MOBILITY OF IT PROFESSIONALS IN MALAYSIA

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Abstract: This paper is based on a research study with the aim to investigate the mobility of IT professionals in Malaysia and come up with suggestions to improve recruitment and retention policies for the IT profession. A questionnaire, namely the IT Professional Turnover/Mobility Survey for the Management of IS/IT Department was constructed and administered to 415 respondents representing IT employees listed in the Malaysian National Computer Confederation (MNCC) registration list with a 25% response rate. Data gathered were statistically analysed using descriptive statistics such as frequency counts and percentages, cross-tabulation, and correlation analysis. A research model was constructed based on review of related articles to determine factors that contribute to mobility of IT professionals. Among the major findings were a large majority of respondents would never or seldom moved and likely to stay in their current positions with nearly half would prefer to stay for more than five years. Majority of respondents also indicated that they would remain as IT professionals with no plans to change their career. The findings also suggest that the three most attractive factors for moving among IT professionals are better salary, better working condition and better environment. The most common reasons for leaving was not happy with working conditions and no opportunity for self development. Good pay/renumeration was considered the best factor for staying in current job. On current organization, location (nearer to home) and career advancement opportunities were the two most popular factors chosen. On mobility factor, the variables found to be significantly related to mobility of IT professionals are: Age, Marital Status and Experience (Demographic Information); Tryout and Travel (Personality factor); Quitting Job and Satisfaction (Job Satisfaction); Salary (Career Advancement); and Work Condition and Flexi Time (Organizational Factor). On the employer's perspective, the three most critical problems faced by employers when their IT personnel leave were disruption to schedules, retraining, and difficulty to get replacement. In summary, the findings presented in this study suggest that IT professionals are likely to stay in their

professions, felt that they have made the right choice in their career with the intention of staying with their current job, whilst charting their career goals within the IT profession, but less ambitious in taking up a more senior position within or outside the organization.

Keywords: Turnover, mobility factor, mobility pattern, job change, career advancement

INTRODUCTION

In today's digital era, there is an immediate need for people with IT skills and knowledge particularly in Asia where the current demand for IT professionals is the highest compared to other continents (Gabott, 2000). However, these qualified IT personnel, most of the time, tend to move from one organization to another, changing their job and position in order to fulfill their satisfaction. Furthermore, the transformation of conventional business operations towards e-business has brought some needs and challenges to the economy aspects as well as to working patterns. Thus, recruitment and retention of IT staff has been a critical issue for the last several years as demand for IT professionals has exceeded supply (Webster et al., 2000).

The demand for highly-skilled IT professionals is however threatened by the working patterns today. The IT professionals tend to switch from one job to another, seeking for better incentives, opportunities and job satisfaction. This contributes to high mobility which can cause problems to the organization particularly with the growing demand for IT personnel to plan, develop, maintain, and integrate information system applications. This phenomenon has created market imbalance. In the mean time, studies have shown that there has been a serious shortage of appropriately qualified IT professionals to meet the demand (King, 1997; Agarwal et al., 1998).

Turnover is costly, not only in terms of replacing staff and the high cost of training new employees, but also in terms of systems development productivity and quality. Employers who lost valuable people in whom they have invested time, training and nurturing, may not want to invest much more in recruiting new staff. Therefore, the management should come up with a practical solution to refine corporate policies pertaining to retention and recruitment.

Despite the various literatures on the turnover in organizations (Morell et al, 2001; Price, 1977; Mobley, 1982), there is as yet no universally accepted account or framework for why people choose to leave (Lee, 1994). The reported skilled IT professional shortage to feed the MSC projects (MASTIC, 2003) as well as the demand from the industry has led to the recruitment of offshore Indian IT professionals (Star InTech, 2004). The trend of outsourcing projects offshore to India in the United States (US) and United Kingdom (UK) had led to a serious lowered demand for IT local graduates (McCue, 2004).

Numerous studies have been carried out on managing IT employees, however, most of these studies were restricted to certain countries, especially North America, Europe and other parts of Asia (Baroudi, 1985; Ginzberg et. al. 1988; Igbaria et al. 1991). None of these studies examined the actual turnover among IT professionals. It is the intention of this study to do just that but within the context of the Malaysian environment. This

research therefore hopes to highlight the present situation in Malaysia, and come up with a recommendation to employers, government and other interested parties to adopt recruitment and retention policies for IT professionals.

LITERATURE REVIEW

Turnover means 'voluntarily cessation of membership of an organization by an employee of that organization' (Morrell et al., 2001). This definition also refers to 'cessation of membership' (Mobley, 1982), but it should be acknowledged that from a more institutional or organizational perspective, turnover may also include accession or entry (Morell et al., 2001). Turnover means when employee ceases to be a member of an organization. (Gomez-Meija et al.,1998).

Job turnover is generally expensive and disruptive to employers. In strong economic times, when there are many options open to employees, it is more important than ever that company keep valued employees (Rittenberg, 2000). According to some researchers, IT professionals form a unique occupational group (Lee, 2000). This group of people has different yet stronger need for growth and personal development compared to other occupation. In addition, IT professionals also have a high need for learning, strong desire to be challenged, and more achievement oriented (Lee, 2000; Wynekoop & Walz, 1998; Woodruff, 1980).

The existing working patterns today have made IT professionals becoming more independent and more entrepreneurial. They tend to move from one place to another, seeking for better incentives and opportunities. The concept of 'switching' from one company to another or 'job-hopping' is seen as an option for most of the IT professionals today. Consequently, this mobility concept is assumed to give some benefits and problems to organizations as well as for the individual. For the past decade, hiring and keeping productive workers is becoming one of the critical issues for organizations (Maher & Palacios, 2000). Staff retention is now seen as a major organizational problem in the next five years, especially for employees at the age of 34-45 (Gabott, 2000).

