

A Study on Attrition among New Entrants in Software Testing Professionals

M. Kannan

Research Scholar, Department of Computer
Science and Applications
SCSVMV University, Enathur,
Kanchipuram-631561

K. Vivekanandan

Professor, Department of Computer Science and
Engineering
Pondicherry Engineering College,
Puducherry - 605 014

ABSTRACT

The Purpose of the Study was to investigate the turnover intentions among new entrants in software testing professionals who are working in software industry which is located in Chennai. The Samples unit [N = 135, Male = 67, Female = 68] was drawn from Software Industry. The Study investigated the Organizational Satisfaction, Job Satisfaction, Interpersonal Relationship with Supervisor's and Life Satisfaction has significant impact on Turnover Intentions among new entrants. The results were interpreted using SPSS 17.0 and the findings given for the software industry to understand perception of employees towards employers and take necessary steps to reduce the turnover intentions.

Keywords: Turnover Intentions, Software Industry, Employers

1. INTRODUCTION

Software Development Life Cycle is a systems approach to problem solving and is made up of several phases, each comprised of well define input and output milestones. Testing phase has much importance in Software Development Life Cycle due to a major contribution in finding and correcting the errors and it was performed by Software Testers. The field of Information Technology has faced a revolution in past decades and has opened new areas of success and opportunities for entrepreneur globally. But now the software industry is facing a serious problem of high turnover. High turnover will affect the project success. The roles of software testers have significant impact on the project success. The following problems will encounter when software testers left their current job during Testing Phase.

- Functional Knowledge on the application.
- Experience on the application
- Experience on the usage of testing tools with respect to specific project
- Client interactions
- Collaboration within the testing team
- Collaboration within the development team
- Time to build a new member

2. LITERATURE REVIEW

Zhigang Wu [1] et al, analyze the impact of employee turnover along controllable variable and Uncontrollable variable. Zhang Guangyu [2] et al, developed a model to understand the talents loss risk using an evaluating indexes system with fuzzy comprehensive evaluation method. Xinhui Jiang [3] et al, while examining to study the turnover intentions with respect to impact and supervisors' monitoring,

results indicate that former did not reduce turnover intentions, but when the later was high, turnover intentions was high. Dayong Wang [4], conducted a study to determine turnover intentions of new employees based on 6 types of pressure such as pressure from work itself, organizational management pressure, role ambiguity and role conflict pressure, interpersonal relationship and communication pressure, career development pressure and personal qualities pressure. Personal qualities pressure has no impact on turnover intentions. Zhang Jiandong [5], conducted a study in IT industry to determine employee engagement such as work input, organizational identity and work-happiness with respect to gender, age, marital status, education and working time. Qin Zhou [6], suggests that low perceived organization support and low job satisfaction leads to high turnover intentions. Dawn Owens [7] et al, conducted a study and classified into two categories to retain the talented employees such as Non-Monetary (Intrinsic) and Monetary (Extrinsic) characteristics. Jo Ellen Moore [8], results suggests that low affective commitment, high perceived job alternatives, and high psychological futility of voice are the primary determinants of turnover. Oksan Imamoglu [9] et al, determines the attributes for project success or failure. The causes of failure are went over time, went over budget, no organizational benefits and low user satisfaction. The reasons for project success are good project management and leadership, effective planning, executive and sponsor commitment, total organization and project team commitment. Janice M. Bum [10] et al identified five key dimensions for motivating their jobs in computing professionals such as skill variety, task identity, task significance, autonomy and feedback. F. Calisir [11] Y.P.S.Kanwar [13] Sinem Aydogdu [38] et al, determines that organizational commitment and job satisfaction predicts intention to quit the job. Sohrab Ahmad [29] et al, determined organizational commitment has significant impact on turnover intentions of call center personnel in Pakistan. Caramollah Daneshfard [37] et al, identifies that there is a direct relationship between organizational commitment and job satisfaction. Abdul Rahman [16] et al, determines perceived alternative job opportunities had significant impact on turnover intentions among IT professionals in Pakistan. Janice Anna Knights [22] et al, determines Psychological Contract Violation have significant impact on job satisfaction and organizational commitment. Jordan Shropshire[23] et al, identified that Stress, job insecurity and burnout are the major turnover intentions to leave the IT field. Age was not found to be any reasonable relationships.

