

# Designing and Implementing a Program to Reduce IT Professionals' Turnover

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**Abstract:- This research paper outlines the challenges of leaders to reduce the IT professionals' turnover. While writing this paper, different scholar or peer-reviewed articles, journals were considered from the university library and data collection from different governmental reports of different countries were also considered. All these have shown how IT professionals' effects the organization and increases the challenges for leaders and human resource managers. But if organization's leaders apply effective retention strategies then turnover of IT professionals can be reduced. For this paper, no human subject considered.**

## I. INTRODUCTION

To stay competitive in the market, every organization faces many challenges, and these challenges impact the organization either in a positive way or a negative way. These challenges include politics, competition, economics, employee behavior, and demotivation. Power and politics are the ones which can affect one person or a group or an organization. Because of the competition, the organization puts pressure on its employees to finish their projects fast or do overtime for the profit of the organization, which results in a job stress for its employees.

Job stress is the one issue which affects the efficiency of not only employees but also the organization. Due to this job stress, employees exhibit poor performance, exhaustion, physical illness and absenteeism (Shropshire & Kadlec, 2012). Also, there are effects on the employees' job satisfaction, relationship of the employees with coworkers or a manager, and the organization workplace environment (Von Hagel & Miller, 2011). Given that situation, employees may leave the organization, which may result in high turnover or attrition in the organization. High turnover or attrition of the employees especially information technology professionals (IT professionals) can become the biggest challenge for the leaders in the organizations (see Appendix A).

High turnover of IT professionals mostly occurs because of the advancement in the technology. Furthermore, according to U.S. Department of Labor, "there will be more than 1.4 million computing jobs available by 2018" (see Appendix B) (Ashcraft & Blithe, 2009). This shows that demand for IT professionals is increasing day-by-day in almost every industry (Ford, Swayze, & Burley, 2013). They are the ones who deals with many challenges such as managing and developing the

latest technology systems to solve the business problems, and provide the technical support to the end users and the clients of the organizations (Thomas, 2015). Furthermore, most of the education is online learning, banks have online services, and life insurances have online access for their customers etc. (Ford, Swayze, & Burley, 2013; Jins & Radhakrishnan, 2012). This shows that everything is done on software and many customers want to use the online services for their products. So, IT professionals play a very important role for the success of the organization of different fields.

Hence, turnover of IT professionals affects a lot to the organization and the organizations find it difficult to control that. Some companies are trying to control the turnover of IT professionals but still are not able to make the employees satisfied with their jobs. Some companies do not know the effective strategies to reduce it (Thomas, 2015). Because of this fact, the organization has to spend millions of dollars. According to the Society for Human Resource Management (SHRM), replacement of an employee costs to the organization from 50%-60% of an employee's annual salary with total turnover costs from 90% to 200% of annual salary (Allen, 2012).

As technology is advancing day by day, it increases the demand for IT professionals in the public and private sectors, though it is also causing high turnover of these employees in the organization. This paper will describe the design and implementation of a program to reduce the IT professionals' turnover in different organizations.

## II. RATIONALE FOR STUDY

In today's competition, every organization wants to be successful in its industry. The organization want to be number one in its field and want to make the profit to grow further. But the organization can be successful if it has some long-term and better employees than its competitor. This is possible if the organizations take care of low turnover of the employees, especially of IT professionals. Because without employees, no organization can make money. In the 21<sup>st</sup> century, most of the public and private sectors rely on IT and IT professionals. In 2014, information technology had contributed to recover the global economy by creating 5.8 million new IT jobs and 75,000 new businesses in the United States. This shows that IT professionals are playing important role in the US economy (Thomas, 2015).

The high turnover of IT professionals in an organization can affect it in many ways. Such as when the IT professionals leave the organization (see Appendix C), then the organization needs to hire new employees for that position which increase the expenses of the organization. Also, due to IT professionals' leaving, the organization can face the incomplete teamwork, can lose his client or customers' satisfaction, and it effects on non-IT employees' workload (Allen, 2012; Arshadi & Shahbazi, 2013). So, it is very important that organization can find the reasons for high turnover and try to find the solution to stay in the market with a good reputation. The turnover of the IT professionals occurs due to resignation, termination, retirement, unsatisfied from the job, uncomfortable with colleagues, disappointment from management etc. (Arshadi & Shahbazi, 2013). From 2011-2014, most researchers show that reasons for the IT professionals' turnover were related to job satisfaction, perceived job alternatives, argument with the supervisor, corporate merger, area of interest, job stress, higher salary, higher portfolio, higher company-brand-name etc. (Ford, Swayze, & Burley, 2013; Guha & Chakraborty, 2014; Von Hagel & Miller, 2011). Most of the IT professionals have a specific knowledge like design knowledge, testing knowledge or implementation knowledge etc. So, IT professionals' turnover affects the knowledge of the organization (Arshadi & Shahbazi, 2013). Due to voluntary turnover, the organization should spend \$200,000-\$250,000 per departing employee and receive an approximately \$7000 loss of daily revenue. Also, the replacement of IT professionals' costs 50%-150% of their salary depending on the position of the employee in the organization (Von Hagel & Miller, 2011).

To be successful, leaders within the organization should be able to understand IT professionals in such a way as to prevent them from leaving the organization. The organization can complete all the needs of the IT professionals, then it helps in reduction of high turnover rate (Sadri & Bowen, 2011). Fulfillment of employees' needs give motivation to its employees. With employees' motivation, the organization can get the positive environment which increases the motivation level of the organization (Chitra & Badrinath, 2014). After when the turnover rate is reduced, the organization can get a reduction in costs on recruiting and training new employees. It helps in shareholder profitability, which results in an overall positive environment of the workplace for the progress (Chitra & Badrinath, 2014). If the employees stay for longer time, then it can increase the satisfaction of the customers. Because employees are the one who makes relation with the customers with their knowledge and experience (Chitra & Badrinath, 2014). So, effective retention strategies are important to reduce the turnover.

### III. RESEARCH QUESTIONS

What are the reasons of the turnover of IT professionals? What factors contribute to IT professionals' decision to voluntarily leave or stay in an organization? How are the non-IT employees negatively impacted by the turnover of IT professionals? How does the turnover of IT professionals negatively impact the organization?

### IV. RESEARCH METHODOLOGY

For this research, I am using qualitative research to know the reasons, factors responsible for the high turnover of IT professionals in different sectors in different countries and how to retain that turnover. I am also looking at whether the retention strategies are helping in the reduction of IT professionals' turnover or not. I reviewed scholarly, peer-reviewed sources and different case studies from earlier researchers through university library databases, google scholar as well as different journals available online and government reports on statistics of IT professionals' turnover to gain the in-depth knowledge of IT professionals' turnover. Most of them published in between 2009-2016. No human subject is using in the study.

#### A. Definition of Terms

*Information technology (IT) professionals.* Information technology (IT) professionals are those professionals who are daily dealing with information technology systems, developing the software and computer programming per the organization's requirements, designing and testing of different IT projects of the organizations, protecting the information against threats, and leading the projects with other departments of the organizations (Thomas, 2015).

*Turnover or attrition.* Turnover occurs when employees leave the organization. There are two types of turnover: voluntary turnover and involuntary turnover. Voluntary turnover is when employees leave the organization due to personal reasons such as career opportunity, going for higher studies, or moving to another place with spouse or family. Involuntary turnover is when employees get terminated from the organization without their wish. Reasons may be poor performance, number of leaves, their behavior, or attitude with others (Allen, 2012). Attrition occurs when someone leaves the organization for voluntary reasons and is not replaced. High attrition or turnover not only affects the organization financially but also the productivity of the employees and the growth of the organization (Ford, Swayze, & Burley, 2013).

*Turnover intention.* Turnover intention is the psychological tendency of an employee to leave the current organization or the probability to leave the present organization soon (Erturk & Vurgun, 2014).

