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The effect of safety climate in workplaces on productive organizational energy of employees: a research in textile industry

Safety climate

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Abstract

Purpose – The aim of this study is to reveal the effects of “safety climate” on “productive organizational energy”, based on the idea that higher energy and productivity will be seen in employees with the improved safety climate in the working environment.

Design/methodology/approach – In this study, data were collected using an online questionnaire from 426 employees of small and medium-sized textile enterprises in the Organized Industrial Zone in the Turkish province of Gaziantep. The “easy sampling” method was applied, one of the sampling techniques not based on probability. Multiple linear regression analysis was used to examine the effects of the “Management’s perspectives and rules” and “Colleagues and safety trainings” sub-dimensions of the safety climate on the “emotional”, “cognitive” and “behavioral” components of productive energy.

Findings – The findings showed that the safety climate in the workplace positively and significantly affects the productive organizational energy of employees. In addition, it was observed that the management’s perspective and rules had a higher impact on productive organizational energy in attitudes towards the safety climate and productive energies of these employees compared to safety pieces of training.

Practical implications – First of all, the result of this study and the positive results that the safety climate in organizations might cause have been noted. It has been demonstrated that the productive energies of the employees will increase if the necessary safety climate is established in the enterprises. In addition, despite the importance attached to the safety training of the employees, as a result of the analysis, it has been determined that the management’s perspective and rules ($\beta = 0.61$; $p < 0.01$) have a higher positive effect on the productive energy of the employees. If these situations are considered by the managers, it is expected that the occupational health and safety management strategies created for the employees will contribute to the formation of positive behaviors in the employees.

Originality/value – The driving force of the present study is that, to our knowledge, there has been no research on this issue related to employees who are mentioned as a critical force in solving productivity and whose number is about 26 million in Turkey’s population.

Keywords Safety climate, Safety culture, Productive organizational energy, Occupational health and safety

Paper type Research paper

Introduction

According to the statistics of the World Labor Organization (ILO), around 2.3 million people worldwide die every year due to work-related accidents or diseases. There are approximately 340 million occupational accidents and 160 million victims of work-related diseases. The ILO updates these estimates periodically, and the point of the update to an increase in accidents



and illnesses (ILO, 2022). The financial burden of unfavorable working conditions leads to an enormous loss, equivalent to approximately 4% of gross domestic product (GDP) worldwide (ILO, 2003). Unfortunately, the situation in Turkey is not different from this. Occupational Health and Safety (OHS) measures were not taken, and macro-scale national economies jeopardize the efficiency and productivity of organizations in micro-dimensions. Activities, such as safety inspections, training and implementation of safety plans, are conducted imperfectly. In addition, given that a significant portion of occupational accidents is due to “unsafe acts,” the concept of “safety climate” (Lee *et al.*, 2021) is decisive regarding OHS practices to determine the main causes of safety accidents caused by human behavior is happening.

Within the scope of OHS practices, there are many regulations at the national and international levels for employees to continue their work in a healthy and safe environment. In most cases, workplaces carry out work on behalf of OHS to meet legal obligations, and the work performed remains ostensible and superficial rather than serving its purpose. However, realizing OHS practices in workplaces includes benefits beyond meeting legal obligations. It is thought that productivity can be increased in workplaces by reducing accidents and injuries by implementing safety improvement programs (Sulzer-Azaroff *et al.*, 1990). A significant portion of workplace accidents are caused by human error (Etman and Halawa, 2007; Chikudate, 2009; Di Bona *et al.*, 2021a, b; Bathrinath *et al.*, 2021; Velmurugan *et al.*, 2022). Human errors are minimized by improving the safety climate. In addition, OHS practices to establish a safety climate increase employee performance (Tasdemir, 2020) and productivity. In the improving safety climate, employees will work with higher energy and productivity in their workplaces; therefore, it is thought that productivity increase will be achieved both in the institutions where they work and in their countries. Therefore, this study aims to analyze the relationship between the safety climate and productive energy (POE) concepts.

To our knowledge, although no study directly examines the relationship between the safety climate and the productive organizational energy levels of the employees in the literature, based on the studies that OHS practices increase the performance and productivity of the employees, it is suggested in this research that the safety culture in the organizations will increase the productive organizational energy in the employees. The information presented in this research provides a clear picture of the progress of research in the field of safety culture and POE research. Thus, this research is crucial because it fills an important gap in the literature.

In this study, first of all, a definition and conceptual perspective regarding the concepts of safety climate and productive organizational energy are presented, and the problems experienced in organizations related to the related concepts are referred. The purpose of this descriptive research is to provide an analytical view of the safety culture and its sub-dimensions, and the characteristics of the POE and its sub-dimensions, based on the findings. With the factor, correlation and multiple linear regression analyses performed afterward; the results about the effects of the safety climate and its sub-dimensions on the productive energies and sub-dimensions of the employees are given. Finally, suggestions for improving the safe environment are presented.

Conceptual framework

In this section, definitions and conceptual information about the concepts of safety climate and productive organizational energy will be presented, along with the theoretical perspective on the effects of the perception of safety climate in the workplace on the productive energies of employees.

