

Could burnout be a reason behind airlines accident? An Emperical Research Study in Turkish Airlines Companies.*

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Abstract

Crew in the cockpit is important issue for preventing aircraft accident. So many research studies have been conducted to explore to figure out why these accidents occur (Merritt, 1996; Helmreich, Thomas and Sexton, 2000). But there some issue has not been so much investigated to learn relationship with the accident. Burnout is one of that issue. The aim of this study is to analyze the relationships between stress, burnout and job satisfaction. Data were collected from pilots and flight attendants from different Turkish airlines companies in Turkey. 125 surveys were accepted and used for analysis. In this survey, the stress scale, job satisfaction scale and burnout scale were administered. After analysing to all data, study results revealed that there is positive relationship found between stress and emotional exhaustion, depersonalization, reduced personnel accomplishment, also negative relationship found between job satisfaction and emotional exhaustion, depersonalization, reduced personnel accomplishment, stress. This results means that whoever suffers from burnout syndrome in the aircraft, they may make a mistakes and airlines accident could occur. Also flight attendants might give passenger low quality service and treat them with inappropriate manner.

Key Words: Burnout, Stress, Job satisfaction.

1. Introduction

Competitive advantage is deadly important factor in all sector. It would be said that having and sustaining competitive advantage in airlines companies depend on safety of flight and quality of services in flight and on the ground. Pilots and flight attendants, in good mental, psychological and physical health give passengers guaranty of safe flight and also high quality of services.

On the other hand, Airlines accident occurs. Researchers have investigated why airlines accident occurs. It was expected that accidents occured due to mechanical or maintenance problems. But they figured out that % 60 thru % 80 of aircraft accidents happen because of human factor. After completing research in airlines companies where and why human factor makes mistakes and causing airlines accident, stress and fatigue were defined one of the reason behind human mistakes and aircraft accidents (Helmreich, Thomas and Sexton, 2000).

According to literature, Burnout syndrome might cause companies workers to have negative, callous and dehumanized responses to their customer, increase turnover intention, high stress, job dissatisfaction and decrease the quality of services (Payne 2001; Collings and Murray, 1996). This information clues that burnout syndrome might be the reason that cockpit crew live and suffer from stress, cause for accident and low quality service in airlines companies and loosing competative advantage in this sector.

In this study aims to figure out burnout effect and relationship with stress, and job satisfaction in the cocpit in different cultural environment. And also this study aims to fill the gap in the literature which is related to airlines sector.

2. Literature Review

Burnout phenomenon NASA held a conference in 1979 (Merritt, 1996). This conference was the outgrowth of NASA research into the causes of air transport accidents (Cooper, White, and Lauber, 1980). The research presented at this meeting identified the human error aspects of air crashes like failures of interpersonal communications, decision making, rules and procedures, stress and fatigue, team management and leadership. In this meeting stress and fatigue was also given much attention. If cocpit is closely monitored, it is obvious that life in the cocpit is so demanding. Pilot and copilot have to control so different type of gauges, limitations, run checklist also procedures and communicate with different ground and air unite in normal flight. On the other

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hand, If emergency occurs. Aircrew burden in two or three times more. To follow all this activities make aircrew so busy and consume all their physiological and psychological energy.

And also cabin attendants encounter different types of customers. Everyday, these workers try to satisfy customers. Then, customers have different custom, culture, personalities, religion and other demographic variables. These variables make cabin attendants jobs more demanding and energy using. Even in extreme situations, cabin attendants must be tolerable, friendly and helpful. In emergency situation, cabin attendants responsibilities double. They have to make passengers ready to land or crash land, give them a quick information about the situation they are in, keep them seated and fastened, show all passengers place of emergency exit, procedures, and equipment.

The complex and demanding working environment, and the performance limits of human on components throughout the system, error can never be completely eliminated (Helmreich, Thomas and Sexton, 2000, Merritt, 1996). The connection between stress and error is simple enough that if humanbeing or machinery is pushed and forced to past their limits more than their normal performance, then stress is accumulated on that component and humanbeing.

