Introduction
Nowadays, for the growing complexity and competition in the organizations, there is a need to flexibility and variation in educational institutes and universities. Educational institutes have downsized, temporary contracts between the employee and employers have increased, and permanent employment has gradually lost its meaning. As a result, educational institutes and universities look for the solutions to encourage their employees to more efforts or job engagement (Welbourne, 2007; Masalimova& Chibakov, 2016). Job engagement is a new concept, which has appeared in the organizational discussions about two decades ago (Kanungo, 1990; Reeve and Smith, 2001). Scholars define job engagement as the psychological interest of an individual in his job (Raymond and Mjoli, 2013). In other words, job engagement refers to the individuals’ understandings about their jobs and workplaces and the harmony between work conditions and personal life (Raymond and Mjoli, 2013). As an
attitude, job engagement is an important variable in increasing organizational
efficiency; the higher the levels of job engagement in an organization’s
employees, the higher its effectiveness. Thus, in order to increase the level of job
engagement, a realistic and holistic view of its determinants seems necessary
(Elankumaran, 2004). Employees who are engaged in their jobs show better
performances at work. Also, engaged employees are refreshed and energetic,
tending to show more efforts from themselves. Researchers (Harter, Schmidt
and Hayes, 2002; Rich, Le Pine and Crawford, 2010; Saks, 2006) have shown
that job engagement has a significant correlation with the variables of
organizational outcomes such as productivity, job performance and
organizational citizenship behaviors. They found that the increase of job
engagement can lead to creating compulsory competition in the organizations
(Bates, 2004; Richman, 2006). Studies showed that most workers and about a
half of employed Americans are not engaged in their jobs or are even disengaged
(Bates, 2004). Organizations focus on the job engagement of their employees as a
successful strategy to keep them at work and inhibit them from quitting their
jobs, increasing their productivity in this way (Lockwood, 2007). However, there
are few researches about the employees’ engagement in the present academic
literature (Macey and Schneider, 2008; Saks, 2006). Kahn (1990) suggested that
job engagement reveals itself in related work activities and it is a tool for
simultaneous self-expression and increasing relations with others. Essentially,
the most contemporary conceptualizations of job engagement were identified
according to the earlier researches of Kahn as a tested framework for identifying
job engagement situations of the employees. Based on Kahn (1990, 1992), three
features including, meaningfulness, safety, and availability are important for
identifying the development of job engagement. Meaningfulness implies that
what the person does is valuable and professional skills are valid in the work
place. It has a cyclical model in which the employees appreciate and value what
they do and like to receive good feedbacks from the organization based on the
value and significance of their jobs (Kahn, 1990; Maslow, 1970). By receiving
feedbacks, the employee feels that his job is important. Then, he feels more
engaged and satisfied, being less likely to quit his job (Brown and Leigh, 1996;
Harter et al., 2002; Fredrickson, 1988; Perrin, 2003; Czarnowsky, 2008; and
Wagner and Harter, 2006). On the other hand, if he feels he is not important in
his job, he may feel lonely or abandoned and this may lead him to job burnout
(Maslach et al., 2001). Safety refers to the ability feeling of a person who has
with no fear of the negative consequences of his self-belief or job (Kahn, 1990).
Kahn suggested that the employees need to trust their work place so that they
are empowered to trust themselves in their jobs, developing a rational
understanding about what is expected from them (Wagner and Harter, 2006).
An employee should know how his job should be commensurate with his
organizational status and how to change his work place and working conditions
as well (Harter, 2002).

About safety, the focus is often on physically damaging factors, while the
employee’s perception about security is mostly about the things that stay safe
from the psychological damages of his workplace (Fredrickson, 2002; Kahn,
1990). Availability refers to owning physical, emotional, and psychological
resources for doing professional tasks (Kahn, 1990). The employees should make
sure that they have necessary tools for doing their jobs or at least can get them.
Apparantly, availability is having the resources such as required equipment,
enough budget, and labor (Harter et al., 2002; Wagner and Harter, 2006). Significantly, resources’ availability is also considered as the opportunity for skill development, learning, a logical job-employee fit (Resick, 2007), and organizational commitment (Meyer and Allen, 1997). According to mentioned points and regarding the importance of attention to human resources at universities, this study was conducted among the employees of state universities in Tabriz with the aim of identifying antecedents and consequences of job engagement by which better planning in this regard and finding good solutions for officials and university administrators become possible. Overall, according to the study of Shuck, Rio, and Rocco (2011), the conceptual and theoretical model of the study, indicating the relationships between antecedents and consequences of job engagement is reflected in Figure 1.

