

DETERMINANTS OF SAFE ORGANIZATIONAL CLIMATE AND ITS IMPACT ON EMPLOYEE PERFORMANCE: A CASE OF MARBLE INDUSTRIES KHYBER PAKHTUNKHWA, PAKISTAN

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Abstract. *The purpose of this research paper was to discover different problems and disseminate solutions for creating a safety climate in an organization by minimizing accidents at the workplace through increasing safety awareness among employees. For this purpose, a survey was carried out to collect the data by means of questionnaires from different marble factories situated in industrial areas of Mardan and Nowshera Districts of Khyber Pakhtunkhwa, Pakistan. Total one hundred questionnaires were distributed among the employees, out of which eighty five were returned, which were considered enough for analyzing the data. Data were analyzed through SPSS version 20. The empirical results showed that environmental conditions, safety related policies and programs, organizational climates, and safety communications were significantly affecting safety climate, and safety climate was highly related to the employee's performance. On the basis of empirical findings of this study, it is concluded that better environmental conditions, safety related policies, organizational climates and safety communications should be ensured and practiced in marble factories situated in industrial zones of Mardan and Nowshera Districts of Khyber Pakhtunkhwa, Pakistan for creating the safety climate in order to enhance the safety related performance of the employees.*

Key words: Safety performance; Safety climate; Organization climate; Environmental condition; Safety policy and program; Safety communication

Introduction

Due to globalization, occupational health and safety related interest is increasing; to know better management practices and supplementary managerial factors. Prior researchers found that most of the accidents and injuries occur at

workplaces due to hazardous activities of the employees; rather than hazardous work surroundings (Mullen, 2004). But the environment also has its influence on the behavior of employees. Therefore, organizational safety climate affects the safety performance of the employees (Seo, 2005; Zhou et al., 2008).

In this study, the primary focus is on safety climate at workplace. Although the concepts of safety climate and safety culture are mostly considered to be interchangeable, but there is a sharp difference between them. Safety culture focuses more on the core values of the organization regarding safety at workplace (Mearns & Flin, 1999), While safety climate emphasizes more on the perception of workers concerning the significance of safety at workplaces in an organization (Zohar, 1980). Prior researchers found that culture is basically the personality of the organization and climate is the mood of the organization. Moreover, Cooper (2000) proposed three interdependent dimensions of safety culture which are (Environment, Person and Behavior), and the safety climate is the shared perceptions and attitudes of the employees about safety at a workplace. In prior researches safety climate is related to diverse safety interrelated outcomes which are:

- Safe working practices
- Safety related programs effectiveness
- Workplace accidents and
- Other safety-related events etc.

But there is less concentration on the determinants of safety climate. However, Dejoy (2004) specified three sets of factors related to safety climate that are (Environmental conditions, Safety related policies and programs, organizational climate). Thus, the present study more elaborates the factors of safety climate within developing countries. This study is generally concerned with the safety climate and its determinants in the Pakistan marble industry. More explicitly, this study examines the safety perceptions, attitudes, and behavior of workers in marble industry of Pakistan.

As occupational health and safety problems continue to remain common in Pakistan. Therefore, huge economic and personnel cost faced by industries, especially in developing countries arises as a result of work-related injuries and diseases (Seo, 2005). In Pakistan occupational health and safety have become serious issues after consecutive accidents in Lahore and Karachi. In those accidents more than 325 workers lost their lives on September 2012 (OSH report, 2013). Hence, workplace accidents occur more often due to poor safety measures within an organization.

Statement of the Research Problem

The literature review reveals that majority of the researchers studied safety climate with respect to its outcomes, and some of them are associated with the determinants of safety climate. However, hardly researchers made any attempt to study the effect of safety climate on employees' performance in the marble industry. This insufficiency is the main reason behind the conducting of this study to investigate determinants of safety climate within an organization. Furthermore, the safety climate is mostly studied in developed economies and less attention is given to the concept of safety climate in developing economies like Pakistan. Thus, the recent study was conducted in an environment of developing economic state of Pakistan.

Research Objectives

The objectives of this research are:

- ❖ To determine the determinants of the safety climate that influence employees' performance at the workplace.
- ❖ To provide a better understanding of the safety climate and the factors that impact employees' attitudes and perceptions regarding safety at workplace.

Hypotheses

- H1: Environmental conditions are negatively related to safety climate.
- H2: Safety-related policies and programs have positive and significant impact on safety climate.
- H3: Organizational climate has positive and significant impact on safety climate.
- H4: Safety communication has positive and significant impact on safety climate.
- H5: Safety climate has positive and significant impact on employee's performance.