There are various reasons that made IT professionals remain working in a company for a while before leaving for other challenging opportunities. Evans (2000), in his study, has identified that IT people tend to stay because they need to get some trainings and access to the latest technology, to better equip themselves before leaving for a better job. In another study, Ferratt and his co-researchers (2001) have mentioned that the constructs that impact the IT professional's intention to stay include employment opportunities, virtual team factors, and several additional individual factors related to work, such as job satisfaction and organizational commitment. The benefit to employee is in fact a lost to an organization/employer. The trust given by the employer is also another reason why IT professionals stay in one company.

Below is the list found to be the most attractive factors for keeping IT personnel in an organization (Lockwood et al. 1999).

Important to IT recruits in the past (1990s):
1. Money (base salary);
2. Job security (based on longevity of the organization);
3. Interesting/challenging work;

4. Training; and,
5. Benefit package (retirement plan, health insurance).

Important to IT recruits today:
1. Money (base salary plus bonuses and stock options);
2. Chance to learn new skills (those that the market values);
3. Reputation of the company in technology innovations;
4. Flexible work environment (flexitime, telecommuting);
5. Working conditions (physical, overtime, colleagues, boss, casual dress); and,
6. "Outside the box" benefits.

While job-hopping is a way for a better life to a worker, it remains risky to employers especially to those that put big investment on employee training. Employers tend to incur greater risks by investing in costly training as employees may leave for better and higher pay job once they were trained and acquired additional skills and competencies (Oilenburg, 2000).

The worldwide IT labor shortage shows no sign of easing. This phenomenon will require management to step up its recruiting and retention efforts even more (Zurier, 2000). According to the author turnover is high in certain companies. The author listed some of the challenges in hiring and keeping IT professionals:

1.   high turnover rate because of salaries and other incentives given by competitors;
2.   lack of skillful people;
3.   high costs in recruiting and hiring people; and,
4.   quality of life issues.

According to Pare et al. (2001), salary, annual bonus, recruitment bonus and Y2K retention bonus, specifically are hypothesized to be positively related to continuance commitment and negatively related to turnover intentions. The authors contend that IT professionals will willingly remain in organizations where work is stimulating and challenging, chances for advancement are high and if they feel reasonably well paid. The study concluded that IT specialists should not be managed as disposable productive resources but considered as humans with specific needs and interests such as equity and justice, opportunity to learn and innovate, recognition of peers and managers, attainment of new levels of responsibility, and empowerment.

RESEARCH METHODS

Data and fact-findings were done through questionnaires and structured interviews. One set of questionnaires was constructed which made up the survey instruments given to personnel responsible for IT development and maintenance. The instrument, namely the IT Professional Turnover/Mobility Survey for the Management of IS/IT Department was constructed based on similar studies conducted in other parts of the world with some modification to suit the local environment. Items were selected from similar studies in Australia (Zeffane1994), the US (Igbaria and Siegel, 1992; Niederman and Sumner, 2001), Canada (Pare et al., 2001), Israel (Mano-Negrin, 2001), and Singapore (Tan and Igbaria, 1993). A pilot survey was conducted to test the validity and reliability of the questionnaire with twenty-five IT professionals from departments and faculties in Universiti Utara

Malaysia. Preliminary findings from the pilot study were presented in an international conference (Huda et al., 2001) where feedbacks were also obtained. Based on the feedbacks and returns, the questionnaires were accordingly revised and considered valid and reliable for the actual survey.

The eight-page questionnaire consisted of six parts, namely:

1. Demographic Information;
2. Personality;
3. Job Satisfaction;
4. Career Advancement;
5. Organizational factor; and,
6. Mobility factor.

The first part, Demographic Information, attempts to gather data on the respondent's background information. This includes the respondent's age, sex, marital status, race. qualifications, type of organization, and position. Personality factor, the second part of the questionnaire. deals with the respondent's personal reasons for changing jobs. Among the information sought were locality, experience, tryout, and travel. Part three of the questionnaire, Job Satisfaction, sought the opinion of the respondents on the extent he/she is willing to change job based on his/her satisfaction with the current position. Among the information asked are feeling about quitting and satisfaction with present job.

The fourth part, Career Advancement. gathered information about promotion, salary and opportunity for career advancement. Part five is the organizational factor that may influence high mobility of the IT professionals. Information such as work condition, work environment and flexible working time were gathered, and may be significant reasons for IT professionals to leave. The last part, Mobility factor, consists of questions that will assess the mobility patterns of the respondents. In this study, mobility as defined previously is moving from one job to another and this can mean the frequency of job changed, intention to leave, and length of stay. This information will be captured and form the mobility factor assessment.

Apart from the survey, interviews were also conducted with senior IT managers to have an in-depth understanding of the mobility patterns of IT professionals. Six organizations were selected for the interview covering the petroleum industry, banks, Information & Communication Technology industry, and a plantation industry. Respondents were asked regarding problems they faced when IT professionals leave their organizations and steps taken to prevent or resolve this problem.

Other information captured in the interview include number of IT personnel and average annual turnover, issues on replacement of IT personnel, implication, attitudes and performance issues. and the more general mobility patterns of IT professionals in Malaysia. Data from the interviews were analyzed and matched against the survey findings. A summary of the problems and solutions also form part of the findings presented in this study.

The survey questionnaires were posted to the IT managers whose addresses were obtained from the Malaysian National Computer Confederation (MNCC) registration. The

instruments were also hand-delivered to organizations that have been identified as active computer users.

Data were coded and cross-tabulated using the statistical package. The major analytical treatment applied was descriptive techniques. Correlation analysis was also conducted to identify evidence of relationships between factors, that may influence high mobility of IT professionals. This will hopefully shed some light on the mobility pattern and its impact to the organization.