*Strategy.* A strategy is a set of actions including analysis, formulation, implementation and evaluation of an organization taking to gain and endure a greater performance to achieve its long-term goals (Rothaermel, 2016).

*Retention strategies.* Retention Strategies are the strategies applied by the organization to create positive environment for the long-term of its employees (James & Mathew, 2012).

### B. Implications

To become successful in the reduction of IT professionals' turnover, the leaders of the organization need to find out the reasons of employees leave in their organization. They need to find what factors are contributing in the decision of their employees to leave the organization. According to that they need to apply effective retention strategies to reduce that turnover. They also need to check whether applied retention strategies are working or not. Furthermore, they need to communicate with their employees to know their problem and they can also take suggestions from the employees to solve the problems. With some steps, leaders of the organization can reduce the IT professionals' turnover.

### C. Hypothesis

Low level of IT professionals' job satisfaction will increase the intention to leave the organization. Low level of trust in the supervisor or the organization will increase the turnover of IT professionals. Opportunities of promotion or career development will not help in the reduction of turnover of IT professionals. IT professionals are more likely to stay at the organizations with higher company-brand-name or high portfolio than in smaller recognition. Gender gap in the organizations negatively affects the IT professionals' turnover.

## V. LITERATURE REVIEW

In these days, every public or private sector's organization is using information technology (IT) to do most of its work and for that organization needs employees who have a knowledge of IT. Employees with a knowledge of IT are known as IT professionals. So, IT professionals play the important role in the organizations' success, and the organizations are spending a lot of money and time in recruiting or hiring the IT professionals with good skills (Ford, Swayze, & Burley, 2013). With the voluntary turnover, good skills or high position employees leave the organization which affects finances and productivity of the organization (see Appendix C). According to Erturk and Vurgun, 2014 research, in the United States from 1970-1990, IT turnover rates varies between 15 and 33%. Since 2003, IT professionals' voluntary turnover rate has increased by 12.6% within defense contracting organizations (Von Hagel & Miller, 2011). This IT professionals' turnover becomes the challenge for the leaders and human research (HR) management not only in the industries but also in the universities, banks, and insurance companies. Different researchers in different

countries had investigated this turnover problem and now a day, it becomes the global problem (Thomas, 2015). So, leaders are trying to apply some retention strategies to reduce that turnover.

The aim of this research paper is to identify the challenges for the leaders within the organization and HR managers to reduce the IT professionals' turnover with the help of earlier scholars or researchers' results on that turnover. Although several researchers and scholars have conducted different studies and analysis on IT professionals' turnover, most of them focused on the reasons for the turnover in different sectors and effects of turnover on the business but less focused on the gender gap, retention strategies, motivational theories and challenges for the organization to reduce that turnover. The following literature review will help to understand the different reasons of IT professionals' turnover, factors contribute to the employees' decision to leave the organization, its impacts on the organization and retention strategies to reduce the turnover in different sectors in different countries.

### A. Reasons of Turnover

IT professionals' turnover is the turnover which occurs because of job stress, exhaustion, job satisfaction, job insecurity, burnout, retirement, uncomfortable with colleagues, trust in the supervisor or organization, workplace environment, change in the organization, gender gap, higher salary, higher portfolio, higher company-brand-name, levels of experience, and personal reasons include physical illness, moving to new place of spouse's new job, career goals, salary, job demands etc. (Arshadi & Shahbazi, 2013; Bisht & Singh, 2012; Erturk & Vurgun, 2014; Gamage & Buddhika, 2013; Guha & Chakraborty, 2004; Ryan & Harden, 2014; Shropshire & Kadlec, 2012). According to U. S. Department of Labor, in 2006, voluntary turnover of IT professionals in 2005-2006 was over 7% (Von Hagel & Miller, 2011). Similarly, in Indian information systems (IS) professionals, the turnover rate was reported as 30% and 45% per year (Erturk & Vurgun, 2014). According to Sri Lanka Information and Communication Technology Association (SLICTA), there was a shortage of 42% of IT professionals per year in the country and total turnover rate increased from 6.4% to 13% in 2004- 2007 (Gamage & Buddhika, 2013). All these results show that IT professionals' turnover not only affecting U.S. organizations but other countries' organizations are also getting affected.

### B. Factors Contribute to Turnover

One factor of IT professionals' turnover is long-term exposure to job demands and lack of job resources leading to a feeling of exhaustion and disengagement respectively which increases the turnover intention of the employees (Appendix D). To find this relation between exhaustion, disengagement and turnover intention, the authors took the survey of IT professionals working in the metropolitan area university in the United States. From the results, they found that 37% of the variance in turnover intention occurs due to exhaustion while 52% of the variance in turnover intention

occurs due to disengagement (Ford, Swayze, & Burley, 2013). Feeling of exhaustion gives stress to the employees and due to the stress, employees start losing their energy to work in the organization and creates distance themselves from the work represent as a disengagement which results in burnout (Appendix E). Because of burnout, employees get negative attitudes and undesirable behavior and increase their turnover intention (Ford, Swayze, & Burley, 2013; Shropshire & Kadlec, 2012). Burnout impacts the organization's ability to deliver its technology goals.

Next factor is a change in the organization such as mergers, new technology, downsizing or workplace environment which gives job insecurity to the employees, affects the turnover intention of the employees (Jins & Radhakrishnan, 2012; Shropshire & Kadlec, 2012). If the change occurs in favor of employees, then they like to stay but if the change is not in favor of employees, then they like to leave the organization (Jins & Radhakrishnan, 2012). Sometimes in the change also, employees start losing their energy to work results in burnout and effects on IT professionals' turnover (Shropshire & Kadlec, 2012). According to Shropshire and Kadlec, 2012 research results, stress, job insecurity and burnout accounts for 32.9% of the variance in intention to leave the IT field (see Appendix F).

Next factor is the lack of leadership effects on the leader-member exchange relationship (relationship between a leader and each of the followers rather than the relationship between the leader and the team). Lack of leadership resulting in stress, poor performance and low job satisfaction of the employees which lead to their decision to leave the organization (Bisht & Singh, 2012). When employees receive low support from their supervisors or the organization (see Appendix G) then they don't want to trust their leaders' decision in areas of honor, honesty, fairness or competence (Dirks & Ferrin, 2002). They start losing interest in their work and feel like frustration and increase their intention to leave the organization (Erturk & Vurgun, 2014). Earlier many researchers in different countries found the relationship between negative leadership and turnover intention (Thomas, 2015). This shows that employees' trust in the supervisor or trust in the organization has a relationship with turnover intention.

Another factor of IT professionals' turnover is the inequality of gender and gender gap in some of the organizations. Earlier studies had found that gender gap occurs due to biological differences and socialized differences. Moreover, this gap is based on organizational culture, environmental influences in the workplace, and the availability of mentors, work-life balance issues, and social interaction between employees. In American IT workforce in 2004, the number of working women decreased to 32.4% which was earlier increased with 34.9% in 2002 (Ryan & Harden, 2014). In 2009, women held only 25% of all IT professionals' jobs (see Appendix H). According to a study by the center for work-life policy, 74% of IT women professionals love their work but still, women leave IT careers by a stunning rate (Ashcraft & Blithe, 2009). Women in IT leave the organization 2.5 times more than

the men and sacrifice more than men with their family-career balance. Another obstacle for women is people's thinking about IT's long unsociable hours in front of a computer screen and women value social interaction more. Such beliefs become the reasons of decline of women in IT professionals (Ryan & Harden, 2014). If the women notice that their organization is male dominated and there is a lack of female roles, then they want to leave the organization as soon as possible. Because such workplace environment is not allowing the women to develop their personal values, knowledge, and skills to achieve their goals. Also, sometimes they have to make more sacrifices with their overall goals, personal preferences, and life stability than men (Ryan & Harden, 2014). When women get better opportunities for career development, they prefer to choose higher salary followed by higher portfolio followed by higher company-brand-name, to leave the organization (Guha & Chakraborty, 2014). Therefore, it is important for leaders and HR managers to develop a smooth environment in the organizational for males and females. If the organization able to reduce the female attrition by one-quarter then it may add 220,000 workers to the science, engineering, and technology talent (Ashcraft & Blithe, 2009).