Significance of the Study

The primary aim of this study is to determine factors which are essential to build a safety climate at workplace within an organization. The objectives of occupational health and safety cannot be achieved without the endeavor of personnel as well as the organization. Many developing countries like Pakistan are in a transitional phase in their economy. The field of occupational health and safety are facing new challenges due to World Trade Globalization (WTG). Most of the workers are not well equipped to handle the hazards as the result of

modern technologies (Malik, 2010). The labor has unproved occupational health and safety facilities because the country lacks fundamental connections and capable personnel. Occupational health and safety services are the major deficiencies in developing countries like Pakistan. Hence, personnel are at high risk of occupational disease (Malik, 2010). At the present it is essential to give attention to this area for attaining high levels of occupational health and safety in developing countries like other developed countries.

Literature Review

The literature reviewed organizational safety climate. First, it covers literature related to the origin of safety climate then it covers benefit of it and later on explains the determinants of safety climate on the basis of previous studies.

Organizational culture

The notion of organizational culture was actually developed in 1970's, whereas the ideas of organizational culture were already existed; but, yet there is no standard and acceptable definition of organizational culture. Still, there is controversy among scholars that organizational culture is somewhat an organization "is" or "has" (Bergh, M., 2011). Therefore, formally considers that the way of describing organization is called organizational culture; this approach is acceptable academically and socially. The other approach is that culture is inconsistent which can be altered; it is accepted by managers and management consultants (Bergh, 2011).

The concept of organizational culture is important to understand because the thought of safety culture is originated from organizational culture (Bergh, M., 2011). Safety culture is investigated within the broader context of organizational culture. According to Cole, Adams, and Wenner (2013), Safety culture was not a subculture of organizational culture but they were related concepts and developed separately (Cole et al., 2013).

Safety Culture

In 1986, International Nuclear Safety Group (INSAG) introduced the term safety culture. The term of safety culture was the accidental term; it is traced back to nuclear explosion at Chernobyl, which was one of the worst commercial accidents in the history of nuclear power generations (Weighmann et al., 2002). The main reason of that accident was "Poor safety culture" found by the IAEA (International Atomic Energy Agency).

Safety culture literature is not formerly developed theoretically from organizational culture (Cole et al., 2013). Cole et al.(2013), further identified two major points from safety culture definition, and the definition was defined

by the International Safety Advisory Group (the definition is mentioned in Table 3); First point, excellent safety attitudes as well as better safety management that established by the organization, concerned to safety culture; and second point is the highest priority to safety is the basic assignment of good safety culture (Cole et al., 2013). The INSAG (International Nuclear Safety Group) statement offered the concept of safety culture and it was correlated to persons as well as organizations, but not link between safety culture and safety performance (Weighmann et al., 2002).

Wiegmann et al. (2002) reviewed safety culture and safety climate literature. They found the subsequent familiar attributes correlated to safety culture across the different definitions:

- The term safety culture refers to common values among the group.
- Organization formal issues are concerned to safety culture which is strongly correlated but not limited to, the management and supervisory systems.
- The contributions of everyone, at all levels are emphasized by safety culture.
- It impacts the behavior of members of the workplace.
- The contingency between reward systems and safety performance is reflected.
- Organization's willingness is reflected to learn from mistake, incidents, and accidents.
- It is relatively ending, constant and resistant to change.

Cole et al. (2013) compared various definitions of safety culture and they concluded that peoples' belief, thinking and their behavior towards the safety perspective are relatively most common factors of safety culture. The definitions of safety culture reflect the view that safety culture is something that an organization 'is' rather than 'has' (Cole et al. 2013).

Safety climate

Safety climate has been often studied and its different definitions are developed from past few decades, but there is no standard definition of safety climate that exists same as organizational culture and safety culture (Bergh, 2011). Therefore, here is still puzzlement between the concept of safety culture and safety climate. The phrase safety climate is sometime used as interchangeable with the phrase of safety culture (Bergh, 2011). But, Guldenmun (2010) simply explained that safety climate is not safety culture. However, Cooper (2000) says that culture refers to the profound configuration of organization which is associated with the values, ethics and assumptions amongst the members, on the other hand climate usually refers to the workers' perceptions and therefore it is

correlated to the facade of the organizational life and culture. (Denison, 1996) Perceptions are affected by, for instance, mood and therefore climate can be said to be more unsound than culture. Safety climate may be considered as the psychological feature of safety culture, including how people see and experience about their safety culture. Safety climate can therefore be seen as a gauge of the organization's safety culture at a specific time and place. Because of this reason, the main difference between two concepts is that climate refers to a circumstance while culture refers to an evolved situation.

