

## Psychometric Study of Persian Version of Spiritual Climate Survey and Stanford Presenteeism Scale and Assessment of Relationship between them among Employees of a Car Manufacturing Company

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### Abstract

**Background and Objectives:** Employee's perception of spirituality in all aspects of organization management is called "spiritual climate". On the other hand, employees' active presence in the workplace, rather than their mere physical presence, is referred to as "Presenteeism". The current study aimed to localize these variables and study the relationship between them.

**Methods:** This cross-sectional study was conducted on the employees of a car manufacturing company in Tehran, Iran, 2018. In addition to the demographic form, the spiritual climate was assessed using Spiritual Climate Survey (SCS). On the other hand, Stanford Presenteeism scale was implemented to measure work attendance. Among 216 participants, 154 subjects attended work despite musculoskeletal pain, and performed their duties; therefore, they entered the analytical phase. The validity and reliability of the instruments and relationship analysis were performed by Partial Least Squares path modeling method.

**Results:** The results of validity and reliability tests confirmed the suitability of the instruments. Work presenteeism was reported as 71.2%. The mean spiritual climate score was measured at  $58.07 \pm 11.38$ . The mean work presenteeism score was obtained as  $17.50 \pm 4.66$ . Pathway of spiritual climate to presenteeism at work is statistically significant. On the other hand, the ratio of the spiritual climate variable to the presenteeism was reported to be significant. Moreover, the ratio of spiritual climate to presenteeism indicated that 17.5% of presenteeism alterations were ascribed to the spiritual climate.

**Conclusion:** The Persian versions of the SCS and Stanford Presenteeism questionnaire can be applied as new and valid measurement instruments. In addition, it was found that the spiritual climate in organizations is one of the variables that can positively affect employees' health, as well as work presenteeism, and increase organizational productivity.

**Keywords:** Spiritual climate, Work presenteeism, Occupational health, Musculoskeletal disease, Psychometrics.

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### Introduction

Spirituality is defined as behaving in adherence to a particular set of deep personal values (1). On the basis of these deeply held values, employees strive to create a kind of emotional solidarity between themselves and their work by observing job standards (2). People's physical and mental health, well-being, and quality of life are boosted by the promotion of organizational spirituality. Employees find a purpose in work,

behave better, and establish a more effective relationship with the community (1,3). Moreover, spirituality is associated with physical health conditions, musculoskeletal pain, mental health, and the ability to adapt to problems and illnesses (4-6). On the other hand, spirituality in organizations can improve and promote organizational efficiency by affecting individuals' physical and mental health (7). Workplace spirituality develops a

sense of closeness among the employees, enhances their development, and reduces employee turnover (8).

One of the aspects of workplace spirituality is the spiritual climate that reflects employees' perception of spirituality in the field of management (9). A higher climate is suggestive of employees' belief that spirituality exerts more profound effects on the decisions of managers and organizations. Spiritual climate has such elements as harmony with self, harmony in work environment, and transcendence. Harmony with self means that employees realize their abilities and enjoy their work. Harmony in workplace is pertinent to interaction with the social and natural conditions of the workplace, and transcendence means being absorbed in work, and recognizing one's duties and oneself (9).

Spirituality in management implies the dynamic balance between these three factors. An organization is a place where people form and find their own meanings (10,11). Spirituality in an organization represents a particular form of work feeling that energizes activities (10). People find purpose and meaning in the organization, enjoy the work, and feel good and well-off (12). Moreover, they can sense self-actualization (13) and all of these benefits are the central point of harmony with self.

