

Araştırma Makalesi / Research Article

WHAT AFFECTS EMPLOYEE MOTIVATION AT IT PROJECTS IN TURKEY? THE IMPACT OF LEADER COMMUNICATION, WAGE SATISFACTION, AND JOB OPPORTUNITIES AT IT PROJECTS EMPLOYEE'S*

Türkiye'deki BT Projelerinde Çalışan Motivasyonunu Ne Etkiler? Lider İletişiminin, Ücret Memnuniyetinin ve İş Fırsatlarının Etkisi

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ABSTRACT: This study aimed to investigate the factors influencing employee motivation and performance of information technology projects in Turkey and the perception of employee motivation next to it and investigate the effect of redundancy request. The employee on different IT projects was selected in Turkey for this study. Seven hypotheses were developed and tested by using literature studies and survey data obtained together. For the hypothesis tests, structural equation modeling was performed by using SPSS and AMOS programs. As a result of the application, five hypotheses were accepted, and two hypotheses were rejected. According to the results of the analysis, it is seen that employee-manager relationships and wage satisfaction have a positive effect on employee motivation. In addition, the hypothesis that the relationship between employee and manager affects performance other than motivation was supported. Also, perceived alternative job opportunities were found to have a positive effect on willingness to leave and a negative impact on employee motivation. The results were interpreted in support of the literature, and suggestions were made to shed light on future studies, and the study was completed in this way.

Keywords: Motivation, Turnover Intentions, Performance, Pay Satisfaction, Leader Communication, Perceived Alternative Job Opportunity, SEM, SPSS, AMOS.

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ÖZ: Bu çalışma, Türkiye'deki bilgi teknolojisi projelerinde çalışanların motivasyonunu ve performansını etkileyen faktörleri ve bunların işten çıkarılmaya etkisini araştırmayı amaçlamıştır. Bu çalışma için Türkiye'de farklı BT projelerinde çalışanlarla iletişime geçilmiştir. Literatür çalışması sonrasında oluşturulan yedi hipotez, elde edilen anket verileri kullanılarak test edilmiştir. Hipotez testleri için SPSS ve AMOS programları kullanılarak yapısal eşitlik modellemesi yapılmıştır. Çalışma sonucunda beş hipotez kabul edilmiş ve iki hipotez reddedilmiştir. Analiz sonuçlarına göre çalışan-yönetici ilişkilerinin ve ücret memnuniyetinin çalışanların motivasyonu üzerinde olumlu bir etkisi olduğu görülmektedir. Ayrıca, çalışan ve yönetici arasındaki ilişkinin motivasyon dışında performansı da etkilediği hipotezi desteklenmiştir. Ayrıca, algılanan alternatif iş fırsatlarının ayrılma isteği üzerinde olumlu bir etkisi ve çalışanların motivasyonu üzerinde olumsuz bir etkisi olduğu saptanmıştır. Sonuçlar literatürle desteklenerek yorumlanmış ve gelecekteki çalışmalara ışık tutmak için önerilerde bulunulmuştur.

Anahtar Kelimeler: Motivasyon, İşten Ayrılma İsteği, Performans, Ücret Tatmini, Lider İletişimi, Algılanan Alternatif İş Fırsatları, SEM, SPSS, AMOS.

INTRODUCTION

With the increasing technology, the information technology sector, which develops more and more every day, acts as an aid for companies to make their operations faster and more efficient. It does not directly provide financial benefits to companies, but can indirectly increase profitability in the long run. The source of information technology projects is human. The quality of human resources will determine the quality of an organization (Weiner, 2013). When the employees are examined, it is seen that the factors to each employee are satisfied with vary. In addition, in terms of performance, it is understood that employees do not conduct their jobs with the same speed. Therefore, it is difficult to think like a production line and make a constant calculation, such as input and output time. However, it is known that unhappy employees want to change their job to another job and that it is difficult to train a new employee (Örücü and Esenkal, 2005). From this, it is understood that employee motivation is a critical issue that needs to be examined.

Motivation is not a factor that some people have, and some people have not. In some cases, all employees are more or less motivated (Robbins, 1998). What is important here is the current situation and the motives. For example, a student can quickly finish a book on a topic of interest, while another student cannot read for more than half an hour. As explained in this way, motivation varies from person to person, and may even change at different times in the same person.

So, what affects employee motivation? In this paper, the concepts of motivation, intention to quit, performance, pay satisfaction, employee-manager relationship, and perceived alternative job opportunities and literature

researches and applications of these topics in IT projects are examined. In the application part of the study, a research model related to the concepts studied, including employee motivation at the center, was established, and specific hypotheses were found between these concepts, and then these hypotheses, which were created through a survey study, were tested. There are many studies in the literature about motivation, performance, and intention to quit (Ashford et al., 1989; Sonnentag and Frese, 2002; Bodla and Hameed, 2008; Robbins and Judge, 2012; Khan and Zakirullah, 2016). In this study, the scope of the target audience was selected only from those working in information technology projects. Thus, the survey with more IT employees was conducted.

Our model allows us to measure the factors that affect the motivation of employees in IT companies in Turkey. According to the survey conducted, the results showed that executive communication has a positive effect on performance and motivation. Also, pay satisfaction has a positive effect on motivation. On the other hand, today, the turnover rates of information technology employees are extremely high. According to a study conducted in 2017, the software sector had a higher turnover rate (13.2%) than other sectors (Forrest, 2019). Because demand and rewards are high, information technology employees want to change their jobs (Miller, 2019). As the cost of leaving jobs is an important cost item for companies, it is important to examine the reasons. With the literature study, the reasons for leaving the job were examined and useful results were obtained for the companies. According to this, perceived business opportunities have a positive impact on turnover intention. However, motivation has a negative impact on turnover intention. Further, for the business to be successful, it is essential to understand the employees' wishes (Katz, 1998; Beckova, 2004). To mobilize employees for the enterprise, their desires and needs, and the conditions that direct them should be examined. Our work can also be useful for managers and employees working in IT projects. Through this paper, IT managers can plan employees' behaviors and work to their subordinates more effectively. In this way, managers can connect employees and work more effectively. In addition, this study is beneficial for academic researches for future researches.