3. SCOPE OF THE STUDY

Employee is one of the biggest asset for an organization. The organization has to understand the needs and keep them with

safe and happy. In our present research work, we have exclusively taken new entrants in software testing professionals for the study and we have cross compared the various factors for their turnover intentions in Software Industry under present scenario.

In the early work done by researchers, Y.P.S.Kanwar[13] Sinem Aydogdu[38] Caramollah Daneshfard[37] Sohrab Ahmad[29] et al have taken two modules such as module 1[Job satisfaction] and module 2[Organizational commitment] and they have applied correlation and/or regression analysis and obtain crucial results. Qin Zhou[6] Abdul Rahman[16] Jordan Shropshire[23] et al have taken three modules such as [Locus of control, Perceived Organizational support, Job Satisfaction], [Job Satisfaction, Organizational Commitment, Perceived Alternative Job Opportunities] and [Impact of Stress, Job Insecurity, Burnout] by using factor analysis [6], correlation analysis [16] and structural equation model [23] they obtain the results. Qin Zhou [6] Abdul Rahman[16] Jordan Shropshire[23] et al have taken three modules such as [Locus of control, Perceived Organizational support, Job Satisfaction], [Job Satisfaction, Organizational Commitment, Perceived Alternative Job Opportunities] and [Impact of Stress, Job Insecurity, Burnout] by applying factor analysis[6], correlation analysis[16] and structural equation model[23] they obtain the results. Calisir[11] et al have taken five modules such as the[Impact of stressors, Job stress, Organizational commitment, Locus of control and Job satisfaction], by applying multiple regression analysis they obtain the results. Previous research work is pertaining to IT professionals and Non-IT professionals in general and they have thoroughly tabulated the results.

Our research interest has taken from the above lead and we have selected four modules such as module 1[Organization satisfaction], module 2[Job satisfaction], module 3[Interpersonal relationship with supervisor's] and module 4[Life satisfaction]. We have applied correlation and regression analysis to compare these four modules and obtain the results which is shown in later pages. The unique work we can defend in our work is that the particular four combinations is not been travelled by many researchers and that to among software testing professionals.

4. OBJECTIVES OF THE STUDY

The study has the following objectives

- To study the demographic profile of the respondents.
- To understand the satisfaction level according to gender about the organization satisfaction, job satisfaction, interpersonal relationship with supervisors and life satisfaction.
- To examine the turnover intentions in software testing professionals.

5. HYPOTHESIS OF THE STUDY

H1: There is no significant difference between gender and turnover intentions in software testing professionals at 5 percent level of significance.

H2: There is no significant difference between age and turnover intentions in software testing professionals at 5 percent level of significance.

H3: There is no significant difference between income level and turnover intentions in software testing professionals at 5 percent level of significance.

H4: Male employees will have greater organization satisfaction, job satisfaction, interpersonal relationship with supervisor's and life satisfaction and lesser turnover intent compared to Female employees.

H5: Organization Satisfaction is negatively correlated with turnover intent.

H6: Job Satisfaction is negatively correlated with turnover intent.

H7: Interpersonal relationship with supervisors is negatively correlated with turnover intent.

H8: Satisfaction in Life is negatively correlated with turnover intent.

6. RESEARCH METHODOLOGY

Type of Research	Descriptive cum Exploratory in nature
Nature of data	Primary and Secondary data
Data Collection	Questionnaire was prepared and distributed to the respondents; responses were collected through personal interview, E-mails and hosted web site
Area of the study	Chennai
Population frame	Employees' from Software Industry
Sampling Unit	Employees' from Software Testing Professionals
Sample size	135
Tools for analysis	Descriptive Statistics : Frequency, Cross Table, ANOVA, Correlation and Regression
Questionnaire Analysis[Reliability]	Cronbach Alpha: Organization Satisfaction = 8 items, 0.956 , Job Satisfaction = 13 items, 0.773, Interpersonal relationship with supervisor's = 9 items, 0.976 , Life Satisfaction = 5 items, 0.663, Turnover Intentions = 2 items, 0.933
Scaling Method	Likert Scale: Strong Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, Strong Disagree = 1

7. RESULTS

Various statistical analyses were conducted to test the different hypothesis. The results of the study are presented in four sub-sections. The first section shows the demographic

profile of the respondents. The section shows the ANOVA results for significant different in hypothesis. The third section describes correlation results and fourth section presents regression analysis.

