

WORKLOAD, SAFETY CLIMATE, AND NEGATIVE AFFECTIVITY,  
AS THE PRESUMED MODERATORS OF  
THE RISK PERCEPTION-ORGANIZATIONAL OUTCOMES  
RELATIONSHIPS

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## **ABSTRACT**

### **WORKLOAD, SAFETY CLIMATE, AND NEGATIVE AFFECTIVITY AS THE PRESUMED MODERATORS OF THE RISK PERCEPTION- ORGANIZATIONAL OUTCOMES RELATIONSHIPS**

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The main purpose of the present study was to examine the moderating role of workload, safety climate and negative affectivity in risk perception's relationship with safety performance of employees, burnout, and job satisfaction in a high-risk work context. It was first expected that risk perception would be positively related to safety performance and then, in line with the moderation hypotheses, it was expected that high levels of workload would negatively affect (i.e., weaken) the relationships between risk perception and both safety performance and job satisfaction while enhancing (i.e., strengthening) the risk perception-burnout relationship. Furthermore, it was expected that positive perceptions of safety climate would strengthen the relationship between risk perception and both safety performance and job satisfaction while weakening the risk perception-burnout relationship. Lastly, it was hypothesized that high levels of NA would negatively affect risk perception's relationships with both safety

performance and job satisfaction and that; it would strengthen the risk perception-burnout relationship.

Eighty-nine workers (i.e., electric technicians) of an Electric Distribution Company operating in Adana region of Turkey, and 89 supervisors/peers of these workers constituted the samples of the study.

Results revealed that risk perception and safety performance was not significantly related and that the presumed moderators did not moderate the risk perception-safety performance relationship. In the relationship between risk perception and burnout, only workload was found to be a significant moderator, although not in the expected direction. In the risk perception-job satisfaction relationship, only NA was a significant moderator.

The findings are discussed together with the strengths, limitations, practical implications and future suggestions of the study.

**Keywords:** Risk perception, moderators, safety performance, burnout, job satisfaction.

## ÖZ<sup>1</sup>

### İŞ YÜKÜ, GÜVENLİ İKLİM VE NEGATİF DUYGU DURUMUNUN RİSK ALGISI VE İŞ SONUÇLARI ÜZERİNE ETKİSİ

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Bu çalışmanın amacı, iş yükü, güvenli iklim ve negatif duygu durumu değişkenlerinin risk algısı, iş sağlığı ve güvenliği performansı, tükenmişlik ve iş doyumunu üzerindeki yordayıcı etkilerini yüksek riskli bir iş ortamında incelemektir. Öncelikle, risk algısı-iş sağlığı ve güvenliği performansı ilişkisinin pozitif yönde olması beklenmiştir. Bir belirleyici (“moderator”) değişken olarak iş yükünün, risk algısının hem iş sağlığı ve güvenliği performansı ile hem de iş doyumunu ile olan ilişkisini zayıflatacağı öngörülürken, risk algısı-tükenmişlik arasındaki ilişkiyi güçlendireceği (artıracağı) öngörülmüştür. Öte yandan, pozitif güvenli iklim algısının, risk algısının, iş sağlığı ve güvenliği performansı ile ve de iş doyumunu ile olan ilişkisini güçlendireceği beklenirken, risk algısı-tükenmişlik arasındaki ilişkiyi zayıflatacağı öngörülmüştür. Son olarak, yüksek negatif duygu durumunun risk algısının hem iş sağlığı ve güvenliği performansı hem de iş doyumunu ile olan ilişkisini negatif yönde etkileyeceği (azaltacağı), ancak risk algısı-tükenmişlik ilişkisini güçlendireceği öngörülmüştür.

Bu çalışmanın örneklemini, Adana bölgesinde faaliyet gösteren bir elektrik dağıtım şirketinin bir alt işverenin elemanlarından 89 elektrik

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<sup>1</sup> An expanded Turkish summary is presented in Appendix T..

teknisyeni ve bu teknisyenlerin iş sađlıđı ve gvenliđi performansını deđerlendiren 89 ilk amir veya iş arkadaşı oluřturmuřtur.

Beklenenin tersine, risk algısı ve iş sađlıđı ve gvenliđi performansı arasındaki iliřki anlamlı bulunmamıřtır. Belirleyici deđiřkenlerin risk algısı-iř sađlıđı ve gvenliđi performansı iliřkisinde yordayıcı bir etkiye sahip olmadıkları tespit edilmiřtir. İř yknn belirleyici etkisi anlamlı bulunmuřtur. Ancak, bu etki beklenen ynde deđildir. Risk algısı ve iş doyumunu arasındaki iliřkide ise yalnızca negatif duygu durumu deđiřkeninin anlamlı bir etkisi bulunmuřtur.

Elde edinilen sonular alıřmanın pratik dođruları, katkıları ve sınırlılıkları ile birlikte tartıřılmıř, ileriki alıřmalar iin bazı neriler de sunulmuřtur.

**Anahtar Kelimeler:** Risk algısı, belirleyici deđiřken, iş sađlıđı ve gvenliđi performansı, tkenmiřlik, iş doyumunu

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## CHAPTER 1

### 1. INTRODUCTION

#### 1.1 Overview

Workplace accidents have serious consequences for employers and employees all around the world (Ceylan, 2012), resulting in serious injuries, deaths and financial costs for companies. Considering the fact that work outcomes such as safety performance, burnout and job satisfaction are related to workplace accidents (e.g., Gravan & O'Brien, 2001), it is important to identify the factors that affect safety performance and other critical outcomes such as burnout and job satisfaction in high-risk contexts.

Risk perception which can be defined as people's awareness of hazards and their consequences (Laughery & Wogalter, 1997), is especially critical in high-risk work environments. Few studies have examined the relation of risk perceptions of employees with work outcomes such as job satisfaction (Nielsen, Mearns, Matthiesen, & Eid, 2011), burnout (Cartwright & Cooper, 1997, Leiter, 2005). One of the main goals of the present study was to examine the relationship between risk perception and some of the critical outcome variables in a high-risk context. More specifically, the present study examined the relationship of risk perception with safety performance, burnout and job satisfaction. Furthermore, workload, safety climate and negative affectivity were examined as moderators of the relationships between risk perception and the three outcome variables included in the study. In the following sections of this chapter, first the relevant literatures concerning the variables of interest are summarized. Then, the hypotheses of the study are presented

#### 1.1.1 Overview of Workplace Accidents

According to the statistics of International Labor office (2012), 317 million workplace accidents and 2.3 million workplace deaths occur every year, corresponding to 6.300 deaths per day. That is, "Every 15 seconds, a worker dies

from work related accidents or diseases, every 15 seconds, 160 workers have a work-related accident". When the economical and psychological consequences of the occupational accidents are examined both from the aspects of companies and employers, a dramatic picture emerges. According to the European Union (EU)-15 statistics, 4.3 million non-fatal work accidents take place every year across EU-15 which results in more than three days absence from work which nearly equals to 146 million lost workdays (as cited in Marcoulaki, Papazoğlu, & Konstandinidou, 2012).

According to the Turkish Statistical Institute in 2013 among employees hired in a year, 2.3% of them had work accidents, 7.3% reported that they were exposed to work accident risk. According to the Turkish Social Security Institution statistics (2006), 79,027 work accidents and 574 work illnesses occurred in 2006 and 1,601 of them resulted in deaths. At the end of 2006, the lost workdays due to work accidents and illnesses were 1.895.235 and it was expected that the cost of work accidents and illnesses with the best estimation would be 4 quadrillion TL. Turkish Statistical Institute (2013) revealed that in 2013, 2.9% of the hired people in the last 12 months had work accidents. The highest work accident rates occurred in the mining and quarry sector (10.4%). Five percent of the accidents occurred in the electric, gas and water industries and four percent of accidents occurred in the construction industry.

Using accident reports data between 2003 and 2011, Ceylan (2012) analyzed the accidents that took place in the electric distribution industry in Turkey. He stated that the death rate per accidents in the electricity industry is higher than Turkey's average. Among the 1438 accidents that took place in the Turkish Electric Distribution Association Company (TEDAŞ), 32.1% resulted in death or fatal injuries. The need to examine the factors behind these workplace accidents in the electric industry becomes apparent based on these statistics.

### **1.1.2 Reasons Behind Workplace Accidents**

Gravan and O'Brien (2001) stated that unsafe work behaviors of employees rather than unsafe working conditions are the main reasons of workplace accidents. Kepir (1981) supported this notion by revealing that only



2% of workplace accidents are not under the control of humans, 10% of them stem from technical inefficiencies, and 88% occur due to unsafe human acts. Çelikol similarly stated that 20% of workplace accidents are caused by production tools and environmental problems whereas 80% of them stem from human factor (as cited in Çopur, Varlı, Avşar, & Şenbaş, 2006).

In the present study, safety performances of electric technicians who work under high electric voltage were assessed. According to the 2011 statistics of the Turkish Electric Distribution Association Company (TEDAŞ), 13% of accidents stem from not using health and safety equipment, 17% were caused by not taking the necessary precautions, and 24% of them were due to negligent risk assessment of situations.

Based on the literature reviewed, it seems fair to conclude that unsafe behaviors are one of the primary reasons of workplace accidents. Therefore, underlying reasons behind unsafe acts or antecedents of unsafe workplace behaviors should provide critical information to organizations in designing organizational interventions, such as training programs aimed at risk identification, or workload adjustment.

In the present study, the risk perception-safety performance relationships and three variables presumed to be critical moderators of this relationship (i.e., workload, safety climate, and negative affectivity) were examined in a high risk work context.

## **1.2 Risk Perception and Its Significance in High-Risk Contexts**

Risk perception, which is one of the fundamental constructs in health-related behaviors, consists of three dimensions which are perceived likelihood, perceived susceptibility, and perceived vulnerability. In a safety context, risk perceptions can be defined as people's awareness of hazards and their consequences (Laughery & Wogalter, 1997). Based on risk perceptions, people identify hazards, thus can act on reducing the risk. According to Weinstein (1993), people tend to engage in action to reduce potential risks to avoid harm. As a result, risk perception of a person is likely to initiate protective behavior. Kelly, Leventhal, and Leventhal (1999) similarly pointed out that risk perceptions

motivate people to take action and the similarity between the levels of risk perception, namely their beliefs and the actual risk (reality) motivate them to engage in protective behaviors. Fiesel (2006) stated that there are two dimensions of risk which are objective and subjective risk. While objective risk is based on accident records and statistics, subjective risk perceptions are based on persons own interpretations, rather than statistics. In this study, subjective risk perceptions of workers were measured.

Risk perception acts as a motivator of behavioral change (Kelly, Leventhal, & Leventhal, 1999; Weinstein, 1993). That is, a person perceiving any risks likely to engage in preventive behaviour. From this aspect, risk perception especially is critical in a high-risk situation. However, it is important to note that people are also inclined to believe that they are at less risk compared to the average person, which is called optimism bias. Hence, in a high- risk context, a person who is under the influence of optimism bias could easily endanger her/himself rather than engaging in preventitive behaviour (Gold, 2007).

According to Weinstein's (1988) *precaution adoption process*, to take preventive action firstly people have to realize the risky situation. At the second step, person should know that the existing risk is significant and he/she is also vulnerable to this risk. After that, person is likely to engage in the precaution adoption process. Therefore, in a safety context, employees' levels of risk perception and how they perceive this risk seem very important. Although there are inconsistent findings, risk perception has been associated with safety behavior. Therefore, in the present study, I explored risk perception's relationship with safety performance along with two other critical outcome variables: burnout and job satisfaction.

### **1.3 Risk Perception and Safety Performance**

As risk perception is a motivator of behavior change (Kelly & Leventhal, 1999; Weinstein, 1993), we expected that there would be a positive significant relationship between risk perception and safety performance. However, there are inconsistent findings regarding this relation (Brewer, Chapman, Gibbons, Gerard, McCaul, & Weinstein, 2007). Seo (2005) studied unsafe work behavior by

including perceived risk as one of the contributing factors. In the risk perception measure, he included 14 hazards that were specific to grain work domain. Results showed that there was no direct relation between perceived risk and unsafe work behavior. Vries, Osch, Eijmael, Smerecnik, and Candel (2012) examined whether risk perceptions predicted sunscreen protection behaviors of parents for their toddlers and young children by taking into account social cognitive constructs, attitudes, social influence beliefs, and self-efficacy. Results indicated that while attitudes, social influences and self-efficacy correlated with safety behavior by .47, .36, and .49, respectively, risk perception had the lowest correlation with safety behavior ( $r = .15$ ).

While some studies could not report significant relation between safe behavior and risk perception, some other studies yielded different results. For instance, Brewer et al. (2007) conducted a meta-analysis to examine the relation between adult vaccination and risk perception through the dimensions which were perceived likelihood and susceptibility or severity. Results showed that risk perception dimensions of risk likelihood (pooled  $r = -.26$ ), susceptibility (pooled  $r = -.24$ ), and severity (pooled  $r = -.16$ ) significantly predicted vaccination behavior.

Tomas, Melias, and Oliver (1999) examined occupational accidents in three Spanish worker samples. In this study, they defined actual risk as workers' perception of probability of suffering an accident. Results showed that workers' perceptions regarding the accidents were a significant predictor of work accidents. Similarly, McCaul, Branstetter, Schroeder, and Glasgow (1996) examined whether women's perception of risk of breast cancer was related to mammography screenings through a meta-analytic review of 19 studies. Results indicated that perceived risk was positively related to mammography screening with an effect size of .16. Borrelli, Hayes, Dunsiger, and Fava (2009) also studied risk perception and intentions to give up smoking and post-treatment abstinence. They hypothesized that higher perceived vulnerability would increase precaution effectiveness. Results showed that changes in perceived vulnerability predicted smoking cessation as they hypothesized.

In the present study, safety performances of employees were assessed by their supervisors, who were responsible for their work health and safety, (and in some rare cases by their peers). It was believed that supervisory (or peers) ratings of safety performance of employees would be more objective compared to employee's own ratings. Electric technicians were from the unit of Electric Repair and Maintenance, who work under high voltage. This unit is regarded as a highly risky unit to work in among the units in the electric distribution sector.

Despite inconsistent findings regarding risk perception and safety behavior relationship, in this study, we expected that risk perception levels would be significantly positively related to safety performance of employees. One reason was that electric maintenance and repair unit was regarded as one of the first degree risky/hazardous jobs in Turkey. Thus, it was expected that in a dangerous job context risk perception levels of employees would be related to safety performance as assessed by sources other than self.

In the present study, as stated above, the moderating role of workload, safety climate, and negative affectivity were examined in the relationships between risk perception and safety performance. Since the electric work context is potentially very hazardous, the effects of some of the critical organizational/job-related (i.e., safety climate and workload) and individual difference variables (i.e., negative affectivity) were examined to further understand the nature of the risk perception- safety performance relationship.

### **1.3.1 Workload as a Moderator of the Risk Perception and Safety Performance Relationship**

Salminen and Lahdeniemi (2012) studied risk factors in work related traffic among sales and marketing people and construction workers. It was found that time pressure was one of the risk factors during working hours which disturbed the concentration of drivers. Wright (1986) stated that workers were likely to engage in short-cut behavior, if they perceived any performance pressure. Under pressure, workers focused on completing their work, but complied less with safe work procedures. Newman, Greenslade, Newton, and Watson (2011) proposed that unsafe driver behaviors were likely to occur under

workload. They studied inattention as one unsafe driver behavior and found that workload was strongly related to inattention ( $r = .41$ ). Greiner, Krause, Ragland, and Fisher (1989) studied time pressure as one of the dimensions of workload. They stated that time pressure put higher demands on employees to finish the task in a given time. Results showed that operators with the most serious time pressure had the highest risk of accidents. In safety research, work overload is regarded as an inverse predictor of safety performance (Newman, Greenslade, Newton, & Watson, 2011). In an electric work context, consequences of inattention, even in milliseconds, could be fatal. This is why work demands or workload which may result in reduced attention may be especially detrimental. In this study, although we expect a positive relationship between risk perception and performance, this relationship is hypothesized to be smaller under conditions of high workload. That is, as workload put more pressure on employees and distracts their attention from work, employees are expected to engage in unsafe behavior despite high levels of risk perception. More specifically, it is expected that, the relationship between risk perception and safety performance would be weaker for those having higher levels of workload and risk perception. In addition to workload, the below reviewed literature suggests that safety climate, as another other organizational/job variable, may have an impact on the risk perception-safety performance relationship.

### **1.3.2 Safety Climate as a Moderator of the Risk Perception and Safety Performance Relationship**

Safety climate is defined as perceptions of employees regarding the characteristics of organizations which have an effect on the behavior. From that way, safety climate is one of the features of organizational climate (Glennon, 1982). However, it is important to distinguish safety climate from safety culture. According to Guldenmund (2000), while safety climate is related to perceptions of employees, safety culture is more related with the attitudes of employees. In the proposed study, safety climate rather than safety culture was measured. This distinction between safety climate and culture is important as these two constructs seem to have differential predictive power in accident involvement

(Clarke, 2006). Zohar (1980) stated that safety climate consists of safety training programs, management attitudes towards safety work, effects of safe conduct on promotion and on social status, level of risk at workplace. Clarke (2006) showed safety climate had greater predictive validity than safety culture in predicting safety behavior. Seo (2005) showed that safety climate was a significant predictor of unsafe work behavior ( $r = .73$ ). Besides that, supportive environment in terms of safety climate helped employees to cope with negative job demands such as risks and hazards (Demerouti, Nachreiner, & Schaufeli, 2001). Hofmann and Stetzer (1996) stated that two dimensions of safety climate, which were perceptions of stronger commitment to management safety and workers' engagement in safety activities, were related to workers' commitment to safety performance. Therefore, they hypothesized that as perceptions of safety climate increased; there would be fewer unsafe acts. Results showed that there were significant differences between teams that differed on safety climate in terms of unsafe behaviors of employees after role overload was controlled. Tholen, Pousette and Törner (2012) found that positive safety climate was one of the prerequisite conditions for safe behavior. One reason is that when employees engage in safety behavior, they pay attention to many cues such as the degree of importance given to safety issue by their managers, how safety is valued in the organization, and how coworkers comply with safety rules and these cues are inherent in safety climate dimensions (McGonagle, Walsh, Kath, & Morrow, 2014). Arezes and Miguel (2006) studied the risk perception and safe behavior relationship in an occupational environment. Results revealed that risk perception of workers were significantly correlated with safe behavior ( $r = .61$ ). Moreover, they found that workers' safety climate contributed to an increase in safe behavior.

The reviewed literature suggests that safety climate is significantly associated with unsafe behavior in work settings and as evident from McGonagle et al.'s (2014) study, safety climate should be considered in the relationship between risk perception and safety behavior. Therefore, it is also plausible that in

addition to its main effect on safety performance, safety climate may also moderate the relationship between risk perceptions and safety performance. More specifically, it is expected that, the relationship between risk perception and safety performance would be stronger for those with high risk perceptions and those evaluating safety climate positively and that risk perception and safety performance would not be associated strongly for those evaluating safety climate negatively.

### **1.3.3 Negative Affectivity as a Moderator of the Risk Perception and Safety Performance Relationship**

Watson and Clark (1984) defined negative affectivity (NA) as a dispositional affective state that includes negative emotionality and self-concept. Based on their conceptualization of NA, a person with high NA is characterized as being nervous and distressed. As a result, people with NA tend to evaluate the situations in more negative terms (Watson & Clark, 1984). Relationship between NA and safety performance is highly important because unsafe behaviors explain 90% of all workplace accidents (Holnagel, 1993). Iverson and Erwin (1997) studied the role of affectivity in the prediction of occupational injuries. They found that NA was significantly positively related to occupational injuries. Hansen (1989) explained that high NA individuals tended to suffer from more negligence, which made them more prone to accidents and injuries. Those with positive affectivity, however, were more likely to control their environment which led to less occupational injuries (as cited in Iverson & Erwin, 1997). Maiti, Chatterjee, and Bangdiwala (2004) conducted a study to examine the influence of NA on work injuries among coal miners. Individuals with higher levels of NA were a concern among underground coal mine workers. Reason stemmed from the fact that those high on NA were simply less likely to implement safe behaviors at work, and hence were not able to avoid work injuries. Paul and Maiti (2007) showed that NA had an indirect impact on work injury ( $r = .23$ ). The indirect effect of NA on work injury was through safety performance. That is, those scoring high on NA had poorer safety performance records, which directly resulted in getting injured at work. According to the authors, those with higher

NA levels were less able to control their environment and were poorer at dealing with safety rules.

