7 (1): 39-54 (2023)

Journal of Aviation

https://dergipark.org.tr/en/pub/jav

e-ISSN 2587-1676

The Effect of Technological Stress Dimensions on Employees' Decision-Making Styles and Regulatory Role of Job Insecurity Perception: A Research in The Aviation Sector

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Article Info

Received: 20 September 2022
Revised: 27 December 2022
Accepted: 05 January 2023
Published Online: 26 February 2023

Keywords:
Technostress
Decision Making Styles
Perception of Job Insecurity
Aviation Sector
Aircraft Maintenance Technics

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RESEARCH ARTICLE

https://doi.org/10.30518/jav.1180461

Abstract

The technological stress factor is more evident in the aviation industry, which uses high and rapidly changing technology, especially for technical employees. The purpose of this research is to determine the effect of technostress levels of aviation industry employees on their decision-making styles and to analysis the regulatory effects of job insecurity perception, which is of great importance for businesses and employees in this effect. The research universe has been determined as the technical personnel in the airline companies operating in Turkey. In all, 402 questionnaires were considered valid and included in the 25th data analysis of SPSS. It was determined that technological stress was statistically significantly related to rational, intuitive, avoidant and instant decision-making. Meanwhile, each decision-making style and the dimensions of job insecurity perception separately have significant moderator roles. Finally, it was revealed that all technostress dimensions, except for the techno-invasion dimension, were statistically significantly correlated with at least one decision-making style. In the research, suggestions were made for the effects of changes in employee's decision-making styles and perceptions of job insecurity as a result of the effects of technostress, and the results were tried to be explained with aviation industry dynamics and theoretical literature.

This article was produced from the author's doctorate thesis.

1. Introduction

Studies analysing and revealing the positive or negative effects of changing and developing new technologies are increasing day by day (Chiappetta, 2017). Developing technology and increase in knowledge cause changes in the business life of employees. Recent studies emphasize that employees are under the influence of technology-based information, and this creates an overload of information and work stress on employees (Kaymaz, 2019). This type of stress originating from developing technology is examined under the concept of technostress as a new phenomenon (Norulkamar et al., 2009). TS (Technostress), a phenomenon that emerged with the integration of computer and artificial intelligence technologies into working life, was defined by the first psychologist Dr. Craig Brod (1984) as *'the inability to cope with new computer technologies as a modern disease of our age and the failure to adapt to these new technologies'*. According to different researchers, technostress is a psychological expression and the mental and physiological arousal due to technology (Arnetz & Wiholm, 1997), the negative impact on the thoughts, behaviors, attitudes and body of the employee who is expected to cope with technology (Weil & Rosen, 1997), It is defined as the difficulty of adapting to new technologies (Brand, 2000). Researchers are focusing more and more on the effects of technostress, especially on employee behaviors and organizations, over concepts and variables. Although technology strengthens businesses with greater productivity, efficiency in the workplace, improved communication, improved mobility and HR (Human Resources), negative consequences that can be considered important for both employers and employees may arise from the use of this technology (Boyer-Davis, 2018).

The aviation sector is one of the sectors where technology develops most rapidly and its applications have a wide impact (Alam, 2016). The advancement of technologies used in an aircraft is a serious stress factor on both pilots and technical personnel. The decisions to be made by the technical personnel in case of aircraft maintenance and breakdowns affect the entire flight operation in particularly and the aviation industry in general. Several leading companies in high-tech industries have begun to reorganize their procedures, approaches to work, and decision support systems using training methods derived from decision analysis. The aviation industry and airlines are supporting related programs to improve decision-making and raise situational awareness about the impact of the decision (Zsambok, 2014). These programs are especially based on regulating the decision-making styles of the employees and determining which factors affect the decision-making styles of the employees. In this process, especially

employees have to cope with intense tension and stress. Therefore, it can be said that the decision-making behaviors of the employees have become more important than ever (Çolakkadıoğlu & Güçray, 2007).

According to (Sverke & Hellgren, 2002), job insecurity is considered a classical job stressor that theoretically operates with two basic mechanisms. The first mechanism is that the need for security is a fundamental motivation to work. The second mechanism is based on the idea that the relationship between employer and employee is partially social. Major organizational changes, such as layoffs, pay cuts, or other threats to job security, provoke negative reactions because they violate an employee's psychological contract against the organization. In this case, the perception of job insecurity is seen as a job stressor for employees and its connection with technological stress is revealed. Employee engagement and lack of job satisfaction affect employee turnover intention and employee turnover rate (Appelbaum et al., 2013). Employees who have more decision-making and decision-making opportunities experience less negative consequences of job insecurity than employees who have less decision-making opportunities. For this reason, it is thought that employees' decision-making behaviors and especially their decision-making styles are associated with job insecurity (Probst, 2005).

Considering the statements before mentioned, it is seen that technological stress is an important factor in the aviation industry. In this research, it has been a matter of curiosity how the dimensions of technological stress have a behavioral effect in the aviation sector and how it causes a change, particularly for employees at the decision stage. In previous studies, the effects of stress on decision-making styles were analysed in different sectors. The aim here is to determine how technology-based stress will affect employees' decision-making styles. Its application in the aviation industry, where technology is intensively high, is also suitable for the investigation of the technological stress factor. Observations and investigations confirm that technology is a stress factor in the aviation industry. At the same time, technological developments affect the decisions of the personnel working in aircraft maintenance, and the decisions of the employees directly affect the costs and flight safety. The question of how the perception of job insecurity, which is an important concept in the aviation industry, plays a regulatory role between these two variables will also be revealed. In addition, the questions of whether technological stress causes a certain effect on decision-making styles and whether its results are differentiated according to decision-making styles can be answered.

2. Conceptual Framework

2.1. Technostress

It is possible to talk about many types of stress and many parameters, mechanisms and environments that trigger it. In management studies, the concept of stress is quite old and is explained under different theoretical assumptions. Administrative stress; for a phenomenon that occurs in the person's environment and is perceived as a demand that must be made by the person, is an environmental factor that emerges as a result of the experience of the difference between the individual's demanded wills and the skills and resources required to meet it (McGrath, 1976). At the organizational level, job stress is based on the stressor-strain approach. Any feature related to work, working life, the nature of the job or new technology is known as stress or situations that cause stress, and the physiological or psychological response to this stress is defined as tension (Hurrel et al., 1998). All approaches are generally based on a transitional approach, which defines stress as a dynamic process between stress and the individual and his/her environment.

Information and communication technologies have changed the functioning of global work environments in particular. In addition, the digital revolution has permanently shaped the nature and future of many jobs and professions. Although technology empowers organizations with greater productivity, productivity in the workplace, improved communication and improved mobility, significant negative consequences may arise from the use of this technology for both employers and employees (Boyer-Davis, 2018). Therefore; studies are carried out to understand and isolate the effects of information and communication technologies on business employees and managers. As a result of these studies, a phenomenon called '**Technostress**' was discovered and people's relations with this phenomenon began to be researched (Boyer-Davis, 2018).