7.1 Demographic Profile of the Respondents

Table 1: Demographic characteristics

Parameters	Category	Number of Respondents
Gender	Male	67
	Female	68
Age	< 25	122
	26 to 30	13
Marital Status	Married	13
	Unmarried	122
Education Qualification	UG	55
	PG	31
	Professional	49
Annual income in Rs.	<=3,00,000	55
	3,00,001 to <=6,00,000	80
Domain	Retail Industry	71
	Health Care	64
Process Model	Waterfall	75
	Spiral	60
Working hours Per week	< 40	60
	40 to 50	75

Source: Primary data

7.2 ANOVA Results

The Table 2, 3 and 4 shows that there is a significant difference exists among Gender, Education and Income level with respect to turnover intentions. Hence H1, H2 and H3 are rejected. Table 5 shows that comparative study of male employees and female employees on different group variables such as organization satisfaction, job satisfaction, interpersonal relationship with supervisor's, life satisfaction and turnover intentions. The result reveals that male employees are more satisfied in different group variables and lesser turnover intent. Hence H4 is accepted.

Table 2: ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	23.713	1	23.713	12.861	.001
Within Groups	245.221	133	1.844		
Total	268.933	134			

Source: Primary data

Table 3: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.449	2	6.724	3.474	.034
Within Groups	255.485	132	1.935		
Total	268.933	134			

Source: Primary data

Table 4: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.246	1	13.246	6.890	.010
Within Groups	255.688	133	1.922		
Total	268.933	134			

Source: Primary data

Table 5: Comparison of Male and Female Groups on Different variables [N=135]

Variables	Sex			
	Male (N = 67)		Female (N = 68)	
	Mean	S.D	Mean	S.D
Organization Satisfaction	3.287	0.941	2.572	0.91
Job Satisfaction	3.691	0.482	3.37	0.408
Interpersonal Relationship with Supervisor's	3.249	0.983	2.428	0.87
Life Satisfaction	3.397	0.544	3.015	0.616
Turnover Intentions	3.00	1.348	3.838	1.367

Source: Primary data

Table 6: Opinion about Organization Satisfaction

	SA	A	N	D	SD
I am familiar with organization's current vision & mission	49 (36.3)	69 (51.1)	12 (8.9)	4 (3.0)	1 (.7)
The Organization is maintaining consistent policies	32 (23.7)	21 (15.6)	2 (1.5)	23 (17.0)	57 (42.2)
The Organization motivates employees	6 (4.4)	49 (36.3)	7 (5.2)	30 (22.2)	43 (31.9)
The Organization openly discusses job related issues with the employees	6 (4.4)	30 (22.2)	40 (29.6)	51 (37.8)	8 (5.9)
The Organization follows standard appraisal procedure	4 (3.0)	54 (40.0)	13 (9.6)	11 (8.1)	53 (39.3)
The Organization gives scope for career advancements	6 (4.4)	31 (23.0)	23 (17.0)	75 (55.6)	0
The Organization takes pride in my accomplishments at work	1 (.7)	55 (40.7)	61 (45.2)	10 (7.4)	08 (5.9)
The Organization is open for feedback	5 (3.7)	33 (24.4)	41 (30.4)	17 (12.6)	39 (28.9)

Source: Primary data [SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly Disagree]

Table 7: Opinion about Job Satisfaction

	SA	A	N	D	SD
I am fairly paid for the job i perform	55 (40.7)	49 (36.3)	11 (8.1)	13 (9.6)	08 (5.2)
I have sufficient resources to do my job	75 (55.6)	40 (29.6)	11 (8.1)	05 (3.7)	04 (3.0)
I am relatively free to my job	55 (40.7)	62 (45.9)	11 (8.1)	04 (3.0)	03 (2.2)
I am having good relationship with my team members	17 (12.6)	62 (45.9)	14 (10.4)	38 (28.1)	04 (3.0)
I am satisfied with my supervisor(s) role	06 (4.4)	44 (32.6)	33 (24.4)	16 (11.9)	36 (26.7)
Work load is reasonable	11 (8.1)	110 (81.5)	11 (8.1)	02 (1.5)	01 (.7)
My present job demands frequent extended working hours	10 (7.4)	63 (46.7)	18 (13.3)	20 (14.8)	24 (17.8)
I feel I have a secured job	73 (54.1)	49 (36.3)	13 (9.6)	0	0
There is a Stress in my job	07 (5.2)	34 (25.2)	13 (9.6)	71 (52.6)	10 (7.4)
I am encouraged to come up with innovative ideas on the job	22 (16.3)	35 (25.9)	58 (43.0)	12 (8.9)	08 (5.9)
There is a recognition in my job	19 (14.1)	44 (32.6)	16 (11.9)	47 (34.8)	09 (6.7)
I am aware of promotional opportunities and also i have a chance of advancement	21 (15.6)	42 (31.1)	57 (42.2)	09 (6.7)	06 (4.4)
The way organizational policies are put into practice is good	19 (14.1)	30 (22.2)	48 (35.6)	22 (16.3)	16 (11.9)