### C. Effects on the Organization

IT professionals' turnover affects the organization in many ways (see Appendix C). For instance, dissatisfaction from the client or customer, workload of other employees, an excess of time and money on hiring and developing the new employees' skills, and overall ability to deliver and quality of the service etc. (Arshadi & Shahbazi, 2013; Ford, Swayze, & Burley, 2013; Shropshire & Kadlec, 2012). Furthermore, knowledge and experience of IT professionals also affect the organization. Employees' knowledge and experience make the relationship with the organization's clients. The good skilled and experienced employees' decision to leaves the organization results in the loss of clients (Bisht & Singh, 2012). The cost of losing an IT employee can be three to six times the losing an administrative employee in HR or finances (Ryan & Harden, 2014). Turnover of IT professionals costs the organization \$80,000 to \$800,000 per employee (Von Hagel & Miller, 2011). Also, the trust of the employees with their supervisor and the organization and vice-versa effects the organization. If the relationship of the supervisor and the organization with their employees is motivating and trustable then it helps in reduction of IT professionals' turnover (Erturk & Vurgun, 2014). Additionally, higher salary, higher portfolio, and higher company-brand-name are also the reasons of turnover intention which affects the organization. According to Guha & Chakraborty, 2014 survey report, for 50% respondents below 30 age group ranked higher salary as the first factor to join the new company, higher company-brand-name as the second factor and higher portfolio as the third factor. This shows that employees are much concerned about career development. So, organizations want to reduce IT professionals' turnover to improve its position in the market, to shows care for their employees and to gain the knowledge of the organizations. For instance, UPS has reduced its annual turnover rate by

1.8% with the approach of better job alternatives such as higher salary, plenty of vacation time, free health insurance and highly competitive pension plan (Allen, 2012).

#### *D. Retention Strategies*

According to Bureau of Labor Statistics (2014), IT professionals' demand is rising and will grow higher. According to James and Mathew, 2012 research, from 2007-2012, turnover rates of 25%-35% had been reported in Fortune 500 companies and the demand for IT professionals is worst for the IT retention problem. Therefore, senior IT leaders are trying to understand the retention strategies to ensure that organizations are retaining IT professionals (Thomas, 2015). In Turkey, more than 70% of the CEOs report stated that highly skilled IT employees' retention is the important success factor (Erturk & Vurgun, 2014). Information technology professionals provide support for business operations' efforts to deliver better quality services and products (Thomas, 2015). They are the ones who knows everything about the project and their exit can delay the project or may be the organization has to close the project in between. So, leaders and HR managers are trying to adopt some strategies to satisfy these employees as retention strategies (reward and recognition, training and development opportunities, mentoring/ coaching sessions, career planning, flexible work time, employee suggestion plans, stock investment opportunities, annual performance appraisal, financial support, contract agreements, on-site day care facilities), welfare benefits (salary, leave benefits, health and related benefits, retirement plan, non-monetary benefits), organizational culture (career development program, good communication channel, leaving opportunities, equal growth opportunities) and personal satisfaction (opportunities for personal growth, job security, fair pay, challenging job, promotion prospects, independent thought and addition in job) (James & Mathew, 2012). From James and Mathew, 2012 survey results, these four sections retention strategies, welfare benefits, organizational culture and personal satisfaction (see Appendix I) have an impact on the reduction of employees' turnover. With the supportive management practice and positive organization culture implementation, HR managers can succeed in retention of IT professionals (Thomas, 2015). If the HR managers formulate some strategies which can promote empowerment and fair treatment to its employees, and the organization is able to fulfill most of the employees' needs and contributions, then they will not leave the organization (Erturk & Vurgun, 2014). Also, CIOs of the organization need to compile a workforce plan of two-three years of the future in which they need to add the critical roles and employees for those roles. They also need to consider the risk to the organization if those employees leave. This type of strategy helps in long-term employments and good skill of technology (Ford, Swayze, & Burley, 2013).

Some organizations applied effective retention strategies (Appendix J) to reduce the employees' turnover. For example, Cendant decreased its annual employees' turnover from about 30% to less than 10%. The company

provide flexible working hours and after understanding the employees' wish of their professional and personal balance life, scheduled a program on work/life balance. This program offers daily flexible start and end times and is managed at the departmental level. Furthermore, the company provides an option of four days of long hours and fifth day off per week and offers wellness programs for the employees (Allen, 2012). Another example of 100% retention is Running Pony Company. Running Pony founded in 1994 is a multiple Emmy Award-winning freelance production company. The company understands that employees' decision to stay or leave depends on the workplace relationships. For positive workplace environment, managers tried to build a supportive and organized culture. According to co-founder and managing partner, Jonathan Epstein, the company is trying to build a team of employees who knew each other, who liked each other, who worked well together and complemented each other. Also, according to co-founder and managing partner, Rod Starnes, the company's biggest achievement is to create an environment of creative and talented people who are comfortable with each other and in the organization (Allen, 2012).

## **VI. METHODOLOGY**

In this research, study is done through qualitative research and no human subject is included. From different scholar articles and data, above literature review is conducted to get the depth knowledge of IT professionals' turnover. The findings of this research focus on four points that are reasons, factors, impact and retention strategies of IT professionals' turnover.

To determine the challenges of the leaders to reduce the IT professionals' turnover, this study was conducted with an examining research design. From literature review, it was found that different calculation techniques were used by the earlier researchers to find the reasons and factors responsible for IT professionals' turnover, different surveys were done by the researchers to find the impact of the IT professionals' turnover on the organizations and different suggestions were provided to reduce the turnover of IT professionals in different organizations in different countries. Furthermore, to support this research, some statistical data from different governmental reports related to industries were also used.

## **VII. RESULTS**

The results of this study found that there are different factors are responsible for IT professionals' turnover. From the literature review, it has been found that feeling of exhaustion and disengagement is one of the factor has a positive effect on IT professionals' turnover (Ford, Swayze, & Burley, 2013). To support this statement, table 1 shows the means, standard deviations (SD), and correlation coefficients of exhaustion, disengagement, and turnover intention which proves that exhaustion and disengagement gives positive results to turnover intention.

	Mean	SD	Exhaustion	Disengagement
Exhaustion	2.71	0.74		
Disengagement	2.82	0.83	.78	
Turnover intention	3.45	1.87	.61	.72

Table 1:- Means, standard deviations, and correlation coefficients between each pair of variables  
 Source: Information Resources Management Journal, 26(3), 55-68 (Ford, Swayze, & Burley, 2013).

For that authors took the survey samples of IT professionals includes analysts, developers, database administrators, system engineers, webmasters, project managers and other IT specialists working in the university of a metropolitan area. In that survey samples, 56% of the respondents were White, 12% Black or African-American, 23% Asian, and the remaining 6% from multiple races or other (Ford, Swayze, & Burley, 2013).

Second stress, job insecurity and burnout factors effects on turnover intention of the employees (Shropshire & Kadlec, 2012). To support this statement, table 2 shows that stress, job insecurity and burnout has positive results on intention to leave the organization.