LITERATURE REVIEW

Influence of Leader and Employee Communication on Employee Motivation and Perceived Performance

Managers should direct their subordinates in line with the objectives of the company to maintain the continuity of the companies despite the increasing competition conditions (Yılmaz, 2011). According to this, managers should

motivate their subordinates at the same time. It can be concluded that the employee's relationship with the manager will affect employee motivation status. The more successful the employee communicates with the manager, the more motivated he will be. An employee with poor communication with the manager is expected to have low motivation.

Similarly, in another study, it is stated that open communication channels of official and informal executive employees have a positive effect on motivation (Dwivedula and Bredillet, 2010). In a study conducted in 2014, the motivation conditions of the software engineers' motivation levels were examined in 4 countries. After face-to-face interviews and surveys, Australian employees stated that they should be good managers as their primary motivation (Verner et al., 2014). In 2003, they stated that almost all of the employees had a sense of job satisfaction after being appraised by their managers and that they created the right motivation for their work (Öztürk and Dündar, 2003). They also stated that the injustice that occurs when they compare themselves with other employees in the team rather than the wage received is more or less creates unrest among the employees. They also stated that it is another source of motivation for employees to know that the higher they work, the higher they will rise. At this point, if the employee knows to receive as much money as works and is evaluated equally with their colleagues, the work environment will be more peaceful. In the study, a positive relationship hypothesis was established between executive communication and motivation, similar to literature studies.

In addition, employees may be given responsibility or enriched to plan, manage, and control their own business. This will increase employee performance and motivation (Üçüncü, 2016). The level of work provided by the manager is considered as an acceptable workload to the extent that the employee can continue to do employee job healthily and effectively (Jung, 2001). The manager is responsible for planning the works under which employees will be motivated (Prentice, 2004). Therefore, manager relationship and communication also affect employee performance. As a result of this researches, the following hypotheses were formed.

H1: Leader and employee communication will have a positive effect on employee motivation.

H2: Leader and employee communication will have a positive effect on perceived employee performance.

Influence of Pay Satisfaction on Employee Motivation

As a result of the literature research, it was found possible that there is a relationship between the concept of pay satisfaction and a concept in the model, and the related hypothesis was written. The hypothesis has been established that pay satisfaction has a positive relationship on employee motivation. In a study conducted in 4 countries in 2014, it was found that motivation levels of software engineers were affected by pay satisfaction (Verner et al., 2014). In addition, employees should be motivated by the companies they work for to be more successful (Aydın, 2000). Thus, motivation would depend on a pay increase, promotion, appreciation, and access to limited resources.

Furthermore, promotion is an excellent opportunity when employees' salary expectations increase. The promotion is to bring the employee to a higher position and, therefore, to a more difficult job. As the task becomes more complicated, the responsibility, authority, social status and salary paid to the individual increase. For this reason, promotion, which is a reward for success and which is a motivation-enhancing element, has a multi-faceted motivator effect on the individual. In terms of being an element that includes monetary and psychological rewards, promotion promotes more than the motivating effect of the same amount of wages (Kıdak and Aksaraylı 2009).

In addition to financial gains for employees, payment implies indirectly spiritual meaning. As a result of the wages received, the employee feels and is motivated by taking or doing what employee wants and being more productive in the environment. As a result of this, the motivated individual is happy in his private life and more successful in working life. As a result of this researches, the following hypotheses were formed.

H3: Pay satisfaction will have a positive effect on employee motivation.

Influence of Perceived Alternative Job Opportunity on Employee Motivation and Turnover Intention

Before this hypothesis was established, a literature review that includes perceived job opportunities among employees' motivation factors has not been conducted. However, the hypothesis was added to the study to overcome this gap in the literature upon the fact that during the face-to-face interviews with the employees in the IT project, the employees stated that they generally found easy work and were affected by the dynamic structure of the sector.

The fact that the employees have more opportunities to find alternative jobs outside their companies makes them feel that they do not need their current company so that they feel free and not stressed because they do not feel under

pressure. This open environment is thought to increase motivation in sectors such as innovation-oriented information technologies. In this study, this hypothesis has been tested and added to the literature to be useful.

Among the issues affecting the desire to quit, the economic and social events that took place in the environment of the employees were more effective (Şimşek, 2002). Also, he stated that in business life, as a result of increasing competition with the development of technology, the attractiveness of other jobs increased, and this affected the desire to quit. It is argued that alternative job opportunities have a positive effect on employees' willingness to quit (Ashford et al., 1989; Bodla and Hameed, 2008). In the literature, there was a significant and positive relationship between perceived alternative job opportunities and intention to quit (Hulin et al., 1985; Thatcher et al., 2003; Hwang and Kuo, 2006; Sakchaicharoenkul, 2009). Hypotheses were created in this way.

H4: Perceived alternative job opportunities will have a positive effect on employee motivation.

H5: Perceived alternative job opportunities will have a positive effect on turnover intention.