To our knowledge, there is no study that examined the moderating impact of NA on the risk perception and safety performance relationship. However, due to the inverse association between NA and safety performance in this study, the relationship between risk perception and safety performance would be weaker for those high on risk perceptions and NA. It was expected that those high on NA would be likely to have poorer safety performance especially under conditions of high risk perceptions.

#### **1.4 Risk Perception and Burnout**

According to Maslach and Jackson (1981), burnout is a syndrome that consists of emotional exhaustion, depersonalization and reduced personnel accomplishment that is experienced by people doing “people work” of any job. Similarly, Pines and Aronson (1988), not very different from the original definition, defined burnout as a manner of physical, emotional and mental exhaustion that occurs due to being involved in long term demanding situations (as cited in Melia & Becerril, 2007). Negative consequences of burnout both for individual employees and work organizations explain why it is important to study it in work contexts. In terms of employee health outcomes, Leiter (2005) showed that levels of exhaustion predicted nurses’ experience of physical symptoms ( $r = .44$ ). Results also indicated that negative consequences of exhaustion did not only occur at work, but also in the personal lives of nurses. That is, while sleeplessness occurred completely in the personal domain of life, headaches and gastro-intestinal disturbances were found to be occurring both in work settings and at home. Cartwright and Cooper (1997) stated that among the job-related factors that lead to burnout are temperature, risks, and hazards. Leiter and Robichaud (1997) combined a model of occupational risk perception with a model of burnout. They stated that occupational risk and burnout were two related factors with implications for each other. That is, feelings of being under risk might increase employees’ susceptibility to exhaustion.



Nahrang, Morgeson and Hofmann (2011) in their meta-analysis, stated that presence of risk and hazards were likely to increase risk and danger perceptions of employees. In their meta analysis Morgeson and Hofmann (2011) found that as components of job demands, risk and hazards were significantly related to burnout ( $r = -.28$ ).

In this study, I examined how the relationship between risk perception and burnout was moderated by workload, safety climate and negative affectivity.

#### **1.4.1 Workload as a Moderator of the Risk Perception and Burnout Relationship**

Workload is defined as intensity of efforts that are performed by the employees to meet the requirement of their work. Workload has psychological and physical consequences for organizations and also a negative impact on absenteeism and turnover rates (Fournier, Montreuil, Brun, Bilodeau, & Villa, 2011). Kawada and Ooya (2005) examined the relation between workload and health complaints in a car manufacturer work setting. Results of the study showed that high levels of workload were significantly related to health complaints ( $r = .58$ ). Toker, Shirom, Melamed, and Armon (2012) examined the impact of workload in the occurrence of diabetes. They found that high workload was significantly positively related to high risk of diabetes while low workload was associated with a lessened risk for diabetes. As workload has negative work outcomes in terms of occupational health and safety, it is important to investigate the role of workload in the relationship between risk perception and burnout, as a critical personal outcome variable.

Leiter (2005) stated the relationship between risk assessment and workload is to a large extent unexplored. Risk perception was found to be positively significantly correlated with workload (Lee, Faucett, Gillen, Krause, & Landry, 2013). Although there are very few studies concerning the relationship between risk perception and workload, studies on the relationship between burnout and workload provide more consistent findings. Positive relation between workload and burnout is based on the rationale of job-demands resources model (Demerouti et al., 2001). Based on this model, job demands require physical,

emotional and cognitive efforts. As one of the job demands, workload was found to be a significant predictor of burnout (Lee & Ashforth, 1996). Shirom, Nirel, and Vinokur (2006) found that workload was significantly correlated with burnout ( $r = .57$ ) because both qualitative and quantitative work overload deplete capacity of workers which leads to exhaustion.

Greenglass, Burke, and Fiksenbaum (2001) examined burnout and workload levels of employees and found that workload was positively correlated with burnout ( $r = .45$ ). Yürür and Sarıkaya (2012) studied effects of workload on burnout among social workers in Turkey and found that workload predicted emotional exhaustion and depersonalization, which are sub-dimensions of burnout.

As evident from the literature, it is expected that the relationship between risk perception and burnout would be stronger for those having higher levels of workload and risk perception, and burnout would not be associated strongly for those having lower levels of workload.

#### **1.4.2 Safety Climate as a Moderator of the Risk Perception and Burnout Relationship**

As stated before, safety climate provides an environment that protects employees from the negative demands of jobs such as risks and hazards (Demerouti et al; 2001). Perceptions of safety climate also have an impact on burnout. Goldenhar, Williams, and Swanson (2003) showed that safety climate had a negative relation with psychological and physical symptoms of burnout such as anger, insomnia and pain. Malmir (2013) found that burnout had a significant negative relationship with safety climate ( $r = -.33$ ). Dollard and Bakker (2010) in their study proposed that psychological safety climate would have a negative relationship with emotional exhaustion. They found that positive safety climate was negatively related to emotional exhaustion ( $r = -.23$ ).

In the present study, I expect that safety climate would moderate the relationship between risk perceptions and burnout experienced by employees. More specifically, it is expected that, the relationship between risk perception and burnout would be stronger for those high on risk perception and those evaluating

safety climate negatively and that risk perception and burnout would not be associated strongly for those evaluating safety climate positively.

#### **1.4.3 Negative Affectivity as a Moderator of the Risk Perception and Burnout Relationship**

As stated before, NA is characterized as a person being nervous and distressed (Watson et al., 1984). In this study, it was expected that NA would moderate the relationship between risk perception and burnout. Schepman and Zarate (2008) explained that individuals with high NA view themselves in more negative terms and focus on mistakes, shortcomings and disappointments. They found that NA showed a positive correlation with three components of burnout; emotional exhaustion ( $r = .81$ ), depersonalization ( $r = .89$ ), and personal accomplishment ( $r = .82$ ) and with total burnout ( $r = .70$ ). Therefore, a person high on NA is likely to have higher levels of burnout. More specifically, it is expected that, the relationship between risk perception and burnout would be stronger for those high on NA and high risk perceptions and that risk perception and burnout would not be associated strongly for those with low NA.

#### **1.5 Risk Perception and Job Satisfaction**

In line with the definition of Cranny, Smith, and Stone (1992), job satisfaction can be defined as an overall reaction to one's job. Job satisfaction is critical as it has impact on various work outcomes. Janyam (2011) examined the influence of job satisfaction on the mental health of workers. Results of the study showed that overall job satisfaction was negatively related to anxiety and insomnia. Bowling, Eschleman, and Wang (2010) found that job satisfaction was positively related to life satisfaction, happiness, affect and absence of negative affect. Especially, in occupations where safety is a critical issue, job satisfaction may be much more important due to its consequences.

In their study, Nielsen, Mearns, Matthiesen, and Eid (2011) included risk perception as one of the dimensions of job demands. They hypothesized that increased levels of risk perceptions would lead to reductions in job satisfaction. Results indicated that workers who scored high on risk perception were less satisfied with their jobs ( $r = -.33$ ). Büyükşahin, Sunal, and Yasin (2011)

compared occupational groups that differed in risk levels, in terms of job satisfaction. Results showed that perceived job risk was significantly negatively correlated with total job satisfaction scores of workers ( $r = -.37$ ). Furthermore, in the same study, inclusion of perceived risk explained an additional 8% of the variance in job satisfaction over education level and gender.

In the present study, the relationship between risk perception and job satisfaction were investigated together with risk perceptions' interactive effects with workload, safety climate and negative affectivity.

### **1.5.1 Workload as a Moderator of the Relationship between Risk Perception and Job Satisfaction**

While workload is associated with productivity for establishments, from the individual perspective, it means time and energy (Maslach & Leiter, 1997). Spector (1987) found that workload was negatively related to job satisfaction of clerical workers that were measured with two different measures of job satisfaction (-.27, -.17). Similarly, Mustapha and Ghee (2013) stated that workload negatively significantly related to job satisfaction scores of academicians.

In this study, it is expected that the relationship between risk perception and job satisfaction would be weaker for those with higher levels of workload and high risk perceptions.

### **1.5.2 Safety Climate as a Moderator of the Relationship between Risk Perception and Job Satisfaction**

Although the reviewed evidence suggest a significant negative relationship between risk perception and job satisfaction (e.g., Büyükşahin et al., 2011, Nielsen et al. 2011). There may be some factors that moderate this relationship in risky job contexts. In this study, we examined workload, safety climate and NA, as potential moderators. Nielsen et al. (2011) conducted a study to examine how safety climate moderated the relation between risk perception and job satisfaction. Results showed that workers who had high levels of risk perception had lower job satisfaction. However, this effect decreased when workers perceived their safety climate as positive. Nielsen et al. stated that by nature some jobs could be risky and since it was difficult to change risk levels of

these jobs, it became critical to implement safety rules to create a positive safety climate to influence job satisfaction levels of employees. Hence in the present study, it is expected that the relationship between risk perception and job satisfaction would be stronger for those high on risk perceptions and those evaluating safety climate positively and that risk perception and job satisfaction would not be associated strongly for those evaluating safety climate negatively.

### **1.5.3 Negative Affectivity as a Moderator of the Relationship between Risk Perception and Job Satisfaction**

Negative affectivity is also related to job satisfaction. Connolly and Viswesvaran (2000) examined correlations between positive affectivity, negative affectivity, and job satisfaction. Results showed that negative affectivity was negatively correlated with job satisfaction ( $r = -.33$ ) while positive affectivity was positively correlated ( $r = .49$ ), and affectivity explained 10-25% of variance in job satisfaction. According to Mazzola (2006), those higher on negative affectivity are likely to create negative situations and would not put effort for more positive situations. Mazzola stated that high NA individual may show more negative reactions to the problems at work, which affect their job satisfaction. Agho, Mueller, and Price (1993) also found that negative affectivity was negatively correlated with job satisfaction ( $r = -.27$ ). One reason was the fact that individual with high NA reacted more negatively to their environment. Necowitz and Roznowski (1994) examined the underlying process behind the relationship between NA and job satisfaction. They stated that those higher on NA recalled more negative features of tasks which provided an explanation for NA and job satisfaction relationship. Therefore, in the present study, it is expected that the relationship between risk perceptions and job satisfaction would be especially negative and stronger for those with high NA than those with low NA. In other words, those with higher levels of NA and high risk perceptions are expected to have lower levels of job satisfaction than those with lower levels of NA and high risk perceptions.

To summarize, we examined how risk perception was related to safety performance, burnout, and job satisfaction through the expected moderating role

of safety climate, workload and negative affectivity. The hypothesized relationships are in Figure 1.

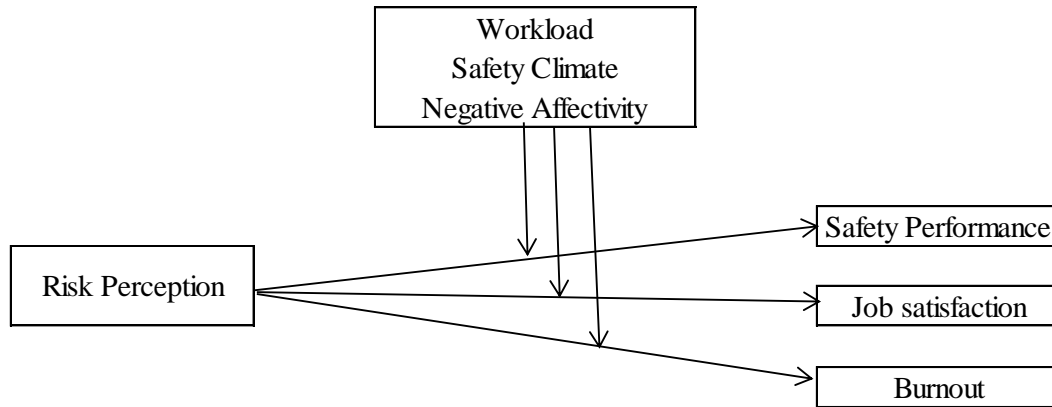


Figure 1. Moderation Model

## 1.6. Research Hypotheses

Based on the reviewed literature, the following hypotheses were developed and tested:

*Hypothesis 1:* Employees with higher levels of risk perceptions have better safety performance.

*Hypothesis 2:* Workload, safety climate, and negative affectivity moderate the relationship between risk perception and safety performance.

*Hypothesis 2a:* Among those with high risk perceptions, those with higher levels of workload have poorer safety performance than those with lower levels of workload.

*Hypothesis 2b:* Among those with higher risk perceptions, those with more positive perceptions of safety climate have better safety performance than those with less positive perceptions of safety climate.

*Hypothesis 2c:* Among those with higher risk perceptions, those with higher levels of NA have poorer safety performance than those with lower levels of NA.

*Hypothesis 3:* Workload, safety climate, and negative affectivity moderate the relationship between risk perception and burnout.

*Hypothesis 3a:* Among those with higher risk perceptions, those with higher levels of workload have higher levels of burnout than those with lower levels of workload.

*Hypothesis 3b:* Among those with higher risk perceptions, those with more positive perceptions of safety climate have lower levels of burnout than those with less positive perceptions of safety climate.

*Hypothesis 3c:* Among those with higher risk perceptions, those with higher levels of NA have higher levels of burnout than those with lower levels of NA.

*Hypothesis 4:* Workload, safety climate, and negative affectivity moderate the relationship between risk perception and job satisfaction.

*Hypothesis 4a:* Among those with higher risk perceptions, those with higher levels of workload have lower levels of job satisfaction than those with lower levels of workload.

*Hypothesis 4b:* Among those with higher risk perceptions, those with more negative perceptions of safety climate have lower levels of job satisfaction than those with more positive perceptions of safety climate.

*Hypothesis 4c:* Among those with higher risk perceptions, those with higher levels of NA have lower levels of job satisfaction than those with lower levels of NA.

## CHAPTER 2

### 2. METHOD

In this chapter, information on the sample, measures, data collection procedures, research design and analyses are provided.

#### 2.1. Sampling and Participants

Participants of the study were electric technicians and their supervisors or peers of an Electric Distribution Company in Adana. Participants were the outsourced employees/technicians working in the repair and maintenance unit of the company. It is critical to describe the work and conditions under which the work gets done in this unit to better understand the context of the study. First of all, employees in this unit are all field workers meaning that their job is mainly to repair breakdowns in electric power pole in the field. Secondly, in the electric distribution sector, this unit is regarded as one of the high-risk units from a safety perspective as the workers are required to work in proximity to high voltage, and as a result, most of the fatal accidents in distribution companies are likely to occur in this unit.

A total of 89 technicians and 89 supervisors/peers participated in the study. Demographic characteristics of the technician participants are presented in Table 1. There were no female participants. The mean age of the participants was 30.35 years (SD = 6.39 years). Approximately 80% of the participants were within the age range of 21 to 35. In terms of education, four of the participants (4.5 %) graduated from primary school, 56 (62.9 %) graduated from high school, 21(23.6%) had a two-year college degree, and five (5.6%) had a four-year college degree. Three participants did not report their education level. Eleven participants (11.2 %) had a total tenure as an electric technician less than a year, 18 worked between one and three years (20.2), 36 of them worked between three and five years (40.4 %),



14 worked between five and 10 years (15.7 %) and two (2.2 %) spent more than 10 years as an electric technician. There were eight missing cases on total tenure. The mean of total tenure was 3.89 years ( $SD = .52$ ) Concerning tenure with the organization, 10 (11.2 %) participants had tenure less than a year, 22 (24.7 %) spent between one and three years, 36 (40.4 %) spent between three and five years, 12 (13.5 %) spent between five and 10 years, one (1.1%) spent more than 10 years in company and eight participants did not report their organizational tenure. The mean for organizational tenure was 3.74 years ( $SD = 4.65$ ). Total number of hours worked varied from 45 to 60 hours with a mean of 48.86 hours ( $SD = 2.22$ ). Sixty four (71, 9%) of the participants worked between 45 and 50 hours weekly in the company, 19 (21.3 %) of them worked between 50 and 55 hours and two (2.2%) of them worked more than 55 hours. About 5% of the participants did not report their working hours in a week. Twelve (13.5 %) participants reported having at least one electric work accident, and 75 (84.3%) did not have any electric work accidents and there were two missing cases on this demographic variable.

Table 1  
*Demographic Characteristics of the Study Participants Technicians*

Variable	Category	Mean	SD	Frequency	%
Age		30.35	6.39		
Education			4		
	Primary			4	4.5
	High Sch.			56	62.9
	Two-year c. Degree			21	23.6
	Four-year c.degree			5	5.6
Total tenure		3.89	4.70		
Raters					
	Supervisors			87	
	Peers			2	
Organizational Tenure		3.74	4.65		13.5
Accident records					84.3
	Yes			12	
	No			75	
Working hours		48.86	2.22		

*Note.* Age, total tenure, and organizational tenure were measured in terms of years. Working hours were measured in terms of hours. Accident records were coded as 0 = "Yes", 1 = "No". Raters were coded as 0 = "Supervisors", 1 = "Peers"

## 2.2 Measures

In the present study, two questionnaire packages were prepared. One for participants/electric technicians and one for their raters (mostly supervisors). The package for the participants included measures of job satisfaction, burnout, safety climate, workload, negative affectivity, risk perceptions, and a demographic information form. Informed consent of both technicians and their supervisors/peers were obtained before administering the packages (see Appendix A and Appendix B for the informed consent forms for the technicians and their raters).

### 2.2.1 Job Satisfaction Scale

To measure job satisfaction of employees, Minnesota Job Satisfaction Questionnaire (Weiss, Davis, England, & Lofquist, 1967), a 20-item measure, was used. The items of the scale are rated on a 5-point Likert type scale (1 = Very dissatisfied; 5 = Very satisfied) (see Appendix C for the job satisfaction

measure). The scale was translated to Turkish by Tuncel (2000) and the internal consistency reliability reported by her was .91. In the present study, internal consistency reliability of the scale was also found to be .91. Higher scores in the Minnesota Satisfaction Questionnaire indicate higher levels of job satisfaction.

### **2.2.2 Burnout Scale**

To measure burnout levels of employees, Maslach Burnout Inventory (1981) developed by Maslach and Jackson which measures three factors of emotional exhaustion, depersonalization, and personal accomplishment, was used. This 22-item scale was adapted to Turkish by Ergin (1992). While in the original version the items are rated on a 7-point Likert type scale; in the Turkish version the items are rated on a 5-point scale (1 = Never; 5 = Always). Turkish version of the scale showed satisfactory reliability estimates (emotional exhaustion .85; depersonalization .65; and personal accomplishment .72). The Burnout Scale is presented in Appendix D. In this scale coding is done in such a way that low scores indicate low levels of burnout. Reliability of the entire burnout scale with 22 items was found to be .75 in the present study.

### **2.2.3 Safety Climate Measure**

To measure perceptions of safety climate, two different safety climate measures were used. Safety climate developed by Neal, Griffin, and Hart (2000) included 16 items, having an internal consistency reliability .91. Four items of Gershon et al.'s scale were included. Lastly, four items by Haktanır (2011) were included in the safety climate scale. Reliability of the total scale was found to be .95.

The items were translated into Turkish by an industrial and organizational psychologist with a Ph.D. and two industrial and organizational psychology graduate students. The bilingual administration professor checked the items and gave the final decision concerning the best translation to ensure conceptual equivalence. In the present study, safety climate was included in the analysis as a composite of 32 items. Reliability of the safety climate scale was found to be .91. The Safety Climate Scale is presented in Appendix E.

#### **2.2.4 Workload Scale**

To measure workload, Turkish version of the Job Demands and Job Resources Scale developed by Xanthopoulou, Bakker, Demerouti, Schaufeli (2007) was used. This scale was adapted to Turkish by Baran (2010). The scale has four items rated on a 5-point scale (1 = Never 5 = Always). In the present study, the reliability of the workload scale was found to be .72 (see Appendix F for the workload measure).

#### **2.2.5 Negative Affectivity Scale**

The 20-item Positive Affectivity, Negative Affectivity Scale (PANAS) developed by Watson, Clark, and Tellegen (1988) was used in measuring affectivity. Although the scale has items measuring both positive and negative affectivity (with 10 items each), only the Negative Affectivity Scale was included in the analyses. Turkish version of the PANAS was translated by Gençöz (2000). In this measure, respondents are asked to indicate to what extent each item described themselves on a 5-point Likert type scale (1 = Not at all to 5 = Extremely). NA and PA were measured by averaging the responses given to 10 items. Gençöz (2000) reported internal consistency estimates to be .86 and .83 for PA and NA, respectively. In the present study, the internal consistency reliability of PA and NA were .85 and .88, respectively (see Appendix G for PANAS).