2.1. Job Stres

Stress is defined as the emotional and physiological reactions to demand, situation or anything in job environment that unbalance person's equilibrium (Zastrow, 1984). Stress builds up on human beings because of so many reasons. One of the reasons behind stress might be job demands and lack of job resources (Brooks and Piquero 1998; Pienaar and Rothmann 2003). Researchers focus on which kind of reason causes and severe the stress level in the working environment. They found that role ambiguity, role conflict (Yang et al, 2008), the quality of the working and social environment (Sparks and Cooper, 1999), task uncertainty and task content (Nelson and Burke, 2000), productivity pressures, job uncertainty, amount of workload and complexity (Noblet and Rodwell, 2008), have been accepted as stressful factor in the working environment. Cockpit is the place which has all these factors. In normal flight, pilots do their normal procedures such as running checklist, observing gauges, communicating with ground and air unite, looking weather situation, planning how to land destination airport. And the flight attendants do serving the passenger, controlling lavatory and other facilities, keeping passengers seated while adverse weather condition, landing and takeoff pace of the flight. These are normal flight activities. But when emergency occurs, everything changes so fast. So many jobs must be done in coordinately and sequentially by pilots and cabin attendants. If one thing is missed by the aircrew, accident is inevitable. Role ambiguity, role conflict and increased work load in emergency situation higher the aircrew stress level (Rosse and Rosse 1981). So, accident occurs. So many examples show that most of the aircraft accidents occur due to meaningless error made by flight crew in stressful time periods like emergency situation (Helmreich, Thomas and Sexton, 2000, Merritt, 1996)

On the other hand, job stress has been a strong contributing risk factor not only error but also burnout (Demerouti, Bakker, Nachreiner, and Schaufeli, 2001; Griffin et al., 2010; Shinn, Rosario, Morch, and Chestnut, 1984; Rai, 2010) and intent to leave (Demerouti, Bakker, Nachreiner, and Schaufeli, 2001; Hopkins et al., 2010; Mor Barak et al., 2006, 2001). One study found that job stress had the strongest influence in predicting burnout (Griffin et al., 2010).

2.2. Burnout

Burnout phenomenon is caused by chronic stress and this phenomenon can impair human service effectiveness and performance (Collings and Murray, 1996). Schaufeli and Enzmann (1998) define burnout as "a persistent, negative, work-related state of mind in 'normal' individuals that is primarily characterised by exhaustion, which is accompanied by distress, a sense of reduced effectiveness, decreased motivation, and the development of dysfunctional attitudes and behaviours at work." Today, Maslach's development of a process model is the most commonly accepted definition and used to specify the developmental sequence of the burnout phenomenon (Boles et al., 2000). The first of these, emotional exhaustion, is characterised by a lack of energy and a feeling that one's emotional resources are used up (Cordes and Dougherty, 1993). This situation brings tension and frustration as workers are unable to carry out their occupational tasks and gradually lose their usual sense of responsibility towards clients and customers.

The second dimension, depersonalisation, is characterised by negative and inappropriate attitudes towards customers, frustration, loss of idealism, and withdrawal. A distinctive feature of depersonalisation is a perception of customers as objects, rather than persons.

The third dimension, reduced personal accomplishment, is characterised by a loss of efficiency and capability, low morale, and inability to cope with job requirement (Maslach and Leiter, 2005). Such reduced personal accomplishment is accompanied by a decline in feelings of competence and a tendency to evaluate oneself negatively with respect to one's work and other people (Schutte et al., 2000).

Burnout in airlines sector is highly dangerous issue. If pilot's live and suffer from burnout when emergency occurs. It may be disaster. Because cockpit crew can not perform everything whaever emergency situation requires and results might be fatal. On the other hand, if cabin crew live and suffer from burnout they may loose their control and treat passengers in bad manner. It would not be a good reputation for airlines company. Researcher investigate what burnout cause in service sector. They found that if employee face with the burnout sydrome, results will be low job satisfaction.

2.3. Job Satisfaction

Job satisfaction is defined as employee's overall satisfaction with his or her job (Locke, 1976). And it incteracts with pay, supervision, relationship with colleagues, company policy (Spector, 1997; Wegge and et al, 2007). Job satisfaction also an extension over a staff member has favorable or positive feeling about work or the work environment (De Nobile, 2003). It refers to the employee reactions towards their work experiences (Berry 1997) and work situations in the organizations (Wood, Wood and Boyd 2007).