Influence of Employee Motivation on Perceived Performance and Turnover Intention

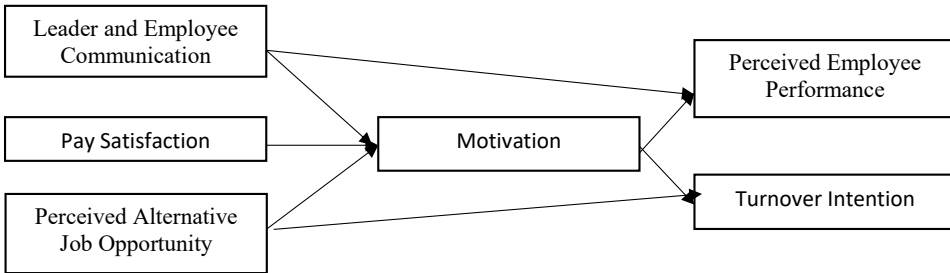
The employee's success in the job, and the success of the given work, employee pride, a source of success and motivation (Sonnentag and Frese, 2002). As a result, performance increase has a positive effect on a profitable future and reputation. It is generally thought that highly motivated employees perform better than lower motivated employees. In addition, motivation is a concept in business life and that employees who are not well motivated cannot perform at the expected level (Robbins and Judge, 2012). Motivation encourages the desire of the employee to achieve the goal of better performance (Handoko, 2000). Motivation, which is the employee's desire to strive for the highest level of company goals, is performed depending on the degree of fulfillment of the employee's needs (Robbins, 2003). In 2007 stated that motivation affects performance in their study (Djunaedi et al., 2017). There is a significant and inverse relationship between motivation and intention to quit (Ünsar, 2011; Khan and Zakirullah, 2016). Literature research stated that as employee motivation increases, the employee's desire to leave the workplace would decrease (Kaya and İlban, 2019). In the study, a negative relationship hypothesis was established between motivation and intention to quit, similar to the literature studies.

H6: Employee motivation will have a positive effect on perceived employee performance.

H7: Employee motivation will have a negative effect on turnover intention.

Based on the literature analysis, a conceptual model has been proposed to demonstrate the factors affecting motivation and how motivation affects performance and intention to quit; this is depicted in Figure 1.

Figure 1: Conceptual Framework



METHOD

Sample

In this paper, the survey method was used. Surveys were sent to employees of different IT Project in Turkey. We also shared the survey on online platforms. To contribute to the study, participants were informed: (1) the study was aimed at academic research; (2) the information received is confidential and will not be shared; and (3) there is no right or wrong answer. The survey was conducted on May-Oct, 2019. Since the study was collected from individuals on a voluntary basis in 2019 and it is a Master Thesis, it does not require an Ethics Committee Certificate. A total of 315 IT project employees replied. A total of 315 IT project employees replied, but incorrect surveys excluded and 298 questionnaire returns remained. Demographic questions asked and shared in Table 1. As he (Hair and other, 1998) pointed out, there is a need to observe the number of expected (estimated) variables at least five times. Also, a suitable sample volume for Maximum Likelihood estimation is 100. If the sample volume for MLE exceeds 400 or 500, the measured goodness-of-fit indicators indicate a poor fit. Our survey rate is 94.6%. (Israel, 2003), when the main mass is over 100,000, the theoretical sample volume should be between 200 (95% confidence level and $\pm 7\%$ precision level) to 400 (95% confidence level and $\pm 5\%$ precision level). The number of the questionnaire's collected in this study provides a theoretical sample volume condition.

Table 1: Summary of Respondents (N=298)

		Number of Participants	% Value
Gender	Male	195	65,4%
	Female	103	34,6%
Age range	21-30	181	60,7%
	31-40	92	30,9%
	41-50	23	7,7%
	51 +	2	0,7%
Education	Bachelor degree	219	73,5%
	Post graduate degree	73	24,5%
	High school	1	0,3%
	Associate degree	5	1,7%
Marital status	Single	176	59,1%
	Married	122	40,9%
Current role	Analyst	90	30,2%
	Project manager	43	14,4%
	Test Engineer	33	11,1%
	Developer	101	33,9%
	Manager	31	10,4%
Current role working year	0-3	180	60,4%
	12 +	25	8,4%
	4-7	75	25,2%
	8-11	18	6,0%
Total years of IT experience	0-3	117	39,3%
	12-15	24	8,1%
	16 +	27	9,1%
	4-7	83	27,9%
	8-11	47	15,8%

Measures

In IT projects, employees were asked to evaluate their communication with their managers, perceived alternative job opportunities, wage satisfaction, motivation, performance, and perceptions about their willingness to leave. After the literature was scanned, suitable scales were found to test the model in the study, and a questionnaire was conducted on the subject's ideal for the coverage. The scales in the literature were translated into English for the measurement of different factors in the study. The reliability after translating the questionnaire was measured via cronbach alfa coefficients (Table 3). The first part of the study consists of demographic questions and provides information about the current situation of the person solving. In the second part, the 5-point Likert scale (1 = strongly agree, 5 =strongly disagree) was used as used in the literature. The table of question sources prepared is in Table 2.

Table 2: Measurement Resources

Latent Variable	Question Resources	Number of Questions
Organizational Business Motivation	Karakaya ve Alper Ay, 2007	10
Individual Business Motivation	Karakaya ve Alper Ay, 2007	10
Intention to Leave	Wayne, Shore ve Liden, 1997	3
Performance	Sigler ve Pearson, 2000	4
Pay Satisfaction	Sharma ve Bajpai, 2011	6
Executive Communication	Mert, 2011	8
Perceived job opportunities	Weng, 2010	4

The application was carried out in 2 stages. First, the questions were discussed with five employees that work in IT, and it was ensured that when everyone read the question, everyone understood it correctly and in the same way. They were asked not only to respond to the entire survey but also to provide feedback on the survey design and text. The aim here is to avoid confusion as scales can be translated from a foreign language into Turkish, which may impair the integrity of meaning. All participants should understand the same expression for each question. Besides, the relationship of the questions with the concepts and their suitability for the research were investigated at this stage. Subsequently, inappropriate survey questions were correctly arranged. Thus, it was prevented from pushing the wrong result to the wrong as a result of the differences in meaning arising from the translation of foreign languages. Then, the pilot study was conducted on 75 people. Since the questionnaire was in an electronic environment, it was not only applied in the same place to be objective and objective results. It was distributed to different age groups, sexes, and businesses, and objective mass was formed. After the application, the responses were tested in the SPSS program, and the reliability of the questionnaire was tested. The most commonly used method is the Cronbach Alpha coefficient (Cortina, 1993; Haladyna, 1999). Generally, Cronbach Alpha value is expected to be over 0.7 (Eymen, 2007). With the help of the program, Cronbach's alpha values, which express the reliability coefficient of the factors, were calculated. The values are in Table 3.

