THE PROSPECTS OF TECHNOLOGY MANAGEMENT WITH ENTREPRENEURSHIP KNOWLEDGE GRADUATES IN THE MALAYSIAN LABOR MARKET

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ABSTRACT

The purpose of this research is to find out the prospect levels of Technology Management with Entrepreneurship knowledge graduates in the labor market from the perspective of the graduates and employers. The scope of the research involves several factors such as suitability of the program, difficulty in getting employed, rewards and satisfaction gained, chances of promotion, demand for graduates by companies or organizations, job suitability, and potential of graduates in developing the company. The results of this research was obtained using survey forms and also by informal interviews with the respondents. As a whole, the results of this research shows that the Technology Management with Entrepreneurship knowledge graduates are needed in the labor market. According to the feedback from graduates, the suitability of the program factor scored the highest tendency with a min score of 3.95 compared to other factors such as difficulty in getting employed, rewards and satisfaction gained and chances of promotion. The feedback from the employers shows that in general, the factor of demand for graduates by companies and organizations , job suitability and potential of graduates in developing the company were favored by them. Each having a min score of 4.14, 3.90 and 4.04. Steps to raise the level of prospects for graduates in the labor market are needed to be taken immediately so that the future of graduates, specializing in their own fields, from the research finding can satisfy the labor market. In conclusion, Technology Management with Entrepreneurship knowledge graduates have good prospects in the labor market from the perspective of both the graduates.

Keywords : *Technology Management with Entrepreneurship knowledge, graduate, labor market, prospects*

INTRODUCTION

The economic downturn in this country a few years back has had negative effects in the public and private sectors in terms of employment. This situation has caused graduates much difficulty in searching for suitable jobs. Thus, when the matter of prospects of graduates in the labor market arises, it is closely related to the course or program taken by the graduates at Institutes of Higher Learning (IHL). This is because choosing the right program at IHL enables graduates to get a job easier after graduating.

In general, the purpose of this research is to find out the prospects of graduates in Technology Management with Entrepreneurship knowledge in the labor market from two perspectives, from the graduates and from the employers. Besides that, this research is also to determine the overall prospects of graduates by factors such as suitability of the program, rewards and satisfaction gained, and career opportunities in the field. From the perspective of the employer, the research will take into account the views of the employer in terms of factors such as the importance and demand for Technology Management with Entrepreneurship knowledge graduates in the developing and managing the organization.

STATEMENT OF RESEARCH

The development of a country depends on the Institutions of Higher Learning of that particular country. IHLs are seen as centers to produce a skilled work force and also where and a person's intellect in cultivated so that he will have self confidence and courage of conviction to face up to the challenges in the working world (Abdul Halim, 1990). The role of IHLs are also as pillars to the development and management planning of human resources. A knowledgeable, skilled and trained worker can contribute to the economic, social, and political development of a country (Zulkifly Mustapha, 1981).

A person who has skills not only has his future secured, but also ensures he can climb up the organization ladder. As a result of this growth, we need to focus on fields that are in great demand to face up to the

challenges of development so that it can be suited with the needs of the of the worker's current job requirements (Noran Fauziah & Wan Rafaei, 1993).

As the country is headed to becoming an industrialized nation, Malaysia needs to be equipped with suitable expertise in accordance to the changes and rapid development of technology. Technology cannot evolve without the necessary skill. Thus, Malaysia needs an adequate workforce trained in the technology field to expand its own technology.

Education, especially in the science and math stream is relevant to the development of technology but is still lacking far behind the social science stream subjects in terms of enrolment and graduates. For instance, at the bachelor's degree level, the number of graduates during the Fifth Malaysian Plan and Sixth Malaysian plan was less than 50 percent of the total enrolment. During the Seventh Malaysian Plan, the number of graduates in science and technology was just 43 percent although various efforts were taken by the government to increase the percentage of science and technology enrolment from 40 : 60 to 60 : 40.

The economic downturn that hit the country a few years back has contributed negatively to the global economic markets. This situation has further deteriorated after an uncertain post September 11 global market. Malaysia's open economic system has also resulted in the labor market to become highly competitive.

The whole of the 1990s, Malaysia has successfully utilized its workforce except for the economic crisis of 1997 to 1999. But ever since 2 or 3 year of late, the unemployment phenomenon has popped up. The first time Malaysia has ever encountered this situation was from 1985 to 1988, when the country faced an economic crisis as a result of the sudden drop of prices for major national commodities and also the dire public financial standings.

