

# Survey to Study PhD Direct after Graduating Masters: A Suggestive Flow Model

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**Abstract**— This survey presents the survey on motivation and suggestions from seniors to study Ph.D. direct after completion of masters

study. This paper is prepared form the survey, done on a Facebook close group named "PhD and Postdoc Positions". The inquiry status was, "After Masters what is your suggestions: Phd or Job". The sample survey was done for 24 hours where 365 commentators commented on the post and found 49.45% of them suggested to do job direct after masters, other recommended to do PhD, Job & PhD at same time, do marry, self-business and others as travel, take rest and so on were 25.28%, 14.01%, 5.22%, 3.02% and 3.02% respectively. According to the responses a dynamic mental model is formed to understand the entire suggestions.

Keywords: Education flow, Masters, Mental Model, Motivational Survey, PhD, System Dynamics, Professional Job,

## 1 INTRODUCTION

There are many researchers and organization studied about PhD and modeling education system. The final achievement of the formal education degree is the Doctorate of Philosophy. Different countries and institutes has their own policies to entry in the formal education from students' childhood phase then the flow of achieving formal education degree continue to PhD. The study focused on suggestive dynamic model about the PhD direct graduating masters. The brief on PhD and system dynamics histories are introduced as.

### 1.1. PhD

A unique type of degree, involving academic work and comparatively attempted by few students is PhD [1] [2], who can also play a catalytic role for change [3]. In the 17<sup>th</sup> century the doctor of philosophy was developed in Germany as the terminal teacher's credential, before that masters as the highest academic degree. It was claimed that the earliest PhD holder was Erhard Weigel awarded in German in 1952. According to Keith Allan Novel, the first doctoral degree was awarded around 1150 [4]. About late 19<sup>th</sup> century, UK started higher research degree, the first Doctorate (DSc) was introduced by Durham University in 1882. Similarly in the USA these higher research degree was started about mid-19<sup>th</sup> century before that they used to go Germany 1 to 3 years to achieve PhD. The first honorary PhD had been awarded to Ebenezer Newton Ellioot in 1852 by Bucknell University [5].

PhD graduate are not only future professors, also future professional who plays leading roles in many parts [6]. The motivation to achieve the highest university degree for the high social value and their graduation rate is increasing with increasing global population day by day in the world [7]. US higher-education institutions awarded a total 55,006 research doctoral degrees in 2015, where science and engineering doctor rates more than doubles than 1975, though the the value of a US PhD may decrease as other universities in other nations step by step [8]. On the other side, the high skilled professional mobility is an effective means of knowledge diffusion and technology transformation [9], but due to proper human recourse management and higher opportunity brain drain problem is so serious.

Many of students in their PhD life compare with other friends who comfortably settled in jobs, earning money and having pleasant life [10]. After their research completion and found others research have high publicity and they feel that they choose wrong area then dissatisfaction limit on their study is increased. It's like climbing the Mount Everest, before, during and after climbing, it we have to think the future, prepare with various accessories , also needs time, money, passion, continuity, environment and so on. Similarly, the strong motivation keeps going through all the challenges facing during PhD. The awareness of every life activities including research, happiness and satisfaction level will be increased.

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There are good and bad both reasons to continue PhD, some good are as to achieve somethings significant, to discover and learn some things new, improve life, fit to environment and bad as keeping visa, peer pressure, horrible job, fulfilling the ambitions of others etc. [11]. Top 5 reasons, an irrational love for research, enjoy challenging assumptions, self-motive, a desire to invent and enjoy the teaching process are characteristics of PhD researchers [12]. All most three fourth of doctoral degree holders in engineering fields found employment in industry or business, less than one eights of them found in academia [13] which shows the ultimate goal of graduates is for better career [14].

Educational scenario is a key measures of socioeconomic development of Nation. These days, the economic situation have strategic opportunity to think the role of the high professional doctoral trainings to minimize the financial crises. The strengthening the doctoral education with new research partnerships and enhancing the employability of doctorate holders are so challenging task in education system [15]. The Economist [16] presents A PhD may offers no offers financial benefit over a Master's degree, reduce earnings. Thus, these days, many students are worrying and inquiring about theirs futures before as well as during their university studies. Proper motivations and orientation is most needed to them to make clear on why, how, what type of research to do as per their core capacity? and so on.

## 1.2. Dynamic models

System dynamics was invented during the mid-1950s by Professor Jay W. Forrester of the MIT. The first research on dynamic was feedback control mechanism for military equipment. System dynamics is an approach for modeling the basic system with feedback loops and their causal relationship [17]. Dynamic analysis is done in different field as engineering, economics, production systems, business optimization system and so on. The social behavior about understanding of corruption on their study [18], through which also it can be felt that the modelling analysis is the powerful tool to understand every system. Dynamic study concurrent the entire knowledge effectively with a single model. The importance and needs of system dynamic graduates, who can perform the systems and analyses with the simple way have better career [19]. Thus, these days university trying to adjust this course in their graduate and undergraduate course.

The system dynamics where, Information about the structure and relationship of dynamic computer models constructed in the absence of written and numerical data is the mental model of dynamic system [20] [21]. The dynamic models

help to make sense of world to interpret environment and understand, which includes categories, concepts, identities, prototypes, causal narratives, stereotypes and world views [22]. To understand the developers' typical tools, activities and practices and their satisfaction with each other [23] presented the mental models from a single pictorial view. In the learning process, the mental model clarify and make understandable to the learner. The mental model can be changed with their skills and experience [24] but easy to understand [25].