Path	Coefficient	T or F Value	p-value
Stress → Leave IT	.335	6.24	p<.0001
Job Insecurity → Leave IT	.308	3.87	p<.0003
Burnout → Leave IT	.303	3.93	p<.0002

Table 2:- Relationship between stress, job insecurity, burnout and leave IT intention  
 Source: International Journal of Information and Communication Technology Research, 2(1) (Shropshire & Kadlec, 2012)

To get answer of hypothesis statement 1, “low level of IT professionals’ job satisfaction will increase the intention to leave the organization”, data was collected from earlier researchers’ results (Gamage & Buddhika and Gamage & Herath’s research in 2013 in Sri Lanka). Figure 1 shows that job satisfaction includes satisfaction with compensation, satisfaction with supervisor, satisfaction with variety, satisfaction with coworkers, and satisfaction with work conditions (Gamage & Buddhika, 2013). To

calculate the relationship between job satisfaction and intention to leave the organization, they used the Cronbach’s Alpha test to ensure the internal consistency of the instruments and correlation analysis is used to identify the strength of the relationship between variables. The results from the Gamage & Buddhika’ research in table 3 and 4 shows the job satisfaction has a negative relationship with intention to leave.

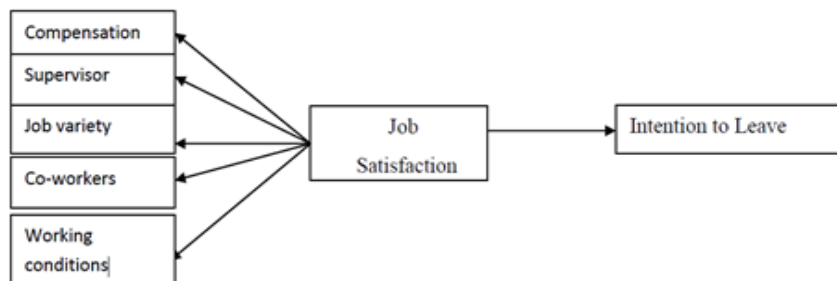


Fig 1:- Conceptual framework

Variables	Cronbach’ Alpha	Number of items
Job Satisfaction	.883	19
Intention to Leave	.834	3

Table 3:- Cronbach’s alpha values of variables

Gamage & Herath’s research also proved that pay satisfaction has a negative relationship with intention to leave.

		Job Satisfaction	Intention to Leave
Job Satisfaction	Pearson Correlation	1	-0.626
	Sig. (2-tailed)		0.000
	N	300	300
Intention to Leave	Pearson Correlation	-0.626	1
	Sig. (2-tailed)	0.000	
	N	300	300

Table 4:- Correlation between Variables

Normally, Cronbach’s alpha in the range of 0.70 to 0.79 is considered adequate, a value in the range of 0.80 to 0.89 is considered good, and in the range of 0.90 to 0.99 is considered excellent. From these results, it is clear that IT professionals’ job satisfaction can affect their intention to leave the organization. From figure 2, it is clear that low level of IT professionals’ job satisfaction can increase the intention to leave the organization. Therefore, hypothesis can be accepted.

To get answer of hypothesis statement 2, “Low level of trust in the supervisor or the organization will increase the turnover of IT professionals”, data was collected from earlier researchers’ results and found that trust in supervisor depends on how much employees are satisfied with their supervisor who provides the guidelines and instruction to carry on their job.

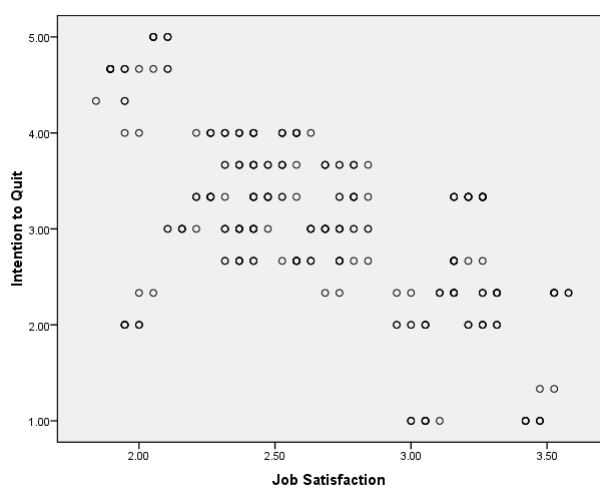


Fig 2:- Scatter plot for job satisfaction and intention to leave

Source: Asia Pacific Journal of Marketing & Management Review, 2(9), 1-11. (Gamage & Buddhika, 2013).

According to Erturk and Vurgun, 2014 research, trust in supervisor makes the relationship between psychological empowerment components and turnover intention via leader-member exchange relationship. The authors took the survey of private IT professionals in Turkey includes system administrators, web developers, programmers, system analysts, project/ team leaders, and hardware

specialists. The results of the survey are shown below in table 5 and 6 from which it is clear that high trust in the organization or supervisor strengthen the perceived organization support and leader- member exchange relationship respectively and reduce the turnover of IT professionals (Erturk & Vurgun, 2014).

Descriptive statistics, reliabilities and correlations.

	Means	St. Dev.	GI	PCM	PCN	POS	LMX	TIO	TIS	TI
GI	3.4	0.11	0.88 <sup>a</sup>							
PCM	4.1	0.29	0.21 <sup>**</sup>	0.84 <sup>a</sup>						
PCN	3.4	0.08	0.48 <sup>**</sup>	0.16 <sup>*</sup>	0.87 <sup>a</sup>					
POS	3.0	0.14	0.44 <sup>**</sup>	0.10	0.49 <sup>**</sup>	0.94 <sup>a</sup>				
LMX	3.9	0.19	0.38 <sup>**</sup>	0.21 <sup>**</sup>	0.40 <sup>**</sup>	0.46 <sup>**</sup>	0.92 <sup>a</sup>			
TIO	3.8	0.18	0.19 <sup>*</sup>	0.18 <sup>*</sup>	0.14 <sup>*</sup>	0.43 <sup>**</sup>	0.21 <sup>*</sup>	0.88 <sup>a</sup>		
TIS	3.8	0.22	0.13 <sup>*</sup>	0.12 <sup>*</sup>	0.11 <sup>*</sup>	0.29 <sup>**</sup>	0.34 <sup>**</sup>	0.49 <sup>**</sup>	0.90 <sup>a</sup>	
TI	2.5	0.25	-0.21 <sup>**</sup>	-0.15 <sup>*</sup>	-0.29 <sup>**</sup>	-0.46 <sup>**</sup>	-0.41 <sup>**</sup>	-0.32 <sup>**</sup>	-0.26 <sup>**</sup>	0.91 <sup>a</sup>

GI: goal internalization, PCM: perceived competence, PCN: perceived control.  
 POS: perceived organizational support, LMX: leader-member exchange, TI: turnover intentions.  
 TIO: trust in organization, TIS: trust in supervisor.  
 \*\* Correlation is significant at the 0.01 level.  
 \* Correlation is significant at the 0.05 level.  
<sup>a</sup> Cronbach's alpha reliabilities.

Table 5:- Means, Standard Deviations, Alpha Reliabilities and Correlations

Moderated mediation results of conditional process modeling.

Moderator	Level	Goal internalization			Perceived competence			Perceived control		
		Conditional indirect effect (note)	SE	z	Conditional indirect effect (note)	SE	z	Conditional indirect effect (note)	SE	z
TIO	Low	-0.21**	0.022	-2.93	-0.02	0.034	-0.43	-0.23**	0.021	-3.04
	High (via POS)	-0.24**	0.018	-3.76	-0.03	0.028	-0.67	-0.26**	0.015	-4.21
TIS	Low	-0.14*	0.012	-2.04	-0.10	0.019	-1.12	-0.17*	0.018	-2.45
	High (via LMX)	-0.16**	0.019	-2.84	-0.12	0.025	-1.44	-0.19**	0.012	-2.98

Note: Conditional indirect effect coefficients show the effect of relevant psychological empowerment component on turnover intentions through the moderated mediation of POS/LMX as mediators and TIO/TIS as moderators respectively.

GI: goal internalization, PCM: perceived competence, PCN: perceived control, TIO: trust in organization, TIS: trust in supervisor.