Table 3: Cronbach Alpha Values

Top Model	Latent Variable	Cronbach's Alpha Value
Motivation	Organizational Business Motivation	0,80
	Individual Business Motivation	0,73
Intention to Leave	Intention to Leave	0,94
Performance	Performance	0,80
Pay Satisfaction	Pay Satisfaction	0,81
Executive Communication	Executive Communication	0,89
Perceived job opportunities	Perceived business opportunities	0,78

Results were examined, and it was found that Cronbach Alpha values in all models were higher than 0.70. This means that the questions and results are reliable. In this context, the application was continued with the employees in IT projects, which is a larger sample target audience the online survey link was shared with employees.

Normality Testing

Structural equation models are multivariate statistical methods using a variance, covariance analysis, and multiple regression analyses to predict causality and correlations between latent and observed variables (Dursun and Kocagöz, 2010). Some basic assumptions must be made to perform factor analysis. These assumptions are conceptual rather than statistical. In case of deviations from statistical assumptions such as multivariate normal distribution suitability and linearity, the calculated correlation coefficients will be reduced. The assumption of normality is only necessary if the significance of the factors is to be tested (Hair et al.; 1998, Hair et al., 2017). For this reason, after demographic analysis, the normality of the data was tested to see its application to structural equation model studies. Skewness & Kurtosis values were found for the test of normality of data using the SPSS 20.0 application. Normality values are evaluated in Table 4 (George and Mallery, 2010).

Table 4: Normality Ranges

Value Range	Durum
$-1 < x < 1$	Most Ideal
$-2 < x < 2$	Expected Status
$-3 < x < 3$	Critical Limit



According to the results, if the values of the analysis are out of the range in Table 4, the assumption of normality will be invalid. Skewness & Kurtosis values were examined with SPSS. In this context, one question in the individual motivation factor does not fit the normal distribution. This question was removed from the analysis and continued to be applied.

Factor analysis

Confirmatory factor analysis (CFA) models are an essential component of SEM, covering a wider class of latent variable models. Analysis, which is considered as a type of SEM, which describes the relationship between observed variables and latent structures with measurement models, is also used to test the accuracy of measurement models (Thompson, 2004). The CFA model is intended to investigate whether the given sample validates the initial theoretical model. The existence of a factor structure that provides this situation and the statistical significance of the structure is tested. Afterward, the validity of the hypothesized model is confirmed by additional sample data appropriate to the model (Schumacker and Lomax, 2004). In the research, when the scales were first subjected to KMO test and factor analysis, the results were not found to be at the desired level. It can be seen in Table 5.

Table 5: Kaiser Meyer Olkin (KMO) Values of The Scales

Factor	KMO	Bartlett’s Test of Sphericity Chi-Square
Motivation	0,91	991,207
Intention to Leave	0,76303	706,572
Performance	0,819928	474,397
Pay Satisfaction	0,832809	593,993
Executive Communication	0,855545	1244,422
Perceived job opportunities	0,797626	418,334

Questions that distorted the results were determined by re-examining them with the help of literature studies, and they were excluded from the analysis. After, KMO values of the scales found at the end of the study are greater than 0.75, and the variables are suitable for factor analysis in Table 5. Bartlett’s Test of Sphericity Chi-Square values indicates that the relationships between the variables are appropriate for the analysis. In this way, the analysis can be continued. During the factor analysis, maximum likelihood and varimax rotation techniques, which are more accurate to be used in academic studies, were used. Factor loads of factor analysis performed separately for all scales are summarized in Table 6. All factor loads were over 0.5. The total variance explanation rate is over 56% for all dimensions.

Table 6: Loadings of Items in Confirmatory Factor Analysis

Construct	Items	Loadings	Variance
Motivation	OM3	0,846	56,141
	OM4	0,806	
	OM1	0,773	
	BM3	0,748	
	BM6	0,715	
	OM9	0,705	
Perceived job opportunities	BM10	0,633	56,299
	AIF3	0,833	
	AIF4	0,812	
	AIF1	0,742	
	AIF2	0,587	
Pay Satisfaction	UT4	0,851	66,331
	UT1	0,842	
	UT5	0,798	
	UT2	0,763	
Executive Communication	YI3	0,872	66,164
	YI4	0,84	
	YI2	0,81	
	YI6	0,804	
	YI1	0,775	
Performance	YI5	0,775	60,344
	P2	0,838	
	P1	0,766	
	P3	0,751	
Intention to Leave	P4	0,749	83,329
	AN3	0,945	
	AN1	0,897	
	AN2	0,895	

Reliability Analysis

The data were checked for missing, incorrect, or inconsistent data and then the normality tests were completed. Afterward, confirmatory factor analysis was conducted for each scale with the help of the SPSS program to measure the consistency of the scales on the appropriate scales according to the normality values. Results in Table 7 were examined, and Cronbach Alpha values of all scales were found to be higher than 0.83, and the scale questions and survey results are consistent and reliable.



Table 7: Reliability Analysis Results

Measurement model	Cronbach's Alpha	Number of question
Motivation	0,9	7
Intention to Leave	0,94	3
Performance	0,86	4
Pay Satisfaction	0,92	8
Executive Communication	0,83	4
Perceived job opportunities	0,83	4

Structural Equation Model

In the structural equation modeling section, the established theoretical model will be tested. IBM AMOS 24 application is selected for use in this section. In addition to these, an excel macro called Stats Tool Package was used for reliability and validity tests (Gaskin, 2012). Under the heading, first of all, the conformity test will be performed for each model that has been tested for normality and reliability. The non-conforming models will be revised and modified to make them fit, and then the motivation measurement model, which is the only two-stage model in the study, will be tested for conformity. Here, the adaptation process will be carried out, and as a result, the model will be made suitable. The whole measurement model was checked for the applied sample, the results were checked according to the values in the model evaluation table, the faulty example was found and deleted, the necessary improvements were applied, and the model was adjusted. These procedures were used for the whole model. After these procedures, confirmatory factor analysis and path analysis were performed on the model.

