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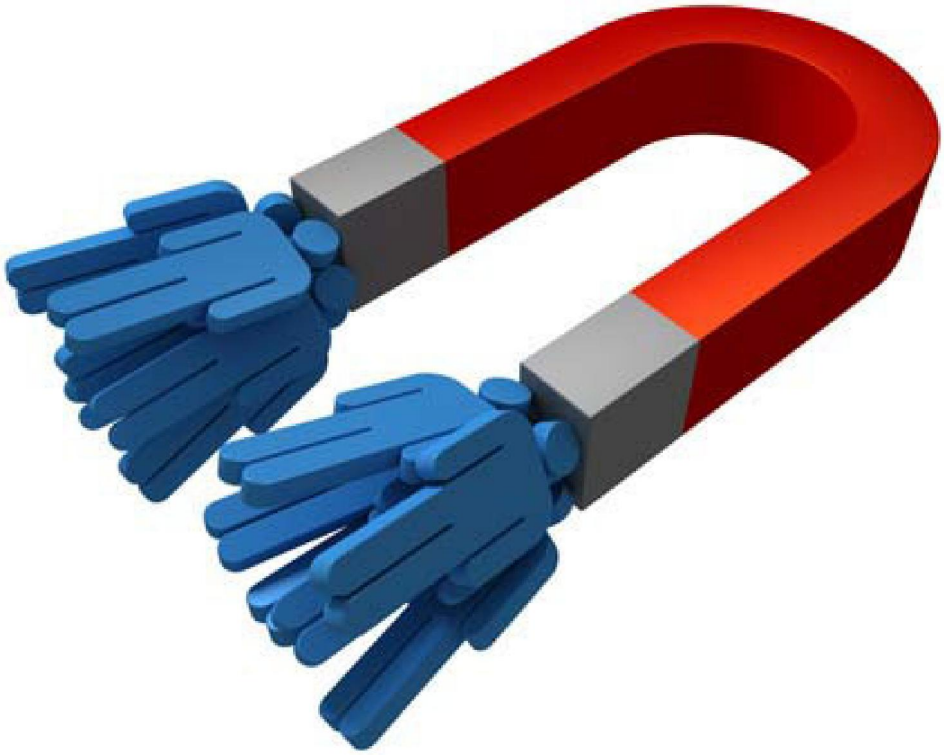
ATTRACTING YOUNG IT PROFESSIONALS: CHOOSING BETWEEN ACADEMIC AND OTHER ORGANIZATIONS



MASTER THESIS

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***Dedicated** to my parents, siblings and my loving husband.*

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Shamim Akhter

ATTRACTING YOUNG IT PROFESSIONALS: CHOOSING BETWEEN ACADEMIC AND OTHER ORGANIZATIONS

Abstract

The purpose of this Master thesis is to identify and categorize young IT professionals' perceptions of organizational attraction. In specific, the salient concepts were explored that young IT professionals used to describe attractive and unattractive factors related to two organizational forms: private-sector organizations and academic institutions. In the following chapters, the results of a qualitative study involving interviews with 22 IT Master-level graduates are presented, including their provided rich descriptions about their own organizational attraction. The findings provide surprising insights into the perceptions of young IT professionals, professionals who perceive themselves as a much needed workforce – even during and after economic meltdown phases. Results of this study indicate specific private-sector and academic attraction factors. The top five organizational attraction factors are: Career planning, Organizational culture, Monetary benefits, Organizational image and Recognition. The top five academic attraction factors are: Challenging and interesting work, University image, Personnel development, Academic culture, and Autonomy. The knowledge gained though this research project could be used by organizations to design personnel marketing efforts and develop communication and recruiting strategies that emphasize the factors which have been identified as attractive and unattractive in this study. Limitations of this study and future research directions are discussed.

Key words: Organizational attraction, young IT professionals

1. INTRODUCTION

The world's economy is suffering an economic recession. This can be seen within the banking system, but also in real estate, and in the car manufacturing sector's termination of large numbers of employees since the year 2008. Job seekers across all sectors are facing significant challenges finding new employment as the job market suffers from the adverse impacts of the global economic recession. Information technology (IT) and computerization is

playing an increasingly important role to further cut down costs. This study is based on the assumption that the economic meltdown, combined with employee layoffs, has influenced IT professionals' perceptions in regard to the attractiveness of large- medium- and small-sized organizations. In specific, human resource (HR) practices related to managing IT professionals' are investigated from an applicants' perspective. While these concepts have received a great deal of research attention in the past, there is a scant amount of knowledge on how young IT professionals perceive these practices during and after economic events and how and if these practices affect their perception of the attractiveness of organizations.

This master thesis is based on a larger study which includes IT graduates perception of attraction, recruitment and retention. Previous studies conducted in this direction have mostly been quantitative in nature; the lack of qualitative studies motivated me to do a qualitative study. First, I would like to give a brief overview of the organizational attraction, recruitment and retention literature. These practices are frequently-discussed areas within the HR field. Organizations have always been quite particular about attracting and selecting candidates (Rynes and Barber, 1990). HR plays a vital role in organizing and fulfilling the organization's human capital, which is a crucial resource that guarantees viability and which may also generate competitive edge for businesses. Aiman-Smith et al. (2001), define organizational attractiveness as "an attitude or expressed general positive affect toward an organization and toward viewing the organization as a desirable entity with which to initiate some relationship." Secondly, the recruiting literature is vast since it has existed for a long time. There has always been recruiting in organizations, but now the shift is more towards web recruiting and e-HRM applications. Finally, attracting and recruiting employees to an organization is not enough. To remain competitive in today's market, it is vital to retain these employees in the organization. To attract employees, the companies initially have marketing costs and then recruitment costs, which are quite high. Then, they have to retain these employees in order to gain and generate the competitive edge for their business. The specific challenge for organizations who want to attract, recruit and retain IT professionals is that these professionals have certain requirements for working in a given setting (ex., autonomy, challenging assignments, etc.). In the theoretical review below, I have illustrated these requirements of young IT professionals in detail.

As mentioned earlier, this master thesis covers only a part of the collected study data. The results presented in this study are based on the *'attraction'* part of the research only. Specifically, I explore attractive and unattractive organizational factors. This research responds to conceptual limitations of the current literature and aims to make a contribution to

the understanding of young IT professionals' perceptions of human resource practices related to economic events. The following research question is addressed: **"***What are the factors that IT professionals perceive as attractive and unattractive in the context of organizational and academic attraction*?" Further, differences between these human resource practices between two organizational forms are studied: private-sector versus academic organizations.

The thesis is structured as follows. First, a theoretical overview of the relevant literature on human resource practices related to IT professionals in private-sector and academic organizations is provided. There has been widespread research on organizational attraction, including articles on opinions and methods. However, the articles chosen and referred to in this study reflect only those articles that have been published in major international peer-reviewed journals (see appendix B). After the literature review, the method employed in this study is described. After this, I present the findings and discuss the emerging concepts, followed by discussion of the integration of both private-sector and academic organizational factors. Finally, implications for managing human resource practices of IT professionals are derived**.** The outcomes of the study are aimed to advance our understanding of managing personnel marketing, communication and recruiting practices for young IT professionals.

2. Theoretical Review

The theoretical review of this research provides background information from two major research streams relevant to this research project: (1) IT professionals, and (2) organizational attraction.

2.1 IT Professionals

Academics and practitioners in various disciplines have studied IT professionals' job motivations. At the beginning, the research originated from a rather macro and sociological view, and organizational structures, employment contracts, applicant decision-making processes, and working conditions for IT professionals were studied (Powell, 1984). Following the dot.com boom in the year 2000, research focused on how to attract and recruit IT professionals (Thomas and Wise, 1999). After the dot.com boom, research was oriented towards economical concepts such as employee turnover, cost effectiveness and demand and supply of labor (Nair et al., 2007). The literature can also be analyzed by synthesizing the insights from the organizational-, individual- and country-level differences. For instance,

Gürer and Camp (2002), focused on factors which include access to technology and a balanced working environment. Later, a more moderate approach focussing on work-life balance, retention and flexible careers evolved (Careless and Wintle, 2007). Recently, the psychological literature looking at IT professionals put a great deal of weight on studying constructs such as person-organization fit, organizational attractiveness and personality traits (Resick et al., 2007; Careless and Imber, 2007; Williamson et al., 2008). Hall et al. (2007), describe IT professionals as having a technical focus and that their motivation is driven by work and related factors like recognition, career development, good working experience, teamwork and working environment. Enns et al. (2006) mention that, IT professionals' are highly motivated by challenging work and that they have a greater need for growth and development, in order to attain job satisfaction. Further, Ituma (2006) explored career anchors of IT professionals in Nigeria. His results suggested six career anchors: being challenged, being in-charge, being free, being marketable, being balanced and being stable. The marketing literature has studied IT professionals in context with organizational branding and marketing to IT professionals (Moroko and Uncles, 2008).

Currently, labor shortages are being experienced in almost all industries, and this leads to competition to attract talent for specified skills. Technology is used to partly replace labor, and automation is increasingly promoted by corporate leaders. To cater to theses significant needs, having an IT degree is not enough anymore. Rather, specific knowledge and skills are required in order to meet today's job requirements of IT professionals. Several studies have been conducted in the quest to analyze specific IT knowledge and skills in demand, and these must also align to an organization's business needs (Agarwal and Ferratt, 1998; Freeman and Aspray, 1999; Lee et al., 1995; McGurie and Randall, 1998; Todd et al., 1995; Agarwal and Ferratt, 2002). The contribution of this study lies in the in-depth analyses of young IT professionals' perceptions of organizational attraction factors with the consideration of economic downturn phases.