All dreads unemployment, and this includes fresh graduates. Until the end of 2001, fresh graduates from IHLs made up 13.1 percent of the total unemployment in the country. As many as 39,521 graduates or 5 percent of the total graduates were unemployed (Mingguan Malaysia, 21st July 2002). If this situation is prolonged, the efforts to restructure the economy of the country will be greatly hampered.

However, in 2002 the economy of the country showed growth and improvement. The economy grew 4 to 5 percent and the Growth Domestic Product (GDP) reached RM370 billion. This situation has increased the chances of employment to 9.8 million people in 2002 compared to 9.4 million people in 2001. Among the sectors that offered new job opportunities were manufacturing, construction, real estate and services.

The manufacturing sector is a major contributor to the GDP and also for the trade surplus for the country (Zulkifly Osman, 2000). This year as much as 46 percent or 57,700 from the total jobs offered are from the manufacturing sector (Laporan Ekonomi, 2002/2003). The demand for workers in the construction sector also increased. In 2001, vacancies in the construction sector were 9.2 percent and registered a positive increase in use of workforce as much as 2.3 percent in 2002.

For the real estate sector, as a whole, the market showed an upward trend with an increase of transactions from 63.9 percent in 1997 to 66 percent in 1998 (Laporan Pasaran Harta, 1998). Meanwhile, the growth of the economy saw an increase in demand from the service sector. In terms of maximizing the work force, there was an increase in the service sector from 32.7 percent in 1970 to 45.7 percent in 1990 and continued increasing to 50 percent in 1999 (Madeline Berma, 2000)

An article from a local daily, Utusan Malaysia, 28 January 2003 reports that there is no reason now for technical or skilled graduates to worry about obtaining a job. Technical or skilled graduates have great potential in being employed if they meet the criteria of the employers. From the facts and assumptions stated it clearly shows that Technology Management with Entrepreneurship knowledge graduates have great potential and good job opportunities in the future.

RESEARCH METHODOLOGY

This research was carried out using qualitative and quantitative methods. The qualitative method was carried out through informal interview sessions with respondents, while the quantitative method was

carried out by surveys among graduates and employers. All the respondents were required to fill up the survey forms by stating the degree of agreement on a scale of 5 using the Likert scale. The ratio of the scale depended on the items, whether it is a positive of negative statement.

The sample population was made up of Technology Management with Entrepreneurship knowledge graduates from University of Technology Malaysia (UTM) and University of Utara Malaysia (UUM), and also employers who employ these graduates in their organizations. A total of 44 respondents were involved in this study, 22 of them graduates while the remaining 22 employers.

The reliability of instruments was measured by Alpha Cronbach using SPSS (version 10.0) to obtain the reliability co efficiency. The outcome showed that the level of reliability was high for the graduates that are 0.8887, 0.7527, 0.6296, and 0.8643. Whereas for the employer was 0.8131, 0.9148, and 0.9219. This proves that the questions asked in the survey forms were clear and easy to comprehend.

ANALYSIS AND RESULTS *(QUANTITATIVE RESULTS)*

The surveys forms were divided into two where sections B, C, D, and E were for graduates while sections A, B, and C were for the employers. After the respondents used the Likert Scale to answer the questions, the data was collected and analyzed with SPSS version 10.0 based on the min score. The min value obtained from the respondents were used a measurement to place them in groups of high, average and low tendency in determining the prospects of the graduates in the labor market. According the Table 1, the measurement of tendency based on Landell (1997).

Table 1: The Tendency Level Based on the Min Score

MIN SCORE	TENDENCY LEVEL
1.0-2.3	Low
2.4-3.7	Average
3.8-5.0	High

Graduates' Perspective

The survey forms were divided into sections A, B, C, D, and E. In section A, respondents were required to fill in their personal details. Sections B, C, D, and E were on factors that should be taken into consideration in determining the level of prospects of graduates in the labor force.

Regarding the suitability of program factor, the data was analyzed based on the min score of several aspects. According to Table 2, the suitability of the Bachelor's Degree in Technology Management with Entrepreneurship knowledge (BDTM) has aided graduates of IHLs to acquire skills that help them in their career. Most respondents with the highest min score of 4.18 agree upon this statement. Meanwhile the response given by respondents that there is a correlation between the content of the program and the skills required in the working world had only an average tendency level with a min score of 3.73.

Table 2: Min Score for the Suitability of Program Factor

SUITABILITY OF PROGRAM FACTOR	MIN SCORE
Skills	4.18
Knowledge	4.00
Communication skills	4.14
BDTM curriculum	3.86
Working exposure	3.82
Industrial training	4.09
Application of skills and knowledge in work	3.86
Skills in the field of work	3.73
Suitability of post	4.05
Theoretical knowledge	3.86
Job comprehension	3.82
Program content	3.95

For the difficulty in getting a job factor, aspects that have been taken into consideration are as in Table 3. The respondents, response to the factor of difficulty in finding a job is at a moderate level. However,

respondents don't agree at all with the statement that there is difficulty in getting a job after they graduates; this scored a min score of 2.05.