Conformity Analysis of Measurement Models

In this section, the individual suitability of each measurement model will be examined, and the result value of each model will be analyzed and interpreted according to the criteria of certain indexes. The specific compliance values and the required values when testing the measurement models are listed in Table 8.

Table 8: Model Evaluation

Compliance Indexes	Definitions
CMIN/DF	Chi-square / degree of freedom
CFI	Comparative fit index
RMSEA	The square root of the mean of the approximation error squares
TLI	Tucker-Lewis Index
AGFI	Adjusted good fit index
PCLOSE(p of Close Fit)	RMSEA linked p-value

These values were tested for suitability in the model, necessary improvements were made, and the result was adjusted. Confirmatory factor analysis was carried out using the high likelihood (Max. Likelihood) method with the Amos program for the model, which was subjected to factor analysis and reliability test. The eligibility criteria and values for all factors in the model are given in Table 9.

The optimum state after covariance added to the manager communication factor was also added to the table. The conformity analysis of the layoff desire model could not be calculated with the AMOS program because it consisted of 3 observed variables. The conformity check of this model shall be indicated in the upper model.

Table 9: Conformity Testing Results

	CMIN/DF	CFI	RMSEA	TLI	AGFI	PCLOSE
Criterion	<5	>0,8	<0,1	>0,9	>0,8	>0,05
Motivation	4,65	0,94	0,11	0,92	0,85	0
Perceived Job Opportunities	0,18	1	0	1,01	0,99	0,91
Performance	2,66	0,99	0,07	0,98	0,97	0,21
Pay Satisfaction	2,62	0,99	0,07	0,98	0,95	0,21
Executive Communication	19,1	0,87	0,26	0,86	0,6	0
Executive Communication OPT	3,36	0,98	0,09	0,99	0,93	0,03

Confirmatory Factor Analysis (CFA) with AMOS

Confirmatory factor analysis of the model should be performed before proceeding to the path analysis method. The confirmatory factor analysis at this point allows the covariance's to be connected and measured by the



covariance’s expected to be correlated with them, and the control of the explained variability status of the connected variants independently of the remaining variables.

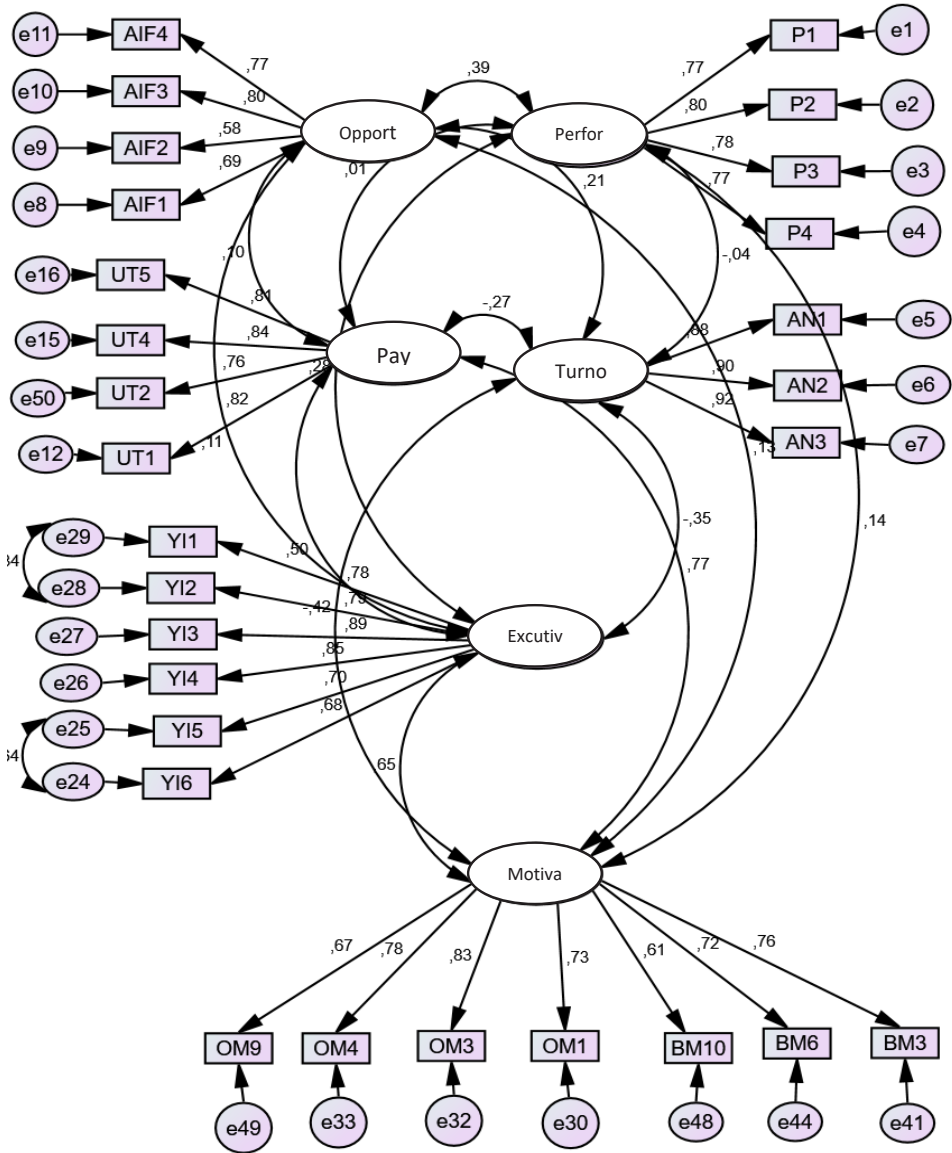
CFA provides the validation of the scales found in the literature with the sample and the data collected. In this topic, the analysis was continued with the AMOS program, as you see in Figure 2. Construct validity analysis is performed by looking at the results of confirmatory factor analysis. There are 4 criterion values stated in Table 10 for construct validity analysis (Hair et al., 2017).