The second element, harmony in work environment, is related to interaction with the natural and social environment. It is the sense of socializing with the environment and the surrounding world (14), as well as integration and connection to the workplace (15). Modesty, respect, empathy (16), industrial democracy, benevolence, fairness, and responsibility allocation can bring harmony to the workplace (17,18). Transcendence means having a connection to something greater than yourself which can be the belief in a higher power. It comes along with absorption in work and transcending the individual self (19). Transcendence in the workplace turns the organization/company into a community (20). Transcendence makes the employees cross the traditional boundaries and focus on their main purpose (21). When people successfully interact with the spiritual climate of the

organization, they will be happier and healthier (22). In addition, the personnel in a good spiritual climate feel that their spiritual values and needs are being respected. This feeling provides the employees with more intrinsic satisfaction with work and motivates and energizes them to gain better outcomes (23). Moreover, some elements of spirituality, such as spiritual intelligence, can affect work presenteeism and non-absenteeism (24).

Employees' active presence, rather than their mere physical presence in the workplace plays a vital role in the promotion of work efficiency and safety. Adaptation of this approach led to the emergence of a new topic entitled "work presenteeism". Work presenteeism is employees' presence in the workplace despite illness which leads to a reduction in individual efficiency and decreases organization productivity (25). In this case, the employee's absence is less costly than his / her presence. On the other hand, the employees' active attendance at the workplace despite health problems cuts absenteeism costs and promotes productivity (26). Presenteeism can be attributed to different personal and organizational reasons, such as evasion of childcare responsibilities and house chores, job insecurity (27), the high value the employees place on their work, and sense of responsibility (28). Koopman et al. reported that the achievement of the desired outcomes with great concentration despite illness indicates higher presenteeism (29). Work presenteeism is also a newly emerged global phenomenon affecting the performance and efficiency of organizations which has attracted considerable attention in recent years (26). Although research on spirituality, especially organizational spirituality in our country has been on a rise in recent years, it is a field still in its infancy in the application phase. One of the questions that can be raised is the relationship between spiritual climate and work presenteeism with the application of the recent approach. Developing and using efficient tools will also help you achieve a more reliable result. Spiritual climate scale (SCS) developed by Joe Pandey et al. and Stanford Presenteeism Scale (SPS-6) are the most common and valid tools used in this field.

Both variables, in particular, work presenteeism pose daunting challenges to management and business in maintaining efficient and healthy workforces, especially in developing countries. Since it is assumed that with aging comes a host of health problems and as workers age, their physical, physiological and psychosocial capabilities change (30). With this background in mind, the investigation of the factors affecting these variables and bringing them under control is of paramount importance. As a result, the researchers first sought to evaluate the validity and reliability of the two instruments and assess the relationship between these two variables. Therefore, the present study was designed and conducted to investigate the reliability and validity of the two questionnaires and analyze the relationship between spiritual climate and work presenteeism.

## Methods

This cross-sectional study was performed on the employees of a car factory in Tehran in 2018. Demographic data were collected using a questionnaire, including work experience, education, sex, marital status, and age. In addition, the spiritual climate was assessed using Spiritual Climate Scale which consists of 16 main questions (it should be noted that two questions in the instrument have a subset leading to a total number of 21 questions). This questionnaire has three subscales of harmony with self (7 questions), harmony in work environment (9 questions), and transcendence (5 questions). The answers are rated on a five-point Likert scale from highly disagree (1) to highly agree (5) (9). In the previous study, using Cronbach's alpha, the total reliability of this questionnaire was reported as 0.873 and the reliability of its components was within the range of 0.74-0.91. In addition, the validity of the instrument was also determined by factor analysis and a good model fit was obtained (9).

Moreover, the other study instrument was the Stanford Presenteeism Scale (SPS-6) (29). The items are rated based on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly

agree), and questions 1-3-4 are reversely scored (29). The respondent selects the option based on his experience in the last month. This experience is related to interaction with work and its performance despite a musculoskeletal problem. For instance, "despite my musculoskeletal problems I am able to fulfill my job duties ". Using Cronbach's alpha, the reliability of the questionnaire of work presenteeism has been assessed as 8%, 72%, and 83%. Moreover, the same studies evaluated the questionnaire validity and ensured its appropriateness.