Research Model

Based on information from the literature review, pilot study and feedbacks gathered at the beginning of the study, several factors have been identified that may have an impact on the mobility of the IT professionals. These factors are then used to form the research variables, in which they are operationalized according to the six parts contained in the survey instrument as discussed at the beginning of this chapter. Figure 1 presents the initial research model used in this study. Basically, the model attempts to identify the factors that influence mobility of IT professionals.

The model as in Figure 1 depicts the proposed relationships between the determinant factors which are Demographic Information, Personality factor, Job Satisfaction, Career Advancement and Organizational Factor also known as antecedent or the independent variables and the dependent variable Mobility Factor. Correlation analysis will be used to test whether significant relationships exist between the independent and dependent variables, in order to establish the mobility pattern.

Figure 1: The Initial Research Model
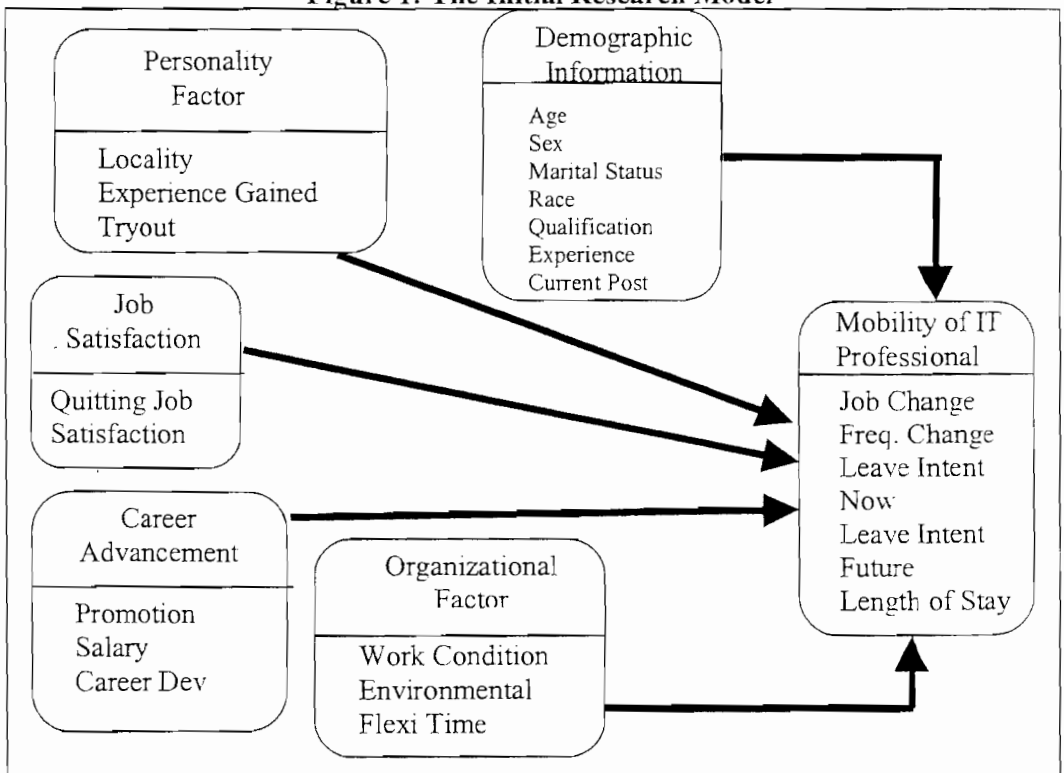
The model will then be modified accordingly to reflect the mobility pattern and the impact of high mobility of IT professionals supported by strong empirical evidence found in this study. The next chapter will discuss the findings of this study based on returns from the survey.

Analysis of Results

The findings of this study are presented in the following order: (1) Demographic Profiles of respondents, (2) Descriptive results of turnover behavior, and (3) Correlation Analysis.

In this study, questionnaires were sent out to 415 IT employees as listed in the MNCC registration list (MNCC, 2000). Out of this total numbers, 104 (25.0%) employees have posted back their responses.

Of the 104 respondents, 81 (77.9%) of the respondents were male and the remaining 23 (22.1%) were female. Majority of the respondents were married (74%) and about half of the respondents age between 36 to 40 years (19.2%) and between 41 to 45 years old (27.9%). Majority of the respondents were Chinese who made up 75% of the total respondents. Referring to the academic background of the respondents, nearly 40% of the respondents have the academic qualification of bachelor degree and 26% of the respondents have obtained their masters degree. Refer to Table 2 for the detailed information regarding the distribution of respondent sample characteristics.

Table 2: Demographic Characteristics

Variable	Frequency	Percentage
Age (years):		
Less than 21	1	1.0
21-25	6	5.8
26-30	10	9.6
31-35	8	7.7
36-40	**21**	**20.2**
41-45	**30**	**28.8**
46-50	15	14.4
Above 50	13	12.5
Gender:		
Male	**81**	**77.9**
Female	23	22.1
Marital Status:		
Single	26	25
Married	**77**	**74**
Divorced	1	1.0
Race:		
Malay	17	16.3
Chinese	**75**	**72.1**
Indian	7	6.7
Others	5	4.8

Level of Qualification:		
Certificate	3	2.9
Diploma	12	11.5
Bachelor Degree	**38**	**36.5**
Post Graduate Diploma	4	3.8
Masters Degree	**27**	**26.0**
Doctorate	7	6.7
Others	13	12.5

This section provides information on job profile of the respondents. Almost 23% of the respondents worked as IT managers while most of the respondents (42%) held other positions in the organization such as consultant, MIS executive, network engineer and project manager. About 40% of the respondents have been working in the organizations for more than seven years and majority of the respondents (76%) worked in private sectors. Table 3 shows more information on the job profile of the respondents.