On the other hand some of the studies tried to understand relationship with stress and job satisfaction. Vinokur-Kaplan (1991) found in their studies that organization factors such as workload and working condition were negatively related with job satisfaction. Fletcher and Payne (1980) also supported that a lack of satisfaction can be a source of stress, while high satisfaction can alleviate the effects of stress. Beehr and Newman (1978) had defined stress as a situation which will force a person to deviate from normal functioning due to the change (i.e. disrupt or enhance) in his/her psychological and/or physiological condition, such that the person is forced to deviate from normal functioning.

In airlines companies, cockpit and cabin crew life are so demanding. Because their working condition and workload, they face to many events that reduce their job satisfaction and cause not to function like normal times. These results mean that low job satisfaction may be source of making a mistake and weak service to the costumer.

3.Job Stress, Job Satisfaction and, Burnout relationship

Burnout phenomenon In the cockpit, pilots and flight attendants, in normal or emergency situation have to handle all of the requirements and demands. But some of the aircrew member may not handle due to the his/her psychological and/or physiological inability. The theory underlying this study was Person-Environment Fit (P-E Fit) theory (French, Caplan, and Harrison, 1982). The P-E Fit theory explains that 54tres arises from the fit or misfit between an individual and his or her environment. This misfit can occur at different levels (Edwards, Caplan, and Harrison, 1998). For example, 54tres can occur if there is a mismatch between the demands required from an individual and his or her abilities to meet those demands. Also, Lazarus's (2000) explained this situation with transactional 54tres model. This model posits that inability of individuals' cognitive processes and emotional reactions to manage strain environments may lead to increased occupational tensions. And also, emotion-centered model of occupational 54tres posits that individuals who feel stressful when exposing with an event in particular environments may experience occupational strains (Spector and Goh's 2001).

Outcomes of stress can be defined as deviations from normal functioning (Edwards et al., 1998). Such outcomes are dissatisfaction and burnout. Job dissatisfaction indicates negative feelings that individuals have regarding their jobs or facets of their jobs (Spector, 1997).

There are some studies in the literature to explain and to define the relations and effect of these variables between each other's. Some of the researchers found that there is a negative relationship between job stress and job satisfaction (Fairbrother and Warn, 2003; Cooper, et al., 1989). And high level of stress cause low level job

satisfaction. Job stress can reduce productivity, increase mistakes and accidents at work, encourage absenteeism, lower morale, increase conflict with others and cause physical and emotional problems (Pflanz and Ogle, 2006) and finally poor life satisfaction (Pawar and Rathod, 2007).

These information's mean that if cockpit and cabin crew suffer from stress due to workload and other stressor, thus low job satisfaction can be predictable.

Thus, we can predict the following hypothesis:

H₁: Stress is negatively related to job satisfaction.

Some of the studies focus on stress and burnout relationship. The stress is also closely linked to burnout (Cordes and Dougherty, 1993; McManus, Winder, and Gordon, 2002; Schuler, 1980; Shirom, 1989). Some researchers consider burnout as a distinctive type of stress syndrome, unique form of job-related stress (Cordes and Dougherty, 1993; Shirom, 1989), typical phenomena in service sector (Cordes and Dougherty, 1993).

Thus, we can predict the following hypothesis:

H₂: Stress is positively related to emotional exhaustion.

H₃: Stress is positively related to depersonalization.

H₄: Stress is positively related to reduced personnel accomplishment.

On the other hand some of the researchers conclude that burnout and job dissatisfaction are clearly linked (Zedeck, Maslach, Mosier and Skitka, 1988). However, It is not clear whether burnout causes people to be dissatisfied with their jobs, or whether job dissatisfaction causes burnout.

Thus, we can predict the following hypothesis:

H₅: Emotional exhaustion is negatively related to job satisfaction.

H₆: Reduced personnel accomplishment is negatively related to job satisfaction.