![Figure 1](image)

### Research Methods

Since the objective of this study was determining the relationships among the antecedents and consequences of job engagement (Figure 1), this study is correlation using descriptive methods for applied goals, based on structural equation modeling. Job fit and reward and recognition were dependent variables; while, efforts, intention to quit, ethics, and job performance were considered as the dependent variables of this study. Statistical population included all the employees in public universities of Tabriz (n=3168). Using Cochran formula and stratified random sampling, the sample size of 350 was achieved. Considering the likelihood of decrease of this number, it was increased by 450 and sample adequacy was found to be over 0.8 at the significance level of 0.01 in hypothesis analysis. To gather data, seven standard questionnaires were used as described below:

- **Job Engagement**: To collect information, Job Engagement Questionnaire of Kanungo (1982) was used. It consisted of 10 questions measured with a 5-point Likert scale. Reliability and validity of the questionnaire was approved by Mirhashemi et al. (2008) for which Cronbach Alpha coefficient of 0.79 was reported.

- **Job fit**: The fitness of job-employee was measured by 5 items. According to the wide research literature, it measures the degree of appropriateness that a person feels between his character or his values with and his organization. It is
a more general approach of the employment – employee, for which the internal consistency of 0.92 was reported in the study of Shantz et al. (2007).

Discretionary efforts- This variable was measured, using a 7-item discretionary efforts’ scale of Lloyd (2008). Its Chronbach Alpha was obtained to be 0.87.

Intention to quit- This variable was measured using a 3-item scale of quit intention of Colarelli (1984) for which Cronbach Alpha coefficient of 0.75 was reported.

Ethics- Professional ethics’ questionnaire was built by Gregory et al. (1990) using four dimensions (i.e. devotion to work, perseverance and seriousness at work, healthy and human relations in workplace, and social spirit and participation in labor). For its good theoretical background and after experts’ confirmation, its face validity was reported to be 0.7.

Reward and recognition- To measure this variable, Reward and Recognition Questionnaire of Armstrong (2005) including 12 items was administered, using 5-point Likert scale. Cronbach’s Alpha of this scale was reported to be 0.82.

Job performance-To measure this variable, Job Performance Questionnaire of Patterson (1992) was used, including 10 items measured with a 5-point Likert scale. Sayahy and Shekarshekan (1996, cited in Arshadi (1996) reported Cronbach’s Alpha of 0.85 for this scale. To estimate its internal consistency, Cronbach’s Alpha was used.

Consistency coefficient of job engagement’s questionnaire was achieved to be 0.75; this coefficient was 0.87 for job fit’s; 0.78 for discretionary efforts’; 0.84 for intention to quit’s; 0.70 for professional ethics’; 0.89 for reward’s; and 0.86 for job performance’s questionnaire. To test the validity of the questionnaires, confirmatory factor analysis was used. Based on Table 1 and Fig.1, a 6-factor model was the fittest.

**Table 1.** Fitness indices of confirmatory factor analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>$\chi^2$</th>
<th>$\chi^2$/df</th>
<th>AGFI</th>
<th>GFI</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six factors</td>
<td>608</td>
<td>1562.71</td>
<td>2.5</td>
<td>0.91</td>
<td>0.91</td>
<td>0.92</td>
<td>0.072</td>
</tr>
</tbody>
</table>

To test the relationships of latent and measured variables in the conceptual pattern of this study, structural equation modeling was used.

**Findings**

Table 2 shows descriptive statistics of the employees’ scores for each variable.

**Table 2.** Descriptive statistics of research variables

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Fit</th>
<th>Reward</th>
<th>Engagement</th>
<th>Intention to quit</th>
<th>Efforts</th>
<th>Ethics</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>mean</td>
<td>3.24</td>
<td>3.35</td>
<td>3.08</td>
<td>2.02</td>
<td>3.96</td>
<td>2.97</td>
<td>4.51</td>
</tr>
<tr>
<td>Std</td>
<td>832</td>
<td>795</td>
<td>711</td>
<td>987</td>
<td>657</td>
<td>990</td>
<td>441</td>
</tr>
</tbody>
</table>

The correlations of research variables are shown in Table 3. As seen in Table 3, correlation coefficients of research variables are significant. Maximum significant correlation relates to job fit and reward; while, minimum significant correlation belongs to job engagement and reward. From correlation analysis of exogenous and endogenous variables, it is seen that any increase in the score of
Job fit and reward leads to the increase of job engagement in the employees. Also, any increase of job engagement’s score enhanced employees’ job quit and discretionary efforts.

