Int. Journal of Economics and Management 8 (S): 97 - 116 (2014)

PERTANIKA JOURNALS

IJEM
International Journal of Economics and Management
Journal homepage: http://www.econ.upm.edu.my/ijem

The Effect of a Psychological Climate for Creativity on Job Satisfaction and Work Performance

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ABSTRACT

The organisational climate for creativity has been widely acknowledged to influence various work outcomes such as employee innovation and productivity. Researches carried out on the creative climate in Malaysia have up till now, confirmed the notion. However, as far as the Malaysian context is concerned, the effect of a creative work environment on employee job satisfaction and work performance level has yet to be explored. As such, this study aims to investigate the effects of a psychological climate for creativity on job satisfaction and work performance. Additionally, this study seeks to establish the role of job satisfaction as a mediator on the relationship between organisational climate and work performance. The results from a sample of 118 electrical engineers working only within the area of the Klang Valley suggest that all variable relationships were positively and significantly correlated: Job satisfaction - Work performance, Psychological climate for creativity - Job satisfaction and Psychological climate for creativity - Work performance. Moreover, job satisfaction was found to mediate between the psychological climate for creativity and work performance when an analysis was carried out on three separate regressions.

Keywords: Creativity, Job Satisfaction, Psychological Climate, Work Performance

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Any remaining errors or omissions rest solely with the author(s) of this paper.

INTRODUCTION

To date, there are on-going researches being carried out on the notion of having a creative working climate which stimulates innovation, creativity and change within a company. This suitable working climate, which was put forth by scholars Ekvall, Arvonen and Lindbald (1983) in the 1980's, facilitates an environment that enhances organisational power; and its framework has been adopted and gone through much structuring and refinement ever since.

The concept of a psychological climate has been employed in this study as it deals with individual-level outcomes and analysis. It uses a relatively different approach in viewing the creative climate as it looks at the relationship of work related outcomes instead of considering it the usual innovation predictor variable. This is supported by the fact that the creative climate influences the psychological processes, the effects of which then become evident on not only innovation but also on the well-being of employees, job satisfaction and work performance (Biswas, 2011).

This study is conducted according to the main objective and specific objectives set to address the issues raised in the problem statement above. The main objective of the study is to empirically examine the relationship of individual-level (psychological) climate for creativity with job satisfaction and work performance. The main objective is then narrowed to a number of specific objectives with the view to establish the influence the psychological climate for creativity has on employee job satisfaction and work performance. They are to determine:

(i) the existing level of psychological creative climate, job satisfaction and work performance among electrical engineers;

(ii) the correlation between creative climate, job satisfaction and work performance;

(iii) the extent to which a psychological creative climate accounts for job satisfaction and work performance; and

(iv) the function of job satisfaction as a mediating variable on the relationship between creative climate and work performance.

Significance of Study

This study provides certain contributions to the body of knowledge. It attempts to impart a deeper understanding of work place factors such as a psychological climate for creativity which impacts job satisfaction, hence affecting the work performance of employees. This knowledge can also be employed by managers to control the working climate in order to improve employee work outcomes.

Furthermore, this study employs the theoretical framework of assessing the creative climate in organizations which is backed by organizational development scholars (Amabile, 1988; Amabile and Conti, 1999; Ekvall *et al*., 1983), whilst the framework of job satisfaction and work performance was one supported by Hackman and Oldham (1975). Job satisfactions and work performance have all been derived from organizational development and human resource development theories since the climate factor and therefore, this research could contribute further knowledge to this field.

LITERATURE REVIEW

The Concept of Climate

According to the meta-analytic review of psychological climate perceptions by Parker, Baltes, Young, Huff, Altmann and Lacost (2003), substantial confusion has been documented concerning the constructs of a psychological climate, organisational climate and organisational culture. The lack of quantitative reviews on the psychological climate literature may be due, to some extent, to the uncertainties regarding the limits of the construct (Clarke, 2010).