In the organizational sense, technostress is the stress situation that arises due to the use of technological information systems in organizational tasks, and they attributed the reason to modern technological information systems (Ayyagari et al., 2011). When stress related to the workplace is considered, technostress is defined as a negative psychological state related to the use of information systems in the workplace and the use of more advanced systems in future, and thus; this can result in anxiety, mental fatigue, skepticism and inefficiency (Salanova et al., 2007). When business and working environments are examined in general, according to (Ragu-Nathan & Tarafdar, 2008), it has three main characteristics as a technological and working environment. First one is the increasing and enormous dependence of managers on information technology (personal computers, production applications, interfaces, etc.), second is the difference in employee-manager knowledge level caused by the increasing complexity of information technologies and third is modern information technologies changing the working climate and organizational culture as well.

Similar to stress in general, but specifically, the key dimensions of technostress are techno-insecurity, techno-uncertainty, techno-overload, techno-invasion and techno-complexity. Technostress creators (stress situations resulting from the use of high information technologies) can be expressed in accordance with the theory as stress situations (expressing emerging situations) and technostress preventers (mitigating situations). Technostress can occur in many situations which are high levels of role stress, low job satisfaction, organizational commitment, productivity and satisfaction of end users from information systems (Tarafdar et al., 2015). However, recent research has shown that when employees are trained to reframe their stress perceptions from negative to positive, significant improvements in their job performance and health have been observed (Crum et al., 2013).

When the studies with technostress are examined, it is seen that the personality traits of the employees, their performance, their productivity, organizational commitment, types of leadership, organizational citizenship, psychological results, intention to leave, feeling good, organizational support, cultural difference, job character and job insecurity, job

satisfaction, productivity, innovation, organizational environment, and its effects were examined (Salanova et al., 2007; Akhtari et al., 2013; Ayyagari et al., 2011; Tarafdar et al., 2015; Srivastana et al., 2015). This research, on the other hand, saw a gap in the field and was designed to understand how it affects the decision-making styles of employees. The research was designed both to fill a gap in the literature and to analyse the relationship between technostress and decision-making styles, and to see the effect on the decision styles of aviation maintenance personnel working with high technology in the sector.

2.2. Decision-Making Styles

Decision-making is the process of choosing among the solution alternatives in order to reach the most suitable result for the specified situation, after obtaining information about the existing alternatives (Chatoupis, 2007). Psychological effects, stress and other irrational internal events affect human decision-making. Especially the role of emotions in decision-making is very important (Leykin & DeBrubeis, 2010). According to (BarOn, 2007), decision-making can be defined as the setting of goals in order to meet any need, generate possible options, and make the most appropriate choice among alternatives.

When it comes to human performance, abilities can partially explain interpersonal differences. However, styles are just as effective on people's performance as abilities. DMS (Decision-Making Styles) have been equated with cognitive style in many studies. Cognitive (intellectual) style determines the speed of the decision maker's processing and interpretation of information (Hayes & Allinson, 1998).

When decision behavior is examined based on decision theory, more than one sub-behavior style and style that affects this type of behavior is detected. One of the sub-dimensions of decision behavior, the factor that most influences behavior is decision-making styles. In particular, decision-making styles take the first place in the list of factors that have the most impact on the risk perceptions of individuals who make decisions (Yaşar, 2016). The decision-making style can be expressed as the reactionary approach of individuals to a phenomenon in a decision-making process (Ercengiz, 2019). Decision-making style has been defined as a characteristic pattern in individuals' interpretation and response to decision-making tasks. With the help of decision-making styles, it can be understood why a person uses such different decision processes when facing seemingly similar situations (Baiocco et al., 2009).

Scott and Bruce (1995) drew attention to many internal characteristics and individual differences in the factors affecting the decision in their studies on decision-making styles and decision-making of individuals. Decision-making by people in managerial positions is an important part of organizational behavior. However, the decision-making styles of managers and the decisions they make are mostly affected by their perceptions and emotions (Nowzari, 2015). Decision-making styles is defined as *'learned habitual response patterns exhibited by an individual when faced with a decision situation'*. This is not a personality trait, but a tendency based on the habit of reacting in a certain way in the context of a certain decision (Orosova & Bavolar, 2015).

Five decision-making styles were defined as a result of a project based on four different populations and explained in behavioral terms (Scott & Bruce, 1995);

• **Rational DMS**: attributed to the use of reasoning and logical approaches in decision-making;

• **Intuitive DMS:** Defined based on hunches, instinctive experience, and hormonal feelings;

• **Dependent DMS:** It is characterized by waiting for support from others before making a decision and turning to different decision-facilitating tools;

• **Avoidant DMS**: Defined by withdrawing, postponing, withdrawing and negating decision scenarios;

• **Instant DMS:** Characterized by quick, heartfelt and impulsive decision-making. The research was designed to reveal the effects and changes of the dimensions of technostress on these five decision-making styles.

2.3. Perception of Job Insecurity

The concept of J.I. (job insecurity), which has become much more effective than its conceptual importance in the 2000s, has now emerged as ian important problem in the macro plans of countries. For example, in a recent policy document published by the European Union in 2013, job security is defined as a *'basic psychological hazard'*. The reasons for this are stated as economic problems, globalization and increasing competition in the future (Schaufeli, 2016). When analysing the respective literature, many different definitions of job insecurity are encountered. It has been defined by Shoss as 'a perceived threat to the continuity and stability of employment' (Shoss, 2017). In this context, the concept of job insecurity can be considered as two types. Quantitative job insecurity refers to perceived threats to the job as a whole, while qualitative job insecurity refers to perceived threats to job characteristics (deteriorating working conditions, lack of career opportunities and reduced salary development, etc.) (Hellgren et al., 1999).

In another definition, job insecurity refers to an employee's anxiety about losing their current job or about losing an existing feature of the job (Greenhalgh & Rosenblatt, 1984). Job insecurity can be defined as the anxiety of the employee about how long he can stay in his current job in the future and the level of continuity he perceives in his job (Lam et al., 2015). Looking at the other phases of job insecurity, the following situations are thought to be a trigger (Roskies & Louis-Guerin, 1990);

• Termination of Employee's Expectations • Early Retirement Status • Decreased Position • Worsening in Working Conditions

The elements of job insecurity are the uncertainty of the future of the job, the perception of threat and anxiety due to the change of working conditions and the business, and the reasons can be specified as personal characteristics, organizational factors, economic and legal reasons (Orçanlı et al., 2019).

Job insecurity, which is a source of work-related stress, not only causes negative attitudes of employees towards their work and the organizations they work for, but also negatively affects the individual and corporate job performance of employees and can harm the physical and mental health of employees. At the same time, job insecurity plays a role in reducing job satisfaction of employees, increasing the intention to leave (Ouyang et al., 2015) and creating a threat to the macro economy (Orçanlı et al., 2019).

2.4. The Relationship Between Technostress and Decision-Making Styles

The importance of making decisions in risky situations under high and developing technology is increasing day by

day. Defining and managing the stress on the flight crew and technical personnel, especially in the aviation industry, is an important component in terms of flight safety. In airline companies, the stressful situations of people working as flight crew and technical personnel also affect other crew members. The underlying assumption is that stress can lead to errors, poor performance, and poor decisions. At this point, determining what kind of stress the employees are affected by will help with the coping techniques. The effects of stressors have a great impact on the decisions to be made in general for errors and performance.