H₇: Depersonalization is negatively related to job satisfaction.

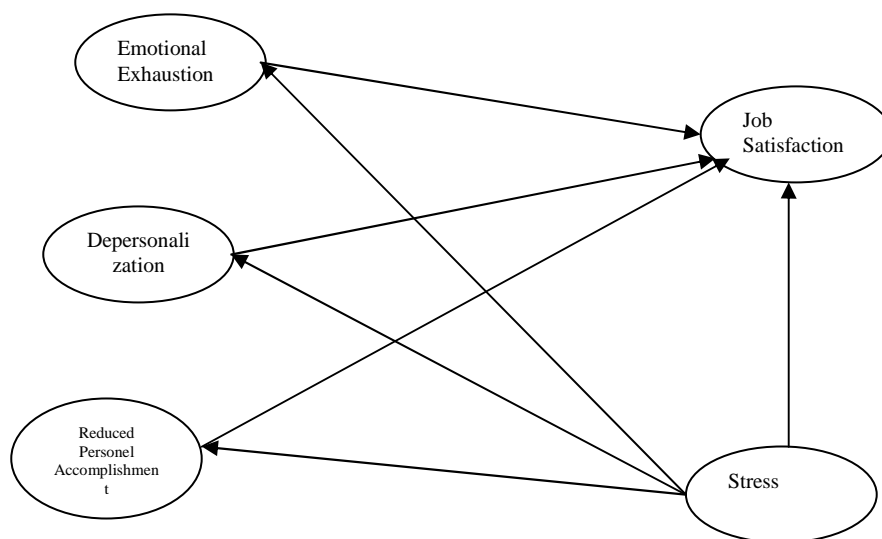


Figure 1. A Schematic diagram of the conceptual framework

4. Method

4.1. Subjects and Procedures

Data were collected from Turkish airlines companies' pilots and flight attendants in Turkey. A questionnaire survey was conducted. The questionnaire that includes demographic information, job satisfaction, stress and burnout items were delivered to 300 randomly selected Turkish airlines companies' pilots and copilots in Turkey. 125 surveys came back from Turkish Airlines companies. The sample included 53 female (42.4%) and 72 male (57.6%). The majority of the respondents were married (58.1%). The 57.7% of participants were pilot and 42.3% of participants were flight attendants. The range of pilots old was 26 thru 62 years and the average

occupational tenure of respondents was about 9.35 years. 19.6 percent of participants have college degree and 28.7 percent has MBA degree and 21.7 percent of participants have other educational diploma.

4.2. Measures

4.2.1. Job Satisfaction

To measure Job satisfaction, Brown and Peterson' (1994) job satisfaction survey was used. The scale consists of 6 items. Participants were requested to evaluate each item in terms of the frequency of their feelings ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Internal consistencies (Cronbach's alpha coefficients) were .803.

4.2.2. Stress

Stress was measured by using the scale developed by House and Rizzo (1972). The scale has 7 factors. Participants were asked to respond to stress scale by indicating the degree to which the condition applied to them on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). In this sample, Cronbach's alpha coefficients were .789.

4.2.3. Burnout

Burnout was measured by Maslach's (1981) scale. The scale has 22 items scored on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale contains three dimensions of organizational commitment: first one is Emotional Exhaustion; second; depersonalisation, third one, reduced personal accomplishment; Cronbach's alpha for this scale was .864; .713 and .853 respectively.

5. Results

Table 1. Stress and Job Satisfaction Regression Analysis.

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	,341 ^a	,116	,109	,61606		
a. Predictors: (Constant), Stress						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6,151	1	6,151	16,206	,000 ^b
	Residual	46,682	123	,380		
	Total	52,832	124			
a. Dependent Variable: Job Satisfaction						
b. Predictors: (Constant), Stress						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,915	,205		14,192	,000
	Stress	-,287	,071		-4,026	,000

a. Dependent Variable: Job Satisfaction

As a result from Table 1, There is a negative relationship found between job satisfaction and stress. This result shows that H₁ is supported and if any person in the cockpit has high stress level this situation will lower that person's job satisfaction

Table 2. Stress and Reduced Personnel Accomplishment Regression Analysis

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	,636 ^a	,404	,399	,63235		
a. Predictors: (Constant), stress						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	33,358	1	33,358	83,422	,000 ^b
1	Residual	49,183	123	,400		
	Total	82,541	124			
a. Dependent Variable: emotional exhaustion						
b. Predictors: (Constant), stress						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,620	,211		7,682	,000
	Stress	,667	,073	,636	9,134	,000
a. Dependent Variable: emotional exhaustion						

Results from Table 2 inform that H₂ is supported and stress is the highly affective factor causing emotional exhaustion.