As the first step in order to make cross-cultural adjustments between the Spiritual Climate Survey and Work Presenteeism Scale, these instruments were translated into Persian by specialists and an English expert. Thereafter, upon the consensus on a single translation, the instruments were translated into Persian again by a native English speaker familiar with Persian. Subsequently, it was adapted to the original text. As suggested by Klein in the structural equation model, 10 samples are required per variable (33).

Since the number of questions in the questionnaire was more than 21, about 210 completed questionnaires were needed for analysis. On the final note, considering a 65% rate of ergonomic pain among Iranian workers (34), 284 people were randomly selected from workers and questioned about the suffering from ergonomic pain during the past month. To this end, the personnel number of all eligible individuals was considered. Thereafter, using R software and Sample function, a total number of 284 personnel numbers were randomly selected. The inclusion criteria entailed work presenteeism despite health problems and a complaint of work-related musculoskeletal disorders. In the first part of the questionnaire, the participants self-reported any musculoskeletal pain that occurred during the last month and completed the rest of the questions.

It is worthy to note that participants entered the project deliberately and people were excluded if they did not wish to, and the names and information of the participants were kept confidential. A total of 154 people confirmed

their presence in the workplace despite musculoskeletal pain in at least one of the body organs answered the rest of the questions. Finally, 154 returned questionnaires carried on with the analysis phase.

Concerning work presenteeism, the assessment of normative differences related to demographic factors (9) is an important step performed by independent t-test, one-way ANOVA, and Pearson correlation. In the next step, validity (convergent and divergent) and reliability (Cronbach's alpha coefficient and hybrid reliability) of the instruments were evaluated. Moreover, factor analysis and the relationships between variables were assessed using partial least square path modeling (PLS) in SmartPLS V3.2.8 Software. It is noteworthy that the fit of the model was evaluated using GoF index.

The present research has been approved by Qom University of Medical Sciences with the ethical code IR.MUQ.REC.1397.052. Accordingly, the participants were provided with all the necessary information to decide wisely on participation in this research and the informed consent form was deliberately completed. Furthermore, all subjects had the freedom to withdraw from the study at any time without any unfavorable consequences, and they were not harmed as a result of their non-participation in the project.

**Result**

A total of 216 questionnaires were returned from distributed questionnaires with a 76% response rate. As evidenced by the obtained results, out of 216 cases, 154 subjects (71.2%) attended the workplace and performed their duties despite musculoskeletal pain in at least one of their body organs. Most of the subjects were males (89%) and married (74.7%). Concerning education level, 58.4% of

respondents had bachelor's degrees or higher. In addition, 22.1% and 14.9% of subjects had a high school diploma and associate's degree, respectively, and 4.5% of participants had below diploma education. Two-thirds of people worked on the day-shift schedule. Moreover, 57.8% of subjects had technical jobs and the rest worked in office jobs. Based on the quantitative results, the mean age of employees was obtained as 36.12 6±6.21 (minimum of 23 and a maximum of 58 years). On the other hand, the mean work experience was estimated at 11.69± 5.13 years (minimum of 1 and a maximum of 22 years).

Table 1. Evaluation of divergent validity using the Fornell-Larcker method

Constructs	1	2	3	4
1. Harmony in work environment	80%	-	-	-
2. Transcendence	94%	95%	-	-
3. Work presenteeism	15%	21%	95%	-
4. harmony with self at workplace	92%	92%	14%	85%

The assessment of normative differences related to age (P=0.555), sex (P=0.514), marital status (P=0.491), work system (P=0.08) and educational level (P=0.02) demonstrated no statistically significant difference. In the same line, participants' occupations were also compared in the two administrative and technical groups and the difference was not significant (P=0.31). The results of the divergent validity analysis by the Fornell-Larcker method are presented in Table 1 (this matrix is only calculated for hidden first-order variables).