POS: perceived organizational support, LMX: leader-member exchange, TI: turnover intentions.

Given that the mediated model [M (POS and LMX) → Y (turnover intentions)] is moderated by W (TIO and TIS), the indirect effect of X (psychological empowerment) on Y through M is constructed as the product of the X → M effect (a1) and the M → Y effect, which is conditional on W (i.e., b1 + c1W). Thus, the indirect effect of X on Y through M is no longer a single quantity but is, instead, a function of W and hence is conditional: (a1) × (b1 + c1W). (a1 is the effect of psychological empowerment components (X) on mediator (M) (POS and LMX), b1 is the effect of mediator (M) (POS and LMX) on turnover intentions (Y), and c1 is the effect of product of mediator and the moderator (M × W) (POS × TIO or LMX × TIS) on turnover intentions (Y).)

Unstandardized regression coefficients are reported. Bootstrap sample size = 5000.

\*\* Parameter estimate is significant at the 0.01 level.

\* Parameter estimate is significant at the 0.05 level.

Table 6:- Estimates, Standard errors, z statistics and significance value of TIO, POS, TIS, and LMX

So, low level of trust in the supervisor or the organization can increase the turnover of IT professionals. Therefore, hypothesis can be accepted.

To get answer of next hypothesis statement, “Opportunities of promotion or career development will not help in the reduction of turnover of IT professionals”, data was collected from earlier researchers’ results. To get the

answer of whether the retention strategies are working or not, the James and Mathew, in 2012 took the survey questionnaire from the 50 companies located in Bangalore, India. To find the results, the authors used the regression analysis by focusing on four factors, career development as factor 1, financial strategies as factor 2, flexi work as factor 4, and appraisal as factor

Factors	Welfare benefits	Sig. Value	Personal Satisfaction	Sig. Value
Career Development	0.316	0.000	0.135	0.022
Financial Strategies	0.285	0.000	0.220	0.000
Flexi Work	0.261	0.000	0.180	0.003
Appraisal	0.107	0.056	0.016	0.405

Table 7:- Relationship between Retention Strategy factors vs Welfare Benefits vs Personal Satisfaction

4. Factor 1, career development was correlated with welfare benefits at 0.316 (32%) and with personal satisfaction at 0.135 (13.5%). Results of all the four factors are shown in table 7 and figure 3. From all the analyses, the authors found that opportunities of career development help in the reduction of turnover. While promotion factor does not play much role in the reduction of turnover (James & Mathew, 2012). Similarly, Bisht and Singh, 2012 took the

interview of the employees who were working in top companies on India. The authors did the analysis with SPSS software, and Scheffe test. From their result also, it is found that career development and promotion has variance effect on turnover of IT professionals (Bisht & Singh, 2012). Therefore, hypothesis statement opportunities of career development or promotion will not help in reduction of turnover of IT professionals is not acceptable.

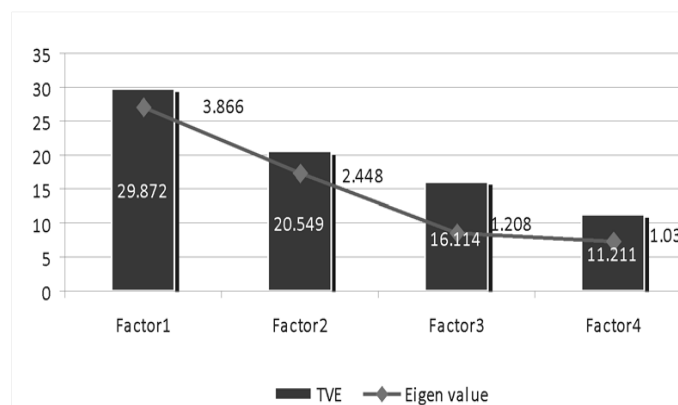


Fig 3:- Factor Analysis



To get the answer of next hypothesis statement, “IT professionals are more likely to stay at the organizations with higher company-brand-name or high portfolio than in smaller recognition”, data was collected from earlier researchers’ results. Higher salary, higher portfolio, higher company-brand-name are the factors which motivate employees to leave the organization for better future. For this, Guha and Chakraborty in 2014, collected the answers from 460 IT employees working in 17 different IT firms in

Kolkata, West Bengal, India. To calculate the results, a correlation matrix and linear regression analysis were used. From the results, the authors found that most of the respondents irrespective of age and gender gave higher salary as rank one to leave the organization. Table 8 shows the results of the survey with the consideration of different age groups and shows that for 51% of below 30 age group respondents ranked higher salary as the first factor to join the new company. 10% of below 30 age group respondents

Age Group	Most important reason (Rank-1) for changing company						Total
	Higher Salary	Higher Portfolio	Scope of Foreign Assignment	Higher Company-Brand-Name	Breach of Commitment	Others	
Below 30	82 (51.0)	16 (9.9)	7 (4.4)	44 (27.3)	6 (3.7)	6 (3.7)	161 (100)
30-40	113 (47.5)	33 (13.8)	8 (3.4)	53 (22.3)	14 (5.9)	17 (7.1)	238 (100)
Above 40	7 (33.4)	2 (9.5)	2 (9.5)	5 (23.8)	1 (4.8)	4 (19.0)	21 (100)
Total	202 (48.1)	51 (12.1)	17 (4.0)	102 (24.3)	21 (5.0)	27 (6.5)	420 (100)

Note: Figures in the parenthesis are the % of total respondents.

Table 8:- Distribution of highest rank given by the respondents by age group

Ranked higher portfolio as the second factor and 27% of below 30 age group respondents ranked higher company-brand-name as the third factor to leave the organization (Guha & Chakraborty, 2014). Therefore, hypothesis statement, IT professionals are more likely to stay at the organizations with higher company-brand-name or high portfolio than in smaller recognition is acceptable.

To get the answer of last hypothesis statement, “Gender gap in the organizations negatively affects the IT professionals’ turnover”, data was collected from earlier researchers’ results. Many studies found that gender gap occurs because of workplace environmental effects, organizational culture, the availability of mentor, personal and professional life balance issues and social interaction between employees (Ryan & Harden, 2014). To find the results, the authors collected the data from survey of IT employees working in a large federal government agency. Out of 800 survey responses, 37% of the samples were received from females. To analyze that data, authors used the IBM SPSS statistics software package, exploratory factor analysis, Cronbach’s alpha values and principal component analysis. These results measurement based on organizational fit, organizational sacrifices and organizational links (Appendix K). For organizational fit, Cronbach’s alpha value is 0.73 and for organizational sacrifice is 0.77. From all the calculations, the authors found that organizational fit experience for males and females is not different while organizational sacrifice is different for males and females. But organizational links of males and females are little different from each other (Ryan & Harden, 2014). According to Ashcraft and Bliethe, 2009, “41% women leave the technology companies after 10 years of experience compared to only 17% of men”. As shown in Appendix L, there is salary gap also occurred

between men and women working in IT companies. In a study of 198 public companies with at least \$6 billion in revenue, only 5 chief executives were women. While, 22 companies had no women chief executive (Ashcraft & Bliethe, 2009). Therefore, hypothesis statement, gender gap in the organization negatively affects the IT professionals’ turnover is partially accepted.

According to a World at Work survey, there are ten retention strategies which have effective results. These are 62% rise in market adjustment/ base salary, 60% hiring bonus, 49% work environment includes flexible hours, casual dress etc., 28% retention bonus, 27% promotion and career development opportunities, 24% above market salary, 22% special training and educational opportunities, 22% individual spot bonuses, 19% stock programs, and 15% project milestone/ completion bonuses (Allen, 2012).