#### **2.2.6 Risk Perception Measure**

A total of four indices of perceived risk were used in the present study. These are risk probability, risk severity, overall risk, and perceived influence. In measuring risk probability and risk severity, the risk perception measure developed by Fiesel (2006) was used. However, in addition to the original items, in the present study items reflecting the risk situations in the electric repair and maintenance domain were also included in the scale after consulting with subject matter experts in the organization. Participants were first asked to indicate the probability of the given risk to occur and then to rate the severity of the given risk on a 5-point Likert type scale. Perceived probability and perceived severity scores are calculated by taking the mean of the ratings given to individual items (See Appendix H and Appendix I for the risk probability and risk severity measures).

The internal consistency reliability of risk probability and risk severity measures were .94 and .94, respectively. In the present study, a weighted composite score was formed by using the risk probability and risk severity ratings. In composing this weighted score, based on the researcher's experience in assigning weights to task importance and task frequency in job analysis, a decision was made to give risk probability and risk severity weights of .3 and .7, respectively. In computing the weighted score the item "wild animal attacks" were excluded because of lack of relevance.

In addition to the measures of risk probability and risk severity, a 2-item measure of perceived overall risk and a 2-item measure of perceived influence was also used. However, as will be explained in the results section, a decision was made not to include these two risk perception measures in the analyses.

### **2.2.7 Safety Performance**

Safety performance checklist of electric technicians was prepared by subject matter experts who were from the occupational health and safety department of the organization. Items were also checked by the subject matter experts from the maintenance and repair department. There were a total of 20 items related to safety factors of repair and maintenance unit (see Appendix J for safety performance measure). Supervisors and in some rare cases coworkers of the technicians were asked to indicate the frequency with which the electric technician in question engaged in safety behavior to rate their safety performance on a 5 point Likert type scale (1 = Never; 5 = Always). An example item from the scale is "in high voltage, he wears gloves." Higher scores on the safety performance scale indicate higher safety performance, lower scores indicate lower performance. Internal consistency reliability of the scale was found to be .87.

### **2.2.8 Demographic Information Form**

Respondents' demographic characteristics were asked in this section. The characteristics included, age, education level, total weekly working hours, tenure, total tenure, accident records. See Appendix K for the demographic questionnaire.

### **2.3 Procedure**

Before starting data collection, first, the required approval of the Institutional Review Board (i.e., Human Subjects Ethical Review Committee) and the management of the organization were received. After the approval of the management, coordinator engineer of the outsource company was contacted and asked to manage the data collection process.

There were two questionnaires in this study. First booklet was for technicians/field workers, which included the Demographic Information Form, Job Satisfaction Scale, Burnout Scale, Safety Climate Measure, Workload Scale, PANAS, and Risk Perception Scale. Informed consent of the participants (see Appendix A and B) was taken before collecting data. In the informed consent form, the purpose of study was explained, voluntary nature of the participation was emphasized and confidentiality of their responses was assured. Participants were asked to indicate whether they would approve that their supervisor or a coworker could evaluate their safety performance. If yes, they indicated the person to provide the ratings. The second booklets were administered to these approved raters. Those evaluating safety performances wrote the names of technicians for whom they filled out the forms. Before administration of the second booklets to the raters, they were informed about the importance of objective ratings of safety performance. After the collection of the second booklets, two booklets were matched. Therefore, for each field worker, there were two booklets. All completed surveys were kept in the sealed envelopes.

All told, the questionnaire package was administered to 110 technicians and their supervisors/peers, who worked closely with them. Of the 110 participants, 103 returned the package completed. However, after data screening and cleaning, the final sample of the study was reduced to 89. That is, the final analyses were conducted on the data collected from 89 technicians 87 supervisors and 2 peers

## CHAPTER 3

### 3. RESULTS

In this section, results are presented under three sections. In the first section, data screening and cleaning procedures are described. In the second section, the correlations among the variables and descriptive statistics are presented. In the third section the results of the hypothesis testing are presented.

#### 3.1. Data Screening and Cleaning

First, accuracy of data entry was checked and no out of range values was identified in the data set. This is followed by examination and handling of missing data. Examination of the data for missing values revealed that there were 91 cases with some missing data. Eighteen of 91 participants (19.6 %) did not report their age. Four of 91 (4.3 %) did not indicate their education levels. Nine participants (9.8 %) did not state their total tenure and/or organizational tenure in company. Five participants (5.4 %) did not indicate the total number of hours worked, and three (3.3%) did not respond to items inquiring whether they had had any work accidents involving electricity. Other than the above mentioned demographic variables, other variables had only one missing value. According to Tabachnik and Fidell (2007) when the missing cases are less than 5% of the whole data set, many of the procedures dealing with missing values yield similar results. Hence, a decision was made to keep the missing demographic data as missing and the missing data in the measures were replaced by the group mean.

After dealing with missing cases, data were examined for outliers. Eight cases with standardized Z scores in excess of  $\pm 3.29$  ( $p < .001$ ) were identified as outliers. Three outliers in Negative Affectivity, one outlier in safety performance and one outlier in job satisfaction variables were identified. However, a decision was made to eliminate only the cases with a standard absolute score greater than

4.00. Therefore, only one outlier from variable Negative Affectivity with a standard Z score of 4.58 was deleted.

### 3.2 Descriptive Statistics

Table 2 presents correlations among the study variables, descriptive statistics as well as internal consistency estimates (i.e., alpha values).

As expected, the mean scores of the study variables were almost all above the mid-point of the 5-point scales except for burnout and negative affectivity ( $M_{na} = 1.38$ ,  $SD = .47$ ;  $M_{burnout} = 1.55$ ,  $SD = .35$ ). Internal consistency estimates (alpha coefficients) of the scales are presented at the diagonal of the correlation matrix in bold. As can be seen in general the alpha values are satisfactory.

When the correlations of risk perception with the other variables of the study are examined, risk perception was found to have a significant positive correlation with workload ( $r = .25$ ,  $p < .01$ ). Risk perception also had a significant negative correlation with occupational accidents where accident involvements was coded with a zero ( $r = -.25$ ,  $p < .05$ ). Workers who had reported having an electric work accident scored higher on risk perception while those having no electric accident scored lower on risk perception, as expected (*Note.* having had an accident was coded “0”, having had no accident was coded “1”). Results showed no significant correlations between risk perception and job satisfaction, safety performance and safety climate. Correlation analyses indicated that two items forming the perceived influence score and two items forming the overall risk score were not correlated with each other or with the other two risk perception measures of risk probability and severity. Therefore, overall risk and perceived influence were not included in the analysis.

Job satisfaction was significantly negatively correlated with burnout ( $r = -.50$ ,  $p < .01$ ), workload ( $r = -.28$ ,  $p < .01$ ), and negative affectivity ( $r = -.30$ ,  $p < .01$ ). Those reporting higher levels of workload and negative affectivity were likely to have lower job satisfaction scores. Safety climate was positively significantly correlated with job satisfaction ( $r = .56$ ,  $p < .01$ ).

Negative affectivity was significantly correlated with burnout ( $r = .32$ ,  $p < .01$ ), and safety climate ( $r = -.57$ ,  $p < .01$ ).



Table 2. Correlations, Means, Standard Deviations and Reliabilities of the Study Variables

	N	#Items	1	2	3	4	5	6	7	8	9	10	11	12
1. Job satisfaction	89	20	<b>(.91)</b>											
2. Burnout	89	22	-.50**	<b>(.75)</b>										
3. Riskperception_weighted	89	18	.09	-.13										
4. Safety performance	89	20	.06	-.01	.06	<b>(.87)</b>								
5. Workload	89	4	-.28**	.10	.25*	-.06	<b>(.72)</b>							
6. NA	89	10	-.30**	.32**	.02	-.15	.19	<b>(.80)</b>						
7. Safetyclimate-overall	89	29	.56**	-.57**	.10	.01	-.28**	-.39**	<b>(.93)</b>					
8. Age of respondents	73	-	-.03	-.02	-.03	.06	-.09	.09	.06					
9. Education of respondents	86	-	-.04	.15	-.05	.02	.16	-.04	.16	-.37**				
10. Tenure in company	81	-	.10	.00	.05	.10	-.21	.13	.09	.11	-.20			
11. Total tenure	81	-	.17	-.13	.02	.11	.09	.10	.04	.48**	.32**	.92**		
12. Total working hours	85	-	-.03	-.08	-.10	-.03	.07	.07	-.11	-.09	.13	.24*	.25*	
13. Electric accidents	87	-	.00	-.03	-.25*	-.07	-.15	.03	-.05	.03	-.06	-.06	-.07	.02
			M=	3.87	1.55	2.23	4.37	3.18	4.16					
			SD=	.65	.35	1.03	.33	.88	.47	.57				

Note. Job satisfaction 1= "Very dissatisfied" 5= "Very satisfied" burnout and safety performance 1= "Never" 5= "Always"

Safety climate 1= "Completely disagree to 5= Completely agree." negative and positive affectivity 1= "Very low" to 5= "Very high" risk probability

1= "It is impossible" to 5= "It is inevitable". Having an electric accident 0= "Yes" to 1= "No"

\* p < .05, \*\* p < .01

### **3.3. Hypothesis Testing**

The main purpose of the study was to examine the moderating role of workload, safety climate, and negative affectivity in the relationship between risk perceptions of employees and the critical outcome variables of safety performance, burnout and job satisfaction in a high-risk work context. For this purpose, a series of moderated regression analyses were conducted. Electric accident record was taken as the control variable in all steps. In each analysis, three hierarchical analyses were performed. To control for the effects of having had an electric accident in the past, this variable entered at the first step of the analyses. In the second step, centered independent variables and in the third step centered interaction terms were included in the analysis. Impact of each moderator was separately examined for the DVs.

#### **3.3.1 The Moderating Effect of Workload, Safety Climate and NA in the Risk Perception and Safety Performance Relationship**

As stated in the introduction part, risk perception levels of employees were related to their safety behaviors in work setting (e.g., Brewer et al., 2007; McCaul, Branstetter, Schroeder, & Glasgow, 1996). In the present study, it was expected that employees with higher levels of risk perception would score higher on safety performance. To test this hypothesis, first the bivariate correlation between safety performance and risk perception was examined and it was not found to be significant ( $r = .06$ , ns). Thus, Hypothesis 1 was not supported. Hypothesis 2 proposed moderating effects of workload, safety climate, and NA in the relationship between risk perception and safety performance. To test this hypothesis, three hierarchical analyses were run to test each moderator separately. In these analyses safety performance was taken as the dependent variable and to control for the effects of having had an electric accident in the past, this variable entered at the first step of the each analysis. That is, in each of the moderated regression analysis, safety performance was first regressed on the control variable (Step 1), then on risk perception and the presumed moderator (Step 2), and then the interaction of risk perception and the presumed moderator (Step 3). The results of the three moderated regression analyses are presented in Table 3. As

can be seen, workload, safety climate, and NA were not found to be significant moderators. Therefore, Hypothesis 2a (See simple slope analysis for workload in the risk perception-safety performance relationship in Appendix L), 2b (See simple slope analysis for safety climate in the risk perception-safety performance relationship in Appendix M) and 2c (See simple slope analysis for negative affectivity in the risk perception-safety performance relationship in Appendix N) were not supported.

Table 3 Moderated Regression Analysis for Safety performance as the Outcome

Moderators/Variables	Rchange	Fchange	Beta
<b>Workload as the moderator</b>			
Step 1	.005	.407	
Acc. Record			-.069
Step 2	.012	.502	
Risk perception centered. Workloadcentered			.092 -.086
Step 3	.017	1.424	
Riskperception cent.* workloadcent.			-.641
<b>Safety Climate as the moderator</b>			
Step 1	.005	.407	
Acc. Record			-.069
Step 2	.006	.243	
Risk perception centered. Safetyclimate cent.			.071 .028
Step 3	.032	2.703	
Riskperception cent.* Safetyclimcent.			-.203
<b>NA as the moderator</b>			
Step 1	.005	.407	
Acc. Record			-.069
Step 2	.041	1.780	
Risk perception centered. NAcentered			.084 -.190
Step 3	.035	3.090	
Risk perception cent.* NAcen.			.187

Note. \* $p < .05$ , \*\* $p < .01$

### 3.3.2 The Moderating Effect of Workload, Safety Climate and NA in the Risk Perception and Burnout Relationship

Next, the moderating roles of workload, safety climate, and NA in the risk perception and burnout relationship were examined. Firstly, moderating impact of workload between risk perception and burnout was examined. Again, the dependent variable burnout was first regressed on the control variable, followed by risk perception and workload at the second step and finally the

interaction term in the final step. Results showed that the effect of accident record was not significant. Risk perception and workload entered in the second step did not contribute significantly to the explanation of safety performance ( $R^2$  Change = .030, *ns*). The proportion of variance added by the interaction term in explaining burnout levels of employees, however, was significant ( $R^2$  Change = .06,  $F(1, 82) = 5.373, p < .05$ ). The proportion of variance accounted for by the accident records, risk perception and workload was 3%, and the interaction term explained an additional 6%. Beta weights revealed that the effect of risk perception ( $\beta = -.162, ns$ ) and workload ( $\beta = .117, ns$ ) were not significant while the interaction term was significant ( $\beta = -.1207, p < .05$ ).

To examine whether the simple slopes were significant or not simple slope analysis with modprobe was conducted. Simple slope analysis results showed that the simple slopes between risk perception and burnout at low and high levels of workload were significantly different from each other ( $t(85) = -.2453, p < .05$ ). That is, results revealed as risk perception increased, burnout increased for lower levels of workload, but this association was inverse for high levels of workload (See Figure 3). Despite the significance of the interaction effect, Hypothesis 3a was not supported because results were not in the expected direction.

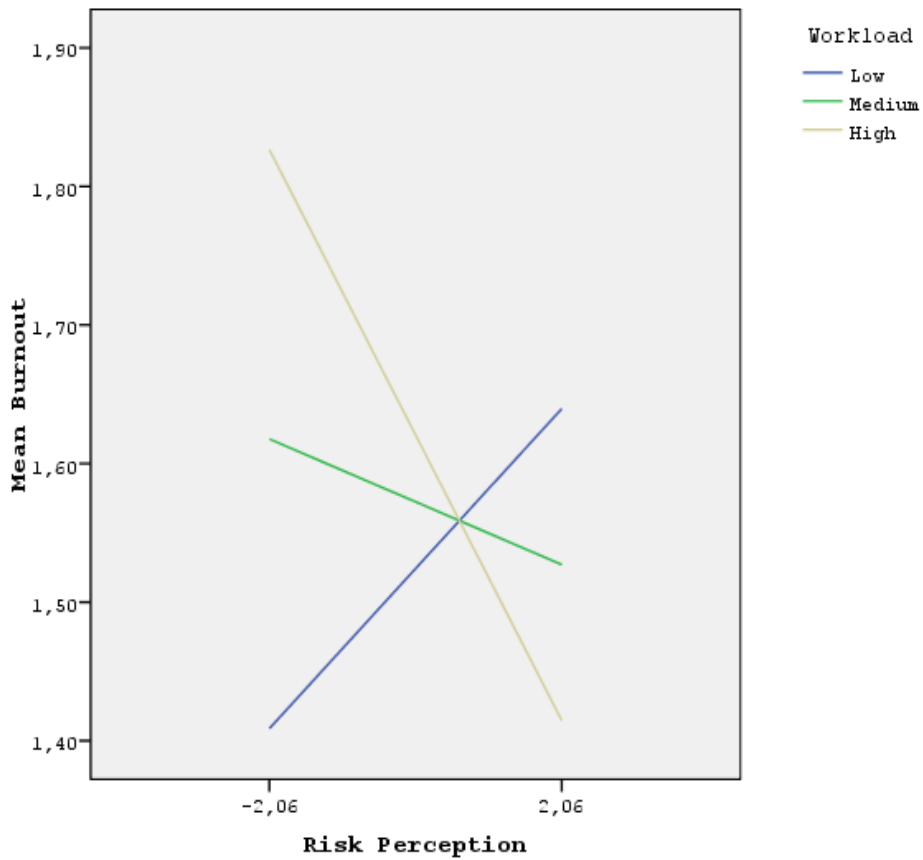


Figure 2. The interaction of risk perception and workload on burnout

Moderation effects of safety climate and NA were not significant. Therefore; Hypothesis 3b (See simple slope analysis for safety climate in the risk perception-burnout relationship in Appendix O) and 3c (See simple slope analysis for workload in the risk perception-burnout relationship in Appendix P) were not supported (see Table 4).

Table 4 Moderated Regression Analysis for Burnout as the Outcome

Moderators/Variables	Rchange	Fchange	Beta
<b>Workload as the moderator</b>			
Step 1	.001	.089	
Acc. Record			-.032
Step 2	.030	1.287	
Risk perception centered.			-.162
workloadcentered.			.117
Step 3	.060	5.373	
Riskperception cent.*			
workloadcent.			-.1.207*
<b>Safety Climate as the moderator</b>			
Step 1	.001	.089	
Acc. Record			-.032
Step 2	.322	19.700	
Risk perception centered.			-.092
Safetyclimate centered.			-.554**
Step 3	.000	.002	
Riskpercept. cent.*			
safetyclimate. cent.			-.005
<b>NA as the moderator</b>			
Step 1	.001	.089	
Acc. Record			-.032
Step 2	.103	4.793	
Risk perception centered			-.152
NAcentered			.294**
Step 3	.037	3.548	
Riskpercept. cent.* NAcent.			.193

Note. \* $p < .05$ , \*\* $p < .01$

### **3.3.3 The Moderating Effect of Workload, Safety Climate and NA in the Risk Perception and Job Satisfaction Relationship**

Finally, in the moderated regression analyses job satisfaction was examined as the dependent variable. Expected moderation effects of workload, NA, and safety climate were examined. No moderation impact of safety climate and workload in the relationship between risk perception and job satisfaction was found. Therefore, hypothesis 4a (See simple slope analysis for workload in the risk perception-job satisfaction relationship in Appendix R) and 4b (See simple slope analysis for safety climate in the risk perception-job satisfaction relationship in Appendix S) were not supported.

NA was found to be a significant moderator in the relationship between risk perception and job satisfaction. Risk perception and NA entered in the second step significantly contributed to the explanation of job satisfaction ( $R^2$  Change = .080,  $F(2, 83) = 3.630, p < .05$ ). The proportion of variance added by the interaction term in explaining job satisfaction levels of employees were significant ( $R^2$  Change = .05,  $p < .05$ ). The proportion of variance accounted for by the accident records, risk perception and NA was 8%, and the interaction term explained an additional 5%. Beta weights revealed that although the effect of risk perception ( $\beta = -.094, ns$ ) was not significant, NA's ( $\beta = -.274, p < 0.5$ ) and the interaction term's ( $\beta = -.224, p < 0.5$ ) effects were significant.

To examine whether the simple slopes were significant or not simple slope analysis with modprobe was conducted. Simple slope analysis results showed that the simple slopes of NA at lower levels was significantly different from each other ( $t(85) = .1903, p < .065$ ). Simple slope analysis results revealed that those having higher levels of risk perceptions had higher job satisfaction scores under low NA. However, those having lower risk perception with lower NA had lower job satisfaction scores (See Figure 5). Results were in the expected direction with Hypothesis 4c. That is, workers with high levels of risk perception and high NA had lower job satisfaction scores than those with lower NA.