According to Ekvall (1991), climate is defined as the observed and recurring patterns of behaviour, attitudes and feelings which characterise life in the organisation, and it exists independently of the perceptions and understanding of the members of the organisation (Ekvall, 1996). Therefore, a psychological climate for creativity would mean the individual's discernment of the pattern of behaviour that characterises life at the workplace. The notion of climate can be split into two complimentary constructs, i.e. a psychological and an organisational climate (Isaksen, 2007). Psychological climate has been described by Isaksen and Lauer (2002) as the cognitive appraisal of the environment ascribed by an individual in terms of his/her acquired meaning and personal values. They then detailed further that the results of the accumulated appraisals from the individuals in an organisation are referred to as the organisational climate. As the psychological climate is made up of perceptions that individuals make of their climate, this may be indicative of their appropriate behaviours within the environment (Barkhi and Kao, 2011).

The social constructionist perspective is the leading approach to the study of psychological climate. According to the proponents of the social constructionist perspective, individuals' perceptions evolve mainly from their interactions with each other and their organisational context and as such, the "construction" of their beliefs about the current work environment takes place almost entirely in that work environment (Reichers and Schneider, 1990; Ashkanasy, Wilderom

and Peterson, 2000). The employees' perceptions are basically seen as individual descriptions of their work environment (i.e. social setting or context). Climate research within the social constructionist perspective is mostly based on measuring employee perceptions of work environment characteristics associated with a chosen referent or focus of interest. For example, as with this study, researchers and practitioners (Amabile, Conti, Coon, Lazenby and Herron, 1996; Schepers and Berg, 2007) have measured employee perceptions of the work environment with regards to creativity.

The psychological climate is people's perception of their working climate, whilst the creative climate is the climate that encourages creativity. According to Ekvall (1996), there are ten key dimensions in a creative climate, i.e. challenge/involvement, conflict, playfulness/humour, idea support, freedom, dynamism/liveliness, trust/openness, idea time, debates, and risk taking.

Job Satisfaction and Its Concept

Job satisfaction is one of the least understood phenomena in organisations today despite being the most widely researched topic (Pak, 2007). For instance, according to Saane, Sluiter, Verbeck and Frings-Dresen (2002) research on job satisfaction has been carried out for more than 40 years and the development of its instruments has branched into a number of streams, i.e. global or multidimensional instrument, multi- or single item instruments, and for general or specific workforce. Today, job satisfaction continue to be examined by sociologists and industrial psychologists such as Uppal (2005), McShane and Glinov (2008), and Kuo and Wu (2012) in great detail.

The positive feelings and emotions with which employees view their work is known as job satisfaction. It is an affective attitude, i.e. a feeling of relative likes or dislikes (Newstrom and Davis, 1993) and refers to the evaluative judgements regarding the level of pleasure an employee obtains from his or her job, consisting of both affective and cognitive components (Dormann and Zapf, 2001; Judge and Hulin, 2003). Due to the fact that it is of subjective perception, job satisfaction is usually placed as a central concept in work and organisational psychology, mediating the relationship of working conditions with organisational and individual outcomes (Liu, Guo and Lee, 2011).

The construct of job satisfaction can be measured with numerous instruments. For instance, Edwards, Bell, Arthur and Decuir (2008), proposed that there are varying aspects of a job that respectively contribute to a worker's general evaluation of a job. They suggest five facets which are satisfaction with work, pay, opportunity for promotion, supervision and co-workers, which may be differentially associated

with the extent to which a worker is satisfied with his/her job. Nevertheless, of all the instruments employed in today's research, only Hackman and Oldham's (1975) job characteristics clearly explain the five work factors relevant to job satisfaction: variety in skills, task identification, task meaningfulness, autonomy and feedback.

Work Performance and Its Concept

One critical factor in developing the effectiveness and success of any organisation is the work performance of employees. Performance was described by Motowidlo, Borman and Schmit (1997) as the total value of the organisation of the discrete behavioural episodes that an individual performs over a standard period of time. Suliman (2001) suggested that the cornerstone in developing effectiveness and success of any organisation is the performance its employees. As such, there has been a growing interest in promoting employee performance through continuous training and development programs (Peterson, Luthans, Avolio, Walumbwa and Zhang (2011).

Campbell, McCloy, Oppler and Sager (1993) argued that performance is not the consequence or result of action, but rather, it is the action itself. According to them, performance is the actions or behaviours that are pertinent to the organisation's goals and are measureable in terms of each individual's proficiency. As this definition is broad, it encompasses both productive and counterproductive employee behaviours that contribute or detract from organisational goals (Hunt, 1996). Although the act of performing may not be directly observable, it can still be assessed independently of its outcomes (Campbell *et al.,* 1993).