Table 10: Validity and Reliability Criteria

Criterion	Description	Range
CR	Composite Reliability	>0,7
AVE	Average Variance Extracted	>0,5
MSV	Maximum Shared Variance	MSV<AVE

To evaluate these criteria, latent variables were connected by covariance’s in the AMOS application, and the model was run. Then, the values in the result outputs were excited, and the square root value of CR, AVE, MSV and AVE value of each factor was calculated with the Excel macro called Stats Tool Package (Gaskin, 2012). The calculated values are given in Table 11.

Figure 2: Post-Revised Confirmatory Factor Analysis



According to Table 11, all the values came out as desired. After the related improvements, the outlier analysis was performed. The questionnaires, whose p1 value was less than 0.05, as suggested by AMOS application, were deleted from the SPSS data file, and the analysis was performed again. These data did not conform to multiple normality values. To avoid confusion as the question numbers are deleted while deleting the questions, the deletion



process was started by sorting the big numbered item. In this way, 26 items were deleted, and the next analysis was continued with 272 questions. In order to confirm the hypotheses of the established model, first of all, normality tests, factor analysis, and reliability tests were performed by using the SPSS program. Afterward, conformity analysis, confirmatory factor analysis, and path analysis were performed with the help of the AMOS program to test the construct validity. To evaluate the suitability of the model, various suitability indices were evaluated: CMIN / df, CFI, TLI, AGFI, PCLOSE, and RMSEA. Finally, the hypotheses will be tested with path analysis and the results of the hypotheses explained.

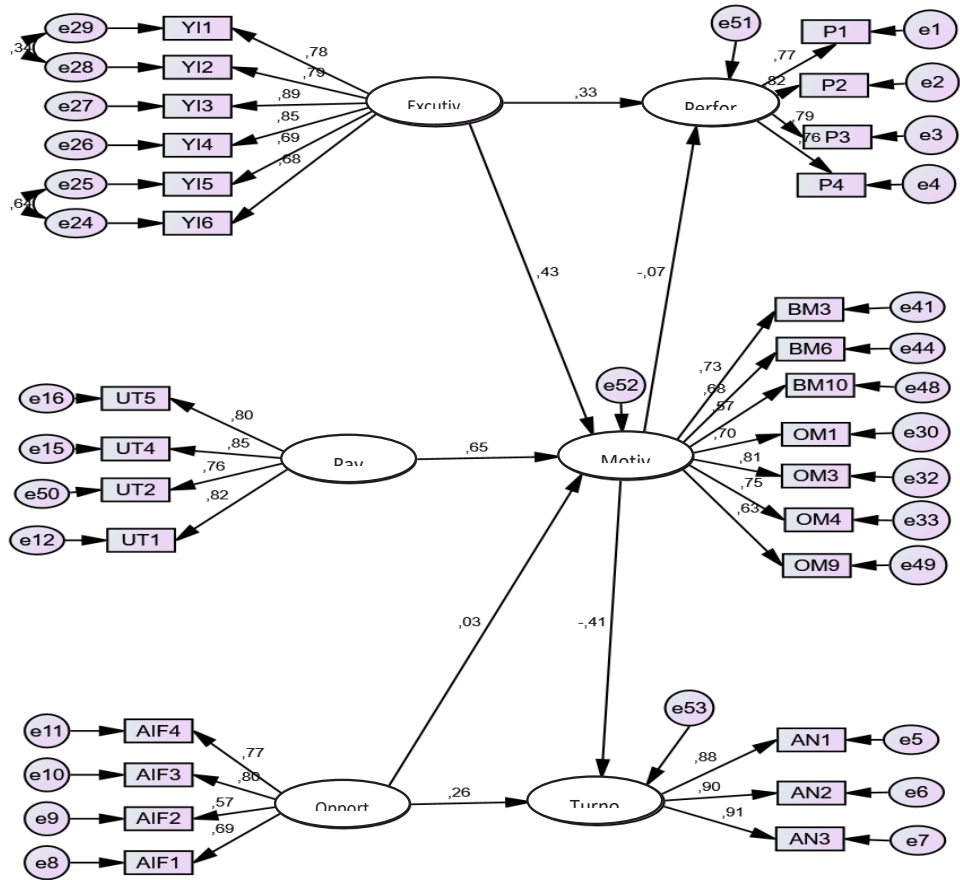
Table 11: Validity, Reliability, and Factor Correlation Matrix

	CR	AVE	MSV	Maxr(H)	Executi	Perfor	Turnove	Jobop	Pay	Motiva
Executi	0,912	0,635	0,442	0,927	0,797					
Perfor	0,858	0,603	0,147	0,864	0,336	0,777				
Turnove	0,937	0,833	0,197	0,943	-0,337	-0,086	0,913			
Jobopp	0,836	0,564	0,147	0,857	0,112	0,384	0,183	0,751		
Pay	0,888	0,664	0,558	0,889	0,497	0,083	-0,255	0,148	0,815	
Motiva	0,899	0,562	0,558	0,907	0,665	0,195	-0,444	0,154	0,747	0,750

Hypothesis Testing

The hypotheses established in light of the literature studies under this title will be evaluated according to the applied questionnaire. Path analysis measures the consistency of the model with survey results. In the AMOS program for analysis, each arrow represented in Figure 3 depicts a hypothesis, and factor loads are indicated on each arrow.

Figure 3: Structural Analysis of Path Analysis and Factor Loads



The conformity values table of the model, which is obtained as a result of the path analysis, is shown in Table 12.

Table 12: Conformity Analysis of Structural Model of Path Analysis

	CMIN/DF	CFI	RMSEA	TLI	AGFI	PCLOSE
Criterion	<5	>0,8	<0,1	>0,9	>0,8	>0,05
Model	1,99	0,93	0,06	0,92	0,83	0,005

When the results in Table 13 of conformity analysis were examined, all conformity values were found to meet the criteria. Therefore, the model is suitable for analysis. Then, the hypotheses established at the beginning of the study were tested. For this reason, the interaction of latent variables was analyzed.