In the book named *'Decision-Making Under Stress Emerging Themes and Applications'*, which examines decision-making and stress and stress factors in general and focuses specifically on the aviation industry, psychological theories on the decision-making and decision situations of aviation workers in technological conditions, time pressure and risky situations are revealed. The book, which consists of twenty-nine chapters, focuses on stress factors and provides information on what types of stressors are affected by decision-makers and how they can cope. The book presents a wide variety of perspectives and applications from many sectors such as aviation, industry, military and emergency services. It is a fundamental scientific publication for the development of technological stress and its effects on employees in the aviation industry (Flin et al., 1997).

In the study named *'The Relationships Among Coping with Stress, Life Satisfaction, Decision-Making Styles and Decision-Making Styles and Decision Self-Esteem: A study with Turkish University Students'*, the complex relationships of stress, life satisfaction, decision-making styles and self-confidence in decision variables were examined. As a result of the study conducted with 492 university students, it was revealed that stress and coping techniques are related to all decision-making styles (Deniz, 2006).

In a qualitative study called *'Decision-Making Styles and Physiological Correlates of Negative Stress: Is There A Relation?'* conducted with military officials and employees, the relationship between Scout and Bruce's five general decision-making styles and negative stress was identified. As a result of the study, it was observed that negative stress was significantly associated with avoidant decision-making style (Thunholm, 2008).

In a quantitative study called 'Decision-Making Styles, Stress and Gender Among Investigators' among police officers, the relationship between the decision-making styles of investigative police officers and the stress they perceived was examined. Scout and Bruce's decision-making styles scale and perceived stress scale were used in this study, which was conducted with 203 participants. When the results were examined, it was seen that the avoidant and dependent styles were associated with high stress (Salo & Allwood, 2011).

2.5. The Relationship Between Technostress and Perception of Job Insecurity

Job insecurity, which is seen as a stressor in the research, is theoretically accepted as a classical job stressor that operates with two basic mechanisms. The first mechanism is that the need for security is a fundamental motivation to work. The second mechanism is based on the idea that the relationship between employer and employee is partially social (Hellgren & Sverke, 2002). Major organizational changes, such as layoffs, pay cuts, or other threats to job security, provoke negative reactions because they violate an employee's psychological contract with the organization.

When the stress factors in the workplace are examined, it is seen that job insecurity has not yet attracted attention in the field compared to other psycho-social stressors. It can be said that job insecurity, which creates an atmosphere of uncertainty, is an important source of stress among individuals. Studies on the subject reveal that the perception of job insecurity increases the level of stress, anxiety and depression, and physical and mental health complaints of employees (Köse & Baykal, 2018). The economic recession, trade wars and high increases in the restructuring activities of the enterprises in recent years have forced the enterprises to lay off their employees in order to reduce their costs (Hirsch et al., 2006), and this has created a high level of job insecurity and stress in many employees (Sverke et al., 2002).

(Hyoung, 2019)'s study analysing the relationship between psychological contract breach, job insecurity and job stress shows how these variables are related to each other. When Saurabh Sharma's study, which measured the relationship between job insecurity and stress at work in the insurance industry in 2016, is examined, it is seen that the primary goal is to reveal how much job insecurity the employees in the insurance industry perceive regarding their jobs and how much stress their job insecurity causes stress in their jobs. In a study conducted in 2007 among married workers, the role of gender in the relationship between job insecurity and job stress is determined (Gaunt & Benjamin, 2007). Gızılgül Valibayova (2018) examined the effect of job insecurity perception on job stress and job performance in her master's thesis.

When Tuğçe Karayaka's (2018) research *titled 'Working life characteristics, work stress and evaluation of job insecurity of occupational safety experts'* is examined, it is seen that 16% of the research group consisting of occupational safety experts have a high quantitative perception of job insecurity and a high rate of job stress that occurs with it., 8% of them have high level of qualitative job insecurity and high level of job stress. It has been observed that there is a positive relationship between job insecurity and job stress. Another research that tries to reveal the relationship between the concept of technostress and job insecurity is the master's thesis conducted by Oğuzhan Kaymaz (2019). The aim of the study titled *'An Application on the Relationship between Technostress and Job Insecurity'* is to determine the relations that may arise between the technostress that employees in the banking sector may be exposed to and the job insecurity they may experience, and to determine how bank employees will face negative situations by considering the effects of these relations. designated as offering recommendations.

3. Material and Method

3.1. Research Models

In this context, the theories based on the research are (Lazarus & Folkman, 1984) 'Transactional Theory of Stress' and (Koeske & Koeske, 1993) 'Stress-Strain-Outcome'. According to these theories, which are modeled as stress tension and behavioral outcome (Cheung & Cheung, 2013), it can be said that technology that causes stress creates a state of tension in employees and as a behavioral result, it leads to meaningful changes or interactions in decision-making styles. For the modeling of the research (Tarafdar et al., 2008), the technostress and its effects model was analyzed and used. In the related model, technostress-creating factors were

determined, and under the influence of these factors, the reactions of employees in different sectors to different variables were determined and the regulatory factors in this relationship were discussed.

There are many studies in the literature examining the relationships between stress types and decision-making behaviors. Study in psychology and management examining decision-making under uncertainty and stress (Heath, 2018), doctoral thesis investigating natural decision-making and stress determinants (Ergönül, 2018), decision-making models and methods book examining decision-making models and types of decisions under different stressors (Klein et al., 1993) have been an important resource for the study of decision-making styles. It has been a reference source for research in books (Flin et al., 1997) that examine the effect of the stressor on decision-making behavior, especially in the aviation sector. The fact that this research is the first to examine the phenomenon of the dimensions of technological stress on decision-making is also important in terms of its original value. The articles and books of researchers such as the founders of the concept of technostress and working in the modeling of the theory (Ayyagari et al., 2011; Tarafdar et al., 2008; Brod, 1984) were used as guides.