It is generally agreed that performance is a multifaceted or multidimensional concept (Suliman, 2001). According to Somers and Birnbaum (1998), the use of multiple dimension scales is necessary in order to examine and understand the nature, significance and strength of the relationship between performance and other variables. In this study, the dimensions used in the research by Suliman (2001) is employed, where six dimensions were applied to measure employee performance in Jordanian industries, namely understanding work duties, work skills, work enthusiasm, quality and quantity of work, and readiness to innovate.

Conceptual Linkage Between Psychological Climate for Creativity and Job Performance

Schneider, Wheeler and Cox (1992) stated that the psychological climate, which is the interpretation of the daily work environment by individual employees, affects their performance. It is indicative of their attitudes and behaviours, and their

important consequences. As this study is concerning the psychological climate for creativity, the link between the variable and work performance is examined as the relationship between the two has been hinted at in several literatures. According to the American Psychological Association (2012), creativity along with cognitive ability, leadership, integrity, attendance and cooperation, are the factors which predict job performance. In truth, it appears naturally persuasive that individuals are more likely to engage in activities that go beyond the call of their formal duties in a favourable climate.

Joyce and Slocum (1984) have contended that climate would be expected to wield strong influences on individual performance. Likewise, assessments based on an individual's psychological climate perceptions will evoke feelings of satisfaction and identification with one's job and organisation (James, James and Ashe, 1990). Positive work attitudes generally predict performance, however, they are not the only determinants of performance-related outcomes (Judge, Thoreson, Bono and Patton, 2001; Jiang, Lepak, Han, Hong, Kim and Winkler; 2012). They also suggested that further terms of the relationships that mediate the consequences of the psychological climate on performance is required for current researches.

Conceptual Linkage Between Psychological Climate for Creativity and Job Satisfaction

Initially, researchers commented that due to its redundancy with job satisfaction, the notion of climate was unimportant (Guion, 1973). Following researches have since corroborated a distinction between these two constructs, defining climate perceptions as descriptions by the employees of their work environment, whilst job satisfaction would be the employee evaluations of those perceptions (Reichers and Schneider, 1990).

Researchers such as Mathieu, Hofmann and Farr (1993); Montes, Fuentes and Fernandez (2003); and Kuo and Wu (2012) have examined the conceptual linkages between the psychological climate and job satisfaction, and argued that climate, as the manner in which individuals perceive their workplace practices and procedures, has an important impact on the degree of satisfaction obtained from the work. Indeed, the literature suggests that job satisfaction is an attitudinal variable, much like job involvement and organisational commitment and hence, it can also be hypothesised as an effect of the psychological climate (Parker *et al.*, 2003).

Conceptual Linkage of Job Satisfaction and Job Performance

The relationship between job satisfaction and job performance has held the attention of researchers for decades, many having had examined the link between satisfaction and performance (Tvorik and McGivern, 1997; Meyer, Paunonen, Gellatly, Richard and Jackson, 1989). Meyer *et al.* (1989) and Jiang *et al.* (2012) carried out studies to investigate the link between the performance of first-level managers in a large food service company and job satisfaction. From the results, it can be said that job satisfaction scores were correlated with the indices of performance that were acquired from the managers' immediate supervisors.

Edwards *et al.* (2008) in their recent literature review provided several theoretical explanations for the relationship between job satisfaction and job performance; (a) attitude towards the job (e.g. job satisfaction) should affect behaviour on the job (e.g. reflected on job performance); (b) behaviour on the job (rewards produced by performance) leads to the formation of attitudes towards the job (expectancy-based theories); and (c) job satisfaction and job performance are reciprocally related.

RESEARCH METHODOLOGY

Research Design

This study is designed for the use of a quantitative survey method in the form of a causal study. Cooper and Schindler (2013) described causal-explanatory studies as an attempt to explain the relationships among variables. Quantitative research entails the counting of things; interpreting results based on the numerical data obtained i.e. attempting to precisely measure something, describing or predicting, and building or testing a theory.