## VIII. DISCUSSION

This research relied on a collection of existing sources by researchers related to employees’ turnover. The result from this study clearly identifies five essential statements on IT professionals’ turnover. The first essential statement is a low-level of IT professionals’ job satisfaction can increase their intention to leave the organization. As figure 1 shows a job satisfaction is measured in five dimensions. According to Gamage and Buddhika’ research, in 2013, all the five dimensions are important for the employees’ job satisfaction. Sometimes, employees say they are satisfied with salary, supervisor, and coworkers but dissatisfied with other aspects of works (Gamage & Buddhika, 2013). In that case, the organization needs to check those aspects and help its employees to satisfy with their jobs. In the result section of

this paper, it is showing how low-level of job satisfaction increases the employees' turnover intention.

The second essential statement is a low level of trust in the supervisor or the organization will increase the turnover of IT professionals. According to Erturk and Vurgun, 2014, trust in organization controls the relationship between perceived organizational support and turnover intention while trust in supervisor controls the relationship between leader-member relationship and turnover intention. From the results shown in table 3 and 4, it is clear that trust in organization or supervisor can affect on IT professionals' turnover. If the organization take care of their employees with some help such as fair salary, provide proper training, give appreciation for their work, or supervisor provide them interesting and challenging work per individual wish, then employees also increase their level of commitment with their positive attitude and reduce their intention to leave the organization (Erturk & Vurgun, 2014).

The third essential statement is opportunities of promotion or career development will not help in the reduction of turnover of IT professionals. From the research, it is found that opportunities such as flexible hours, competitive salary, career development etc. are some of the retention strategies (see Appendix H) provided by the organizations help in reduction of IT professionals' turnover. From the results, it is clear that if the organization apply some retention strategies then maybe it helps in the reduction of IT professionals' turnover. Therefore, it's a challenge for HR managers to apply right effective retention strategies to reduce the negative effect of turnover and to increase the positive effect of turnover (James & Mathew, 2012; Bisht & Singh, 2012).

The fourth essential statement is the IT professionals are more likely to stay at the organizations with higher company-brand-name or high portfolio than in smaller recognition. It has been discovered that employees are very much concerned about their career development and for that higher salary, higher portfolio, higher company-brand-name are those factors which attract the employees to leave their current organization (Guha & Chakraborty, 2014). From the result section, it has been cleared that irrespective of age or gender, employees give importance to these factors to increase their skills. Therefore, it is important that organization can show its care for employees' skills and experience.

Fifth and last essential statement is the gender gap in the organization negatively affects the IT professionals' turnover. It has been discovered that from longtime gender gap is occurring in the different organizations in different countries. But slowly-2 it was decreasing and the companies increased posts for females with the equal rights as the men have. For instance, in 1980, female patenting rates were 1.7% and in 2005, it was 6.1% (Ashcraft & Bliithe, 2009). From the literature review and result section, it is clear that gender gap is the important factor for the turnover of IT professionals. Therefore, it is important for

the leaders to apply effective strategies to create the positive environment for the men and women equally.

## IX. CONCLUSION

In conclusion, IT professionals' turnover is the big challenge for HR managers and leaders. After reviewing approximately 25-30 scholar articles, I found that it's a big issue from long time in different organizations in different countries. Many organizations are trying to apply effective retention strategies, some of them received positive results but some of them still struggling with this challenge. Furthermore, the earlier researchers also found that motivation and retention strategies both are important to reduce IT professionals' turnover.

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APPENDIX A

TOP ORGANIZATIONAL CHALLENGES CITED BY HR PROFESSIONALS

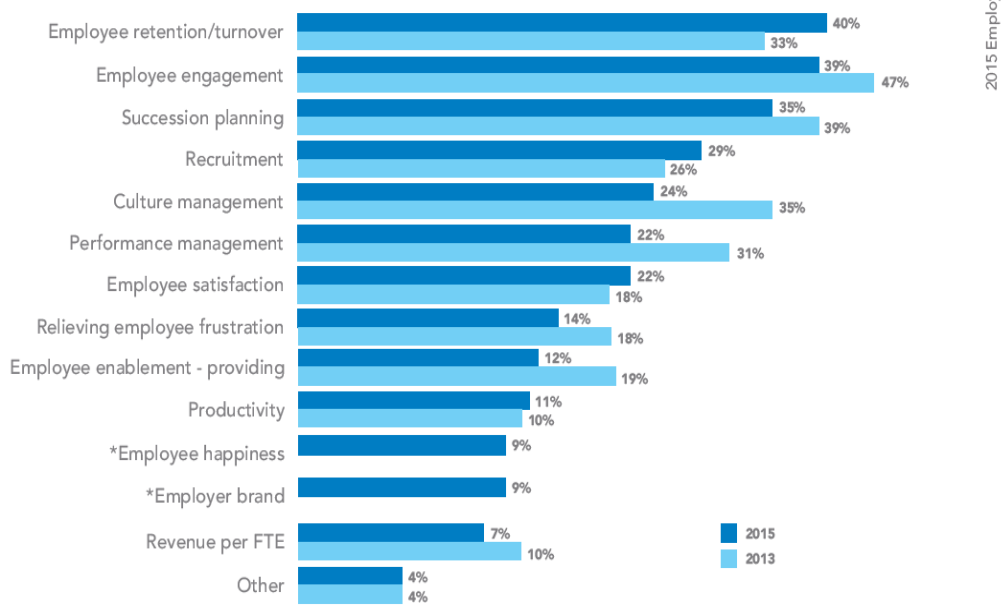


Fig 4:- Challenges for HR Professionals

Source: [http://go.globoforce.com/rs/862-JIQ-698/images/Globoforce\\_SHRM\\_2015.pdf](http://go.globoforce.com/rs/862-JIQ-698/images/Globoforce_SHRM_2015.pdf) . (Globoforce, 2015).

**APPENDIX B**

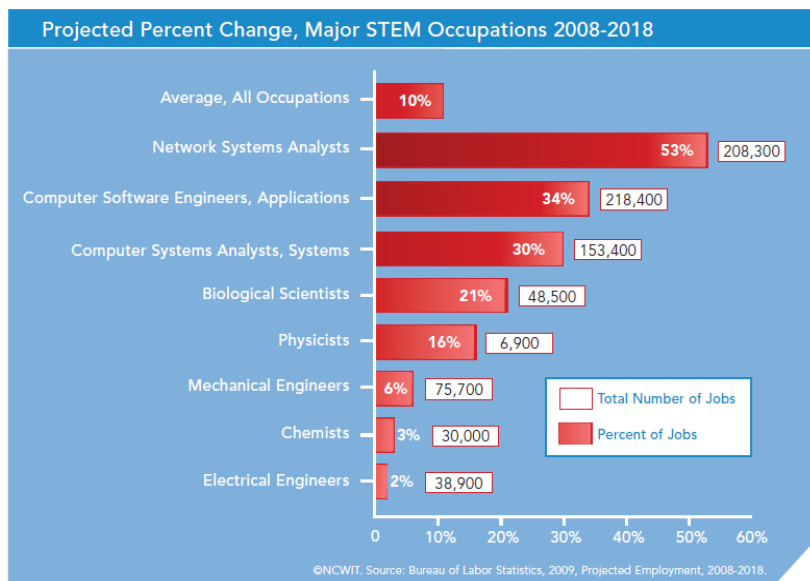


Fig 5:- Number of Occupations from 2008-2018

*Adapted from “Women in IT: The facts” by Ashcraft, C., & Blithe, S., 2009. National Center for Women & Information Technology.*

