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MARMARA ÜNİVERSİTESİ  
SOSYAL BİLİMLER ENSTİTÜSÜ  
İNGİLİZCE İŞLETME ANABİLİM DALI  
ORGANIZATIONAL BEHAVIOR BİLİM DALI

**THE MODERATING EFFECT OF SELF-EFFICACY ON THE  
RELATIONSHIP BETWEEN JOB RESOURCES AND WORK  
ENGAGEMENT**

Yüksek Lisans Tezi

ÖMER ERDEM KOÇAK

İstanbul, 2013

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Danışman: Yrd. Doç. Dr. Melek Birsal

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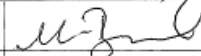
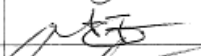
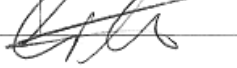
## TEZ ONAY BELGESİ

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## ÖZET

### ÖZ-YETERLİLİĞİN İŞ KAYNAKLARI İLE ÇALIŞMAYA TUTKUNLUK ARASINDAKİ İLİŞKİDE ŞARTLI DEĞİŞKEN ETKİSİ

Son yıllarda Türkiye’de üniversite sayısının artmasıyla birlikte üniversitelerdeki akademisyenlere sağlanan çalışma koşulları da yavaş yavaş araştırmalara konu olmaya başlamıştır. Demerouti ve arkadaşlarının oluşturdukları İş Talepleri - Kaynakları Modeli (2001) kullanılarak Türkiye’deki üniversitelerin akademisyenlerine sağladıkları iş kaynakları ile akademisyenlerin çalışmaya tutkunlukları arasında bir nedensellik ilişkisi incelenmiştir. Aynı modele bağlı olarak Öz-Yeterlik inancı ele alınmış, akademisyenlerin Öz-Yeterlik inancının İş Kaynakları ve Çalışmaya Tutkunluk arasındaki ilişki üzerindeki şartlı değişken etkisi test edilmiştir. İş kaynaklarının ölçümü için 6 farklı ölçek kullanılmıştır. Özerklik için Tülay Turgut (2010) tarafından hazırlanan 6 maddelik, İş arkadaşları desteği için Bakker (2004) tarafından hazırlanan 3 maddelik, kıdemli hocaların koçluğunu ölçmek için Le Blanc (1994) tarafından hazırlanan 5 maddelik, Geribildirim için Boonzaier, Ficker, Rust (2001) tarafından hazırlanan 6 maddelik, İşin Anlamlılığı için Boonzaier vd. (2001) tarafından hazırlanan 3 maddelik ve Kişisel Gelişim Fırsatları için Bakker (2004) tarafından hazırlanan 3 maddelik ölçekler kullanılmıştır. Çalışma Tutkunluğunu ölçmek için Schaufeli ve arkadaşları tarafından hazırlanıp, Tülay Turgut (2011) tarafından Türkçe uyarlaması yapılan 9 maddelik kısaltılmış Utrecht Çalışmaya Tutkunluk ölçeği; Öz-Yeterliği ölçmek için Schwarzer ve Jerusalem tarafından hazırlanıp 1996 yılında Yeşilay, Schwarzer ve Jerusalem tarafından Türkçe’ye uyarlaması yapılan 10 maddelik Genel Öz-Yeterlik ölçeği kullanılmıştır. Türkiye’deki hem devlet hem de vakıf üniversitelerinde görev yapan 435 akademisyen üzerinde yapılan çalışmada katılımcılara online-anket yolu ile ulaşılmıştır. Araştırmanın sonuçları, bu model ile yapılan daha önceki çalışmalara paralel olarak, akademisyenler örneklemini için de iş kaynaklarının çalışmaya tutkunluk üzerinde güçlü bir etkiye sahip olduğunu ortaya çıkarmıştır. Özellikle İşin Anlamlılığı, İş Kaynakları arasında en büyük etkiye sahiptir. Ayrıca, akademisyenlerin Öz-yeterlik inancının iş kaynakları ile çalışmaya tutkunlukları arasındaki bu ilişkinin yönünü değiştirebilecek anlamlı bir şartlı değişken etkisi

oluřturamayacađı sonucuna varılmıřtır. Sonular, akademisyenlerin alıřmaya olan tutkunlukları sayesinde kendilerine, ğrencilere, üniversitelerine, lke ekonomisine ve bilime yaptıkları katkıları göz önünde bulundurularak tartıřılmıřtır.

## **ABSTRACT**

### **THE MODERATING EFFECT OF SELF-EFFICACY ON THE RELATIONSHIP BETWEEN JOB RESOURCES AND WORK ENGAGEMENT**

In recent years, along with the increasing number of universities in Turkey, working conditions of academicians has slightly become subject for researches. In this study, using the Job Demand – Resources model developed by Demerouti, Bakker, Nachreiner and Schaufeli (2001) the relationship was investigated between job resources provided to academicians and their work engagement. Abiding by the same model, Self-Efficacy is handled in order to test if it has a moderating effect on the relationship between academicians' job resources and their work engagement. For measurement of job resources 6 scales were used. Autonomy was measured with a 6-items scale developed by Turgut (2010); Colleague Support measured with Bakker's 3-items scale; Supervisory Coaching was measured with Le Blanc's 5-items scale; Feedback and task significance were measured by Boonzaier, Ficker and Rust's 6-items and 3-items scales respectively; Opportunities for Personal Development was measured with Bakker's 3-items scale. In order to assess work engagement, UWES-9 was used which was developed by Schaufeli et al. and adopted to Turkish by Tülay Turgut (2011) as a shortened version of UWES. Self-Efficacy was measured by Schwarzer and Jerusalem's 10-items Generalized Self-Efficacy scale which had been adapted to Turkish by Yeşilay, Schwarzer and Jerusalem (1996). 435 academicians working in Turkish universities were selected via convenience sampling method and were reached by online survey. Results of research showed that, in parallel with previous studies, job resources have a strong influence on work engagement for academicians sample as well. Moreover, it was concluded that academicians Self-Efficacy do not have significant influence to generate a moderating effect changing the direction of relationship between job resources and work engagement. Results are discussed considering the contributions that academicians make to students, universities, economy and science.

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# 1. INTRODUCTION

Today, universities are getting involved in competition just like private companies because of the fact that the growing demand of educating generations. The biggest income items of universities are student tuitions and projects taken from government or some scientific institutions such as TUBITAK etc. Also public universities take interest from Higher Education Budget according to amount of their students. Thus, particularly the attractiveness is indispensable for universities for both economic and other some reasons such like prestige, development, and contribution to science.

Most of universities, even some state universities included, provide serious scholarships in order to attract successful students. They compensate successful students' accommodation, academic expenses and also their allowances. Moreover, universities may improve their facilities, campuses, halls, sport centers etc. in order to be attractive.

Beside these student oriented policies, university administrations also improve their academic staff quality via trainings and transferring famous or competent academicians. These famous, well-known academicians help universities for perception management in marketing operations.

Also, famousness of these academicians stem from their expertness of scientific area. So it can be inferred that these well-known academicians are competent as well in their scope.

Universities want to take well-known and competent academicians in their staff for universities' reputation which is also associated with academic staff's amount of research in both quantitative and qualitative manner. As it is known from history, most reputable universities are those in which most influential researches, discoveries and innovations have been done, and most famous scientists work.

Universities are increasing their availability of resources for their academic staff in order to boost scientific research by funding, providing free environment, furnishing with physically, organizationally, socially, psychologically appropriate work setting.

For example; in Turkey, universities are incrementally promoting laboratory researches which are related to automobile industry because of that government had put a strategic goal for domestic car production. In another example; universities trying to become a stake of job security for their academic staff as long as they make research. First of these resources is more subject to economical needs whereas second (job security) is related to psychological well-being.

Apart from physical resources such as funds or facility improvements, environment which provides psychologically well-being is seen as a resource for work environment. Parallel to this suggestion there is a broad research in industrial psychology and organizational behavior literature since the Hawthorne studies which had opened a new era in the management literature.

By virtue of the industrial revolution, working environments shifted from crafts to mass-production factories. This shift had emerged some problems along with itself such as management. The Classical Management Theories tried to deal with these problems through planning and organizing business processes in order to maximize the profit. But they had neglected the human factor near machinery. Right after the Hawthorne studies conducted by Elton Mayo and others, the importance of human motivation, interests, needs for recognition had been revealed.

Since last half of 20<sup>th</sup> century new concepts for management emerged. Researches have been making studies and trying to develop theories for improving productivity via employee satisfaction and providing employee well-being. It is empirically proved that productivity of an organization is strongly related to employee well-being and health. That's why researchers take a close interest in employee health.

Occupational health is one of the important topics with its increasing number of studies all over the world with different national samples and occupations. Among these studies the types of changes in the work environment has become particularly important topic and have brought work organization to the forefront of concern in occupational health. Nowadays it is known that most of workers complaining from

psychological causes such as stress, burnout rather than physical conditions like exhaustion. Also, people are seemed to be mentally exhausted rather than physically.

However, some employees are seen more enthusiastic about their jobs who are also committed to their jobs, satisfied with their jobs and other positive outcomes.

It is important for university administrators if academicians in their school find meaning besides make money, have enthusiasm and pride while working, devote themselves into their work. Because the level of positive answers to these questions is substantial for total university performance, effectiveness and efficiency (Koyuncu, Burke, & Fiksenbaum, 2006).

Teaching has been identified as a particularly stressful occupation (Chaplain, 2008; Montgomery & Rupp, 2005). A large body of research shows that employee who have task of teaching are particularly at risk of stress, and that this is an international phenomenon (Chan, 2002). This phenomenon is also valid for universities because of the work structure and context of academicians.

On the other hand according to Roth, Asor, Kanat-Maymon and Kaplan (2007) there are many teachers who are satisfied with and enthusiastic about their work. Hakanen, Bakker & Schaufeli (2006) noted that also there are teachers engaged their jobs.

Academicians are in a working environment where they have autonomy usually to order or select their tasks; have close relationships with senior professors and colleagues; have lots of opportunities of personal development while making research.

Selection process of occupations is very distinctive for people's attitudes by which people show their motives of how they want to work. A desired career path such as academic career needs some patience because it takes several years and requires a motivation to study further after graduation. The opportunity cost of being an academician in Turkey is greater than its gain when considering only economic reasons. Although, it is still an attractive occupation people are seeking some other interests such as knowledge, autonomy etc. since the need of achievement, many of

people may not be contented with bachelor degree. Sense of curiosity also may be another motivator. The meaning they find may be the significance of the job. As known, staying inside the science may be a desired position.

In lights of these discussions, academicians are expected to be highly self-efficacious because of the assumptions given above. Firstly, they have more know-how regarding to an average person and have high scores from test which predicts attendants' judgment and decision making competencies. Second, academicians are respected people in their environment, since the perceived respect contributes to the self-efficacy beliefs the academicians should be self-efficacious (Prieto, 2009).

Eventually, engagement is very important for organizational success and effectiveness and relevant for employee well-being and work behavior for several reasons. First, work engagement is a positive experience in itself (Schaufeli, Martanez, Pinto, Salanova & Bakker, 2002). Second, it is related to good health and positive perception of the job (Demerouti, Bakker, Jonge, Janssen & Schaufeli, 2001). Third, work engagement helps individuals derive benefits from stressful work (Britt, Adler and Bartone, 2001). Fourth, this construct is positively related to organizational commitment (Demerouti et al., 2001).

In this study, work engagement levels of Turkish academicians working at universities in Turkey is investigated and also the relationship between job resources given to academicians and their work engagement is tried to be explained. Originality of this study is the examination of moderation effect of self-efficacy of academicians on the relationship between job resources provided and work engagement. The research question is that “Are job resources a need for high work engagement level when academicians are not highly self-efficacious?”

## **2. JOB RESOURCES**

Research on the relationship between conditions of workplace and employee performance is one of basic studies of management. At the early stages of 20th century, studies started to pay attention to the motivational aspects of employees' as well. This was when human oriented management styles have become popular and called as behavioral management era.

The relationship between the conditions of workplace and its effects over employees' and well-being has been under examination since early 1960's. Prevalent models which were defining this relationship were mostly interested in the negative outcomes of working conditions. It was only after the 1990s, especially with the influence of positive psychology (Seligman & Csikszentmihalyi, 2000), that was not only the negative outcomes but also the positive consequences of work conditions are studied (Metin, 2010).

### **2.1. PREVIOUS THEORIES INFLUENCING JOB RESOURCES**

#### ***2.1.1. Job Demand-Control Model***

There are many research and theoretical attempts to have more insight and enlighten the relationship between work-related psychological and physical risks and employee health (Kahn and Byosiere, 1992). A leading model in this context was the Job Demand-Control (JD-C) model suggested by Karasek in 1979. Basically, the model principally assumes that the main sources of job stress lie within two basic characteristics of the job itself. "Psychological job demands" and "job decision latitude". Karasek defines psychological job demands as psychological stressors which are present in the work environment, for example: high pressure of time, high working pace, difficult and mentally exacting work etc. Furthermore, job decision latitude is explained as a workers ability to control his own activities (autonomy) and skill usage (Karasek and Theorell, 1990).

This model assumes two hypothesis: (1) the combination of high job demands along with low job control precipitates psychological and physical strain (high strain'



jobs); (2) jobs in which both demands and control are high produce well-being, learning and personal growth ('active' jobs) (Karasek, Theorell, 1990). So, according to JD-C model, job demands and job control combine with others interactively rather than separately and additively in predicting job-related outcomes.

However, according to Rijk, Le Blanc, and Schaufeli (1998) examination of literature empirical findings with JD-C model in the literature are not consistent. Early studies showed moderate empirical support (Karasek, 1979; Karasek, Baker, Marxer, Ahlbom & Theorell, 1981) whereas relatively recent studies with similar samples failed to confirm the essential interaction of job demands and job control (Pieper, La Croix, & Karasek, 1989; Reed, La Croix, Karasek, Miller & MacLean, 1989).

Studies conducted on the JD-C model were often unmatchable because every researcher that has looked into this topic conceptualized and measure job demands and job decision latitude in unique ways. Numerous types of job demands were used as operationalization of job demands concept also including workload and interpersonal conflicts. Additionally, job decision latitude has often been considered as discretion, control, autonomy and self-determination. A fundamental problem is that for job demands Karasek's original scale includes not only pure descriptive items but also affective ones. Moreover, decision latitude is critiqued for being mix of job control, skill variety and job complexity (Rijk et al., 1998). According to Wall, Jackson, Mullarkey, and Parker's research in which they were able to demonstrate the interaction effect using a more focused measure of control rather than Karasek's original measure of decision latitude; both advise that measurement and theory should be viewed together. (Wall, Jackson, Mullarkey, and Parker, 1996). The inference from these researches should be that there is a gap between theory and measurement for JD-C model; so that only a review of framework is made in order to mention about background of Job Demand – Resources Theory which will be handled forward.

### ***2.1.2. Effort-Reward Imbalance Model***

One of the most important models that guided occupational health research is the Effort-Reward Imbalance (ERI) Model which has its origin in medical sociology and

emphasizes both the effort and the reward structure of work (Siegrist, 1996; Marmot, Siegrist, Theorell & Feeney, 1999). The ERI model states that there is an underlying principle that work-related benefits are determined by reciprocity of efforts and rewards at work. Efforts represent job demands and obligations while rewards consist of money, esteem, job security, career opportunities etc. (Vegchel, Jonge, Bosma and Schaufeli, 2004). Model briefly claims that employee's experience of strain or well-being is determined by the balance or imbalance of effort and reward character of work. So, working hard without receiving appreciation may be an example of a stressful imbalanced job. Conversely, positive emotions, elicited by balanced social rewards, are likely to promote well-being.