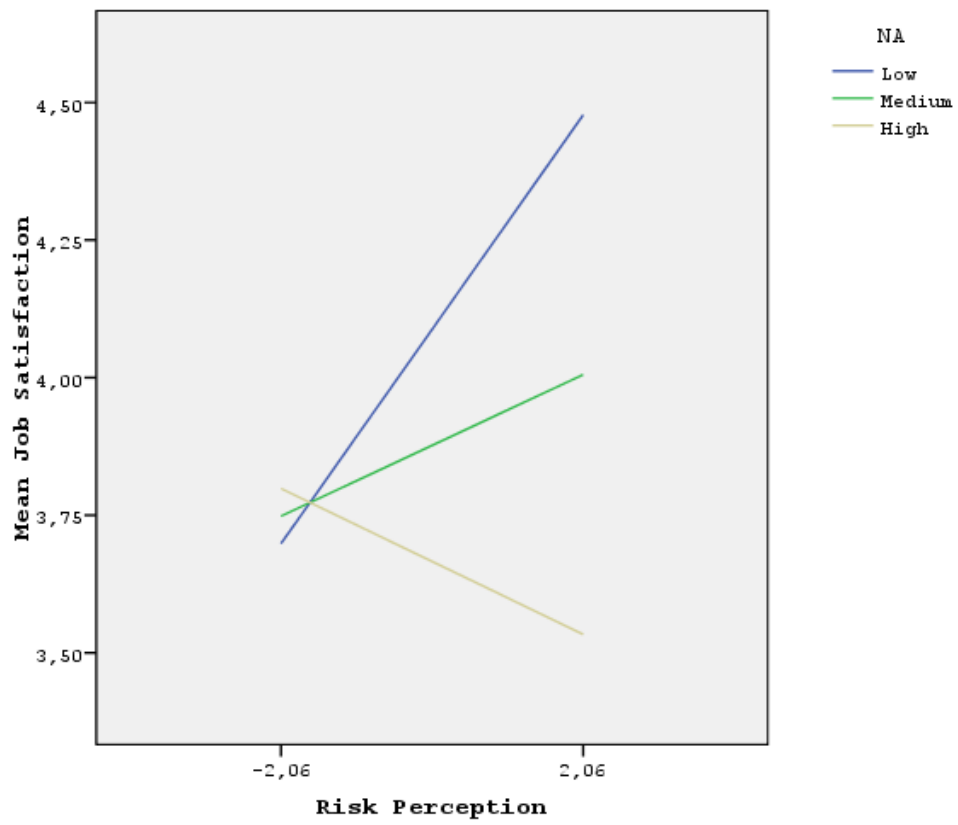


Figure 3. The interaction of risk perception and NA on job satisfaction

*Table 5 Moderated Regression Analysis for Job satisfaction as the Outcome*

Moderators/Variables	Rchange	Fchange	Beta
<b>Workload as the moderator</b>			
Step 1	.000	.000	
Acc. Record			.001
Step 2	.099	4.539	
Risk perception centered. workload centered			.149 -.316**
Step 3	.022	2.029	
Riskperception cent.* workloadcent.			.730
<b>Safety Climate as the moderator</b>			
Step 1	.000	.000	
Acc. record			.001
Step 2	.288	16.774	
Risk perception centered. Safetyclimate centered.			.033 .534**
Step 3	.002	.187	
Risk perception cent.* Safetyclim. cent.			-.106
<b>NA as the moderator</b>			
Step 1	.000	.000	
Acc. record			.001
Step 2	.080	3.630	
Risk perception cent. NAcentered			.094 -.274*
Step 3	.050	4.684	
Risk perception* NA cent.			-.224*

Notes: \*p< .05, \*\*p< .01

## CHAPTER 4

### 4. DISCUSSION

In this chapter, first an evaluation of the study findings is provided. Second, practical implications of the findings for organizations are discussed. Third, potential contributions of the study are presented. Lastly, methodological limitations of the current study as well as some suggestions for future research are discussed.

#### 4.1 Evaluation of the Findings

The aim of the present study was 1) To test the moderation impact of workload, safety climate, and NA in the relationship of risk perceptions of employees with three outcome variables: safety performance, burnout, and job satisfaction. Originally, 110 technicians working in a contractor of an electric distribution company and their supervisors/peers (as raters of safety performance of the technicians) participated in this. However, following data screening and cleaning, 89 participants (technicians and rater pairs) remained in the final sample.

##### 4.1.1. Evaluation of the Findings Concerning Risk Perception-Safety Performance Relationship

In line with Weinstein's (1988) *precaution adoption process*, people firstly have to realize that risky situation is significant and also they are vulnerable to it. This is critical because once person perceives the criticality of risky situation, he/she is more likely to engage in preventive actions. In the present study, the relationship between risk perception and safety performance was investigated first. It was expected that those with high levels of risk perception would score high on safety performance (H1). To test this hypothesis, bivariate correlation between the two variables was examined. It was found that the correlation between risk perception and safety performance was not significant. Thus, Hypothesis 1 was not supported. Actually, although,

conceptually it makes more sense to expect a positive correlation between these two variables, the empirical evidence regarding the relationship is quite inconsistent. While some studies yielded significant results (e.g., Brewer et al., 2007), some others reported a weak relationship (e.g., Vries et al., 2012). The work context examined in this study is regarded as the first degree dangerous work environment due to employees' contact with or exposure to electricity. Therefore, I expected that in such a high-risk work context, this relation would be stronger. There may be a critical plausible explanation for the observed weak relationship between risk perception measure and safety performance in the present study. In the present study, safety performance of employees was assessed through rating of their first supervisors or coworkers. Range restriction could be responsible for the observed weak relationship as safety performance had a quite high mean with low variability ( $M = 4.37$ ;  $SD = 0.33$ ). It is possible that raters did not want to create a negative impression for the ratees as they were all outsourced employees working under contract. Hence, although all raters were told that the study was conducted for research purposes only and the confidentiality of their responses were assured, they may still have inflated their ratings of ratees' safety performance with the intention to protect them from a potential negative consequence.

#### **4.1.2 Evaluation of the Findings on Expected Moderation Impact of Workload, NA, and Safety Climate in the Risk Perception-Safety Performance Relationship**

It was found that moderation impact of workload in the relationship between risk perception and safety performance was not significant. Although moderation impact of workload in the risk perception and safety performance relationship was not supported, results were in the expected direction. That is, workers with high levels of risk perception had poorer safety performance under high levels of workload than those under low levels of workload. As stated before, one possible reason for not having a significant interaction effect could be related to range restriction in safety performance measure. Another plausible explanation for not finding a significant interaction effect could be related to the

small sample size of 89. In the present study, effect size of the interaction was higher than the effects sizes of the main effects, suggesting existence of a potential interaction effect. A larger sample size would probably allow for the emergence of a significant interaction effect.

Similar to workload, safety climate was not found to be a significant moderator of the risk perception-safety performance relationship. It was expected that positive safety climate perceptions were significantly positively related to safety performance relations (Seo, 2005; Tholen, Pousette, & Törner, 2012). However, in the present study, safety climate was not significantly related to safety performance. When the mean ( $M = 4.17$ ) and standard deviation ( $SD = .57$ ) values are examined, it is evident that range restriction could well be responsible for this finding. This again, may have stemmed from the working status of the participants. That is, having an outsourced (hence temporary) worker status could have created pressure on the workers to present their working climate as a much safer one than it actually was. What is being reported by the technicians does not seem to be congruent with what the company records tell. Accident records of this company are known to be high and it is known that the company has problems in providing the required safety equipment. Therefore, technicians could have inflated their safety climate ratings with fear of losing their jobs.

When the potential moderating effect of NA in the risk perception-safety performance relationship was examined, it was found that the beta weight of the Interaction term was not significant ( $\beta = -.187, p < .085$ ). It seems possible that with a larger sample size, this effect would be conventionally significant. When the mean ( $M = 1.38$ ) and standard deviation ( $SD = .47$ ) values are examined, it seems that participants may have inflated negative items and tend to show themselves lower on NA, but higher on PA due to social desirability effects. Another reason could be that behavior is complex not necessarily under the control of a person (Paul & Maiti, 2006). Based on Reason's (1995) arguments, individual's momentary and long-term capabilities for their jobs play a role in their injuries and safety performance. Therefore, in future studies, other variables that have impact on safety performance should be examined.

### **4.1.3 Evaluation of the Findings on Expected Moderation Impact of Workload, NA, and Safety Climate in the Risk Perception-Burnout Performance Relationship**

In the present study, burnout was also examined as one of the work outcomes. Occupational risks and burnout levels of employees are related two constructs (Leiter & Robicaud, 1997; Nahrang et al., 2011). Hypothesis which proposed that workload, safety climate, and NA would moderate the relationship between risk perception and burnout was supported only for the workload moderator, however, the observed interaction was opposite of the expected direction. That is, although it was expected that those with high levels of workload and high risk perceptions would have higher levels of burnout than those with lower levels of workload. Results revealed that those with high levels of risk perceptions were less likely to experience burnout when the workload was also high. Results were surprising because it looks like coupling of *high risk perceptions* with *high workload perceptions* seems to bolster the workers resistance to burnout. One possible reason could be that those having higher risk perceptions may be preoccupied with work and therefore they may suffer from less negative sides of risk perceptions that lead to burnout. Future studies are definitely needed to further explore this unexpected interaction.

It was expected that the relation between risk perception and burnout would also be moderated by safety climate (Hypothesis 3b). However, the moderation impact of safety climate was not significant. Burnout levels of employees were expected to be higher ( $M = 1.5$ ,  $SD = .47$ ) because as known from working conditions, technicians could not be able to use their annual leaves and have some problems regarding their salary payments. Therefore, like safety climate scores, burnout scores may have been manipulated by technicians. As NA has been reported to be positively correlated with burnout as individuals high on NA evaluate situations in more negative terms (Zarate, 2008). Contrary to the expectations (Hypothesis 3c), NA did not moderate relation between risk perception measures and burnout. Although main effect of NA was significant, the interaction was not significant. The positive relation between NA and burnout is

evident in the literature (Yavas, Karatepe, & Babakus, 2012). In the present study, also the relation between NA and burnout was found to be significant ( $r = .32$ ). However, in some studies, the relation between NA and burnout was examined through mediation of some other variables. Yavas, Karatepe, and Babakus (2012) found that perceptions of organizational politics mediate relation between NA and burnout. Therefore, rather than direct relation of NA on burnout, some other variables could be mediating this relation.

#### **4.1.4 Evaluation of the Findings on Expected Moderation Impact of Workload, NA, and Safety Climate in the Risk Perception-Job Satisfaction Relationship**

Based on Nielsen et al.'s (2011) study, it was expected that increased level of risk perception would lead to reduced job satisfaction and that workload, safety climate, and NA would moderate this relationship. Hypothesis 4a, which stated the expected moderating effect of workload, was not supported. That is, the nature of the relationship did not change depending on the levels of workload. Similarly, Hypothesis 4b was not supported as safety climate did not moderate the relationship between risk perception and job satisfaction. In both hypotheses, main effects of workload and safety climate were found to be significant while interaction was not.

One plausible explanation why safety climate did not moderate the relationship between risk perceptions and job satisfaction may be related to the nature of the job in question and the conditions under which the job gets done. In this work context, different from many other jobs, there are some situations that are not necessarily under the control of technicians. For example, although there are safety rules and regulations and although you may be overly cautious, a small lapse on the part of a coworker may result in a serious injury for you. Under such conditions, job satisfaction may be quite (low) independent of perceived risks and independent of perceived climate and independent of the interaction of these two variables.

Hypothesis 4c, which stated that NA would moderate the relationship between risk perceptions and job satisfaction, was supported. That is, participants

with high levels of risk perception and high NA had lower job satisfaction than those with low NA. In other words, low levels of NA acted as a buffer to reduce the effects of risk perceptions on job satisfaction. The direction of interaction was in the expected trend. One reason is that people high on NA evaluate problems and situation at work in more negative terms which in turn impacts their job satisfaction negatively (Mazzola, 2006).

#### **4.1.5 An Overview of the Observed Correlations**

Although majority of the hypotheses of the study were not supported, the bivariate correlations observed among the variables of interest were in general consistent with what is being reported in the literature. For example, job satisfaction was found to be significantly negatively correlated with burnout scores of employees. Similarly, Rothmann (2008) found that those who scored higher on job satisfaction scored lower on burnout.

The results indicated that relationship between workload and risk perception was positively significant which means that electric technician who had higher levels of workload scored higher on risk perception. That is, under high workload, they were more likely to perceive their job as more risky. This finding is consistent with the literature (e.g., Lee et al., 2013).

Results regarding safety climate are also critical. Based on the findings, safety climate was significantly negatively correlated with burnout. That is, electric technician who positively evaluated safety climate scored lower on burnout. Other researchers also report a negative relationship between safety climate and burnout (Malmir, 2013; Dollar & Bakker, 2010). On the other hand, in the present study, safety climate was found to be positively significantly related to job satisfaction. This finding is also consistent with the literature (Nielsen et al., 2011). Safety climate was found to be significantly negatively related to workload ( $r = -.28$ ).

Another expected finding based on the literature was the relation between accident records and risk perception measures. Results indicated that those having at least an electric accident scored higher on risk perception. Therefore,



experience of having an accident affected risk perception measures in line with the literature (Leiter, Zanaletti, & Argentero, 2009).

#### **4.2 Practical Implications of the Study**

Although majority of the hypotheses of the study were not supported, there are some findings with critical implications. First of all, results regarding both the main effects and trend wise interaction effects of NA in the prediction of both job satisfaction and burnout have important practical implications, especially for recruitment processes. Job satisfaction and burnout are among the important work outcomes for organizations (Labert & Hogan, 2009; Leiter 2005). Results showed that those high on NA were more likely to be less satisfied with their jobs and also were more likely to experience burnout, especially when risk perceptions were high. Therefore, in the recruitment process, applicants with high levels of NA, who qualify for the job in question otherwise, may be directed to positions with relatively low levels of perceived risk.

Secondly, results provided evidence for the importance of safety climate at work. Electric technicians who evaluated safety climate positively were less likely to experience burnout and more likely to have higher job satisfaction. This finding is critical because it shows that organizations could gain considerably by installing a positive safety climate through training programs and through establishing monitoring and reward systems reinforcing safe work behavior. Besides this, workload was found to have a negative impact on safety climate perceptions. Therefore, organizations should be aware of the fact that workload negatively impact safety climate of an organization. Therefore, organizations should make their HC plans and working schedule by considering the amount of work in the organization.

#### **4.3 Contributions of the Study**

Despite the fact that many of the hypotheses could not be supported, the present study is believed to have some strength that are worth mentioning. First of all, this study is one of the few studies that examined the relationship between risk perception and work outcomes in the electric distribution sector in Turkey especially, The literature on risk perception-safety performance relationship is

still emerging and quite inconclusive (Brewer et al., 2007; Tomas et al., 1999). Therefore, this study is expected to contribute to this emerging literature. Furthermore, studies examining this relationship in the Turkish work context, especially in a high-risk work context is almost nonexistent, to the knowledge of the researcher. So, it is hoped that this study will contribute to the relevant local literature as well.

Another strength of the present study is the use of multi-source in collecting data. Collection of safety performance data from supervisors/ peers is an important methodological strength of the present study.

#### **4.4 Limitations of the Study and Suggestions for Future Research**

As mentioned above, one of the main limitations of the present study is sample size. Weights of the interaction terms were mostly above .10, suggesting that with a sample size of 200+ the observed interactions would reach the conventional significance levels.

Another limitation of the present study is related to potential rating biases or tendencies. As stated before, safety performance ratings were collected from supervisors or coworkers of the electric technicians. Because of the status of the rates (i.e., outsourced employees, with no job security), raters could have been motivated to inflate safety performance ratings. In future studies, accident and near-miss accident records can be obtained from personal files and be used as the safety performance criterion. In the present study, although accident records were used, they were collected from employees themselves, and near-misses of employees were not collected. Especially, such records from the organizational files could be stronger indicators of safety performance.

Finally, in the present study, the risk perception measure was constructed by using both existing scales and by including some job-specific items. In other words, this study was the first study in which this particular measure was used. Therefore, future studies may focus on both checking and improving the psychometric qualities of the instrument such as establishing both construct and predictive validity.

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## APPENDICES

### APPENDIX A

#### GÖNÜLLÜ KATILIM FORMU (TEKNİSYEN KATILIMCILAR İÇİN)

##### Sayın Katılımcı,

Bu anket, Orta Doğu Teknik Üniversitesi Prof. Dr. Canan Sümer ve Yrd.Doç Dr. Yonca Toker danışmanlığında yürütülen tez çalışması kapsamında yapılmaktadır.Bu araştırmacının amacı, katılımcıların risk algılarının işe yönelik sonuçlara etkisini bilimsel yöntemle analiz etmektir. Elde edilecek bilgilerin daha emniyetli iş ortamlarının oluşturulmasına yönelik katkı sağlanması beklenmektedir. Bu anketten elde edilecek bilgiler sadece bilimsel araştırma amaçlı kullanılacaktır. Araştırma sonuçlarının analizinde araştırmanın yapıldığı kurumun adı ile anketi dolduran çalışanların isimleri kullanılmayacaktır. Tamamen gönüllülük esasına dayanan bu çalışmada vereceğiniz cevaplar kesinlikle gizli tutulacak ve araştırmacılar tarafından değerlendirilecek, katılımcıların kimlikleri hiçbir kişi ve kurumla paylaşılmayacaktır. Sorulara vereceğiniz doğru ve dikkatli cevaplar araştırmanın güvenilirliği açısından oldukça önemlidir.Çalışma hakkında daha fazla bilgi almak için aşağıdaki iletişim bilgilerinizi kullanabilirsiniz.Çalışmaya ayırdığınız zaman ve katkınızdan dolayı çok teşekkür ederiz.

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*Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip bırakabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum.*

Evete  Hayır  Tarih : ..... /..... /..... İmza

## APPENDIX B

### GÖNÜLLÜ KATILIM FORMU (AMİR/ İŞ ARKADAŞLARI İÇİN)

#### AÇIKLAMA

Bu anket, Orta Doğu Teknik Üniversitesi Prof. Dr. Canan Sümer ve Yrd. Doç Dr. Yonca Toker danışmanlığında yürütülen tez çalışması kapsamında yapılmaktadır. Bu araştırmacının amacı, katılımcıların risk algılarının işe yönelik sonuçlara etkisini bilimsel yöntemle analiz etmektir. Elde edilecek bilgilerin daha emniyetli iş ortamlarının oluşturulmasına yönelik katkı sağlanması beklenmektedir.

Çalışmanın bu bölümünde, risk algıları ve standart güvenlik tedbirlerine riayet etme sıklığı arasındaki ilişki ve bu ilişkiyi etkileyen faktörler incelenecektir. Bu kitapçıkta sorumlusu olduğunuz veya çalışmasını yakından tanıdığınız iş arkadaşınızın Standart Güvenlik tedbirlerine riayet etme sıklığına ait maddeler bulunmaktadır.

Tamamen gönüllülük esasına dayalı olarak yapılan bu çalışmada elde edilen veriler sadece araştırma amaçlı kullanılacak ve katılımcıların kimlikleri hiçbir kişi ve kurumla paylaşılmayacaktır. Değerlendirmenin sağlıklı yapılabilmesi için tüm maddelerin yönergede belirtilen şekilde cevaplandırılması gerekmektedir. Anket süresi yaklaşık 10 dakikadır.

Çalışma ya da çalışmanın sonuçları hakkında daha detaylı bilgi edinmek için aşağıda belirtilen eposta adresine başvurabilirsiniz.

Çalışmaya ayırdığınız zaman ve katkınızdan dolayı çok teşekkür ederiz.

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*Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip bırakabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum.*

Evet  Hayır

Tarih : ..... / ..... / .....