Table 3. Correlations of research variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fit</th>
<th>Reward</th>
<th>Engagement</th>
<th>Intention to quit</th>
<th>Efforts</th>
<th>Ethics</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engagement</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fit</td>
<td>0.53**</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reward</td>
<td>0.48**</td>
<td>0.47**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to quit</td>
<td>-0.32**</td>
<td>-0.28**</td>
<td>-0.31**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efforts</td>
<td>0.28**</td>
<td>0.30**</td>
<td>0.16**</td>
<td>-0.27**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethics</td>
<td>0.25**</td>
<td>0.16**</td>
<td>0.04</td>
<td>-0.24**</td>
<td>0.17**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>0.18**</td>
<td>0.19**</td>
<td>0.22**</td>
<td>-0.14**</td>
<td>0.42**</td>
<td>0.07</td>
<td>1</td>
</tr>
</tbody>
</table>

**<0.01, **<0.05

Figure 2. The figure of structural function after data fitness with the hypothesized pattern

In order to identify casual correlations and the effect of job fit and reward on job engagement and the effect of job engagement on its four likely consequences, a path model using structural equation modeling was used. Results of this analysis confirmed the findings of path analysis in the structural model related to the research hypotheses.

As seen in the output of the the software, standard estimations (Figure 1) and significant numbers related to path analysis in research hypotheses (Table 4), values of fitness indices show good fitness of the model and the value of the fraction of $\chi^2$ and degree of freedom is 2.63 and smaller than 3. The value of RMSEA was 0.074 and smaller than 0.08. Thus, all coefficients are significant.

Job fit had a significant and positive effect on job engagement with the coefficient of 0.49. In addition, reward had a significant and positive effect on job engagement with the coefficient of 0.35. Thus, path coefficients of both mentioned antecedents of job engagement are significant. In other words, people with high perception of job fit and organizational reward show more engagement
in their jobs. In case of job engagement’s consequences, it is seen that the casual path between job engagement and intention to quit is significant and negative with the coefficient of 0.44.

Moreover, efforts and job engagement have a significant correlation with the coefficient of 0.44. The casual path between job engagement and ethics is significant and positive with the coefficient of 0.41. The casual path between job engagement and performance was found to be significant and positive with the coefficient of 0.20.

Table 3. Coefficients of antecedents and consequences of job engagement

<table>
<thead>
<tr>
<th>Hypothesis path</th>
<th>Standard path coefficient</th>
<th>t</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engagement → job fit</td>
<td>0.49</td>
<td>6.06</td>
<td>positive effect</td>
</tr>
<tr>
<td>Engagement → reward</td>
<td>0.35</td>
<td>4.69</td>
<td>positive effect</td>
</tr>
<tr>
<td>Intention to quit → engagement</td>
<td>-0.44</td>
<td>-5.60</td>
<td>positive effect</td>
</tr>
<tr>
<td>Effort → engagement</td>
<td>0.44</td>
<td>4.85</td>
<td>positive effect</td>
</tr>
<tr>
<td>Ethics → engagement</td>
<td>0.41</td>
<td>4.18</td>
<td>positive effect</td>
</tr>
<tr>
<td>Performance → engagement</td>
<td>0.20</td>
<td>2.86</td>
<td>positive effect</td>
</tr>
</tbody>
</table>

$\chi^2 = 1640.91$, $df = 622$, $\chi^2/df = 2.6$, RMSEA = 0.074, CFI = 0.91, GFI = 0.91

Discussions and Conclusion

In the recent decade, the concept of job engagement has been considered by many psychological, industrial, organizational, and management experts. The correlation of this variable with organizational productivity’s factors including job quit, job satisfaction, and efforts has led to various researches in this field. Accordingly, this study aimed to investigate the antecedents and consequences of job engagement.

Based on the results, a positive and significant correlation was found between job engagement and job fit as an antecedent of job engagement. If the job is designed in a way that it fits one’s personal qualities, it encourages and engages the person in his job, increasing personal productivity (Skinner, 2005). This result agrees with Shuk et al. (2011), Resick et al. (2007), and Thomas et al. (2011). Shuk et al. (2011) suggested job fit as an antecedent of job engagement. Thomas et al. (2011) concluded that the employees who experience job fit in their work places are more likely to do their jobs with more energy and enthusiasm. Based on these results, there was a positive and significant correlation between reward and job engagement. This result agrees with Maslach et al. (2001) who found that the lack of reward and appreciation leads to job burnout in the staff; then, proper appreciations and rewards are important factors in job engagement of the employees. Accordingly, when the employees receive reward and appreciation from the organization, they feel that they should respond it by higher engagement at work.