First introduced by Zohar in 1980, safety climate is one of the organizational climate types, characterizing organizational features and their perception by employees. Since then, it has

been a crucial structure for examining the variables associated with workplace accidents and injuries (Barbaranelli *et al.*, 2015). Safety climate term refers to the perceptions of policies, procedures and practices related to safety in the workplace (Barling *et al.*, 2002; Griffin and Neal, 2000; Zohar, 2003; Neal and Griffin, 2006). At a broader level, the safety climate defines employees' perceptions of the value of safety in an organization (Neal and Griffin, 2004), while the root cause, which is closely related to OHS and creates unsafe environments, is the reflection of negative attitudes and perceptions on behavior. Unfortunately, the change of behavior cannot be realized easily and in a short time. For a chance to be implemented, it often needs to be established as a culture. The situation is similar in occupational health and safety (Fagnoli and Lombardi, 2021). The reason for the sad picture regarding occupational health and safety in Turkey stems from this situation. Despite the tremendous change and transformation in the OHS legislation since 2012, the fact that it has not led to a positive trend in OHS statistics can be explained by the long-term establishment of the culture.

Despite the use of the concept of energy in many different biological or psychological contexts, the energy of individuals in the business context has recently emerged as a focal issue point (Quinn, 2007; Quinn and Dutton, 2005; Schwartz, 2007). The concept of energy is mostly emphasized in positive situations (Cole *et al.*, 2012). Bruch and Vogel (2011) associated with the concept of productive organizational energy with high emotional engagement, mental alertness, high activity, speed, stamina and productivity. However, Quinn (2007) defines energy as a positive emotional experience that includes the willingness to act and the capability to act. Quinn (2007) further asserts that energy is necessary for the development of high-quality connections and there exists a fundamental relationship between energy and positive connections in the workplace. Quinn (2007) also argues that energy represents a source of transformation and change in relationships. According to Quinn (2007), the energy of the employee and the quality of business connections are included in a dynamic feedback relationship that develops over time. Furthermore, Baumeister (2002) defines energy as the presence of blood sugar that enables individuals to regulate their behaviors. It is an organizational resource that increases employees' action and motivation capacities, enabling them to do their work and achieve their goals (Quinn *et al.*, 2012).

Social contagion focuses on the spread of stimuli to other people, such as the synchronous dissemination of emotions through emotional contagion (Hatfield *et al.*, 1994). The spread of positive emotions on work behavior can have several positive effects, such as increasing cooperation, minimizing conflict and increasing task performance (Barsade, 2002). Social contagion theory provides a potential mechanism through which human energy can be transmitted through social interaction. It is expected that every factor that will ensure the development of the organization will bring positive results to the organization. Many researchers have studied the safety climate and tried to establish a relationship between the safety climate and accidents. As the safety climate increases, the probability of an accident decreases (Ahn and Park, 2006; Kim and Park, 2002; Lee *et al.*, 2021). A more positive work environment is created for employees. Thus, it is suggested that a positive safety climate will positively affect productive organizational energy in workplaces, based on the theory of social contagion in the research.

Unfortunately, an organizational resource, such as productive organizational energy, is not always efficiently managed (Pfeffer, 2010). Lack of energy may result in undesirable actions, such as burnout (Demerouti *et al.*, 2001), stress (Sonnetag *et al.*, 2010) or quitting work (Schaufeli *et al.*, 2009). Negative conditions, such as increasing job demands, longer working hours, constant change, technology blurring the boundaries of work and personal life, increased workload and the risk of job loss trigger the deteriorating energy in the workplace. An unfavorable safety climate is also a situation that has a negative impact on workplaces. Casey *et al.* (2017) argue that safety climate is one of the foundations that enable organizations to build their safety capacity and the safety climate and control practices over

work systems and the productive performance of the organization can be sustained. Many previous meta-analytical studies (Christian *et al.*, 2009; Clarke, 2006; Nahrgang *et al.*, 2011) have consistently shown that people work safer when there is a shared social context in which safety is prioritized and valued somehow shows. According to Sutherland and Hofmeyr (2012), the main factors that provide productive corporate energy are recognition, job security and management support. Given the reasons mentioned above, it is suggested that there is a positive correlation between the dimensions of the safety climate and productive organizational energy. The hypothesis established in this context is as follows:

H. Climate of safety affects productive organizational energy positively and significantly.

Schudy and Bruch (2010) defined three dimensions of organizational energy: emotional, cognitive and behavioral energy. Emotional energy describes the collective positive emotion, enthusiasm and inspiration associated with organizational goals and tasks. Cognitive energy means the ability to think productively and proactively about business activities and solutions. Behavioral energy, on the other hand, refers to the collective active behaviors towards the common goals of the organization. Although productive energy has similarities with the concepts in the literature, such as collective motivation, collective effectiveness, group cohesion, emotional climate and collective exhaustion (Alexiou *et al.*, 2019), it has some unique characteristics. First, productive energy is a common phenomenon with a shared characteristic that arises at the individual level but takes place at a higher level of analysis, for example, at the organizational level. Second, productive energy has a three-dimensional structure consisting of emotional, cognitive and behavioral energy (Bekmezci *et al.*, 2020).