Table 3: Min Score for the Difficulty in Getting a Job Factor

DIFFICULTY FACTOR	**MIN SCORE**
Difficulty in getting a job	2.05
Career opportunities	3.00
Jobs offered	2.86
Interview experience	2.73
Job Qualification	2.50
Job application response	2.71
Rejection of job application	3.10
Failing interviews	3.19

For the rewards and satisfaction obtained factor, it involves the aspect of salary and rewards in terms of promotion. From Table 4, we can see that the connection between salary increment and one's ability has the highest min score of 4.05. The lowest min score by respondents was on the aspect of dissatisfaction about promotion. The discontented respondents gave a min score of 3.00.

Table 4: Min score for Rewards/Satisfaction Gained

REWARDS/SATISFACTION FACTOR	**MIN SCORE**
Salary	4.00
Appropriate salary for academic level	3.82
Correlation between salary and ability	4.05
Extra pay	3.09
Underpaid for the job	3.32
Dissatisfied about promotion	3.00

The factor of pay increment includes aspects such as opportunities for promotion and to further studies. According to Table 5, most respondents stated that the opportunities for promotion are high. However, on the aspect of frequency for promotion, the level of contentment among respondents was at an average with a min score of 3.68.

Table 5: Min Score for Promotion Factor

PROMOTION FACTOR	**MIN SCORE**
Opportunities for promotion among graduates	4.00
Job assurance	4.09
Opportunities to further studies	3.86
Frequency for promotions	3.68
Opportunities for promotion at the work place	3.82

Table 6 shows the min score for factors which are taken into consideration when determining graduates' prospects in the labor market. The suitability of program factor has the highest tendency with a min score of 3.95. This is followed with the factor of chances for promotion with a min score of 3.89. The rewards and satisfaction gained, and difficulty in getting a job factors scored an average tendency level with a min score of 3.55 and 2.77 each.

Table 6: Overall Min Score by Graduates' Factor

GRADUATES FACTOR	**MIN SCORE**
Suitability of program	3.95
Difficulty in getting a job	2.77
Rewards/satisfaction gained	3.55
Chances for promotion	3.89

EMPLOYERS' PERSPECTIVE

The second section of the survey forms was for the feedback from the employers regarding the prospects of Technology Management with Entrepreneurship knowledge graduates in the labor market. The research focused on 3 main factors, they are : i) The demand for graduates from organizations ii) job suitability for graduates iii) the potential of the graduates.

The aspects involved in the factor of demand for graduates from organizations were directly related to the need for graduates and also Technology Management with Entrepreneurship knowledge in an organization. The results are stated in Table 7. In general, these aspects are in great demand from organizations as the min score exceeds 4.00.

Table 7: Min Score for the factor of the demand for

Technology Management with Entrepreneurship knowledge Graduates

DEMAND FACTOR	**MIN SCORE**
Demand for Technology Management with Entrepreneurship knowledge Graduates	4.05
Demand for Technology Management with Entrepreneurship knowledge	4.18
Demand for Technology Management with Entrepreneurship knowledge in managing the administration	4.18

From Table 8, most respondents agreed that the factor of job suitability was important. The skills acquired by the graduates at the varsity level were very useful their career in the organization. However, the min score for the aspect of curriculum for the Bachelor's Degree in Technology Management with Entrepreneurship knowledge (BDTM) was at an average score of 3.76. This goes to show that the curriculum by the university has not yet been able to meet the demands of the employers.

Table 8: Min Score for Job Suitability Factor

JOB SUITABILITY FACTOR	**MIN SCORE**
Skills	4.14
Knowledge	3.86
Communication skills	4.09
BDTM curriculum	3.76
Industrial Training	4.05
Application of skills and knowledge in work	3.82
Skills in the field of work	3.86
Suitability of post	3.82
Theoretical knowledge	3.82
Job comprehension	3.82
Understanding in the field of work	3.86

For the opinion of factors from employers about the potential and contributions from graduates towards the development of the company and organization, refer to Table 9. The potential in graduate factor has a high min score. We can see that the potential in graduates to help in the management of the company is a huge factor with a min score of 4.18. However, employers had a low tendency level when it came to the experience of graduates in their work.