Zohar (1980) introduced the idea of safety climate in the literature. Neal et al. (2000) define safety climate as a definite shape of organization climate that describes the individual perceptions of the workers related to safety in the work setting. Neal (2000) also identified the important factors of safety climate that include management values, safety communication, safety training, and safety systems. Zohar (2000) proposed a multilevel model of safety climate, in which the author stated that policies define strategic goals, while procedures present strategic course of action interrelated to these goals; His model specified two levels of analysis, policies and procedures.

The safety climate standard and acceptable definition does not exist yet. There is still puzzlement between the association of safety culture and safety climate. However, some scholars used the term safety climate and culture interchangeably, and some accepted that there is a difference between the two concepts due to its essential dimensions (Cole et al., 2013). According to Cooper (Cooper, 2002) Culture is the deep structure of the organization which is concerned with the beliefs, values and assumptions among the members, while climate is concerned with perceptions of the members, therefore it is related to the surface of the organizational life and culture. That is why, Safety climate is the psychosomatic feature of the safety culture that how people see and experience about safety culture within their organization (Cooper, 2002).

As long-standing view point, attitudes and the unvarying way in which people behave represents safety culture and picture of the existing situation represents safety climate, on this based Cole, Adams, and Wenner (2013) concluded that safety climate is somewhat an organization 'has' at a particular time (Cole et al., 2013). Cole et al. (2013) cited Flin et al. (2000) identified most commonly dimensions of safety climate that are safety management, safety arrangements, training, procedures, risk and work pressure and also cited Clarke (2000) that she reviewed sixteen experiential studies of safety climate and identified five common themes that are work surroundings, personal liability and participation, administration attitudes, safety system, and Safety action.

There is puzzlement that still exists in the literature between the concept of safety climate and safety culture. While some researchers differentiated the concepts of safety culture and safety climate in order to relate them with personality and mood respectively (Cole et al., 2013; Wiegmann et al., 2002). Furthermore, Cole et al. (2013) defined that personality is stable and difficult to change whereas mood is sensitive to situations and external environment (Cole et al., 2013). On these bases they concluded that safety climate is the ‘snapshot’ of the culture at a specific time. According to Cole, Adams, and Wenner (2013), safety climate focuses on employees’ current perceptions and attitudes towards safety, it is the temporal phenomenon, that changes frequently which is related to environmental and situational factors, and is closely concerned to safety perceptions at a particular time (Cole et al., 2013).

As researchers defined safety climate is the employees’ shared perception and attitude about safety at work. Whereas, different researchers found out different safety climate factors but Fu, Zhang, Xi, and Zhang (2006) in safety climate surveys identified nine mostly common safety climate factors which are.

- Belief and value
- Management commitment
- Hazards identify and Risk Level Management
- Safety education and training
- Worker involvement and Commitment
- Safety institutes and specialists
- Site management, and
- Standardization

Fu et al. (2006) observed that safety climate main factors are

- Management commitment
- Worker involvement
- Safety education and training, and
- Beliefs and perceptions

But in this study the main focus is on four factors of safety climate which are:

- Environmental Conditions
- Safety related policies and programs
- Organization Climate
- Safety Communication

Safety Policies and Programs, and Safety Climate

The safety interrelated policies and programs of the organization have been viewed as outside manifestation of the morals and viewpoint of the organization regarding workplace safety (Dejoy et al., 2004). The policies associated with the organizational safety are the strongest indicators of safety climate (Diaz & Cabrera, 1997). It consists of safety standards, safety guidance, the accessibility to resources for safety (Personal Protective Equipment), and safety performance feedback, as specified by Dejoy et al. (2004). However, studies related to safety related policies and programs have highlighted that these are vital ingredients of successful programs (Cohen, 1997; Shannon, 1997). It significantly influences the employees' perception regarding safety at workplace (Barling & Hutchinson, 2000; Dejoy et al., 2004). On this basis, it is expected that safety related policies and programs have significant contribution in creating safety climate.

Organizational climate and Safety climate

In 1970-80 the concepts of organizational climate and culture got much attention. Climate is a set of perceptually and psychologically attributes; climate refers to attributes of people, organizational climate refers to organization attributes and psychological climate refers to individual attributes (James and Jones, 1974). James and James (1989) specified that organizational climate consists of different evaluations of the work environments; whereas Dejoy (2004) indicated these evaluations are the characteristics of the workplace e.g. management, involvement, modernism, and communication. These assessments highly influence employees' behaviors and prospect inside an organization (Schneider, 1975).

