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## Influential factors to pursue doctorate degree in Malaysia

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### Abstract

The production of doctorate graduates is important for new knowledge economy. In Malaysia, doctorate holders are still relatively small. Thus, there is a vital need to look into ways to boost up the number of admission and production of doctoral graduates. This study examined the underlying determinants for the choice of pursuing a doctoral degree? Using both quantitative and qualitative data from 888 and 7 usable responses, the study found the contributing factors to attract individuals into the doctorate program were (1) Opportunity; (2) Personal attributes; (3) Working Relevant Knowledge; (4) Financial support; (5) Program structures; and (6) Social Support.

*Keywords:* Doctoral degree; Influential factors; Opportunities; Personal attributes; Working relevant knowledge; Financial support; Program structures; Support.

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### 1. Introduction

The production of PhD graduates is of vital importance for new knowledge economy. Malaysian government today emphasizes the importance of investment in knowledge creation, knowledge dissemination and knowledge capacity in order to generate wealth, sustain current living standards and provide continuing public access to a wide range of quality services. Its core idea is that future economic performance will be closely based on the skill and innovation level of the labour force, underpinned by effective research and R&D capacity. In Malaysia, PhD holders are still relatively small compared to other developing countries. In 2009 the number of admission into doctoral programs in Malaysia was 4,942 with total enrolment of 16,947 and number of graduate for that year was 750 for both Public and Private University (Mohe 2010).

Due to an increasingly competitive global driven economy and the need for availability of highly inventive and resourceful talent pool with extensive research training in the work force, there is an urgent need for Malaysia to increase many more doctoral degree holders. The private sectors need for highly competent manpower to drive their research, development and commercialization is also another evidence for Malaysia to boost more research experts through competent doctorate degrees. The low number of research development and commercialization, publication and patent in Malaysia as compared to other developing countries like Korea and Taiwan is evidence on the needs for more doctorate degree holders in Malaysia (Mohe 2010).

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Specific issues related to doctorate degree have been discussed by many academics and the Ministry of Education, yet empirical evidence are still in isolation and relatively scanty on why the number of qualified doctorate holder in Malaysia is still small in comparison to the needs and other countries. Previous case studies had identified five main issues related to doctorate degree on selected higher education institutions in Malaysia. It included (1) admission to doctoral programme (e.g. length of time, selection process and supervisors acceptance criteria); (2) career development; (3) supervisor; (4) facilities and equipment availability; and (5) completion rate. (Mohe 2009) The present research therefore aims to extend the previous findings via empirical investigation on the current scenario of Malaysian Public universities in response to government agenda. This study revealed the views of the potential PhD, candidates, graduates and faculty members towards the doctoral programs in Malaysia in terms of their motivation factors to embark into doctorate program.

## **2. Related Literature Review**

Opportunity/rewards which refer to higher salary scheme, potential for promotion, higher potential wages, wider job opportunity, leading to better career and professional career attractiveness were rated the highest by the respondent in the present study. This indicates that the demand for doctorate program is highly influenced by this factor. Applicants will apply for doctorate program if they perceive that having doctorate degree will offer them such opportunity or rewards. Social support is a determinant of a person choice to perform certain behaviour (Kampuis 2007). There are several groups that can be distinguished as being important factors of social support, namely parents and family, friends, lecturers, mentors, and counselors. Social support in this study referred to moral support or encouragement. Rudd (1986) in his study discovered that individuals' attributes such as self satisfaction, self-motivation and self-achievement were the motivational factors which influenced individuals to pursue PhD/Doctorate degree. Tennant (2004) indicated that people would pursue the degree if it is required for their job and career development.

## **3. Methodology**

This study utilized random sampling method in which respondents were selected from the list provided by post graduate office in every Malaysian Public Universities. Data were gathered using a set of self construct questionnaires based on literature. Factor analysis and reliability test were utilized to identify the relevant factors or variables and to determine the validity and reliability of the instrument. Eight hundred eighty eight respondents or 69% of them completed and returned the survey questionnaires in this study. The data were analyzed using SPSS 16.0 and seven faculty members were interviewed to validate the quantitative findings.