A cross-sectional study is employed in this study. Statistical surveys in the form of questionnaires are used to collect quantitative information about items in a population; these serve as numerical data. A survey was deemed appropriate for research questions regarding self-reported beliefs or behaviours (Neuman, 2003). The questionnaires were distributed to only electrical engineers working within the area in the Klang Valley by means of the snowball technique via electronic mail. As per Roscoe (1975), a sampling size of at least 90 respondents was required; given that there was a maximum of 3 categories for any one of the variables and that a minimum sample size of 30 for each category was required. In total, 118 respondents were obtained for this study.

For the study at hand, a multiple regression analysis was deemed appropriate to be implemented to determine the relationships between the three variables involved**.** The multiple correlation analysis was also considered appropriate to obtain explanations of job satisfaction and work performance on the predictor variable. This is to test that the psychological climate for creativity is in fact a predictor of job satisfaction and work performance. Descriptive statistics were used in most cases to present and summarise the data.

Research Instrument

The instruments employed in this study are the Creative Climate Questionnaire (Ekvall, 1996); Job Diagnostic Survey (Hackman & Oldham, 1975) and a measure of work performance by Suliman (2001). A pre-test was carried out on the instruments to test the reliability and validity of the instruments using Cronbach's Alpha which yielded .93, .76 and .62 respectively. All the questions were adopted and customised to appropriately suit the objectives of the study. A 6-point Likert-like scale anchored with frequency descriptors was use to obtain answers to the questions. A score of "1" signified strong disagreement and a score of "6" meant strong agreement. The last part of the questionnaire required the respondents to provide their personal and work information.

RESULTS AND DISCUSSIONS

Respondents' Demographic Variables

The demographic variables involved in this study for the 118 respondents are: (i) gender; (ii) ethnicity; (iii) age group; (iv) education level, and (v) tenure in the present organisation. Table 1 illustrates a summary of the respondents' demography.

Table 1 Profile of respondents (N=118)

Demographic variables	Frequency	Valid percent (%)
Gender		
1. Male	84	71.2
2. Female	34	28.8
Ethnic		
1. Malay	38	32.2
2. Chinese	73	61.9
3. Indian	7	5.9

Table 1 (*Cont'd*)

Age		
1. 21 to 25	66	55.9
2. 26 to 30	36	30.5
3. 31 to 35	15	12.7
4. 36 and above	1	0.8
Education		
1. Doctorate Degree	2	1.7
2. Master's Degree	17	14.4
3. Bachelor's Degree	97	82.2
4. Others	2	1.7
Tenure in organisation		
1. Less than 2 years	73	61.9
2. Between 2 to less than 5 years	30	25.4
3. More than 5 years	15	12.7
Number of employees in organisation		
1. Less than 50	16	13.5
2. 50 to 150	33	28.0
3. More than 150	69	58.5

Level of Psychological Climate for Creativity

Table 2 shows the descriptive statistics for the dimensions of a psychological climate for creativity. The values all represent the results of the average of the 5 items that make up each particular dimension. A score of "1" indicates "not applicable at all" and a score of "6" indicates "high applicability" of the particular dimension in the organisation. As observed from the table, the dimensions range from a mean of 4.03 (SD = .75) to 4.41 (SD = .53), signifying that the average response is between "slightly applicable" to "moderately applicable."

With regards to the highest and the second highest mean values, dimensions 'Freedom' and 'Dynamism/Liveliness' scored 4.41 (SD = .53) and 4.36 (SD = .55) respectively. In contrast, the two lowest mean values were scored by the 'Conflict' and 'Idea Time' dimensions with means of 4.03 (SD = .75) and 4.07 (SD = .66) respectively, indicating a slight applicability of these dimensions at the workplace climate to the respondents. It should be noted that apart from the 'Conflict' dimension, all other items for the dimensions in the psychological climate for creativity were positively worded. Items for the 'Conflict' dimension were reverse coded as the items were negatively worded. This is done so that a high

value indicates the same type of response on every item. Hence, a mean score 4.03 shows that most respondents felt that there was minor occurrences of personal and emotional tensions in the organisations.