Source: Primary data [SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly Disagree]

Table 8: Opinion about Interpersonal Relationship with Supervisor's

	SA	A	N	D	SD
There is a smooth interpersonal communication	44 (32.6)	26 (19.3)	21 (15.6)	44 (32.6)	0
I get sufficient knowledge from my supervisor(s)	32 (23.0)	24 (17.8)	25 (18.5)	47 (34.8)	08 (5.9)
My supervisor(s) is consistent in applying the rules to all the	02 (1.5)	27 (20.0)	26 (19.3)	27 (20.0)	53 (39.3)

employees					
My supervisor(s) treats me with respect	01 (.7)	68 (50.4)	11 (8.1)	55 (40.7)	0
My supervisor(s) gives me a reasonable work	03 (2.2)	54 (40.0)	63 (46.7)	12 (8.9)	03 (2.2)
My supervisor(s) accepts my ideas if it is valid	01 (.7)	52 (38.5)	77 (57.0)	04 (3.0)	01 (.7)
My supervisor(s) provides performance feedback(ie timely & consistent basis)	02 (1.5)	53 (39.3)	02 (1.5)	17 (12.6)	61 (45.2)
My supervisor(s) provides me with cross training outside of my specialization	03 (2.2)	31 (23.0)	22 (16.3)	20 (14.8)	59 (43.7)
My supervisor(s) provides me with opportunities for professional growth	02 (1.5)	29 (21.5)	22 (16.3)	18 (13.3)	64 (47.4)

Source: Primary data [SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly Disagree]

Table 9: Opinion about Life Satisfaction

	SA	A	N	D	SD
In most ways my life is close to my ambition & wishes	25 (18.5)	65 (48.1)	18 (13.3)	19 (14.1)	08 (5.9)
The conditions of my life are excellent	11 (8.1)	51 (37.8)	43 (31.9)	19 (14.1)	11 (8.1)
I am satisfied with my life	15 (11.1)	30 (22.2)	61 (45.2)	11 (8.1)	18 (13.3)
So far i have got the important things i wanted in life	03 (2.2)	39 (28.9)	69 (51.1)	21 (15.6)	03 (2.2)
I would change almost nothing hereafter in my life	05 (3.7)	10 (7.4)	102 (75.6)	11 (8.1)	07 (5.2)

Source: Primary data [SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly Disagree]

7.3 Correlation Results

From table 10 the result reveals that there is a strong negative relationship exists between organizational satisfaction, job satisfaction and interpersonal relationship with supervisors with respect to turnover intentions. A moderate negative relationship exists between life satisfaction and turnover intentions. Thus decrease in organizational satisfaction, job satisfaction, and interpersonal relationship with supervisor's and life satisfaction will increase turnover intentions. Thus Hypothesis H5, H6, H7 and H8 are accepted.

Table 10 : Correlations between Different Variables (N = 135)

		Organization Satisfaction	Job Satisfaction	Interpersonal Relationship with Supervisor's	Life Satisfaction	Turnover Intentions
Organization Satisfaction	Pearson Correlation	1	.725**	.950**	.468**	-.876**
	Sig. (2-tailed)		.000	.000	.000	.000
Job Satisfaction	Pearson Correlation	.725**	1	.766**	.436**	-.726**
	Sig. (2-tailed)	.000		.000	.000	.000
Interpersonal Relationship	Pearson Correlation	.950**	.766**	1	.504**	-.898**
	Sig. (2-tailed)	.000	.000		.000	.000
Life Satisfaction	Pearson Correlation	.468**	.436**	.504**	1	-.422**
	Sig. (2-tailed)	.000	.000	.000		.000
Turnover Intentions	Pearson Correlation	-.876**	-.726**	-.898**	-.422**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data