The Percentages of loading factors of spiritual climate and work presenteeism are also depicted in Table 2. According to the results of factor analysis based on partial least squares path modeling analysis, one of the questions (No. 13) was omitted. Accordingly, the Spiritual Climate Survey with 20 items was approved as a valid native instrument.

Table 2: Percentages of loading factors

Variable	Harmony in work environment						Transcendence			Harmony with self at workplace						Work presenteeism										
	C5	C6	C7-1	C7-2	C7-3	C7-4	C14	C15	C16	C8	C9	C10-1	C10-2	C10-3	C1	C2	C3	C4	C11	C12	P1	P2	P3	P4	P5	P6
loading factor	83%	85%	86%	81%	81%	80%	72%	85%	85%	94%	90%	99%	99%	94%	91%	79%	79%	84%	87%	88%	92%	98%	98%	89%	98%	98%

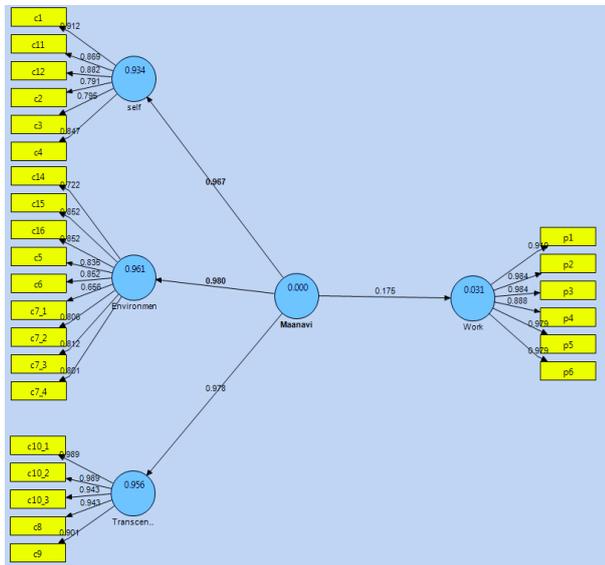


Figure 1. Standardized percentages of the final model of spiritual climate and work resentment

Table 3 displays the convergent validity using the average variance extracted (AVE). In addition, this table demonstrates the Cronbach's alpha coefficient and the composite reliability of each hidden variable which is greater than 0.7 indicating the favorable reliability of the instruments. In order to evaluate the percentage significance, the t-value was calculated by the bootstrapping method with values >1.96 as significant (P<0.05). Percentages of the standardized path of the final model were obtained as depicted in Figure 1. All percentages were significant (P<0.05).

Table 3. Description, Average variance extracted Index, Cronbach's alpha and Composite Reliability of Variables (n=154)

Variable	Minimum	Maximum	Mean±SD	Average variance extracted	Cronbach Alpha	Composite Reliability
Harmony with self	6	27	3.48±19.6	0.72	0.923	0.940
Harmony in work environment	9	39	6.34±24.43	0.64	0.922	0.941
Transcendence	5	24	4.23±14.57	0.91	0.975	0.980
Spiritual climate	20	86	11.38±58.07	0.70	0.977	0.980
Work presenteeism	6	60	4.66±17.50	0.91	0.981	0.985

Finally, the mean and standard deviation of the scores of the spiritual climate survey and Stanford Presenteeism scale are presented in Table 3.

### Discussion

The results were indicative of the acceptability of the internal consistency of the spiritual climate survey and Stanford Presenteeism Scale. Using Cronbach's alpha, the reliability of the spiritual climate survey was obtained as 0.977 which is higher, as compared to the value of 0.873 reported in the original version (9).