Environmental Conditions and Safety climate

Environmental and workplace situations like high temperature, dust, noise, chemicals, substantial workload, and hazardous tools have been connected to workplace illnesses and injuries (Baker, 1992). Employees' perceptions concerning the level of risk faced at the workplace have been a prominent aspect in studies of safety climate (Flin et al., 2000). Due to this reason, it is probable that environmental conditions contribute to workers' perceptions of safety climate.

Safety Communication and Safety Climate

Social exchange theory suggests that one party behaves in ways that benefit another party (Blau, 1964). These beneficial actions are created in organizational citizenship behaviors, to improve system, and do better

(Eisenberger et al., 1990). Hofmann and Morgeson (1999) concluded that Perceive organization support (POS) is positively linked to safety communication and it is ultimately beneficial to the organization. On the basis of this, it is expected that safety communication major role concerns safety climate.

After reviewing the literature about safety climate at the workplace, it is concluded that the current study will be an important significant contribution to the literature regarding safety climate. Moreover, this study will also be useful for raising safety awareness among employees at workplace within an organization.

Good Safety Culture/Climate Benefits

Most of the studies proved that excellent safety culture and climate have an affirmative influence on safety and minimizes accidents rates, and also increases productivity and reduced costs (Bergh, 2011). Bergh, (2011) cited Florczak (2002) that the undeviating expenses and causes of an accident can be compared to the tip of an iceberg, and the meandering costs and causes of accidents can be compared to the iceberg thrashing under the surface (Florczak, 2002).

OSH Pakistan

The workers' health status directly affects the economy of a country (Malik, 2010). In marble factories exposure of marble dirt causes severe health problems, and working in dirt surroundings is a severe hazard to get a stern disease of the lungs, which is known as Byssinosis and brown lung disease. Most of the people are killed during the work rather than wars, and two hundred and seventy million accidents are recorded each year out of which 350,000 are deadly (Demaretet et al., 2004; Malik, 2010).

In developing nations like Pakistan, many factors affect the occupational health and safety, such as insufficient medical services and uneducated labor force. There are no trustworthy data on hand on occupational accidents, deaths, diseases and injuries (Malik, 2010). Due to occupational illnesses and injuries the total economic losses are enormous (Hogstedt, 2000).

In Pakistan, reliable data related to occupational health and safety is unavailable due to reason that most of the accidents are not reported to the labor department. Although, workers routinely face hazards due to hazardous technologies in the workplace which are the cause of high accident rate and occupational diseases. Similarly, harmful working environment as well as the illiteracy and unawareness of the majority of workforce to use personal protection equipment at work is also a great cause of high rate of accidents and health hazards (Pasha,

2003). Therefore, occupational injuries and disease rate are very high in Pakistan, (Malik, 2010). The country is unable to provide the basic infrastructure and qualified personnel to work force; for this reason, the employees at the workplace will be in danger if no serious measures are taken to improve occupational health and safety (Ahsan & Pertanen, 2001). Leamon (2011) predicted a rapid change in working life wherein demand flexibility at different workplaces regarding occupational health and safety would be necessities.

Workers face many diseases of eyes, nose, ears, skin, and throat at the workplace. In Mardan and Nowshera regions marble factories are in large number, so dust and noise are enormous in an environment, which impact workers' eyes, ears and nose, and also causing different injurious diseases like lung cancer, skin, and eye allergies. Even most of the employees do not have the awareness of the workplace hazards present in their work environment specially dust and noise, which caused the health problems. Noise induced hearing loss, which frequently exists among workers in noisy workplaces. Hazards are frequently occurring in the workplace due to materials used, tools and machinery. The detection and management of health hazards on workplaces, including not only of physical, chemical and biological but also psycho-social factors that affect health and efficiency of workers (Malik, 2010).

The accidents and diseases at work place can be prevented by following and implementing the World Health Organization's (WHO) guidelines. Furthermore, the workplace can be made to provide safer work surrounding for improving the health of work force. Healthy worker play a vital role to increase productivity of their organizations, thus healthy workers are the most productive workers (Malik, 2010). The sustainable development of the country is possible through high productivity of industries which can be made possible through a healthy work force. Hence, it is the way to protect personnel, communities and the environments for future generations as scheming toxic waste and exposure decrease. Industrial processes generate pollution and many exposures harm the environment, and also such processes affect occupational health and safety programs. Occupational safety and health can be supportive in humanizing the employees' employability with the healthier workplace plan, stipulation of a healthy and safe work setting, preparation and evaluation of work demands, medical checkup, health program and assessment of realistic capacities (Malik, 2010).

The social and economic development of a country can be improved through healthy worker force. Therefore, to up hold healthiness and protection at the workplace, the primary focus should been the enforcement of legislation and

assessment of workplaces to improve healthiness and protection standards. This approach initially has been useful to overcome the occupational hazards during the industrial revolution. In major industries, health and safety standards do not exist at the workplaces as mentioned in the factory act.