Table 13: Structural Model Factor Loads and Significance

			Estimate	S.E.	C.R.	P
Motivation	<---	Opportunity	0,037	0,054	0,685	0,494
Motivation	<---	Executive	0,371	0,048	7,807	***
Motivation	<---	Pay	0,38	0,04	9,536	***
Performance	<---	Executive	0,225	0,05	4,551	***
Turnover	<---	Opportunity	0,45	0,11	4,102	***
Performance	<---	Motivation	-0,029	0,06	-0,482	0,63
Turnover	<---	Motivation	-0,706	0,106	-6,666	***

As a result of the analysis of the hypotheses established, the factor table and significance state. For each hypothesis in the table, p-value, meaningfulness status is examined, it is seen that 5 of 7 hypotheses are meaningful and accepted and 2 of them are rejected. The hypothesis that motivation has an impact on performance and perceived job opportunities for employee motivation was rejected. In general, when the results were examined, it was observed that employee-manager communication and employee satisfaction had a positive effect on employee motivation, as well as employee and manager communication positively affected employee performance. On the other hand, alternative job opportunities positively affect the employee’s willingness to quit and negatively affect employee motivation. According to the results of the path analysis, the hypothesis which is thought to affect employee motivation performance and perceived job opportunities on employee motivation was rejected. For this reason, these connections were removed from the model, and the path analysis was performed again with the AMOS program. The improved final version of the model and factor loads are shown in Figure 4.

After finding the path analysis model and factor loads, the suitability test was performed for the improved final version of the model. The criterion required for this purpose, the result suitability values of the model, and the suitability values of the improved model are shared below. According to the resulting table, there is no significant change in values. All values, except PCLOSE, are at the desired level. However, the PCLOSE value is then acceptable according to our sample number. Therefore, the model in Table 14 studied is considered appropriate.

Figure 4: Improved Path Analysis Structural Model and Factor Loads

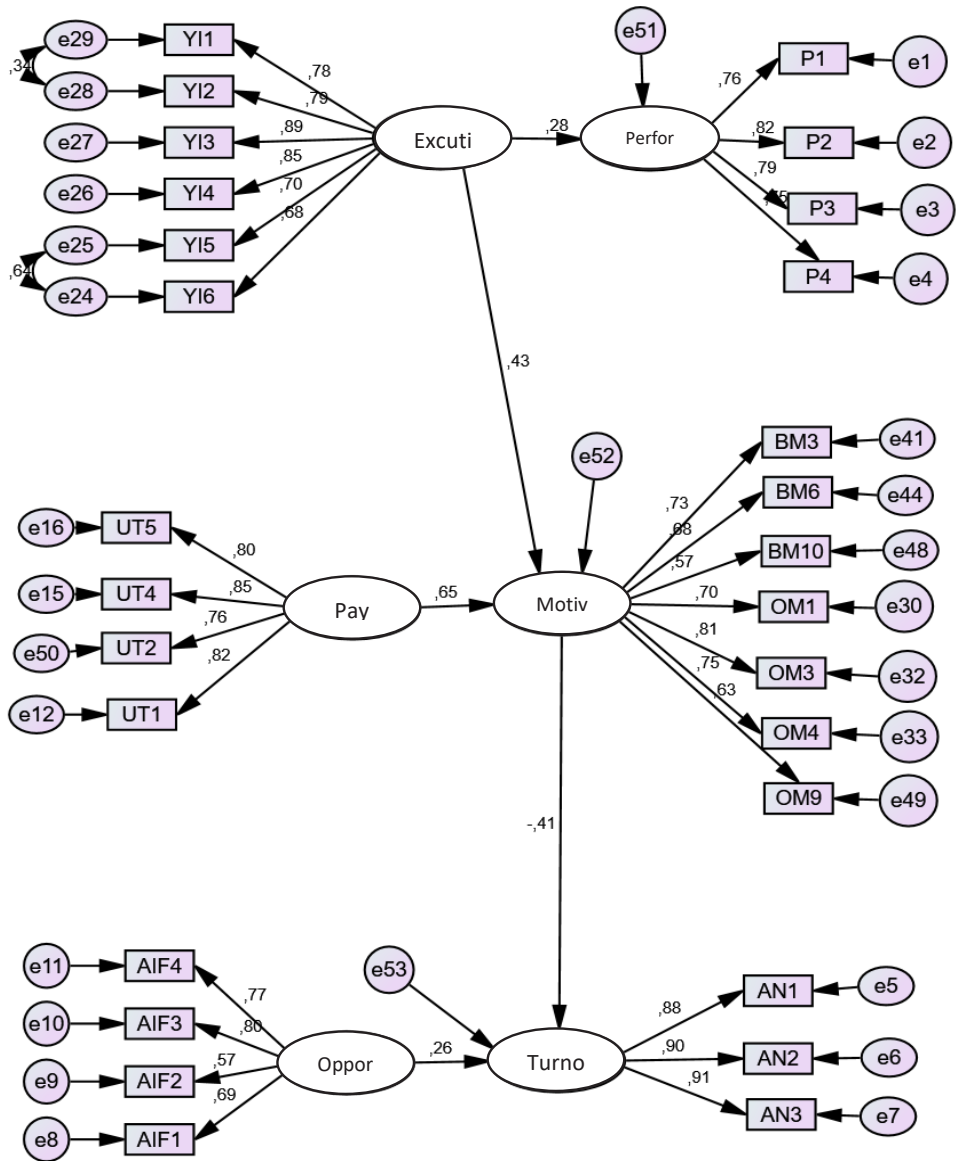


Table 14: Improved Path Analysis Structural Model Conformity Analysis

	CMIN/DF	CFI	RMSEA	TLI	AGFI	PCLOSE
Criterion	<5	>0,8	<0,1	>0,9	>0,8	>0,05
Model	1,99	0,93	0,06	0,92	0,83	0,005
Model OPT	1,98	0,93	0,06	0,93	0,83	0,007



After the model was found suitable, all hypotheses were tested. As a result of the analysis of the hypotheses, the improved factor table, and significance states and p values, are in Table 15.