The model of ERI at work postulates the presence of imbalance between effort and reward is maintained under such conditions. Firstly, when work contracts are inadequately defined, or employees have little choice of alternative workplaces they may continue (for example due to low level of skill, lack of mobility). This concept similarly reflects the construct of role conflict. Secondly, employees may accept this imbalance for their personally strategic reasons (this strategy is mainly chosen to improve future work prospects by gaining a 'foot in the door'). Thirdly, for the people who have specific cognitive and motivational coping abilities with demands it may be easy to experience the 'high cost/low gain' (Shyman, 2011). It is a fact that, employees who are overcommitted may experience more inappropriate perceptions of demands and resources required to cope with demands, than under-committed colleagues (Siegrist, 1996).

Karasek's JD-C model initially addressed the issue of job strain among blue-collar industrial workers. However, as empirical evidence recommends, ERIM might be more powerful in clarifying hazardous work situations like stress in the service occupations and professions. In particular the ones dealing with person-based interactions and which are claimed to be motivated by intrinsic rewards as well as purely financial ones (Calnan, Montaner and Horne, 2004). As seen from the research put into middle ERIM especially considers financial rewards; this is why we will use another construct which will be discussed after Hackman and Oldham's construct.

### ***2.1.3. Job Characteristics Model***

The theory proposed by Hackman and Oldham considers nature and characteristics of job has been seen as the most persuasive model (Johns, Xie & Fang, 1992). Kelly (1992) refers to this model as the most well-known and widely discussed theory.

The Job Characteristics model is also supported by humanistic management approach which aims to preserve, maintain and develop the “human factor” in the workplace. This intent is visible in the various components of the model. According to the model, employees exhibit positive both personal and work outcomes (internal work motivation, general job satisfaction, growth satisfaction, and work effectiveness). Depending on Boonzaier, Ficker, Rust’s suggestions (2001) employees experience three psychological states, namely:

- They perceive their work to be meaningful,
- They experience responsibility for the results or outcomes of their work,
- They have knowledge of the results of their work

Experienced meaningfulness of the work means how dense employees experience the job as generally meaningful, valuable and worthwhile. Experienced responsibility for the work outcomes is defined as the degree to which the employee feels personally accountable and responsible for the results of the work one does. Knowledge of results is the degree to which the employee knows and understands, on a continuous basis, how effectively one is performing the job. (Boonzaier et al., 2001)

The job characteristics created the critical psychological states for internal work motivation according to Hackman and Oldham’s theory of job design (Buruk, 2006). The theory stressed for reasonably objective, measurable, and changeable properties which belong to the work itself in order to promote psychological states. Through these states, internal work motivation is stimulated. The theory also states that six job characteristics contribute to psychological states. These are autonomy, skill variety, task identity, task significance, and feedback. Experienced meaningfulness of the work is contributed by skill variety, task identity, and task significance. Autonomy is the

primary factor for experienced responsibility outcomes. However, feedback is separated into two parts; the first part is direct feedback from the job itself whereas the second part is feedback from others who observe and assess the input and knowledge the job holder has committed to the results of work.

The basic assumptions of both the JD-C Model and ERI Model is that job demands particularly lead to job strains, when job resources are lacking (autonomy in the JD-C; salary, esteem, job security in the ERI). It is argued that the strength of these models lies in their simplicity, but how can the complex reality of working organizations be reduced to only a handful of variables? Undeniably, studies conducted on the welfare of employees have created a mass of job demands and lack of job resources as possible predictors. Beside the psychological and physical job demands, such as lack of rewards and lack of autonomy, emotional demands are included.

In this study, job demands/resources model is used which was developed by (Demerouti, 2001a) and validated by several studies (Demerouti, Bakker, Nachreiner, & Schaufeli 2001; Schaufeli & Bakker, 2004) as a work engagement model.

## **2.2. JOB DEMAND – RESOURCES MODEL**

The Job Demand/Resources (JD-R) Model emerged from dominant models like Karasek's JD-C (1979); Siegrist's ERI (1996) and Hackman and Oldham's Job Characteristics (1975), which exclusively focus on the role of the work environment in determining employees' adaptive functioning at work.

JD-R model has an assumption that every occupation has its own specific risk factors and these factors can be classified into two categories. Accordingly, there is a need to generate an all-embracing model that may be applied to various occupation settings; regardless any strict resources and demands list (Bakker & Demerouti, 2007). The JD-R model basically assumes that all jobs have two set of variables; in other words while people's work environments differ, the characteristics of those environments (job characteristics) can usually be divided into two categories: job demands and job resources (Mauono, Kinnunen, Ruokolainen, 2007; Bakker,

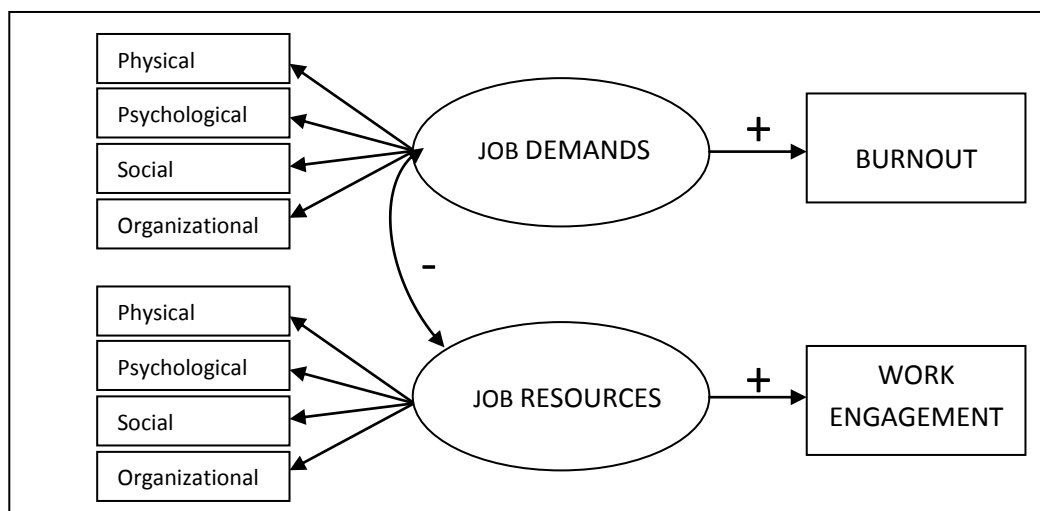
Demerouti, & Schaufeli, 2003; Bakker, Demerouti, Euwema, 2005; Llorens, Bakker, Schaufeli & Salanova, 2006).

Jones and Fletcher (1996) define demands as “the degree to which the environment contains stimuli that peremptorily require attention and response”. Demands are defined as the “things that have to be done.” Schaufeli and Bakker (2004) refer to job demands as “those physical, psychological, social or organizational aspects of the job that require sustained physical and/or psychological effort and are consequently associated with certain physiological and/or psychological costs (i.e., strain).”

Job demands may not be negative. In the case of unable to meet these demands or meeting them requires high effort, may generate stress for employees. Therefore these stress leads to negative responses such as depression, anxiety, or burnout (Schaufeli, Bakker, 2004).

On the other hand job resources “are physical, psychological, social, or organizational features of the job that are functional in achieving work goals. They reduce job demands and the physical and/or psychological costs associated with them (negative responses such as burnout,) and stimulate personal growth and development” (Bakker et al., 2003; Hobfoll & Shirom, 2001). Hobfoll (2002) thinks that resources are necessary to deal with job demands and to ‘get things done,’ but they also are important in their own right.

**Figure 1: The Job Demands- Resources Model**



Source: Demerouti E., Bakker, A.B., Nachreiner, F., & Schaufeli, W.B. (2001). The Job Demands - Resources model of burnout. *Journal of Applied Psychology*. 86, 499-512

There are two underlying psychological processes that are functional in the development of job strain and motivation (Figure 1). In the first, energetic process, poorly designed jobs or high job demands exhaust employees' mental and physical resources. Therefore they may lead to the depletion of energy and to health problems. Hockey stated in his study (1993) that when environmental demands become influential on employees, they create performance protection strategies. This protection is thought to be achieved through the "the mobilization of sympathetic activation (autonomic and endocrine) and increased subjective effort (use of active control in information processing)". Eventually, the greater activation and effort set off more psychological costs for individuals. These are referred to as compensatory costs by Bakker and Demerouti, (2006). Consequently, there is a long term effect of such a compensatory strategy such as breakdown because it may drain of an individual's energy.

The second process proposed by the JD-R model is motivational process. This process links job resources via engagement with organizational outcomes such as turnover intention. As follows from the definition, job resources may play either an intrinsic motivational role because they foster employees' growth, learning and development, or they play an extrinsic motivational role because they are instrumental in achieving work goals (Schaufeli & Bakker, 2004).

In the literature other cases also support this idea. Job resources fulfill human needs (autonomy) (DeCharms, 1968), competence (White, 1959), and relatedness (Baumeister & Leary, 1995). Also self-determination theory (Deci & Ryan, 1985) suggests that work contexts that support psychological autonomy, competence, and relatedness enhance well-being and increase intrinsic motivation (Ryan & Frederic, 1997). For example, proper feedback increases job competence via fostering learning, whereas decision latitude (autonomy) and social support satisfy the need for autonomy and the need to belong, respectively (Schaufeli & Bakker, 2004). As mentioned before also Job Characteristics Theory recognizes this motivational potential of job resources through presence of core job characteristics: skill variety, task identity, task significance, autonomy and feedback.

Job resources may also play an extrinsic motivational role and this can be explained depending upon Meijman & Mulder's Effort-Recovery Model (1998). According to Meijman and Mulder (1998), if an individual's effort and abilities are expected to be dedicated with enthusiasm, work environment should offer many resources which facilitate doing job. In that case it is likely that the task will be completed successfully and that the work goal will be attained. For instance, supportive colleagues and proper feedback from one's superior increase the likelihood of being successful in achieving one's work goals (Schaufeli & Bakker, 2006)

### **3. WORK ENGAGEMENT**

The relationship between the individuals and the organizations is a widely studied phenomenon. The topflight indicator of this relationship is behaviors posed by individual to the organization. Research literature which has been going on since 1960's, shows that employees might have negative or positive attachments to their organizations or works, depending on meeting of their expectations by organization.

On the other hand, a healthy and positive relationship between individuals and organizations can be seen frequently. Those who are willing to work devote their energy, mental and physical powers and time, while get enjoyment and enthusiasm are called as engaged workers. The work engagement concept emerges through this way.

#### **3.1. Development of Work Engagement Concept**

The “work” is a widely used word in organizational behavior science. Although it may be used interchangeably with ‘job’ in the literature, ‘work’ means “activity involving mental or physical effort done in order to achieve a result” (Oxford, 2013). Also ‘work’ could be used as “a task or tasks to be undertaken”. As a verb ‘work’ is defined as “do work; (a machine or a system) to function especially, properly and effectively”.

Engagement is derived from its roots of ‘engage’ which originally meant ‘to pawn or pledge something’, later ‘pledge oneself (to do something)’ (16th century); ‘involve oneself in activity’ (17th century). In contemporary meaning it means “(be engaged in) to participate or become involved in”. Engagement is defined as “the action of engaging or being engaged”. So it can be said engagement is an action of participating or an action to become involved in.

The Engagement is a situation which can be seen at business life, friendships and any other areas of casual life. For example, when supporters go to a soccer game, they only watch the game and even don't think other things. They feel themselves as a part of that game being played on the field with a sense of that this association benefits for team. This situation is called as engagement to a team. Likewise, when two friends go



to dinner, sometimes they may not feel how quickly the time passed throughout the time they stayed there because of the joy and pleasure they feel. Repeatedly engagement may occur here. Also in business life, individuals may experience engagement. When they feel engaged or become engaged or engage in their works (jobs), they carry out their works willingly, pay more attention to works or enjoy doing their job. When employees participate to job more willingly, do not think other things when doing their job and feel themselves as a part of the job they carry out; they will be in a positive situation. Therefore this provides employees to get rid of stress and struggle and helps to success implicitly. As a result; when individuals concentrate well in works, appropriate their jobs, exert effort in order to success, positive outcomes will come up for organizational level as well.

Many researchers defined and interpreted on engagement concept. They handled engagement concept with 3 different perspectives. One of these researchers is Kahn who developed concept of engagement defined engagement as “the simultaneous employment and expression of a person’s preferred self in task behaviors that promote connections to work and others, personal presence (physical, emotional, and cognitive) and active, full role performances.”

Kahn tried to create a theoretical framework which illustrating how psychological experiences of work and work contexts shape the process of people presenting and absenting their selves during task performances (Kahn, 1990). His starting point was the work of Goffman (1961). According to Goffman, people have momentary attachments and detachments in their role performances.

Kahn thinks that Goffman’s work dealt with momentary face-to-face encounters and a different concept was needed to fit the organizational life, which is ongoing, emotionally charged and psychologically complex.

As Kahn (1990) suggested in his study:

*“Some psychologists, sociologists and group theorists have documented the idea that people are inherently ambivalent about being members of ongoing groups and systems and seek to protect themselves from both isolation and engulfment by*

*alternately pulling away from and moving their memberships. These self-in-role pulls and pushes enables people to cope with both internal ambivalences and external conditions.”*

Kahn developed two concepts of personal engagement and personal disengagement in order to explain pull and push calibrations of self-in-role above. These concepts referred to the behaviors by which people bring in or leave out their personal selves during work role performances. When employees bring selves in their work roles personal engagement comes out. This means organizational members express and employ themselves physically, cognitively and emotionally. Personal disengagement occurs when one's self and work role do not fit, so people withdraw and defend themselves physically, cognitively or emotionally (Kahn, 1990).

While Physical dimension of engagement concerns the physical energies exerted by individuals to accomplish their roles, cognitive dimension of employee engagement concerns employees' about the organization, its leaders and working conditions. The emotional dimension concerns how employees feel about each of those three factors and whether they have positive or negative attitudes toward the organization and its leaders (Kular, 2008). Hence, according to Kahn (1990), engagement means to be psychologically as well as physically present when occupying and performing an organizational role.

Kahn found that there were three psychological conditions related with engagement or disengagement at work: meaningfulness, safety and availability. He argued that people asked themselves three fundamental questions in each role situation: (i) How meaningful is it for me to bring myself into this performance? (ii) How safe it to do so? (iii) How available am I to do so? He found that if employees are offered more psychological meaningfulness, psychological safety and when employees are psychologically available, employees become more engaged at work (Kahn, 1990). In a similar research according to May, Gilson and Harter (2004) meaningfulness was found to have the strongest relation different employee outcomes in terms of engagement.

Also engagement has been defined as emotional and intellectual commitment to the work or organization (Baumruk, 2004 and Shaw 2005) or the amount of discretionary effort exhibited by employees in their job (Frank et al. 2004). When Saks was differentiating the engagement concept from commitment he argues that engagement is not merely an attitude as in commitment; it is degree to which an individual is attentive to their work and absorbed in the performance of their role.

Also Robinson, Perryman and Hayday (2004) suggest that engagement is related to but distinct from other constructs in organizational behavior. For example they state that:

“...engagement contains many of the elements of both commitment and OCB, but is by no means a perfect match with either. In addition, neither commitment nor OCB reflect sufficiently two aspects of engagement – its two-way nature, and extent to which engaged employees are expected to have an element of business awareness.