İmza:

## APPENDIX C

### İŞ DOYUMU ÖLÇEĞİ

	Hiç tatmin etmiyor	Pek tatmin etmiyor	Ne ediyor ne etmiyor	Oldukça tatmin ediyor	Çok tatmin ediyor
1. Sürekli bir şeylerle meşgul olabilme imkanı	1	2	3	4	5
2. Kendi kendime çalışma imkanı	1	2	3	4	5
3. Zaman zaman farklı şeylerle meşgul olma imkanı	1	2	3	4	5
4. Toplumda bir yer edinme imkânı	1	2	3	4	5
5. Amirimin elemanlarına karşı davranış tarzı	1	2	3	4	5
6. Amirimin karar verme konusundaki yeterliliği	1	2	3	4	5
7. Vicdanıma ters düşmeyen şeyleri yapabilme imkanı	1	2	3	4	5
8. Sürekli bir işe sahip olma imkanı (iş güvenliği)	1	2	3	4	5
9. Başkaları için bir şeyler yapabilme imkanı	1	2	3	4	5
10. Başkalarına ne yapacaklarımı söyleme imkanı	1	2	3	4	5
11. Yeteneklerimi kullanabilme imkanı	1	2	3	4	5
12. Firma politikasını uygulama imkanı	1	2	3	4	5
13. Aldığım ücret	1	2	3	4	5
14. Bu işte ilerleme imkanım	1	2	3	4	5
15. Kendi kararımı verme özgürlüğü	1	2	3	4	5



	<b>Hiç tatmin etmiyor</b>	<b>Pek tatmin etmiyor</b>	<b>Ne ediyor ne etmiyor</b>	<b>Oldukça tatmin ediyor</b>	<b>Çok tatmin ediyor</b>
16. İş yaparken kendi yöntemlerimi deneme imkanı	1	2	3	4	5
17. Çalışma koşulları	1	2	3	4	5
18. Çalışma arkadaşlarının birbiriyle anlaşması	1	2	3	4	5
19. Yaptığım işten dolayı aldığı övgü	1	2	3	4	5
20. İşimden elde ettiğim başarı duygusu	1	2	3	4	5

## APPENDIX D

### TÜKENMİŞLİK ÖLÇEĞİ

#### Yönerge:

Aşağıda verilen maddeler işiniz ile ilgili duyguları ele almaktadır. **Kendinize işim ile ilgili bu duyguları ne kadar sıklıkla hissediyorum?** sorusunu sorunuz ve cevabınızın ne derecede geçerli olduğunu beş basamaklı (1= Hiçbir zaman 5= Her zaman) ölçek üzerinde ilgili kutucuğu işaretleyerek belirtiniz. **Lütfen her ifadeyi dikkatlice okuyunuz ve düşüncenizi en iyi yansıtan rakamı daire içine alınız.**

*Örneğin; Kendinize işinizden soğuduğunuzu ne kadar sıklıkla hissettiğinizi sorun, eğer sık sık soğuduğunuzu hissediyorsanız 4'ü işaretleyiniz*

	Hiçbir zaman	Ara sıra	Bazen	Sık sık	Her zaman
1. İşimden soğuduğumu hissediyorum.	1	2	3	4	5
2. İş dönüşü ruhen tükenmiş hissediyorum.	1	2	3	4	5
3. Sabah kalktığımda bir gün daha bu işi kaldıramayacağımı düşünüyorum.	1	2	3	4	5
4. İşim gereği karşılaştığım insanların ne hissettiğini hemen anlarım.	1	2	3	4	5
5. İşim gereği karşılaştığım bazı insanlara sanki insan değilmiş gibi davrandığımı hissediyorum.	1	2	3	4	5
6. Bütün gün insanlarla uğraşmak benim için gerçekten çok yıpratıcı.	1	2	3	4	5

7. İşim gereği karşılaştığım insanların sorunlarına en uygun çözüm yollarını bulurum.	1	2	3	4	5
8. Yaptığım işten tükendiğimi hissediyorum.	1	2	3	4	5
9. Yaptığım iş sayesinde insanların yaşamına katkıda bulunduğuma inanıyorum.	1	2	3	4	5
10. Bu işte çalışmaya başladığımdan beri insanlara karşı sertleştim.	1	2	3	4	5
11. Bu işin beni giderek katılaştırmasından korkuyorum.	1	2	3	4	5
12. Çok şeyler yapabilecek güçteyim.	1	2	3	4	5
13. İşimin beni kısıtladığımı hissediyorum.	1	2	3	4	5
14. İşimde çok fazla çalıştığımı hissediyorum.	1	2	3	4	5
15. İşim gereği karşılaştığım insanlara ne olduğu umurumda değil.	1	2	3	4	5
16. Doğrudan doğruya insanlarla çalışmak bende çok fazla stres yaratıyor.	1	2	3	4	5
17. İşim gereği karşılaştığım insanlarla aramda rahat bir hava yaratırım.	1	2	3	4	5
18. İnsanlarla yakın bir çalışmadan sonra kendimi canlanmış hissederim.	1	2	3	4	5
19. Bu işte birçok kayda değer başarı elde ettim.	1	2	3	4	5
20. Yolun sonuna geldiğimi hissediyorum.	1	2	3	4	5
21. İşimdeki duygusal sorunlara serinkanlılıkla yaklaşırım.	1	2	3	4	5
22. İşim gereği karşılaştığım insanların bazı problemlerini sanki ben yaratmışım gibi davrandıklarını hissediyorum.	1	2	3	4	5

## APPENDIX E

### GÜVENLİ İKLİMİ ÖLÇEĞİ

#### Yönerge

Aşağıda, iş yerinizdeki İş Sağlığı ve Güvenliği iklimine yönelik maddeler yer almaktadır. Kendinize her bir ifadenin çalışmakta olduğunuz birim için cevabınızın ne derecede geçerli olduğunu beş basamaklı (1= Hiç katılmıyorum 5= Tamamen katılıyorum) ölçek üzerinde ilgili kutucuğu işaretleyerek belirtiniz.

**Lütfen her ifadeyi dikkatlice okuyunuz ve düşüncenizi en iyi yansıtan rakamı daire içine alınız.Lütfen hiç bir maddeyi boş bırakmayınız.**

	Hiç katılmıyorum	Katılmıyorum	Biraz katılıyorum	Oldukça katılıyorum	Tamamen katılıyorum
1. Yönetim Çalışanların güvenliği ile ilgilidir.	1	2	3	4	5
2. Eğitim programlarında iş yeri ve sağlığı ve güvenliği konusuna öncelik verilir.	1	2	3	4	5
3. İşteki görevlerim çoğu zaman iş yeri sağlığı ve güvenliğine yönelik Standart Güvenlik Tedbirlerini uygulayabilmeme engel olmaktadır.	1	2	3	4	5
4. İş yeri sağlığı ve güvenliğindeki aksaklıkları engellemek için sistematik prosedürler vardır.	1	2	3	4	5

	Hiç katılmıyorum	Katılmıyorum	Biraz katılıyorum	Oldukça katılıyorum	Tamamen katılıyorum
5. Toplantılarda iş yeri sağlığı ve güvenliğiyle ilgili konuları tartışmak ve çözümlmek için yeterli fırsat olmaktadır.	1	2	3	4	5
6. Çalıştığım birimde saha çalışanları Uyum içinde çalışırlar.	1	2	3	4	5
7. Yönetim işyeri sağlığı ve güvenliğine büyük önem vermektedir.	1	2	3	4	5
8. Bu iş yerinde Standart Güvenlik Tedbirlerine uygun olmayan bir davranış, ancak bir iş kazası durumunda rapor edilir.	1	2	3	4	5
9. Çalışanlar iş yeri sağlığı ve güvenliği eğitim programlarına yeterli erişime sahiptirler.	1	2	3	4	5
10. Çalıştığım birimde saha çalışanları birtakımın üyesi gibi davranırlar.	1	2	3	4	5
11. İşyerimde, kişisel koruyucu malzemelerin/ekipmanların kullanılmaması durumunda yaptırımlar uygulanır.	1	2	3	4	5
12. Genellikle, fazla işim olduğu için Standart Güvenlik Tedbirlerini uygulamaya zamanım olmuyor.	1	2	3	4	5
13. Bu iş yerinde çalışanların karşılaştıkları iş kazalarına ait raporlar tutulmaktadır.	1	2	3	4	5
14. İş sağlığı ve güvenliğine yönetim yüksek öncelik verir.	1	2	3	4	5

	Hiç katılmıyorum	Katılmıyorum	Biraz katılıyorum	Oldukça katılıyorum	Tamamen katılıyorum
16. Bu iş yerinde iş yeri sağlığı ve güvenliği konusunda açık bir iletişim vardır.	1	2	3	4	5
17. Bu kurumdaki güvenlik prosedür ve uygulamaları yararlı ve etkilidir.	1	2	3	4	5
18. Çalıştığım birimde saha çalıştığım birimde saha çalışanlarından biri çok yoğun olduğunda diğerleri ona Yardım eder.	1	2	3	4	5
19. İş yerinde, kişisel koruyucu malzemelerin/ekipmanların Kullanımı teşvik edilir.	1	2	3	4	5
20. İş yeri sağlığı ve güvenliği konularında çalışanların görüşlerine düzenli olarak başvurulur.	1	2	3	4	5
21. Yönetim iş güvenliğini önemli bir Konu olarak görür.	1	2	3	4	5
22. Çalışanlar iş yeri sağlığı ve güvenliği konularında kapsamlı eğitim alırlar.	1	2	3	4	5
23. Çalıştığım birimde saha çalışanları işbirliği içerisindedirler.	1	2	3	4	5
24. Bu iş yerinde iş güvenliği ve sağlığı konularından sıklıkla bahsedilir.	1	2	3	4	5
25. Birimde, iş güvenliği hakkındaki bilgiye nasıl erişeceğimi biliyorum.	1	2	3	4	5
26. Güvenlikle ilgili prosedür ve uygulamalar olası vakaları önlemede yeterlidir.	1	2	3	4	5

	Hiç katılmıyorum	Katılmıyorum	Biraz katılıyorum	Oldukça katılıyorum	Tamamen katılıyorum
27. Çalışanlar iş yeri sağlığı ve güvenliği ile ilgili endişelerini Yönetimle paylaşabilmektedir.	1	2	3	4	5
28. Çalıştığım birimde saha çalışanları birbirine yardım ederler	1	2	3	4	5
29. Standart Güvenlik Tedbirlerini her zaman uygulayabilmem için işimde yeterince zamanım vardır.	1	2	3	4	5
30. Çalıştığım birimde saha çalışanları birbirlerini desteklerler.	1	2	3	4	5
31. Çalışma alanımda kişisel koruyucu malzemeler/ekipmanlar hazır bulunmaktadır.	1	2	3	4	5
32. Bu iş yerinde, Standart Güvenlik Tedbirlerine uygun olmayan bir davranış herhangi bir olumsuz sonuca neden olmasa bile rapor edilir.	1	2	3	4	5

## APPENDIX F

### İŞ YÜKÜ ÖLÇEĞİ

Aşağıda verilen maddeler işiniz ile ilgili durumları ele almaktadır. Kendinize işim ile ilgili bu durumları ne kadar sıklıkla hissediyorum? sorusunu sorunuz cevabınızın ne derecede geçerli olduğunu beş basamaklı (1= Hiçbir zaman 5= Her zaman) ölçek üzerinde ilgili kutucuğu işaretleyerek belirtiniz. **Lütfen her ifadeyi dikkatlice okuyunuz ve düşüncenizi en iyi yansıtan rakamı daire içine alınız.**

*Örneğin; Kendinize “Ne kadar sıklıkla hızlı çalışmak zorunda olduğunuzu” sorunuz, eğer ara sıra hızlı çalışmak durumunda kalıyorsanız 2’yi işaretleyiniz*

	Hiçbir zaman	Ara sıra	Bazen	Sık sık	Her zaman
1. Hızlı çalışmak mı zorundasınız?	1	2	3	4	5
2. Yapmanız gereken çok fazla işiniz mi var?	1	2	3	4	5
3. Bir işi zamanında yetiştirmek için ne sıklıkla fazla mesai yapmanız gerekir sıklıkla fazla mesai yapmanız gerekir?	1	2	3	4	5
4. Çalışırken üzerinizde zaman baskısı hissediyor musunuz?	1	2	3	4	5



## APPENDIX G

### NEGATİF & POZİTİF OLMA EĞİLİMİ ÖLÇEĞİ

Aşağıda farklı duygusal durumları niteleyen sözcükler bulunmaktadır. Lütfen her bir sözcüğü okurken kendinizi "**genel olarak**" nasıl hissettiğinizi, diğer bir deyişle her bir duyguyu ne ölçüde yaşadığınızı düşününüz ve cevabınızı verilen ölçeği (1= Çok az, 5= Aşırı derecede) kullanarak belirtiniz. **Lütfen her ifadeyi dikkatlice okuyunuz ve düşüncenizi en iyi yansıtan rakamı daire içine alınız.**

	Çok az	Biraz	Orta Düzeyde	Oldukça Fazla	Aşırı derecede
1. Hevesli	1	2	3	4	5
2. Sıkıntılı	1	2	3	4	5
3. Heyecan dolu	1	2	3	4	5
4. Morali bozuk	1	2	3	4	5
5. Güçlü	1	2	3	4	5
6. Suçlu	1	2	3	4	5
7. Ürkek	1	2	3	4	5
8. Düşmanca	1	2	3	4	5
9. Şevkli	1	2	3	4	5

	<b>Çok az</b>	<b>Biraz</b>	<b>Orta</b>	<b>Düzeyde</b>	<b>Oldukça</b>	<b>Fazla</b>	<b>Aşırı</b>	<b>derecede</b>
10. Gururlu	1	2	3	4	5			
11. Husursuz-tetikte	1	2	3	4	5			
12. Canlı	1	2	3	4	5			
13. Kendinden utanan	1	2	3	4	5			
14. İstekli	1	2	3	4	5			
15. Gergin	1	2	3	4	5			
16. Kararlı	1	2	3	4	5			
17. İlgili	1	2	3	4	5			
18. Sınırlı	1	2	3	4	5			
19. Aktif	1	2	3	4	5			
20. Korkmuş	1	2	3	4	5			

## APPENDIX H

### RİSK OLASILIĞI ÖLÇEĞİ

Aşağıda işiniz ile ilgili farklı risk durumları sıralanmıştır. Lütfen her bir durumun yaptığınız iş sırasında “gerçekleşme olasılığı” olup olmadığı sorusunu sorunuz ve cevabınızın ne derecede geçerli olduğunu beş basamaklı (1= Hiç mümkün değildir 5= Gerçekleşmesi kaçınılmazdır) ölçek üzerinde ilgili kutucuğu işaretleyerek belirtiniz

	Hiç mümkün değildir	Gerçekleşme olasılığı çok azdır	Gerçekleşme olasılığı vardır	Gerçekleşme olasılığı çok fazladır	Gerçekleşmesi kaçınılmazdır
1. Ark	1	2	3	4	5
2. Elektrik çarpması	1	2	3	4	5
3. Düşme	1	2	3	4	5
4. Kesik	1	2	3	4	5
5. Yabani hayvan	1	2	3	4	5
6. Malzeme altında	1	2	3	4	5
7. Meslek hastalığı	1	2	3	4	5
8. Yıldırım çarpması	1	2	3	4	5

	<b>Hiç mümkün değildir</b>	<b>Gerçekleşme olasılığı çok azdır</b>	<b>Gerçekleşme olasılığı vardır</b>	<b>Gerçekleşme olasılığı çok fazladır</b>	<b>Gerçekleşmesi kaçınılmazdır</b>
9. Trafik kazası	1	2	3	4	5
10. Yangın	1	2	3	4	5
11. Ölüm	1	2	3	4	5
12. Ruhsal Bozukluklar	1	2	3	4	5
13. Bel fıtığı	1	2	3	4	5
14. Böcek sokması	1	2	3	4	5
15. Enfeksiyonlar	1	2	3	4	5
16. Solunum yolu	1	2	3	4	5

## APPENDIX I

### RİSK CİDDİYETİ

Aşağıda işiniz ile ilgili farklı risk durumları sıralanmıştır. Lütfen her bir durumun ne derece tehlikeli olduğu sorusunu sorunuz ve cevabınızın ne derecede geçerli olduğunu beş basamaklı (1= Hiç tehlikeli değildir 5= Çok tehlikelidir) ölçek üzerinde ilgili kutucuğu işaretleyerek belirtiniz.

	Hiç tehlikeli değildir	Az tehlikelidir	Orta derecede tehlikelidir	Oldukça tehlikelidir	Çok tehlikelidir
1. Ark	1	2	3	4	5
2. Elektrik çarpması	1	2	3	4	5
3. Düşme	1	2	3	4	5
4. Kesik	1	2	3	4	5
5. Yabani hayvan	1	2	3	4	5
6. Malzeme altında	1	2	3	4	5
7. Meslek hastalığı	1	2	3	4	5
8. Yıldırım çarpması	1	2	3	4	5
9. Trafik kazası	1	2	3	4	5
10. Yangın	1	2	3	4	5
11. Ölüm	1	2	3	4	5

12. Ruhsal	1	2	3	4	5
13. Bel fitiđı	1	2	3	4	5
14. Bcek sokması	1	2	3	4	5
15. Enfeksiyonlar	1	2	3	4	5
16. Solunum yolu	1	2	3	4	5

## APPENDIX J

### GÜVENLİ DAVRANIŞ ÖLÇEĞİ

**Yönerge:** Aşağıdaki ölçekte, hemşireler için “**Standart Güvenlik Tedbirleri**” olarak adlandırılan 23 madde yer almaktadır. Sizden, sorumlusu olduğunuz her bir arıza onarım bakımsaha çalışanınin veya aynı ekipte çalıştığınızı arkadaşınızın bu davranışlara nederecede riayet etmekte olduğunu şimdiye kadarki gözlemlerinize dayanarak değerlendirmeniz beklenmektedir. Lütfen, her bir maddeyi **beş basamaklı** (1= *Hiç bir zaman* 5= *Her zaman*) ölçek üzerinde ilgili kutucuğu işaretleyerek değerlendiriniz.

Eğer, ifadenin değerlendirmesini yapmakta olduğunuz arıza onarım bakım saha çalışanı için geçerli olmadığını düşünüyorsanız “Uygun Değil-UD” seçeneğine karşılık gelen kutuyu işaretleyiniz. **Lütfen her soruyudikkatlice okuyunuz ve hiç bir maddeyi boş bırakmayınız.**

**Değerlendirdiğiniz çalışanın Adı Soyadı:**

**Değerlendirdiğiniz çalışana yakınlık dereceniz :** Ekip arkadaşı :

**Amiri:**  **Diğer:**

	Hiçbir zaman	Ara sıra	Bazen	Sık sık	Her zaman	Uygun Değil
1. Çalışmaya başlamadan önce enerji olup olmadığının kontrolünü yapar.	1	2	3	4	5	UD
2. Enerji nakil hatlarından çalışırken baret takar.	1	2	3	4	5	UD
3. Üç metreden yükseğe çıktığında emniyet kemerini ve baretini takar.	1	2	3	4	5	UD
4. Enerji kesildiğinden emin olmadan ve topraklama yapmadan arızaya müdahale etmez.	1	2	3	4	5	UD
5. Enerji nakil hattı ve AG panolarında çalışırken topraklama yapar.	1	2	3	4	5	UD
6. Sisteme enerji verirken ilgili ekip arkadaşlarını uyarır	1	2	3	4	5	UD
7. Çalışma sahasında eksik bulunan malzemeleri (sigorta, termin manyetik şalter) yöneticisine bildirir.	1	2	3	4	5	UD
8. Alçak gerilim Sistemine enerji vermeden izolasyon kontrolü yapar.	1	2	3	4	5	UD
9. Yüksek gerilimde izole eldiven Kullanır.	1	2	3	4	5	UD
10. Yüksek gerilim hatlarından çalışırken yaklaşma mesafelerini riayet eder.	1	2	3	4	5	UD
11. Yeni hat tesis edilirken elektrik tehlikelerini dikkate alır.	1	2	3	4	5	UD
12. Havai hatta çalışmaya başlamadan önce gerilim dedektörü ile gerilim kontrolü yapar.	1	2	3	4	5	UD



	<b>Hiçbir zaman</b>	<b>Ara sıra</b>	<b>Bazen</b>	<b>Sık sık</b>	<b>Her zaman</b>	<b>Uygun Değil</b>
13. Sepet kullanacağı zaman paraşüt tipi emniyet kemeri ile kendini sepete bağlar.	1	2	3	4	5	UD
14. AG kablo arızalarında AVOMETRE ile kısa devre testi yapar ve kablonun sağlamlığından emin olur.	1	2	3	4	5	UD
15. Kesici arızalarında enerjinin geldiğini YG dedektörü ile kontrol eder.	1	2	3	4	5	UD
16. İş sahasında iş güvenliği ayakkabısını giyer.	1	2	3	4	5	UD
17. Yüksek gerilim çalışmalarında izole sehpa veya izole halı kullanır.	1	2	3	4	5	UD
18. Ark riski olan yerlerde ark elbisesi giyer.	1	2	3	4	5	UD
19. İş sağlığı güvenliği kurallarına uyar	1	2	3	4	5	UD
20. Arkadaşlarının iş sahasında emniyetini önemser.	1	2	3	4	5	UD
21. Yeterli bilgisi veya tecrübesi olmadığı konularda işe müdahale etmez sorumlusuna haber verir	1	2	3	4	5	UD
22. İş sağlığı ve güvenliği prosedürlerini ve standart güvenlik tedbirlerini harfiyen uygular	1	2	3	4	5	UD
23. Çalışmaya başlamadan önce iş güvenliği değerlendirmesi yaparak, olası riskleri tespit eder.	1	2	3	4	5	UD