Table 15: Improved Structural Model Factor Loads and Significance

			Estimate	S.E.	C.R.	P
Motivation	<---	Executive	0,372	0,048	7,822	***
Motivation	<---	Pay	0,383	0,04	9,575	***
Performance	<---	Executive	0,208	0,043	4,848	***
Turnover	<---	Opportunity	0,446	0,109	4,082	***
Turnover	<---	Motivation	-0,704	0,105	-6,686	***

p values in the table are less than 0.05 for all hypotheses. Therefore, all hypotheses in the table were supported and shared below.

H1: Executive communication has a positive effect on performance.

H2: Executive communication has a positive effect on motivation.

H3: Pay satisfaction has a positive effect on motivation.

H5: Perceived business opportunities have a positive effect on turnover intention.

H7: Motivation has a negative effect on turnover intention.

Findings

Similar to the literature studies, a positive relationship hypothesis was established between executive communication and motivation, and this hypothesis was confirmed (Öztürk and DüNDAR, 2003; Dwivedula and Bredillet, 2010; Yılmaz, 2011). In the same way, it was concluded that executive communication had a positive effect on employee performance perception. Employees who have positive communication with their managers are both high performing and motivated in their jobs (Seiler, 2012), (Prentice, 2004; Üçüncü, 2016). Likewise, a positive relationship hypothesis was established between pay satisfaction and motivation, and this hypothesis was confirmed. Therefore, an employee who is satisfied with his salary is expected to work in a motivated manner in the job (Aydın, 2000; Verner et al., 2014). Afterward, the hypothesis that perceived job opportunities because of employees’ thoughts although not in the literature, had a positive effect on employee motivation was tested and rejected. In addition, the hypothesis that perceived alternative job opportunities positively affect the intention to quit was supported. A

negative relationship hypothesis was established between motivation and intention to quit, and this hypothesis was confirmed (Ünsar, 2011; Khan and Zakirullah, 2016). Therefore, it is expected that a motivated employee will have a low desire to quit. However, the hypothesis that employee motivation affects performance was rejected. The results of this study differ according to the literature (Handoko, 2000; Sonnentag and Frese, 2002; Robbins and Judge, 2012; Djunaedi et al., 2017).

CONCLUSION

The primary purpose of this research is to investigate the factors that affect the motivation of employees in the IT projects and the effect of motivation on the performance of the employees and their desire to quit. In the study, the literature research related to the first-mentioned concepts is included. Afterward, the research model was decided according to the relationships between the concepts that emerged in the intensive literature study, and hypotheses were determined. Then, it was chosen to conduct a questionnaire as a method for this research, the scales in the literature were examined and translated, and the questions were made suitable for each reader to understand the same expression. Afterward, the surveys were shared with the IT project employees working in different companies and sectors via e-mail, hand and social media. Three hundred fifteen questionnaires were solved, the ones with specific contradictory values were removed, and the study was completed with 272 questionnaires. Models and hypotheses established with the help of SPSS and AMOS programs were tested. Of the seven hypotheses developed at the beginning, five were supported at the end of the tests, and the other two hypotheses were rejected.

As stated in the Findings section, the hypothesis that employee motivation affects performance was rejected. The reason for this may be due to the fact that performance perception does not fully reflect reality. The performance of an overworked employee is well. On the other hand perception concept is subjective. But may not be self-sufficient; therefore, an employee can respond in this way during a survey. Another reason for this may be that the IT sector is very dynamic and it is difficult to capture the differentiating and developing technology every day. Employees have to improve themselves to stay in IT constantly. For this reason, they may not consider themselves sufficient and high in performance.

What should companies do when these results are examined? It was found that pay motivation influenced motivation. Therefore, companies can award their employees according to their performance. Also, it should be ensured that

all employees understand the award received by the employee. In this way, other employees perceive the situation correctly and increase their motivation. Besides, it was revealed that the relationship between the employee and the manager increased the motivation. Therefore, managers should tell their employees their expectations and desires and provide information about what is happening in the organization. Managers can include employees in making important decisions. The leader should also be able to motivate and influence employees. The manager needs employee motivation to succeed.

There are many types of research in the literature about motivation, performance, and intention to quit. In this study, the scope of the target audience was selected only from those working in information technology projects. Thus, a survey with more IT employees was conducted. However, since the information technology sector is newer than the other sectors, the studies within this scope are less. Employees of the information technology sector, which develops in parallel with changing expectations, current conditions, and technology, are also affected. Therefore, further studies can be carried out on information technology employees. Yet another challenge here is that it is difficult to find a sample because the sector is new and young. In addition, group differences can be analyzed using demographic characteristics obtained from employees. For example; while software developers can be motivated by wage increase compared to analysts, results such as analysts' executive communication are more effective on motivation. In this way, different analyzes can be made by using seniority year, gender, role, and age. These studies may be more niche and more targeted than generalization. Also, due to the limited time, so many participants could not be reached. In future studies, more realistic results can be achieved if IT companies in a wider time support the project.

In addition, we could not reach objective results because we use the employees' perception of performance. If performance measurement is expanded and included in the scope, more realistic results can be approached in terms of performance. Besides, due to the high number of managers in the companies, they did not participate in the survey sufficiently. Therefore, group differences between managers and employees could not be evaluated. If managers contribute to the studies, group differences can be analyzed, and the studies can be examined from different perspectives. Finally, no studies have been found in the literature on the effect of perceived job opportunities on motivation, especially in information technology projects. The hypothesis established in this study is rejected, but it can be re-studied with more samples.

Motivation in the workplace is not only crucial for the happiness of the employees but also the success and profit of the company. This study was

conducted with many different IT companies in Turkey, and it describes the results of the factors affecting motivation and motivation. As a result, it is seen that the employee-manager relationships and pay satisfaction have a positive effect on employee motivation. In addition, the hypothesis that the relationship between employee and manager has an effect on performance was supported. On the other hand, perceived alternative job opportunities were found to have a positive effect on willingness to leave and a negative effect on employee motivation. We encourage future research to examine the reason and also the results of employees' motivation to rapidly evolving IT projects.

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