In 2006, in his study, Saks argued that by exhibition high engagement, employees may want to repay their organization. In other words, as a response to the resources they are given by organization, employees will choose to engage themselves to varying degrees or not. Employees are more likely to exchange their engagement for resources and benefits provided by their organization.

An alternative model of engagement comes from the Maslach, Schaufeli, and Leiter (2001) who described job engagement as the positive antithesis of burnout, noting that burnout involves the erosion of engagement with one's job. They suggested that six areas of work-life cause either burnout or engagement: workload, control, rewards and recognition, community and social support, perceived fairness and values. Then Maslach et al. also argued that these work-related factors which are sustainable workload, feelings of choice and control, appropriate recognition and reward, supportive work community, fairness and justice, and meaningful and valued work are all associated with engagement. They defined burnout with dimensions of exhaustion, cynicism and reduced professional exhaustion; whereas defined engagement in terms of opposite aspects of burnout such as energy, involvement and efficacy. Same as burnout

does, they suggested that engagement is also expected to mediate the relationship between these six factors above.

According to Maslach and Leiter (1997), job engagement is assessed by the opposite pattern of the scores on the three MBI (Maslach Burnout Inventory) dimensions: that is, low scores on exhaustion and cynicism, and high scores on efficacy, are indicative of job engagement.

Contrary to Maslach and Leiter (1997), Schaufeli, Bakker, Demerouti (2001) did not feel that engagement is adequately measured by the opposite outline of MBI scores. Because this implies that both concepts are each other's complements.

Depending on Russell and Carroll's (1999) realistic findings which suggests that positive and negative affect are independent states, rather than two opposite poles of the same bipolar dimension, in their study Schaufeli and Bakker (2004) proposed that instead of being two opposite poles burnout and engagement are independent, yet are negatively correlated states of mind.

### **3.2. Operationalization of Work Engagement**

Schaufeli and Bakker (2004) defined engagement as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication and absorption. According to Schaufeli et al. (2002a) engagement refers to a persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior.

Schaufeli et al. operationalized engagement with the Utrecht Work Engagement Scale (UWES), a self-report instrument that includes the three dimensions of vigor, dedication and absorption mentioned below (Schaufeli et al. 2002a, 2002b).

Vigor is characterized as showing high levels of energy and having mental resilience while working, the willingness of one's to invest effort to work, and persistence also in the face of difficulties.

Dedication is related with being strongly involved in one's work and feeling a sense of significance, enthusiasm, inspiration, pride, and challenge (Schaufeli and Bakker, 2004).

Absorption which is the third dimension was found to constitute element of engagement in 30 in-depth interviews (Schaufeli, Taris, LeBlanc, Peeters, Bakker, De Jonge, 2001). Absorption is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work (Bakker et al, 2003).

Alan Saks (2006) states in his study that although both Kahn's and Maslach et al.'s models indicate the psychological conditions or antecedents that are necessary for engagement, they do not fully explain why individuals will respond to these conditions with varying degrees of engagement. Alan Saks (2006) states in his study that both Kahn's and Maslach et al.'s models do not completely explain why employees will respond with varying degrees to psychological conditions necessary for engagement. A stronger theoretical explaining for employee engagement can be found in social exchange theory (SET).

SET argues that obligations are generated through a series of interactions between parties who are in a state of reciprocal interdependence. A basic tenet of SET is that evolution of relationships into trusting, loyal and mutual commitments overtime depends on parties' obedience to the 'rules of exchange' (Cropanzano and Mitchell, 2005). These rules of exchange are those one party's actions set off a response of other party including a reciprocity or repayment rules. Cropanzano and Mitchell's (2005) example in order to explain this situation as follows: when individuals receive economic and socio-emotional resources from their organization they feel obliged to respond in kind any repay the organization.

Employees may repay to their organization by their level of engagement. That is, employees will choose to engage themselves to varying degrees and in response to the resources they receive from their organization. According to Saks (2006) bringing oneself more fully into one's work roles and devoting greater amounts of cognitive,

emotional and physical resources is a very profound way for individuals to respond to an organization's actions. When employees are reinforced with resources and benefits by their organization, the possibility of actualization of employees' engagement' exchange with expected effort will increase (Saks, 2006).

### **3.3. Difference of Work Engagement from Other Attachment Styles**

Engagement is also should be seen a different concept from workaholism however these two concept are not seen clear. However, Bakker et al. (2007) states that these concepts are similar but do not overlap themselves. Workaholics spend a great deal of time in work activities when given the discretion to choose whether to do so; they are excessively hard workers. In addition, workaholics are reluctant to disengage from work and they persistently and frequently think about work when they are not at work. This suggests that workaholics are obsessed with their work; they are compulsive workers (Schaufeli, Taris, & Bakker, 2006; Scott, Moore, & Miceli, 1997).

On the other side engaged employees work hard (vigour), are involved (dedicated), and feel happily engrossed (absorbed) in their work. In this sense, they may seem similar to workaholics. However, contrary to workaholics, engaged employees do not have typical compulsive drive. They see the work as a fun, not an addiction. These propose was concluded from a qualitative study among 15 engaged workers (Schaufeli et al., 2001).

A brief and simple discrimination for engaged employees is that they work hard because they like it but not because of a strong inner urge. Workaholics generally exaggerate their need to work. Then, this brings on risks in their health, reduces their happiness and weakens their interpersonal relations and social functioning (Bakker, Demerouti, & Burke, 2009). In short, work engagement can be discriminated from workaholism (Taris, Schaufeli, & Shimazu, 2010). Previous studies have also shown that work engagement can be discriminated from Type-A behavior (Hallberg, Johansson, & Schaufeli, 2007), and from job involvement and organizational commitment (Hallberg & Schaufeli, 2006). In addition, Halbesleben and Wheeler (2008) have shown that work engagement can be distinguished from embeddedness.

### **3.4. Consequences of Work Engagement**

According to the research literature conducted until today, work engagement has some positive consequences such as job satisfaction, lower absenteeism, lower turnover, organizational commitment, customer satisfaction, productivity, high profit, lower intention to quit and job security (Bakker and Demerouti, 2008; Harter, Schmidt and Hayes, 2002; Salanova, Llorens, Garcia, Burriel, Bresó, and Schaufeli, 2005; Xanthopolou, Bakker, Heuven, Demerouti and Schaufeli, 2008; Xanthopolou, Bakker, Demerouti and Schaufeli, 2009).

In their study Bakker et al. (2008) stated that these positive organizational behaviors result from employees' enthusiasm and feeling important themselves, therefore it leads to better financial outcomes and higher customer satisfaction.

Bakker and Demerouti (2008) demonstrated that engaged employees experience more positive feelings such as happiness, enthusiasm and joy; have higher well-being; create their own individual and job resources easier when compared to others. Bakker (2005) states that if one of couples married has high work engagement, this situation would have an impact on others' level of working performance. Also, engaged employees take more initiative, exhibit proactive behaviors and higher learning motivation (Sonnentag, 2003).

According to Bakker and Schaufeli (2008) possible outcomes of work engagement are those related with performance: health, commitment, positive attitudes towards job and extra role behaviors. Those who seem to be more engaged have more job satisfaction, organizational satisfaction, lower intention to quit when compared to low engaged employees (Demerouti, 2001).

In this study, Schaufeli et al.'s work engagement definition is taken into consideration which argues that work engagement is a related but different construct from burnout and other organizational behavior constructs.

#### **4. RELATIONSHIP BETWEEN JOB RESOURCES AND WORK ENGAGEMENT**

Specifically, of job resources, autonomy, colleague support, supervisory coaching, feedback from both job itself and agents, opportunities for personal development and task significance are focused and each of which seem to be an important factor for context of academic staff. While autonomy, task significance, feedback pertains to task; colleague support to interpersonal; supervisory coaching to organizational job context; opportunities for development pertains to organizational dimensions. So, study covered all the kind of job resources stated in the JD-R model.

According to motivational process of JD-R model which have been mentioned above, the motivational potential of resources provide that employees intend to fulfill their work goals and objectives. This process actually points at work engagement directly. The availability and accessibility conduce to this motivational process which is one of JD-R model processes along with energetic process. Depending on Bakker et al. (2008) definition, job resources perform a motivational role because they foster the growth, learning and development of employees, or are instrumental in achieving work goals. Hence, through a motivational process which satisfy basic needs for autonomy, relatedness, and competence, and which increase the likelihood of attaining one's work goals, job resources are likely to foster work engagement (Simbula, Guglielmi & Schaufeli, 2011).

Along with Conservation of Resources Theory (COR) which suggests people have tendency to obtain, retain, foster and protect resources. COR theory hypothesis that when employees are still lack of resources after essential resource investments or when resources they have are in danger, stress is likely to occur (Hobfoll, 1989). It can be inferred that more resources may make employees less vulnerable in terms of stress whereas those with fewer resources may be more sensitive and vulnerable. Job resources create a stronger mind and resilient psychological states of mind. Consequently, job resources play an important role in reinforcing positive images of



self, and in fostering positive work outcomes like work engagement (Demerouti, et al. 2001).

Psychological meaningfulness involves a sense of return on investments of the self-in-role performances (Kahn, 1992). According to Kahn, task characteristics may benefit to achievement of psychological meaningfulness through its structure of challenging work, variety, allow using different skills, personal discretion and the opportunity to make contributions. Due to the jobs' providing room and incentive structure the more high on the core job characteristics, the more bringing of employees to their work or being engaged (Kahn, 1992).

Hakanen, Bakker and Schaufeli (2006) conducted a study among Finnish teachers. Apart from different hypothesis, they also hypothesized the existence of motivational process of JD-R model. According to their study, they confirmed that work engagement mediated the effects of job resources and organizational commitment.

One another study which is belonged to Llorens , Bakker, Schaufeli and Salanova (2006) which aims to search out if job demands and resources evoke two relatively independent processes: health impairment and employee motivation. The study was implemented among both Spanish and Dutch employees and Llorens et al. (2006) found substantial support for the association between job resources and work engagement. They also demonstrated that the basic structure of JD-R Model is consistent across countries.

For the relationship between job resources and work engagement Schaufeli & Bakker's research (2007) is also one other evidence in which they conducted among 1439 employees of six divisions of an electrical engineering and electronics company in The Netherlands. In these studies researchers handled job resources of autonomy, colleague support, opportunities for development and supervisory coaching which are also included in our study.

A longitudinal study conducted with a broad sample of 2555 Finnish dentists indicated that various resources such as autonomy, skill variety, feedback on

performance, are positively related to work engagement (Hakanen, Bakker and Demerouti, 2005).

One of the several studies which investigated relationship between job different job resources and work engagement is conducted by Salanova and Schaufeli in 2008 using two independent samples from Spain and The Netherlands (n=724). Both samples confirmed that there is a strong correlation between resources and work engagement. One of important points is that this relationship is invariant across two samples.

Sulea et al.'s study (2012) lightens a broader area in which they propose a model including job resources and work engagement together with organizational citizenship behavior (OCB). In their study work engagement strongly mediated relationship between resources and OCB..

Klusmann, Kunter, Trautwein, Ludtke, And Baumert (2008) examined the association between school-specific resources and engagement in their study by collecting 1939 individual-level (teachers), school-level (principals and students) data. According to the results, although school-level data were associated with engagement, individual differences between teachers predisposed them to develop more engagement.

Xanthapoulou, Bakker, Demerouti and Schaufeli (2007) conducted one of the studies which personal resources have been added to the research model. They included self-efficacy, organization based self-esteem and optimism as personal resources beside autonomy, supervisory coaching, development opportunities, social support, performance feedback as job resources into their research model. They both examined the one way a reciprocal relationship of these all variables among each.

The one of the most recent studies belongs to Simon L. Albrecht. He proposed a model including job (means task in his study), team and organizational level resources, engagement, well-being, commitment and extra-role performance. His study's aim was to elaborate the JD-R model of work engagement by examining how organizational, team and job (task) level factors interrelate to influence engagement and well-being and downstream outcome variables such as affective commitment and extra-role behavior.

As job resources he considered career development, autonomy, supervisor's support and role clarity. Using Structural Equation Modeling (SEM) method with a sample of 3437 employees of a large multi-national mining company, he found that these job, organization and team level resources were all positively associated with engagement. His findings also support the motivational process proposed by Bakker and Demerouti (2008), suggesting that the provision of job resources (supervisory coaching, career development, role clarity and autonomy) can serve to intrinsically motivate employees and result in increased positive affect and positive attitudes towards work.

A two-way (reciprocal) study was longitudinally conducted by Ouweneel, Le Blanc and Schaufeli (2012) in order to test if positive emotions build resources and to what extent they contribute to work engagement through an increase in personal or job resources. They hypothesized that positive emotions, resources and work engagement are reciprocally related to each other in a way akin to a gain cycle. Likewise the most of researchers they used SEM in order to test the model, and they found that a causal effect of personal resources (hope, optimism, self-efficacy) on work engagement exists. Positive emotions and personal resources were reciprocally related. However, most surprisingly no relationships with job resources were found to be significant.

Koyuncu, Burke & Fiksenbaum (2006) made a research among woman managers and professionals in a Turkish bank in order to show potential antecedents and consequences of work engagement. They assessed engagement by UWES developed by Schaufeli et al. with three sub-scales: vigor, dedication and absorption. Antecedents included personal demographic and work situation characteristics as well as work life experiences; consequences included measures of work satisfaction and psychological well-being. They found that work-life experiences, particularly, control, rewards and recognition and value fit were found to predict all three dimensions of work engagement. Additionally, engagement, particularly dedication dimension predicted various outcomes such as job satisfaction, intent to quit and vigor predicted psychological well-being outcomes.

In Turkey, a quite comprehensive study in recent years was made by Turgut in 2011. In her study Turgut aimed to both adjust work engagement scale into Turkish

though its reliability and factorial validity and examine work engagement's relationship with job demands and resources using work-to-family conflict, work overload as demands and time flexibility, supervisor support as resources. In her comprehensive study on 279 employees working in service sector she found that, Turkish adaptation of UWES is consistent with English version with three dimensions structure. She attained three dimensions along with all items placed in right dimension as in the original scale. She also presented the mediation relationship of work-to-family conflict between supervisor support, time flexibility, work overload and work engagement.

## 5. SELF-EFFICACY CONCEPT

Definition of self is not very easy because the Self is not a straightforward concept. According to Oxford Dictionary self is related to Dutch zelf and German selbe, and its early use was emphatic the sense of ‘(I) myself’, ‘(he) himself’ etc; and defined as “a person’s essential being that distinguishes them from others, especially considered as the object of introspection or reflexive action” (2013). And World English Dictionary also defines the self as “the distinct individuality or identity of a person or thing” (2013). Turkish Language Association also defines self as “a complex combination of all attributes that constitutes an individual” (Enç, 1974).

Greenwald makes a different definition for self. Greenwald states that Self Concept can be named as ‘totalitarian ego’. Because he thinks that ego, as an organization of knowledge, serves the functions of observing (perceiving) and recording (remembering) personal experience; therefore it can be characterized as a personal historian (Greenwald, 1980).

In Self-Concept Framework, self is handled together with other interesting concepts such as ideal self, ought self, possible self, rejected self, reflected self (Cinnirella, 1998). Although some scientists and researchers attempted several times to define and operationalize the self-concept from different perspectives (Wundt, James, Cooley, Mead, Freud, Rogers) (Epstein, 1973), in this research these are not discussed in detail due to the major subject “Self-efficacy”.