2.2 Organizational attraction

Organizational attraction has a long history and has been studied by various researchers. Schneider's (1987) attraction-selection-attrition (ASA) model is seen by many researchers in the field as the foundation of this research stream. The theory underlying the ASA model implies that individuals in any organization are inimitable in that they are the ones attracted to, chosen by, and who decide to remain with an organization as per their choice. It also

describes the relationship between the person and the organization and discusses an individuals' personal fit with an organization (Schneider et al., 1998). According to Lievens et al. (2001), prospective applicants are more attracted to large-sized, medium-sized, decentralized and multinational organizations. In 2002, Rainey explicitly mentioned the increase in demand for more highly trained and skilled employees. In addition, IT firms have been competing for talent not only by providing salary and tangible benefits, but also with assurance of a high quality of life at the working place, support for family and other personal issues, meaningful work, and educational and developmental opportunities. For instance, in order to generate the required workforce, IT companies in India focus heavily on recruiting the most skilled IT executives to meet their needs (Gupta, 2001). The growth scenario of IT industries in India is more inclined towards generating wealth, foreign exchange, and employment which focuses on implementation rather than research and development. Nevertheless, organizations have always been under pressure to attract and retain professionals, especially the brightest ones. Labor shortage is a situation that can afflict an organization's vision and struggle for recognition (Boxall and Purcell, 2008). Organizations have been quite concerned with attracting candidates and designing their selection strategies (Rynes and Barber, 1990). This is where HR plays a vital role: in organizing and catering to the organization's human capital, which is a crucial resource that guarantees viability, and which may also generate competitive edge for business. In 2003, Highhouse et al. analyzed 305 undergraduates to measure attraction to organizations. For instance, they found that some elements of a recruitment brochure may affect a company's attractiveness but may have no possible effect on intentions towards actually joining the company; the brochure may enhance the company prestige but have no effect or influence on the attractiveness of the company as a place to work.

Polyhart (2006) highlights the importance of having the right individuals in an organization to achieve the 'competitive advantage'. Again, the attraction factor seems to encourage many researchers to discover any other factor that might influence job seekers to join an organization. Cable and Judge (1994) investigated 171 college students who were seeking jobs. According to their study, as for pay preferences, the students were highly attracted to positions where they would receive fixed pay (individual based), flexible benefits and other compensation systems. Additionally, their study specifically looked at the job seekers needs as they were planning to enter the job market. For instance, the graduates were more inclined towards incentives-based payment systems rather than seniority-based payment systems. But this was not the case in other studies, e.g., Lievens et al. (2001). In their study,

pay mix yielded no significant effect on organizational attractiveness. On the other hand, Moriones et al. (2004) argue that seniority-based pay is used as a motivational device and, on offering seniority-based pay systems, employees would be more inclined towards management policies that would result in a *long-term employment relationship*.

In 1995, Shinew and Backman, empirically studied the importance of incentives in the workplace. *Travel incentives* in particular, were very popular, which implies that they provide positive re-enforcement in the long-run and also add to the organization's motivational/attraction element. Amabile et al. (1996), discussed various instruments, such as freedom or autonomy, resources, the kind of work, etc., in an organization's environment that would motivate people to be creative and would lead an organization to be successfully innovative. Reputation of the organization plays equally an important role in influencing the decision-making process of job. Also, the degree of autonomy on the job moderates the validity of three dimensions of the so-called 'Big Five' – conscientiousness, extraversion and agreeableness (Mount and Barrick, 1993). Thomas and Wise (1999) supplemented the recruitment literature by examining organizational attractiveness for a diverse sample where job characteristics' were perceived to be highly important to organizational attraction. Their study, with MBA students determined that an organization's characteristics and diversity in an organization are also important to organizational attraction.

Job seekers' views of the "person-organization fit" are predicted by the similarity between their values and the values of the organization and by evaluating the person-organization fit in their job choice decisions they can manage their future work attitudes (Cable and Judge, 1996). Honeycutt and Rosen (1997) expanded the use of social identity theory and person-organization fit to envisage an individual's attraction to an organizational position. Their study also indicates that individuals were attracted to an organization with flexible career paths and policies. Roberson et al. (2005) employed the marketing theory to examine how the recruitment message influences job seekers attraction to organizations. In the results of their study, the recruitment message did not have a direct effect on applicant perceptions of an organization's attractiveness, instead those messages may have provided job seekers with information about the organization and persuaded them think of their fit with the organizations and its culture (Collins and Han, 2004).

Firms with a good reputation or image increase the number of applicants and influence applicant decisions (Polyhart, 2006). In Polyhart's study, he also points out that attributes like person-organization fit, location, pay, benefits, etc., would attract individuals or even influence an individuals' decision to join a particular organization. Duxbury and Higgins

(2005) studied three types of work-life conflicts: work overload, work to family interference and family to work interference, where family demands such as those concerning one's children, get in the way of work. These conflicts can hinder an employee in doing his/her work in the required timeframe and it can become very difficult to maintain a balance between work and family responsibilities. In the late 90's, Thompson et al. (1999) studied both work-family benefit availability and supportive work-family cultures. They were positively correlated with commitment and negatively correlated with work-family conflicts and decisions to leave the organization. Today's workforce would like to hold on to strong corporate values that are associated with their own personal values (Buhler, 2007). Later, research also indicates that both organizations and employees have certain values that can be directly compared to see value congruence. Furthermore, if their values match, employees are happier and are more likely to stay in that organization (Cooman et al., 2009).

Only a few studies have been conducted in the last 10-12 years within few European countries (UK, Sweden, Germany and The Netherlands) to analyze the way academics handle their job or positions in universities. However, research shows that universities often complain that it is not easy to find highly qualified staff. It is difficult to recruit knowledgeable staff and retaining the staff is also quite challenging (Gilliot et al., 2002). Enders and Teichler (1997) found that the academics were satisfied with their career at the university because it is a flexible profession and they work in a challenging environment. On the other hand, they found that the young academics in Germany, England and the Netherlands spend more time on research than senior academics and are obviously research-oriented. The teaching load is higher in the Netherlands and Germany as compared to US and UK. They also pointed out problems of job security and lower career development opportunities.

According to Huisman et al. (2002), due to limited chances of pursuing a career in academia, many universities have problems attracting young PhD students. In Sweden, for instance, the long PhD programs deter some students from postgraduate study and the salaries for academic staff were found to be lower than salaries in other European countries. The trainees or postgraduates in The Netherlands, on the other hand, embrace their positions mostly because they are treated as members of the academic staff. However, the salaries do not reflect the actual work that they do and the career development prospects are uncertain with very few possibilities of climbing up the career ladder. The chances of getting a position within the faculty are very low due to the limited posts available. The pressure to publish and finish the PhD research within four years also deters young PhD students. In Germany, young

doctoral staffs' do not usually intend to continue an academic career due to the strict process that must be followed by academic staff in the universities. To pursue an academic career they must first obtain a position as an assistant or post-doctoral fellow, then a position as a private lecturer and lastly appointment to a professorship. Consequently, young academics in Germany are older than academics of the same level in other countries. The reasons for the loss of appeal of an academic career include working conditions of academic staff, poor academic pay, uncertain promotion possibilities, fewer positions up the career ladder, etc. In their study Gilliot et al. (2002), concluded that universities must incorporate new career trends into the traditional academic career path. They also mention this would be tedious and would require adaption of practices in terms of job satisfaction, work-life balance and also require establishing multiple and flexible career paths into the academic world.

Since November 2008, the downturn of the economy has affected many employers and employees in both academia and other organizations. Mostly companies have applied the commonly used phrase, "tough times call for tough measures". From layoffs to cutbacks, many professionals and organizations have felt the recession's impact. During a recession, having the right people is even more crucial than in better times. Organizations must classify and retain the best talent and the skills that will enable them to respond to upcoming technological challenges (Schwarzkopf et al., 2004). Companies require nothing but the best and most talented pool available. HR really needs to be on its toes, to accomplish and fulfill organizations' needs relating to such human capital. This research was motivated by the current economical downturn worldwide, where HR easily gets targeted when it comes to cutting on costs. The quest to get into the best and the most reliable company is the main motive of graduates during this time. While the full study aimed at collecting data on attraction, recruitment and retention factors of IT graduates, this thesis focuses on results of the attraction part. In comparison to previous literature, none of the available studies have done a comprehensive research on young IT professionals' preferences in context with academic and private-sector organizational differences. In this study we will focus only on *attraction*, which involves the fit linking an individual's characteristics, for example, interests, and an organization's characteristics, for example, working culture (Polyhart et al., 2006). Based on face-to-face interviews, this research focuses on examining organizational and academic attraction factors using qualitative methods.

3. METHOD

3.1 Sample

Due to the exploratory nature of this research, a qualitative approach was adopted. I limited the sample to IT graduates because this group of job-entering college graduates will be highly significant in meeting the future demand of the IT sector. Goles (2001) states that colleges and universities contribute a major part of the staff for the IT industry. It is obvious for organizations that they need to devote time to reviving their IT workforce through career fairs or proactive recruiting. A convenience sampling strategy, also involving follow-up snowball sampling so as to increase the sample size, was applied. The sample consisted of post-graduate students doing PhDs and IT students in the end phase of their study programs in various IT-related Master's programs. They all studied at the same university located in the eastern part of the Netherlands, next to the German border. The Asian, African and European ethnic backgrounds were included in the sample. In total, 58 IT graduates were invited to participate in the study. Twenty-five graduates agreed to be interviewed, resulting in a response rate of 37.93%. Three graduates cancelled the interviews on short notice. Fifty percent (n=11) of respondents were within the age group of 20-24 while the remaining 50% (n=11) were within the age group of 25-30. Among the respondents 73% were male (n=16) and 27% were female (n=6).

Before conducting the interviews, the interviewees received an e-mail that explaining the study purpose and the interview questions were also provided. Following this mail, each interviewee was contacted so as to individually arrange interview appointments. Most of the graduates expressed great interest in contributing to this research.