## APPENDIX K

### DEMOGRAFİK BİLGİLER

**Yaşınız:**

**Eğitim durumunuz: İlkokul .....**

**Lise .....**

**Meslek yüksek okulu (2 yıllık) .....**

**Üniversite .....**

**Diğer (Açıklayınız) .....**

**Bu kurumda çalışma süreniz:**

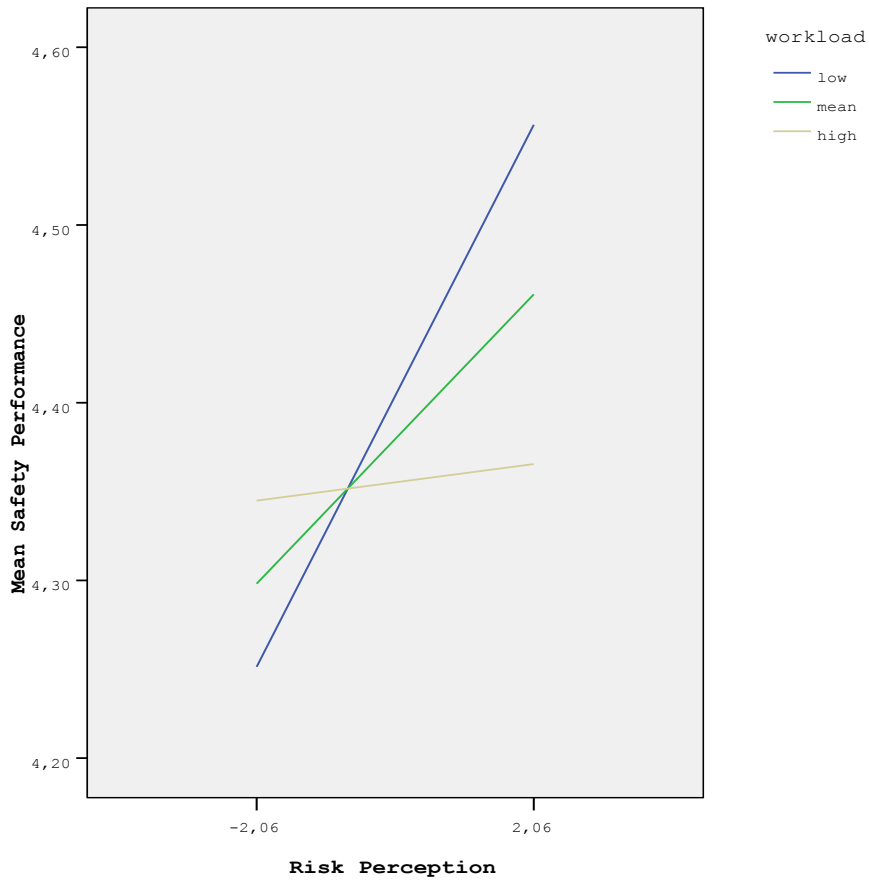
**Teknisyen /Tekniker olarak toplam çalışma süreniz:**

**Bir haftada yaklaşık çalıştığınız toplam saat:**

**Elektrik ile ilgili iş kazanız oldu mu? Evet ..... Hayır.....**

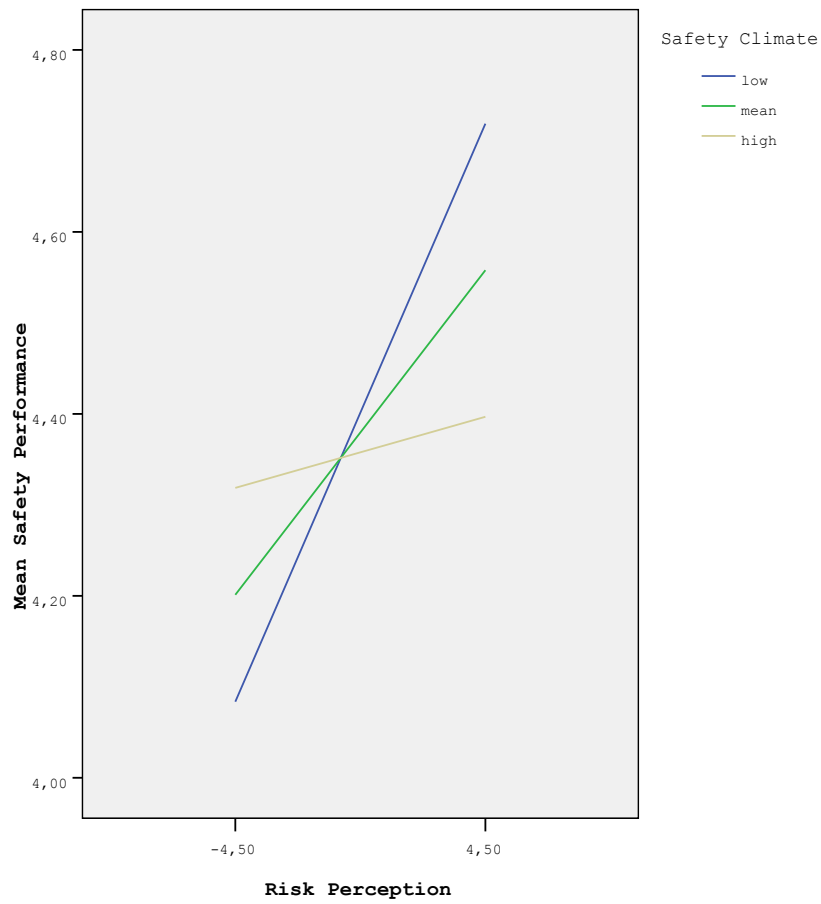
## APPENDIX L

### SIMPLE SLOPE ANALYSIS FOR WORKLOAD IN THE RISK PERCEPTION- SAFETY PERFORMANCE RELATIONSHIP



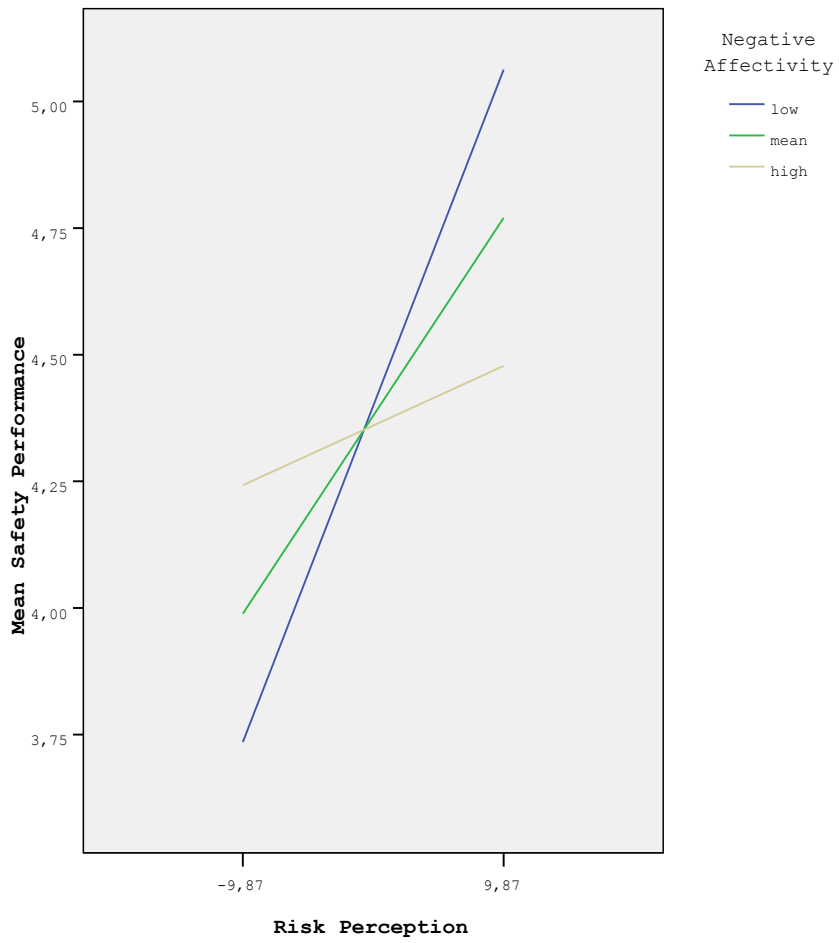
## APPENDIX M

### SIMPLE SLOPE ANALYSIS FOR SAFETY CLIMATE IN THE RISK PERCEPTION- SAFETY PERFORMANCE RELATIONSHIP



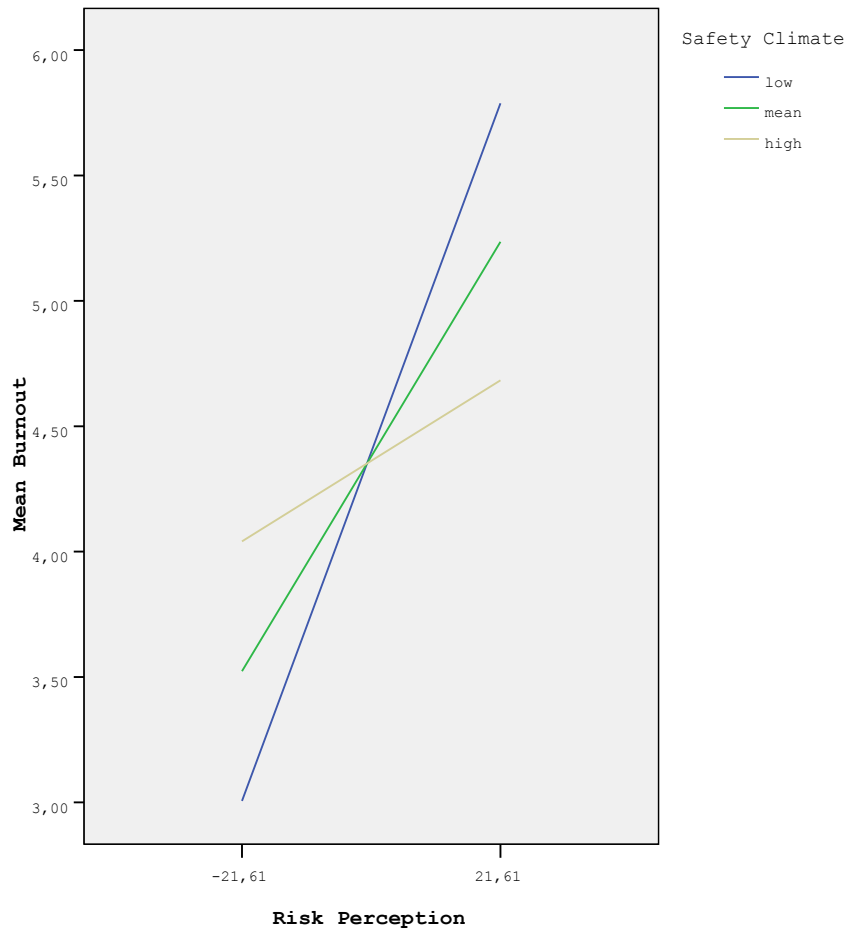
## APPENDIX N

### SIMPLE SLOPE ANALYSIS FOR NA IN THE RISK PERCEPTION- SAFETY PERFORMANCE RELATIONSHIP



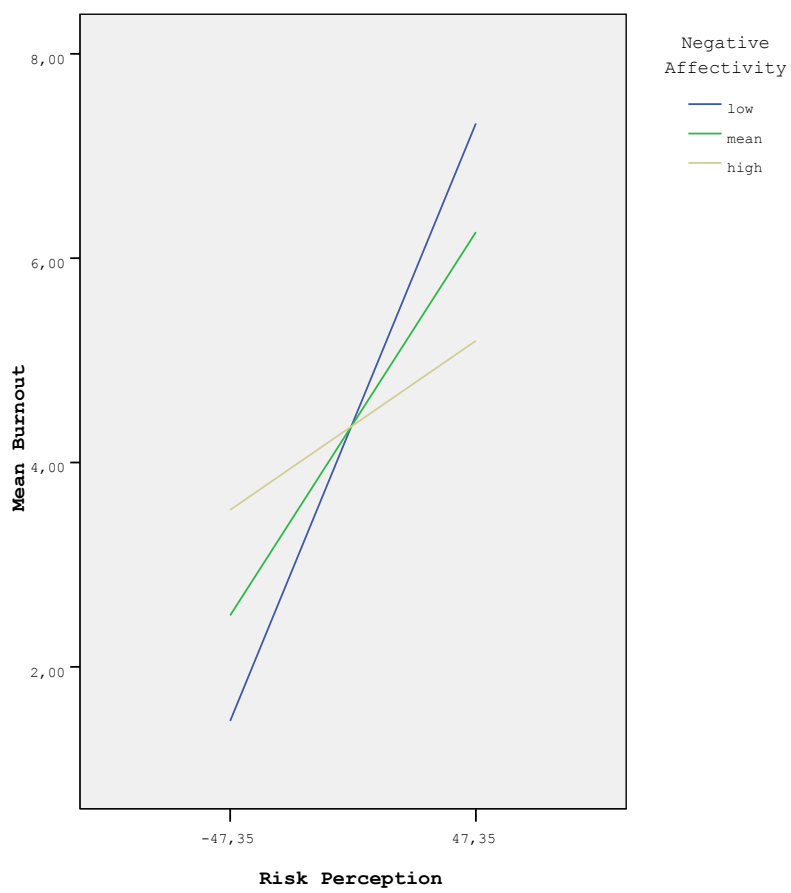
## APPENDIX O

### SIMPLE SLOPE ANALYSIS FOR SAFETY CLIMATE IN THE RISK PERCEPTION- BURNOUT RELATIONSHIP



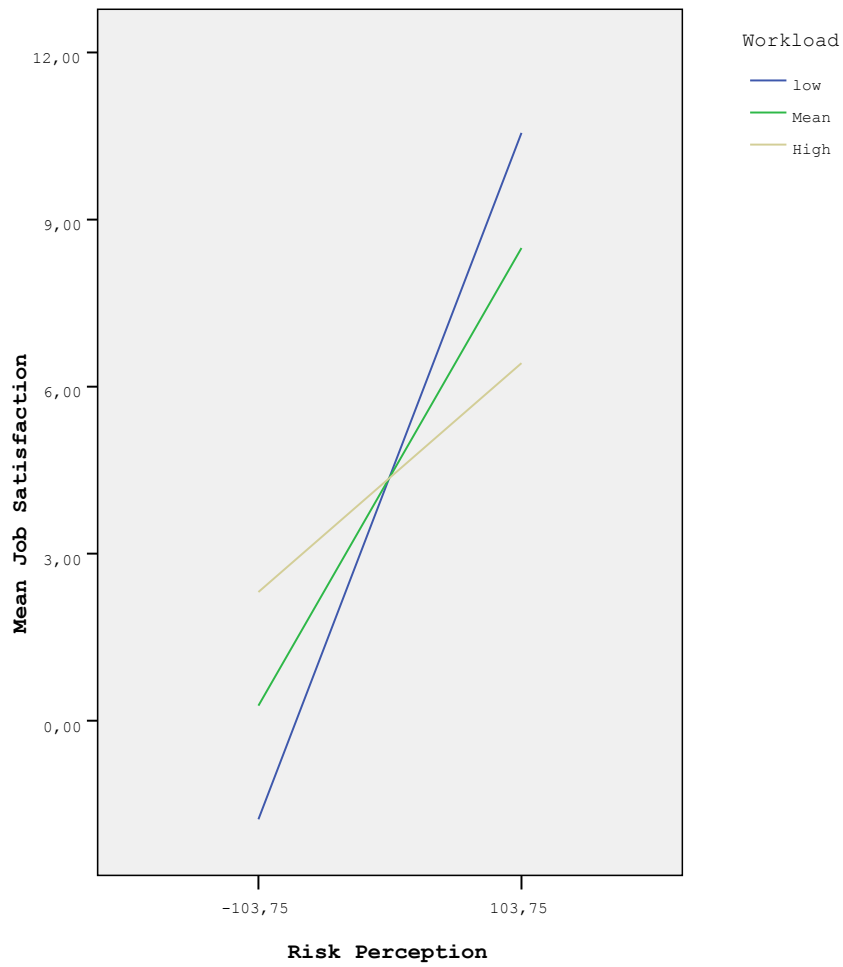
## APPENDIX P

### SIMPLE SLOPE ANALYSIS FOR NA IN THE RISK PERCEPTION- BURNOUT RELATIONSHIP



## APPENDIX Q

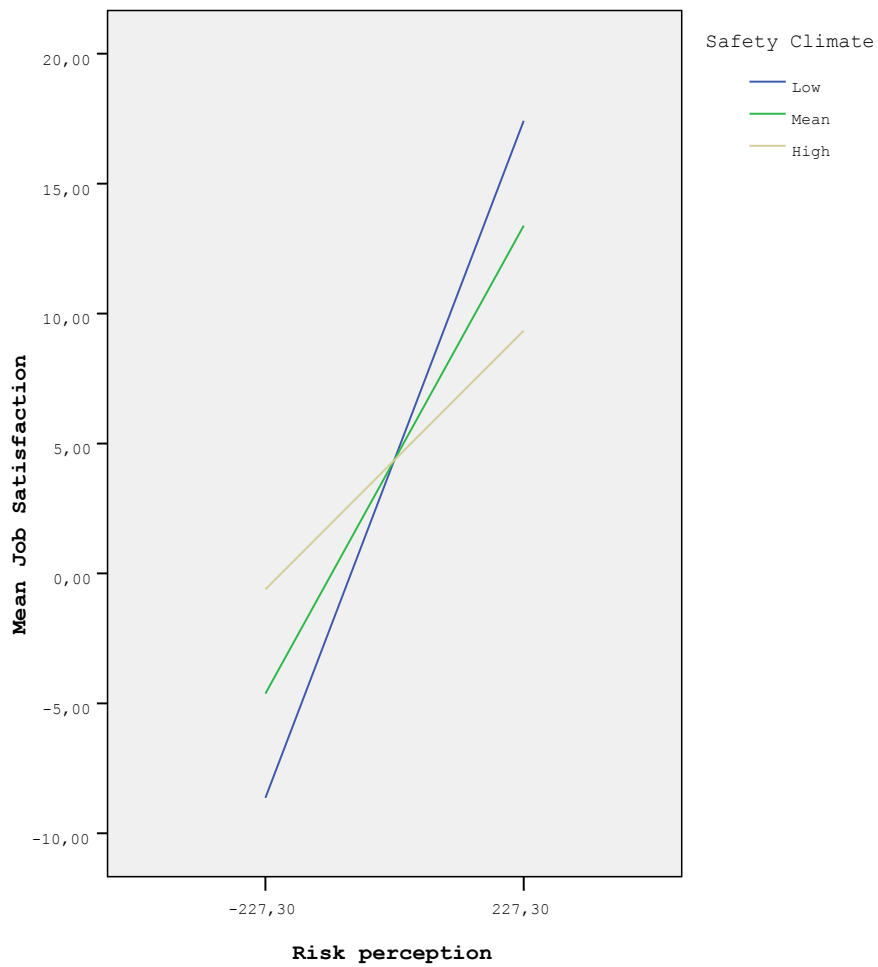
### SIMPLE SLOPE ANALYSIS FOR WORKLOAD IN THE RISK PERCEPTION- JOB SATISFACTION RELATIONSHIP





## APPENDIX R

### SIMPLE SLOPE ANALYSIS FOR SAFETY CLIMATE IN THE RISK PERCEPTION- JOB SATISFACTION RELATIONSHIP



## APPENDIX S

### (TURKISH SUMMARY)

### TÜRKÇE ÖZET

#### İŞ YÜKÜ, GÜVENLİ İKLİM VE NEGATİF DUYGU DURUMUNUN RİSK ALGISI VE İŞ SONUÇLARI ÜZERİNE ETKİSİ

Dünya genelinde iş kazalarının ciddi yaralanmalar, ölüm ve maddi kayıp gibi ciddi sonuçları bulunmaktadır (Ceylan, 2012). Dünyada her yıl yaklaşık 317 milyon iş kazası meydana gelmekte, 2.3 milyon iş kazası ölümlerine sonuçlanmaktadır (International Labor Office, 2012). Türkiye İstatistik Enstitüsü kurumunun istatistiklerine göre (2013, www. tuik.gov.tr); 2013 yılında işe alınan çalışanların %2.3'ü iş kazası geçirmiş, %7.4'ü ise iş kazası riskine maruz kaldığını belirtmiştir. Bu istatistikler iş kazalarının hem ülkemizde hem de dünyada neden önemli olduğunu göstermektedir.