In Pakistan, poor occupational health and safety legislation and communication are needed to be improved. Furthermore, there is no specific inclusive law that covers occupational health and safety aspects of the industries in Pakistan. There are different laws associated with health and safety in various sectors. Legislation diverse portions are concerned with a variety of aspects of occupational health and safety in Pakistan. Occupational health and safety enhancement can be productive in enhanced capitulate, extra happiness in work routine, and better financial improvement.

In Pakistan, the main training institution regarding health and safety for the enhancement of working circumstances and surroundings is established in Lahore to address diverse dimensions of occupational health and safety. Since, it is operationalized, it has organized 135 training courses to improve work place safety and health.

In Pakistan, the term “enterprise safety managers” is not familiar, therefore majority of the workforce at the work place do their work in the absence of safety manager. For the time being, the idea of employees’ safety virtually does not exist in Pakistan. Therefore, health, safety and environment departments in Pakistani industries are primarily interested in the protection of their site machines rather than their employees (Pasha, 2003).

Marble Reserves in Pakistan

Pakistan is the home of premium and purest grades of marble in the world, and has huge marble reservoirs especially in Khyber Pakhtunkhwa (Hadi, 2014). Therefore, Marble and Granite are emerging and promising sectors of Pakistan because they have huge potential of investment, expert and livelihood. Moreover, the marble industry can bring prosperity and development in a country (Khan, 2009). According to Pakistan Stone Development Company (Pasdec), Pakistan has roughly three hundred billion tons of marble assets spread mostly in Khyber Pakhtunkhwa, the tribal belt, Balochistan and Sindh. Approximately, ninety eight percent marble assets are assumed to be in Khyber Pakhtunkhwa and FATA. However, high potential areas for huge and quality marble reservoirs are situated in Buner, Chitral, Hazara, Kohistan, Nowshera, Mardan, Swat and Kohat, Bajaur, Kurram, Khyber, Mohmand and Orakzai Agencies from Federally Administered Tribal Areas (FATA) (Khan, 2009; Hadi, 2014).

The marble industry has potential in export sector. Therefore, some of the valuable marble is exported to European countries. While the estimated worldwide buy and sell in marble and granite is round about forty five dollar billion a year (Hadi, 2014). But unfortunately, marble exported from Pakistan was just of \$33 million last year (Khan, 2009). Recently, Pakistan offered big investment opportunities in mining. Therefore, Saudi Arabia has given away its attention to buy Pakistani marble products of around \$260 billion to build its new cities (Khan, 2009).

Pakistan Stone Development Company (PASDEC) is dedicated to convert the current Pakistani marble sector in to a globally competitive and socially responsible industry in Pakistan. The modern techniques will convert the existing marble industry of Pakistan in to a globally competitive industry which in turn will enhance the economic growth of the country.

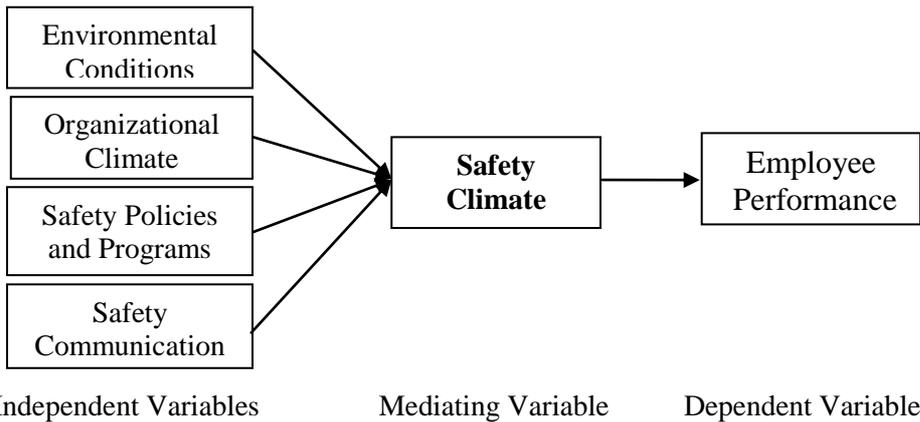
Thirty different types of marble exist in Khyber Pakhtunkhwa province and the adjacent tribal strap which are Badal, Bampokha, golden marble, Nowshera Jet-black, off-white, pink, super-white, Zebra and Ziarat marble (Khan, 2009).