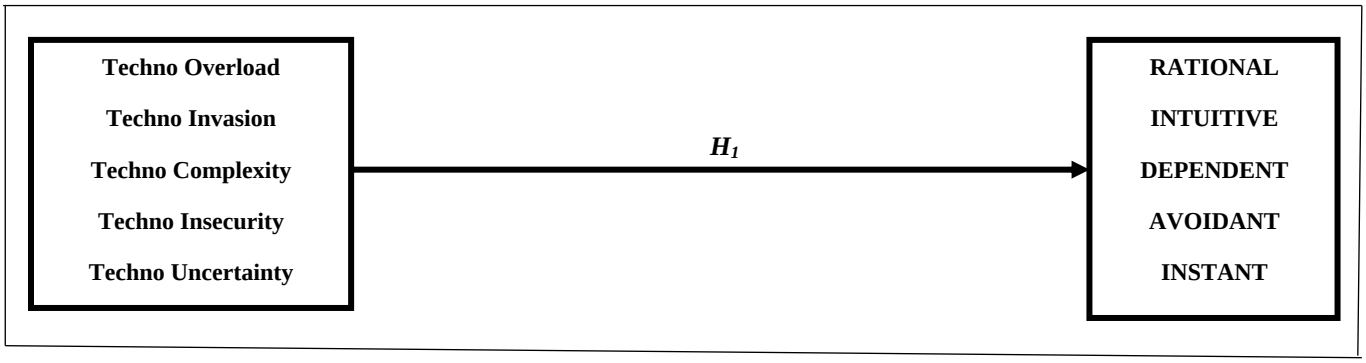

Figure 1. Relationship Model Between Research Sub-Dimensions

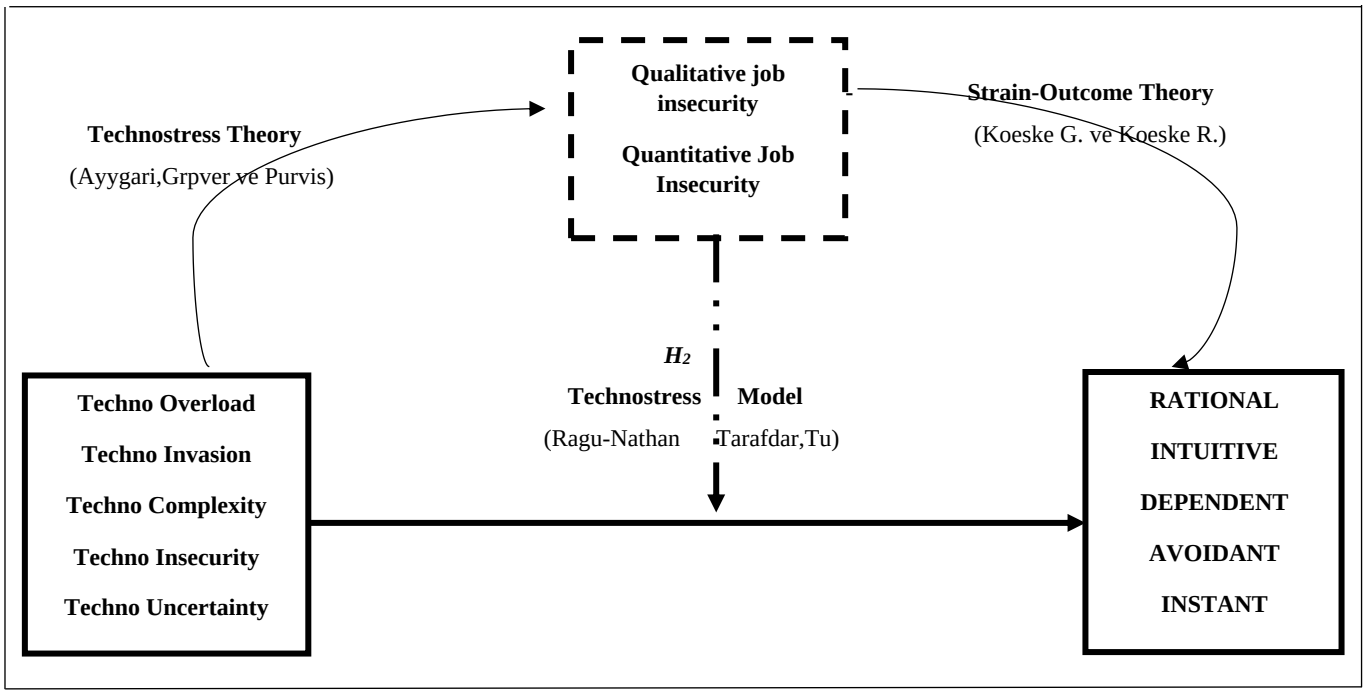

Figure 2. Research and Related Theories Model in the Moderation of Perceptions of Job Insecurity

3.2. Hypotheses

H1: There is a significant relationship between the dimensions of technostress and decision-making styles:

The first hypothesis is that there is a significant relationship between the technostress dimensions and the decision-making styles of the employees. It is thought that the five dimensions of technostress have significant relationships with decision-making styles at different levels. In particular, determining which decision-making style is more affected by which technostress dimension will provide useful evidence for the employees to determine the effect of the stress they are exposed to on the decision style.

H2: The perception of job insecurity has a significant moderator role in the relationship between technostress and decision-making styles:

The second hypothesis is that 'the perception of job insecurity has a significant moderator role in the relationship between technostress and decision-making styles'. It is known that the perception of job insecurity is a significant moderator, especially with the stress factor, as seen in previous studies. In

this research, he thinks that technological stress, especially on decision-making styles, can affect the degree or change its direction.

3.3. Sampling and Data Collection

The research universe consists of technical personnel working in the aircraft maintenance sector in Turkey. The survey method was adopted in the research and the sample was selected from the technical personnel working in the airline companies operating in Turkey and it is seen that the sample selected from the universe is completely homogeneous. The research population was determined as approximately 5500 people. An online questionnaire consisting of a total of 77 questions was created and the prepared questionnaire was sent to the members of UTED (Association of Aircraft Technicians) to collect data in the research, via SMS and online questionnaire link. The number of UTED members is around 4000 and a questionnaire was sent to all members. A total of 529 questionnaires were responded to, and 402 of the questionnaires, which were all filled in and usable, were evaluated and deemed appropriate for data analysis. Research data were analyzed in SPSS 25. Program.

3.4. Measures

The technostress scale was first developed by (Tarafdar et al., 2007) as five dimensions and twenty-three items. The scale is a five-point Likert-type scale measuring technological stress (1= Strongly Disagree, 2= Disagree, 3= Undecided, 4= Agree, 5= Totally Agree). The adaptation of the technostress scale to Turkish was carried out by (Ilgaz et al., 2016) and it was determined that the original structure of the scale was preserved.

The job insecurity perception scale was designed by (Ashford et al. 1989; De Witte & Naswall, 2003; Hellgren et al. 1999) to measure perceived job insecurity and was translated into Turkish by (Şeker, 2011). (Dede, 2017) applied on teachers. The scale is a five-point Likert-type scale measuring the perception of job insecurity (1= Strongly Disagree, 2= Disagree, 3= Undecided, 4= Agree, 5= Totally Agree).

Decision-making style, derived from cognitive psychology, is 'a disposition based on the habit of reacting in a particular way in the context of a particular decision'. Although there are many constructs that describe individual differences in decision-making, Scott & Bruce's (1995) 'General Decision-Making Styles' scale and inventory is the most comprehensive and widely used conceptual approach (Gurtner et al., 2016). The decision-making styles scale includes five sub-dimensions with a total of 25 items. Sub-dimensions of the scale; rational decision making, intuitive decision making, dependent decision making, spontaneous decision making and avoidant decision making. The options of the five-point Likert-type questionnaire, from 1 to 5, are as follows: Strongly Disagree, Disagree, Undecided, Agree, Strongly Agree.

4. Findings and Results

The data set collected through a questionnaire from the primary data sources in the research was analyzed using the SPSS 25 program. In this context, descriptive statistics were calculated and the sample was introduced. In the following stage, factor analyzes were applied to examine the validity and reliability characteristics of the scales used in the study, and then the Cronbach's alpha coefficient was calculated to determine the reliability. By using factor structures discovered as a result of Factor Analysi, factor scores were calculated with the approach of collecting responses. Decision-making styles scale was grouped under KMO: 0.844 and 5 factors and reached 62.447% explanatory power. On the other hand, the scale of perception of job insecurity is KMO: 0.791 and its explanatory value is 72,158% with 2 factors. The 5 dimensions of technostress are KMO:0.847 and the total explanatory value is 64.119%. Using the factor scores obtained, linear regression, multiple regression and hierarchical regression analyzes were applied to the hypothesis tests.