## **4. Findings and Discussions**

Based on the previous study done in Malaysia (Mohe 2009) three main factors that attracted Malaysians to pursue doctorate degree were identified namely financial aid, careers and career development and attractiveness of the programs and professors. However, based on 30 questions asked in the present study related to determinants to pursue doctorate degree, the statistical analysis using factor analysis and reliability test found that the questions/items were loaded into 6 components. The components were grouped into (1) Rewards/opportunity; (2) Personal-attributes; (3) work related knowledge; (4) Financial support; (5) Program structures; and (6) support/encouragement. These six factors highly influenced the respondents in pursuing their doctorate degree as all means were rated above 4.67. All in all, opportunity/rewards (mean=6.03) were rated the highest, followed by personal attributes (mean=6.00); Working related knowledge (mean=5.64); Program Structure (mean=5.35); support/encouragement (mean=5.20) and lastly Financial support (mean=5.02).

Table 1: Influential factors to pursue doctorate degree

Variables	N	Mean	SD
Rewards/Opportunity	888	6.0262	1.06746
Attributes	888	6.0016	.87323
Work Knowledge	888	5.6352	.92183
Program Structure	888	5.3491	1.14002
Support	888	5.1965	1.89179
Financial Support	888	5.0244	.90484

### **Opportunity/Rewards**

The findings were consistent with Park (2003) and Ehrenberg (1992), who suggested that higher salary or higher potential wages offered to those holding doctorates degree attracted students to pursue doctorate degree. Along the same vein, Enders (2004) found that professional career attractiveness influenced people to pursue doctorate degree.

Similarly, the qualitative findings supported that “open job prospect for PhD” will motivate students to pursue for doctorate degree. Some faculty members agreed that reward will enhance individual to pursue doctorate degree. It must start from the government sectors and the private sectors will follow.

*“Government must offer some rewards. In industry no tangible rewards that’s why they are not doing their phd. Better salary scheme in civil service. Government does it, industry will follow. They have social obligation/responsibility. Have to break the colonial system. Salary scheme has to be improved based on the qualification.... Teachers can earn more if they have phds”.*

### **Personal attributes**

Rudd (1986) in his study discovered that individuals’ attributes such as self satisfaction, self-motivation and self-achievement were the motivational factors which influenced individuals to pursue PhD/Doctorate degree. Similarly, the study, found that students’ personal attributes such as intellectual satisfaction and high self achievement contributed to their motivation to pursue for a doctorate degree. Those who enjoy studying will also choose to pursue doctorate degree. Faculty members interviewed stated that maturity, commitment and independence are important attributes of a doctorate candidate.

*“I think maturity of the student is important, so is commitment. Good IQ does not necessarily be a good PhD. If they are independent, they can be categorized as matured. They know what they want and what they do.”*

### **Working Related Knowledge**

Some faculty members interviewed feel that having a PhD is only relevant to academicians in the university. There is a grave concern as to where the future 60,000 PhD holders are going to be allocated. Two respondents provided their views in relation to this.

*“PhD degree is not very much relevant to most industry especially manufacturing and servicing that need more technical and professional skill rather than theoretical knowledge. Moreover, most of the jobs in the industry don’t require a PhD except administration and higher position (just to be proud of the title) -There is no difference in salary even though they have a PhD.”*

Relevancy of knowledge to the working environment is very important to influence individuals to pursue doctorate degree. The findings of this study found that working knowledge or relevance of knowledge to working environment is among the influential factors that motivate individuals to pursue doctorate degree. This argument was supported by Tennant (2004) as he indicated that people would pursue the degree if it is required for their job and career development.

### **Doctoral Program and Structured**

Ehrenberg (1992) argued that, having a proper doctorate program structure and guidance induced attractiveness for doctorate program application. Therefore Malaysian university should diversify its doctorate degree by offering different structure of doctorate programs. Findings from the present study found that doctorate structure (traditional PhD, professional PhD, and etc.) and programs influence individuals to pursue doctorate degree. This finding is supported by the research qualitative results in which the respondents stated that:

*“Flexibility of the program will induce student to apply – university should offer varieties of doctorate program like DBA or other programs for other than academicians. Now doctorate program is very much focusing for academicians not the practitioners. Other doctorate program should be less research oriented and should be focused in generating competence individual in many fields not just ONE specific field like what our PhD programs are now”*