According to Vogel *et al.* (2022), the recognition of productive organizational energy is essential for the strategic management of organizational energy because this capability helps managers identify the unit's future energy resource model, its consequences and necessary interventions. However, many managers do not understand what the term productivity really means. In fact, productivity is often discussed by managers but rarely defined, often misunderstood, confused with similar terms and often cannot be measured, leading to productivity being overlooked and even unproductive decisions made (Tangen, 2002). Vogel and Bruch (2012) pointed out the practices that managers can use to energize their organizations or business units in light of their empirical research. Cross *et al.* (2003) also discussed leadership groups among energy consumers, which have an energy-reducing effect on the organization in their social network analysis. Lamberti (2010), in his study focusing on the driving forces of productive organizational energy, suggested that the factors that drive productive organizational energy are directed through organizational leadership at different levels. In general, there are many studies suggesting that the managerial perspective is effective in creating performing, energetic and developing organizations (Bruch and Vogel, 2011; Quinn, 2015; Raes *et al.*, 2012). Given the reasons mentioned above, it is suggested that there is a positive correlation between management's point of view and rules and productive organizational energy and subdimensions. The hypothesis established in this context is as follows:

H1. Management's point of view and rules affect productive organizational energy positively and meaningfully.

H1a. Management's point of view and rules affect the emotional component of productive organizational energy positively and significantly.

H1b. Management's perspective and rules affect the cognitive component of productive organizational energy positively and significantly.

H1c. The management's perspective and rules affect the behavioral component of productive organizational energy positively and significantly. Safety climate

Employees develop consistent perceptions and expectations of behavior-outcome possibilities based on various cues available in their work environment and shape their behavior accordingly (Dieterly and Schneider, 1974; Fleishman, 1953; Linvin and Stringer, 1968; Zohar, 1980). Productive organizational energy captures “shared experience and positive influence among unit members, cognitive stimulation and representative behavior display” (Cole *et al.*, 2012). Most importantly, it can be shaped as it can be influenced by organizational factors such as degrees of autonomy and participation in decision-making. Organizational energy has been associated with knowledge creation and exchange (Cross *et al.*, 2007). It has been found that individuals with high energy have significant effects on the knowledge of units and networks as a whole over time (Cross *et al.*, 2003; Alexiou *et al.*, 2019). For example, in any work environment, a particularly influential person may be known as an “energizer,” someone who can ignite progress in projects or within groups. On the other hand, there are people who are influential in consuming the energy of a group. These energy-consuming individuals are avoided as much as possible, even if they have the expertise to contribute to solving a problem (Cross *et al.*, 2003). It is thought that employees in the organization interact with other individuals in the organization in connection with their energy status, regardless of their social capital. Therefore, it is thought that co-workers in the work environment are effective in productive organizational energy.

Training is one of the most common methods to increase the productivity of individuals and communicate organizational goals to staff (Galanou and Priporas, 2009). According to Davar and Parti (2013), there is a moderate relationship between workplace training and productivity for employees at different levels. Training is the most effective way to motivate and maintain the high quality of human resources within an organization (Hutchings *et al.*, 2009; Nda and Fard, 2013). In general, there are many studies that have found that the training given to employees has a significant impact on productivity (De Grip and Sauermann, 2013). However, the lack of studies on the relationship between safety education and productive organizational energy is evident in the literature, and the study conducted in this context is original. According to Vinodkumar and Bhasi (2010) and Zohar (1980), behavioral skills are extremely significant because they enable the development of knowledge and/or attitudes. However, to Subramaniam *et al.* (2016), safety training positively affects employee productivity. According to Bayram (2022), the motto “safety starts with education” was put forward to prevent accidents and diseases in workplaces. However, education also plays a vital role in increasing employee productivity, which increases profitability and productivity for organizations. Given the reasons mentioned above, it is suggested that there is a positive correlation between colleagues and safety training and productive organizational energy and subdimensions. The hypothesis established in this context is as follows (see Figure 1):

H2. Colleagues and safety training positively and significantly affect productive organizational energy.

H2a. Colleagues and safety training positively and significantly affect the emotional component of productive organizational energy.

H2b. Colleagues and safety training positively and significantly affect the cognitive component of productive organizational energy.

H2c. Colleagues and safety training positively and significantly affect the behavioral component of productive organizational energy.