Table 3. Stress and Reduced Personnel Accomplishment

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	,236 ^a	,056	,048	,52290		
a. Predictors: (Constant), stress						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	1,979	1	1,979	7,236	,008 ^b
1	Residual	33,632	123	,273		
	Total	35,610	124			
a. Dependent Variable: Reduced Personnel Accomplishment						
b. Predictors: (Constant), stress						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,326	,174		19,079	,000
	stress	,163	,060	,236	2,690	,008
a. Dependent Variable: Reduced Personnel Accomplishment						

According to results from Table 3, H₃ is supported and stress also causes low personnel accomplishment. This means that if person has high stress level, they might not do their job requirement the way they have to.

Table 4. Stress and Depersonalization Regression Analysis.

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	,265 ^a	,070	,063	,77868	
a. Predictors: (Constant), Stress					

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5,620	1	5,620	9,269	,003 ^b
	Residual	74,580	123	,606		
	Total	80,200	124			
a. Dependent Variable: Depersonalization						
b. Predictors: (Constant), Stress						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	2,859	,260		11,011	,000
	stress	,274	,090	,265	3,045	,003
a. Dependent Variable: Depersonalization						

Table 4 results shows that H₄ is supported and if a person in the aircraft has high level of stress they may disregard passengers need and wants. And they may treat them not in a good manner.

Table 5. Emotional Exhaustion and Job Satisfaction regression analysis.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,602 ^a	,362	,357	,52356
a. Predictors: (Constant), Emotional Exhaustion				

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19,116	1	19,116	69,736	,000 ^b
	Residual	33,716	123	,274		
	Total	52,832	124			
a. Dependent Variable: Job Satisfaction						
b. Predictors: (Constant), Emotional Exhaustion						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,885	,217		17,932	,000
	Emotional Exhaustion	-,519	,062	-,602	-8,351	,000
a. Dependent Variable: Job Satisfaction						

Result from Table 2 shows that H₅ is supported. There is a negative relationship found between emotional exhaustion and job satisfaction. This results mean that if the person lives and suffers from emotional exhaustion this situation might lower that person job satisfaction.

Table 6. Reduced Personnel Success and Job Satisfaction regression analysis.

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	,543 ^a	,295	,289	,55026		
a. Predictors: (Constant), Reduced Personnel Accomplishment						
Model	Sum of Squares		df	Mean Square	F	Sig.
	Regression	15,590	1	15,590	51,487	,000 ^b
1	Residual	37,243	123	,303		
	Total	52,832	124			
a. Dependent Variable: Job Satisfaction						
Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
	(Constant)	4,618	,352	13,126	,000	
1	Reduced Personnel Accomplishment	-,662	,092	-,543	-7,175	,000
a. Dependent Variable: Job Satisfaction						

Results from Table 6 shows that H₆ is supported. There is a negative relationship found between reduced personnel accomplishment and job satisfaction. This means if any person has lower job satisfaction that person performance might be reduced.

Table 7. Depersonalization and Job Satisfaction Regression Analysis

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	,303 ^a	,092	,085	,62451		
a. Predictors: (Constant), Depersonalization						
ANOVA ^a						
Model	Sum of Squares		df	Mean Square	F	Sig.
	Regression	4,860	1	4,860	12,461	,001 ^b
1	Residual	47,972	123	,390		
	Total	52,832	124			
a. Dependent Variable: Job Satisfaction						
Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
	(Constant)	3,010	,259	11,640	,000	
1	Depersonalization	-,246	,070	-,303	-3,530	,001
a. Dependent Variable: Job Satisfaction						

Results in the Table 7 inform that H₇ is supported and if a person suffers from burnout syndrome it is obvious that they may serve to customer with inappropriate manner.