On the other side of concept, the ‘efficacy’ word comes from early 16th century from Latin ‘efficacia’. In Oxford dictionary efficacy word is defined as “the ability to produce a desired or intended result”. The World English Dictionary defines similarly but as “the quality of being successful in producing an intended result”. Merriam-Webster approaches ‘efficacy’ word as “a power to produce an effect”.

Putting the words ‘self’ and ‘efficacy’ together provides a meaning but not the whole concept tried to be examined in this study. The concept is all by itself a unique concept in psychology literature.

The history of self-efficacy begins with Bandura's (1977) social learning theory that was renamed social cognitive theory in 1986. He found that a powerful sense of individual self-efficacy is associated with healthy life, achievement and sufficient social integration (Bandura, 1997). This concept is also being used in several areas such as academic success, emotional dysregulation, mental and physical health, career preference and sociopolitical change (Otacıoğlu, 2008). Bandura (1995) believes that self-efficacy makes difference in how people feel, think, behave, and motivate themselves.

Self-Efficacy is defined by Bandura (1997) as "beliefs in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands". Meantime, Zimmerman (2000,) stated that "self-efficacy refers to personal judgments of one's capabilities to organize and execute courses of action to attain designated goals".

In daily life at every tasks either at work or at home, self-efficacy beliefs affect people's choices, persistence, the way of acquiring skills, and the amount of effort they exert (Schunk, 1989). People may have distinct self-efficacy beliefs for each different task, each context and these beliefs may also be affected by the perceived task difficulty. One's confidence to deal with language or numbers or one's tendency for learning by doing or by reading may be examples of task differences and varying contexts, respectively. Self-efficacy will be assessed by the person before attempting the task, thus impacting upon motivation for the task (Zimmerman, 2000).

Tschannen-Moran and Woolfolk Hoy summarized that teachers' self-efficacy is related to: student outcomes such as achievements (Ashton & Webb, 1986; Ross, 1992), motivation (Midgley, Feldlaufer & Eccles, 1988), and students own sense of efficacy (Anderson, Greene & Loewen, 1988). In addition, teachers' efficacy beliefs also relate to their behavior in the classroom, including the effort teachers invest in teaching, the goals they set, and their levels of aspiration. Teachers with a strong sense of efficacy also tend to exhibit greater levels of planning, organization and enthusiasm (Allinder, 1994). Additionally they are open to new ideas and more willing to experiment with new methods to better meet the needs of their students (Guskey,

1988). Further, efficacy beliefs influence teachers' persistence when things do not go smoothly and their resilience in the face of setbacks. Greater efficacy also enables teachers to be less critical of students when they make errors (Ashton & Webb, 1986), to work longer with a student who is struggling (Gibson & Dembo, 1984) and to be less inclined to refer a difficult student to special education (Meijer & Foster, 1988; Tschannen-Moran & Hoy, 2001).

The belief of self-efficacy of course does not arise by itself; according to Bandura (1986), information about one's efficacy comes from four principal sources.

1. Performance achievements based on authentic mastery experiences.
2. Observations about the performances of others.
3. Verbal feedback and allied types of social influences to the effect that one possesses certain capabilities.
4. Physiological states from which people partly judge their capabilities, strengths, and vulnerability to dysfunction.

When these sources are examined it could be inferred that job resources such as feedback from both job itself as mastery experiences; feedback from others, social support and supervisory coaching as verbal feedback and allied types of social influences contributes to the self-efficacy concept.

We can state parallel with Bandura (1986) that there is an obvious difference between possessed knowledge and skills and using them well under challenging circumstances. That means personal accomplishments require not only skills but self-beliefs of efficacy to use them well. Hence, a person with the same knowledge and skills may perform poorly, adequately, or extraordinarily depending on fluctuations in self-efficacy thinking. Therefore, positive outcomes such as engagement or commitment may not be provided with only given resources to employees.

Margolis and McCabe (2003) stated that self-efficacy is an important influence on motivation –the degree to which an individual will become engaged in and will expand physical or mental energy in an activity. They argued that the greater self-efficacy, the greater desire to carry out tasks, resiliency and success.

Self-efficacy plays a key role in the self-regulation of motivation. Most of human motivation is generated cognitively. People motivate themselves and guide their actions anticipatorily by the exercise of forethought. They form beliefs about what can they do. They anticipate likely outcomes of prospective actions. They set goals for themselves and plan courses of action designated to realize valued futures.

Through several ways self-efficacy beliefs contribute to motivation. Self-efficacy beliefs determine the goals which people set for themselves, how much effort they expend, how long they persevere in the face of difficulties and their resilience to failures. When faced with obstacles and failures people who have self-doubts about their capabilities moderate their efforts or give up quickly. Those who have a strong belief in the capabilities exert greater effort even when they fail to master the challenge. People's strong perseverance contributes to performance accomplishments (Bandura, 1994).

Self-efficacy can shape types of activities people choose. People tend to avoid activities and situations they believe exceed their coping capabilities. By the choices they make, people cultivate different competencies, interests, and social networks that determine life courses. Any factor that influences choice behavior can profoundly affect the direction of personal development. This is because the social influences operating in the selected environments continue to promote certain competencies, values, and interests long after the efficacy decisional determinant has rendered its inaugurating effect (Bandura, 1994). It can be inferred from here that belief of self-efficacy contributes to personal development pace.

Bandura states that occupations structure (context) - autonomy may be a true example for our study - is a good part of people's lives and provide them a major source of personal growth (Bandura, 1994).

Self-efficacy also affects goal setting. In order to accomplish a long term objective, setting short-term goals increase intrinsic motivation and develop perception of self-efficacy. In other words, putting and accomplishing short-term goals provides satisfaction from achievements. Reachable but challenging short-term goals become a



datum point for retaining interests, reaching long-term objectives, and developing belief of self-efficacy. Goal-setting is an effective self-regulatory process because it includes feedback and improves perception of control (Bandura, 2001).

Stress is known to be negatively related to engagement (Demetoruti, 2001). Self-efficacy is also related to optimism which is associated with several stressors. According to JD-R Model, stress occurs in situation of lack of job resources. On the other hand, people who believe they can control over threats do not conjure up disturbing thought patterns. But those who believe they cannot manage threats experience high anxiety arousal. They view many aspects of their environment as fraught with danger. Through such inefficacious thinking they distress themselves and impair their level of functioning. The stronger sense of self-efficacy the bolder people are taking on taxing and threatening activities (Bandura, 1994).

In the study conducted in 1997, Bandura hypothesized and confirmed that there is a relationship between academic level and self-efficacy. The other concepts associated with self-efficacy were as follows: optimism, self-regulation, self-esteem which are positively; depression, anxiety which are negatively.

Jex and Bliesse (1999) found a reciprocal relationship between the job demands and generalized self-efficacy. Self-efficacy moderated the relationship between job demands and some strain variables such as job dissatisfaction, intent to leave, poor organizational commitment.

Depending on these researches, we could say and expect that self-efficacy may have impacts on job resources such as autonomy, social support, feedback from both job itself and others, supervisory support, task significance, and personal development which are included our study. And self-efficacy may also have impacts on work engagement due to its association with motivation mentioned above. Self-efficacious people are expected to be more vigorous and more ready to exert effort for the sake of that they dedicate themselves.

## **6. MODERATOR EFFECT OF SELF-EFFICACY ON THE RELATIONSHIP BETWEEN JOB RESOURCES AND WORK ENGAGEMENT**

The JD-R model has been recently expanded through inclusion of personal resources such as self-esteem, optimism, resilience, organization-based self-esteem and self-efficacy. Personal resources are aspects of the self that are generally linked to resiliency and refer to individual's sense of their ability to control and impact upon their environment successfully (Hobfoll, Johnson, Ennis, & Jackson, 2003).

Previous studies have shown that these personal resources are not only related to stress resilience, but also have positive effects on physical and emotional well-being (Chen, Gullya and Eden, 2001; Pierce, Gardner Cummings and Dunham, 1989; Scheier & Carver, 1992). Although people's perception of and adaptation to environments is variable, depending on their levels of personal resources, these resource levels are cultivated by environmental factors (Bandura, 2000). In other words, it is proposed that personal resources may function either as moderators or as mediators in the relationship between environmental factors and (organizational) outcomes, or they may even determine the way people comprehend the environment, formulate it, and react to it (Judge, Locke and Durham, 1997).

Xanthopolou, Bakker, Demerouti and Schaufeli (2007) examined the role of three personal resources (Self-efficacy, organization-based self-esteem and optimism) in predicting exhaustion and work engagement. Results of structural equation modeling analysis showed that personal resources partly mediated the relationship between job resources and work engagement.

Furthermore, in their study of female school principals, Bakker, Gieversveld, and van Rijswijk (2006) found that those with most personal resources, scored highest on work engagement.

Instead of focusing on situation-specific self-efficacy, the present study examines a general dimension, which refers to individuals' perceptions of their ability to meet

demands in a broad array of contexts (Chen, Gully, & Eden, 2001). Accumulation of successes, as well as persistent positive experiences, augments general self-efficacy (Chen et al., 2001). It has been shown that generalized and specific efficacy beliefs are correlated, and that the general tendency to feel efficacious may spill over into specific situations (Yeo & Neal, 2006).

Most of the research on self-efficacy was its moderating effect between stressors (job demands etc.) and strain (burnout etc.). (Salanova, Peiro & Schaufeli, 2002; Stetz, Stetz and Blisse, 2006). In relation to the role of personal resources as moderators, studies have mainly examined the relationship between unfavorable work characteristics and negative outcomes. For example, Van Yperen and Snijders (2000) have shown that general self-efficacy moderates the relationship between job demands and psychological health symptoms.

However, less attention has been paid its moderating effect on relationship between job resources and positive states like work engagement. There is some evidence; however, that self-efficacy may act as an important determinant of work engagement (Llorens, Schaufeli, Bakker & Salanova, 2007).

Bakker et al. (2006) showed that those with most personal resources scored highest on work engagement via their study among female school principals. In particular, resilience, self-efficacy, and optimism contributed to work engagement and were able to explain the unique variance in engagement scores (in addition to social support from team members and colleague principals, opportunities for development, and social support from the intimate partner).

Prieto (2009) extended the JD-R model regarding self-efficacy as a personal resource as a predictor of work engagement using a sample comprising 274 teachers. The results revealed that self-efficacy significantly predicted work engagement measuring via the UWES (Schaufeli & Bakker).

Another research (Sweetman and Luthans 2010) discussed the relation between psychological capital and work engagement. Their assumption was that the psychological capital can be thought of as a concept similar to personal resources

which include self-efficacy, optimism, hope and resilience. According to Sweetman and Luthans' discussion, these concepts facilitate work engagement, and they argued that efficacy is the most important psychological mechanism for producing positive work-related outcomes.

A meta-analysis search has been done by Halbesleben (2010) who states that self-efficacy is regarded as a personal resource which can be hypothesized to be positively associated with work engagement with an estimated correlation of .50, ( $p < .01$ ).

Xanthopolou et al. (2007) also considered self-efficacy as one of personal resources which are supposed to predict and to be predicted by work engagement in their reciprocal model. The results showed that engaged employees are highly self-efficacious, and believe they are able to meet the demands they face in a broad array of contexts.

In their study among 300 Norwegian principals Federici and Skaalvik (2011) revealed that the principal self-efficacy was positively related to work engagement. They measured Work engagement by a modified version of UWES.

Self-efficacy also has impacts on job resources. The study Guglielmi et al. (2012) validates this statement as well. They hypothesized that job resources mediated the relationship between self-efficacy and work engagement and burnout. According to the 224 school principals survey results, personal resources operates as initiators of health impairment and motivational processes which had been discussed inside JD-R model.

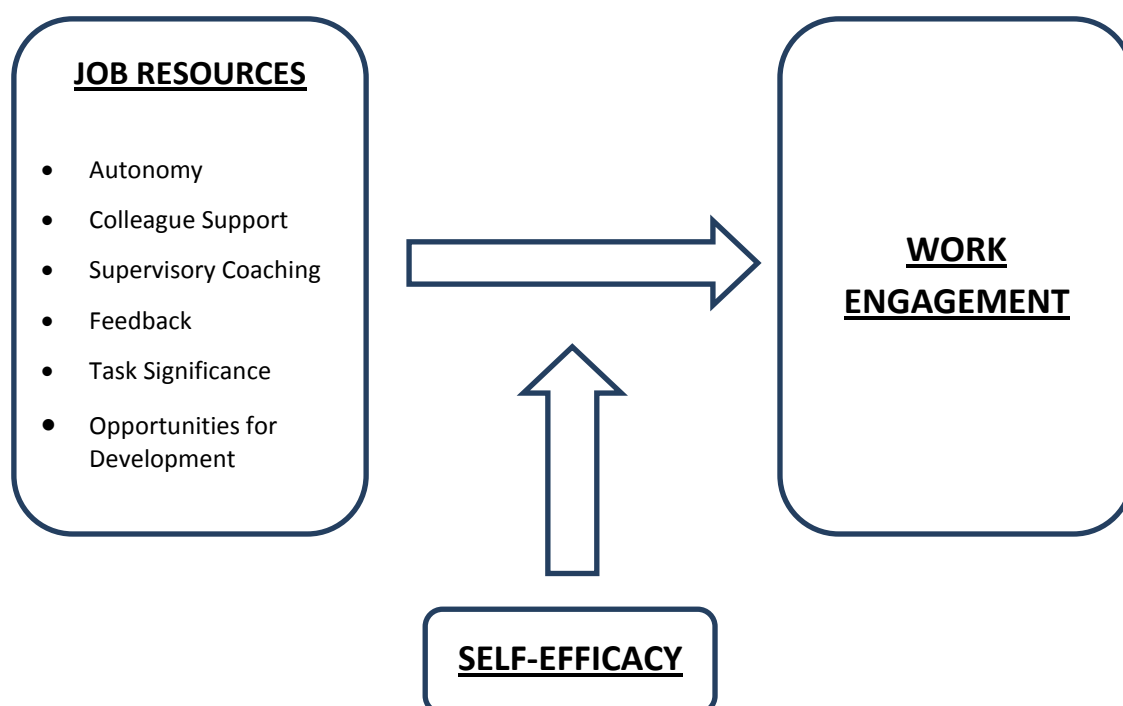
Xanthopolou et al. (2007) come up with an idea that it can be argued that job and personal resources are reciprocal, since individuals, through learning experiences, can form stronger positive evaluations about themselves and in turn, they comprehend or create more resourceful work environments (Kohn & Schooler, 1982). In other words, not only personal resources may be promoted by a manageable and comprehensive environment, but they may also determine the way people perceive or formulate this environment and how they react to it (Judge, Bono, & Locke, 2000; Judge et al., 1997). If this perspective of reciprocity is applied to the JD-R model, it may be expected that

self-efficacious or optimistic employees will focus more on job resources than on job demands, and as a result they will experience higher levels of work engagement.

## 7. RESEARCH MODEL AND HYPOTHESIS

The purpose of this study is to examine the effect of self-efficacy on the relationship between job resources and work engagement for sample of academicians. It is argued that self-efficacy (personal resources) is a moderating variable that moderates the relationship between job resources and engagement.

**Figure 2: The Research Model**



### 7.1. HYPOTHESIS

H<sub>1</sub>: There is a relationship between job resources and work engagement.

H<sub>2</sub>: Self-efficacy moderates the relationship between job resources and work engagement such that the relationship becomes stronger when self-efficacy is low.

Research Question: Are there any self-efficacy or work engagement level differences between academicians according to their gender, title, type of university, academic expense compensation situation?