3.2 Interview Scheme

This study is based on qualitative interviews with candidates planning to enter into the IT sector as professionals. For each of the 22 in-depth interviews, a semi-structured interview scheme was used. This scheme had been initially pilot tested with four other IT graduates. The interview questions aimed at identifying and categorizing organizational attraction. In particular, I collected IT graduates' descriptions of what attracts them to and detracts them from private-sector organizations and an academic institutions.

The interviews were conducted in June 2009. Each interview lasted between 60 and 90 minutes. Each individual interview started by describing the study's purpose and by assuring

confidentiality. The interview scheme consisted of two phases. *First*, the interviewee was asked to spontaneously identify attractive and unattractive factors of attraction towards an organization and university. *Second*, the interviewees were asked to rank-order the identified factors and *lastly*, to rate the factors presented from previous literature. The initial stage of the interviews began with the collection of demographic information of the interviewed IT graduates. Then, graduates were asked to think about the current economic recession (since 2008) and whether this event has influenced the attractiveness of organizations, and large organizations for IT professionals, respectively. Next, they were asked to narrate and further explore salient factors they regard as important for describing an IT professional's organizational attraction and academic attraction. They spontaneously identified several attractive and unattractive factors related to these concepts. These factors were then rank-ordered, where the rank '1' was given for most attractive factors. (e.g., monetary benefits were mostly ranked as number1). Followed by their identification of attractive and unattractive factors, interviewees were presented with a set of attraction factors from previous literature which they marked as very attractive, attractive, neutral, rather unattractive and unattractive. For the full set of interview question, *see Appendix D.*

All interviews were tape-recorded with the consent of interviewees. The total interview time was 1,245 minutes (21 hours and 13 minutes). Comprehensive field notes were taken to complement the audio data. The interviews were transcribed verbatim by the same interviewer. Individual transcripts were then sent for member checking. Each interviewee received a transcript of their individual interview to assure the accuracy and credibility of the collected data (Creswell, 2009). The interviewees were given the opportunity to adjust, comment, correct their statements and also add additional information if needed. Eighteen of the 22 interviewees responded to this so-called member check. On average, less than two percent of their transcript needed alteration. Finally, the transcripts and notes were then aggregated into one master transcript, which resulted in 163 pages single-spaced text.

3.4 Data Analysis

The data analysis required identification of major categories and themes that interviewees described as attractive and unattractive private-sector and academic attraction factors. The factors retrieved from the transcripts were quite comprehensive, and 42 organizational attraction factors were derived, for example. Content analysis was used as a data reduction technique (Stemler, 2001). The initial phase of the analysis consisted of two coders

independently reading the master transcript line by line. The coders also listened to the audio tapes once more to familiarize themselves with the content of the transcript. This process was tedious yet generative because we extracted useful information pertaining to our research. We started off with open coding, which involved examining, comparing and categorizing data to develop codes (Strauss and Corbin, 1990). The two coders independently developed codes and compared them in order to form categories. From these, major codes were developed and then refined into individual themes. For example, the category '*career planning*' included factors like career growth, career advancement, career development and international career. Differences in interpretation were also prevalent during analysis. For instance, unattractive factors like differences in gender, language and IT not being important, were new factors for us and these were categorized under a new category that we labeled '*discrimination*'. These categories were then content-analyzed to show the importance of highly attractive and unattractive attraction, recruitment and retention factors across the sample. While content analyzing the categories, as each category was mentioned and identified by the coders it was counted. Lastly, the rank-order of the identified factors was calculated separately to identify new factors, i.e., other than the ones present in the literature and also to show the importance of a particular factor. For example, the factor '*salary'* gained 137 points (1=10, 2=9, 3=8 and so on). This enabled an in-depth understanding of the most attractive and unattractive factors for IT graduates in relation to organizational attraction.

4. Results and discussion

This Master thesis investigated two major areas. *First*, what factors do young IT professionals find attractive and unattractive considering employment in a private-sector organization? *Second*, what factors do young IT professionals find attractive and unattractive considering employment in an academic organization? The 22 in-depth interviews along with the detailed transcripts provided a rich data source from which interesting results were derived.

4.1 What factors do young IT professionals find attractive and unattractive considering employment in a private-sector organization?

Reviewing the full set of results, 42 different organizational attraction factors were identified by the interviewed young IT professionals (see Appendix E). These factors were ranked in

order of importance by the interviewees, with 1 being the most attractive factor (1= 10 points). For instance, 'Career development' had128 points), 'Challenging and interesting work' had 100 points, etc. Considering the least important organizational elements, 'conferences' and 'interaction with other companies' and organizations being 'multicultural or multinational' received the lowest rank, mentioned by a few interviewees. This large amount of data was categorized into themes and the ranks were added to identify the most attractive factor for the interviewees (see Table 1). Opportunities for career planning scored the highest with 337 points followed by organizational culture with 107 points and monetary benefits with 137 points.

Organization attraction factors	***Total points***
Career planning	337
Organizational culture	107
Monetary benefits	137
Interesting and challenging job	91
Organizational image	87
Autonomy	87
Social benefits	70
Location	34
Innovative organization	31
Recognition	25
Job security	17
Value congruence	10

Table 1: Rank ordered private-sector attraction factors.

To provide a clear picture of the most important factors, Table 2 was created. This illustrates major categories of private-sector organizational attraction factors identified by IT graduates. Each category was counted as many times as it occurred in the transcripts while coding. 'Career planning' (n=31) was highly emphasized as an attraction factor followed by 'organizational culture' and 'monetary benefits' (n=18).

Organization attraction factors	***n***
Career planning	31
Organizational culture	18
Monetary benefits	18
Organizational image	12
Recognition	11
Interesting and challenging job	10
Social benefits	9
Innovative organization	9
Autonomy	7
Location	7
Value congruence	2
Job security	2

Table 2: Content analysis of private-sector attraction factors

The category **career planning** includes aspects relating to training, conferences, career growth, career development and advancement, and the option for an international career. This is the most important factor derived in this study with a score of 337 points and ranked first. Interviewees expressed the relation between years of work experience and becoming 'a professional'. As one interviewee expressed, *"if you're in the company for 12 years... they still push you... you have to develop yourself and how can we make things better.*"

Organizational culture involves networking, working environment in which people communicate well and are consistent in what they do, openness to new ideas, diversified culture, the challenging of each others' work, trusting and helping each other, and feeling committed to the work they are doing. The organizational culture scored 107 points and was ranked second in this study. One interviewee expressed the need for an open-door culture in the workplace: *"I like an open-door kind of culture where you can just walk-in, easily contact people."*

The category **monetary benefits** include salary and other financial incentives. For many young professionals, financial incentives are quite important in the beginning of their career. This is not surprising, seeing that new graduates would need to satisfy a variety of initial needs including money for a new place to live, transportation, or even repaying education loans etc. This scored 137 points and was ranked third as an organization attraction factor.

Hence, an organization's salary scheme appears to be one of the preliminary criteria for young IT professionals when assessing the job market. As one of the interviewees said, *"I think salary would attract mostly, no matter what but they'd find money always a motivating factor".* On the other hand, one of the interviewees mentioned, *"Money is important but it's not a factor of attraction… in the IT field we know money will come"*

Interesting and challenging job concerns working hard on challenging tasks and interesting projects, which includes achieving self-actualization (to do things differently, have an innovative job or meaningful work) and functions or involvement in the management, consulting, management and leadership skills . This scored 91 points and was ranked as the sixth most important organization attraction factor. An interviewee said: *"I would look for some company in IT or consulting… something like IT implementation or change management."*

Organizational Image includes the reputation of the organization, its size (large, medium or small) and type (public or private sector), whether the organization is willing to offer jobs, how experienced is the organization in its field and also the quality certification of the organization. Organizational image scored 87 points and was ranked as the fourth highest organizational attraction factor. If an organization has a good reputation or image, both organization and employees benefit. As one interviewee explained, *"If I had the choice between two jobs, and one of these companies is in high regard by the public, then I guess I would choose for that one and not the other one".*

Autonomy includes flexibility in doing one's job and also flexible work hours, for example, the ability to work from home once a week, normal working hours and free time. It received 87 points and was ranked as the ninth highest organizational attraction factor. An interviewee described the need for flexibility: *"I plan to have my work in such a way that I'm not restricted to a location or time to work, so I can do whatever I want and plan my own work."*

Social benefits comprised of policies, insurance, travel compensation, international travels, pension funds, and accommodation. This scored 70 points and ranked as the seventh most important organizational attraction factor. For instance, one interviewee mentioned the need for such benefits: *"I think... to keep me in a company maybe, the social benefit aspect will be more important."*

Location was specified a number of times, referring to inconveniences caused either by public transit or time constraints. For example one young IT professional said: "It m*ust be central in the Netherlands... so you can easily travel around to different companies."* This scored 34 points and was ranked as the tenth highest organizational attraction factor.

Innovative organization scored 31 points and was ranked as the eighth most important organizational attraction factor. It refers to companies doing research and coming up with new products, having top-shelf technology and to the future development of an organization. One interviewee said, *"For me their products first, why? Because their products for me can reflect what kind of company built those products. What kind of vision they would like to achieve with the products. So, for example, if we are talking about Gmail, we know that… ok this company is the type of company that wants to lead."*

Recognition is a vital organizational attraction factor where employees' work and efforts are realized and rewarded. For instance, "just being a number in a company" highly de-motivates a person, as one interviewee expressed: *"If you're just a number then I wouldn't like it... I want to be a person, I want to be part of a group but I don't just want to be a number in a company."* This scored 25 points and was ranked as the fifth most important organizational attraction factor.

Job security scored 17 points and was ranked as the twelfth greatest organizational attraction factor. This includes stability with one's job in unstable times like a *recession.* For instance, an interviewee talked about unstable working environments: *"I will be more concerned about the job security...like if a company has a very high rate of firing people... it will not attract me."*

Value congruence is sharing values between individual and organization (Balazs 1990). This refers to fit with the organization and the individual status obtained by working in an organization. This scored 10 points and was ranked as the eleventh greatest organizational attraction factor. One interviewee mentioned: "*The perceived fit is very important while the actual values might be more important*". Two interviewees expressed their view on making a difference to the world and being eco-friendly, as one interviewee stated, *"I would never work*

for a company… let's say, that would do something in third-world countries or do something wrong to pollute the environment."