4.1. Testing the Relationship Between Technostress Dimensions and Decision-Making Styles

When the model between the technostress dimensions and rational decision-making was examined, the multicollinearity was checked because there was more than one independent variable in the model and it was seen that there was no (VIF<5.0). Model p=0.000 is seen as significant and 11.2% of the change in rational decision making is explained by the change in the dimensions of technostress.

Table 1. Rational Decision-Making with Technostress Dimensions Hierarchical Regression Analysis Results

Model		Non-standardized Constants		Standardized Constants	t	p	VIF
		B	Std. Error	β			
1	(Constant)	3.081	0.216		14.263	0.000	
	Techno Overload	-0.067	0.036	-0.113	-1.884	0.040*	1.595
	Techno Invasion	-0.013	0.030	-0.026	-0.444	0.657	1.487
	Techno Complexity	0.136	0.039	0.207	3.499	0.001*	1.556
	Techno Insecurity	0.099	0.038	0.146	2.354	0.010*	1.432
	Techno Uncertainty	0.166	0.034	0.242	4.921	0.000*	1.078

a. Dependant Variable: Rational Decision-Making p<0.05* R^2=0.112 F=9.862

When the model is examined, it is seen that 1 unit increase in techno overload causes a 0.113 decrease in rational decision-making, while 1 unit increase in techno complexity causes an increase of 0.207 units in rational decision-making. An increase of 1 unit in the techno uncertainty variable causes

an increase of 0.242 in rational decision-making. A 1-unit increase in techno-insecurity causes an increase of 0.146 in rational decision making. It was understood that the techno invasion (p=0.657) variable did not have a significant effect on rational decision-making.

Table 2. Hierarchical Regression Analysis Results for Heuristic Decision Making with Technostress Dimensions

Model		Non-standardized Constants		Standardized Constants	t	p	VIF
		B	Std. Error	β			
2	(Constant)	3.587	0.346		10.370	0.000	
	Techno Overload	-0.083	0.057	-0.089	-1.462	0.145	1.595
	Techno Invasion	-0.017	0.047	-0.021	-0.362	0.717	1.487
	Techno Complexity	-0.120	0.062	-0.117	-1.939	0.053	1.556
	Techno Insecurity	-0.053	0.061	-0.050	-0.868	0.386	1.432
	Techno Uncertainty	0.145	0.054	0.134	2.671	0.008*	1.078

a. Dependant Variable: Intuitive Decision-Making p<0.05* R^2=0.080 F=6.736

As a result of the multiple regression analysis for the relationship between technostress dimensions and intuitive decision-making, the model was found to be significant (p=0.000). When the model is examined, 8% of the change in intuitive decision-making is explained by the change in the dimensions of technostress. There is no multicollinearity problem in the model. When the model was examined, it was seen that only the relationship between techno uncertainty and intuitive decision making was significant (p=0.008). An increase of 1 unit in the techno uncertainty variable causes an increase of 0.134 units in intuitive decision-making. Techno overload (p=0.145), techno invasion (p=0.717), techno complexity (p=0.053) and techno insecurity (p=0.386) variables have no significant effect on intuitive decision-making. As a result of the multiple regression analysis done to find out the relationship between technostress dimensions and dependent decision-making, the model was found to be significant (p=0.000). When the model is examined, 8.9% of the change in dependent decision-making is explained by the change in the dimensions of technostress. There is no multicollinearity problem in the model.

Table 3. Dependent Decision-Making with Technostress Dimensions Hierarchical Regression Analysis Results

Model		Non-standardized Constants		Standardized Constants	t	p	VIF
		B	Std. Error	β			
3	(Constant)	2.882	0.303		9.515	0.000	
	Techno Overload	0.002	0.050	0.002	0.035	0.972	1.595
	Techno Invasion	0.043	0.041	0.061	1.044	0.297	1.487
	Techno Complexity	0.156	0.054	0.172	2.872	0.004*	1.556
	Techno Insecurity	0.038	0.054	0.041	-0.716	0.475	1.432
	Techno Uncertainty	0.239	0.047	0.252	5.052	0.000*	1.078

a. Dependant Variable: Dependant Decision-Making p<0.05* R^2=0.089 F=7.774

When the model is examined, it is seen that the relationship between techno-complexity and dependent decision-making is significant (p=0.004) and that a 1-unit increase in techno-complexity causes a 0.172-unit decrease in dependent decision-making. The relationship between techno uncertainty variable and dependent decision-making was also significant (p=0.000), and it was understood that 1 unit increase in techno uncertainty caused an increase of 0.252 units in dependent decision-making. On the other hand, techno overload (p=0.972), techno invasion (p=0.297) and techno insecurity (p=0.475) variables did not have a significant relationship with dependent decision-making.

As a result of multiple regression analysis for the relationship between technostress dimensions and instant decision-making, the model was found to be significant (p=0.000). When the model is examined, 12.3% of the change in avoidant decision-making is explained by the change in the dimensions of technostress. There is no multicollinearity problem in the model. When the model is examined, it is seen that the relationship between techno-complexity and instant

decision-making is significant (p=0.000) and that a 1-unit increase in techno-complexity causes a 0.215-unit decrease in instant decision-making.

Table 4. Hierarchical Regression Analysis Results for Immediate Decision-Making with Technostress Dimensions

Model		Non-standardized Constants		Standardized Constants	t	p	VIF
		B	Std. Error	β			
4	(Constant)	3.675	0.277		13.275	0.000	
	Techno Overload	-0.074	0.045	-0.096	-1.616	0.171	1.595
	Techno Invasion	-0.034	0.038	-0.052	-0.905	0.271	1.487
	Techno Complexity	-0.182	0.050	-0.215	-3.670	0.000*	1.556
	Techno Insecurity	-0.076	0.049	-0.088	-1.554	0.632	1.432
	Techno Uncertainty	-0.022	0.043	-0.025	-0.509	0.648	1.078

a. Dependant Variable: Instant Decision-Making p<0.05* R^2=0.123 F=11.118

As a result of the analysis, it was seen that the variables of techno overload (p=0.171), techno invasion (p=0.271), techno uncertainty (p=0.648) and techno insecurity (p=0.632) were not significantly associated with instant decision-making. As a result of the multiple regression analysis for the relationship between technostress dimensions and avoidant decision making, the model was found to be significant (p=0.000). When the model is examined, 17.6% of the change in avoidant decision-making is explained by the change in the dimensions of technostress. There is no multicollinearity problem in the model.

Table 5. Hierarchical Regression Analysis Results for Avoidant Decision-Making with Technostress Dimensions

Model		Non-standardized Constants		Standardized Constants	t	p	VIF
		B	Std. Error	β			
5	(Constant)	4.095	0.325		12.610	0.000	
	Techno Overload	-0.031	0.053	-0.033	-0.575	0.566	1.595
	Techno Invasion	-0.035	0.044	-0.043	-0.778	0.437	1.487
	Techno Complexity	-0.198	0.058	-0.193	-3.393	0.001*	1.556
	Techno Insecurity	-0.260	0.058	-0.246	-4.511	0.000*	1.432
	Techno Uncertainty	-0.001	0.051	-0.001	-0.027	0.979	1.078

a. Dependant Variable: Avoidant Decision-Making p<0.05* R^2=0.176 F=16.902

When the model is examined, it is seen that the relationship between techno-complexity and avoidant decision-making is significant (p=0.001), and a 1-unit increase in techno-complexity causes a 0.193-unit decrease in avoidant decision-making. The relationship between the techno-insecurity variable and avoidant decision-making was also significant (p=0.000), and it was understood that a 1-unit increase in techno-insecurity caused a 0.246-unit decrease in avoidant decision-making. On the other hand, techno overload (p=0.566), techno invasion (p=0.437) and techno uncertainty (p=0.979) variables did not have a significant relationship with avoidant decision-making. As a result of all analysis results, the significant effects of the five dimensions of technostress on the five basic decision-making styles are shown in Figure 3.