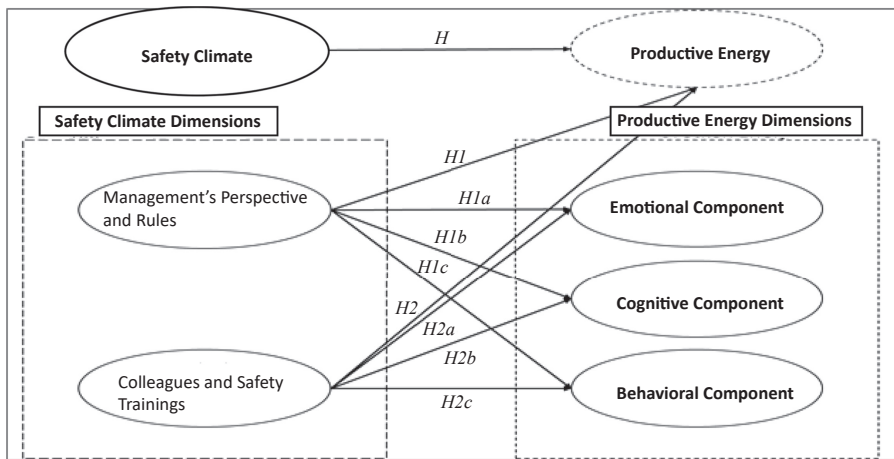


Figure 1.
Research model

Source(s): Author's own creation/work

Material method

Data collection

Production activities continue during the COVID-19 process. Due to restrictions and risk of contamination, data were collected using an online questionnaire. The online survey takes an average of 4–5 min to complete. The first part of this study consisted of demographic questions, and the second part consisted of questions compiled from two different scales to determine the safety climate and productive organizational energy level of the employees.

Scales of this research

The scales used in this study are discussed further.

Safety Climate Scale (GIS): Adapted from the safety climate scale developed by Choudhry *et al.* (2009). The shortening of the scale, its Turkish validity and reliability studies were conducted by Türen *et al.* (2014). It is a 5-point Likert-type self-assessment scale. The scale has a two-dimensional structure: “management perspective and rules” and “co-workers and safety training.”

Productive organizational energy Scale (UES): It was developed by Cole *et al.* (2012), and Turkish validity and reliability studies were conducted by Bekmezci *et al.* (2020). It is a 5-point Likert-type self-assessment scale. This scale has a three-dimensional structure: “emotional,” “cognitive” and “behavioral.”

Ethical approval

To meet the ethical content of this research, the necessary permissions were obtained from the Social and Human Sciences Ethics Committee of Gaziantep University. In addition, before participating in the present study, all participants were informed that participation in the survey was voluntary. Information about the participants in this study is shown in Table 1.

Information about participants

In this study, 16.4% of the participants were women and 83.6% were men. The majority of the participants (56.3%) were high school graduates. The rate of married participants was 74.2%. A total of 23% of the participants stated that they worked for one year or less, 40.8% for

		f	%
Gender	Woman	70	16.4
	Man	356	83.6
Educational status	Primary education	40	9.4
	License	43	10.1
	High school	240	56.3
	Associate degree	91	21.4
Marital status	Master's or Doctorate	12	2.8
	Single	110	25.8
How many years have you been working in your company?	The married	316	74.2
	1 year and less	98	23.0
	2-3 years	174	40.8
	4 years and more	154	36.2

Source(s): Author's own creation/work

Table 1.
Distribution of participants by diagnostic characteristics

2-3 years and 36.2% for four years or more. The average age of the participants was calculated as 34.31 ($S_s = 9.28$).

Validity and reliability analysis results of the safety climate scale

Exploratory factor analysis was applied to explore the factor structure of the Safety Climate Scale used in the research. The Kaiser-Mayer-Olkin (KMO) test was applied to test the suitability of the data structure in terms of sample size for factor analysis. This test compares the size of the observed correlation coefficients with the size of the partial correlation coefficients (Çokluk *et al.*, 2010). It has been stated that the data set cannot be factored for $KMO \leq 0.50$ (Field, 2013). A KMO value above 0.90 indicates an excellent sample size (Tavsancil, 2005).

The KMO value calculated for factor analysis was 0.93. According to this value, the data structure was sufficient for factor analysis. The suitability of the data for factor analysis was determined by applying the Barlett Sphericity test. The fact that the p -value of this test was below 0.05 indicated that the matrix with the relations between the items was different from the unit matrix without the relations (Can, 2018). When the test results applied for factor analysis were evaluated (Barlett Sphericity ($\chi^2(91) = 6,956.36; p < 0.001$), it was seen that the chi-square value was significant. This result showed that the data were suitable for factor analysis.

Factor analysis was performed by applying the Principal Components Analysis method. The cut-off point for factor loads was set to 0.40 (Comrey and Lee, 1992). Since the measurement tool was designed with two factors, factor analysis was applied by forcing the scale items to two factors. No item with a factor loading value below 0.40 was observed. The factor loads of the items in the measurement tool are given in Table 2.

As a result of the exploratory factor analysis, it was determined that the scale items were grouped under two factors. The factor loads of the items in the scale ranged from 0.68 to 0.84. The two-factor structure explained 78% of the total variance. Convergent validity means that statements about variables are related to each other and to the factor they create. To ensure convergent validity, the calculated CR (Composite Reliability) values are expected to be greater than the AVE (Average Variance Extracted) values and the AVE value to be greater than 0.5. It is also expected to be $CR > 0.70$ to ensure reliability (Yaşlıoğlu, 2017). When the calculated values were examined, it was understood that the conditions of $CR > AVE$, $CR > 0.70$ and $AVE > 0.50$ were met.