IT graduates also identified 42 organizational factors which they considered unattractive (see Appendix E). These factors were compiled in table 3. The identified organizational attraction factors were ranked by the interviewees, with 1 being the most unattractive factor (1= 10 points). The following organizational unattractive factors are 'long working hours' (=38 points), 'Bureaucracy' and 'Boring and routine job' (=35 points), 'No recognition' (=33) and 'Redundancy at work' (=28 points), respectively. Factors in large organizations that were described as unattractive and relatively unimportant are: not flexible, slowly growing, representing seniority-based pay systems, and difficult to change contracts.

Organization unattractive factors	***Total points***
Bad organizational culture	147
Lack of monetary benefits	97
No career planning	90
Boring job	83
Discrimination	71
Bad organizational image	71
Organization not innovative	42
Lack of autonomy	34
Lack of recognition	18
No job security	15
Lack of social benefits	9

Table 3: Rank ordered private-sector unattractive factors

In addition, major categories were derived as organizational unattractive factors as shown in Table 4. These categories were also content-analyzed, i.e., each category was counted as it appeared in the transcripts. 'Bad organizational culture' was mentioned at least 21 times signifying that organizational culture is vital in organizational settings. 'Boring job' was mentioned 19 times followed by 'lack of monetary benefits', which was mentioned 12 times.

Organization unattractive factors	***n***
Bad organizational culture	21
Boring job	19
Lack of monetary benefits	12
No career planning	11
Lack of recognition	9
Discrimination	7
Lack of autonomy	7
Lack of social benefits	5
Bad organizational image	5
Organization not innovative	4
No job security	2

Table 4: Content analysis of private-sector unattractive factors

The category **bad organizational culture** relates to aspects such as limited organization facilities, uncomfortable working conditions and working with many colleagues at a time, too much pressure at work and long working hours, favoritism, office politics and bureaucracy. It scored 147 points and was ranked as one of the most unattractive factors (n=21) for the interviewed young IT professionals. One of the student's quotes shows this issue as follows: *"Many people have the door closed... then you get a closed group… you get individuals instead of group or company"*.

Boring job included no self actualization, redundancy in work, traveling too much, boring and routine job, and job not related to one's study. One interviewee expressed the need for jobs related to one's interests. He said, *"a lot of employees in a company… the IT people... just complain they can't use all that they learn... they're doing some boring job every day"*. It scored 83 points and was the second organization unattractive factor (n= 19).

Lacks of monetary benefits deals with whether the benefits **are** in terms of salary or incentives. This scored 97 points and was the third-ranked organizational unattractive factor. As discussed earlier, salary, being an extrinsic factor, will probably be used to discard jobs. Although salary is not an important aspect of organizational attraction for IT graduates, they still want the pay to exceed their expectations. As one interviewee described: *"It would be an unattractive point if, companies offer only minimum salary"*.

No career planning consists of limited possibilities for promotions, no educational opportunities or training, lack of supervision, no possibilities for career growth or development and a straightforward, mapped career. This scored 90 points and was the fourth most unattractive organizational attraction factor. An interviewee identified the concept of tailored jobs saying: *"If companies have a whole bunch of standardized ideas about how career of a person should evolve or develop over time… I think you should look at every person separately.... and everyone could do something else differently"*.

Lack of recognition is a de-motivating factor for most of the IT graduates. As one of the students expressed the need to be recognized within the organization: *"I want recognition… I think IT people think their job is very important. I think the general idea is, most companies or people don't see the value of IT or what it does!"* It scored 33 points and was the fifth most unattractive organizational attraction factor.

Discrimination considers gender differences, positions not equivalent to qualification, seniority-based pay, language, no equal opportunities and IT as not being important. It scored 71 points and was the sixth most unattractive organizational factor. One graduate expressed discrimination in terms of language barriers: *"company that doesn't respect equal opportunities. For example... here they all ask whether you speak Dutch"*.

Lack of autonomy means an employee must perform a task under certain set rules or policies. It is comprised of too much pressure, limited vacation days and less freedom or autonomy in doing a job. This category scored 34 points and was the seventh most unattractive organizational factor. As one of the graduate expressed: *"Unattractive would be …limitations on your freedom in the job. So if you'd have a very specific job, you're not allowed to do anything besides your tasks description"*.

Lack of social benefits is comprised of limited or no benefits or no provision for insurance methods other than basic salary. This scored 9 points and was the eighth most unattractive organizational factor. As one interviewee stated: *"I don't know about here, but in my country not many companies offer insurance to their employees"*.

Bad organizational image included statements such as a large organization is inflexible; start-ups are not secure; negative public reputation of the company due to, for instance,

exploiting customers or employees, low-quality products or instability in the market, bad management, policies, or no reputation with well-known companies; changes not communicated on time; and difficulties in making changes to contracts. An interviewee described this issue as follows: *"Unattractive…maybe the reputation of the company… like bad reputation from polluting the environment or something"*. This scored 71 points and was the tenth most unattractive organizational factor.

Organization not innovative is when a company doesn't grow in terms of innovating new technology or does not match up-to-date standards with technology. In Goles (2001) survey of 243 IS students, this factor or attribute was relatively unimportant. In contrary to Goles Study, many IT graduates of this study found this factor quite important, and one student mentioned, ***"****Well if the company is not innovative enough ... a lot of IT guys are looking at doing something …I mean really do something … so a company should give that kind of opportunity, where you really able to create things, actually do something within the organization... so most people are not attracted to companies that are just maintaining stuff... not really creating"*.

No job security is when the environment of the organization is unstable or the job is not secure and there is high turnover in the organization. This scored 15 points and was the eleventh most unattractive organization factor. An interviewee described that "*when other employees leave companies…I think it's not good, I think they don't like it when in the company… around you there is a high turnover... a stable team is quite important"*.

Comparing the content analyses of the top five attractive and unattractive organizational factors (see Table 5), both attractive and unattractive factors are apparent and it can be clearly understood what factors are important and required to attract an IT graduate and what would detract them from an organization. Soon after graduation, IT graduates seek to grow within their careers', which seems to be the most important factor. Then again, if graduates see that the organization does not provide any opportunity for growth or development (no career planning), this would also be very unattractive for them to choose or even stay in an organization. Organizational culture is the second most important factor to work in an organization. Previous studies have focused on person-organization fit, and, according to Judge and Cable (2007), for instance, organizations attract people who identify a fit between their values or preferences and the organization's culture. On the other hand, a bad

organizational culture is the most unattractive organizational factor. The graduate's would not be attracted to an organization where their values would not match to those of the organization.

A boring or redundant job is also a very unattractive factor for the graduates. As new graduates, they need challenging and interesting work to motivate them to move up the corporate or career ladder. Monetary benefits, on the other hand are important, at least in the first few years of a graduate's career. If these benefits are not sufficient or do not match their expectations, it would not attract them to an organization. Following monetary benefits is organizational image, which is vital in the initial years of a graduate's career as he/she finds contentment in working for an organization that has an image and reputation in the world of technology. Being recognized within the organization is quite important for the graduates as they want their knowledge and skills to be realized and acknowledged. Similarly, lack of recognition would force them to either be dissatisfied with the organization or leave the organization. This lends credence to the conclusion that although career planning is important to attract IT graduates, lack of recognition cannot be overlooked as it is quite important to IT graduates. The above analysis is consistent with Agarwal and Ferratt's (2001), study where the nature of the job, compensation and recognition were identified as important factors in retaining IT professionals.

Organizations' attractive factors	***n***	***Organization unattractive factors***	***n***
Career planning	31	Bad organizational culture	21
Organizational culture	18	Boring job	19
Monetary benefits	18	Lack of monetary benefits	12
Organizational image	12	No career planning	11
Recognition	11	Lack of recognition	9

Table 5: Comparison of the top 5 attractive and unattractive private-sector factors

After rank-ordering the identified organizational attraction and unattractive factors, the interviewees were asked to ponder a number of factors extracted from previous literature, which are presented in Table 6. The 22 interviewees then marked the factors as very attractive, attractive, neutral, rather unattractive and unattractive. The interviewees found almost every factor attractive. Out of all factors, challenging and interesting work (72.7%) and positive work environment (72.7%) ranked highest. Performance (4.5%) and seniority-based pay system (22.7%) were the most unattractive factors, as marked by our interviewees.