Data analysis showed a positive and significant correlation between job engagement and discretionary efforts. Lloyd (2008) concludes that discretionary efforts are correlated with the staff performance, leading the employee to move along with professional responsibilities. Results of this study are consistent with Macey and Shneider (2008) who found that discretionary efforts are the outcomes of job engagement.
Analyses showed a positive and significant correlation between job engagement and professional ethics. According to Saks et al (1996), professional ethics is positively correlated with job satisfaction and organizational commitment. But, it has a negative correlation with intention to quit.

Harter et al. (2002) analyzed job engagement and its relationships with the concepts such as intention to quit, participation, satisfaction, customer commitment and job safety. In their study, ethics was one consequence of job engagement (Saks et al., 2006). This result consists with Ardalan et al. (2014) who studied the relationship between Islamic work ethics and job engagement, finding a positive and significant correlation between them. In fact, if the employees have positive attitudes toward their jobs and enjoy them, considering them as a tool for personal and social development, they get more engaged in the job-related activities. If the job is considered as a tool for helping colleagues, it can play an important role in creating a friendly climate at work and increase employees’ engagement.

Results showed a positive and significant correlation between job engagement and the employees’ performance. Thus, engaging the employees in the organization and developing the grounds for using their ideas in organizational decisions is a kind of respect and validation to the employees by the organization. This is a motivation for improving their performances in reaching organizational goals. Based on Allen (1998), by delegation of authority to subordinates and engaging them in organizational decisions, a friendly manager-employee relation and the quantity and quality of the manager’s information about the employees are positively correlated with the employees’ organizational commitment. Decrease of an employee’s commitment to his organization is a determining factor in increasing individual productivity and performance (Mahdad et al., 2011). Maslach et al. (2001) suggested job performance as a consequence of job engagement. They believed that job engagement leads to improving the employees’ outcome, organizational achievement, and a better organizational performance (Bates, 2004; Baumruk, 2004; Harter et al., 2002; Richman, 2006). Finally, results showed that there is a negative correlation between job engagement and intention to quit. This result consists with Steel and Ovalle (1984), Harter et al. (2002), Saks (2006), Schaufeli and Bakker (2004), and Sonnentag (2003). Steel and Ovalle (1984) found that intention to quit is the result of dissatisfaction or the lack of commitment in the staff. Job engagement models represent the correlation between job engagement and quit intention. Shuffle and Baker (2004) and Sonnentag (2003) found that job engagement is positively correlated with organizational commitment but negatively correlated with quit intention. They also found the correlation between job performance and discretionary efforts of employees. Shuffle and Baker (2004) suggested that job engagement has a negative correlation with quit intention, mediating the correlation between job resources and quit intention.

According to the results, it is concluded that path coefficients of both variables are significant antecedents of job engagement. In other words, people with high job fit, reward, and recognition feel high job engagement in the workplace. Also, about the consequences of job engagement, there is a casual, positive, and significant path between discretionary efforts, ethics, and job performance. A negative and significant correlation was found between job engagement and intention to quit. Thus, consequences and antecedents of job
engagement should be accurately considered. Despite the significant correlation between the consequences and antecedents of job engagement, these variables have not been studied considerably. Some research limitations included the lack of cooperation between the employees in preparing and shipping the questionnaires, the existence of a conservative climate in the organizations, the lack of research spirit among the employees, and insufficient literature about research variables and the lack of access to the wide theoretical backgrounds.

Despite mentioned limitations, a new and widespread research field has opened. Elements of job engagement, its consequences, and antecedents, are newly-appearing issues in both management and psychology fields. In this respect, further studies can consider job engagement and its variables using other measurement tools. There may be other variables as the consequences and antecedents of job engagement that can be studied in future.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Mohammad Ali Zabani Shadbad- Ph.D student of Educational Administration, Urmia University, Urmia, Iran.

Mohammad Hassani- Professor of Educational Administration, Urmia University.

Mir Mohammad Seyyed Abbaszadeh- Professor of Educational Administration, Urmia University.

Abolfazl Ghasemzadeh- Assistant Professor at Shahid Madani University.

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