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Convergent Validity of the Situational Outlook Questionnaire: Discriminating Levels of Perceived Support for Creativity

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The purpose of this study was to continue examining the validity of the Situational Outlook Questionnaire (SOQ™). The relationship between mean ratings of the nine dimensions that make up the Situational Outlook Questionnaire and the self-perception of the organizational climate as conducive (or not conducive) to creativity was tested with a sample of 1,830 individuals from a variety of organizations. Participants were categorized on their level of perceived support for creativity. The results indicated that the means of all nine dimensions of the Situational Outlook Questionnaire were different for each level of perceived support for creativity in the work environment. The difference was statistically significant for each level. The results of this study indicated that the Situational Outlook Questionnaire may be able to discriminate effectively among different levels of perceived support for creativity in the immediate work environment.

The purpose of this study was to examine the relationship between an individual's perceptions of the degree of support for their personal creativity and the climate for creativity and change where they work. The study utilized a modified version of the Situational Outlook Questionnaire (SOQ™) to conduct the inquiry. The SOQ is a paper and pencil instrument intended for use as a diagnostic tool to improve awareness and understanding of the organization's ability to support creativity and change. It is conceptually grounded in previous empirical and theoretical work on creativity and innovation (Drucker, 1985; Ekvall, 1996; Lauer, 1994).

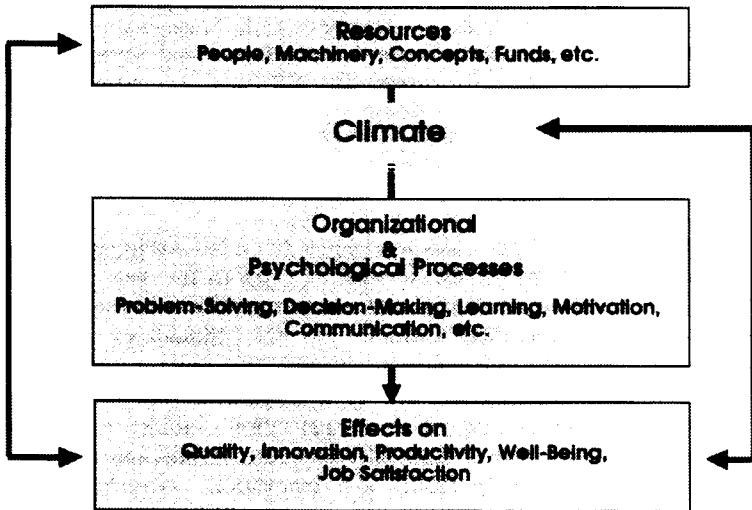
The basic theoretical model underlying the SOQ proposes that creative productivity, in any context, is dependent upon numerous individual, group, and organizational variables. These variables combine to influence the patterns of behavior in any work environment. These recurring patterns, as well as their underlying attitudes and feelings, characterize the atmosphere or "quality of life" within an organization and is defined as organizational climate (Ekvall, 1996; Isaksen, Lauer, & Ekvall, 1999).

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Ekvall (1991) asserted that climate acts as an intervening variable in an organization. Climate influences, and is subsequently influenced by, the outcome of organizational operations. Climate affects outcomes by influencing organizational processes such as problem solving, decision making, communicating and coordinating, the individual processes of learning and creating, and levels of motivation and commitment. These in turn influence the ways in which the organization uses its resources, such as people, buildings, intellectual property and funds. These effects subsequently become apparent in the quality of the products or services produced, whether these are radically new products, minor improvements of old ones, job satisfaction, productivity, profit, or emotional and physical well-being. These factors, in turn, affect both the availability of resources and the climate itself (See Figure 1).



Adapted from Ekvall, Swedish Council for Management and Work

FIGURE 1 A Model of Climate as an Intervening Variable

The environment may be either conducive or detrimental to creativity. Stein (1968) expressed this orientation by stating, "creativity, like all behavior, is a function of the transactional relationships between the individual and his environment" (p.936). The climate within organizations that stimulates creative productivity has been the subject of increasing attention and research (Amabile & Gryskiewicz, 1989).