Key Authors	***Factors***	***Very attractive 5***	***Attractive 4***	***Neutral 3***	***Rather un-attractive 2***	***Unattractive 1***
Schneider,1987; Cable and Judge, 1996; Goodman and Svyantek, 1999; Kristof et al., 2005	Perceived fit with organization	45.5% (n=10)	50% (n=11)	4.5% (n=1)	0	0
Meglino and Ravlin, 1998; Slaughter and Greguras, 2009	Similarity between own values and values of the organization	36.4 % (n=8)	40.9% (n=9)	13.6 (n=3)	9% (n=2)	0
Tharenou, 1997; Hall and Moss, 1998; Lee, 2001	Career advancement opportunities	72.7% (n=8)	27.2% (n=6)	4.5% (n=1)	0	0
Honeycutt and Rosen, 1997; Careless and Wintle, 2007	Flexibility in doing the job, e.g., Possibility to work from home.	54.5% (n=12)	31.8% (n=7)	13.6% (n=3)	0	0
Thompson et al., 1999; Duxbury and Higgins, 2005	Balance between work and family responsibilities	27.3% (n=6)	54.5% (n=12)	13.6% (n=3)	4.5% (n=1)	0
Bretz, Jr. and Judge, 1994; De Coornan et al., 2009	Performance-based pay structure	31.8% (n=7)	27.2% (n=6)	27.2% (n=6)	9% (n=2)	4.5% (n=1)
Baker et al., 1988; Hutchens, 1989; Lazear, 1979; Moriones, A.B., Sanchez, J.E.G., and Guell, M., 2004	Seniority-based pay system structure	27.3% (n=6)	13.6% (n=3)	27.2% (n=6)	13.6% (n=3)	22.7% (n=5)
Turban et al., 1998; Highhouse et al., 2003; Collins and Han, 2004; Lievens et al., 2005, 2007	Reputation/Image	40.9% (n=9)	27.2% (n=6)	31.8% (n=7)	0	0
Mortimer and Lorence, 1979; Thomas and Wise, 1999; Schreurs, 2009	Challenging and interesting work	72.7% (n=16)	22.7% (n=5)	4.5% (n=1)	0	0
Cable and Judge, 1994; Honeycutt and Rosen, 1997; Voskuijl and Thierry, 1999; Lievens et al., 2001	Monetary benefits	36.4% (n=8)	50% (n=11)	13.6% (n=3)	0	0
Bartel, 1995; Bhatt, 2001	Training opportunities	54.5% (n=12)	40.9% (n=9)	4.5% (n=1)	0	0
Bertola, 1990; De Coornan et al., 2009	Job security	40.9% (n=9)	22.7% (n=5)	27.2% (n=6)	9% (n=2)	0
Bailey and Adiga, 1997; Barrick and Mount, 1993; Buunk, 2005	High degree of autonomy	45.5% (n=10)	27.2% (n=6)	27.2% (n=6)	0	0
Bretz, Jr. and Judge, 1994; Parker and Allen, 2001	Social benefits	36.4% (n=8)	40.9% (n=9)	18.1% (n=4)	4.5% (n=1)	0
Amabile et al., 1996; Honeycutt and Wise, 1997	Positive work environment	72.7% (n=16)	27.2% (n=6)	0	0	0
Shinew and Backman, 1995	Possibility for international travel	45.5% (n=10)	22.7% (n=5)	31.8% (n=7)	0	0

Table 6: Attractive and unattractive organizational factors: relating interview results to literature

4.2 What factors do young IT professionals find attractive and unattractive when considering employment in an academic organization?

The academic attraction factors were ranked in order of importance by the interviewees, with 1 being the most attractive factor (1= 10 points). For instance, 'Career development' earned 128 points, and 'Challenging and interesting work' earned 100 points, etc. Considering the least important organizational elements, 'conferences' and 'interaction with other companies' and organizations being 'multicultural or multinational' received the lowest rank, mentioned by a few interviewees. This large amount of data was categorized into themes and the ranks were added to identify the most attractive factor according to the interviewees (see Table 1). Opportunities for career planning scored the highest with 337 points, followed by organizational culture with 107 points and monetary benefits with 137 points.

The interviewed young IT professionals identified many factors relating to the attractiveness of working in an academic institution. In total, 42 academic attraction factors were derived (see Appendix F). These factors were ranked in importance by the interviewees with 1 being the most attractive factor (1=10 points). For instance, 'Friendly working environment' had 91 points, 'Interesting research topic' had 69 points, and Teaching had 38 points. This large amount of data was categorized into themes and the order of ranking was determined to identify the most attractive factor according to the interviewees (see Table 7).

Academic attraction factors	***Total points***
Challenging and interesting work	174
Academic culture	161
Personnel development	157
Autonomy	126
Networking	63
Recognition within the field	56
Traveling	53
Job security	53
Monetary benefits	50
Academic image	49
Academic facilities	30
Social benefits	14

Table 7: Rank ordered academic attraction factors

The identified academic attraction factors were then content-analyzed (see Table 8). 'Challenging and interesting work' (n=28) was highly emphasized in an academic organization. 'Academic image' was mentioned 19 times followed by 'personnel development', which was identified 18 times. 'Academic culture' (n=16) and 'autonomy' (n= 15) at work, was also found as a major academic attraction factor.

Academic attraction factors	***N***
Challenging and interesting work	28
Academic image	19
Personnel development	18
Academic culture	16
Autonomy	15
Networking	14
Traveling	12
Job security	7
Recognition within the field	6
Academic facilities	6
Monetary benefits	4
Social benefits	4

Table 8: Content analysis of academic attraction factors

The category **challenging and interesting work** relates to aspects such as an interesting research topic, challenge of an assignment, a balance between theory and practice, and a variety of different tasks such as teaching, supervising, consulting, and research. As an interviewee described an academic job that integrates research and practice: *"It is a lot of collaboration with organizations because it's not just sitting in the office and researching but research must be two-way: I mean research and practice... must be that kind of direction so you know what is academic in that field ... and your research should also have an impact... so that kind of collaboration."* It scored as the most important academic attraction factor (n= 22) with 174 points.

Academic image incorporates reputation, if the university is a research pioneer, and up-to-date standards for technology. It scored 49 points and was the second most important academic attraction factor (n = 19). One of the IT graduates identified the use of technology in

universities: ***"****The academic environment is always up to date with latest advancements and they what's going on and then you can continue learning a lot when you work here".*

Personnel development consists of opportunities for training and gaining 'new knowledge' via conferences, training and new challenges at work. Working in an academic setting and sharing knowledge also adds to one's knowledge. One of the interviewee argues: *"If you have an interesting research topic, you know something I'm interested in it's nice. Because I like to familiarize myself with things I don't know... so that's definitely a plus"*. This category scored 157 points and was the third (n= 18) most important academic attraction factor.

Academic culture is comprised of the working environment, having intelligent and friendly colleagues, the quality of education provided by the university, internationally oriented culture, PhD employees can enjoy living a student's life, a decentralized management and support from the government and university. This scored 161 points and was the fourth (n= 16) highest ranked academic attraction factor. One graduate expressed: *"The culture is very important, so if people are willing to work together, if people like each other, then it's good"*.

Autonomy is freedom in deciding what work to do and how to do it. It basically is a sense of control over one's work (Amabile et al., 1996). It includes flexibility with work time, vacation and more free time, and high autonomy where one can make use of the environment and space for creativity. One interviewee stated excitedly: *"Flexibility I think that's high here. And also I think you get the room here to be creative. You have your room to do your things… you can be creative"*. It scored 126 points and was the fifth greatest (n = 15) academic attraction factor.

Networking is one of the key categories and it relates to collaborating with different universities and university students, a broader scope of networking within the university, faculty from different cultures and background, and exchanges with external organizations also belong to this category. This category scored 63 points and was the sixth most important (n = 14) academic attraction factor. An interviewee mentioned. *"if you work at a university, for example, you can work with other universities you can interact with them. You see different nationalities and cultures"*.

Traveling to conferences and trainings was a factor identified as quite attractive for the interviewed sample. This scored 53 points and was the seventh-ranked (n= 12) academic attraction factor. These opportunities were suggested as positive ways to get acquainted with latest research and different people, along with, as a leisure opportunity. As one interviewee described: *"Also very nice thing about international conferences, is also you can get to know a lot of people are researching… you get to pick up new ideas"*.

Job security means stability or assurance of one's job in a company. This category also scored 53 points and was the eighth-ranked (n = 7) academic attraction factor. One student said: *"They say if you choose an academic career... it is for life… if you do it intelligently you have everything… in life...it is kind of job security"*.

Recognition in this case is an employee's reputation within the field and within the academic career. As an interviewee stated: *"The reputation you can gain with it. A simple example would be the doctor title... the title because everyone likes it. But also the reputation you can get within the field of very well-known people and you're a referee to top papers and you are also referred over a 1000 times or more"*. Many interviewees were attracted to this factor and it scored 56 points and was the ninth highest ranked (n= 6) academic attraction factor.

Academic facilities are those facilities, resources, which include materials and information that help young IT professionals to feel comfortable in their jobs and do their jobs well, and give them the opportunity to publish. For instance, one of the interviewees said: "*It's very different back home, especially the internet facilities. Like here we have it everywhere in the university"*. This category scored 30 points and was the tenth-ranked (n= 6) academic attraction factor.

Monetary benefits relate to salary and other financial benefits. This scored 50 points and was the eleventh greatest (n= 4) academic attraction factor. However, few of the interviewed young IT graduates think that university pays well in comparison to other private organizations. A graduate quotes, *"I know they pay well!!! J J"* But on the other hand few think the contrary. One of the interviewee said: *"you know salary is not always good.... especially in ** you only get 2000 in the 1st year as a PhD. But some master students when they work for companies they get 2800-3000 as starting salary!"*

Social benefits include items like policies, insurance, travel compensation, pension funds, etc. This scored 14 points and was the twelfth highest ranked (n= 4) academic attraction factor. A graduate quotes, *"Like some social insurance benefits for foreign students or foreign people like to take care of their families or something because I think ... maybe you can say like a policy"*.

IT graduates also identified 51 academic unattractive factors (see Appendix F), which were compiled into categories while data analyzing (see Table 9). The identified academic unattractive factors were ranked by the interviewees, 1 being the most unattractive factor (1= 10 points). 'Low salary' (=101), followed by 'research' (=39), 'limited benefits' (=31) and being 'too theoretical' (=22) in terms of teaching and research, etc. However, 'not providing preferred training' and 'less traveling opportunities' were ranked the least (=5 points) unattractive factor in an academic organization. This large amount of data was categorized into themes and the ranks were added to identify the most attractive factor according to the interviewees. Research was the most unattractive factor of working in an academia followed by lack of monetary benefits.

Academic unattractive factors	***Total points***
Research	103
Lack of monetary benefits	101
No career growth or development	104
Bad academic culture	121
Lack of social benefits	54
Long duration	70
Bad academic image	48
Lack of academic facilities	28
Teaching	19
No customer interaction	9
Location	7

Table 9: Rank ordered academic unattractive factors

Major categories were derived as academic unattractive factors, as shown in Table 10. These were then content-analyzed, i.e., each category was counted when it occurred in the transcripts. 'Research' was the most unattractive factor in an academic organization, which was mentioned at least 18 times. This was followed by 'lack of monetary benefits' and 'no

career growth or development' both of which were mentioned 12 times each. 'Bad academic culture' (N= 8) and 'lack of social benefits' (N=6) were also frequently mentioned.