The Cronbach's alpha coefficient was calculated to determine the reliability of the Safety Climate Scale. Values between 0.60 and 0.80 indicate that the measurement tool is highly

Item no.	Factor loads	Move*	Self-worth	Explained variance (%)	CR	AVE	Cronbach alpha
Factor 1			10.19	66.35	0.97	0.74	0.97
MPR2	0.84	0.77					
MPR9	0.83	0.83					
MPR5	0.82	0.83					
MPR3	0.79	0.76					
MPR4	0.78	0.76					
MPR10	0.76	0.79					
MPR7	0.75	0.72					
MPR6	0.73	0.79					
MPR1	0.70	0.67					
MPR8	0.68	0.78					
Factor 2			1.79	11.65	0.93	0.77	0.92
IAGE1	0.84	0.77					
IAGE2	0.81	0.82					
IAGE3	0.76	0.84					
IAGE4	0.70	0.84					

Table 2.
Factor loads of safety
climate scale items

Note(s): *Item common variance; MPRs = Management perspective and rules, IAGE= Colleagues and safety training
Source(s): Author's own creation/work

reliable, and values between 0.81 and 1.00 indicate that the measurement tool is highly reliable (Ozdamar, 2004). The alpha coefficients calculated for the scale factors were 0.97 and 0.93. The obtained values showed that the internal consistency reliability of the measurement tool was at a high level.

Validity and reliability analysis results of the productive organizational energy scale

Exploratory factor analysis was applied to explore the factor structure of the Productive Organizational Energy Scale used in this research. The KMO value calculated for factor analysis was 0.94. The data structure was sufficient to perform factor analysis. The suitability of the data for factor analysis was determined by applying the Barlett Sphericity test. The fact that the values - value op-value test is below 0.05 indicates that the matrix with the relations between the items is different from the unit matrix without the relations (Can, 2018). When the test results applied for factor analysis were evaluated (Barlett Sphericity ($\chi^2(91) = 7,093.99; p < 0.001$), it was seen that the chi-square value was significant. This result showed that the data were suitable for factor analysis.

Factor analysis was performed by applying the Principal Components Analysis method. The cut-off point for factor loads was set to 0.40 (Comrey and Lee, 1992). Since the measurement tool was designed with three factors, factor analysis was applied by forcing the scale items to three factors. An item (Da3) with a factor load below 0.40 was excluded from the scale. The factor loads of the items in the measurement tool are given in Table 3.

As a result of the exploratory factor analysis, it was determined that the scale items were grouped under three factors. The factor loads of the items in the scale ranged from 0.42 to 0.92. The three-factor structure explained 84% of the total variance. Convergent validity means that statements about variables are related to each other and to the factor they create. To ensure convergent validity, the calculated CR (Composite Reliability) values are expected to be greater than the AVE (Average Variance Extracted) values and the AVE value to be greater than 0.5. It is also expected that $CR > 0.70$, to ensure reliability (Yaşlıoğlu, 2017).

Item no.	Factor loads	Move*	Self-worth	Explained variance (%)	CR	AVE	Cronbach alpha
Factor 1			8.82	65.04	0.97	0.85	0.97
Du2	0.90	0.92					
Du5	0.88	0.87					
Du3	0.87	0.91					
Du1	0.86	0.87					
Du4	0.84	0.87					
Factor 2			1.53	11.28	0.95	0.79	0.95
Bi5	0.73	0.86					
Bi4	0.70	0.88					
Bi1	0.67	0.81					
Bi3	0.65	0.80					
Bi2	0.53	0.78					
Factor 3			1.04	7.67	0.78	0.57	0.76
Da4	0.92	0.86					
Da2	0.84	0.82					
Da1	0.42	0.76					

Note(s): *Item common variance; Du = Emotional, Bi= Cognitive, Da = Behavioral

Source(s): Author's own creation/work

Table 3.
Factor loads of
productive
organizational energy
scale items

When the calculated values were examined, it was understood that the conditions of $CR > AVE$, $CR > 0.70$ and $AVE > 0.50$ were met.

The Cronbach's alpha coefficient was calculated to determine the reliability of the Productive organizational energy Scale. Values between 0.60 and 0.80 indicate that the measurement tool is highly reliable, and values between 0.81 and 1.00 indicate that the measurement tool is highly reliable (Ozdamar, 2004). The alpha coefficients calculated for the scale factors were 0.97, 0.95 and 0.76. The obtained values showed that the internal consistency reliability of the measurement tool was at a sufficient level.

Data analysis

Before analyzing the research data, some assumptions were checked. The distribution of the scores obtained from the safety climate and productive organizational energy scales was examined based on the skewness and kurtosis coefficients. To meet the normal distribution assumption, it is sufficient that the skewness and kurtosis coefficients are in the range of ± 1 (Tabachnick and Fidell, 2007). The skewness and kurtosis coefficients calculated in this study were within the specified range. Pearson correlation coefficients were calculated to examine the relationships between safety climate and productive organizational energy scores. Correlation coefficients are coefficients that show the amount and direction of the relationship between two data sets. The correlation coefficient takes values in the range of ± 1 . Coefficients between 0 and ± 0.30 indicate low, coefficients between ± 0.30 and ± 0.70 indicate moderate and coefficients between ± 0.70 and ± 1 indicate high-level relationships (Büyükoztürk, 2007).