This study was designed to examine the nature of the relationship between individuals' perceptions of support for their personal creativity and their results on the nine dimension scores of the SOQ. Our specific research interest was in determining whether a significant relationship existed between the individual's perception of the supportiveness of their own immediate work environment for creativity and each of the nine dimensions of the SOQ.

METHOD

Participants

The study used data from 1,830 individuals; of these 1,469 were members of organizations that contracted for training courses in Creative Problem Solving (CPS) with the Creative Problem-Solving Group - Buffalo (CPS-B), while 361 were participants in educational and organizational research samples.

Regarding sex, 54.8% were male, 45.2% were female. The mean age of those respondents ($n = 977$) who reported their age was 35.3 years with a range of 17 to 64 years. The educational level of the sample, reported by 762 subjects, was spread over the following groups: completed high school ($n=21$), some college education ($n = 134$), bachelor's degree ($n = 249$), some graduate education ($n=22$), master's degree ($n = 177$), and doctorate ($n = 159$).

Participants came from a wide range of organizational levels and functions. The majority of participants included in this study came from six organizations ($n = 1,469$), while the remaining subjects were undergraduate students who had previously attended courses on creativity ($n = 195$), attended educational conferences ($n = 122$), or attended five-day creative problem-solving courses ($n = 44$). Participants represented a variety of organizations, namely: 74% from Business/Goods Industries ($n = 1354$), 3% from Education ($n = 55$), .6% from the Government or Service sector ($n = 9$), 10.7% were college students ($n = 196$), and 11.8% did not specify their type of organization ($n = 216$).

The majority of the participants in the Business/Goods Industry category came from two large international organizations. Several courses were conducted at a petroleum company, accounting for a total of 755 respondents, or 41.3% of the total sample. Programs conducted for a consumer products manufacturer provided another 528 subjects, or 28.9% of the total sample.

Measures

The SOQ is a revised translation of the Creative Climate Questionnaire (CCQ; Isaksen, Lauer, Murdock, Dorval, & Puccio, 1995). The former is designed to assess nine aspects of organizational climate that either foster or hinder creative behavior and organizational change.

The initial translation of the questionnaire from Swedish to English began in 1986. Two independent Swedish translators then used a process known as back translation with decentering to adjust the initial translation (Bontempo, 1993). The English translation was then reviewed for face validity using a Q-sort by the initial translation team, and six creativity researchers, one from India, two from Norway, and three from the USA.

The questionnaire that resulted from this translation process was similar to Ekvall's CCQ in that it contained five items for each of the 10 theoretical dimensions. The senior author then used this as a research instrument. Data collected from 419 individuals who completed this first 50-item version of the SOQ were analyzed by Lauer (1994). An exploratory principal component analysis (Varimax rotation) revealed 10 factors with an eigenvalue equal to or greater than 1.0 and accounted for 62.1% of the total variance. Examination of the delineation of items in the Varimax rotation did show some inconsistency with the theoretical loading patterns. The coefficient alphas for the sample ranged from .72 to .87 for the 10 theoretically based factors. A study by Isaksen and Kaufmann (1990) reported similar coefficient alphas for a sample of 634 individuals.

Following this initial translation and analysis process, the SOQ was tested and refined on four different versions of the measure. This process is described in more detail in the technical manual (Isaksen, Lauer, Murdock, Dorval, & Puccio, 1995) and Cabra's thesis (1996). The intent of this refinement process was to improve the factor structure and coefficient alphas. Exploratory factor analysis supported a nine-factor principal axis (oblique rotation) factor structure rather than the 10 factor principal component (varimax rotation) structure reported by Ekvall, Arvonen, and Waldenstrom-Lindblad (1983). This nine factor structure is reported by Isaksen, Lauer, & Ekvall (1999) in a study of 1,111 individuals who used the fourth version of the SOQ. Coefficient alphas for the nine factors ranged from .62 to .89. Further studies of the SOQ's reliability and validity have been conducted (Britz, 1995; Grivas, 1996; Isaksen & Kaufmann, 1990; Isaksen et. al., 1995; Talbot, Cooper, & Barrows, 1992; Turnipseed, 1994).