The reliability of Stanford Presenteeism Scale was also obtained as 0.981 which indicates better internal consistency, in comparison with its original source (0.80), Italian versions (0.72) and Portuguese versions (0.83) (31-34). Surveys indicated that the questionnaires have good reliability, in comparison with 0.7 which is referred to as favorable reliability (35). Moreover, the factor loadings of each of the spiritual climate questions have a minimum of 0.72 and that of the Stanford Presenteeism questions was reported as 0.89 which are favorable, as compared to the acceptable value of 0.4 (36). Accordingly, this analysis also confirmed the reliability. The validity of the instruments was assessed through divergent and convergent validity. The average variance extracted (AVE) is used to evaluate the convergent validity that examines the correlation of each construct (hidden variable) with its questions (indices). According to Fornier and Larcker, its optimal value is equal to 0.5 (37). As illustrated in Table 2, for all hidden variables, this index is higher than 0.6 indicating the favorable convergent validity of the instruments.

The root-mean-square AVE of all the first-order variables is greater than the correlation value between them, indicating good divergent validity and good fit of the instruments. Unlike the original version (9), in the factor analysis of this study, one of the questions of the spiritual climate questionnaire did not meet the requirements (factor loading<0.4) and was excluded from the questionnaire. Pandey et al.

(9) used exploratory and confirmatory factor analysis to examine the structure of the questionnaire.

KMO and Bartlett tests were used as GoF indices of structural model yielding the value of 0.77 which is better than the results of the present study. Kikolini et al. assessed the validity and reliability of the Italian version of Stanford Presenteeism Scale using confirmatory factor analysis and confirmatory factor analysis and confirmed its validity. KMO and Bartlett's index was also reported as 0.686 (31).

In addition, in the Portuguese version of the questionnaire, the KMO and Bartlett's index was 0.83 indicating the acceptability of the factor analysis (32). The goodness-of-fit of the final model was performed using GoF index and it was calculated as 0.15 which indicates the average fitting of the model. Work presenteeism means individuals' involvement in work processes despite health issues and illness problems. This health problem allows people not to attend the workplace, rather they prefer to have a physical presence (38). In the current study, job-related musculoskeletal disorders were selected as a health problem. Based on that, the rate of work presenteeism was reported as 71.2%.)

Chambers et al. in a study conducted on doctors and dentists in New Zealand reported this value as 88% (39). Fernando et al. in their study performed in Sri Lanka reported this value as 85% in 2017 (40). The value of presenteeism obtained in the present study was lower than the results of other researchers. Nonetheless, in the present study, approximately three out of every four workers attended the workplace and provided service despite musculoskeletal pain during the past month.

The mean score of work presenteeism was measured at  $17.50 \pm 4.66$  (out of 30 possible scores). A higher score means more concentration on job duties despite illness. On the contrary, a lower score (close to six) means less concentration on job duties and consequently a decrease in organizational productivity (29). This rate of work presenteeism is estimated to be average

( $17.50 \pm 4.66$ ), which is in line with the results of Italian researchers (31). However, it was lower than the mean score of Stanford Presenteeism ( $22.9 \pm 4.4$ ) obtained in the study conducted by Kopman et al. (29).

No significant difference was observed in the differential analysis of demographic groups of age, sex, marital status, education, work experience, work system, and occupational group. In previous studies, except age (25), most of these variables did not make a difference in the presence of people at work (9, 31,32). In previous studies, the number of participants from one occupational group was at least three times more than that of the other group/groups and this can be the source of this difference. Nonetheless, in the present study, the number of participants in the two occupational groups was approximately the same.

In a study conducted by O'donnell, no relationship was observed between presenteeism and type of chronic health problem, illness, or injury. Moreover, no significant difference was detected between the participants with less than 1 year of work experience and those with more than 1 year of work experience (41). It can be concluded that the experience of pain or difficulty in the individual, regardless of the cause, may not make any significant difference. As mentioned earlier, work presenteeism despite health problems can have both positive and negative aspects. Work attendance along with concentration and fulfilling the job duties can reduce the organizational costs; however, low concentration can increase the expenditures.