İş sağlığı ve güvenliği davranışları, tükenmişlik ve iş doyumu iş sonuçlarının iş kazaları ile olan ilişkisi göz önünde bulundurulduğunda (örn., Gravan ve O'Brien, 2001), kritik olan iş sonuçlarını etkileyen faktörleri incelemek oldukça önemlidir. Kişilerin tehlikeler ve bu tehlikelerin sonuçları ile ilgili farkındalıkları risk algısı olarak tanımlanmaktadır (Laughery ve Wogalter, 1997) ve risk algısı özellikle yüksek riskli bir iş ortamında daha da önem taşımaktadır.

Bu çalışmanın amacı risk algısı ile *iş sağlığı ve güvenliği performansı*, *tükenmişlik algısı* ve *iş doyumu* arasındaki ilişkiyi incelemektir. Bunun yanında, bu çalışmada risk algısı ile bu üç bağımlı değişken arasındaki ilişki üzerinde iş yükü, güvenli iklim ve olumsuz duygu durumu değişkenlerinin olası belirleyici (moderatör) etkilerinin incelenmesi de hedeflenmiştir.

## 1. Risk Algısının Yüksek Riskli İş Ortamlarındaki Önemi

Risk algısı sağlık ile ilgili davranışların temellerinden olup, kişilerin, tehlikelerin ve bu tehlikelerin sonuçlarının farkında olması olarak tanımlanmaktadır (Laughery ve Wogalter, 1997). Risk algısı, kişilerin farkettileri teklikeyi azaltmaları için bireylerin aksiyon almalarına yardımcı olur (Kelly, Leventhal ve Leventhal, 1999). Weinstein (1988) risk algılama sürecini üç adımda tanımlamaktadır. Risk algısı için önce kişi riskli durumun farkına varmalıdır. İkinci aşamada, farkında olduğu durumun teklikeli veya önemli olduğunu bilmelidir. Son aşamada ise tehlikeyi önleyici davranış içerisinde bulunmalıdır. Bu nedenle iş sağlığı ve güvenliğinin önemli olduğu yerlerde, risk algısı büyük önem taşımaktadır.

Risk algısının subjektif ve objektif olmak üzere iki boyutu bulunmaktadır. Objektif risk, kişinin iş kazası verileri ve bazı istatistiksel verilere dayanırken, subjektif risk kişilerin yorumları ve riski nasıl algıladıkları ile ilgilidir. Bu çalışmada, çalışanların subjektif risk algıları ölçülmüştür.

## 2. Risk Algısı ve İş Sağlığı ve Güvenliği Performansı

İş sağlığı ve güvenliği performansı ve risk algısı arasındaki ilişkiye ait bulgular farklılık göstermektedir (Brewer, Chapman, Gibbons, Gerard, McCaul, ve Weinstein, 2007). Bazı çalışmalara göre risk algısı ve iş sağlığı ve güvenliği performansı arasında doğrudan bir ilişki yokken (Seo, 2005), diğer çalışmalar farklı sonuçlar ortaya koymuştur. Örneğin; risk algısı ve aşılama davranışı arasındaki ilişki incelenmiştir (Brewer ve ark., 2007). Sonuçlar şunu göstermiştir ki, risk olasılığı ( $r = -.26$ ) ve risk ciddiyeti ( $r = -.16$ ) aşılama davranışını anlamlı bir şekilde açıklamaktadır. Benzer şekilde, Tomas, Melias ve Oliver (1999) çalışmalarında işçilerin risk algılarının iş kazalarını anlamlı bir şekilde açıkladığını bulmuşlardır.

Bu çalışmada iş sağlığı ve güvenliği davranışı, çalışanların ilk amirleri veya çalışma arkadaşları tarafından ölçülmüştür. Literatürdeki risk algısı-iş sağlığı ve güvenliği performansı ilişkisi ile ilgili farklı bulgulara rağmen, bu çalışmada, bu ilişkinin pozitif yönde olması beklenmektedir. Çünkü çalışmaya

örneklem olan iş kolu elektrik dağıtım şirketinin arıza onarım bakım birimidir ve bu birim Türkiye'deki yüksek riskli iş kolları arasında yer almaktadır. Bu nedenle, yüksek riskli iş ortamında işçilerin risk algılarının onların iş sağlığı ve güvenliği performansı ile pozitif yönde ilişkili olması beklenmektedir.

### **3. İş yükü, Güvenli İklim ve Negatif Duygu Durumu Değişkenlerinin 'Risk Algısı-İş Sağlığı ve Güvenliği Performansı' İlişkisine Etkisi**

İş baskısı ve iş yükü altında, çalışanlar işlerini bitirmeye odaklanmakta ve iş sağlığı ve güvenliği kurallarına daha az uyum göstermektedirler, bu sebeple de işi yaparken kestirme yöntemlere başvurarak, iş sağlığı ve güvenliği performansına uymayan davranışlarda bulunabilmektedirler (Wright, 1986). Benzer bir şekilde, iş yükünün bir boyutu da zaman baskısıdır. Sonuçlar şunu göstermiştir ki, yoğun zaman baskısı altında çalışan operatörlerin en yüksek risk grubunda olduğu bulunmuştur.

Bu çalışmada, risk algısı ve iş sağlığı ve güvenliği performansı arasında pozitif ilişki beklememize rağmen, iş yükünün fazla olduğu durumlarda bu ilişkinin gücünün daha azalacağı beklenmektedir. Şöyle ki, iş yükü çalışanlar için baskı oluşturup, dikkatlerini negatif etkilediğinden, yüksek risk algısına rağmen çalışanların fazla iş yükü altında iş sağlığı ve güvenliği performanslarının düşmesi beklenmektedir.

İş yükünün yanında, güvenli iklim değişkeni de belirleyici faktör olarak incelenmiştir. Güvenli iklim, çalışanların davranışlarına etki eden organizasyon ile ilgili algılarıdır (Glennon, 1982). Güvenli iklim, çalışanların algıları ile ilgili olduğundan bu çalışmada güvenli iklim kültürü yerine güvenli iklim algısı değişkeni kullanılmıştır. Seo (2005) çalışmasında güvenli iklimin güvenli olmayan iş davranışını anlamlı şekilde açıkladığını bulmuştur ( $r = .73$ ). Çünkü, güvenli iklimin çalışanların risk ve tehlikelerin yaratacağı negatif etkilere karşı koruyucu bir etkisi bulunmaktadır (Demerouti, Nachreiner ve Schaufeli, 2001). Tholen, Pousette ve Törner'de (2012) pozitif güvenli iklimin güvenli davranış için öncelikli koşullardan biri olduğunu bulmuştur. Çünkü çalışanlar güvenli davranış içerisinde bulunurken, yöneticilerinin güvenliğe ne kadar önem verdiğine, organizasyonun güvenliğe ne kadar önem verdiğine ve çalışma

arkadaşlarının iş sağlığı ve güvenliği kurallarına ne kadar uyum gösterdiğine dikkat ederler. Bu bulgular doğrultusunda, risk algısı ve iş sağlığı ve güvenliği performansı arasındaki ilişkinin, pozitif güvenli iklim algısı yüksek olan çalışanlarda daha güçlü olacağı beklenmektedir.

“Risk algısı-iş sağlığı ve güvenliği performansı” ilişkisinde belirleyici faktör olarak incelenen son değişken negatif duygu durumudur. Negatif duygu durumu yüksek olan kişiler, daha sınırlı ve problemlili kişiler olarak tanımlanmaktadır (Watson ve Clark, 1984). Bu nedenle negatif duygu durumu yüksek olan kişiler, durumları daha negatif şekilde değerlendirmektedirler. Iverson ve Erwin (1997) negatif duygu durumu ve iş kazaları arasındaki ilişkiyi pozitif yönde anlamlı bulmuştur. Negatif duygu durumu yüksek olan kişilerin daha umursamaz olduğu, bu nedenle kaza ve sakatlıklara daha maruz kaldığı bulunmuştur (Hansen, 1989). Bilgilerimiz doğrultusunda, daha önce negatif duygu durumunun, risk algısı ve iş sağlığı ve güvenliği arasındaki ilişkiye yordayıcı etkisinin incelendiği bir çalışma bulunmamaktadır. Ancak, negatif duygu durumu ve iş sağlığı ve güvenliği performansı arasındaki ters ilişkiden dolayı, “risk algısı-iş sağlığı ve güvenliği performansı” ilişkisinin, risk algısı ve negatif duygu durumu yüksek olan kişiler arasında daha zayıf olduğu beklenmektedir.

#### **4. İş yükü, Güvenli İklim ve Negatif Duygu Durumu Değişkenlerinin ‘Risk Algısı-Tükenmişlik’ İlişkisine Etkisi**

Tükenmişlik, kişilerin yaptıkları işlerinde hissettikleri duygusal yorgunluk, yabancılaşma ve azalan başarı hissi olarak tanımlanabilir (Maslach ve Jackson, 1981). Tükenmişliğin negatif sonuçlarından dolayı, tükenmişliği etkileyen faktörleri çalışmak önem taşımaktadır. Örneğin; Leiter (2005) çalışmasında, tükenmişliğin bir boyutu olan yorgunluğun hemşireler üzerindeki fiziksel etkilerini pozitif ve anlamlı bulmuştur ( $r = .44$ ). Tükenmişliği, risk modeli içerisinde incelediğimizde, risk altında olan çalışanların yorgun olma ihtimallerinin daha fazla olduğu belirtilmiştir (Cartwright ve Cooper, 1997). Nahrang, Morgerson ve Hofmann (2011) çalışmalarında, risk ve tehlikelerin tükenmişlik ile ilişkilerinin anlamlı ve negatif olduğunu bulmuştur ( $r = -.28$ ). Bu

çalışmada, iş yükü, güvenli iklim ve negatif duygu durumunun risk algısı ve tükenmişlik ilişkisine olan yordayıcı etkisi incelenmiştir.

İş yükü, çalışanların işlerini tamamlamaları için harcadıkları çaba olarak tanımlanabilir. Risk algısı ve iş yükü arasındaki ilişki üzerinde literatürde çok fazla çalışma bulunmamaktadır (Leiter, 2005). Bu ilişkiyi inceleyen çalışmalarda, risk algısı ve iş yükü arasındaki ilişki pozitif yönde anlamlı bulunmuştur (Lee, Faucett, Gillen, Krause ve Landry, 2013). İş yükü ve tükenmişlik arasındaki ilişkiye yönelik literatürde daha çok çalışma bulunmaktadır. Lee ve Ashforth (1996) iş yükünün tükenmişliği açıklayan önemli bir değişken olduğunu bulmuştur. Aynı şekilde, Shirom ve arkadaşları (2006), iş yükü ve tükenmişlik arasında pozitif bir ilişki bulmuştur ( $r = .57$ ). Literatürdeki bulgular incelendiğinde, risk algısı ve tükenmişlik arasındaki ilişkinin, risk algısı ve iş yükü yüksek olan çalışanlar için daha güçlü olacağı beklenmektedir.

Risk algısı ve tükenmişlik arasındaki ilişkide “belirleyici” rol oynadığı düşünülen ikinci değişken güvenli iklimdir. Daha önce bahsedildiği gibi, güvenli iklim çalışanları risk ve tehlikelerin negatif etkilerine karşı korumaktadır. Malmir (2013) tükenmişlik ve güvenli iklim arasındaki ilişkinin negatif anlamlı bir ilişkisi olduğunu bulmuştur ( $r = -.33$ ). Bu çalışmada, “risk algısı-tükenmişlik” ilişkisinin risk algısı yüksek ve negatif güvenli iklim algısına sahip olan kişiler arasında daha güçlü olacağı beklenmektedir.

İş yükü ve güvenli iklim değişkenlerinin yanı sıra, negatif duygu durumu da olası belirleyici bir değişken olarak “risk algısı-tükenmişlik” ilişkisinde incelenmemiştir. Literatürde bulunan çalışmalar incelendiğinde, negatif duygu durumu yüksek olan kişilerin hata ve kusurlara daha çok odaklandıkları bulunmuştur (Schepman ve Zarate, 2008). Bu nedenle de yüksek negatif duygu durumunun tükenmişlik ile olan ilişkisi pozitif ve anlamlı bulunmuştur ( $r = .70$ ) (Schepman ve Zarate, 2008). Bu çalışmada, risk algısı ve tükenmişlik arasındaki ilişkinin yüksek risk algısı ve negatif duygu durumu yüksek olan çalışanlarda daha güçlü olacağı beklenmektedir.

## 5. İş yükü, Güvenli İklim ve Negatif Duygu Durumu Değişkenlerinin 'Risk Algısı-İş Doymu' İlişkisine Etkisi

İş doymu, kişinin işine karşı genel tutumu olarak tanımlanabilir (Cranny, Smith, ve Stone, 1992). Nielsen, Mearns, Matthiesen ve Eid (2011) çalışmalarında, iş yerindeki riskin iş doymunda azalmaya neden olduğunu, risk algısı yüksek olan kişilerin ise iş doyumlarının daha düşük olduğunu bulmuşlardır ( $r = -.33$ ).

Sepctor (1987), iş yükü ve iş doymu arasındaki ilişkiyi incelemiş, iş yükünün iş doymu ile olan ilişkisini negatif yönde bulmuştur. Negatif ilişkiden dolayı, bu çalışmada, risk algısı ve iş doymu arasındaki ilişkinin iş yükü yüksek olan çalışanlar arasında daha zayıf olacağı beklenmektedir. Nielsen ve ark. (2011) çalışmasında, risk algısı yüksek kişilerin iş doyumlarının daha düşük olduğunu, ancak bu etkinin güvenli iklimin pozitif algılandığı ortamlarda daha azaldığını belirtmiştir. Bu nedenle işlerin risk boyutlarını değiştiremediğimizde, bu etkiyi azaltacak olan güvenli iklimin organizasyon içerisinde pozitif bir algı yaratması yönünde çalışması gerekmektedir (Nielsen ve ark., 2011). Bu çalışmada, risk algısı ve iş doymu arasındaki ilişkinin, pozitif iklim algısı yüksek olan kişiler arasında daha kuvvetli olacağı beklenmektedir.

Son olarak negatif duygu durumu değişkeni incelenecek olup, literatürdeki çalışmalar incelendiğinde, negatif duygu durumu ve iş doymu arasındaki ilişkinin anlamlı ve negatif olduğu bulunmuştur. Örneğin; Connolly ve Viswesvaran (2000) çalışmasında, negatif duygu durumu ve iş doymu arasındaki ilişkiyi negatif ve anlamlı bulmuştur ( $r = -.33$ ). Mazzola'ya göre negatif duygu durumu yüksek olan kişiler, işteki problemlere daha negatif bir yaklaşım göstermektedirler. Necowitz ve Roznoski (1994) negatif duygu durumu yüksek bireylerin, olayların negatif yönlerini daha çok hatırladığını açıklamıştır. Bu nedenle bu çalışmada, risk algısı ve iş doymu arasındaki ilişkinin negatif duygu durumu yüksek olan çalışanlar için daha negatif olacağı beklenmektedir.

Özetle, bu çalışmada, iş yükü, güvenli iklim ve negatif duygu durumu değişkenlerinin; risk algısı ile iş sağlığı ve güvenliği performansı, tükenmişlik ve

iş doyumunu arasındaki ilişkilerde olası yordayıcı etkisi incelenmiştir. Bu bağlamda aşağıdaki hipotezler test edilmiştir.

*Hipotez 1:* Risk algısı yüksek olan çalışanların iş sağlığı ve güvenliği performansı daha iyidir.

*Hipotez 2:* İş yükü, güvenli iklim ve negatif duygu durumunun risk algısı ve iş sağlığı ve güvenliği arasındaki ilişkiye yordayıcı etkisi vardır.

*Hipotez 2a:* Risk algısı yüksek çalışanlar arasında, iş yükü fazla olanların iş sağlığı ve güvenliği performansı iş yükü düşük olan çalışanlara göre daha düşüktür.

*Hipotez 2b:* Risk algısı yüksek çalışanlar arasında, güvenli iklimi algısı daha pozitif olan çalışanların iş sağlığı ve güvenliği performansı güvenli iklim algısı daha düşük olan çalışanlara göre daha iyidir.

*Hipotez 2c:* Risk algısı yüksek çalışanlar arasında, negatif duygu durumu yüksek olanların iş sağlığı ve güvenliği performansı düşük olanlara göre daha düşüktür.

*Hipotez 3:* İş yükü, güvenli iklim ve negatif duygu durumunun risk algısı ve tükenmişlik güvenliği arasındaki ilişkiye yordayıcı etkisi vardır.

*Hipotez 3a:* Risk algısı yüksek çalışanlar arasında, iş yükü fazla olanların tükenmişlik seviyeleri iş yükü daha düşük olan çalışanlara göre daha fazladır.

*Hipotez 3b:* Risk algısı yüksek çalışanlar arasında, güvenli iklimi algısı daha pozitif olan çalışanların tükenmişlik seviyeleri güvenli iklim algısı daha düşük olan çalışanlara göre daha azdır.

*Hipotez 3c:* Risk algısı yüksek çalışanlar arasında, negatif duygu durumu yüksek olanların tükenmişlik seviyeleri negatif duygu durumu daha düşük olanlara göre daha yüksektir.

*Hipotez 4:* İş yükü, güvenli iklim ve negatif duygu durumunun risk algısı ve iş doyumunu arasındaki ilişkiye yordayıcı etkisi vardır.

*Hipotez 4a:* Risk algısı yüksek çalışanlar arasında, iş yükü fazla olanların iş doyumunu seviyeleri iş yükü daha düşük olan çalışanlara göre daha azdır.



*Hipotez 4b:* Risk algısı yüksek çalışanlar arasında, güvenli iklimi algısı daha negatif olan çalışanların iş doyum seviyeleri güvenli iklim algısı daha yüksek olan çalışanlara göre daha düşüktür.

*Hipotez 4c:* Risk algısı yüksek çalışanlar arasında, negatif duygu durumu yüksek olanların iş doyum seviyeleri negatif duygu durumu daha düşük olanlara göre daha düşüktür.

## **6. Yöntem**

Bu çalışmanın örneklemini, Adana bölgesindeki faaliyet gösteren bir elektrik dağıtım şirketinin bir alt işveren çalışanı olan 89 elektrik teknisyeni ve bu teknisyenlerin iş sağlığı ve güvenliği performansını değerlendiren 89 ilk amir veya iş arkadaşı oluşturmuştur. Çalışmaya katılan tüm çalışanlar arıza onarım bakım biriminde sahada çalışmaktadır. Elektrik dağıtım sektöründe, bu birim genel olarak yüksek risk grubunda yer almaktadır ve ölümlü kazaların bu birimde gerçekleşme olasılığı fazladır.

Katılımcılara anket uygulanmıştır ve teknisyenlere uygulanan anket paketinde iş yükü, güvenli iklim algısı, negatif duygu durumu, tükenmişlik, iş doyumunu ölçekleriyle birlikte bir demografik bilgi formu yer almıştır. İlk amir veya iş arkadaşlarına uygulanan ankette ise sadece iş sağlığı ve güvenliği performans ölçeği yer almıştır.

Çalışanların iş doyumları, 20 maddeden oluşan Minnesota İş Doyumu ölçeği kullanarak (Weiss, Davis, England, ve Lofquist, 1967) ölçülmüştür. Bu ölçekte maddeler Likert tipi beşli bir derecelendirme ölçeği üzerinde değerlendirilmektedir. Bu çalışmada, iş doyumunu ölçeğinin iç-tutarlılık katsayısı 0,91 bulunmuştur.

Tükenmişlik seviyelerini ölçmek için, Maslach ve Jackson tarafından geliştirilen Maslach Tükenmişlik ölçeği kullanılmıştır. Bu ölçek Ergin (1992) tarafından Türkçe'ye adapte edilmiştir. Toplam 22 maddeden oluşan ölçekte 5-basamaklı Likert tipi bir değerlendirme yapılmaktadır. Ölçeğin bu çalışmadaki güvenilirlik 0,75 olarak bulunmuştur.

Bu çalışmada, güvenli iklim algısını ölçmek için, iki farklı güvenli iklim ölçeği kullanmıştır. Neal, Griffin ve Hart (2000) tarafından kullanılan güvenli iklim ölçeği 16 madde içermektedir. Dört madde ise Gershon ve arkadaşlarının (2000) geliştirdiği ölçekten adapte edilmiştir. Son olarak ise Haktanır (2011) tarafından geliştirilen dört madde eklenmiştir. Ölçeğin bu çalışmada güvenilirlik katsayısı 0,95 bulunmuştur.