Table 9: Min Score for the Factor of the Employers' Opinion Towards the
Potential in Technology Management with Entrepreneurship knowledge graduates

FACTOR	**MIN SCORE**
Contribution of ideas	4.09
Commitment	4.23
Assisting in the running of the company	4.18
Usage of skills	4.05
Able to bring a positive change	3.95
Contribute to the increase of productivity	4.09

Motivated	4.14
Knowledgeable	3.95
Adapt to work	3.86
Experience in the work field	3.73
Able to work in groups	4.14

The summary of the employers' point of view about the factors discussed is stated in Table 10. All the factors that were studied have a high tendency based on the min score results.

Table 10: Overall Min Score According to the Employers' Factors

EMPLOYERS' FACTOR	**MIN SCORE**
Demand for graduates in the organization	4.14
Job suitability for graduate	3.90
Work potential in graduate	4.04

QUALITATIVE RESULTS

The researcher also used qualitative methods to collect data for this research. According to (Meriam, 1998 extracted from Marohaini Yusoff, 2001) a qualitative research, the method normally used to collect descriptive data is through interviews. In interviews, the researcher can get explanations and further information about what was said (Patto, 1980 extracted from Marohaini Yusoff, 2001).

Below does the researcher from informal interview sessions obtain the results with the respondents? The results can be categorized into two sections, the perspective of the graduate as well as the perspective of the employer.

GRADUATES' PERSPECTIVE

Graduates feel that the duration for industrial training should be extended *(…… the duration of industrial training should be extended from the current length, that is from 3 month to 6 months …… more skills and experience can be obtained ……")*. They feel that industrial training exposes them to the real working world *("…… well actually, industrial training doesn't help graduates to apply all that was taught at university …… helps us to broaden our thoughts so that we can later on adapt easily to the real working world ……")*.

They also stated that the teaching and learning programs should be more focused towards the practical side compared to the theory *("… the curriculum program should be more focused towards the practical side compared to theory according to the majoring of graduates …… emphasis on management disciplines, engineering technology, information and communication technology (ICT), science and mathematics, and humanities……")*.

One method suggested by the graduates was to adapt the program to make it a better success *("…… emphasis should be placed on 3 aspects, they are skills, knowledge and behavior …… skills and knowledge is greatly needed by the country as we are heading towards globalization, being orientated in information and communication technology (ICT) …… behavior refers to the way a graduate builds his confidence and never misses out on opportunities or has strong self initiatives …… increasing the skills and knowledge necessary in their fields*……"). A graduate should also have effective communication skills *("…… needs more exposure on the way to communicate effectively …… able to communicate will all levels of superiors or subordinates ……")*.

On the whole, Technology Management with Entrepreneurship knowledge graduates state that the prospects for them in the labor market is fair *("…… the prospects for this program is fair …… job opportunities are abundant in the private/public sector in management and at executive levels according to what field they specialized in ……")*.

EMPLOYERS' PERSPCTIVE

Employers suggested that exposure and promotions about the Technology Management with Entrepreneurship knowledge program should be carried out as the general population is still uninformed

about the program *("…… promotions is needed to give a clearer and more precise picture …… inform the employers and those who are interested in this field ……")*.

In addition, the employers also touched on the link between the program and the graduates' field of work *("…… not all that is learned by the graduates is applied in their work ……depends on the compatibility between the course taken and the field of work in the industry ……")*.

A number of employers feel that graduates lack experience *("…… inexperience in the work that they do ……they are fresh graduates and only first time on the job ……")*. There were also some employers having trouble employing Technology Management with Entrepreneurship knowledge graduates *("…… the program is new …… lack of understanding of the program is really about, the prospects and where to place these graduates are also unclear …… graduates take a long time to explain their course during interviews ……")*.

Generally speaking, employers are satisfied with the participation of graduates in the developing of the company and organization *("…… the graduates are able to contribute ideas, are highly committed in developing the company, and have strong motivation to carry out work…… fast in adapting themselves to the work situation……")*.

SUGGESTIONS

After having done the research and obtaining the results, the researcher has come up with several suggestions that can be applied by the Technology Management with Entrepreneurship knowledge Faculty in producing graduates that can meet the demands of the labor market. This is because the researcher feels that he is obligated to take the initiative to increase the quality of future graduates that will be creative, innovative and competent.

Stated in an article in Berita Harian, 7th August 2002, was a call to all Public Institutes of Higher Learning (PIHL) and Private Institutes of Higher Learning (PIHL) to send their undergraduates for industrial training so that they can be exposed and understand the needs of a real market. Besides that, the purpose of industrial training is also to broaden the undergraduates' knowledge in skills and work (Tiffin & McCormick, 1975). Most of the feedback from the respondents suggests that the period for industrial training should be extended because they cannot learn much in such a short period at present.