The SOQ is intended for adult respondents. Flesch Reading Ease scores for the questionnaire instructions and the items were 54.4 and 59.3 respectively. This converts to a USA grade-school reading level of 8.3 for the instructions and 7.6 for the items.

In 1996 the SOQ was made available for use with groups and organizations. However, because of the multidimensional nature and intended use of the questionnaire, it must be administered and debriefed by individuals who are qualified and trained to use the theory and measure for effective interventions.

The SOQ version used in this study consisted of positive dimensions (Challenge, Freedom, Idea Support, Playfulness/Humor, Debate, Trust/Openness, Risk-taking, and Idea Time) which tend to foster a more creative climate. The Conflict dimension, as defined, is considered to be detrimental to creativity in the workplace. It is important to distinguish Conflict from Debate. Conflict focuses on negative emotional and personal tensions, whereas Debate centers upon differences of ideas, viewpoints, and individually unique experiences and knowledge. Both dimensions incorporate tension; debate pertains to idea tension, while conflict entails personal tension.

The version used in this study contained five items for each of the nine SOQ dimensions and the omnibus question cited later in this section. Of the 46 items, 22 items are reverse scored to control for response bias. The items are framed in such a manner that they ask the respondent to be an objective observer of the environment in which he/she is working. Respondents answer the items on a 4-point scale in which 0 = Not at all applicable, 1 = Applicable to some extent, 2 = Fairly applicable, 3 = Applicable to a high degree. The overall scores for each dimension are calculated by taking the mean of the participant's response for each dimension and multiplying this by 100. All dimensions therefore, have a theoretical range from 0 to 300. This procedure allows for ease of comparison across dimensions. The coefficient alphas for the SOQ's nine theory-based factors obtained from this sample were as follows: Challenge, .81; Freedom, .69; Conflict, .72; Idea Support, .83; Playfulness/Humor, .78; Debate, .82; Trust/Openness, .71; Risk-taking, .52; and Idea Time, .81.

Studies of validity have used demographic grouping and/or self-report responses as a means of classifying respondents into meaningful groupings (Litwin & Stringer, 1968; Sackett & Larson, 1990; Taylor & Gryskiewicz, 1993). In this study an omnibus question was used to classify respondents into meaningful groups. The question was phrased: "I feel the immediate work environment is supportive of my personal creativity." The respondents were divided into four groups depending on their responses to this question. The group of participants who had scored their environment as "not supportive" was labeled Not Supportive ($n = 201$). Those in the second group found their immediate work environment conducive to their creativity "to some extent" and are labeled To Some Extent ($n = 609$). The third group consisted of respondents who had answered the omnibus question with "fairly applicable" and are labeled Fairly Supportive ($n = 702$). Finally, those in fourth group said that the description was "applicable to a high degree" to their work environment and are labeled Highly Supportive ($n = 318$).

Procedure

All participants completed the questionnaire individually focusing their responses on their perception of their immediate working environment. The SOQ was distributed through the various organizations mail systems along with a memorandum describing the purpose of the measure. The participants from educational and organizational research studies were given the questionnaire by the senior author in classroom settings and the questionnaires were collected immediately upon completion. Completed instruments were then returned to the CPS-B for scoring and analysis. Steps were taken to ensure voluntary participation and confidentiality.

TABLE 1 SOQ Means and SDs Sorted by Support of the Immediate Work Environment to Personal Creativity With Results of One-way ANOVAs Between Groups*

Dimension	Not Supportive (n=201)		To Some Extent (n=600)		Fairly Supportive (n=702)		Highly Supportive (n=318)		F**	R ²
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Challenge	149.2	68.5	187.3	56.4	224.3	50.0	257.7	45.8	221.33	.27
Freedom	135.9	51.6	168.8	47.4	204.6	42.8	237.7	45.4	275.14	.31
Idea Support	109.8	57.0	167.8	50.2	213.0	49.5	251.0	49.9	406.10	.40
Playfulness / Humor	103.1	54.8	143.9	50.0	179.9	50.0	216.3	55.5	252.52	.29
Debate	127.7	61.2	167.2	54.1	201.1	49.1	233.1	48.0	216.80	.26
Trust / Openness	98.0	47.8	140.6	45.4	176.3	45.0	215.3	49.3	334.94	.36
Conflict	178.3	63.7	136.2	58.8	108.2	53.6	77.4	53.4	158.53	.21
Risk-Taking	112.0	48.2	139.8	40.4	166.8	35.9	194.2	44.2	223.68	.27
Idea Time	77.7	55.8	115.1	50.0	150.8	51.9	198.5	57.6	256.62	.30