## 8. METHOD

In this part of the study, the research and application methods are taken into account. Information about the sample and the implementation of the survey, the scales and statistical analyses used are given successively.

### 8.1. Sample

Sample of this study consists of 435 academicians (except professors) of universities from various regions all over Turkey. Number of academicians working for private universities is 91 which constitute 21% of sample, whereas for state universities this amount is 344 which covers 79% of the sample. Ages of participants in the sample range between 22 and 64 with a mean of 32. When this information is considered it can be inferred that the sample is fairly young.

The gender distribution is also seems to be fair with 56% male and 44% female proportions which are 245 and 190, respectively.

Since the work engagement level of academicians except professors are investigated in this research, participants asked their titles in their universities. When title diversity is considered, sample consists of 252 research assistants (58%), 31 lecturers (7%), 106 assistant professors (25%), and 46 associate professors (10%). The title distribution of this study is nearly similar to its population. While associate professors constitute the 11%, assistant professors 28% of population, only a 10% difference exists in lecturers due to its difficulty to reach. This difference is shifted to amount of research assistants which constitutes 42% of population. Here, we can say that, the titles distribution of sample is fairly consistent with the population portions ([www.yok.gov.tr](http://www.yok.gov.tr), 17.06.2013).

Academicians in the sample work in various faculties such as Faculty of Economics and Business Administration (consists of Faculty of Commercial Sciences, Faculty of Business, Faculty of Economics and Faculty of Political Sciences), Faculties of Architecture and Engineering (including Faculty of Technical Education and Urban Planning), Faculty of Arts and Literature, Faculty of Communication (including Fine

Arts), Faculty of Law, Faculty of Education (including faculties of foreign languages), Faculty of Health Sciences (including medical faculty, faculty of pharmacy, faculty of veterinary science) and the others (including faculty of divinity, agriculture etc.). While 153 of academicians works on faculties of economics and business administration (35,2%); 69 on faculties of Architecture and Engineering (15,9%); 54 on faculties of Literature and Arts (12,4%); 24 on faculties of Communication (5,5%); 39 on faculties of Law (9%); 47 on faculties of Education (10,8%); 11 on faculties of Health Sciences (2,5%); and 38 other various faculties (8,7%).

Other questions asked to participants are if they have any administrative tasks at their universities; if they give lectures at other universities; how many days they are expected to be in university; if their universities compensate their academic expenses (conferences, books, researches etc.).

All the data mentioned above are shown in Table 1 on the next page.



**Table 1: Demographics of Gender, Title, Departments, Type of Universities**

<b>Variable</b>	<b>Groups</b>	<b>n</b>	<b>Percentage</b>
<b>Gender</b>	Male	245	56,3%
	Female	190	43,7%
	<b>Total</b>	<b>435</b>	<b>100%</b>
<b>Title</b>	Research Assistant	252	57,9%
	Lecturer	31	7,1%
	Assistant Professors	106	24,4%
	Associate professors	46	10,6%
	<b>Total</b>	<b>435</b>	<b>100%</b>
<b>Departments</b>	Economics & Business	153	35,2%
	Architecture & Engineering	69	15,9%
	Literature & Arts	54	12,4%
	Communication	24	5,5%
	Law	39	9,0%
	Education	47	10,8%
	Health Sciences	11	2,5%
	Others	38	8,7%
	<b>Total</b>	<b>435</b>	<b>100%</b>
<b>Type of University</b>	Public Universities	344	79,10%
	Private Universities	91	20,90%
	<b>Total</b>	<b>435</b>	<b>100%</b>

Academicians who have administrative tasks adding to their academic tasks constitutes 31% of the sample (n=135). 242 of remained 300 academicians are research assistants who are not expected to have administrative tasks. The lecturer also have no permission to have administrative tasks. Eventually, crosstabulation below shows that number of assistant professor and associate professor who have administrative tasks consists almost 50% of all. The data are given in Table 6 below.

**Table 2: Administrative Tasks According To Title**

	Administrative tasks?		Total
	Yes	No	
Assistant Professors	53	53	106
Associate professors	21	25	46
<b>Total</b>	<b>74</b>	<b>78</b>	<b>152</b>

Moreover, we thought that lecturing at another university also affects the performance outcomes of academicians, and then we asked if they give lectures at other universities. It is seen that only 31 participants among 183 associate professors, assistant professors and lecturer give lecture at another university. This constitutes approximately one sixth of all. The data are shown in Table 7 below.

**Table 3: Crosstabulation for Title and Lecturing at Another University**

	Another University		Total
	Yes	No	
Lecturers	1	30	31
Assistant Professors	20	86	106
Associate professors	10	36	46
<b>Total</b>	<b>31</b>	<b>404</b>	<b>435</b>

Participants are also asked to give information about number of days that they are expected to be at university. This is very important for academic life also, because especially research assistants have lectures for their graduate educational life as a student. And having flexibility for working days is related to autonomy which is a job resource. Correspond to these causes participants are asked for number of days they are expected to be at university. In Turkey, pretty much of universities have 5 working days (weekdays). One more option (5+) is added to questionnaire in order to find out if there is anyone who works more than 5 days. Interestingly; although the occupations autonomic structure 51% of participants (n=224) stated that they have to be at university for 5 days. The data are given in Table 8 below.

**Table 4: How Many Days Do Academicians Have To Be At University?**

	<b>Frequency</b>	<b>Percent</b>	<b>Valid %</b>	<b>Cumulative %</b>
<b>1</b>	1	,2	,2	,2
<b>2</b>	10	2,3	2,3	2,5
<b>3</b>	34	7,8	7,8	10,3
<b>4</b>	87	20,0	20,0	30,3
<b>5</b>	224	51,5	51,5	81,8
<b>5+</b>	79	18,2	18,2	100,0
<b>Total</b>	<b>435</b>	<b>100,0</b>	<b>100,0</b>	

It is known that university government's attitude about resources for academic works are very important for motivation to make research and give lectures. For this reason participants are asked to express their universities compensation situation for academic expenses such as conferences, books, researches etc. The data are given in Table 9 below.

**Table 5: Do Universities Compensate Academic Expenses?**

	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
<b>No</b>	96	22,1	22,1	22,1
<b>Partially</b>	263	60,5	60,5	82,5
<b>Yes</b>	76	17,5	17,5	100,0
<b>Total</b>	<b>435</b>	<b>100,0</b>	<b>100,0</b>	

From the frequency results table it can be seen that participants stated that 60 percent of them are partially support in terms of academic expenses. While only 17,5% of respondents stated as they are compensated for academic expenses by their universities, who stated they are not compensated constitutes 22% of all. According to these results, one fifth of academicians are not take economical support for their academic expenses means that they have to pay by themselves even though they state their universities names on researches.

## **8.2. Procedure**

Surveys are loaded to a website and e-mails are sent to 10300 academicians to all over Turkey. These are from randomly selected universities from each region. Number of 380 participants is the required amount of sample for representing the population of this research (Sekaran, 2010). But in order to make it clear, we waited until 435 surveys. All surveys were used in analysis because there were no missing values or extreme values. This survey has been completed in 3 weeks period.

## **8.3. Research Instruments**

Within the scope of this research, a survey consisting of 3 sections is applied. This survey consists of 55 items. In the first section, job resources scale which includes autonomy, social support, supervisory coaching, feedback, task significance and opportunities subscales; in the second section work engagement and self-efficacy scales are used. In the third scale of survey was related to demographic information of participants and their universities. Items in the first and second sections were measured with a six point scale.

### ***8.3.1. Job Resources Scale***

First section of survey consists of items to measure job resources combined with autonomy, social support, supervisory coaching, feedback, task significance and opportunities for development subscales. These all subscales constitute a 26 items job resources scale in sum.

Autonomy is measured with a 6-item scale developed by Turgut (2010), (e.g., “I can decide when I start and stop doing my job.”)

Colleague Support will be measured with 3 items scale developed by Bakker et al (2003), including “If necessary, can you ask your colleagues for help?”

Supervisory Coaching will be assessed with 5 items scale developed by Le Blanc (1994), (e.g., “My supervisor uses his/her influence to help me solve my problems at work”).

Task significance and Feedback scales are each comprised of 3 and 6 items, respectively and developed by Boonzaier et al (2003) depending upon Hackman and Oldham’s JCT. A sample item for Task significance is “This job itself is very significant and important in the broader scheme of things”.

Feedback scale sample items, for performance feedback is “After I finish a job, I know whether I performed well”, for feedback from agents “to what extent managers or coworkers let you know how well you are doing on your job?”

Opportunities for development will be measured with a 3 items scale developed by Bakker (2003b). An item is “My work offers me the possibility to learn new things”.

All job resources items were scored on a six-point scale, ranging from (1) “totally disagree” to (6) “totally agree”.

### **8.3.2. Work Engagement Scale**

There are several instruments to measure work engagement but The Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2002; Schaufeli and Bakker, 2003) is a useful scale which includes items for assessment of the three engagement dimensions included in Schaufeli et al.’s (2002) definition; vigor, dedication and absorption. But in this study, due to decrease the number of items in the survey a shortened version of UWES is used which is named as UWES-9. This is a nine-item scale while original has seventeen. The validation of scale is done by Schaufeli, Bakker and Salanova (2006) and Turkish translation of this scale is done by Turgut (2011). The UWES has

been validated in several countries, including China (Yi-Wen and Yi-Qun, 2005), Finland (Hakanen, 2002; Hakanen et al. 2006), South Africa (Strom and Rothmann, 2003), Spain (Schaufeli et al., 2002), whereas UWES-9 is expected to be valid as well.

Sample items for work engagement scale each of which represent a dimension is as follows: Vigor (e.g., “At my work, I feel bursting with energy”), for Dedication (e.g., “My job inspires me”), and for Absorption (e.g., “I get carried away when I am working”). High scores on items indicate high work engagement. Items were scored on a scale ranging from (1) “totally disagree” to (6) “totally agree”.

### ***8.3.3. Self-Efficacy Scale***

Self-efficacy is assessed with the ten-item Generalized Self-Efficacy Scale developed by Schwarzer & Jerusalem (1995). The scale items are rated on a 6-point scale ranging from (1) “totally disagree” to (6) “totally agree”. The Turkish adaptation of the scale was made by Yeşilay, Schwarzer and Jerusalem (1996). The researcher and the thesis advisor made minor changes on this Turkish translation before including this scale in the final questionnaire. No reverse items were used in this measure. A sample item is “I can always manage to solve difficult problems if I try hard enough”

### ***8.3.4. Items Related To Demographics***

Survey has 13 questions about demographic variables. 7 of them are multiple-choice questions while remain are open-ended. Open ended questions are; age, faculty, number of articles, chapters, books written by since 12.01.2012, and number of congress joined since 12.01.2012. Gender, title, kind of university they work at, if they have administrative task, if they give lectures at another university and how many days they are expected to be at university, if university compensate their academic expenses are stated as demographic questions.

## 9. FINDINGS

In this section, the results of the analysis conducted to data and the relationships among the study variables are stated.

### 9.1. Factor and Reliability Analysis

In order to determine the dimension structure of job resources, principal component exploratory factor analysis with varimax rotation was used. Each step was conducted on one-item-a time basis by discarding any item with a factor loading less than .50, or which loaded to more than one factor with a .10 or less difference, or that singly loaded on a factor. Those factors with Eigenvalues of 1.00 or more were taken into consideration in total variance explained. The internal consistencies of the scales were calculated by Cronbach's Alpha, and the factors with Alpha values of .70 were considered to have sufficient reliability.

#### 9.1.1. Job Resources Survey

A principal components factor analysis with varimax rotation was carried out with first twenty-six question in the survey constitute autonomy, colleague support, supervisory coaching, feedback, task significance, opportunities for development which are attributed to job resources. Among these six sub-scales, only two of them congregated under one factor and rest were found to be as originally thought. Therefore, while six factors were being expected to be found, five factors have been attained. Moreover, job resources scale has 0.944 Cronbach's Alpha reliability value.

The KMO measure of sampling adequacy revealed a value more than .50, which means that it is statistically appropriate to rely on the sampling to see if the correlations are meaningful. In addition, loadings under each factor were examined and discarding process mentioned above was implemented. Thus, 11<sup>th</sup> and 1<sup>st</sup> questions were omitted due to that they have similar loadings to more than one factor.

5 factors came out at the end of the analysis while the resulting KMO yielded a value of .918 and the Bartlett's test of sphericity yielded a significant result with a

$p=.000$ . Thus, it was concluded that the data is appropriate for carrying out the factor analysis and that the factor results are valid. The 26 items loaded under 5 factors which explained 71,025% of the total variance. These five factors were named as “**feedback and coaching**”, “**autonomy**”, “**colleague support**”, “**task significance**”, “**opportunities for development**”.

The Cronbach’s Alpha values of the factors are .935, .867, .871, .873, .874 respectively. The detailed tabulation of the Job Resources Scale factor analysis is shown in Table 2 on the next page.

**Table 6: Factor Analysis Results of Job Resources Scales**

<b>FACTORS</b>	<b>Loadings</b>	<b>Factor Variance %</b>	<b>Cronbach’s Alpha</b>
<b>Factor1: Feedback and Coaching</b>		<b>21,496</b>	<b>.924</b>
Professors often let me know how well they think I am performing the job	,790		
Professors and others on this job give me feedback about how well I am doing in my work.	,784		
My professor informs me whether he/she is satisfied with my work.	,726		
To what extent professors or coworkers let you know how well you are doing on your job?	,712		
In your work, do you feel appreciated by your professor?	,646		
After I finish a job, I know whether I performed well.	,631		
Just doing the work required by the job provides many chances for me to figure out how well I am doing.	,624		
My professor uses his or her influence to help me solve my problems at work.	,614		
Is your superior professor friendly towards you?	,609		
To what extent does doing the job itself provide you with information about your work performance?	,542		
<b>Factor 2: Autonomy</b>		<b>15,187</b>	<b>.867</b>
I decide myself the order of doing my tasks.	,824		
I decide myself which tasks are performed during the day.	,817		
I decide myself the start and finish time of my tasks.	,815		
I decide myself the method which I use to perform my task.	,784		
The responsibility to solve the problems encountered while performing tasks belongs to me.	,587		



<b>Factor 3: Task Significance</b>		<b>12,188</b>	<b>.873</b>
The job itself is very significant and important in the broader scheme of things.	,799		
How significant is your job? Are the results of your work affecting the lives of other people?	,758		
This job is one where a lot of other people can be affected by how well the work gets done.	,757		
<b>Factor 4: Colleague Support</b>		<b>11,880</b>	<b>.871</b>
Can you count on your colleagues when you encounter difficulties in your work?	,845		
If necessary, can you ask your colleagues for help?	,778		
In your work, do you feel appreciated by your colleagues?	,701		
<b>Factor 5: Opportunities for Personal Development</b>		<b>10,273</b>	<b>.874</b>
In my work, I develop myself continuously.	,802		
My work offers me the possibility to learn new things.	,770		
In my work, I have the opportunity to develop my strong points.	,666		
<b>KMO: .918</b>			
<b>P:,.000 (Bartlett's test)</b>		<b>71,025%</b>	

### *9.1.2. Work Engagement Survey*

A principal components factor analysis with varimax rotation was carried out with 9 questions between 27<sup>th</sup> and 36<sup>th</sup> questions in the survey. Considering the UWES – Shortened version (UWES-9) one factor had been expected to be found. Somehow three factors could be attained in UWES, but in their study Schaufeli, Bakker and Salanova (2006) stated that when measuring Work Engagement as one variable instead of its dimensions, shortened version (UWES-9) can be used. Therefore, UWES-9 is used and only one factor was attained after factor analysis.