Academic unattractive factors	***n***
Research	18
Lack of monetary benefits	12
No career growth or development	12
Bad academic culture	8
Lack of social benefits	6
Long duration	5
Bad academic image	4
Lack of academic facilities	3
Teaching	3
No customer interaction	1
Location	1

Table 10: Content analysis of academic unattractive factors

The category **research** consists of research being too theoretical, long hours of reading, mostly research and no teaching, too much pressure to publish and other tasks not related to research. An interviewee talked about his interest in practical contributions: *"It's a theoretical contribution to society … it's more like... I'm also interested in practical contribution. So if I do research … I write a book it gets forgotten in a couple of years, so it's very rare that you invent a Porters model"*. This category scored 103 points and was the second most unattractive academic factor (n= 103).

Lack of monetary benefits in academics relates to low salary and other limited monetary incentives. It scored 101 points and was the third most unattractive academic factor. An interviewee described: "*compared to private and real business the earnings are lower at university"*.

No career growth or development is comprised of career risk, few career opportunities or development, assignments provided by the university, no practical experience, no growth or being too specialized in one field only, not gaining the preferred training, and position is related to one's qualification. This category scored 104 points and was the third most unattractive academic factor. One interesting view on career risk was pointed out by one of

the interviewees. He said: *"Job security is attractive but if they don't need you, you can still work and that will decrease your value because they don't need you but you don't have to leave"*.

Bad academic culture includes redundancy and bureaucratic structures, places where the environment is seen as static, job is not related to study, boring job, too may responsibilities and workload or pressure is high (teaching and research), no self-actualization or recognition, working environment is too dynamic (too many changes), cold relationship with colleagues, superiority aspect, and no balance between work and family life. *"For pursuing the career I don't think there is much …not that good… no career development. It's just lectures and then assistant professor… associate professor.... then professor…and that takes a long time…and also the position that you get is related to the degree you have... so like you elevate your degree and don't elevate your career, I think. It's different working in a company"*. This category scored 121 points and was the fourth-ranked academic unattractive factor.

Lack of social benefits consists of limited or rather restricted benefits such as no laptop, mobile, no good insurance packages, dinners, etc., as compared to private organizations and less traveling opportunities. It scored 54 points and was the fifth-ranked unattractive academic factor. An interviewee said: *"the benefits ... I don't perceive them as being too low but of course they are not as high as within corporate lines…"*

Long duration in the academic context is the duration taken to complete a research project. It comprises of the age factor, huge projects, longer working hours, and length of the study of PhD. For example, this includes the length of time to complete a PhD dissertation. One of the interviewee expressed: *"PhD programs are too long. Because … some…. like PhD students, they have to work for 5 or 6 years but the project is still not finished, so they still need to work here"*. It scored 70 points and was the sixth most unattractive academic factor.

Bad academic image involves lack of hierarchical control, low/bad reputation, not being innovative, and university being old fashioned. Reputation was an attractive and important factor for IT graduates, and, as one of them said: *"There is no reputation in an academic career...I mean if you're working as a management consultant in a company it sounds more interesting than a professor"*. It scored 48 points and was the seventh most unattractive academic factor.

Lack of academic facilities are those that hinder an employee's research or prevent them from fulfilling their job requirements, e.g., computer, internet, library access, etc., and difficulties in research areas obtaining sponsoring of research. It scored 28 points and was the eighth most unattractive academic factor. An IT graduate expressed her concerns about the lack of university facilities saying: *"The classrooms.... where they give lectures, the building, the computers.... they are old-fashioned, it's not innovative"*.

Teaching was comprised of teaching only, overloaded with courses and lectures along with research. Teaching has been described by the interviewed IT graduates as the most important part of an academic career. Also, they feel teaching needs to go hand-in-hand with research or it has to relate to the field of study one is interested in. One of the interviewees discussed: *"Here the pressure is too high for the end result of the research or something else like teaching plus research... or maybe other jobs which are not related to research"*. It scored 19 points and was the ninth most unattractive academic factor.

No customer interaction scored 9 points. According to the interviews, networking and socializing with private organizations or other organizations is also important. An interviewee mentioned, *"you don't see a lot of customers here..."*

The location scored 7 points. It was mentioned by one interviewee as: *"In this university, I know a few people who have to stay in Enschede… and the rest of the family and friends live elsewhere, so the location is not nice."*

Comparing the content analysis of the top five attractive and unattractive academic factors (see Table 11), both the attractive and unattractive factors are clearly defined and it is easy to see what factors are important and required to attract an IT graduate to an academic organization and what would detract them from an academic organization. The graduates think a university is a place booming with knowledge and technology, which inspires them to embrace their work and constructively criticize each others' work. Challenging and interesting work is what lures them to a university but research, on the other hand, is very unattractive due to the fact that it is too theoretical and a long process or it does not suit their interests. However, the image of the university is also attractive because the graduates think their reputation grows along with the university image over time. Graduates are also very

attracted to universities because they seem to evolve as professionals as a result of training and remaining up-to-date with technology. However, some seem to think their career freezes and there is not much opportunity for growth within an academic career (for example, starting as an assistant professor and the last stage is professor or head of the department), in comparison to private organizations.

Again, academic culture is quite attractive as it is open and friendly in nature but then if the culture is bad, for instance, office politics, seniority, etc., it can be very unattractive, too. IT graduates are fond of 'autonomy' in their work. It is very important to them so that they can exercise or execute their responsibilities their own way within the given timeframe. Conversely, many interviewees seem to think that universities do not provide many benefits in terms of monetary and social benefits, e.g., insurance, travel compensation etc. in comparison to private organizations. Once again, though unattractive factors like lack of monetary or social benefits are not considered important, it can be a source of de-motivation of IT graduates in the long run.

Academic attractive factors	***n***	***Academic unattractive factors***	***n***
Challenging and interesting work	28	Research	18
Academic image	19	Lack of monetary benefits	12
Personnel development	18	No career growth or development	12
Academic culture	16	Bad academic culture	8
Autonomy	15	Lack of social benefits	6

Table 11: Comparison of the top 5 attractive and unattractive academic factors

4.3 Integration of results

In this study, each and every organization/ academic attractive and unattractive factor has been given equal importance. The factors identified by IT graduates were also ranked by the same IT graduates and these factors were content analyzed into categories to obtain a comprehensive picture of the factors that influence their decision as job seekers after graduation. To give an overview of the results of this study, the top five organization and academic attractive factors are shown in Table 12. While taking a close look at the factors identified by the IT graduates, it was noticed that many factors support findings of previous research.

Just like the study by Lievens et al. (2001), IT graduates in this are attracted to size and type (private/public sector) of an organization and also multicultural organizations. In the study by Hall et al. (2007), they described IT professionals as having a technical focus, which does not comply with our study. Young IT graduates are more inclined towards management or consulting and leadership responsibilities along with the 'technical foci'. On the other hand, the motivation driving factors like recognition, career development, team work, working environment and working experience identified in their study complies well with this study. Just like in Enns et al. (2006), IT professionals of this study are highly attracted and motivated by challenging work and career growth and development. Ituma (2006) studied IT professionals in the Nigerian context, which resulted in six career anchors, of which four of the anchors fit this research, namely; autonomy, stability, challenging work and recognition. Traveling and travel incentives have also been identified as an attraction factor, which corresponds with Shinew and Bechams' (1995) empirical study, as it provides positive reinforcement in the long run and also acts an attraction element for potential employees. Unlike Cable and Judge (1994), the results of this study show that the graduates are more attracted to work for a company because of how it impacts their career plan rather than because of monetary benefits. Obviously monetary benefits, social benefits and other compensation systems are important, but it is not the most important factor for them to join a company. In their study, Cable and Judge (1994) also mention that graduates are more attracted towards seniority- and performance-based pay, and Moriones et al. (2004) also argued in their study that seniority-based pay is a motivational instrument for the employees that would attract and retain them. In the case of this study, however, it is one of the unattractive factors. This result is similar to Lievens et.al. (2001), where potential applicants least attracted to seniority-based payment systems. Therefore, IT graduates would be very attracted to an organization that gives them an opportunity to plan their career, along with monetary benefits.

This study also supports the findings of the studies done by Mount and Barrick (1993) and Polyhart (2006), that the reputation of an organization or its image plays a very important role in influencing the decision-making process of prospective employees. Amabile et al. (1996) studied organization attraction in the context of factors like autonomy or freedom, the kind of work in the organization, and how the environment of the organization can attract and motivate a person to be creative, which also comes up in this research. In their recruitment literature, Thomas and Wise (1999), examined organizational attractiveness factors that are also observed in this study. For instance, job characteristics, organizations' characteristics and

diversity in an organization are important in attracting graduates. In addition, organizational image and its culture would also heighten their decision-making process. Young IT graduates also identified attraction factors like an organization's innovativeness, having top shelf technology, or motivating them to be creative and do things differently, and these fit with the research done by Gürer and Camp (2002).

In 2006, Polyharts' study also resulted in attributes like organization fit, location, pay and benefits that as factors that influence an applicant's attraction towards a particular firm or that play a role in retaining highly qualified talents in an organization. His results highly coincide with the results of this study in the context of an organization's attractiveness. Person-organization fit has been studied for a long time and in this research it has been identified quite a few times. As in Rosens' (1997) research, person-organization fit predicts individual's attraction to an organization and the individuals are also attracted to flexible career paths and policies provided by an organization. Young IT professionals also hold onto strong corporate values that are in line with their own personal values (Buhler, 2007). In addition, if their values match those of the organization, both the employees and the employer are happy, and this in turn motivates the employees to stay in the organization (Cooman et al., 2009). Coincidentally, many organizational attraction factors have been identified by previous researchers and they are similar to most of the factors in this research. However, factors like networking or interaction with other companies, supervision within the company and conferences have not been identified in previous research.