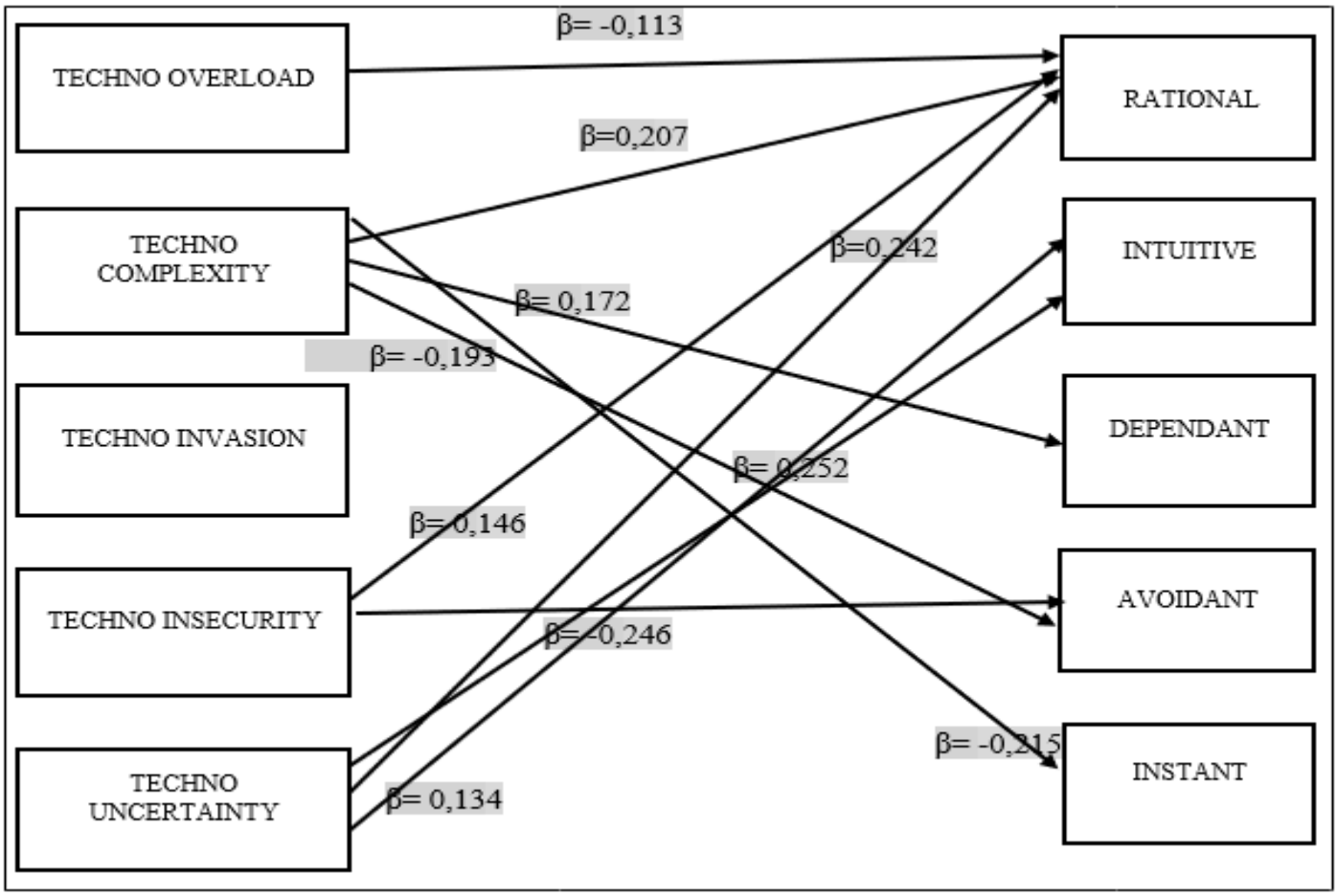

Figure 3. Network Analysis of the Relationship Between Technostress Dimensions and Decision-Making Style

The network relationship between the dimensions of technostress and five decision-making styles is shown above. All dimensions except the techno-invasion dimension seems to have a significant effect on a particular decision-making style. In the table below, the direction of significant relationships is expressed.

Table 6. Technostress and Decision-Making Styles Relationship Direction Network Table

Decision-Making Styles / Technostress	RATIONAL	INTUITIVE	DEPENDANT	AVIODANT	INSTANT
Techno Overload	-				
Techno Complexity	+		+	-	-
Techno Invasion					
Techno Uncertainty	+	+	+		
Techno Insecurity	+			-	

4.2. The Moderating Role of Perception of Job Insecurity in the Relationship Between Technostress and Decision-Making Styles

When the table emerged as a result of the hierarchical regression analysis is examined, it is seen that the perception β=0.136). β=0.108). The perception of qualitative job insecurity has no moderator effect.

of quantitative job insecurity (p=0.041) has a significant moderator effect in the relationship between technostress and rational decision-making, and that technostress has an explanatory effect to (R2=31%) and the effect is lower (from

Table 7. The Moderating Role of Perception of Job Insecurity in the Relationship Between Technostress and Rational Decision-Making Hierarchical Regression Analysis

Model		Non-standardized Constants		Standardized Constants	t	p	R^2
		B	Std. Error	β			
1	(Constant)	4.317	0.031		140.557	0.000	
	Technostress	0.079	0.032	0.136	2.509	0.013	0.20
	Quantitative J.I.	0.033	0.033	0.057	1.012	0.312	
	Technostress* Quantitative J.I.	0.055	0.027	0.108	2.055	0.041*	0.310

a. Dependent Variable: Rational Decision Making J.I.: Job Insecurity * p<0.05

When the table emerged as a result of the hierarchical regression analysis is examined, it is seen that the perception of quantitative job insecurity (p=0.000) has a significant moderator effect in the relationship between technostress and intuitive decision making, and that technostress has an explanatory effect to (R2=6.4%) and the effect (β=-- It was determined that it changed from 0.184 to β=0.181) in the opposite direction.

Table 8. The Moderate Role of Perception of Job Insecurity in the Relationship Between Technostress and Intuitive Decision-Making Hierarchical Regression Analysis

Model		Non-standardized Constants		Standardized Constants	t	p	R^2
		B	Std. Error	β			
2	(Constant)	3.113	0.047		65.543	0.000	0.035
	Technostress	-0.169	0.049	-0.184	-3.453	0.001	
	Quantitative J.I.	0.060	0.051	0.065	1.167	0.244	
	Technostress* Quantitative J.I.	0.145	0.041	0.181	3.518	0.000*	0.064

a. Dependent Variable: Intuitive Decision Making J.I.: Job Insecurity * p<0.05

When the table that emerged as a result of the hierarchical regression analyzes is examined, it is seen that the perception of qualitative job insecurity (p=0.002) has a significant moderator effect in the relationship between technostress and impulsive decision making, and that technostress has increased its explanatory power to (R2=12.9%) and the effect (β=-- It was determined that it decreased from 0.320 to β=0.144).