Table 3: Job Profile

Variable	Frequency	Percentage
Current Position:		
Systems Analyst	8	7.7
Programmer	6	5.8
Academician	8	7.7
Own Business	7	6.7
Network Administrator	4	3.8
Database Administrator	1	1.0
IT Manager	**24**	**23.1**
Others	**44**	**42.3**
Term in Position:		
Less than 1 year	9	8.7
1-3 years	31	29.8
4-6 years	24	23.1
More than 7 years	**40**	**38.5**
Type of Current Organization:		
Government	14	13.5
Semi Government	2	1.9
Private	**79**	**76.0**
Own business	8	7.7
Freelance	1	1.0

Table 4 depicts the number of time the employees have changed job or moved from their previous position. Out of the total number of 103 responses, 44 respondents (42.7%) stated

that they seldom changed their job or moved from previous position. The other 26 respondents (25.2%) answered that they sometime changed their job or moved from previous position. This number is similar to those who had never move or change their job. From the result, it shows that most of the time, these IT staff had experienced job-hopping.

Table 4: Have you changed job or moved from previous positions

	Frequency	Percentage (%)
Never	26	25.2
Seldom	44	42.7
Sometime	26	25.2
Most of the time	4	3.9
All the times	3	2.9
TOTAL	**103**	**100.0**

Did not answer = 1 person

Those who had changed job between one to four times are the most significant which comprises of 63 respondents (table 5). By mentioning the number of times they had changed job since they are qualified as an IT professional clearly shows that these IT staff again had experienced job-hopping.

Table 5: The number of times changing job once qualified as an IT Professional

	Frequency	Percentage (%)
0	33	31.7
1	21	20.2
2	11	10.6
3	17	16.3
4	14	13.5
5	4	3.8
6	2	1.9
7	1	1.0
10	1	1.0
TOTAL	**104**	**100.0**

Figure 2 shows the percentage of agreement and disagreement on some attractive factors in accepting new positions. The three most attractive factors agreed by respondents are; better salary (81.2%), better working conditions (80.2%), and better environments (80.0%). The percentage for other factors listed such as career advancement opportunity (78.6%), promotion (60%), seek experience (59.8%), flexible working hours (57.7%), nearer to hometown (42.1%), travel (16.7%), and test the market (14.7%). The other factors given

by the respondents are; to contribute to the country, to enhance knowledge and skills, to work in a stable multinational company and also to manage own business.

Figure 2: Factors Accepting Job
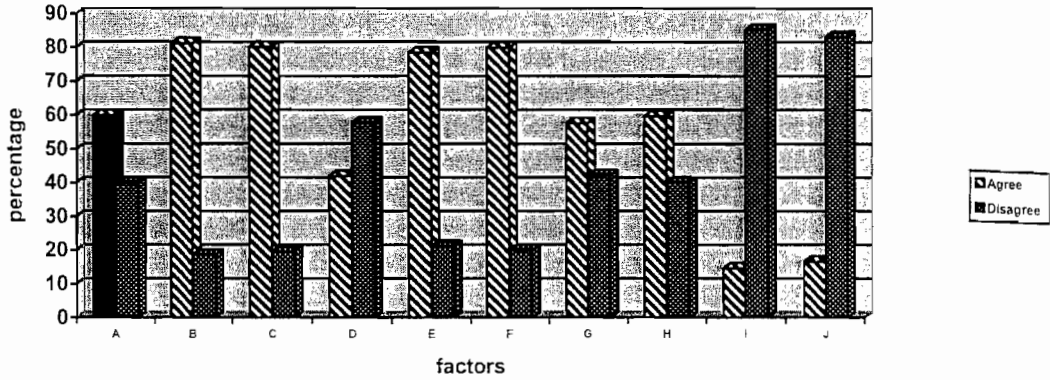
A: promotion
B: better salary
C: better working condition
D: nearer to home
E: career advancement
     opportunities

F better environment
G flexible working time
H seek experience
I test the market
J travel

The respondents were also asked to state the most important factor that will make them leave their present organization. The two most important factors to leave are identified as follows:
1. not happy with working condition (35.6 %); and,
2. no opportunity for self development (24.1 %).

Figure 3 further illustrates the percentage of respondents who considered the listed factors as important. Other factors such as unsatisfactory remunerations (13.7%), retrenchment (6.9%), family matters (6.9%), and also to further studies (2.3%). The other factors given by the respondents are better offer from other organization, change of profession, and office politics.

Only 9.7% of the respondents feel like quitting their job in their current organization, while more than 90% of the respondents have no intention at all. The rest of the respondents (75.5%) are satisfied with their present job.

Figure 3: Factors Leaving an Organization
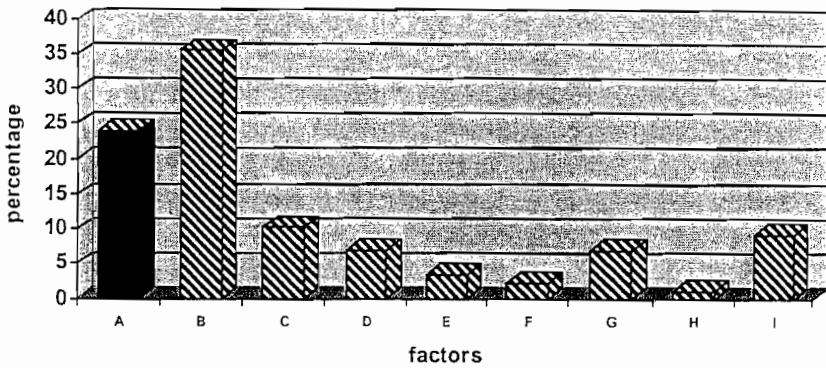
A: no opportunity for self development

B: not happy with working conditions

C: unsatisfactory remuneration

D: family/personal reasons

E: unsatisfied with salary

F   further studies

G   retrenchment

H   lack of support for staff welfare

I   others

Respondents were given a list of reasons what they liked most about their current job. From the list of reasons, about 31.2% of the respondents chose pay/remuneration scheme as the most favorable reason they like about their current job. Other significant answers are good training program (9.7%) and opportunity for promotion (8.6%). Only 3.8% of the respondents appreciate the opportunity to further studies while only 1% appreciates the opportunity to travel.