**APPENDIX C**

Separation Costs
<p><b>Financial</b></p> <p>HR staff time (exit interview, payroll administration, benefits)</p> <p>Manager’s time (retention attempts, exit interview)</p> <p>Accrued paid time off (vacation, sick pay)</p> <p>Temporary coverage (contingent employee, overtime for remaining employees)</p> <p><b>Other</b></p> <p>Delays in production and customer service; decreases in product or service quality</p> <p>Lost clients</p> <p>Clients not acquired that would have been acquired if employee had stayed</p> <p>Stiffer competition as employee moves to a rival company or forms own business</p> <p>Contagion (other employees decide to leave; for example, to join defector at his/her new organization)</p> <p>Disruptions to team-based work</p> <p>Loss of workforce diversity</p> <p><b>Replacement Costs</b></p> <p>New hire’s compensation</p> <p>Hiring inducements (signing bonus, reimbursement of relocation expenses, perks)</p> <p>Hiring manager and unit/department employee time</p> <p>Orientation program time and materials</p> <p>HR staff induction costs (payroll, benefits enrollment)</p> <p><b>Training Costs</b></p> <p>Formal training (trainee and instruction time, materials, equipment)</p> <p>On-the-job training (supervisor and employee time)</p> <p>Mentoring (mentor’s time)</p> <p>Socialization (other employees’ time, travel)</p> <p>Productivity loss until replacement has mastered job</p>

Table 9:- Voluntary Turnover Costs and Benefits

*Adapted from “Retaining talent, a guide to analyzing and managing employee turnover” by Allen, D. G., 2012.*

**APPENDIX D**

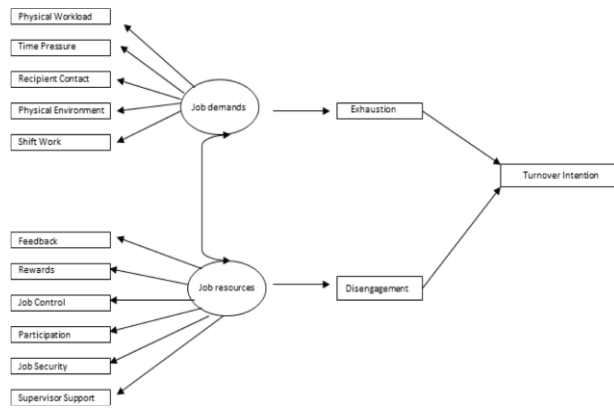


Fig 6:- The job demands-resources model of burnout

Adapted from “An exploratory investigation of the relationship between disengagement, exhaustion and turnover intention among IT professionals employed at a university” by Ford, Swayze, & Burley, 2013. *Information Resources Management Journal*, 26(3), 55-68.

**APPENDIX E**

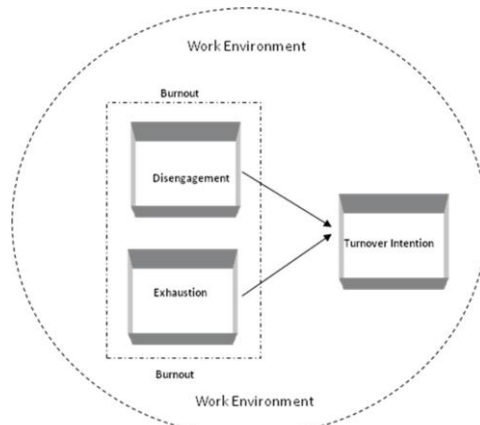


Fig 7:- Truncated JD-R model of burnout.

Adapted from “An exploratory investigation of the relationship between disengagement, exhaustion and turnover intention among IT professionals employed at a university” by Ford, Swayze, & Burley, 2013. *Information Resources Management Journal*, 26(3), 55-68.

**APPENDIX F**

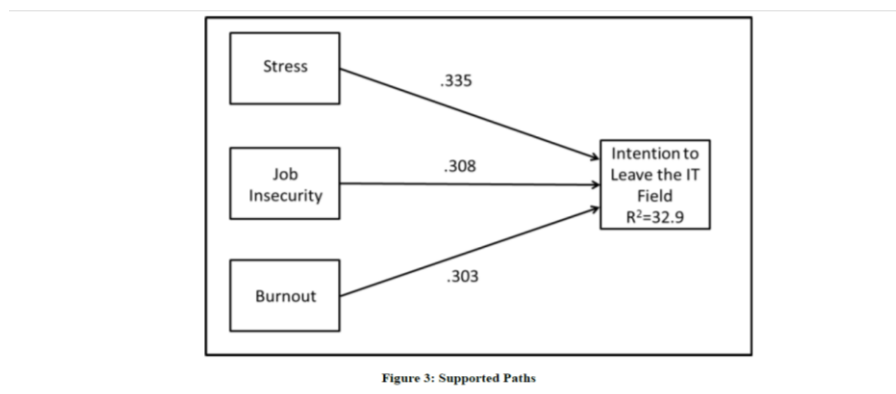


Figure 3: Supported Paths  
Fig 8:- Supported paths for intention to leave the IT field

Adapted from “I’m leaving the IT field: The impact of stress, job insecurity, and burnout on IT professionals” by Shropshire & Kadlec, 2012. *International Journal of Information and Communication Technology Research*, 2(1).

**APPENDIX G**

TIO – Trust in Organization and TIS- Trust in Supervisor  
 POS- Perceived Organizational Support and LMX- Leader- Member exchange

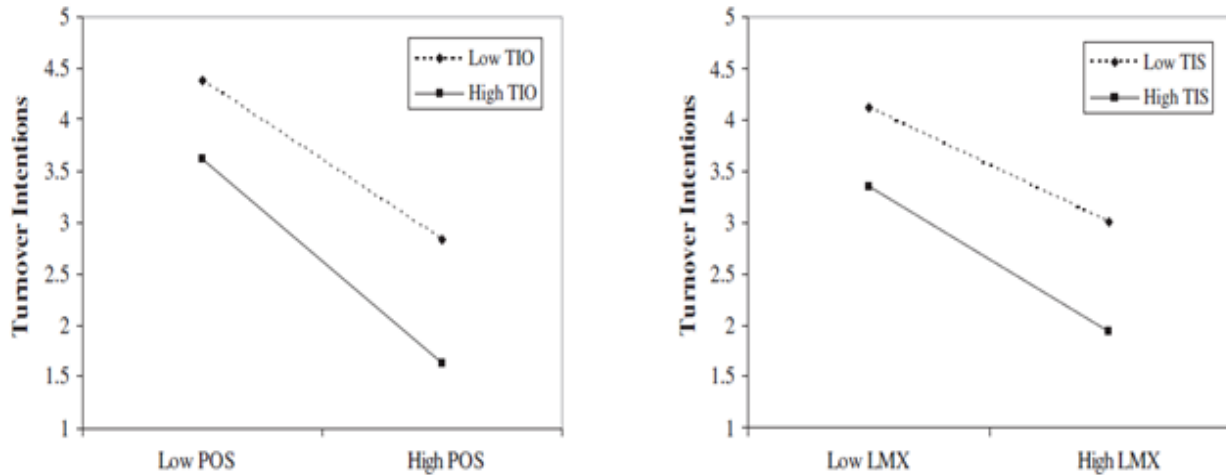


Fig 9:- Relationship between TIO, TIS and turnover intention

Adapted from “Retention of IT professionals: Examining the influence of empowerment, social exchange, and trust” by Ertürk & Vurgun, 2014. *Journal of Business Research*, 67, 1-13.

**APPENDIX H**

In 2009, women made up only 25 percent of the IT workforce. Women's representation also varies by race/ethnicity.