Table 2 Level of psychological climate for creativity

Dimensions	N	Minimum	Maximum	Mean	Std. Deviation
Conflict	118	1.60	5.40	4.03	.75
Idea Time	118	2.00	5.00	4.07	.66
Trust/Openness	118	2.40	5.60	4.16	.71
Playfulness/Humour	118	2.20	5.40	4.19	.60
Risk-Taking	118	2.40	5.60	4.22	.74
Debates	118	2.80	5.20	4.25	.60
Idea Support	118	2.40	5.80	4.27	.65
Challenge/Involvement	118	1.60	5.00	4.28	.59
Dynamism/Liveliness	118	2.60	5.60	4.36	.55
Freedom	118	2.80	5.60	4.41	.53

Level of Job Satisfaction

The data concerning the respondent's perception of the level of job satisfaction were gathered through 14 items. A score of "1" indicated "strong disagreement" and a score of "6" indicated "strong agreement" regarding the respondent's job satisfaction. The mean score for job satisfaction was 4.41 (SD = .464) with a minimum score of 3.43 and a maximum score of 5.57. A small standard deviation score (designated by SD) signifies that the data scores were close to the mean. The mean of 4.41 shows that the respondents are slightly to moderately satisfied with their job.

With the 25th percentile of the job satisfaction at 4.00 and the 75th percentile at 4.79, an inter-quartile range of .79 (4.79 - 4.00) was obtained. The values below the 25th percentile signify that 25 percent of the respondents rated their job satisfaction below 4; values between 25th percentile and 75th percentile mean that 50 percent rate their job satisfaction between 4.00 and 4.79; values above the 75th percentile indicate that 25 percent of the respondents rate their job satisfaction levels above 4.79. This illustrates that the respondents are fairly satisfied with their jobs.

Table 3 Level of job satisfaction and work performance

		Job satisfaction	Work performance
N	Valid	118	118
	Missing	0	0
Mean		4.41	4.35
Median		4.43	4.39
Std. Deviation		.464	.308
Range		2.14	1.89
Minimum		3.43	3.17
Maximum		5.57	5.06
Percentiles	25^{th}	4.00	4.22
	50^{th}	4.43	4.39
	75^{th}	4.79	4.56

Level of Work Performance

The data concerning the respondent's perception of their own work performance were acquired through 18 designated scaled items with a score of "1" indicating low work performance and, at the other extreme, a score of "6" indicating that the respondents consider that their work performance high. As illustrated in Table 3, the mean score for work performance was 4.35 (SD = .308) with a minimum score of 3.17 and a maximum score of 5.06.

The 25^{th} percentile and 75^{th} percentile of work performance was 4.22 and 4.56 respectively, with the values between these percentiles indicating that 50 percent of the respondents had work performance scores of between 4.22 and 4.56. Respondents who rated their performance below 4.33 and above 4.72 percent accounted for 25 percent each.

Relationship Between All the Three Variables Under Consideration

Hair, Black, Babin and Anderson (2009) defined correlation as a measure of the strength of the relationship between two variables. The Pearson Correlation was determined as a suitable test for the variables concerned since all the constructs were continuous variables and the variables were interval scaled. There are 3 bivariate correlations to be looked at: (1) psychological climate for creativity-job satisfaction, (2) psychological climate for creativity-work performance and (3) job satisfaction-work performance relationships. From the preliminary analysis carried out, there were no indications of violation of the assumptions of normality, linearity and homoscedasticity.

All the relationships were significant at 0.01 levels and all were positively correlated, with the correlation scores of the variable relationship in descending order from high to low being: Job satisfaction-Work performance ($r = +.55$; $p < 0.001$), Psychological climate for creativity-Job satisfaction ($r = +.49$; $p < 0.001$) and Psychological climate for creativity-Work performance ($r = +.48$; $p < 0.001$). Cohen (1988) stated that values between 0.30 and 0.49 indicate a medium correlation and values between 0.5 and 1.0 indicate a large correlation. As such, the relationships between the variables were medium correlated and above.

Table 4 Pearson's correlation coefficient of psychological climate for creativity and selected variables

	Psychological climate for creativity	**Job satisfaction**	**Work performance**
Psychological climate for creativity		+.49**	+.48**
Job satisfaction	+.49**		+.55**
Work performance	+.48**	+.55**	

** Correlation was significant at the 0.01 level (2-tailed)

The Extent to Which the Psychological Climate for Creativity Explains Job Satisfaction and Work Performance

The third objective of this study i.e. to determine the extent to which the psychological climate for creativity account for job satisfaction and work performance is answered in this section. A regression analysis was conducted for the purpose of identifying the relationship between the psychological climate for creativity and job satisfaction and work performance.