The KMO measure of sampling adequacy value was .914 which means that it is statistically appropriate to rely on the sampling to see if the correlations are meaningful as mentioned above. Moreover, Bartlett Test value seemed to be significant (P=.000) indicating that data is suitable for factor analysis.

According to results of factor analysis, one factor explained 64,902% of total variance of Work Engagement.

**Table 7: Factor Analysis Results of Work Engagement Scale**

<b>FACTORS</b>	<b>Loadings</b>	<b>Factor Variance %</b>	<b>Cronbach's Alpha</b>
<b>Factor1: Work Engagement</b>		<b>64,902</b>	<b>.931</b>
At my work, I feel bursting with energy.	,874		
At my work I feel strong and vigorous.	,874		
I am enthusiastic about my job.	,832		
My job inspires me.	,825		
When I get up in the morning, I feel like going to work.	,822		
I feel happy when I work intensely.	,813		
I am proud of the work that I do.	,746		
I am immersed in my work.	,724		
I get carried away when I am working.	,724		
<b>KMO: .914</b>			
<b>P=.000 (Bartlett's test)</b>			

### ***9.1.3. Self-Efficacy Survey***

The KMO sampling adequacy value is .931 and Bartlett test of Sphericity ( $p=.00$ ) expresses that the scale is appropriate for factor analysis. Only one factor found as a result of factor analysis of self-efficacy scale. Since only one factor structure of self-efficacy, only the variance explained is given here.

One factor which comprised of all ten items, have the variance explained 69,557% of Self-Efficacy. The Cronbach's Alpha reliability value is .951. The tabulation below shows the factor loadings of all Self-Efficacy items.

**Table 8: Factor Analysis Results of Self-Efficacy**

<b>FACTORS</b>	<b>Loadings</b>	<b>Factor Variance %</b>	<b>Cronbach's Alpha</b>
<b>Factor1: Self-Efficacy</b>		<b>69,657</b>	<b>.951</b>
I can always manage to solve difficult problems if I try hard enough.	,880		
If someone opposes me, I can find the means and ways to get what I want.	,880		
It is easy for me to stick to my aims and accomplish my goals.	,843		
I am confident that I could deal efficiently with unexpected events.	,841		
Thanks to my resourcefulness, I know how to handle unforeseen situations.	,836		
I can solve most problems if I invest the necessary effort.	,836		
I can remain calm when facing difficulties because I can rely on my coping abilities.	,830		
When I am confronted with a problem, I can usually find several solutions.	,818		
If I am in trouble, I can usually think of a solution.	,804		
I can usually handle whatever comes my way.	,774		
<b>KMO: .932</b>			
<b>P=.000 (Bartlett's test)</b>			

## **9.2. Relations between Variables**

In order to observe if there is multi-collinearity between any of the variables before conducting regression analysis, the correlation matrix was analyzed as seen in table below.

The means, standard deviations and correlations related to all factors of the independent, moderating and dependent variables of the study, including sample size, are depicted in Table 9. All significant correlation coefficients imply low to high level relationships between the study variables, ranging from .256 to .801 and they were all in the anticipated direction.

**Table 9: Correlation between Variables**

	Mean	Std. Dev.	1	2	3	4	5	6	7
1. Feedback & Coaching	4,1	1,07							
2. Autonomy	4,3	0,97	,364**						
3. Colleague Support	4,6	1,10	,641**	,363**					
4. Task Significance	4,6	1,10	,488**	,373**	,379**				
5. Opportunities for Personal Development	4,6	1,11	,499**	,425**	,378**	,611**			
6. Job Resources	4,4	0,80	,801**	,657**	,740**	,766**	,783**		
7. Self-efficacy	4,4	0,93	,436**	,403**	,256**	,386**	,366**	,490**	
8. Work Engagement	4,4	0,97	,539**	,433**	,358**	,680**	,658**	,714**	,574**

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

According to this table, all the variables are seem to be correlated eas expected. Positive correlations are found between all variables and dimensions of job resources as well. This means, all the variables are appropriate for further analysis. The highest correlation is seen between job resources and its dimension of feedback & coaching. On the other hand the lowest correlation is seen between self-efficacy and colleague support.

### 9.3. Regression Analysis Results

This study mainly hypothesized that self-efficacy has moderating effect on the relationship between job resources and work engagement and also hypothesized that there is a relationship between job resources and work engagement. In order to analyze these two hypotheses are stated:

H<sub>1</sub>: There is a relationship between job resources and work engagement;

H<sub>2</sub>: Self-efficacy moderates the relationship between job resources and work engagement such that the relationship becomes stronger when self-efficacy is low.

In order to test Hypothesis 1; firstly a simple regression analysis is done in order to investigate the relationship between job resources and work engagement neglecting dimensions of job resources. Then, a multiple regression analysis was conducted to

examine the contribution of dimensions of job resources in detail (autonomy, feedback & coaching, task significance, colleague support, opportunities for personal development) separately to work engagement. Accordingly, both overall effect of job resources and each dimension's separate effects are examined due to brought each dimension's effect into open. Thereby, the relationship could be understand better.

**Table 10: The Results of Simple Regression Analysis for Testing the Main Effect of Job Resources on Work Engagement**

	R	R <sup>2</sup>	Adj R <sup>2</sup>	F	p	β	t	p
Job Resources	.714 <sup>a</sup>	.510	.509	450,511	.000	.714	21.225	.000

a.Predictors: Job Resources  
Dependent Variable: Work Engagement

**Table 11: The Results of Multiple Regression Analysis for Testing the Main Effect of Job Resources on Work Engagement**

	R	R <sup>2</sup>	Adj R <sup>2</sup>	F	p	β	t	p
Job Resources	.770 <sup>a</sup>	.593	.588	450,511	.000			
Feedback & Coaching						0,211	4,809	.000
Autonomy						0,115	3,252	.001
Colleague Support						0,077	-1,885	.060
Task Significance						0,380	9,342	.000
Opportunities for Personal Development						0,301	7,215	.000

a.Predictors: Autonomy, feedback & coaching, colleague support, task significance, opportunities for personal development  
Dependent Variable: Work Engagement

It was seen that job resources which including feedback & coaching, autonomy, colleague support, task significance, opportunities for personal development explain 59% of the total work engagement. All the variables except colleague support have significant relationships with work engagement. Moreover, among the job resources, task significance has the highest influence on work engagement ( $\beta=.380$ ,  $p=.000$ ), followed by opportunities for personal development ( $\beta=.301$ ,  $p=.000$ ), feedback & coaching ( $\beta=.211$ ,  $p=.000$ ) and autonomy ( $\beta=.115$ ,  $p=.000$ ). Among these resources, colleague support has not significant relationship with work engagement of academicians ( $p=.060$ ). In light of these findings, hypothesis 1 is supported. It can be said that, there is a relationship

between job resources and work engagement. In addition to this finding a particular result is that feedback & coaching, autonomy, task significance, opportunities for development each make significant contributions to work engagement separately but colleague support is insignificant for academicians' context.

In order to test Hypothesis 2: "Self-Efficacy moderates the relationship between job resources and work engagement." A three-step hierarchical regression analysis was conducted. The main purpose of this analysis is to find whether the effect of job resources on work engagement changes when it (job resources) interacts with self-efficacy. There was no multi-collinearity problem because VIF values were not exceeding 10.

In the first step independent variable, dependent variable and moderating variable are all transformed into standardized values. On the second step, an interaction variable was produced through multiplying independent and moderating variables' transformed versions. At the last step regression analyses were conducted among independent variable and dependent variable (job resources – work engagement), moderating variable and dependent variable (self-efficacy – work engagement), interaction variable produced new and dependent variable (Job X Self-Efficacy – Work engagement). In this last step a three-step hierarchical regression analyses was conducted. To avoid multi-collinearity, centered scores were used by subtracting the mean from the raw scores. The change in  $R^2$  is examined in order to claim if moderation effects of self-efficacy make sense for the relationship between independent variable (job resources) and dependent variable (work engagement). Also, moderation effect in this regression model must be significant as well. The table below shows the 3-block regression models for moderating analysis.

All the models introduced considering hypothesis are entered in 3-blocks hierarchical regression model in 3 stages. According to model summary the first stage which investigates the relationship between job resources and work engagement is significant in which job resources were handled as independent variable and work engagement as dependent variable. This analysis had also been conducted for first hypothesis group.

In the second stage of model which investigates the relationship between self-efficacy and work engagement seems to be significant in which self-efficacy was taken as independent variable and work engagement as dependent variable. According to change in  $R^2$  value, it can be inferred that two independent variables together explains more variance of work engagement which means that when job resources and self-efficacy taken as independent variables together predicts work engagement better than one independent. Therefore, self-efficacy makes a significant contribution to the work engagement as an independent variable.

The third stage of the hierarchical regression model for measuring moderating effect which investigates the relationship between job interaction variable of job resources & self-efficacy and work engagement in which interaction of variables represents the moderation and work engagement dependent variable. According to significance value of .726 ( $p > .05$ ) it can be inferred that the impact of moderation variable on the relationship between independent and dependent variable is non-significant. This means the moderation effect of Self-Efficacy on the relationship between job resources and work engagement is not significant in the context of Turkish academicians.

The moderation effect analysis results are shown in Table 12 which including only step 2 and step 3 due to step 1 is same with simple regression results in Table 10.

**Table 12: Results of Hierarchical Regression Analysis for Testing the Moderation Effect of on Work Engagement**

Variables	$\beta$	Beta	$R^2$	$\Delta R^2$	F
<b>Step 2</b>					
Job Resources	.569*	.569*	.576*		293.705
Self-Efficacy	.295*	.295*			
<b>Step 3</b>					
Job Resources	.570*	.570*	.576*	-	195.447
Self-Efficacy	.298*	.298*			
JR X SE	.009	.011			

\* $p < .01$  JR: Job Resources SE: Self-efficacy Beta: Standardized Beta  
Dependent Variable: Work Engagement

The first model in the table had been analyzed before which indicates that there is a significant ( $p=.000$ ) and strong (.714) relationship between job resources and work engagement as shown in Table 10.

The second model (step 2) in which job resources and self-efficacy entered together in order to determine how they predict work engagement. According to standardized beta coefficients of independent variables which show how much contribution each make to work engagement, while job resources have a value of .569, self-efficacy has .295. Both of the relationships are significant.

In the third model which investigates the effect of moderating variable, the interaction of job resources and self-efficacy is added to the previous model. While standardized beta values of job resources and self-efficacy remain almost same, but the contribution of the interaction does not exist. Also the interaction variable is not significant. Therefore it can be deduced that there is no moderation effect of self-efficacy on relationship between job resources and work engagement. So, the hypothesis 2 is rejected.

Consequently, the Hypothesis 1 is supported but Hypothesis 2 is not supported. Particularly, while job resources such as autonomy, feedback & coaching, task significance, opportunities for development and overall job resources which could means sum of them contributes, but colleague support does not make significant contribution to work engagement of Turkish academicians. Thus, self-efficacy does not change the direction of this relationship.

Furthermore, deeper analyses were made in order to identify the model better. Academicians were divided into groups according to their titles, and type of universities. Based on title, there are four groups which are research assistant, lecturer, assistant professor and associate professor. Each group was analyzed for the same model which hypothesis that self-efficacy moderates the relationship between job resources and work engagement. Only associate professor group partially validated the model which means self-efficacy of associate professors partially moderates the relationship between job resources they have and their work engagement.



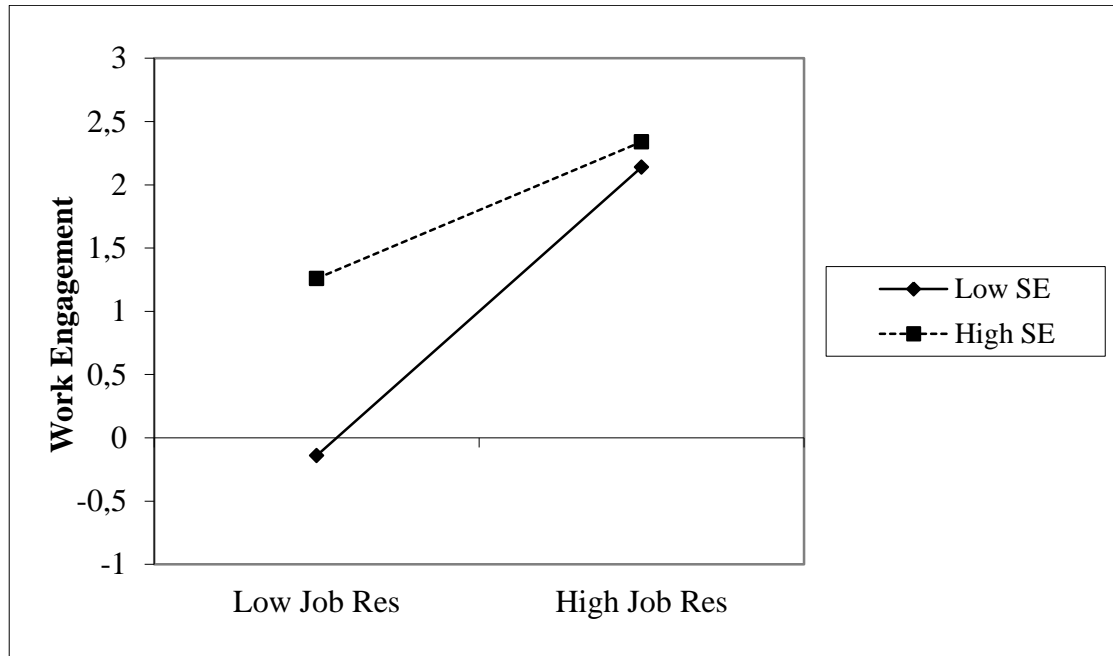
**Table 13: Results of Hierarchical Regression Analysis for Testing the Moderation Effect of on Work Engagement (Assoc. Profs.)**

	<b>Variables</b>	<b><math>\beta</math></b>	<b>Beta</b>	<b>R<sup>2</sup></b>	<b><math>\Delta R^2</math></b>	<b>F</b>
Step 1	Job Resources	.588*	.565*	.320*		20.684
Step 2	Job Resources	.520*	.499*	.444*	.124*	17.180
	Self-Efficacy	.288*	.359*			
Step 3	Job Resources	.667*	.641*	.522**	.078**	15.304
	Self-Efficacy	.367*	.458*			
	JR X SE	-.296**	-.336**			

\*p< .01 \*\*p<.05 JR: Job Resources SE: Self-efficacy Beta: Standardized Beta  
Dependent Variable: Work Engagement

According to results, self-efficacy partially moderated but not fully; because there is no intersection between the regressions lines of high and low self-efficacy situations. This relationship can be seen on Graph 1. Associate professors who are less self-efficacious are more sensitive to rate of given job resources whereas those who are more self-efficacious are less sensitive to rate of job resources. This means that in case the lack of self-efficacy, associate professors should be supported with more job resources in order to get more engaged to work, consequently research and teaching, comparing to those who are already self-efficacious. Job resources brings more marginal benefit for associate professors who are lack of (or low) self-efficacy.

**Graph 1: The Moderating Plot of Self-Efficacy on the Relationship Between Job Resources and Work Engagement**



#### **9.4. Difference Tests**

In this part, difference tests are conducted to see the differences of the work engagement and self-efficacy levels among gender, title, kind of university, the situation that academicians are compensated for their academic studies. For all difference tests, temporary t-test terminological hypothesis  $H_1$  and  $H_2$  are stated in order to make comparison between groups apart from main hypothesis of this study. These should not be mixed to main hypothesis.