Figure 4a: Factors Liked Most about Current Job (As Listed)
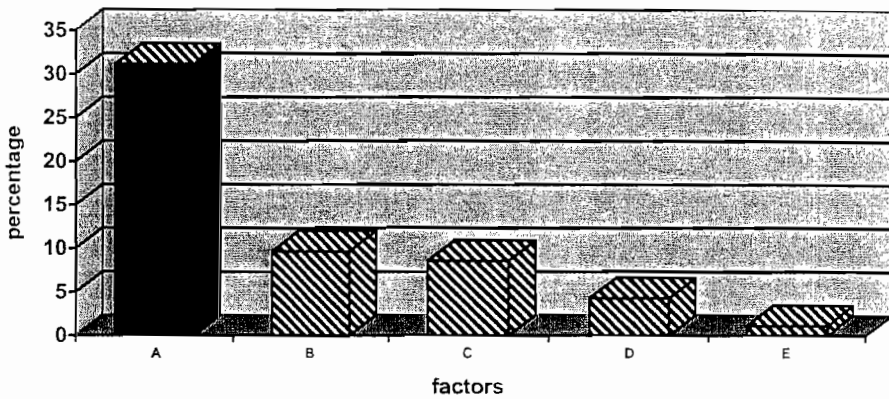
A: good pay/remuneration   D: opportunity to further studies
B: good training program   E: opportunity to travel
C: opportunity for promotion

Forty (40) respondents listed their own reasons for liking their current job, which were then categorized into five categories. Many differing reasons given but they can be categorized into three major reasons such as self-development (8.7%), flexibility (9.6%), working environment (7.7%), working culture (5.8%), and job satisfaction (6.7%) as depicted in Figure 4b.

## Figure 4b: Factors Liked Most about Current Job (Stated by Respondent)
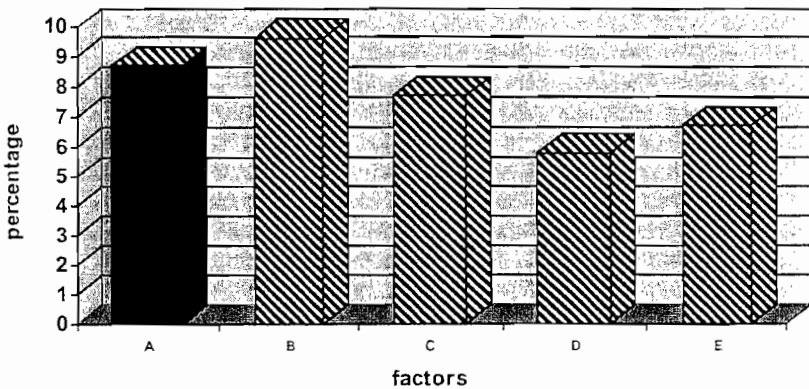
A: self development   D: working culture
B: flexibility   E: job satisfaction.
C: working environment

Besides what they like most about their current job, the respondents were also asked what they like most about their current organization. Figure 5 displays reasons given by the respondents of what they liked most about their current organization. The three main reasons include:

1. Location near home (20%)
2. career advancement opportunities (20%) and
3. good working condition

Other reasons are flexible working time (14%), conducive work-place environment (12.9%), image/reputation (7.1%), many facilities (4.7%), and availability of training (2.4%).

Figure 5: Factors Liked Most About Their Current Organization
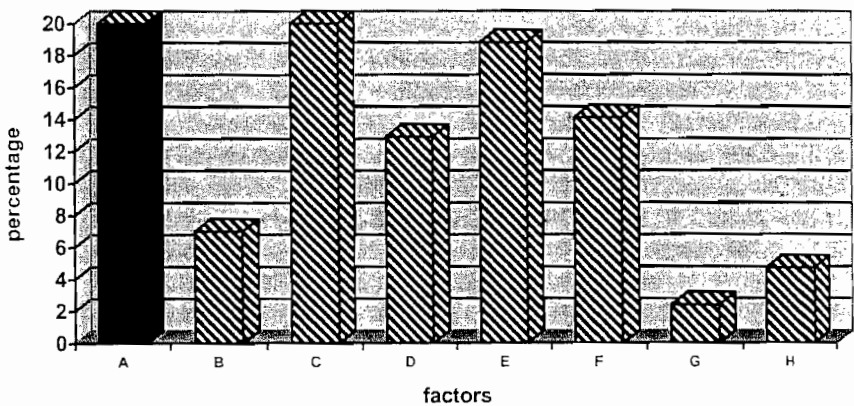
A: location near home   E: Good Working condition
B: image/reputation   F: Flexible working hours
C: career advancement opportunities H: Availability of training programmes
D: conducive environment   I: many facilities

Only 39.2% of the respondents are likely to leave their organization within the next year while the majority of them are likely to stay. Figure 6 displays the ideal length of time to stay with one employer. Majority of the respondents (49 %) prefer to stay for more than 5 years, followed by 22.1% who prefer to stay 4-5 years and about 16.3% who prefer to stay of 3-4 years.

