (TW1) having 86% in comparison to effective as team leader (TW2) for 14%; problem solving (PS); ability to identify problems (PS1) with 83% over ability to develop practical solutions (PS2) with 17%; and technology (TEC); competency in using relevant technology (TEC1) with 80% over competency in information technology (TEC2) with 20% priority weight.

In contrast, engineering undergraduate's perceived communication skills are the most important employability skill with a priority weight of 43%; followed by teamwork, problem-solving, and technology with 37%, 15%, and 4% respectively. A pair-wise comparison on sub-criteria shows that COM1 was perceived extremely important (83%) than COM2 (17%). Consistent with results from business undergraduates, TW1 is superior in comparison to TW2 with a gap of 50%; PS1 with 80% over PS2 with 20%, and TEC1 having 88% over 13% of TEC 2 in priority weight.

These results are consistent with prior studies that found communication skills, leadership, and technology savvy are considered as the utmost important employability skills across sectors (e.g. [3], [4], [7], [18]). Even though most studies have highlighted leadership skills in comparison to teamwork and problem solving in their studies, [7] explains teamwork and problem solving are the significant determinants of leadership. Thus, it should be measured separately to ensure potential employees would be able to deal with real-world issues. A recent study by [12] suggested engineering college should give more emphasized on interpersonal skills and communication as a value-added to the engineering undergraduates' competencies set. These competencies set has gained demands in the loosely-coupled and egalitarian structure matrix of organizations because interpersonal skills and communication are perceived as the competitive value that has significant investment value towards business sustainability

5. Conclusion

The UAE education system has undergone stages of reformation; however, the tertiary education system still inclined at preparing students to attend the public sector employment; which greater weight in humanities. Thus, the skills set provided in the tertiary education is much skewed into non-business and non-engineering fields. The young graduates have traditionally been attracted to the public sector because it has offered higher wages, job security and social status. This employment trend has limits the employment competitive advantage; created surplus of undergraduates with humanities background; rather than business and engineering fields. With the pragmatic skills set that foreseen to have economically competitive, undergraduates must undergone series of workplace experiences to unlock the skills sets and to adapt to the situation.

Although this study has provided a fundamental understanding and comparison between business and engineering undergraduates using AHP, further studies should be conducted to explore more criteria of employability skills. Future study should be looking into the skills set expected by the employer and the extent of these skills set to provide an employment path to the undergraduates in the UAE. This is important, as the expectation of employers may be vary from the perception of the undergraduates. Thus, aligning between the perception and expectation between the user and provider must be sought to highlight the gap in skills requisition.

Furthermore, the interest of undergraduates that have been mold from the education system must be evaluate as employment opportunities are largely comes from private sectors. To remain competitive, undergraduates must starts to create interest to seek for employment in business and engineering related field. With skills of critical thinking and problem-solving, decision-making, initiatives, creativity, innovation, collaboration, flexibility, leadership and responsibility as a benefit to the fundamental skills set, high skilled workers will be produce to match the quality of education system.

As the requirement of the industries is changing due to the requirement of business sustainability, thus, the criteria of employability are tended to change aligned with the political and socio-economic conditions of industries in specific countries. Socio-demographic factors that defined the structure of culture and norms of a society should also be considered as an important factor in the future study. These are imperative because it can provide a sound gold standard that can be used as a platform to conduct comparison studies to ensure the sustainability of business process in business and engineering sectors.

This study highlights the imperative aspects of opportunities and challenges that drive for a more sustainable and diversified economy will provide a prospect, as well as challenge, to create attractive, high value-added employment opportunities for the emerging population; the undergraduates. The skills set attained by business and engineering undergraduates via a quality upgrade in education system will increase the employability rate that matched the skill set demanded by prospective employers. This is important as the overall workforce signify the economy of UAE and will help to move the economy up the value chain. Better-educated workforce, equipped with preferred skills set will be a key enabler to address to the employment landscape.

With regard of training the next-generation workforce in the UAE is becoming increasingly important due to fast-changing technology landscape; closing the skills gap still be the top priority for between the supply (education sector) and demand (employers) parties. Even though employers were urged to increase their focus on adopting organizational capability to give their workers the right skills set to enable future growth; however, the skills set required for entry level before the undergraduates set foot into the organization's door is far important to be developed and acknowledge. Without the fundamental skills set; the undergraduates will not be able to adapt and drive new possibilities to respond effectively to rapidly evolving technology landscape and new business scenario. Undergraduates must be equipped and prepared with "adaptability-enabler-mode switch" to face the challenge of upgrading their skills set according to organizational capabilities and skills to enable future growth.

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