*df = 3, 1826

** all p values < .001

RESULTS

The means and standard deviations of the four groups on each dimension, as presented in Table 1, indicate that the scores on all the SOQ dimensions increased as the individuals perceived their immediate work environment as more supportive to their personal creativity (except for the Conflict dimension, which decreased). To determine if differences

were statistically significant between the four groups, we conducted a one-way multivariate analysis of variance (MANOVA). This was followed by nine one-way analyses of variance (ANOVA's) for the nine dimensions to determine the strength and statistical significance of the differences among all four categories on each dimension. The MANOVA results were statistically significant [Wilks's $\Lambda = .46$, $F(3,1826) = 53.54$, $p < .001$]. The subsequent one-way ANOVA's (See Table 1) showed that this effect was statistically significant for all dimensions. The F -value for each dimension was statistically significant at $p < .001$. The magnitude of the effect sizes as measured via R^2 were all greater than .26 and may be considered large (Cohen, 1977).

DISCUSSION

The preceding results provide evidence that a statistically significant difference does exist between the respondents' reports of perceived support for creativity and the scores for the SOQ dimensions. The results show that individuals who perceive their immediate work environment as more supportive of their creativity report higher mean scores on those dimensions of the SOQ that are positively related to the creative climate. Lower mean scores were observed for the Conflict dimension for those who report more support for their personal creativity. This suggests that there is a meaningful relationship between the manner in which individuals perceive their work environment and how they view the environment's ability to support their personal creativity in the organizational settings included in this study.

There are, however, several limitations to this study. First, only a single item was used to categorize the subject groups. Additional omnibus items may be added to obtain an improved sense of how the respondents perceive the overall creative climate in their immediate work environment. It may also be useful to examine further how the SOQ dimensions relate to other measures such as job satisfaction and other measures of organizational climate, creative climate, and culture. For example, Turnipseed (1994) found that several job satisfaction factors and social environmental variables are related to the SOQ dimensions.

The coefficient alpha of two dimensions is below .70, which is commonly used as an acceptable baseline for a research instrument (Freedom, .69, and Risk-Taking, .52). The SOQ version used in this study was the third revision. Subsequent revisions of the questionnaire have addressed this issue and improvements have been reported in the literature (Isaksen, et al., 1999). Future research will continue exploring means to improve the questionnaire's reliability.

Another limitation to this study is that the ratings of the overall environmental support for creativity were measured by self-reports. Additional research using outside observers and a variety of alternative

measures are needed to further validate the dimensions of creative climate assessed by the SOQ. Further utility can be realized from a study of this nature if a large random sample were acquired and analyzed, since the findings and insights could be transferred to other organizational settings with higher levels of confidence. Finally, since climate is conceived as an attribute of the organization, future validation studies should also focus on organizational performance measures.

An additional limitation is that both the criterion measure (omnibus question) and the SOQ were combined and completed by respondents at the same time. Shared method variance may result and this may be an issue in a study of this nature. Further research should take this into account.

Despite these limitations this study has many merits. The large sample size and the wide variety of organizations it contains provides a comparative base for other studies on the topic to build upon. The sample size also allows further studies to be conducted that may address how perceived level of support for creativity relates to the type of industry, the intensity of the technology used, and the rate of change of technology in that industry. These and other questions may also be studied in relation to the departments within an organization or the functions individuals perform in the organization.

In summary, the results of this study coupled with the psychometric findings of other studies (Isaksen & Lauer, 1999; Isaksen, et al., 1999; Isaksen, et al, 1995) support the continued investigation into the SOQ and how it can be used to further our understanding of creativity and change in organizational settings.

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