Multiple linear regression analysis was performed to examine the predictive effect of safety climate on productive organizational energy. Some assumptions were checked before the analysis. The calculated VIF value was 3.46. The obtained value showed that there was no multicollinearity problem ($VIF < 10$) among the independent variables (Çokluk et al., 2010). Durbin-Watson coefficients took values between 1.65 and 1.95. The coefficients obtained indicated that the assumption of independence of errors ($1.5 < DW < 2.5$) was met (Kalayci, 2017). Graphs of standardized residuals were examined to determine whether the covariance assumption was met. In the histogram graph, it was observed that the residuals were

distributed very close to normal. On the other hand, in the normal PP plot, it was determined that a large proportion of the residues was distributed close to and parallel to the normal distribution line. The results obtained in this study showed that the covariance assumption was met. SPSS 25.0 statistical package program was used for the analysis.

Results

Pearson correlation coefficients of relationships between safety climate and productive organizational energy scores are presented in Table 4.

When Table 4 is examined, "management perspective and rules scores, emotional ($r = 0.846$; $p < 0.01$), cognitive ($r = 0.715$; $p < 0.01$), behavioral ($r = 0.420$; $p < 0.01$) and UEO Total ($r = 0.749$; $p < 0.01$) It is understood that there were moderate and level high-level positive correlations between the scores of = 0.749; $p < 0.01$ " can be seen.

When colleagues and safety training scores and emotional ($r = 0.754$; $p < 0.01$), cognitive ($r = 0.691$; $p < 0.01$), behavioral ($r = 0.358$; $p < 0.01$) and ITS Total ($r = 0.755$) scores were examined, there were moderate and high-level positive correlations between the scores of = 0.680; $p < 0.01$).

EAS total scores with emotional ($r = 0.848$; $p < 0.01$), cognitive ($r = 0.731$; $p < 0.01$), behavioral ($r = 0.416$; $p < 0.01$), and UES Total ($r = 0.755$) scores It can be said that there is a moderate and high ($p < 0.01$) positive correlation between ($p < 0.01$) scores.

As shown in Table 5, the components of the safety climate together had a significant relationship with productive organizational energy ($R = 0.755$; $F_{(2,423)} = 280.19$; $p < 0.001$), and 57% of the variation in productive organizational energy was explained by the safety climate components.

Table 4.
Pearson correlation coefficients of relationships between safety climate and productive organizational energy scores

Variables	1	2	3	4	5	6	7
1 Management Perspective and Rules	1						
2 Training	0.843**	1					
3 GIO Total	0.989**	0.913**	1				
4 Emotional	0.846**	0.754**	0.848**	1			
5 Cognitive	0.715**	0.691**	0.731**	0.867**	1		
6 Behavioral	0.420**	0.358**	0.416**	0.534**	0.596**	1	
7 IET Total	0.749**	0.680**	0.755**	0.908**	0.925**	0.811**	1
Average	47.78	19.24	67.02	23.76	23.84	17.97	65.57
Ss	5.51	1.98	7.26	2.94	2.54	2.88	7.36

Note(s): ** $p < 0.01$; N = 426; VS= Safety climate scale, ITS= Productive organizational energy scale
Source(s): Author's own creation/work

Table 5.
Regression analysis results were performed to determine the predictive effects of safety climate components on generative energy

Variable	B	SH	β	t	p
(Still)	1.06	0.16		6.45	0.00
Management Perspective and Rules	0.58	0.06	0.61	10.25	0.00
Colleagues and Safety Training	0.18	0.06	0.17	2.84	0.01
R = 0.755	$R^2 = 0.570$		$F_{(2,423)} = 280.19$		$p < 0.001$

Note(s): Dependent variable = ITS Total
Source(s): Author's own creation/work

The findings obtained in this study showed that management perspective and rules ($\beta = 0.61$; $p < 0.01$), co-workers and safety training ($\beta = 0.17$; $p < 0.01$) were positive predictors of productive organizational energy. Management perspective and rules had greater impact on productive organizational energy than co-workers and safety training.

The components of the safety climate together had a significant relationship with the emotional dimension ($R = 0.85$; $F_{(2,423)} = 550.06$; $p < 0.001$) and 72% of the variation in productive organizational energy was explained by the safety climate components (Table 6).

Management perspective and rules ($\beta = 0.73$; $p < 0.01$), co-workers and safety training ($\beta = 0.14$; $p < 0.01$) were positive predictors of emotional dimension. Management perspective and rules were more effective on the emotional dimension than co-workers and safety training.

As shown in Table 7, the components of the safety climate together had a significant relationship with the cognitive dimension ($R = 0.733$; $F_{(2,423)} = 246.10$; $p < 0.001$) and 54% of the variation in productive organizational energy was explained by the safety climate components.

Management perspective and rules ($\beta = 0.46$; $p < 0.01$), co-workers and safety training ($\beta = 0.31$; $p < 0.01$) were positive predictors of cognitive dimension. Management perspective and rules were more effective on the cognitive dimension than co-workers and safety training.