Çalışanların iş yükü seviyelerini ölçmek için Baran (2010) tarafından türkçeye çevrilen Xanthopoulou, Bakker, Demerouti ve Schaufeli (2007) tarafından geliştirilen dört maddelik ölçek kullanılmıştır.

Negatif duygu durumu için, Watson, Clark ve Tellegen (1988) tarafından geliştirilen PANAS ölçeği kullanmıştır. Gençöz (2000) tarafından Türkçe'ye adapte edilen bu ölçek, 10 negatif 10 pozitif olmak üzere toplam 20 madde içermektedir. Maddeler beş basamaklı Likert tipi bir ölçek üzerinde değerlendirilmektedir. Bu çalışmada, negatif ve pozitif duygu durumunun güvenilirlik değeri sırasıyla 0,85 ve 0,88 bulunmuştur.

Çalışanların risk algılarını ölçmek amacı ile risk ciddiyeti, risk olasılığı, genel risk ve algılanan etkisi boyutları kullanmıştır. Fiesel (2006) tarafından geliştirilen 32 maddeli ölçek araştırmacı tarafından Türkçe'ye ve elektrik dağıtım sektörüne adapte edilmiştir. Bu ölçekte riskin olasılığı ve riskin ciddiyeti hakkında maddeler yer almaktadır. Risk algısı puanı hesaplanırken, her madde için risk olasılığına 0,3, risk ciddiyetine ise 0,7 ağırlık verilmiş olup ağırlıklandırılmış değerlerin toplamı kullanılmıştır.

Çalışanları iş sağlığı ve güvenliği performansını ölçmede, organizasyonun iş sağlığı ve güvenliği birimi uzmanları ile 20 maddeden oluşan bir ölçek geliştirilmiştir. İlk amirler veya iş arkadaşları, her bir davranışın gösterilme sıklığını 5-basamaklı bir ölçek üzerinde değerlendirmiştir. Bu çalışmada ölçeğin güvenilirlik değeri 0,87 bulunmuştur.

Katılımcıların yaş, eğitim seviyeleri, haftalık toplam çalışma saati, iş deneyimi ve kurumdaki toplam çalışma süresi ve elektrik ile ilgili bir kaza geçirip geçirmediği demografik formda yer almaktadır.

## 7. Sonular

Sonular incelediėinde, tikenmiřlik ve negatif duygu durumu dıřındaki deėiřkenlerin ortalama puanlarının kullanılan 5-basamaklı leklerin orta deėerinden yksek olduėu grlmřtr. leklerin gvenilirlik deėerlerine bakıldıėında ise genelde deėerler tatminkardır. Korelasyonlara bakıldıėında, risk algısı ve iř yk arasındaki iliřki pozitifdir ( $r = .25, p < .01$ ). Daha nce elektrik kazası geirmiř olan alıřanların risk algılarının daha yksek olduėu bulunmuřtur ( $r = -.25, p < .05$ ) (*Not.* İř kazası var “0”, iř kazası yok “1” olarak kodlanmıřtır). İř doyumunun tikenmiřlik ile olan iliřkisi negatif bulunmuřtur ( $r = -.50, p < .01$ ). İř yk ( $r = -.28, p < .01$ ) ve negatif duygu durumunun ( $r = -.30, p < .01$ ) ise iř doyumunu ile olan iliřkisi anlamlı ve negatif bulunmuřtur. Gvenli iř ikliminin iř doyumunu ile olan iliřkisi ise anlamlı ve pozitifdir ( $r = .56, p < .01$ ). Negatif duygu durumunun tikenmiřlik olan iliřkisi pozitifken ( $r = .32, p < .01$ ), gvenli iklim ile olan iliřkisi negatiftir. ( $r = -.57, p < .01$ ).

## 8. Hipotez Testleri

Bu alıřmanın amacı, iř yk, gvenli iklim ve negatif duygu durumu deėiřkenlerinin risk algısı ile, iř saėlıėı ve gvenliėi performansı, tikenmiřlik ve iř doyumunu arasındaki iliřkilerdeki olası yordayıcı etkisini lmektir. Bu nedenle, moderasyonlu regresyon analizleri yapılmıřtır. Bu amala, her analizde elektrik kazası deėiřkeni (bir kaza gemiřinin olup olmaması) kontrol deėiřken olarak analize dahil edilmiřtir. Her analizde,  adımdan oluřan bir *oklu hiyerarřik regresyon analizi* yapılmıř olup, ilk adımda elektrik kazası deėiřkeni, ikinci adımda ortalanmıř (standardize dilmiř olan) olan baėımsız deėiřkenler (rneėin, risk algısı ve belirleyici deėiřken olarak da negatif duygu durumu deėiřkeni) ve son adımda da ikinci adımda girilen deėiřkenlerin etkileřimi dahil edilmiřtir. Her bir belirleyici deėiřkenin (iř yk, gvenli iklim ve negatif duygu durumu) etkisi her bir baėımlı baėımlı deėiřken (iř gvenliėi performansı, tikenmiřlik ve iř doyumunu) iin ayrı olarak incelenmiřtir.

## **9. İş yükü, Güvenli İklim ve Negatif Duygu Durumunun Risk Algısı ve İş Sağlığı ve Güvenliği Performansı Arasındaki İlişkiye Etkisi**

Bu çalışmada, Hipotez 1 doğrultusunda risk algısı yüksek olan çalışanların iş sağlığı ve güvenliği performanslarının daha iyi olacağı belirtilmiştir. Risk algısı ve iş sağlığı ve güvenliği performansı arasındaki ilişkinin anlamlı olmadığı bulunmuştur ( $r = .06$ , ns). Bu nedenle Hipotez 1 desteklenmemiştir. Hipotez 2a, 2b ve 2c doğrultusunda iş yükü, güvenli iklim ve negatif duygu durumunun yordayıcı etkisi incelenmiş, belirleyici faktörlerin yordayıcı etkisi bulunmamıştır. Bu nedenle Hipotez 2a, 2b ve 2c desteklenmemiştir.

## **10. İş yükü, Güvenli İklim ve Negatif Duygu Durumunun Risk Algısı ve Tükenmişlik Arasındaki İlişkiye Etkisi**

İş yükünün risk algısı-tükenmişlik ilişkisi üzerindeki belirleyici rolünü ölçmek için yapılan moderasyonlu regresyon analizinde ilk adımda girilen iş kazası değişkeninin, tükenmişlik değişkeni üzerinde anlamlı bir açıklayıcı etkisi olmadığı görülmüştür. İkinci adımda risk algısı ve iş yükü değişkenleri analize dahil edilmiş ve etki anlamlı bulunmamıştır. Son adımda ise standardize edilmiş etkileşim değişkeni denkleme dahil edilmiştir. Etkileşim değişkeninin tükenmişlik değişkeni üzerinde açıkladığı varyans anlamlıdır. Risk algısı, iş yükü ve iş kazası değişkenleri tükenmişlik değişkenindeki varyansın %3'ünü açıklarken, son adımda girilen Risk Algısı X İş Yükü etkileşimi değişkeninin analize girilmesiyle tükenmişlik değişkeninde açıklanan varyans % 6 artmıştır. Beta değerleri risk algısı ( $\beta = -.162$ , ns) ve iş yükünün ( $\beta = .117$ , ns) ana etkisinin anlamlı olmadığını; ancak etkileşimli değişkeninin anlamlı olduğunu göstermektedir ( $\beta = -.1.207$ ,  $p < .05$ ). İş yükünün anlamlı yordayıcı etkisinin yönünü bulmak için analizler yapılmış, beklenenin aksine, risk algısı yüksek olan kişilerde iş yükü azaldıkça tükenmişlik seviyesinin artmış olduğu, risk algısı düşük olan kişilerde ise iş yükü artıkça tükenmişlik seviyesinin yükselmiş olduğu bulunmuştur. Bu nedenle Hipotez 3a desteklenmemiştir. Güvenli iklim ve negatif duygu durumunun yordayıcı etkisi de anlamlı bulunmamıştır.

## **11. İş yükü, Güvenli İklim ve Negatif Duygu Durumunun Risk Algısı ve İş Doymu Arasındaki İlişkiye Etkisi**

İş yükü, güvenli iklim ve negatif duygu durumu değişkenlerinin yordayıcı etkisini incelemek amacı ile yapılan analizler sonucunda, iş yükü ve güvenli iklim değişkenlerinin yordayıcı etkisi anlamlı bulunmamıştır. Bu nedenle, Hipotez 4a ve 4b desteklenmemiştir.

İş yükü ve güvenli iklim belirleyici faktör olarak anlamlı bulunmazken, negatif duygu durumunun risk algısı ve iş doymu arasındaki ilişkiye belirleyici etkisi anlamlı bulunmuştur. İş kazası, risk algısı ve negatif duygu durumu değişkenlerinin iş doymunda açıkladıkları varyans %8 iken; negatif duygu durumu ile risk algısının etkileşim etkisinin ilave olarak açıkladığı varyans ( $R^2$  değişim) %5 olarak bulunmuştur. Gözlenen etkileşim etkisi irdelendiğinde ise, risk algısı ve negatif duygu durumu da yüksek olan çalışanların iş doyumlarının, negatif duygu durumu daha düşük olan çalışanlara göre daha düşük olduğu bulunmuştur. Bu sonuç, Hipotez 4c'yi desteklemektedir.

## **12. Tartışma**

Bu çalışmada, hipotezler doğrultusunda, risk algısı ile iş sağlığı ve güvenliği performansı arasındaki ilişkinin pozitif olması beklenmişti, ancak hipotez desteklenmemiştir. Literatürdeki çalışmalara baktığımızda bu iki değişken arasındaki ilişkiye ait sonuçların tutarlı olmayabildiği görülmektedir. Bazı çalışmalar aralarında anlamlı bir ilişki bulurken (örn., Brewer ve ark., 2007), bazı bulgular ise aralarındaki ilişkinin zayıf olduğuna işaret etmektedir (örn., Vries ve ark., 2012). Bu çalışmada, iş sağlığı ve güvenliği performansı ilk amir veya iş arkadaşları tarafından değerlendirilmiştir. İş sağlığı ve güvenliği performansının ortalama değeri oldukça yüksek 4.37 (SS= 0.33) bulunmuştur.

Görece yüksek olan ve varyansı da oldukça dar olan bu değerlendirmeler, gözlenen korelasyonların ya da ilişkilerin zayıf olmasında önemli bir rol oynamış olabilir. Bu çalışmaya katılan çalışanların hepsi belirli süreli sözleşmeler ile bir alt işveren firmada çalıştıklarından, değerlendiriciler işveren tarafında negatif bir algı yaratmamak için değerlendirmelerini yapay bir şekilde yüksek yapmış olabilirler.

Görece **yüksek** bir aralık/ranj içinde yapılan değerlendirmeler, beklenen etkileri baskılamış olabilir.

İş yükünün risk algısı ve iş sağlığı ve güvenliği performansı arasındaki ilişkiye yordayıcı etkisi anlamlı bulunmamıştır. Bunun bir nedeni, örneklemdaki katılımcı sayısından kaynaklanabilir. Daha büyük bir örneklem ile etkileşimli değişkenlerin etkilerinin ortaya çıkma olasılığının yüksek olacağı beklenmektedir. İş yükü gibi güvenli iklimin de risk algısı ve iş sağlığı ve güvenliği arasındaki ilişkiye yordayıcı etkisi bulunmamıştır. Bu durum, çalışanların iş yerlerindeki güvenli iklimi olduğundan çok daha pozitif yansıtma eğilimlerinin bir sonucu olabilir. Katılımcı teknisyenler, işlerini kaybetme kokusu ile, iş ortamlarını değerlendirirken sosyal beğenirlik düzeyi yüksek cevaplar vermiş olabilirler.

Negatif duygu durumunun yordayıcı etkisi göz önünde bulundurulduğunda, etkileşim değişkeninin beta değerlerinin yüksek olduğu görülmüştür, daha büyük bir örneklem içerisinde bu trendin anlamlı olması beklenmektedir. Diğer bir sebep ise, kişilerin kendilerini negatif duygu durumunda daha düşük; ancak pozitif duygu durumunu ifade eden maddelerde kendilerini daha yüksek gösterme eğilimleri etkili olabilir.

Tükenmişlik değişkeni ile ilgili sonuçları incelediğimizde, iş yükünün risk algısı ile olan etkileşiminin tükenmişlik değişkenine yordayıcı etkisi anlamlı bulunmuştur; ancak yönü beklenen yönde değildir. Ters yöndeki ilişkinin nedenlerinden biri, risk algısı yüksek olan kişilerin, iş yükü altında iş yoğunluğu sebebi ile iş risklerinin olumsuz etkilerinden daha az etkileniyor olmaları olabilir.

Risk algısı ve tükenmişlik arasındaki ilişkiye güvenli iklimin yordayıcı etkisi de anlamlı bulunmamıştır. Bu ilişkinin anlamsız olmasına etki eden nedenlerden biri tükenmişlik seviyesinin görece düşük olması olabilir. Çalışan yorumları ve çalışanların yıllık izin ve maaş ödemeleri ile ilgili problemlerinden dolayı sorun yaşadıkları bilinmekte bu nedenle tükenmişlik seviyelerinin daha yüksek olması beklenmektedir. Ancak, yine sosyal beğenirlik düzeyi yüksek cevap verme eğilimleri nedeni ile beklenen bu etki gözlenmemiş olabilir.

Risk algısı ve iş doyumu arasındaki ilişkiye, iş yükü ve güvenli iklimin yordayıcı etkisi bulunmamıştır. Bu iş kolunda; diğer iş kollarından farklı olarak, bazı durumlar teknisyenlerin kontrolünde olmamaktadır. Örneğin, kişi tüm güvenlik önlemlerini alsa bile bazen iş arkadaşının hatası iş kazası işe sonuçlanabilmektedir. Aynı şekilde bazı teknik problemlerden dolayı alınan önlemler yetersiz kalabilmektedir.

Negatif duygu durumunun risk algısı-iş doyumu ilişkisine yordayıcı etkisi bulunmuştur. Yüksek risk algısı ve negatif duygu durumu olan kişilerin iş doyumlarının negatif duygu durumu düşük olan kişilere göre daha az olduğu bulunmuştur. Yordayıcı değişkenin yönü beklenen şekildedir. Çünkü negatif duygu durumu yüksek olan kişiler problemleri daha iyi değerlendirirken problemin daha negatif noktalarına odaklanmaktadır bu da kişilerin iş doyumlarını etkilemektedir.

Ana hipotezlerin çoğunun desteklenmemesine rağmen, bu çalışmadaki korelasyonel değerler önemli bulguları ortaya koymaktadır. İş doyumu ve tükenmişlik arasındaki ilişki bu çalışmada anlamlı ve negatif olarak bulunmuştur. Risk algısı ve iş yükü arasında anlamlı bir pozitif ilişki bulunmuş ve bu sonuç ilgili yazındaki bulgular ile uyumludur (Lee ve ark., 2013). Buna göre iş yükü fazla olan kişiler işi daha riskli olarak algılamaktadır. Çünkü çalışanlar iş yükleri fazla olduğu zaman, işi bitirmeye odaklanıp kurallara daha az uyum göstermektedirler (Wright, 1986).

Güvenli iklim ile ilgili bulunan sonuçlar da önemlidir. Bu çalışmadaki sonuçlara göre, güvenli iklim tükenmişlik ile negatif bir ilişkiye sahiptir. Bu bulgu ilgili yazında rapor edilen bulgular ile uyum göstermektedir (Malmir, 2013; Dollar ve Bakker, 2010). Diğer yandan, güvenli iklim, iş doyumu değişkeni ile pozitif ilişki göstermektedir. Bu bulgu da Nielsen ve arkadaşları (2011) tarafından bulunan sonuçlar ile paralellik göstermektedir.

Leiter, Zanaletti ve Argentero (2009) kişilerin iş kazası deneyimlerinin risk algılarını etkilediğini belirtmişlerdir. Aynı şekilde, bu çalışmada da iş kazası geçiren kişilerin risk algılarının daha yüksek olduğu bulunmuştur.

### **13. Çalışmanın Pratik Doğurguları**

Ana hipotezlerin çoğu desteklenmemesine rağmen, bazı bulguların önemli doğurguları bulunmaktadır. Negatif duygu durumunun “risk algısı-iş doyumu” yordayıcı etkisinin anlamlı olması, özellikle işe alım süreci için önemli mesajlar içermektedir. Örneğin, risk algısı yüksek olan işlerde işe alım sürecinde, olumsuz duygu durumu yüksek adaylar başvurdukları pozisyon yerine, daha az riskli işler için değerlendirilmeye alınabilir. Diğer yandan, güvenli iklimi pozitif olarak değerlendiren çalışanların iş doyumları yüksek, tükenmişlik seviyeleri ise düşük olarak bulunmuştur. Bu nedenle organizasyonlarda güvenli iklimin oluşmasına önem vermeli, gerekirse eğitim programları veya ödüllendirme sistemi ile olumlu bir iklimin oluşturulması ve sürdürülmesi için çalışmalıdır. Diğer yandanda organizasyonlar iş yükünün güvenli iklim algısını olumsuz etkilediğini bilmeli ve yıl içerisindeki planlamalarını bunu göz önünde bulundurarak yapmalıdırlar.

### **14. Çalışmanın Katkıları**

Bu çalışma, risk algısı ve iş sonuçları arasındaki ilişkiyi Türkiye’de elektrik dağıtım sektöründe inceleyen ilk çalışmalardan biridir. Risk algısı ve iş sağlığı ve güvenliği arasındaki ilişki hala araştırılmaktadır. Bu nedenle bu çalışmanın ilgili yazına katkıda bulunacağı düşünülmektedir. Çalışmanın diğer güçlü yanı ise veri toplama sürecinde birden çok kaynağın (teknisyenlerin kendisi ve de amirler/iş arkadaşları) kullanılmasıdır.

### **15. Çalışma Eksiklikleri ve Öneriler**

Bu bu çalışmanın temel eksikliklerinden biri örneklem büyüklüğü ile ilgilidir. Daha büyük bir örnekleme, daha güvenilir sonuçlar alınması mümkün olacağı gibi, eğilim olarak tespit edilen bazı bulguların, istatistiksel anlamlılık düzeyine erişmesi de mümkün olacaktır.

Çalışmanın diğer bir eksikliği, değerlendirmelerdeki potansiyel yanlılıklardır. Daha önce belirtildiği gibi, bu çalışmada iş sağlığı ve güvenliği performansı değerlendirmeleri ilk amir/iş arkadaşları tarafından yapılmıştır. Ancak çalışanların çalışma statülerinden dolayı (alt işveren çalışanı olmaları, sözleşmeli olmaları vb gibi.) değerlendirmelerinde objektif olmamış olabilirler.



Bu nedenle daha sonraki alıřmalarda, ramak kala kazalar (near-miss accidents) ve iř kazaları baėımlı deėiřken olarak kullanılabilir.

Son olarak, bu alıřmada kullanılmıř olan risk algısı leėi bu rneklem iin ilk defa kullanılmıř olup, bir sonraki alıřmalarda leėin geerliliėi konusunda alıřmalar yapılmalıdır.

## APPENDIX T

### TEZ FOTOKOPİSİ İZİN FORMU

#### ENSTİTÜ

Fen Bilimleri Enstitüsü	<input type="checkbox"/>
Sosyal Bilimler Enstitüsü	<input checked="" type="checkbox"/>
Uygulamalı Matematik Enstitüsü	<input type="checkbox"/>
Enformatik Enstitüsü	<input type="checkbox"/>
Deniz Bilimleri Enstitüsü	<input type="checkbox"/>

#### YAZARIN

Soyadı : Gecer  
Adı : Canan  
Bölümü : Endüstri ve Örgütsel Psikolojisi

**TEZİN ADI** (İngilizce): Workload, Safety Climate and Negative Affectivity as the Presumed Moderators of the Risk Perception-Organizational Outcomes Relationships

**TEZİN TÜRÜ** : Yüksek Lisans  Doktora

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir.
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir.
3. Tezimden bir bir (1) yıl süreyle fotokopi alınamaz.

**TEZİN KÜTÜPHANEYE TESLİM TARİHİ**: 05.09.2014