Data and Methodology

The present section presents the data and methodology of the study. The details are as follows:

Data

The universe of the present study was the Marble industries in two purposively selected districts namely Mardan and Nowshera of Khyber Pakhtunkhwa. For this purpose data has been collected from 81 employees from 10 Marble industries in both the area.



Results and Discussions

The following section shows the results of the study. First survey results have been given. Then results for testing of the various hypothesis of the study have been presented.

Survey Results

The table below presented the alpha scores and result indicated that the items are reliable. Thus, the study findings are ready for further analysis.

Table 1: *Scales and Reliability Test*

| Subscales: | Cronbach's Alphah Reliability (α) | N of Items |
|---------------------------|--|-------------------|
| Environmental Condition | .88 | 5 |
| Safety Policy and Program | .90 | 5 |
| Organizational Climate | .90 | 5 |
| Safety Communication | .92 | 5 |
| Safety Climate | .86 | 5 |
| Safety Performance | .86 | 5 |

The above table shows that, Cronbach's Alphas are high, which indicate high level of internal consistency for scale of Environmental condition, Safety policies and programs, Organization climate, Safety communication, Safety climate, and Safety performance.

Table 2: *Selected Personal Characteristics*

| Variables | Options | Percentage % |
|--|------------------------------|---------------------|
| Gender | Male | 100 |
| | Female | 0 |
| Age | Less than 20 years | 7 |
| | 20 to less than 30 years | 56.4 |
| | 30 to less than 40 years | 25.8 |
| | 40 years or more | 10.5 |
| Marital Status | Single | 18.8 |
| | Married | 81.1 |
| Experience in the current organization | Below 1 years | 12.9 |
| | 1 to less than 3 years | 22.3 |
| | Above 3 years | 64.7 |
| Salary | Below 10,000 | 71.7 |
| | 10,000 to less than 15,000 | 15.2 |
| | Above 15,000 | 12.9 |
| Designation | Manager | 14.1 |
| | Worker | 85.8 |
| Qualification | Primary | 24.7 |
| | Secondary | 10.5 |
| | High Secondary | 7 |
| | Graduate | 4.7 |
| | Post Graduate | 4.7 |
| Resident | Illiterate | 48.2 |
| | City | 16.4 |
| | Village | 83.5 |
| Smoking/Snap habit | Smoke/Snap even at work time | 89.4 |
| | Smoke, but not at work time | 5.8 |
| | Do not smoke/snap used | 4.7 |

Table 2 showed the personal characteristics of persons. The demographic analysis showed that 57% of workers age between 20 -30, 26% of workers age between 30-40, 7% of workers age under 20 and 10% of workers cross 40 year. The analysis found that majority of workers are Illiterate almost 57%, 26% left out at primary, 10% reach to matric and only 7% done graduate. Most of workers are less than 30 years old (they are relatively young), married, have

spend time above 3 years in current organization, their salary are less than 10,000 which is actually less in present era, smoke/snap even at work time, belong to villages. It is found that majority of them are illiterate or hardly get primary level education.

Table 3: *Descriptive Statistics*

| | Statistic | | | Skewness | | Kurtosis | |
|------------------------------|-----------|-------|-----------|-----------|------------|-----------|------------|
| | N | Mean | Std. Dev. | Statistic | Std. Error | Statistic | Std. Error |
| Environmental Conditions | 85 | 15.51 | 6.43 | 0.07 | 0.26 | -1.22 | .517 |
| Safety Policies and Programs | 85 | 9.02 | 5.41 | 1.16 | 0.26 | 0.72 | .517 |
| Organizational Climate | 85 | 11.05 | 6.50 | 1.09 | 0.26 | -0.36 | .517 |
| Safety Communication | 85 | 15.77 | 6.94 | -0.34 | 0.26 | -1.03 | .517 |
| Safety Climate | 85 | 12.10 | 6.32 | 0.82 | 0.26 | -0.89 | .517 |
| Safety Performance | 85 | 11.53 | 6.13 | 0.97 | 0.26 | -0.34 | .517 |

In table 3 all the values are within the acceptable level.

Results for Hypothesis Testing

H1: Environmental Conditions (Working Conditions) are negatively related to safety climate.

Table 5: *Model Summary*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .874 ^a | .764 | .761 | 3.115 |

a. Predictors: (Constant), working condition

The above table provides information of R and R Square. The value of R is 0.874 which represent the strong correlation. This means that variables environmental conditions and safety climate varies together 87% of the time. The value of R Square 0.764, this means that 76% of the total variation in the safety climate is accounted for by the variation in the environmental conditions.