Table 9. The Moderating Role of Perception of Job Insecurity in the Relationship Between Technostress and Instant Decision-Making Hierarchical Regression Analysis

Model		Non-standardized Constants		Standardized Constants	t	p	R^2
		B	Std. Error	β			
3	(Constant)	2.327	0.036		65.279	0.000	
	Technostress	-0.241	0.036	-0.320	-6.684	0.000	0.099
	Qualitative J.I.	0.069	0.036	0.091	1.918	0.056	
	Technostress* Qualitative J.I.	-0.098	0.032	-0.144	-3.061	0.002*	0.129

a. Dependent Variable: Instant Decision Making J.I.: Job Insecurity * p<0.05

In the analysis, it was determined that the perception of job insecurity does not have a moderator role between technostress and avoidant decision making. At the same time, the moderator role of the perception of job insecurity was not analysed because there was no significant relationship between technostress and dependent decision-making style. In the table below, the meaningful and meaningless moderator roles of the dimensions of job insecurity perception in the relationship between decision-making styles and technostress are indicated.

Table 10. Moderator Role of Perception of Job Insecurity in the Relationship Between Technostress and Decision-Making Styles

MODERATOR \ TS*DMS	TS*RATIONAL DMS	TS*INTUITIVE DMS	TS*INSTANT DMS
QUANTITATIVE J.I.	√	√	
QUALITATIVE J.I.			√

5. Discussion and Conclusion

5.1. Evaluation of the Effects of the Dimensions of Technostress on Decision Making Styles

A significant and negative relationship between techno overload and rational decision-making was determined. The increase in the technological load on the technical personnel leads the employee to do more research in order to understand this new or complex technology and makes the time pressure more felt. This result, which is compatible with the studies of Tarafdar et al., also confirms that technology-intensive workers need more time because they are exposed to multitasking and technological workload at the same time (Tarafdar et al., 2007). Technical personnel have to take the necessary action and make the decision for aircraft maintenance or repair in a limited time frame. At this point, an excessively intense technological situation may cause the personnel to make less rational decisions. Employees may move away from the tendency to make rational and logical decisions, due to this time pressure and technological load. In a study conducted in the aircraft maintenance sector in line with the studies in the literature, he stated that time pressure and increasing technology cause an increase in the workload in the aircraft maintenance sector, a decrease in quality standards, wrong decisions, human factor errors and stress (Çoban, 2019).

A significant and negative relationship was found between techno-insecurity and avoidant decision-making. Techno-insecurity is the fear of employees losing their jobs due to constantly changing and developing technologies, and this is shaped by new behavioral patterns. Especially the new technologies that technical employees are constantly dealing with creates the concern that they will lose their jobs over time or that the people who will replace them may have more control over technology. The increase in such stress level creates a sense of taking more responsibility in employees and causes them to engage in behavioral actions having them to think they can handle technology, they are doing it. In this case, employees make less avoidant decisions and move away from avoidant behavior by taking responsibility.

A significant and positive relationship was found between techno-insecurity and rational decision-making. Technical personnel, who are effected by constantly developing and changing technology, may think that technology can increase much more over time and that some artificial intelligence or advanced technologies can take their place. For this reason, employees try to be more careful and attentive in their decisions and show more rational style that acts according to rules and data. In sectors where technology does not have much effect and technological change is slow, the rational decision-making levels of employees decrease and they may turn to other decision-making styles.

It has been determined that the techno uncertainty factor interacts significantly with more than one decision-making style. Considering that decision-making in fuzzy and uncertain situations is a very difficult and complex process, the effects of different decision-making styles in the environment of technological uncertainty also support our findings in terms of compatibility with the literature. Techno uncertainty has significant and positive effects especially on rational decision-making, intuitive decision-making and dependent decision-making. The significant and positive effect of techno-uncertainty on dependent decision-making, where technostress alone does not have a significant effect, is an important result. Dependent decision-making for employees is an important phenomenon in the aviation industry. Personnel working in aircraft maintenance or any malfunction may frequently refer to the opinions and suggestions of others for jobs that they do not have full knowledge of technology or cannot predict the results of. At this point, the issue of technological uncertainty is seen as a stress factor in the employee and can lead the employee to make decisions more dependent on other employees, especially employees who have a good command of technology. This situation is undesirable for employees at the same level or role. In the organization, the workload remains with a certain group of employees, and employees who follow technology or make better decisions in an environment of technological uncertainty or blurry situations make more effort. On the other hand, fuzzy and uncertain technology makes workers tired. Constant technological changes in the organization push employees to spend time on acquiring more information. In this case, the decisions to be made are delayed and the employees decide more rationally and more investigative. In fact, for many businesses, the employee who makes rational decisions is considered more effective and efficient. However, time pressure and high technology in the aviation industry expect employees to make more effective decisions. In this case, constantly changing and renewed technologies increase the desire of employees not to make mistakes, and this causes them to make more rational decisions. Another relationship between techno-uncertainty and intuitive decision making has been found. Employees in the ever-changing technology do not know which technology to trust in their business decisions. In this case, technological uncertainty can slightly increase intuitive decision making in employees. One of the most important options among decision-making options in uncertain, fuzzy situations and risky positions is to make decisions based on intuition. Therefore, in environments of technological uncertainty, it is normal for employees to act with their intuition and use their intuition in their decisions.

Another relationship between techno-uncertainty and intuitive decision-making has been found. Employees in the ever-changing technology do not know which technology to trust in their business decisions. For example, when an employee who constantly controls aircraft propellers with ultrasound starts to do this with a new technology, microwave, he will not be able to read the results as well as before, and he

will act on his feelings and intuitions instead of his previous experiences in the decisions he will make. In this case, technological uncertainty can slightly increase intuitive decision-making in employees. One of the most important options among decision-making options in uncertain, fuzzy situations and risky positions is to make decisions based on intuition. Therefore, in environments of technological uncertainty, it is normal for employees to act with their intuition and use their intuition in their decisions.

When the study data were analyzed, it was determined that technological complexity had a significant and positive relationship with dependent decision-making. Technical personnel tend to make more dependent decisions when a more complex situation occurs in aircraft technologies and when they are alone with high complexity technologies. The stress factor brought about by complex technology triggers the thought of making mistakes in technical employees and they tend to make more dependent decisions, although they are not sure about their decisions.

The increase in technological complexity in the aviation industry is inevitable. Due to the constantly renewed and more complex technology, employees are no longer able to postpone their decisions and do not leave important decisions for later because techno-complexity is a stress factor on them. This situation shows the harmony of literature and research results in terms of both aviation sector dynamics and avoidant decision-making dynamics. In this case, it can be explained by the desire to minimize the risks of making mistakes due to complex technology.