5.1. The Relationships between job satisfaction, stress and burnout dimension results.

According to results, coming from study approve that all hypothesis which were developed in this study are supported.

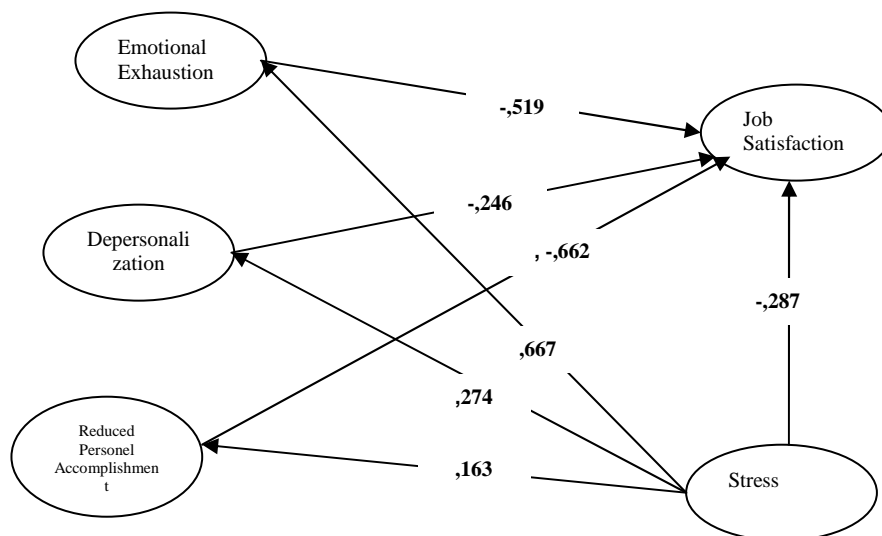


Figure 2. A conceptual framework results

The present study investigated the relationships between job satisfaction, stress and burnout syndrome in Turkish airlines companies. According to results from this study, there were significantly negative relation found between job satisfaction with emotional exhaustion (-,519), reduced personnel accomplishment (- ,662) and depersonalization (- ,246). This results match with the literature. Also in Acker's (1999) study, which was conducted among 128 social workers, was demonstrated moderate associations between job satisfaction and the emotional exhaustion and depersonalisation dimensions of burnout, but none between job satisfaction and the reduced personal accomplishment dimension. The study of Low et al. (2001) and Kuruuzum et al.(2008), which was conducted among 148 salespeople, and found a significant negative relationship between job satisfaction and burnout. Another study made by Boles et al. (2000), which was conducted among a sample of small business owners and a sample of educators, and found a strong correlation between job satisfaction and the Emotional exhaustion dimension and weaker correlations between job satisfaction and the depersonalisation and reduced personal accomplishment dimensions.

Also, in this study there is a significantly positive relation found between stress and emotional exhaustion, depersonalization, and reduced personnel accomplishment. As it said before, researchers are not sure whether burnout cause stress or vis a vis. But they found positive relation between burnout and stress variable like this study (Cordes and Dougherty, 1993; McManus, Winder, and Gordon, 2002; Schuler, 1980; Shirom, 1989).

As it was said before if stress has an affect on mistakes and cause airlines accident. Due to relation with stress, burnout could be another reason which causes mistakes and cause airline accident like stress. Therefore this study contributed another variable in the literature.

In airlines companies, competition occurs related to safety of flight and quality of service not only ground but in the air. Results from this study show that stress and burnout can be harmful for airlines companies competition strength. If the stress level increased in the cockpit and cabin. Results might be more mistakes not only in pilots responsibilities but also cabin attendants behavior towards customer. If the first one occurs, airlines accident might be inevitabel. If the second occurs, low customer satisfaction drive to airlines company losing its reputation and market share.

For future direction, researcher might investigate relationship between rules and procedure, leadership, team management, communication and other organizational behavior subjects such as organizational commitment, emotional labor, person organization and person job fit. Airline sector must be more considered to research on.

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