Table 6 ANOVA^a

| | Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|--------------|-----------------------|-----------|--------------------|----------|-------------------|
| | Regression | 2604.36 | 1 | 2604.36 | 268.45 | .000 ^b |
| 1 | Rersidual | 805.22 | 83 | 9.70 | | |
| | Total | 3409.58 | 84 | | | |

a. Dependent Variable: Safety climate

b. Predictors: (Constant), working condition

Output of table 6 that shows ANOVA statistics includes F statistics value is 268 and it is significant at 5%. This means that model is statistically reliable.

Table 7 *Coefficients*^a

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | |
|--------------|------------------------------------|-------------------|----------------------------------|----------|-------------|------|
| | B | Std. Error | Beta | | | |
| | (Constant) | -1.12 | .88 | -1.35 | .180 | |
| 1 | working condition | .83 | .05 | .87 | 16.39 | .000 |

a. Dependent Variable: Safety climate

Since the above table shows that t value = 16.385 which is beyond the tabulated value of t=2.000 for the five percent of level of significance with degree of freedom (df). Therefore, environmental condition has positive and significant impact on safety climate, and there is significant relationship between environmental condition and safety climate at 5% level of significant mean that we are 95% confident that this relationship exists. Thus, we reject H1 that environmental conditions are negatively related to safety climate.

H2: Safety Policies and Programs have positive and significant impact on safety climate.

Table 8 *Model Summary*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|--------------|-------------------|-----------------|--------------------------|-----------------------------------|
| 1 | .665 ^a | .443 | .436 | 4.784 |

a. Predictors: (Constant), Safety policies & programs

The above table provides information of R and R Square. The value of R is 0.665 which represent the strong correlation. This means that variables safety policy and program and safety climate varies together 94% of the time. The

value of R Square 0.443, this means that 44% of the total variation in the safety climate is accounted for by the variation in the safety policies and programs.

Table 9 ANOVA^a

| | Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|--------------|-----------------------|-----------|--------------------|----------|-------------------|
| 1 | Regression | 1509.66 | 1 | 1509.66 | 65.95 | .000 ^b |
| | Residual | 1899.92 | 83 | 22.89 | | |
| | Total | 3409.58 | 84 | | | |

a. Dependent Variable: Safety climate

b. Predictors: (Constant), Safety policies and programs

Output of table 9 that shows ANOVA statistics includes F statistics value as 65.951 and significant at 5%. This means that model is statistically applicable.

Table 10 Coefficients^a

| | Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|--------------|------------------------------------|-------------------|----------------------------------|----------|-------------|
| | | B | Std. Error | Beta | | |
| | | | | | | |
| 1 | (Constant) | 5.01 | 1.01 | | 4.94 | .000 |
| | Safety pp | .78 | .10 | .665 | 8.12 | .000 |

a. Dependent Variable: Safety climate

The above table shows that t value = 8.121 which is beyond the tabulated value of t=2.000 for the five percent level of significance with degree of freedom (df), we accept the H2 that (safety policy and program have positive and major effect on safety climate) there is significant relationship between safety policy and program and safety climate at 5% level of significant mean that we are 95% confident that this relationship exists.

H3: Organizational climate has positive and significant impact on safety climate.

Table 11 Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|--------------|-------------------|-----------------|--------------------------|-----------------------------------|
| 1 | .948 ^a | .898 | .897 | 2.045 |

a. Predictors: (Constant), Organizational climate

The above table provides information of R and R Square. The value of R is 0.948 which represent the strong correlation. This means that variables organizational climate and safety climate varies together 94% of the time. The

value of R Square 0.898, this means that 89% of the total variation in the safety climate is accounted for by the variation in the organizational climate.

Table 12 ANOVA^a

| | Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|------------|----------------|----|-------------|--------|-------------------|
| 1 | Regression | 3062.46 | 1 | 3062.46 | 732.26 | .000 ^b |
| | Residual | 347.12 | 83 | 4.18 | | |
| | Total | 3409.58 | 84 | | | |

a. Dependent Variable: Safety climate

b. Predictors: (Constant), Organizational climate

Output of table 12 that shows ANOVA statistics includes F statistics value as 732.2 and significant at 5%. This means that the model is statistically applicable.

Table 13 Coefficients^a

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|-----------------------------|------------|---------------------------|------|-------|
| | B | Std. Error | Beta | | |
| 1 | (Constant) | 2.28 | .42 | 5.38 | .000 |
| | Org. climate | .87 | .03 | .948 | 27.06 |

a. Dependent Variable: Safety climate

The above table shows that t value = 27.060 which is beyond the tabulated value of t=2.000 for the five percent level of significance with degree of freedom (df), we accept the H3 that (organizational climate has positive and major effect on safety climate) there is significant correlation between organizational climate and safety climate at 5% level of significant mean that we are 95% confident that this relationship exists.