7.4 Regression Results

Based on the results of the correlation analysis, stepwise regression analysis were carried out to determine true relationship exists between four independent variables such as organization satisfaction, job satisfaction, interpersonal relationship with supervisor's, life satisfaction and one dependent variable is turnover intentions. The table 12 reveals that it is significant for predicting independent variables and dependent variable. The table 13 reveals that Organization Satisfaction and Interpersonal relationship with supervisors are the strong predictors for turnover intentions among new entrants in software testing professionals.

Table 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.904 ^a	.817	.811	.61596

Source: Primary data

a. Predictors: (Constant), Life Satisfaction, Job, Organization, Interpersonal Relationship

Table 12: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	219.611	4	54.903	144.709	.000 ^a
Residual	49.322	130	.379		
Total	268.933	134			

Source: Primary data

a. Predictors: (Constant), Life Satisfaction, Job, Organization, Interpersonal Relationship

b. Dependent Variable: Turnover Intentions

Table 13: Coefficients

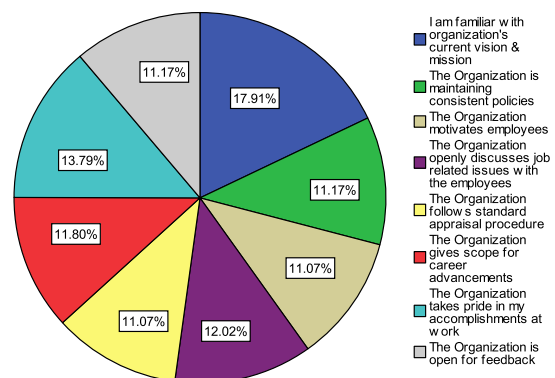
Model	Unstandardized Coefficients		Standardized Coefficients Beta	T	Sig.
	B	Std. Error			
(Constant)	7.594	.512		14.824	.000
Organization Satisfaction	-.343	.172	-.240	-1.996	.048
Job Satisfaction	-.297	.176	-.099	-1.689	.094
Interpersonal Relationship with Supervisor's	-.862	.183	-.616	-4.712	.000
Life Satisfaction	.102	.101	.044	1.009	.315

Source: Primary data

a. Dependent Variable: Turnover Intentions

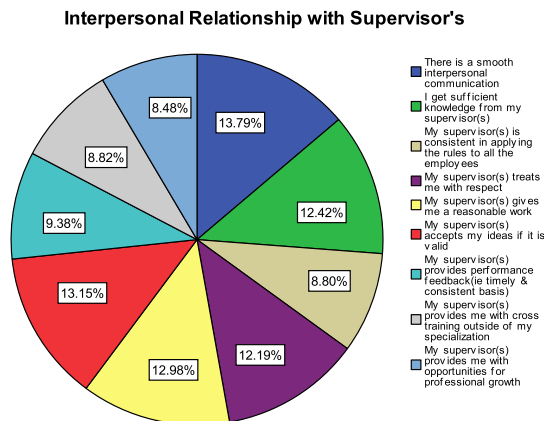
Figure 1

Organization Satisfaction



Source: Primary Data

Figure 2



Source: Primary Data

8. CONCLUSION

The study shows Organization Satisfaction and Interpersonal relationship with supervisors are the strong predictors for turnover intentions. Job Satisfaction and Life Satisfaction have no impact on turnover intentions among software testing professionals. Results from the Figure 1 and Figure 2, clearly indicates that maximum impact reason for turnover intentions among software testing professionals are lesser amount of motivation towards employees[11.07%], No standard appraisal procedures for employee career benefits[11.07%] and Supervisor's doesn't providing opportunities for professional growth[8.48%]. From the table 5, it is understood that male employees are more satisfied when compared to female employees. It is also observed that male = 80.59 % and female = 80.88 % agrees that they are interested in doing testing job. The study can be extended to compare and contrast with a variety of other sectors. The study concludes that employee is the biggest asset for the organization. The organization has to revise the current policies for the new entrants and needs to motivate them. As well as the supervisors has to be more open mind in providing consistent performance feedback and give more opportunity for the new entrants to learn new things in the current technology in order to retain the talented young employees.

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