As seen in Table 8, the components of the safety climate together had a significant relationship with the behavioral dimension ($R = 0.420$; $F_{(2,423)} = 45.20$; $p < 0.001$). A total of

Variable	B	SH	β	T	p
(Still)	0.24	0.15		1.60	0.11
Management perspective and rules	0.78	0.05	0.73	15.28	0.00
Colleagues and safety training	0.17	0.06	0.14	2.95	0.00
R = 0.850	$R^2=0.722$		$F_{(2,423)} = 550.06$		$p < 0.001$

Note(s): Dependent variable = Emotional
Source(s): Author's own creation/work

Table 6.
 The results of regression analysis performed were used to determine the predictive effect of safety climate components on the emotional dimension

Variable	B	SH	β	t	p
(Still)	1.25	0.16		7.63	0.00
Management Perspective and Rules	0.42	0.06	0.46	7.44	0.00
Colleagues and Safety Training	0.31	0.06	0.31	4.97	0.00
R = 0.733	$R^2=0.538$		$F_{(2,423)} = 246.10$		$p < 0.001$

Note(s): Dependent variable = Cognitive
Source(s): Author's own creation/work

Table 7.
 Regression analysis results were used to determine the predictive effect of safety climate components on the cognitive dimension

Variable	B	SH	β	t	p
(Still)	1.84	0.31		5.91	0.00
Management perspective and rules	0.53	0.11	0.41	4.94	0.00
Colleagues and safety training	0.02	0.12	0.02	0.20	0.84
R = 0.420	$R^2=0.176$		$F_{(2,423)} = 45.20$		$p < 0.001$

Note(s): Dependent variable = Behavioral
Source(s): Author's own creation/work

Table 8.
 Regression analysis results were performed to determine the predictive effect of safety climate components on the behavioral dimension

18% of the variation in productive organizational energy was explained by the safety climate components. Only management perspective and rules ($\beta = 0.41$; $p < 0.01$) were significant predictors of behavioral dimension.

Management perspective and rules were more effective on behavioral dimension than co-workers and safety training.

The results of the hypothesis test regarding the model are given in Table 9. All of the main and sub-hypotheses regarding the positive and meaningful effects of the safety climate on the productive energy in the organizations were accepted.

Conclusion and discussion

With the addition of the devastating effects of COVID-19 on top of the harsher competitive conditions with increasing globalization, it is becoming more and more challenging for organizations to survive. On top of all these, work accident and occupational disease expenses, which do not benefit the business and do not add value to the product or service, are added to the costs. However, improving the safety climate in workplaces will prevent work accidents and occupational diseases and their indirect costs. Thanks to the positive safety climate to be established in the workplace, increasing the productive energies of the employees will both facilitate the survival of the organizations and enable the employees to operate in “decent” jobs. Thus, it is evaluated that improvement can be achieved in the working environment.

This research was conducted to develop the conceptual framework for the concepts of safety climate and productive organizational energy, determine the effects of safety climate on the productive energies of employees and develop and test a wide model by making use of the literature. The concepts of “safety climate” and “productive organizational energy” have been studied in detail and have been tried to be explained. Starting from the theory of “Social Contagion,” the effect of the safety climate in the workplaces on the productive energies of the employees was analyzed.

In this study, which was conducted because of necessity, with a special focus on the results of the safety climate that can affect the productive energies of the employees and contribute to

Hypothesis	Results
H. Climate of safety affects productive organizational energy positively and significantly	Supported
H1. Management's point of view and rules affect productive organizational energy positively and meaningfully	Supported
H1a. Management's point of view and rules affect the emotional component of productive organizational energy positively and significantly	Supported
H1b. Management's perspective and rules affect the cognitive component of productive organizational energy positively and significantly	Supported
H1c. The management's perspective and rules affect the behavioral component of productive organizational energy positively and significantly	Supported
H2. Colleagues and safety training positively and significantly affect productive organizational energy	Supported
H2a. Colleagues and safety training positively and significantly affect the emotional component of productive organizational energy	Supported
H2b. Colleagues and safety training positively and significantly affect the cognitive component of productive organizational energy	Supported
H2c. Colleagues and safety training positively and significantly affect the behavioral component of productive organizational energy	Supported

Table 9.
Hypothesis test results

Source(s): Author's own creation/work

the organizational effectiveness, the results of 426 participants from small and medium-sized textile enterprises in Gaziantep Organized Industrial Zone have been empirically examined.

Safety Climate is categorized into two sub-dimensions, as “management’s point of view and rules” and “co-workers and safety training,” while productive organizational energy is categorized into three sub-dimensions, as “emotional,” “cognitive” and “behavioral.” These results are consistent with the first studies in which scales were revealed in the literature (Cole *et al.*, 2012; Bekmezci *et al.*, 2020).

This study was conducted to determine the relationship between safety climate and productive organizational energy; exploratory factors and multiple linear regression analyses were used to test all hypotheses put forward among the variables.