H4: Safety communication has positive and significant impact on safety climate.

Table 14 Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .863 ^a | .744 | .741 | 3.24 |

a. Predictors: (Constant), Safety communication

The above table provides information of R and R Square. The value of R is 0.863 which represent the strong correlation. This means that variables safety communication and safety climate varies together 86% of the time. The value of

R Square 0.744, this means that 74% of the total variation in the safety climate is accounted for by the variation in the safety communication.

Table 15 ANOVA^a

| | Model | Sum of Squares | Df | Mean Square | F | Sig. |
|---|--------------|-----------------------|-----------|--------------------|----------|-------------------|
| 1 | Regression | 2536.41 | 1 | 2536.41 | 241.101 | .000 ^b |
| | Residual | 873.17 | 83 | 10.52 | | |
| | Total | 3409.58 | 84 | | | |

a. Dependent Variable: Safety climate

Predictors: (Constant), Organizational climate

Output of table 15 that shows ANOVA statistics includes F statistics value as 241.1 and significant at 5%. This means that the model is statistically reliable.

Table 16 Coefficients^a

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------------------|-----------------------------|------------|---------------------------|-------|------|
| | B | Std. Error | Beta | | |
| | (Constant) | -.416 | .878 | | |
| 1 Org. climate | .79 | .051 | .863 | 15.53 | .000 |

a. Dependent Variable: Safety climate

The above table shows t value = 15.527 which is beyond the tabulated value of t=2.000 for the five percent level of significance with degree of freedom (df), we accept the H4 that (safety communication has positive and significant impact on safety climate) there is significant relationship between environmental condition and safety climate at 5% level of significant mean that we are 95% confident that this relationship exists.

H5: Safety climate has positive and significant impact on safety performance.

Table 17 Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|--------------|-------------------|-----------------|--------------------------|-----------------------------------|
| 1 | .936 ^a | .876 | .875 | 2.164 |

a. Predictors: (Constant), Safety climate

The above table provides information of R and R Square. The value of R is 0.936 which represent the strong correlation. This means that variables safety climate and safety performance varies together 93% of the time. The value of R

Square 0.876, this means that 87% of the total variation in the safety performance is accounted for by the variation in the safety climate.

Table 18 ANOVA^a

| | Model | Sum of Squares | Df | Mean Square | F | Sig. |
|---|------------|----------------|----|-------------|---------|-------------------|
| | Regression | 2758.145 | 1 | 2758.145 | 588.879 | .000 ^b |
| 1 | Residual | 388.749 | 83 | 4.684 | | |
| | Total | 3146.894 | 84 | | | |

a. Dependent Variable: safety performance

Output of table 18 that shows ANOVA statistics includes F statistics value as 588.879 and significant at 5%. This means that the model is statistically applicable.

Table 19 Coefficients^a

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | |
|-------|-----------------------------|------------|---------------------------|------|--------|------|
| | B | Std. Error | Beta | | | |
| 1 | (Constant) | .708 | .505 | | 1.402 | .165 |
| | Org. climate | .899 | .037 | .936 | 24.267 | .000 |

a. Dependent Variable: Safety performance

The above table shows the t value = 24.267 which is beyond the tabulated value of t=2.000 for the five percent level of significance with degree of freedom (df), we accept the H5 that (safety climate has positive and significant impact on safety performance) there is significant relationship between safety climate and safety performance at 5% level of significant mean that we are 95% confident that this relationship exists.

Conclusion

In this study safety climate and its impact on employees' performance was investigated. In this research, four factors are examined, i.e. environmental conditions, safety related policy and program, organizational climate, and safety communication. The tests have proven that all the factors have a positive and significant impact on safety climate, and safety climate is positively linked with employees' performance.

Finally, the study found that environmental conditions, safety related policy and program, organizational climate, and safety communication have a significant impact on safety climate. Thus, safety performance of employees depends on

safety climate provided by the organization to minimize accidents at the workplace.

Policy Recommendations

In order to keep workers safe from accidents, the following recommendations are made;

- First aid box must be available.
- There should be PPE (personal protective equipment) available for workers; it includes gloves, mask, protective clothes, shoes, and goggles.
- Helmets and gloves should be used by workers, while loading and unloading truck, leather gloves rather than rubber gloves should be used because marble pieces are sharp and cut rubber easily
- Provide health insurance to workers.
- The minimum wage law provided by the government of Pakistan should be enforced in marble sector to ensure the fair distribution of rewards among employees.
- Filter drinking water are compulsory to have at workplace.
- Organization must provide necessary safety training to its workers regularly.
- There is need for hospital near industry site.

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