To equip the graduates with skills before stepping into the working environment, they should be first exposed to effective communication skills. The content of the curriculum should also be more towards the aspects of ICT applications. This is in line with the faculty's hope of becoming a faculty that excels and is the forerunner in Technology Management with Entrepreneurship knowledge.

An abstract from Berita Harian, 7th August, 2002, Datuk Seri Abdullah Ahamad Badawi in his speech at a Seminar between industries and Public Varsities called out to all local universities to reevaluate the courses that they offered to ensure that graduates are exposed to matters such as the English Language, ICT or economics as an elective subject. He hoped that this can bring in job opportunities for them in the private and public sector.

As the Technology Management with Entrepreneurship knowledge program is new, the researcher feels that there should be a mechanism that is responsible in promoting the program and its prospects to the public. Through the spreading of information, awareness will be created to all parties especially the employers in hope that they would give opportunities to these graduates who are seeking jobs to work in their organizations.

Besides that, the researcher believes that the undergraduates should be active in co-curriculum activities as it helps them develop leadership skills, group work ethics, communicate with the public and make them matured in thinking and responding. These elements are a bonus to graduates who seek jobs even though they have no prior working experience as they are equipped with skills based on earlier on co-curriculum activities at university.

CONCLUSION

Even though Technology Management with Entrepreneurship knowledge has just started expanding in this country, the labor market prospects in this field is getting wider with the creation of new job opportunities by the manufacturing, construction, real estate, and services sector. The results of this research, from the perspective of the graduates, shows that the suitability of the job and chances for promotion were contributing factors in determining the prospect levels for graduates in the labor market. Meanwhile, from the perspective of the employers, the factors of demand for graduates with a Bachelor's Degree in Technology Management with Entrepreneurship knowledge in developing the organization, job suitability for graduates and graduates' work potential were the main factors in determining the prospect levels for graduates. On the whole, the research results show that Technology Management with Entrepreneurship knowledge graduates have a big labor market in the Technology Management with Entrepreneurship knowledge field. Thus, it is hoped that future Technology Management with Entrepreneurship knowledge graduates that specialized are in their own fields, can meet the demands of the labor market.

References

Abdul Halim Othman (1990). "Pre-Employment Training Activities in a University
Setting: It's nature, issues and challenges". Pembentangan kertas kerja di Seminar Kebangsaan PSIMA kedua.

Landell, K. (1997). "Management by Menu". London: Wilay and Sms Inc.

Madeline Berma (2002). "Pengurusan Sektor Perkhidmatan di Malaysia: Cara memanfaatkan persejagatan ekonomi". Penerbit Universiti Kebangsaan Malaysia, Kuala Lumpur.

Marohaini Yusoff (2001). "Penyelidikan kualitatif: Pengalaman kerja lapangan kajian". Penerbit Universiti Malaya, Kuala Lumpur.

Mc Cormick, E.J dan Tiffin, J (1975). "Industrial psychology, edisi keenam". London: George Allen dan Unwin Ltd.

Md Zhahir Kechot & Mansor Jusoh (2000). "Ekonomi Malaysia: Menghadapi & Menangani Cabaran". Penerbit Universiti Kebangsaan Malaysia, Kuala Lumpur.

Noran Fauziah Yaakub & Wan Rafaei Abd Rahman (1993). "Siri Psikologi Organisasi: Sumber Manusia dalam Organisasi". Dewan Bahasa dan Pustaka, Kuala Lumpur.

Zulkifly Hj Mustapha (1981). "Latihan dan Permintaan Kerja: Satu Tinjauan dari segi Perkembangan Tenaga Manusia". Kertas Seminar Psikologi dan Masyarakat Kedua.

Zulkifly Osman (2000). "Pertumbuhan Didorong Produktiviti. Ekonomi Malaysia: Menghadapi & Menangani Cabaran". Penerbit Universiti Kebangsaan Malaysia, Kuala Lumpur

Berita Harian, Graduan Diminta Tingkat Kemahiran. 7 Ogos 2002.

Mingguan Malaysia, Wanita Melayu Lebih Cerdik Tapi Tidak Isu Pengangguran Mendapat Kerja Siswazah. 21 Julai 2002.

Laporan Ekonomi, Permintaan Tenaga Buruh Meningkat. 2002/2003.

Laporan Pasaran Harta 1998, Edisi Kedua Puluh Satu. Jabatan Penilaian dan Perkhidmatan Harta.

Utusan Malaysia, Lepasan SPM/STPM: Panduan Pilih Masa Depan. 28 Januari 2003.