Thus, the theme of this paper is to review the papers on PhD careers and do analysis with system dynamic conceptual approach using Vensim software on continuing PhD direct after graduating Master's degree. Many of Masters Graduates confused and wait for senior's advice regarding their career. This study simplify on the curiousness of those masters graduates and presents the dynamic view of the seniors, PhD and Post doc graduates.

## 2. Methodology

### 2.1. Data Survey

The survey was done from the data of a Facebook close group named "PhD and Postdoc Positions". PhD students, PhD graduates, Postdoctoral, researcher and professors all around the word in different field were joined in this group. Total members of the group was about 183,423. Sample data were taken during 24 hours from questioned status on the timeline. The status "After Masters –what is your suggestions Phd or Job?" was uploaded on October 13, 9.33 AM and data extract on 14<sup>th</sup> October 2017 at 9.30.

### 2.2. Data analysis and Modeling

The comments like 'self-determine', 'confused', 'Travel' were considered as others and others as per their strong recommendations as Job. PhD, Marry and so on. Then, according to those data a System dynamic conceptual model was prepared using Vensim Software.

## 3. Analysis and discussion

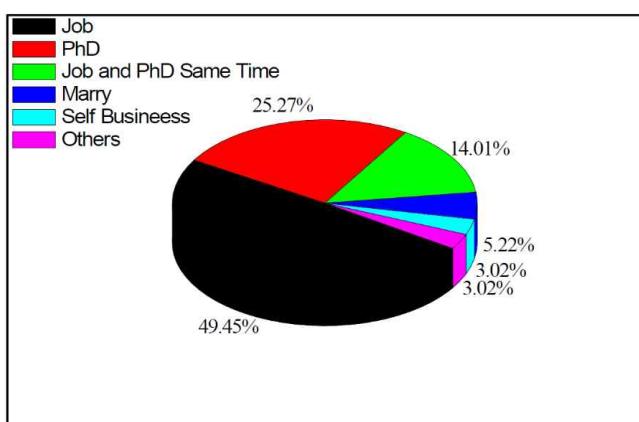
The total commentators, like sticker, love strikers, laugh stickers, surprised stickers, and angry stickers hitting persons were 365, 300, and 20,4,4,1 respectively. The survey notified 180 commentators suggested to do job direct after masters, other recommended to do PhD, Job & PhD at same time, do marry, self-business and others as travel, take rest and so on were 92,51,19,11,11 respectively. The status written in Facebook was as in Figure 1.

Yesterday at 09:33



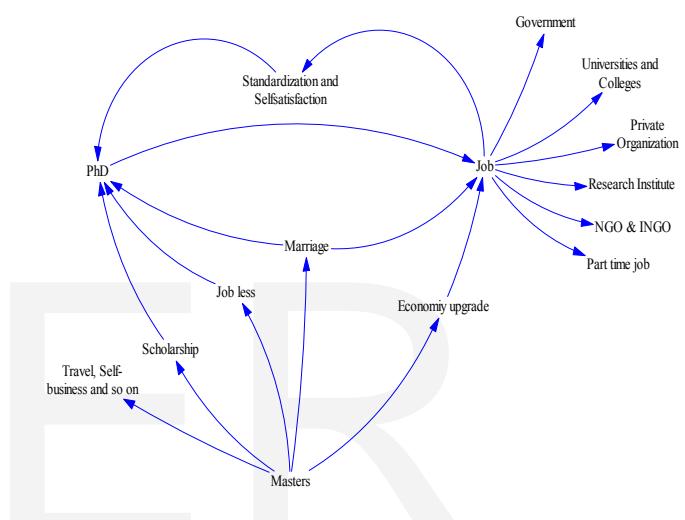
**Figure 1** the uploaded Facebook status

The survey showed that most of seniors who recommended job because of the financial issues, getting experience for future orientation and so on. A seniors from USA suggested as "in the USA the job experience preferred than the multiple academic degree either PhD or Post Doc" which is also included in the job. The strong recommendation for PhD and others like 'PhD itself a Job' is addressed as PhD suggestion. 'Both together' as well as 'full time PhD and part time job' and so on were arranged in 'Job and PhD same time' Section. In the 'others' section those commentators who suggested as 'Your interest and passion', 'It is totally depend on your career vision', 'do travel', 'Confused' typed were included. Remaining marry and self-business suggestions are arranged as per their strong recommendations. Summerring the comments, we can see the suggestions chart as in Figure 2 below.



**Figure 2** Suggestions to do direct after Masters

Summarizing the suggestions from the seniors view, the Vensim model is prepared as in Figure 3. It shows priority for job is given to update the economy growth, then for standardization and self-satisfaction do PhD. Some suggestions not to be passive, go for PhD if you be jobless. The suggestions from the commentators in this study and the other surveyed papers, educated professional can be involved in different sectors as Government, University and Colleges, self-business, Private Organizations, Research institute, NGO and INGOs and other part time job.



**Figure 3** After Masters Vensim suggestions model

#### 4. Conclusion

The survey shows majority of seniors suggested to do job first then for self-satisfaction and upgrade the social value do PhD latter. The survey found 49.45% of senior commentators suggested to do job direct after masters, other recommended to do PhD, Job & PhD at same time, do marry, self-business and others as travel, take rest and so on were 25.28%, 14.01%, 5.22%, 3.02% and 3.02% respectively. According to the responses dynamic model is formed to understand the entire suggestions. This summarized factors to decide the future goal, e.g. strengthen the economic situation and getting the experience of to implement the studies theories on real world job is the first priority after masters.

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