According to Table 5a, the psychological climate for creativity accounted for 23 percent variance in job satisfaction ($\lambda = 0.49$; Adj $R^2 = 0.23$; $p = 0.000$). The regression analysis from Table 5a illustrates that the adjusted R square was 0.23, suggesting that the 23% variance in job satisfaction was explained by the psychological climate for creativity. The standardized regression coefficient suggests that a positive regression coefficient of 0.49 with a significance level of 0.000 exists between the psychological climate for creativity and job satisfaction. This result is indicative of a positive relationship between the psychological climate for creativity and job satisfaction.

Table 5a Job satisfaction regressed on psychological climate for creativity

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Adjusted R Square
		B	Std. Error	Beta			
1	(Constant)	2.17	.37		5.82	.00	0.23
	PCC	.54	.09	.49	6.03	.00	

a Dependent Variable: JS

Likewise, the psychological climate for creativity accounted for a 22.4 percent variance in work performance ($\lambda = 0.49$; $R^2 = 0.224$; $p = 0.000$). The regression analysis from Table 5b shows that the adjusted R square was 0.224, suggesting that the 22.4% variance in work performance was explained by the psychological climate for creativity. The standardized regression coefficient suggests that a positive regression coefficient of 0.48 with a significance level of 0.000 exists between the psychological climate for creativity and work performance. This result is indicative of a positive relationship between the psychological climate for creativity and work performance. All standardised parameters had a significant t-value ($t \geq 2.00$), statistically proving the contributions of the psychological climate for creativity on job satisfaction and job performance.

Table 5b Work performance regressed on psychological climate for creativity

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Adjusted R Square
		B	Std.Error	Beta			
1	(Constant)	2.89	.25		11.60	.00	0.224
	PCC	.35	.06	.48	5.89	.00	

a Dependent Variable: WP

The Extent to Which Psychological Climate for Creativity and Job Satisfaction Explains Work Performance

The extent to which job satisfaction and the psychological climate for creativity jointly explains work performance was analysed using a multiple regression analysis. The results shown Table 6 indicate that 34.5% variance in work performance was explained by job satisfaction and the psychological climate creativity, with an estimated coefficient of 0.41 ($R^2 = 0.345$; $p = 0.000$), followed by the psychological climate for creativity at 0.28 ($R^2 = .345$; $p = 0.000$).

Table 6 Work performance regressed on psychological climate for creativity and job satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Adjusted R Square
		B	Std. Error	Beta			
1	(Constant)	2.30	.26		8.86	.00	0.345
	JS	.27	.06	.41	4.75	.00	
	PCC	.21	.06	.28	3.28	.00	

a Dependent Variable: WP

Job Satisfaction As a Mediator Between Psychological Climate for Creativity and Work Performance

An analysis of job satisfaction as a mediator between the psychological climate for creativity and work performance was performed guided by the methodology done by Pak (2007). In order to determine three separate regression equations the following three steps were performed:

(i) the mediating variable was regressed on the independent variable;

(ii) the dependent variable was regressed on the independent variable; and

(iii) the dependent variable was simultaneously regressed on the independent variable and mediating variable

Pak (2007) was of the view that once the three separate conditions have been identified, in order to verify the position of the mediator variable the following conditions must hold true:

(i) the independent variable must affect the mediator in the 1st equation;

(ii) the independent variable must affect the dependent variable in the 2nd equation; and

(iii) the mediator must affect the dependent variable in the 3rd equation.

The results achieved in accordance with the three required steps are shown in Tables 5a, 5b and 6. The results from the 1st equation and 2nd equation indicate that the psychological climate for creativity considerably affects job satisfaction ($t = 6.03$; $p = 0.001$) and work performance ($t = 5.89$; $p = 0.001$) respectively. From the 3rd equation, job satisfaction can be seen to have a significantly higher effect on work performance ($t = 4.75$; $p = .001$) and the beta was lower than in the 2nd equation.

Sobel's test was performed to test the mediation effect that job satisfaction had between the psychological climate change and work performance, the results of which are shown in Table 7. The results from Sobel's test indicate that job satisfaction has a mediation effect on the relationship between the psychological climate change and work performance (Test Statistics: 3.73; p-value: 0.000). As the relationship between the psychological climate change and work performance was significant (R=0.48, p=0.000), it can be said that job satisfaction partially mediated between the psychological climate for creativity and work performance. This means that the psychological climate for creativity influences job satisfaction, which in turn influences work performance.