Gaziantep, the province where this study was conducted, is of considerable importance as it is the “heart of textile exports” in Turkey and also explains the concepts specified for textile workers working in harsh conditions. However, although there are many studies on the safety climate in the literature, to our knowledge, no study has been found that deals with the relationship between the safety climate and productive organizational energy. In this respect, the research conducted here presents an up-to-date and more comprehensive view compared to the studies developed in the literature, makes strong contributions to theoretical knowledge and provides an opportunity to expand the understanding of the methodological approach to the concepts of safety climate and productive organizational energy. The findings obtained in the present study will fill the gap in the national and literature.

All hypotheses created for this study were accepted. Safety climate and its sub-dimensions positively and significantly affect productive organizational energy and its sub-dimensions. In general, when the results are interpreted, it can be stated that the safety climate in the workplaces can positively affect the productive energies of the employees at medium and high levels and that the positive safety climate in the workplaces can lead to an increase in organizational effectiveness and efficiency. Management perspective and rules increase productive organizational energy; affect the emotional, cognitive and behavioral components of productive organizational energy positively and significantly. Also, co-workers and safety training increase productive organizational energy; affect the emotional, cognitive and behavioral components of productive organizational energy positively and significantly. Within the scope of productive organizational energy, it has been determined by the analyses that the management’s perspective and rules, as well as the co-workers and safety training, are effective. It is challenging to compare the results of the research with the results of other studies since, to our knowledge, there is no study on these two concepts. However, it can be said indirectly that similar results were obtained with previous studies (Fleishman, 1953; Linvin and Stringer, 1968; Dieterly and Schneider, 1974; Zohar, 1980; Clarke, 2006; Christian *et al.*, 2009; Nahrgang *et al.*, 2011; Bruch and Vogel, 2011; Quinn, 2015; Raes *et al.*, 2012; Subramaniam *et al.*, 2016; Bayram, 2022).

When the results are detailed, it has been analyzed that the “management perspective and rules” dimension of the safety climate scale (factor1) is more effective on the three dimensions (emotional, cognitive, behavioral) of the productive organizational energy scale than the “co-workers and safety training” dimension (factor2). This result is very valuable regarding the application. Namely, despite the importance given to the safety training of the employees in practice, as a result of the analysis, it has been determined that the management’s perspective and rules have a higher positive effect on the productive organizational energy of the employees.

According to Sutherland and Hofmeyr (2012), the main factors that provide productive corporate energy are recognition, job security and management support. The results of the research support Sutherland and Hofmeyr’s (2012) findings. The safety climate, closely associated with occupational safety, and in particular, safety training and management’s perspective, were positive and significant with organizational productive energy.

It has been revealed that the safety culture adopted by the managers in the enterprises is perceived as exemplary behavior by the employees. In this case, it indirectly affects the productive energies of the employees. Thus, the positive development of the management perspective, which plays an important role in the first place, by raising the awareness of occupational health and safety to the managers will be effective on the employees in the enterprises. In other words, instead of OHS practices, such as employee training and communication that match the “colleagues and safety training dimension,” it will be more effective to raise awareness and managers’ awareness, review and constantly update the rules in the workplace. Communication links between employees and managers should be kept open, information flow on production and safety issues should be ensured and the general management philosophy should be supported by policies. The mission, vision and policies of the companies should be not only production oriented but also people-oriented. In line with the ILO’s “decent work” mission, it is recommended that relevant governments, politicians, non-governmental organizations and managers create action plans to raise awareness and develop practices on occupational health and safety.

There are some limitations in this study due to the nature of science. The most crucial limitation of this study is that the present research has been conducted only in textile enterprises in Gaziantep, Turkey. Based on this limitation, different results can be obtained from research to be applied to employees in different geographies and sectors. At the same time, applying this study on a broader universe is among the basic recommendations. Although the article conceptualizes it as an organizational level structure, analyzes were made at the individual level. In addition, the use of self-report measures to assess the safety climate and productive energy is another limitation of the current research. Providing self-declared performance with an objective, measurable performance measure will increase confidence in the interpretation of self-report data in survey-based studies. Another limitation of the research is that; The quantitative research method was used within the scope of the research. The use of qualitative research methods can be beneficial for future researchers to be able to look at the subject from different dimensions and to deal with the subject in a more exploratory and in-depth manner.

The findings obtained in this research will benefit all geographies and all sectors, especially in Turkey, the universe where this study is conducted and the heart of textile exports in Turkey. However, this is not enough. In this context, some suggestions are made to future researchers. It is recommended that safety climate researches be continued with different variables, especially in risk-intensive sectors. Also, while the safety climate is an important predictor of productive energy, it does not explain all the variance. Including other determinants in future work will enable businesses to increase productivity through human capital. The safety climate is a reflection of top management’s priorities and practices in relation to organizational productive energy in an organization and therefore offers an ideal point of intervention. Occupational health and safety professionals who wish to improve organizational productivity should consider interventions to increase the safety climate in workers. Based on the awareness that OHS practices in workplaces are beyond meeting the requirements of the legislation, it is recommended to researchers, entrepreneurs, managers and politicians that the results of this study should be evaluated as a strategy for businesses, sectors and even countries.

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