Work presenteeism despite musculoskeletal disorders as an emerging phenomenon can reduce organizational productivity (42). Pain while working makes employees unable to work at their full capacity and makes them susceptible to functional errors. Ergonomic disorders are caused by such factors as poor working conditions, poor equipment layout, poor body postures, occupational stress, as well as psychological and social factors. On the other hand, some other factors encourage people to attend the workplace despite ergonomic pains. These factors include lack of

communication and support in the workplace, inadequate training, job ambiguity, overwhelming work pressure, as well as some personality traits, such as high responsibility and occupational commitment and attachment. It is noteworthy that people's perception of the severity of the problem also affects their attendance (42).

As indicated by the studies, people generally underestimate the severity of their health problem and decide to attend work. Moreover, the ambiguous attitude of people to managerial pressure in case of job absence and job insecurity also increases the work presenteeism (43). Therefore, the promotion of an occupational health program in organizations is necessary to reduce work presenteeism and absenteeism due to illness and improves the individual's score of work presenteeism in order to promote productivity (30).

Moreover, some factors can improve attendance in the workplace and reduce presenteeism so as to increase organizational productivity (44). These influential factors include training workers in living the right way, training managers to establish better communication with employees and create transparency in the organization (45), bringing the psychological and social factors under control (46), increasing support and communication in the workplace (47) and enhancing job security (48).

The mean score of the spiritual climate was obtained at  $58.07 \pm 11.38$ . Pandey et al. (29) also indicated a mean of  $54.74 \pm 2.7$  in their study both of which are rated as average. As this score increases and reaches 100, it means that managers exert higher levels of spirituality in the workplace and all employees have a deep understanding of the spirituality exerted at the organization level (49). In addition, the spiritual climate has a positive effect on team learning (50), reduces organizational maladaptation, tendency to quit, job burnout (51) and personal stress in the workplace (50).

Since the path coefficient of the spiritual climate to work presenteeism is greater than 1.96, this path is significant at a 95% confidence level ( $P < 0.05$ ). Path coefficient of

spiritual atmosphere to work presenteeism indicates that a unit increase in the spiritual atmosphere will result in a 75-unit increase in work presenteeism. In other words, 17.5% of changes in work attendance are attributed to spirituality. As mentioned earlier, the results of the current study suggested that a part of presenteeism variable is attributed to the spiritual climate. In light of this result, managers can deal with work presenteeism as one of the most challenging managerial issues in industrial and organizational environments. In general, it can be concluded that these two instruments can be used to assess the spiritual climate and the status of Iranian employee's attendance despite health problems.

The establishment of a relationship between spiritual climate and work presenteeism as a career behavior was one of the gaps the present study sought to bridge. This could affect organizational performance and be used as new managerial tools. This relationship was previously hypothesized (52); however, the researchers in the current study aimed to empirically and practically investigate this relationship.

The limitations of each study depend on many factors. This study was conducted on the employees in a car industry; therefore, the generalization to the employees in other industries and organizations must be made very cautiously. Given the limited scope of the selected occupation, it is suggested that the validity of the research instrument be studied in other occupations and on a greater scale. Moreover, complementary research, especially on women working in industries and organizations with a larger study population is also recommended. Furthermore, given that younger employees exhibit different work attendance, as compared to older and more experienced employees (53), special attention to age and work experience is recommended.

## Conclusion

As evidenced by the obtained results, the Persian versions of the Spiritual Climate Survey and Stanford Presenteeism questionnaire can be applied as new and valid measurement instruments. In addition, it was

found that the spiritual climate in organizations is one of the variables that can positively affect employees' health, as well as work presenteeism, and increase organizational productivity.

According to the above-mentioned results, all the employees, managers, and policymakers of the economics, health, and management of the country can apply the spirituality-related studies as well as psychological concepts in work environments, such as work presenteeism. In so doing, they can develop health improvement programs, increase productivity, and move towards a resilient economy. Consequently, they can achieve a holistic view of industrial and organizational management.

### Conflict of interest

The authors declare no conflict of interest.

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