### **Support and Encouragement**

Social support is a determinant of a persons choice to perform certain behaviour (Kampuis 2007). There are several groups that can be distinguished as being important factors of social support, namely parents and family, friends, lecturers, mentors, and counselors. Social support in this study referred to moral support or encouragement. The study found that encouragement is one of the dimensions that may influence individuals to pursue doctorate degree. This finding was supported by Freedman (1997), Stake & Mares, (2005) and Stake & Nickens (2005) who argued that those who are in sciences need more inspiration and role model to pursue doctoral degree for different reasons. According to Ajzen (2006), conversations about positive experiences can help to motivate those who want to pursue doctorate program as learning about these experiences can cause them to change their beliefs about pursuing a doctoral program, thus changing their attitude about the subject. This argument is in accordance with one of the faculty members interviewed in the present study. He reaffirmed that,

*“The art of encouraging doing PhD is the lecturer – to inspire student to pursue at the highest level should begin at secondary and tertiary level. Teachers and lectures are the individuals who plant the seeds and develop the future leaders. They should be the role model and develop the excitement of discovering, enjoy going into the unknown, finding new things, and wanting to be a scientist”*

### **Financial Support**

Financial support and availability were found to be the least influencing factor on students’ decision to pursue their doctorate degree. These findings are inconsistent with Ehrenberg (1992), who proposed to increase financial support for graduate students as part of the policies to avert PhD/doctorate shortages. The interview findings from the faculty members however found contradicting opinions. Three of the faculty members from S&T argued that funding is very important but the other four from Science Social disagreed. Those in favor of funding emphasized the following views.

*“For S&T must be adequately funded. Government need to allocate fund. If government can allocate fund, many people will want to do PhD, especially in overseas. For me, funding is very important. It is the main factor. More research grants for universities especially in sciences as conducting the research is expensive. It cost a lot in terms of chemicals, equipments. Nowadays supervisors have to get grant then they will be able to get students without grant, it is difficult to get students to study with them”*

Tinto (2003) however claimed that “while finances matter, it is not clear that they matter in the same way at different stages of the doctoral completion process.” Four of our respondents agreed that funding is needed but not important enough to influence individuals to pursue for doctorate degree.

## 5. Implications and Conclusion

Based on the above findings and discussion, the following implications were derived. The demand for doctorate degree was found highly influenced by individuals' recognition of their future rewards and opportunities such as better career path and higher potential wages. These lucrative factors prompt individuals of different sectors to view PhD as an investment in education for future earnings potential. Presently, there is no difference in salary scheme among public service servants, academicians and teachers who obtain a PhD degree in Malaysia. Similarly, in the public sector, having a PhD degree does not make any difference. The findings reflect a vital need to reassess the salary scheme of the PhD holders and it should begin with the government sector. The private sector will follow suit once getting the cream of the workforce becomes competitive.

Besides restructuring salary scheme, there is vital need to address the issue of doctorate degree relevancy to current job environment in Malaysia. MyBrain15 has targeted achieving 60,000 PhD holders by 2023. This huge number has prompted many distinguished faculty members to query where to put these brains besides the universities. Currently, there are not many job vacancies that require for PhD holders especially in the private sectors. One of the reasons could be due to the fact that most R&D in Malaysia is carried out by the universities. Private sector plays very little role in promoting R&D, thus, there is no urgent demand for PhD holders. In addition, the supply provided by the universities may not meet the needs of the private sector too. This implies that the university-industry linkages have to be strengthened to determine the areas of doctoral program needed for the current and future environment. Communication between the universities and the industries should be enhanced to create a win-win situation.

In addition, diversifying the current doctoral programs offered by universities will meet the current need of the potential PhD candidates. The program offered should not only focus on building new knowledge alone but also on industrial research and development purposes. Indeed, new route of doctorate program like industrial doctorate or professional doctorate should be offered by all universities in Malaysia and not only by certain university. Although the present study found that finance is not one of the constraints faced by potential PhD candidates, but awareness towards availability of funds to pursue doctorate degree may encourage students to gain highest qualification without the need to sacrifice their own financing. MOHE or other financial bodies should provide enough funds to the students and the university particularly in the field like S&T. Encouragement can also be done through developing awareness on the areas of research and grant available through research council unit, university centre of excellence or the professors' personal websites requesting for research assistance. All in all, in order to attract more potential candidates to embark into the doctorate program, all parties such as the Ministry of higher education, universities and industries play a paramount role to ensure the nation vision is materialized.

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