When it comes to academic organizations, young IT graduates would be very attracted if they were given challenging and interesting work in a challenging environment along with personnel development through with training, new technologies, etc. The research of Enders and Teilchers' (1997) and Huisman et al. (2002), done in the European context, found that academics were satisfied if they had a flexible profession and the chance to work in a challenging environment. They also pointed out problems like lower career development opportunities, which are also identified as an unattractive factor by the young IT graduates in this study. Surprisingly, as shown in the table below (see Table 12), monetary benefits are not among the top 10 academic attraction factors mentioned by the interviewed IT graduates in the Netherlands. This is unlike in Sweden where academic staff received lower salaries than other European countries, which was highly unattractive and de-motivating and which did not reflect the actual work they did (Huisman et al., 2002). Also, the university image and culture plays a very important role in influencing their decision-making process, and this result also

corresponds with Enders and Teichlers' study (1997) and also Huisman et al. (2002). None of the research done before showed that universities should provide career development opportunities or a flexible career path, and, as concluded and recommended by Gilliot et al. (2002) universities need to integrate career trends and paths for new talents highly in demand by universities. If this would be provided or at least possible to provide, then it would definitely attract young IT graduates since it one of the most attractive academic factors. Autonomy, recognition, traveling, job security, etc., are common within the company and academic attraction factors. Enders and Teilcher (1997) pointed out problems of job security in an academic organization but it is the other way around in this research. IT graduates in this research think job security in universities is quite high and that is one of the many reasons they would be attracted to working in a university in times like during a recession. Networking and traveling, however, has not been mentioned in previous academic studies but they are a part of the results of this study identified by young IT graduates.

Private-sector attractive factors	***n***	***Academic attractive factors***	***n***
Career planning	31	Challenging and interesting work	28
Organizational culture	18	Academic image	19
Monetary benefits	18	Personnel development	18
Organizational image	12	Academic culture	16
Recognition	11	Autonomy	15
Interesting and challenging job	10	Networking	14
Social benefits	9	Traveling	12
Innovative organization	9	Job security	7
Autonomy	7	Recognition within the field	6
Location	7	Academic facilities	6

Table 12: Comparison of the top 10 private-sector and academic attraction factors

5. Limitations and future research

This study is not without limitations. The first limitation refers to the comprehensiveness of the results. This study was conducted with young Dutch IT professionals within one university, which limits the scope and generalizability of the results. For this reason, future research is recommended to explore organizational attractiveness, including interviewees with IT graduates from other universities so that results can be compared and made more explicit.

Secondly, the sample size may also represent a limitation of this study because only 22 interviews were conducted. For comparison, in Goles (2001), a previous study with interviews, he had 243 respondents in his study. This may highlight a weakness in the present research. For this reason, future research is required to interview more respondents to achieve data saturation, and at least interview 50 respondents to get a wider image of applicant attraction around private-sector and academic organizations.

Thirdly, the sample demographics are limited and included mostly Dutch, with a few Asian IT young graduates who participated in the study as well. The sample does not represent those IT professionals who are attempting to work their way up the career ladder without a Master's degree, or those who have no educational background or no degree at all, but still good IT knowledge. The responses may have been different for people who are actually searching for a job at the time of being interviewed. For that reason, future research should attempt to be more inclusive in the sample representation.

Finally, this study is exploratory in nature, which means it has limitation of external validity in general. Each individual is unique and his/her preferences of what makes an organization attractive may differ. Future research is needed to determine if other demographic samples, like UK, US or the Middle East, may similarly describe the same factors of attractiveness towards an organization.

6. Conclusion

The goal of this study was to understand attractive and unattractive private-sector and academic factors identified by young IT professionals. As new job-entering IT professionals, they want to satisfy certain needs, both intrinsic needs (e.g., career advancement, recognition, culture, working environment etc.), and extrinsic needs (e.g., salary, benefits, job security etc.). With respect to the attractive component of Schneider's (1987) ASA framework, results of the present study show that IT professionals' preferences or decisions to join a private organization or a university, is influenced by their expectations and what an organization can provide. Trank et al. (2002), suggest that organizations should find ways to heighten challenging jobs and career growth, which will be crucial to attract and retain highly-skilled professionals in highly competitive job markets. Relating the findings of this Master thesis to Boxall and Purcell's (2008) review of extrinsic rewards like job security, salary etc., as main driver for employee satisfaction. This study shows that intrinsic rewards also matter to attract young talent.

In short, the results indicate that young IT professionals are attracted by different factors, both intrinsic and extrinsic factors. Also, organizations are challenged to understand the motivational factors of their future IT labor so as to attract the brightest people. Young IT professionals today have plenty of jobs available to them. This study's interviewees were aware of the job-market situation for IT professionals and they also know that their skills are quite in demand. They are confident that they will get good jobs and work for interesting organizations. In academics, the independent nature of jobs in universities allows young IT professionals to find areas of professional activities which are the source of professional attachment and satisfaction. Universities should consider integrating a mixture of career development paths, not only within research and teaching but also integrating their chances of career growth and networking with external organizations to inspire young IT professionals of today.

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Appendices

8. Appendices

8.1 Appendix A: Literature analysis

Author	Year	Title	Academic Journal
Powell, G	1984	Effects of job attributes and recruiting practices on applicant decisions: A comparison	Personnel psychology
Turban, D; Keon, T	1993	Organizational Attractiveness: An Interactionist Perspective	Applied Psychology
Honeycutt, T.L; Rosen, B	1997	Family friendly HR policies, salary levels, and salient identity as predictors of organizational attraction	Vocational behavior
Schenk, K.D; Davis, K.S.	1998	The 21st Century IT workforce: Addressing the Market imbalance between Supply and Demand	CPR 98 Boston MA USA
Agarwal, R; Ferratt, T.W.	1998	Recruiting, retaining and developing IT professionals: An empirically derived Taxonomy of HR practices	CPR 98 Boston MA USA
Turban, D.B; Forret, M.L; Hendrickson, C. L	1998	Applicant attraction to firms: Influences of organization reputation, Job and organizational attributes, and recruiter behaviors	Vocational behavior
Schaubroeck, J; Ganster, D.C; Jones, J.R	1998	Organization and Occupation Influences in the Attraction-Selection-Attrition Process	Applied psychology
Sullivan, S.E	1999	The Changing nature of careers: A review and research agenda	Journal of Management
Thomas, K.M, Wise, P.G	1999	Organizational attractiveness and individual differences: Are diverse applicants attracted by different factors?	Business and psychology
Stam, M; Molleman, E	1999	Matching the demand for and supply of IT professionals: towards a learning organization	Int. Journal of Manpower
Agarwal, R; Ferratt, T.W.	2000	Retention and the career motives of IT professionals	SIGCPR (ACM) Evanston Illinois USA
Moore, J.E	2000	One Road to Turnover: An Examination of Work Exhaustion in Technology Professionals	MIS Quarterly

Aiman-Smith, L; Bauer, T; Cable, D	2001	Are you attracted? Do you intend to pursue? A recruiting policy-capturing study	Business and psychology
Lievens, F; Decaesteker, C; Coetsier, P; Geirnaert, J	2001	Organizational Attractiveness for prospective applicants: A person-organization fit perspective	Applied psychology: International review
Turban, D.B	2001	Organizational Attractiveness as an Employer on College Campuses: An Examination of the Applicant Population	Vocational behavior
Lee, P	2001	Career goals and career management strategy among information technology professionals	Career Development International
Goles, T	2001	A view from the entry level: Student perceptions of critical information systems job attributes	SIGCPR ACM
Pfeffer,J	2001	Fighting the war for talent is hazardous to your health	Organizational Dynamics-Elsevier Science, Inc.
Collins, C.J; Stevens, C.K	2002	The Relationship Between Early Recruitment-Related Activities and the Application Decisions of New Labor-Market Entrants: A Brand Equity Approach to Recruitment	Applied psychology: International review
Lievens, F; Van Dam,K; Anderson, N	2002	Recent trends and challenges in personnel selection	Emerald insight (Personnel review)
Trank, C; Rynes, S; Bretz,Jr.R	2002	Attracting applicants in the war for talent: Differences in work preferences among high achievers	Journal of Business and Psychology
Gillot,D; Overlaet,B; Verdin, P	2002	Managing Academic personnel flow at universities	Tertiary education and management.
Ferratt,T; Agarwal,R	2002	Enduring practices for managing IT professionals	Communications of the ACM
Highhouse, S; Lievens, F; Sinar, E.F.	2003	Measuring attraction to Organizations	Educational and Psychological Measurement
Fulmer, I.S; Gerhart, B; Scott, K.S.	2003	Are the 100 best better? An Empirical Investigation of the relationship between being a "great place to work" and firm performance	Personnel psychology
Williams, J.	2004	The future of IT	IT pro (IEEE Xplore)