Table 7 Sobel's test for psychological climate for change and work performance

	Test statistics	**p-value**
Sobel's Test	3.73	0.000

CONCLUSIONS AND IMPLICATIONS

A good working environment is seen as the key factor in creating job satisfaction. Job satisfaction is one criterion for ascertaining the health of an organisation and it relates its precedence to a creative climate and its antecedent to work performance. This study set out to examine the creative climate – job satisfaction – work performance relationship.

As indicated by the findings of this study, creative climate is an important predictor of job satisfaction and work performance among electrical engineers. It is an antecedent for innovation and change and also has significant effect on the work outcomes of employees, as also discovered by other studies.

Managers of organisations play an important role in forming a working environment that promotes creativity. The factors that could create a creative climate in their organisations need to be identified and factors that would inhibit it, eliminated so that there is overall job satisfaction in their organisation, bringing about higher work performance.

Summary of the Findings

The research findings proved that debates, idea time, trust/openness and idea support dimensions were rated at remarkably high levels, whilst other dimensions were average. In descending order, the correlation scores of the variable relationships from high to low were Job satisfaction-Work performance ($r = +.55$; $p < 0.001$),

Psychological climate for creativity-Job satisfaction ($r = +.49$; $p < 0.001$) and Psychological climate for creativity-Work performance ($r = +.48$; $p < 0.001$).

The findings illustrated that the psychological climate for creativity accounted for 23 percent variance in job satisfaction ($\lambda = .49$; Adj $R^2 = 0.23$; $p = 0.000$) and a 22.4 percent variance in work performance ($\lambda = 0.48$; $R^2 = 0.224$; $p = .001$). Job satisfaction turned out to be a better predictor of work performance with an estimated coefficient value of 0.41 ($R^2 = 0.345$; $p = .000$), followed by the psychological climate for creativity at 0.28 ($R^2 = 0.345$; $p = .000$). This proved the importance of the psychological climate for creativity as a predictor of the two work outcomes. Finally, the findings also indicated that one standard deviation increase in the two exogenous variables of the psychological climate for creativity and job satisfaction led to a .31 standard deviation increase in work performance.

Additionally, using Sobel's test, job satisfaction was tested as a mediator between the psychological climate for creativity and work performance. The findings from the analysis showed that in the 1st equation, the psychological climate for creativity significantly affected job satisfaction ($t = 6.03$; $p = 0.001$). Likewise for the 2nd equation, in which the psychological climate for creativity significantly affected work performance ($t = 5.89$; $p = 0.001$). In the 3rd equation, job satisfaction had a significantly higher effect on work performance ($t = 4.75$; $p = 0.001$) and the beta was lower than in the 2nd equation. All the above findings indicate that job satisfaction act as a partial mediator between the psychological climate for creativity and work performance.

Implications of the Study

Some implications on both the theoretical and practical aspects could be noted from the research findings. From the theoretical standpoint, the study reinforces the existing theory on the relationships and the extent to which the variables under study affect each other. The study proved that positive work outcomes were truly affected by the psychological climate for creativity and that job satisfaction mediated between the relationship of the psychological climate for creativity and work performance. However, much of the topics on the effects of the psychological climate for creativity on work outcomes remain unexplored, and so this research supplements the existing body of knowledge with the relationship of these variables.

There are several implications to be reaped from the findings from a managerial standpoint. This study put forward that a creative climate was an essential element to be considered in an organisation. Attention should be paid by the managers in organisations to the creative climate dimensions in order to improve the job satisfaction levels and work performances of the electrical engineers. As the

creative climate is an important antecedent for the engineers' job satisfaction and work performance, improving the organisation climate could also produce much improvement to the latter. Management needs to implement change and encourage initiatives that create a more conducive creative environment. Finding methods to promote job satisfaction among electrical engineers might facilitate the improvement of an organisation's performance by its managers without incurring substantial additional costs.

Limitations and Suggestions for Future Studies

This study has not conducted a path analysis for the relationship between the psychological climate for creativity, job satisfaction and work performance. Therefore future studies should include a path analysis using the analysis of moment structure (AMOS) to test the independent relationship among the variables concurrently.

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