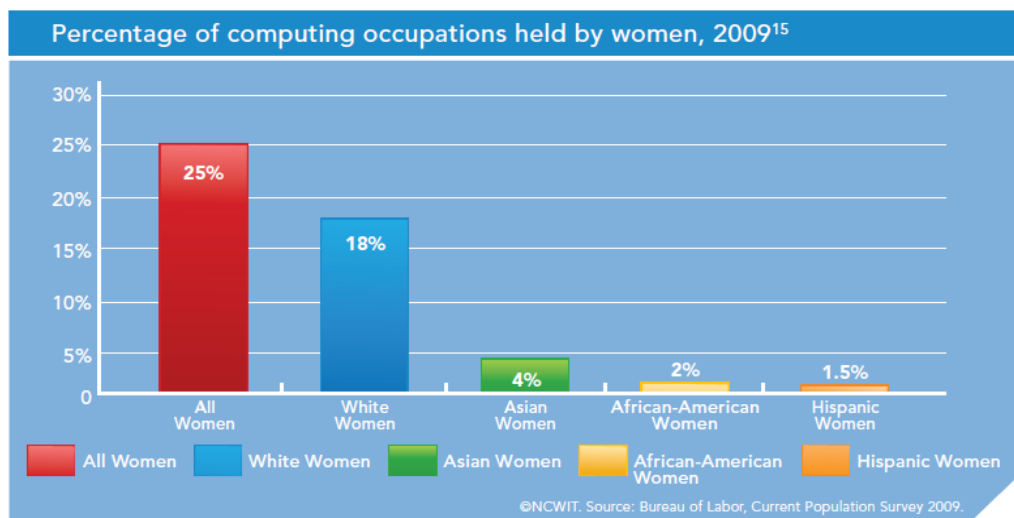


Fig 10:- Percentage of Computing Occupation held by Women, 2009

Adapted from “Women in IT: The facts” by Ashcraft, C., & Blithe, S., 2009. *National Center for Women & Information Technology*.

**APPENDIX I**

Figure 3: Conceptual Model of Variables investigated for the Study

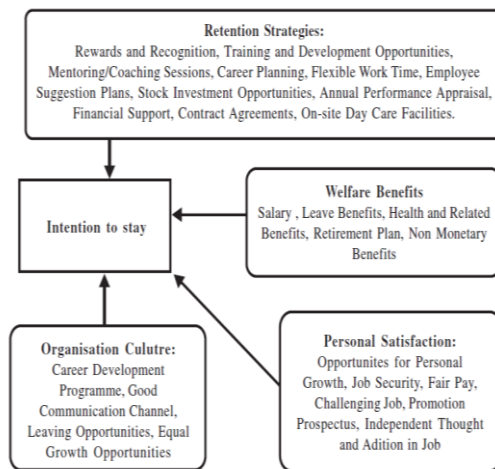


Fig 11:- Retention strategies vs Intention to Stay

Adapted from “Employee retention strategies: IT industry” by James, L., & Mathew, L., 2012. *SCMS Journal of Indian Management*, 9(3), 79-87.

**APPENDIX J**

Initiative	Effectiveness	Offer the initiative		
		Yes	No	Plan to
Health care benefits	1.96	94%	3%	--
Competitive salaries	2.02	83%	8%	5%
Competitive salary increases	2.05	75%	15%	6%
Competitive vacation/holiday benefits	2.09	92%	4%	1%
Regular salary reviews	2.11	89%	6%	4%
Defined contribution retirement	2.21	73%	21%	2%
Paid personal time off	2.21	75%	20%	2%
Flexible work schedules	2.25	60%	32%	4%
Training and development opportunities	2.26	88%	4%	4%
Open-door policy		93%	3%	2%
New-hire orientation	2.32			
Defined benefit plan	2.32	92%	2%	3%
Child care paid or on-site	2.32	52%	41%	2%
Early eligibility for benefits	2.40	3%	89%	5%
Workplace location	2.41	40%	54%	2%
Tuition reimbursement	2.41	59%	23%	--
Retention bonuses	2.42	77%	17%	3%
Child care subsidies	2.43	22%	71%	4%
Spot cash	2.46	8%	84%	4%
Stock options	2.48	43%	47%	6%
Succession planning	2.53	27%	66%	3%
Non-cash or low-cash rewards	2.54	32%	46%	16%
Casual dress	2.56	63%	25%	8%
360-degree feedback	2.59	76%	18%	1%
On-site parking	2.60	31%	51%	14%
Domestic-partner benefits	2.64	86%	10%	1%
Elder care subsidies	2.66	12%	74%	4%
Attitude surveys/focus groups	2.66	4%	89%	2%
Alternative dispute resolution	2.67	46%	41%	10%
Transportation subsidies	2.67	31%	60%	5%
Fitness facilities	2.74	16%	75%	4%
Severance package	2.75			

Sabbaticals	2.77	26%	62%	8%
Telecommuting	2.78	56%	38%	1%
Non-compete agreements	2.79	12%	82%	2%
Concierge services	2.84	26%	64%	7%
	2.92	46%	48%	--
		5%	87%	4%

Table 10:- Retention Initiative Effectiveness

Adapted from “Retaining talent, a guide to analyzing and managing employee turnover” by Allen, D. G., 2012.

APPENDIX K

Table 1 — Embeddedness Items

Dimension	Item
<b>Organizational Fit</b>	I like the members of my work group. <b>*My coworkers are similar to me.</b> My job utilizes my skills and talents well. <b>*I feel like I am a good match for this company.</b> <b>*I fit with the company’s culture.</b> <b>*I like the authority and responsibility I have at this company.</b> My values are compatible with the organization’s values. <b>*I can reach my professional goals working for this organization.</b> <b>*I feel good about my professional growth and development.</b>
<b>Organizational Sacrifice</b>	The prospects for continuing employment with this company are excellent. I would not sacrifice a lot if I left this job. <b>*The benefits are good on this job.</b> <b>*The retirement benefits provided by this organization are excellent.</b> <b>*The health-care benefits provided by this organization are excellent.</b> I feel that people at work respect me a great deal. I am well compensated for my level of performance. <b>*I have a lot of freedom on this job to decide how to pursue my goals.</b> <b>*The perks on this job are outstanding.</b> My promotional opportunities are excellent here.
<b>Organizational Links</b>	<b>*How many years have you been in your current position?</b> <b>*How long have you been with this agency?</b> <b>*How many years of federal service do you have?</b> <b>*How many coworkers do you interact with regularly?</b> <b>*How many coworkers are highly dependent on you?</b> <b>*How many work teams are you on?</b> <b>*How many work committees are you on?</b>

\*Items with an asterisk and in bold represent embeddedness items retained after exploratory factor analysis was performed using principal component analysis with varimax rotation.

Table 11:- Gender gap in three dimension

	Hypothesis	p-value	Result
H1	There is a significant difference between the perceived organizational fit experienced between males and females such that males perceive better organizational fit than do females.	.22	Not supported
H2	There is a significant difference between the perceived organizational sacrifice experienced between males and females such that females perceive more organizational sacrifice than males.	.01	Supported
H3	There is a significant difference between the organizational links of males and females such that males have more links than females (Links – Years of Service).	.01	Partially Supported
	There is a significant difference between the organizational links of males and females such that males have more links than females (Links – Participation in Groups).	.01	
	There is a significant difference between the organizational links of males and females such that males have more links than females (Links – Interaction with Others).	.61	

Table 12:- Summary of hypotheses



Adapted from “Job embeddedness of information technology professionals: The effects of gender” by Ryan, S., & Harden, G. (2014). *The Journal of Computer Information Systems*, 54(4), 52.

### APPENDIX L

IT Occupation	Salary gap between men and women
Web Developer/Programmer*	14.05%
Developer: Applications	12.92%
Software Engineer	12.91%
Database Administrator*	11.98%
Project Manager	9.81%
Programmer Analyst	9.05%
Systems Administrator	7.43%
Business Analyst	4.28%
Quality Assurance (QA) Tester	4.02%
Help Desk*	3.27%
IT Management: CEO, CIO, CTO, VP, Dir. Strategist, Architect	2.28%
Technical Writer*	1.64%
Technical Support	1.40%

\* These results may not be indicative of the broad market due to a small sample size for this job title. ©NCWIT. Source: Dice Holdings, Inc.

Table 13:- Salary gap in IT occupation

Adapted from “Women in IT: The facts” by Ashcraft, C., & Blithe, S., 2009. *National Center for Women & Information Technology*.