Niederman, F	2004	IT Employment prospects in 2004: A mixed bag	IEEE Xplore
Ang, S; Slaughter, S.	2004	Turnover of Information technology professionals: The effects of Internal Labor market strategies	ACM
Heslin, P.A.	2005	Conceptualizing and evaluating career success	organizational Behavior
Lievens, F; Hoye, G; Schreurs	2005	Examining the relationship between employer knowledge dimensions and organizational attractiveness: An application in military context	Occupational and Organizational Psychology
Chapman, D; Carroll, S; Piasentin, K; Uggerslev, Krista; Jones, D	2005	Applicant Attraction to Organizations and Job Choice: A Meta-Analytic Review of the Correlates of Recruiting Outcomes	Journal of Applied Psychology
Martin, G; Beaumont, P; Doig, R; Pate, J.	2005	Branding: A new performance discourse for HR?	European Management Journal
Lee, C.K.	2005	Transferability of skills over the IT Career Path	SIGMIS-CPR'05
Ehrhart, K.H; Ziegert, J.C.	2005	Why are individuals attracted to organizations?	Journal of Management
King, R.C; Bu, N.	2005	Perceptions of the mutual obligations between employees and employers: a comparative study of new generation IT professionals in China and the United States	Int. Journal of Human Resource Management
Slaughter, J.E; Stanton, J. M; Mohr, D.C.	2005	The Interaction of Attraction and Selection: Implications for College Recruitment and Schneider's ASA Model	Applied psychology (Int. Review)
Mahony, D; Klaas, B; Mcclendon, J; Varma, A.	2005	The effects of mandatory employment arbitration systems on applicants attraction to organizations	Human Resource Management (Wiley InterScience)
Ferratt, T.W; Agarwal, R; Brown, C.V.; Moore, J.E.	2005	IT Human resource management configurations and IT turnover: Theoretical Synthesis and Empirical Analysis	Information Systems research
Enns, H.G; Ferratt, T.W; Prasad, J	2006	Beyond stereotypes of IT professionals: Implications for IT HR practices	Communications of the ACM
Melissa Johnson and Phil Roberts	2006	Rules of Attraction: Recruit and retain the best staff with employer branding.	MHS (Medical health services)
Polyhart, R; Weekley, J; Baughman, K.	2006	The structure and function of human capital emergence: A multilevel examination of the attraction-selection-attrition model	Academy of Management Journal
Polyhart, R.	2006	Staffing in the 21st Century: New Challenges and Strategic Opportunities	Journal of Management

Chapman, D; Webster, J.	2006	Toward an integrated model of applicant reactions and job choice	International Journal of Human Resource Management
Zwieg, P; Kaiser, K; Beath,C; Bullen,C; Gallagher, K; Goles,T; Howland,J; Simon,J.	2006	The Information technology: workforce: Trends and implications 2005-08	MIS Quarterly Executive
Strohmeier,S.	2006	Research in e-HRM: Review and implications	Human Resource Management Review
Ituma, A.	2006	The Internal Career: An Explorative Study of the Career Anchors of Information Technology Workers in Nigeria	SIGMIS-CPR (ACM)
Mangold, W.G; Miles, S.J.	2007	The employee brand: Is yours an all-star?	Business Horizons (ELSEVIER) ScienceDirect
Lievens, F; Hoye, G; Anseel, F.	2007	Organizational Identity and employer image: Towards a unifying framework	Journal of Management
Carless, S; Wintle, J.	2007	Applicant Attraction: The role of recruiter function, work-life balance policies and career salience	Selection and Assessment
Niederman, F; Sumner, M; Maertz Jr, C.P.	2007	Testing and Extending the unfolding model of voluntary turnover to IT professionals	Human Resource Management (Wiley InterScience)
Quesenberry, J.L.; Trauth, E.M.	2007	What Do Women Want?: An Investigation of Career Anchors among Women in the IT Workforce	SIGMIS-CPR (ACM)
Sumner, M; Franke, D.	2007	Career Orientation and the Global IT Workforce: Research in Progress	SIGMIS-CPR (ACM)
Resick, C.; Baltes, B; Shantz, C.	2007	Person–Organization Fit and Work-Related Attitudes and Decisions: Examining Interactive Effects With Job Fit and Conscientiousness	Journal of Applied Psychology
Careless, S; Wintle, J.	2007	Applicant Attraction: The role of recruiter function, work–life balance policies and career salience	International Journal of Selection and Assessment
Walker, H.J; Feild, H; Giles, W; Bernerth, J; Jones-farmer, A.	2007	An assessment of attraction toward affirmative action organizations: investigating the role of individual differences	Journal of Organizational Behavior

Carless, S; Imber, A.	2007	The Influence of Perceived Interviewer and Job and Organizational Characteristics on Applicant Attraction and Job Choice Intentions: The role of applicant anxiety	International Journal of Selection and Assessment
Williamson, I.O; Slay, H.S; Shaprio, D.L; Shivers-Blackwell, S.L.	2008	The Effect of explanations on prospective applicants' reactions to firm diversity practices	Human Resource Management (Wiley InterScience)
Coldwell, D.A; Billsberry, J; Van Meurs, N; Marsh, P.J.G	2008	The Effects of Person-organization ethical fit on employee attraction and retention: towards a testable explanatory model	Business Ethics
Moroko, L; Uncles, M.	2008	Characteristics of successful employer brands	Brand Management
Dik, B.J; Sargent, A.M; Steger, M.F.	2008	Career Development strivings: Assessing goals and motivation in career decision-making and planning	Career Development International
Bubany, S.T; Krieshok, T.S; Black, M.D; McKay, R.A.	2008	College students' perspectives on their career decision making	Career Assessment
Aggarwal, A.	2008	Emerging markets : Labor supply in the Indian IT industry	Communications of the ACM
Schreurs, B; Druart, C; Proost, K; De Witte, K.	2009	Symbolic Attributes and Organizational Attractiveness: The moderating effects of applicant personality	International Journal of selection and Assessment
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8.2 Appendix B: Interview Questions

1. A) Currently…..due to the financial crisis a lot on the job market has changed. Has this event influenced your level or attraction and perceptions of large organizations?
   B) Depending on company size, do you intend to work for a large organization, medium, small or start-up, in the public or private sector?
   C) What kind of organization is most attractive/ unattractive for you regarding company size? Why?
   D) Do you know if the perception of IT professionals towards large organizations has changed? (Does reputation matter.. or it doesn't matter at all)

2. What factors attract you to get started working in an organization?

3. When you think about your peers (other IT/IS students) what do you think attracts them or what doesn't attract them to a specific organization? Do you think there are some salient attraction factors that are important for all IT professionals, some things organizations "must offer"?

4. When you think about an academic career, what do you think are factors that would make you and other IT graduates decide for an academic career *(attraction to university as future employer and organization to work in)*? Please list the attractive and unattractive factors and describe them in detail.

5. In general, would you please compare the factors that attract you to an organization *(organizational attraction factors that you find most important)* from the ones that make you stay in an organization *(retention factors)*?

8.3 Appendix C: List of organizations' attractive and unattractive factors

Organization Attraction Factors

Monetary benefit's

Career development

Challenging and interesting work

Training possibilities

Reputation

Positive work environment

Autonomy

Location

Flexibility (e.g. working at home)

Benefit's (car, own office)

Recognition

Top shelf technology

International Travels

Right position according to qualification

Culture (positive)

Secure job

Stable environment: Team consistency

Secondary Benefits

Size and Type (public/private sector)

Consultancy

Traineeship

Willing to offer a job

Kind of job (expected type of job)

Management and Leadership techniques

Not always technical but also organizational

Innovative job

Free time

Future development of an organization

Experience

Networking

Location (working abroad)

Meaningful work

To be creative: Do things differently

Fit with the organization

Quality certification of the company

Normal working hours

Diversified

Status (self)

Experienced colleagues (to get assistance)

Conferences (like best practices)

Interaction with other companies

Multinational/multicultural

Organization unattractive factors

Low salary

Long working hours

Bureaucracy

Boring and routine job

No recognition/appreciation

Redundancy in work

No growth

Culture (negative)

Language

Not innovative

Working with many colleagues at a time

No career growth or development possibilities

Less autonomy

Gender difference

High turnover

No educational opportunities or training

Office politics

No opportunities for promotions

Not related to study

Standardized idea about career

Traveling too much (location)

IT seen as small

Lower position (not equal to qualification)

Too much pressure

Bad reputation

Wrong size

No equal opportunities'

Start-up not secure

Policies

Bad management

Less benefits

Changes not communicated on time (early)

Vacation days (days they can take off)

Uncomfortable working conditions

No reputation with well-known companies

Not an open environment

No support/supervision

Organizational culture

Large organization (not flexible)

Slow growth

Seniority based pay

Changes in contract difficult

8.4 Appendix D: List of academic attractive and unattractive factors.

Academic attractive factors

Friendly working environment

Interesting research topic

High Autonomy

Knowledge: Opportunity for learning and training

Travel opportunities

High job security

International conferences: new idea

Salary

Teaching

Flexibility (work)

International Culture

Challenge of an assignment

Academic Reputation

Collaboration with organizations

Reputation with the academic career (PhD)

Reputation within the field

Access to university facilities (research and internet facilities)

Sophisticated and new technology

Vacation and free time

Opportunity for being creative

Broader scope for networking

Social/other benefit's (family, policy)

Different fields of work Students, research etc.

Balance between research and teaching

Financial benefits

Good relationship with the industry

Research related to study

Decentralized

Opportunity to publish

Work time

Living like a student

Reputation

Interaction with students

Intelligent colleagues

Possibility to share knowledge

Excellent colleagues

Social Network

Support from academia

Challenging environment

Quality of education

Less pressure

Research pioneer

Academic unattractive factors

Low salary

Research

Limited benefits

Too theoretical

Huge projects(working longer/long years)

Bureaucracy

Less facilities

Career opportunity (low)

Less benefit's

Bad reputation

No teaching, only research

Long process (duration)

Too specialized in one field

Biased thinking (career risk)

Research: long hours, lot of reading

Not many Career opportunities

Seems Boring

Work load

No practical experience

Courses and lectures

Can't do what you want (PhD assignment by university)

Research topic not interesting

Too much responsibilities

No career development

Working hours (longer)

Static environment

Routine teaching

No customers (no interaction)

Too much pressure (teaching and research)

Length of study: PhD

Old fashioned: Lectures, rooms, computers

Difficulties in research area (costs, sponsoring)

Superiority

Pressure to publish

Low reputation

Age factor

Miscellaneous jobs not related to their responsibility

No balance between work and family life

No growth

Relationship with colleagues

Lack of recognition

Lack of control (too much of flexibility)

Location

Not innovative

Working environment

Job security (decreases ones worth)

Position related to qualification

Dynamic environment (too much change)

Not the preferred training

Less traveling opportunities

8.5 Appendix E: List of Tables