Figure 6: Ideal Length Of Time To Stay With An Employer

A   6 month- 1 year   D   4 year-5 year
B: 1 year –2 year   E   more than 5 year
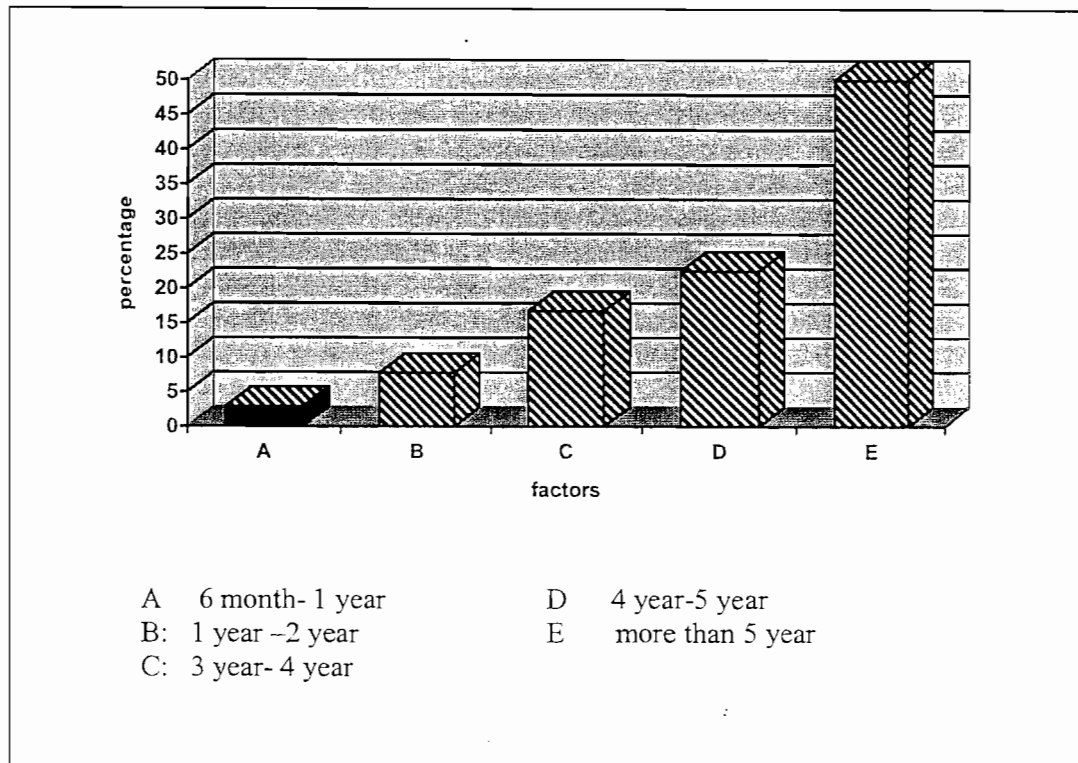C: 3 year- 4 year

Table 7 describes the intention of respondents in planning their future career. Majority of the respondents (60.4%) indicated that they would remain as IT professionals with no immediate plans of changing their career. This result is also consistent with their satisfaction with the present working environment, where an even greater majority of respondents (77.7%) would be unlikely to set up their own business. This may also indicate that IT professionals are less likely to end up as technopreneurs. An even greater majority would remain in the same industry (96.1%), though almost all respondents (99%) have indicated moving to a different position in the future. This may also suggests the wide career opportunities that are available in the IT profession. Despite these, a significant majority of the respondents (62.1%) also indicated having planned for their career goals, though they may not necessarily aimed for a more senior position in the foreseeable future. This is evidenced from the high proportion of respondents who thought that they would not move up to senior positions either within the same organization (71.8%) or to other organization (81.6%). In addition, 83.5% of respondents indicated that they are likely to stay and not opt out of retirement in the foreseeable future.

Table 7: Future Career Intention

	Percent Yes	Percent No
Plan to change career	39.6	60.4
Setup own company	22.3	77.7
Join industry	3.9	96.1
Remain in current position	1.0	99.0
Career goal mapped out	62.1	37.9
Move up to senior position in same firm	28.2	71.8
Move up to senior position in other firm	18.4	81.6
Retire/Opt out	16.5	83.5

Though the data provide support for high mobility of the IT professionals, this however is expected to be limited within the same level/position. Given the wide career opportunities in the IT profession, an application analysts for example can move to become a systems analyst, a business analyst, an IS planning analyst, a systems engineer, a database designer, or even a database administrator. In summary, the data presented in Table 7 above suggests that IT professionals are likely to stay in their professions, felt that they have made the right choice in their career with the intention of staying with their current job, whilst charting their career goals within the IT profession, but less ambitious in taking up a more senior position within or outside the organization.

Model of IT Professional Mobility

Correlation analysis was carried out to test the relationships between the various research variables against the IT professional mobility based on the initial research model presented earlier in Figure 1. Operationalization of the research variables as represented in the initial research model was done by examining the strengths of each relationship. A strong relationship between two variables suggests that the variables are closely related and have a high degree of association. Though the significance and strength of a relationship provide no evidence of cause and effect, formulation of the associations among the independent and dependent variables derived from the initial model may form the basis of causation. This is considered appropriate since the initial model has been developed based on prior studies.

According to Emory and Cooper (1991) relationships between two or more variables can be measured by using techniques appropriate to the measurement scales used. The authors suggest the most popular and regularly used techniques are Chi-square based measures and correlation coefficients. The Pearson's correlation coefficient technique was used since all variables are measured on the interval and ratio scales as suggested by Emory and Cooper (1991, p. 583). The SPSS software was used to run the correlation analysis and a number of relationships were identified as being statistically significant at the 0.01 and 0.05 levels. The results of the analysis are shown in Table 8 below.