5.2. Evaluation of the Moderator Role of Perception of Job Insecurity in the Effect of Technostress on Decision-Making Styles

Quantitative job insecurity had a significant moderator effect on the relationship between technostress and rational decision-making, and it was understood that in cases where quantitative job insecurity is high, technostress reduces the positive effect on rational decision-making. While employees make more rational decisions due to technological stress, job insecurity significantly affects this effect and rational decision.

On the other hand, it was determined that quantitative J.I. had a moderator effect on the effect of technostress on intuitive decision making. Quantitative J.I. changed the effect of technological stress on intuitive decision-making from negative to positive. It can be said that quantitative J.I. has a full moderation effect in this relationship. Technological stress leads to increased intuitive decision-making in employees with high quantitative J.I. Employees under technological stress are shy about making decisions based on their past experience and experience because they are faced with a new technological system. At the same time, when faced with high quantitative job insecurity, decision mechanisms change. In many studies (Ünsar & Dinçer; Ilkım & Derin, 2018; Selvi & Sümer, 2018), it has been seen that the perception of job insecurity leads to negative changes in employee performance, job perspective, and emotions. Based on these studies and the concepts in the literature, it can be said that high quantitative job insecurity delays or disables stress-induced corrective behaviors on employees, and it can be thought that this situation adversely affects the behavior of employees who avoid intuitive decision-making due to technology-induced stress. Therefore, it can be said that the perception of quantitative job insecurity played a moderator role in the relationship between technological stress and heuristic decision in the research.

In the study, qualitative J.I. reduced the effect of technostress on intuitive decision-making. At this point, it can be said that it has a partial regulatory effect. Model analysis has shown that as qualitative J.I. increases, employees tends to make more instant decisions. When technical personnel perceive a corporate job insecurity, it can be said that they act not only by the effects of technostress, but also by the effects of corporate job insecurity in their decisions. When the dynamics of the aviation industry are examined, making a quick decision is not a very desirable situation. In studies (Günalan, 2019; Aslan, 2011), employee performance and job engagement decrease as qualitative job insecurity increases. Based on these results, it can be said that although employees tend to make less instant decisions and do their jobs more accurately in the face of technology-related stress, a possible decrease in their performance and organizational commitment in an environment where qualitative job insecurity increases may push them towards instant decisions.

5.3. Contributions and Suggestions

The concept of technostress, which has recently been examined in the field of business administration and organizational behavior, apart from the fields of psychology and sociology, especially its effects on employee performance, job satisfaction, susceptibility to technological innovations, self-efficacy, managerial abilities, organizational commitment, organizational culture, decision making, etc. has been discussed. It has been the subject of research with many variables (Salanova et al., 2007; Akhtari et al., 2013; Ayyagari et al., 2011; Tarafdar et al., 2015; Srivastana et al., 2015). While examining the causes of technological stress and the phenomena associated with it, it was seen that Lazarus' stress theory was theoretically utilized. In this research, taking its theoretical basis from (Lazarus & Folkman, 1984) and (Koeske & Koeske, 1993) stress theories, it was built on the model of technostress and its effect on work/life phenomena (Tarafdar et al., 2011) developed by Tarafdar et al. It is now well established in the literature that technological stress is one of the other types of stress and has important effects on the lives of employees. This research, on the other hand, was carried out in the maintenance department of the aviation industry, where technological stress was investigated before. The effects of technostress on productivity, ergonomics, demographics and time perspective in the aviation industry were examined (Doğan, 2016; Ufuk et al., 2015; Çoban, 2019). In parallel and in harmony with these studies, the effect of stress on decision making, which has been widely researched in the literature, and in this context, the effect of technostress on decision-making in the doctoral thesis research has been examined in a unique framework.

Literature studies show that the direct effect of technological stress on decision-making styles is an under-studied area. Decision-making styles, which are seen as a sub-specialty branch of detailed research on stress and decision-making behavior and have similar characteristics such as personality traits, have actually been discussed with different phenomena in the literature. Studies examining the psychological and sociological aspects of people's decision-making styles (Curşeu & Schruijer, 2012; Leykin & DeBrubeis, 2010) try to understand how the decision-maker makes decisions when faced with factors such as emotional, anxiety and worry, depression, and stress. It is thought that this research will also contribute to this kind of psychology-based research.

The significant and positive effect of the perception of job insecurity with technological stress supports other studies (Jordan et al., 2006; Valibayova, 2018) working on this subject and developing models. It is also thought to make significant contributions to the literature (Cheung et al., 2016; Katungu, 2018; Ouyang et al., 2015) questioning the relationship between decision, emotions and job insecurity. A result supporting the findings of researchers who examined job insecurity as a stress factor and modeled it using the theory of Lazarus & Folkman (1984) was determined. This research shows that the perception of job insecurity is a complete stressor and has a direct effect on technological stress and a moderator and direct effect on decision-making.

It should not be forgotten that decision-making and technostress in the aircraft maintenance industry are two interrelated concepts that affect the performance and work efficiency of aircraft maintenance personnel. In order to combat the problem of new technologies and to get the optimal decision, the quality and quantity of resources such as the number of technicians, necessary equipment and technical documents should be increased, daily, weekly and monthly workload plans should be rearranged, improvements should be made on organizational factors that affect or delay decisions, and decision-management and emotional intelligence training should be given to technicians. Besides, in order for technicians to cope with technostress, the technological workload should be equally distributed to the technicians, basic and refresher training should be given to adapt to new technologies, technical problems and updates should be done in a timely manner, working hours should be rearranged to prevent the physical and psychological negative effects of technostress, and social activities should be emphasized. should be given. The significant and positive interaction between technostress and the perception of job insecurity may suggest that there are mechanisms that can trigger each other or increase the effect of each other relatively. For this reason, studies can be carried out to reduce the perceptions of job insecurity as well as to try to protect employees from technostress. It is known that the aircraft maintenance sector is a field that requires high experience and continuous training, and in this respect, short-term contracts should not be imposed on the personnel. Employees should be informed about employers' long-term employment plans and convinced that they can take part in the care organization's future vision.

As a summary and suggestion;

* The effects model of technostress can now be updated in the light of new research,

* Technostress and decision-making styles research should be conducted for different sectors and a meta-analysis can establish relationships between the results.

* Effects of technological stress can be measured and desired/undesirable situation analysis can be made according to expected decision styles within the scope of prospect theory.

* It can be researched which decision styles are associated with the perception of job insecurity and its regulatory effect can be examined on the basis of sectors within the stress factor.

* Due to the developing technology, changing human life and renewed work/organization environment, a study can be carried out to update the existing technostress scale.

* Businesses should determine the general decision-making styles of the employees and optimize what kind of decision-making personnel will perform better in which departments,

* In order to be affected by technological changes and technological stress at the minimum level, businesses should review their education systems, and the availability of supervised learning and reinforcement learning methods should be increased.

* Aviation supervisors should be more sensitive to employees, especially regarding techno overload, should not leave them alone with the technological load and should take into account the feedback of the personnel on technology.

Ethical Approval

Not applicable

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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Cite this article: Yıldırım, B.A, Boru, D.E. (2023). The Effect of Technological Stress Dimensions on Employees' Decision-Making Styles and Regulatory Role of Job Insecurity Perception: A Research in The Aviation Sector. Journal of Aviation, 7(1), 39-54.