Since only the gender variable is consisting of two sub-groups, the “t” test analysis was conducted. For the other variables One-way Anova test was used.

##### **9.4.1. Gender**

In order to see how work engagement and self-efficacy differ among men and women, independent samples “t” test was conducted. Independent “t” tests statistics show difference according to groups variance equalities. Thus, before conducting “t”

test, variances of groups' equalities need to be tested. This is done by using Levenes test.

Consequently, the Levene test has p values greater than .05 ( $p > 0.05$ ), meaning that the variance is equal between the groups of man and woman. The test shows that both work engagement and self-efficacy do not have significant variance according to gender. ( $p = .251 > .05$ ;  $p = .158 > 0.05$ ). Accordingly, difference test hypothesis  $H_1$  is accepted which means there is no significant difference on work engagement and self-efficacy levels between men and women.

#### ***9.4.2. Title***

In order to test the mean differences of two or more independent groups, One Way Anova Variance Analysis is used. Repeatedly, Anova requires the Levene test in order to determine the equality of group variances.

According to results of Levene test, equality of group's variance are accepted ( $p = .270 > .05$  for work engagement,  $p = .697 > .05$  for self-efficacy). Since, required conditions are fulfilled, One-Way Anova analysis can be done.

The results of Anova analysis indicate that there is significant difference for level of work engagement among groups of academicians in terms of their title ( $p = .000$ ). Here, the difference test hypothesis  $H_0$  is rejected which states "There is no significant difference of work engagement levels among research assistants, lecturers, assistant professors and associate professors.

Therefore it can be said that "There is significant difference of work engagement levels among research assistants, lecturers, assistant professors and associate professors."

In order to present which title group is different than others, Scheffe test is used. Scheffe test is used when number of cases of groups is not close or equal each.

**Table 14: Scheffe Test Results for Work Engagement among Title Groups**

<b>Title</b>		<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>Research Assistants</b>	Lecturers	-,14900	,18980	,893
	Assistant Professors	-,38245*	,11544	,013
	Associate Professors	-,71843*	,15989	,000
<b>Lecturers</b>	Research Assistants	,14900	,18980	,893
	Assistant Professors	-,23345	,20361	,726
	Associate Professors	-,56942	,23172	,111
<b>Assistant Professors</b>	Research Assistants	,38245*	,11544	,013
	Lecturers	,23345	,20361	,726
	Associate Professors	-,33598	,17606	,304
<b>Associate Professors</b>	Research Assistants	,71843*	,15989	,000
	Lecturers	,56942	,23172	,111
	Assistant Professors	,33598	,17606	,304

\*. The mean difference is significant at the 0.05 level.

According to Scheffe test there is significant work engagement mean difference between research assistants ( $\mu_{we}= 4,23$ ) and assistant professors ( $\mu_{we}= 4,62$ ) ( $p=.013<.05$ ), research assistants ( $\mu_{we}= 4,23$ ) and associate professors ( $\mu_{we}=4,95$ ) ( $p=.000$ ). There is no significant difference for work engagement levels between other pairs.

On the other hand, Anova results revealed that self-efficacy levels does not differ significantly according to their title ( $p=.063>.05$ ). Here, the difference test hypothesis  $H_0$  is accepted which states “There is no significant difference of self-efficacy levels among research assistants, lecturers, assistant professors and associate professors. Therefore it is meaningless to make comparison each title groups and make comments.

### 9.4.3. Type of University

In the survey, participants are asked to specify whether they are working for a public or private university. Then here, difference in work engagement and self-efficacy level according to type of university academician work for is examined.

Independent sample “t” test is conducted because types of universities have only two options to select: public or private and dependent variables are interval measures.

According to Levene test while group variances are assumed to be unequal for work engagement, they are assumed to be equal for self-efficacy.

It can significantly said that the work engagement level means are not equal between public university academicians and private university academicians ( $p=.000$ ). Here the difference test hypothesis  $H_0$  is rejected whereas  $H_1$  is accepted which states “There is significant work engagement level difference between academicians who working for public universities and private universities.” Therefore, work engagement levels are different in public and private universities (Public  $\mu_{we}= 4,32$ ; Private  $\mu_{we}= 4,78$ ). The results are shown in Table 15.

**Table 15: Work Engagement Independent Samples Test According to Type of University**

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Work Engagement	Equal variances assumed	8,445	,004	-3,859	433	,000
	Equal variances not assumed			-4,474	178,197	,000
		N	Mean	Std. Deviation	Std. Error Mean	
Work Engagement	Public University	344	4,3220	1,05231	,05674	
	Private University	91	4,7802	,81329	,08526	

For self-efficacy difference among academicians working for public universities and private universities, it can significantly said that the self-efficacy level means are not equal between public university academicians and private university academicians ( $p=.000$ ). Here the terminological difference test hypothesis  $H_0$  is rejected whereas  $H_1$  is accepted which states “There is significant self-efficacy level difference between academicians who working for public universities and private universities.” Therefore, self-efficacy levels are different in public and private universities (Public  $\mu_{se}= 4,27$ ; Private  $\mu_{se}= 4,68$ ). The results are shown in Table 16.

**Table 16: Self Efficacy Independent Samples Test According to Type of University**

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Self-Efficacy	Equal variances assumed	2,651	,104	-3,762	433	,000
	Equal variances not assumed			-4,180	165,245	,000

		N	Mean	Std. Deviation	Std. Error Mean
Self-Efficacy	Public University	344	4,2765	,95092	,05127
	Private University	91	4,6846	,79287	,08312

For the Job Resources difference among academicians working for public and private universities, it is seen that the job resources level means are not equal between public and private university academicians ( $p=.000$ ). Therefore, here the difference test hypothesis  $H_0$  is rejected whereas  $H_1$  is accepted which states “There is significant job resources level difference between academicians who are working for public universities and private universities. (Public  $\mu_{jr}= 4,35$ ; Private  $\mu_{jr}= 4,74$ ). The results are shown in Table 17.

**Table 17: Job Resources Independent Samples Test According to Type of University**

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Job Resources	Equal variances assumed	5,105	,024	-4,189	433	,000
	Equal variances not assumed			-4,746	170,880	,000

		N	Mean	Std. Deviation	Std. Error Mean
Job Resources	Public University	344	4,3545	,81952	,04419
	Private University	91	4,7442	,66018	,06921

#### **9.4.4. Giving Lectures at Another University**

Some of academicians defined that they are giving lectures part time other than the universities they are formally staff as full time. Then, it should be tested if academicians who give lectures outside are whether more engaged and self-efficacious or not.

In order to determine the differences, if exist, independent sample t-tests were conducted. Therefore the results are as given below at Table 18.

For work engagement level differences among academicians, it is seen that there work engagement level means are not equal between academicians who give lectures only inside and those both give lectures outside ( $p=.000$ ). Here the difference test hypothesis  $H_0$  is rejected whereas  $H_1$  is accepted which states “There is significant work engagement level difference between only insiders and others.” Therefore, work engagement levels of academicians are different. (Inside  $\mu_{we}= 4,38$ ; Outside  $\mu_{we}= 4,84$ )

**Table 18: Work Engagement Independent Samples Test According to Giving Lecture at another University**

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Work Engagement	Equal variances assumed	1,014	,315	2,430	433	,016
	Equal variances not assumed			2,693	36,111	,011

		N	Mean	Std. Deviation	Std. Error Mean
Work Engagement	Lecturing Outside Yes	31	4,8459	,90934	,16332
	Lecturing Outside No	404	4,3850	1,02516	,05100

Moreover, academicians who are giving lectures at another university are found more self-efficacious comparing those are not giving. According to independent t test results self-efficacy levels of academicians who are giving lectures outside are higher than the others ( $p=.013$ ). Here, the difference test hypothesis  $H_0$  is rejected whereas  $H_1$  is accepted which states “There is significant level of self-efficacy difference among academicians who are giving lectures outside and who are not giving (No  $\mu_{we}= 4,33$ ; Yes  $\mu_{we}= 4,76$ ). The results are shown in Table 19.

**Table 19: Self Efficacy Independent Samples Test According to Giving Lecture at another University**

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Self-Efficacy	Equal variances assumed	2,488	,115	2,485	433	,013
	Equal variances not assumed			3,150	38,511	,003

		N	Mean	Std. Deviation	Std. Error Mean
Self-Efficacy	Lecturing Outside Yes	31	4,7613	,71399	,12824
	Lecturing Outside No	404	4,3312	,94266	,04690



#### 9.4.5. Situation of Being Supported For Academic Expenses

Attendants in this study are asked whether they compensated for academic expenses such as congress, books and researches by their universities. More than half of academicians (n=263) stated that their expenses are compensated partially, while only 76 of 435 academicians stated they are compensated well. Remaining 96 academicians stated that they are not compensated for their academic expenses which mean they have to pay their congress, hotel, transportation, books, and laboratory expenses by themselves. It is thought that to investigate the difference in work engagement and self-efficacy levels among these groups might be useful.

In order to determine the difference, if exist, One-Way Anova Analysis was conducted because three options structure of compensation situation. Repeatedly, Anova requires the Levene test in order to determine the equality of group variances.

According to results of Levene test, equality of group's variance are accepted ( $p=,103>.05$  for work engagement,  $p=,998>.05$  for self-efficacy). Since, required conditions are fulfilled, One-Way Anova analysis can be done.

**Table 20: Work Engagement ANOVA According to Situation of Being Supported For Academic Expenses**

Levene Statistic	df1	df2	Sig.
2,284	2	432	,103

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8,880	2	4,440	4,305	,014
Within Groups	445,578	432	1,031		
Total	454,458	434			

The results of Anova analysis indicate that there is significant difference for level of work engagement among groups of academicians in terms of their situation of compensation. ( $p=.014$ ). Here, the  $H_0$  is rejected which states “There is no significant difference of work engagement levels among academicians who are fully, partially compensated and not compensated by their universities for academic expenses.”

Therefore it can be said that “There is significant difference of work engagement levels among academicians who are fully, partially compensated and not compensated by their universities for academic expenses.” As expected, Scheffe test results indicated that the difference is significant between who stated they are supported ( $\mu_{we}= 4,59$ ) and not supported ( $\mu_{we}= 4,16$ ).

**Table 21: Scheffe Test Results for Work Engagement According to Situation of Being Supported For Academic Expenses**

Compensation	Compensation	Mean Difference (I-J)	Std. Error	Sig.
<b>No</b>	Partially	-,29414	,12110	,053
	Yes	-,42660*	,15593	,024
<b>Partially</b>	No	,29414	,12110	,053
	Yes	-,13245	,13226	,606
<b>Yes</b>	No	,42660*	,15593	,024
	Partially	,13245	,13226	,606

\*. The mean difference is significant at the 0.05 level.

On the other hand, Anova results revealed that self-efficacy levels does not differ significantly according to their situation of compensation ( $p=.957>.05$ ). Here, the difference test hypothesis  $H_0$  is accepted which states “There is no significant difference of self-efficacy levels among academicians who are fully, partially compensated and not compensated by their universities for academic expenses. Therefore it is meaningless to make comparison each title groups and make comments.

## 10. DISCUSSION

In this chapter the results of hypothesis are discussed and evaluations of scales used in present study are made depending on factor analysis of scales and reliability results of sub-scales.

At first, principal component analysis were conducted for each of variable. Although, six components had been expected according to the theory and scales used, 5 components found in the end. Feedback and coaching items were gathered under one component. This finding might be depend on the structure of academicians work context because the fact cannot be ignored that all studies with same variables and items resulted parallel to the theory (Schaufeli, 2003; Xhantapoulou, 2007), but feedback has been measured with Boonzaier et al. (2001) items which has not been tested with JD-R model before. Also this may be due to the structure of work which does not allow getting feedback from others such as students and colleagues. Academicians work individually and usually get feedback from veterans. Thus, feedback founded integrated with coaching factor. These scales may intervene to each other due to similar items, because supervisory coaching includes items about feedback of supervisor as well. These similar questions about feedback from others may be perceived as general feedback, then get under the coaching factor. The sum and the substance of it, further analyses were conducted according to five components of job resources.

Then analyses are made according to five components of job resources which are feedback & coaching, autonomy, task significance, colleague support and opportunities for development. Reliabilities for all of these sub scales were sufficient. This means, scales of each of these components are selected well.

As dependent variable work engagement was expected to be one factor due to the scale used to measure it (UWES-9). Expectedly, work engagement was found as one factor in total with a sufficient reliability. This means that the shortened version of Utrecht Work Engagement Scale is also valid for Turkish academicians' sample.

This is the first time that UWES-9 has been tested in Turkish academicians' sample, besides work engagement may be a good predictor for academicians' performance (Barkhuizen and Rothman, 2006) due to its position against Burnout (Schaufeli and Bakker, 2003).

Self-efficacy was measured with Schwarzer and Jerusalem's Generalized Self-Efficacy scale which is composed of one factor. Parallel with this theoretic view, in the present study one factor is attained including all of items. This scale has been used in Turkish sample before several times, so its validation in Turkish sample had been made. By this study Generalized Self-Efficacy Scale's validation for a special occupation has been made for Turkish academicians.

As main hypothesis of the present study the relationship between job resources and work engagement of Turkish academicians was investigated in order to make contribution to the literature. Any study had been found to exist before about job resources and work engagement in academicians' context. This hypothesis was supported in present study which states that job resources as an overall variable makes a strong contribution to work engagement of academicians. This means if job resources are made more available for academicians, their work engagement levels increases; the more job resources the more work engagement. According to work engagement literature, work engagement is one of the best predictor of performance (Bakker, 2003). Therefore, we can imply that, by supporting the first hypothesis, the job resources increases the performance exerted through work engagement. This finding is tally with the studies in the literature (Hakanen et al., 2006; Llorenss et al., 2007; Xanthopoulou et al., 2009; Nir & Bogler, 2008; Salanova et al., 2006...). All of this points to the conclusion that contribution of job resources autonomy, coaching and feedback, task significance, colleague support, opportunities for personal development in particular is consistent with all contexts.

There were five job resources dimensions, and then all are analyzed if relationship exists between each of job resources factors and work engagement. While significant relationship for four of them is found, but only one (colleague support) has no significant relationship.

First of them is associated with the relationship between feedback & coaching factor of job resources and work engagement. The results show that there is a strong relationship. This means that taking feedback from other academicians, senior professors, from job itself by doing correctly and senior professors' interest, trainings are very substantial resources for academicians by which the work engagement and performance are increased. This result is also consistent with the results of Schaufeli and Bakker (2004), Bakker and Demerouti (2005).

Second examination is for if relationship exists between autonomy as a job resource and work engagement. Autonomy is one of the drivers at job selection process. But everybody may not fit to autonomic jobs. The results of regression model which investigates the relationship between autonomy and work engagement confirms that the more autonomy the more work engagement in academicians' context. It can be inferred that academicians are employees who want to order their task by themselves and be responsible of the results of their own behaviors. They need to be flexible about when they want to start working and finishing. It can be noted that if academicians are restricted with working hours and given tasks that are planned how to do, their enthusiasm and vigor across job may reduce. The result is parallel with Xanthopoulou et al. (2009), Bakker, Schaufeli, Leiter and Taris (2008).