Table 8: Results of Correlation Analysis

	Job Change (Mobility) (Q10)	Freq. of Change (Q11)	Leave Intent now (Q13)	Leave Intent Future (Q21)	Length of Stay (Q22)
Demographic Info.					
Age (Q1)	0.102	0.221*	-0.193*	-0.235**	0.286**
Sex (Q2)	-0.096	-0.059	0.115	0.082	-0.065
Marital Status (Q3)	0.187*	0.317**	-0.248**	-0.195*	0.217*
Race (Q4)	-0.047	0.008	0.100	0.000	-0.001
Qualification (Q5)	0.157	0.112	-0.017	-0.114	0.029
Current Post (Q7b)	0.062	0.114	-0.161	-0.031	0.061
Experience (Q8)	-0.158	-0.199**	-0.022	-0.140	0.165*
Personality Factor					
Locality (Q15d)	-0.022	0.025	0.079	0.120	-0.143
Experience Gained (Q15h)	0.008	-0.080	0.082	0.030	-0.060
Tryout (Q15i)	-0.180*	-0.165	0.258**	0.182*	-0.368**
Travel (Q15j)	-0.059	-0.001	0.388**	0.230*	-0.201*
Job Satisfaction					
Quitting Job (Q17)	-0.052	-0.156	0.805**	0.663**	-0.238**
Satisfaction (Q18)	0.127	0.040	-0.407**	-0.409**	0.243**
Career Advancement					
Promotion (Q15a)	0.069	-0.028	0.150	0.050	0.012
Salary (Q15b)	0.081	0.027	0.197*	0.082	-0.042
Career Dev. (Q15e)	-0.139	-0.004	0.055	-0.026	-0.015
Organizational Factor					
Work Condition (Q15c)	-0.006	0.090	0.204*	0.022	0.039
Environmental (Q15f)	-0.062	-0.034	0.067	-0.018	-0.025
Flexi Time (Q15g)	0.175*	0.124	0.016	-0.027	-0.029

*Correlation is significant at the 0.05 level.
**Correlation is significant at the 0.01 level.

Results of the analysis show that all the five factors tested are significantly related to mobility of the IT professionals. However, mixed results were obtained on individual variables that make up the factors. Variables whose associations are significant in at least the 0.05 level will be included in the final model. Based on the results presented in the table, ten variables belonging to the five factors are found to be significant. These variables along with their corresponding factors, make up the final model as presented in Figure 7 below.

The variables found to be significantly related to mobility of IT professionals are: Age, Marital Status, and Experience (Demographic Information); Tryout and Travel (Personality factor); Quitting Job and Satisfaction (Job Satisfaction); Salary (Career Advancement); and Work Condition and Flexi Time (Organizational Factor). Each of these variables will be discussed in greater detail in the next chapter.

Figure 7: The Model of IT Professional Mobility

Figure 7: The Model of IT Professional Mobility
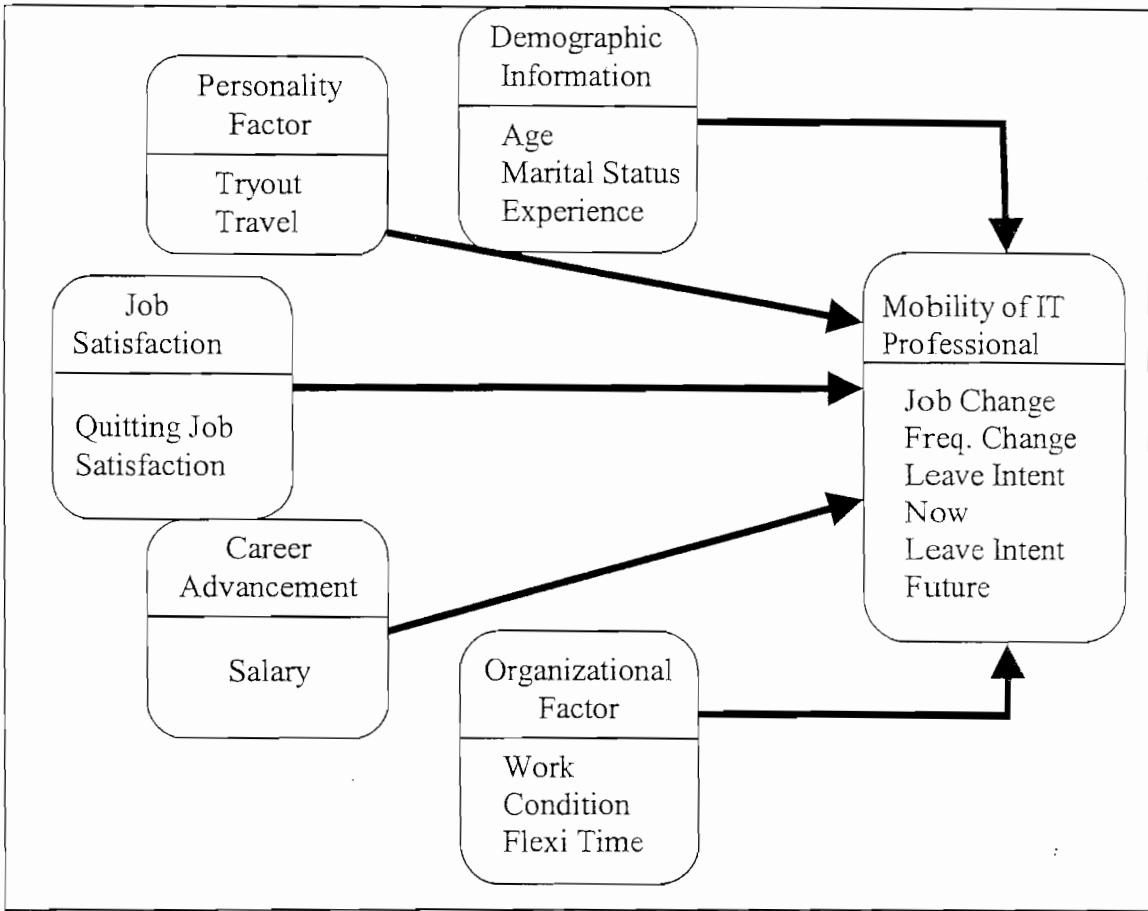
Employer Responses

Thirty (30) employers have been interviewed in order to gather their perceptions regarding this mobility issue.

Table 9 summarized the various problems encountered by employers, once their IT professionals left their organizations. Over forty-seven percent (47.3%) of the employers stated that, the schedules are disrupted when a key IT personnel leaves, and that the remaining staff or newcomers have to be retrained. Thus, these disrupted schedules will cause subsequent problems such as inability to get qualified replacement (21.8%) and that systems cannot be delivered at all or on time (5.5%). Customer services and maintenance are also disrupted (12.7%).

Table 9: Problems Faced When IT Professionals Left The Organization

Problem	Frequency	Percentage
Disruption of schedules	13	23.6%
Retraining (time & money)	13	23.6%
Difficult to get replacement (skills, readiness & experience)	12	21.8%
Customer services & system maintenance	10	12.7%
Systems cannot be delivered	3	5.5%
Blend in with organization	2	3.6%
Morale of remaining staff affected	1	1.8%
Handover of responsibilities	1	1.8%
TOTAL	**55**	**100%**

Responses in table 10 shows quite a similarity to the responses from table 9 regarding the problems faced in term of difficulty of getting qualified replacement, and the disruption of schedules (51.1%)

Table 10: Worst Cases When An Employee Left

Impact	Frequency	Percentage
Difficult to get replacement (skills, readiness & experience)	12	26.7%
Disruption of schedules	11	24.4%
Handover of responsibilities	5	11.1%
Morale of remaining staff affected	3	6.7%
Bringing the knowledge with him/her	3	6.7%
Familiarization & understand the system	2	4.4%
System maintenance	2	4.4%
Disorganized IT system	2	4.4%
Retraining	2	4.4%
No problem (have sufficient handover procedures to follow)	1	2.2%
Not relevant	1	2.2%
Customer services	1	2.2%
TOTAL	**45**	**100%**

Most respondents (60.7%) are positive that they will get a replacement that will better perform for the organization (table 11). The others (21.4%) state that there will be opportunity for other staff to be promoted, if the personnel leave the organization.

Table 11: Best Thing When An Employee Left (Positive Impact)

Impact	Frequency	Percentage
New replacement, better performance	17	60.71%
Promotion/Opportunities for the other staff	6	21.43%
None unless the employee is a problematic staff	2	7.14%
No need to pay Voluntary Retirement Scheme	2	7.14%
Ex-staff contribution	1	3.57%
TOTAL	**28**	**100%**

By looking at table 12, the respondents seem to agree that the mobility is high when the economic is good. Those working in the private sectors seem to change jobs more often than the public sector. It seems that among industry, the IT staff in the banking sector seems to be more mobile. They tend to be in the young age group.

Table 12: Mobility Patterns of IT Professionals In Malaysia

Very High	High	Medium	Low	Very Low
1	12	5	4	4

Table 13 indicates that most of the employers seemed to agree that prospect/advancement opportunity is the main reason that contributes to the mobility patterns (60.9%).

Table 13: Factors That Contribute To Mobility Patterns

REASON		%
Prospect/Advancement opportunity	50	60.9%
Organizational decision	3	3.6%
Benefit/Compensation	3	3.6%
Personal reason	6	7.3%
Organizational environment	17	20.7%
Security	1	1.2%
Attitude	2	2.4%
TOTAL	**82**	**100**

CONCLUSION

The study has managed to uncover some interesting and fruitful findings to meet the intended objectives. Trends on the mobility of IT professionals show high mobility pattern due to the wide career opportunities in the IT profession, at the same time, there is limited mobility across different levels or positions, and across industries. This finding is consistent with the nature of IT work, which is project-based that requires a combination of different IT skills, hence wider career opportunities corresponding to the "horizontal" mobility pattern. The findings also suggest that IT positions have reached a saturation

level, particularly at the senior and higher levels, which limits vacant situation resulting in less "vertical" mobility across the different levels.

It is the hope that findings from this study would enable organizations and individuals associated with the adoption of IT, to anticipate and take the necessary actions to overcome the problems of high mobility and turnover among their IT staff. Whilst young and less experienced IT professionals tend to be highly mobile, employers need to create better and more conducive working environment as well as attractive compensation schemes, in order to retain able and competent employees.

Findings from this study have implications on a number of policies on the mobility of IT professionals and IT human resource development. In light of these findings, a number of recommendations are advanced:

- Wider career opportunities for specialized IT posts should be created to encourage horizontal mobility within the organization and to provide room for mobility among the IT professionals. This is due to the limited mobility across different levels and the wide career opportunity presence in the IT profession as found in this study. Among the varied positions available include, but not limited to, systems analyst, programmer analyst, systems programmer, web designer, web developer, software engineer, data communications specialist, network specialist, database administrator, database designer, business application analyst, business intelligence specialist, IS planning analyst, enterprise architect, multimedia specialist, AI specialist, and end-user support;.
- To attract able and competent IT professionals, the recruitment policy should take into consideration attractive remunerations and superior compensation schemes where these should commensurate with individuals possessing the five factors found to be significant in this study. These include demographic information such as seniority and experienced IT professionals, and highly qualified individuals. Personality factor such as intention to test the individual marketability and likeness for travel, should also be identified. Job satisfaction, career advancement such as salary, organizational factor such as working condition and flexible working time; should also be incorporated in the recruitment and retention policy;
- Interviews for new intake should consider looking for indicators of intention to stay briefly with the company. Among the indicators found in this study include likeness to travel, less qualified or applicant with low qualification, less experienced, salary that is not competitive, work condition not conducive, and inflexible working time;
- Trends in outsourcing should be seen as a significant step in the mobility of IT professional with implications to the IT human resource policy. Outsourcing would help organizations to seek support for their business solutions without having to spend more on IT acquisition and maintenance including hiring of IT professionals. Outsourcing would create the much needed varied and specialized IT positions within the outsourcing companies, which would encourage competition among the outsourcers, thereby providing better and superior quality services to clients, apart from attracting the more able and competent IT professionals.

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