The third analyze is associated with the relationship between task significance which means that an identifiable piece of work affects others within or outside the organization, and work engagement. According to descriptive results of task significance dimension, academicians see their work as significant ( $\mu=4.6$ ). This task significance provides meaningfulness for work and thus academicians get engagement to work. This result is exactly in same direction with literature examples such as Bakker and Demerouti (2007), Bakker and Demerouti (2003).

The fourth one was for consideration of a relationship between colleague support as a job resource and work engagement. Colleague support was operationalized as the helping, recognizing and other positive behaviors directed by colleagues through that one feels more supported across struggles. According to regression model analyses which are conducted between colleague support and work engagement, there was no

significant relationship. So, we can say colleague support do not predicts work engagement of academicians. In plain words, colleague supporting environment in academic context do not make contributions to their level of work engagement, but it may to other engagement types such as organizational engagement. This should be investigated by further studies. These results are inconsistent with the studies done before. This may be due to the structure of academicians' work. Academicians are usually study alone, and face with distinctive problems in their research. Briefly, academicians are working individually. Thus, instead of support from colleagues, they get help and support from veteran academicians who are usually their former professors. Therefore, the colleague support variable may be insignificant for academicians' work engagement.

It can be said that communication among academicians is conducted usually vertical rather than horizontal. In other words, academicians do not communicate with peers about the works but they may for other facts of life. In parallel with this idea Mengi and Schreglman (2011) stated that colleagues do not encourage Turkish academicians to make research and to study.

They work individually then their colleague support becomes insignificant for work engagement, it would also be interesting to see if colleague support is significant for organizational engagement. Academicians may not need colleague support for work but they may for fun or relationship, and organizational engagement accordingly.

The last examination was related to the relationship between opportunities for personal development as a job resource and work engagement of academicians. Every kind of work may not provide a sufficient or desired level of personal development. However, the direction of development may not be as interested. But the descriptive statistics of opportunities for personal development show that academicians have opportunities for development. ( $\mu=4,61$ ). According to regression analysis, the hypothesis was supported. Thus it can be inferred that environments or jobs that boost personal development predicts work engagement strongly. In the model, opportunities for development made the greatest contribution among study variables ( $\beta=,380$ ). It can be said that Turkish academicians are mostly engaged in works that provide an

environment which promote personal development. This is consistent with the studies in the literature Xanthopoulou (2007), Hakanen and Perhoniemi (2008).

As in the structure of academicians' job context, academicians have to improve their ability and develop their knowledge in order to maintain an incremental raise in the occupation. Actually, personal development is a need for their professional career. Also, their desire for personal development may be linked to their personality characteristics. This should be studied in further studies.

Self-efficacy was seen as a moderator variable in the model in order to explain if being self-efficacy of an academician changes the direction the relationship between job resources and work engagement. In shortly, "What is the situation of the relationship between job resources and work engagement when academicians are self-efficacious or not?" was the research question behind the hypothesis.

In order to analyze the moderation effect, hierarchical regression analysis were conducted. According to results of analyses, no significant moderating effect has been found to impact the relationship between job resources and work engagement.

According to analysis results, self-efficacy contributes directly to work engagement as an independent variable but do not affect the relationship between job resources and work engagement. This means, whether academicians are self-efficient or not, job resources' contribution to work engagement do not change significantly.

When job resources are promoted for academicians use, work engagement boosts neglecting the level of self-efficacy. Even though academicians believe that they are competent enough to solve problems or cope with struggles or not, the effect of job resources on their work engagement is not changed.

Self-efficacy was thought as moderating variable in the model at first. But when the results of hierarchical regression analysis were taken it was seen that self-efficacy is not an appropriate moderator variable for relationship between job resources and work engagement.

Then it is thought that it worth to go further and ask if each academic title groups have distinct characteristics. Separate moderating analyses are done for different title groups of academicians in order to have insights. According to results, all title groups resulted insignificant self-efficacy moderation results except associate professors. Solely associate professors group have confirmed the tested moderating model. Actually this is perfect contribution to the literature which has not been stated before in meaning of sample.

The results that have presented prove that while self-efficacious associate professors have work engagement even if they face with lack of job resources, those with lack of self-efficacy make a fuss about work engagement (performance) when job resources begin to decrease. This means, low self-efficacy makes more sensitive to job resources whereas high self-efficacious are less sensitive. In both situations, associate professors should be supported with resources if they are expected to produce more science.

Not generally but particularly for associate professors the results support the hypothesis that self-efficacy partially moderates the relationship between job resources and work engagement. However, the moderation is valid for associate professor title group.

Likewise, Grau, Sanalova and Peiro (2001) study in which self-efficacy moderates the relationship between stressors such as (lack of) job autonomy, role conflict, (lack of) social support and burnout. They stated that low levels of self-efficacy are related to high levels of occupational stress and individuals with low level of generalized self-efficacy show more emotional exhaustion when their job autonomy is higher. When this statement is held together with the definition of work engagement which posits itself as opposite of burnout, it could be interpreted that our study is parallel with Grau et al.'s (2001) study.

Speier and Frese's (1997) study also confirms finding in which self-efficacy moderated the relationship between control (job autonomy) and initiative. They stated that highly self-efficacious individuals are less dependent on the external work



conditions than the low self-efficacious in the development of initiative. This is also parallel with the findings in this study.

From these arguments it might be concluded that the lack of job resources have less negative impact on individuals when these have more positive perceptions about themselves, and specifically high levels of self-efficacy.

In the present study, some difference tests were conducted according to some demographic variables. According to results, there is no difference in both work engagement and self-efficacy levels of men and women. Gender makes no sense for work engagement and self-efficacy levels. Gender indifference do not have consistent results in the literature. The fact of the matter is that gender's self-efficacy difference depends on sample.

According to the title, work engagement levels seem to be different among research assistants, lecturers, assistant professors and associate professors. Associate professors and research assistants are significantly different in work engagement. This may be tied to their stages of careers because both of positions are the beginning of two era. Research assistant is early stage of whole academic life and assistant professor is early stage of professorship and lecturing.

Self-efficacy does not differ among title groups of academicians. This can be interpreted as the difference of personality characteristics.

Kind of university also makes a difference for academicians. While public university academicians have less work engagement, private university academicians have more. Because of the fact that resources are more available at private universities, their employees' engagements may be greater regarding to public university academicians.

Moreover the situation of compensation of academic expenses such as congress, transportation, books etc. by universities make difference among academicians for their work engagement but not for self-efficacy. Therefore, repeatedly it can be said that self-efficacy is a personality characteristic and may not differ according to where one

work for. On the other side work engagement is fully related to where one work for and it may differ pursuant to working environment. Compensation may be seen as a job resource, then, if academicians are supported with resources their work engagement levels increases. In further studies, compensation may be seen as a job resources due to its motivational role somehow clarified in this study.

The main result deduced from the study is that university administrators should invest in promoting academicians job resources in order to see engaged academicians. By this way universities will obtain also student satisfaction, academic research performance, greater reputation, and make greater contribution to national knowledge capital.

## 11. LIMITATIONS AND SUGGESTIONS

First of all, the findings of this research depend completely on the responses of the participants who are academicians accessed via mail. So, there could be social desirability bias in answering questions in the survey.

However, it can be argued that such constructs as personal resources (self-efficacy) and work engagement are almost impossible to measure in any other way than by self-reports.

Moreover, a longitudinal research design may give better data for studies' reliabilities in order to validate findings over time, but due to lack of time for master thesis it is almost impossible to make a longitudinal research.

Another important limitation of this study concerns the method of sampling used. Even though one of the major strengths of this study is its sufficient sample size which can represent the population according to Sekaran sample size table, convenience sampling method was used. However, e-mails are sent all around Turkey and at least all academicians of one university from each city.

A broader range of resources should be examined for JD-R model. Because it can contain countless resources and this is its one of strengths. Ideally, researches should start with a qualitative analysis, including organizational document research and explorative interviews with job incumbents from different layers of the organization (representatives from research assistants, professors, lecturers, university administrators etc.). The model used in this study is only one dimension of JD-R model, therefore any interaction between job resources and job demands should be investigated in order to explain concept broadly.

On the other hand, this study has contributed to Turkish organizational behavior literature with the findings and come up with an idea that when academicians are the subject of the study, separate analysis should be done depending on titles because different results may be found. In other words, deeper analyses are required in order to reach exact trues.

Through the inspiration of this study some further studies can be conducted. Accordingly, it was found that job resources predict work engagement a good bit, then some other physical job resources such as physical conditions, wages, equipment etc. should be investigated.

Personal characteristics are good predictors for work engagement and self-efficacy discrepancy of associate professors revealed that those who are self-efficacious are engaged to work even they are under lack of job resources condition. This may connote that self-efficacious academicians might produce their own resources. Eventually, a study which investigates the prediction of self-efficacy to job resources in academician context should be done.

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## BÖLÜM 1

	Aşağıda çalışma arkadaşlarıyla ilgili bazı ifadeler yer almaktadır. Lütfen her bir ifadeyi dikkatlice okuyunuz. Bu ifadelere ne derece katıldığınıza ilişkin görüşünüzü "6 - Tamamen katılıyorum"dan "1 - Hiç katılmıyorum"a doğru uzanan ölçek üzerinde belirtiniz.	Hiç katılmıyorum	Çok az katılıyorum	Biraz katılıyorum	Oldukça Katılıyorum	Çoğunlukla Katılıyorum	Tamamen katılıyorum
		1	2	3	4	5	6
1.	Yaptığım işle ilgili bütün sorumluluğu alabilirim.						
2.	Gün içerisinde hangi görevleri yerine getireceğime ben karar veririm.						
3.	Görevlerime ne zaman başlayıp ne zaman bitireceğime ben karar veririm.						
4.	Görevlerimi hangi sırayla yapacağıma ben karar veririm.						
5.	Görevlerimi hangi metodla yapacağıma ben karar veririm.						
6.	Görevlerimi yerine getirirken karşılaştığım sorunları çözme sorumluluğu bana aittir.						
7.	İhtiyacım olduğunda çalışma arkadaşlarımdan yardım isteyebilirim.						
8.	Zorlandığım bir durumla karşılaştığımda bana destek olacakları konusunda arkadaşlarıma güvenirim.						
9.	Birlikte çalıştığım arkadaşlarımdan beni değerli bulduğunu hissediyorum.						
10.	Hocalarım beni, benden memnun olup olmadığı konusunda bilgilendirirler.						
11.	Hocalarım çalışmalarındaki sorunlarım ya da isteklerime ilgi gösterir.						
12.	Hocalarım tarafından değer gördüğümü hissediyorum.						
13.	Hocalarım yaşadığım sorunların çözümünde bana yardım ederler.						
14.	Hocalarım bana sıcak, yakın ve samimi davranırlar.						
15.	Yaptığım işler bana çalışma performansım hakkında bilgi verir.						
16.	Çalışırken işimi ne kadar iyi yapıp yapmadığımı anlama imkanım var.						
17.	Çalışmalarım sonuçlandığında ne kadar başarılı olup olmadığımı anında görebilirim.						

18.	Çalışmalarımı ne kadar iyi yaptığım konusunda çalışma arkadaşlarım geri bildirim verir.						
19.	Hocalarım veya iş arkadaşlarım bana işimi nasıl yaptığımla ilgili geribildirim verirler.						
20.	Hocalarım ne kadar iyi çalıştığım konusunda bana sık sık geribildirim verirler.						
21.	Genel olarak bu iş anlamlı ve önemlidir.						
22.	İşim o kadar önemlidir ki, çalışmalarımı ne kadar iyi yaptığım pek çok kişiyi etkiler.						
23.	Yaptığım iş daha geniş bir bütünün parçası olarak oldukça anlamlı ve önemlidir.						
24.	İşimde güçlü olduğum yönlerimi geliştirebileceğim imkanlar var.						
25.	İşimde kendimi sürekli olarak geliştiririm.						
26.	İşim bana yeni şeyler öğrenme olanağı sunar.						

## BÖLÜM 2

	Aşağıda çalışma arkadaşlarıyla ilgili bazı ifadeler yer almaktadır. Lütfen her bir ifadeyi dikkatlice okuyunuz. Bu ifadelere ne derece katıldığınıza ilişkin görüşünüzü "6 - Tamamen katılıyorum"dan "1 - Hiç katılmıyorum"a doğru uzanan ölçek üzerinde belirtiniz.	Hiç katılmıyorum	Çok az katılıyorum	Biraz katılıyorum	Oldukça Katılıyorum	Çoğunlukla Katılıyorum	Tamamen katılıyorum
		1	2	3	4	5	6
27.	İşimde enerji dolu olduğumu hissediyorum.						
28.	İşimde kendimi güçlü ve gayretli hissederim.						
29.	İşim bana heyecan verir.						
30.	İşim bana ilham verir.						
31.	Sabah kalktığımda istekli bir şekilde işe gidesim gelir.						
32.	Yoğun tempoda çalıştığımda kendimi mutlu hissederim.						
33.	Yaptığım işlerle gurur duyarım.						
34.	Çalışırken kendimi işe kaptırırım.						
35.	Çalışırken işim beni alır götürür.						
36.	Yeni bir durumla karşılaştığımda ne yapmam gerektiğini bilirim.						
37.	Beklenmedik durumlarda nasıl davranacağımı her zaman iyi bilirim.						
38.	Fikirlerime karşı çıktığında kendimi kabul ettirecek yolları bulurum.						
39.	Her türlü zorluğun üstesinden gelirim.						
40.	Eğer gayret edersem sorunlar zor bile olsa çözümünü her zaman bulurum.						
41.	Aklımdakileri gerçekleştirmek ve hedeflerime erişmek bana zor gelmez.						
42.	Bir sorunla karşılaştığımda onu çözebilmek için birçok fikir üretebilirim.						
43.	Güçlükleri soğukkanlılıkla karşılarım, çünkü yeteneklerime her zaman güvenebilirim.						
44.	Ani olayların da üstesinden geleceğime inanıyorum.						
45.	Her sorun için bir çözümlüm vardır.						

## BÖLÜM 3

1. Cinsiyetiniz?	<input type="checkbox"/> Erkek	<input type="checkbox"/> Kadın				
2. Yaşınız?	_____					
3. Unvanınız?	<input type="checkbox"/> Araştırma Görevlisi	<input type="checkbox"/> Öğretim Görevlisi				
	<input type="checkbox"/> Yardımcı Doçent	<input type="checkbox"/> Doçent				
4. Çalıştığınız üniversitenin türü?	<input type="checkbox"/> Devlet Üniversitesi	<input type="checkbox"/> Vakıf Üniversitesi				
5. Görev yaptığınız, Fakülte: _____ Bölüm: _____						
6. Çalıştığınız kurumda idari görevleriniz bulunmakta mıdır?	<input type="checkbox"/> Evet	<input type="checkbox"/> Hayır				
7. Başka üniversitelerde ders veriyor musunuz?	<input type="checkbox"/> Evet	<input type="checkbox"/> Hayır				
8. Haftada kaç gün üniversitede bulunuyorsunuz?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 5+
9. Çalıştığım kurum akademik masraflarınızı karşılamakta mıdır?	<input type="checkbox"/> Hayır	<input type="checkbox"/> Kısmen	<input type="checkbox"/> Evet			
10. Akademik dergilerde yayınlanan makale sayınız (01.01.2012 tarihinden itibaren):	_____					
11. Yayınlanan kitap sayınız (01.01.2012 tarihinden itibaren):	_____					
12. Yayınlanan kitap bölümü sayınız (01.01.2012 tarihinden itibaren):	_____					
13. Katıldığınız kongre sayısı (01.01.2012 tarihinden itibaren):	_____					