Exploratory and Confirmatory Factor Analyses of the Spirituality in the Workplace Questionnaire (SWQ): A Tool for Workforce Development

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Abstract

This research describes an effort to develop and validate a psychometrically multidimensional measure of spirituality in the workplace (SWQ). The SWQ was administered to a random sample of 1008 faculty members employed by six public universities in Jordan. The data set was subject to exploratory factor analysis (EFA) using the criteria of an eigenvalue equal to or greater than one and a factor loading equal to or greater than .30 without cross loading. Principle axis factoring with oblique rotation was used to uncover the underlying structure of the SWQ. Five factors emerged with all 22 items retained. Internal consistency reliability coefficients for these factors ranged between .76 and .87. Based on the Maximum Likelihood estimation method in confirmatory factor analysis (CFA), the five-factor model was confirmed providing a good fit to the data. Discussions were provided in the context of the scale development.

Keywords: Spirituality, Workplace, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), Workforce Development, Higher Education, and Jordan

Introduction and Theoretical Framework

Major world changes such as global markets downfalls, economic restructuring, downsizing, massive layoffs, and the decline of neighborhoods and extended families have left many employees feeling demoralized and dehumanized, devoid of energy, and no longer being connected (Ashmos & Duchon, 2000; Laabs, 1995). These factors have
been critical in sparking the interest of researchers and practitioners in the topic of spirituality in the workplace which is a call for a more humanistic work environment, increased simplicity and flexibility, more meaning, a connection to something higher, and a primary source of community (Ashmos & Duchon, 2000; Marques, Dhiman, & King, 2005). Spirituality in the workplace is a young area of inquiry with potentially strong relevance to the well-being of individuals, organizations, and communities because of the fact that engaging the spirit of employees with their work may increase organizational commitment and job satisfaction (Leigh, 1997; McCormick, 1994; Milliman, Czaplewski, & Ferguson, 2003; Mirvis, 1997), may maximize long-term organizational stability, overall performance, productivity, motivation, and creativity (Giacalone & Jurkiewicz, 2002; Jurkiewicz & Giacalone, 2004; Mitroff & Denton, 1999; Nick & Milliman, 1994), may develop a more ethical organizations and communities (Garcia-Zamor, 2003), may enhance the meaning of work, may deepen relationships in the workplace, and at the same time a work environment that fully enriches the life of each employee (Bell & Taylor, 2004; Burack, 1999; Neal, 2000; Sheep, 2006; Whitney, 2002).

Spirituality in the workplace is defined as “an experience of interconnectedness, shared by all those involved in a work process, initially triggered by the awareness that each is individually driven by an inner power, which raises and maintains his or her sense of honesty, creativeness, proactivity, kindness, dependability, confidence, and courage, consequently leading to the collective creation of an aesthetically motivational environment characterized by a sense of purpose, high ethical standards, acceptance, peace, trust, respect, understanding, appreciation, care, involvement, helpfulness, encouragement, achievement, and perspective, thus establishing an atmosphere of enhanced team performance and overall harmony, and ultimately guiding the organization to become a leader in its industry and community, through its exudation of fairness, cooperativeness, vision, responsibility, charity, creativity, high productivity, and accomplishment” (Marques, Dhiman, & King, 2005, p. 123). Duchon and Ashmos (2005) added that workplace spirituality recognizes that employees have an inner life that nourishes and is nourished by meaningful work that takes place within the context of community.

McLaughlin (1998) asserted that organizations that want to survive in the 21st century will have to offer a greater sense of meaning and purpose to their workforce. “In today’s highly competitive environment, the best talent seeks out organizations that reflect their inner values and provide opportunities for personal development and community service, not just bigger salaries” (p. 11). Moreover, workers are increasingly hoping to find in the workplace the sense of connection they find in the traditional family and social community ties (Ashmos & Duchon, 2000). According to Gull and Doh (2004), employees who feel connected and meaningful in their workplace will perform better, show up more often, and contribute more devotedly toward a better atmosphere in the workplace. Further, employees want more control over their work, more work-life balance, and more personal growth and meaning in their work. In fact, most spirituality driven organizations evidence some commitment to social responsibility and service to employees and to the community; promote employee wellness, sense of meaning, transcendence, creativity, and self-actualization; emphasize participatory management...
practices; and establishes caring relationships and the enactment of common values, such as honesty, trust, and fairness in organizational settings (Groen, 2001; Uhrich, 2001).

Work can be physically strenuous and stressful, contributing to illness such as heart disease, diabetes, and nervous disorders like anxiety and depression. Thus, spirituality is recognized as a panacea for dealing with workplace pressure (Ashmos & Duchon, 2000; Neal, 2000). In conclusion, spirituality grounds people in their work and allows them to connect with the transcendent in all they do and enables their organizations to prosper (Elmes & Smith, 2001; Lewin & Regine, 2000). Therefore, public and private organizations that want to survive and compete in the 21st century should measure and enhance the spirituality of their employees on a regular basis (Marques, 2005).

Researchers have speculated that spirituality in the workplace may be multidimensional in nature and involve a system of factors (Ashmos & Duchon, 2000; Bell & Taylor, 2004; Duchon & Ashmos, 2005; Garcia-Zamor, 2003; Gull & Doh, 2004; Marques, Dhiman, & King, 2005; Milliman, Czaplewski, & Ferguson, 2003; Neal, 2000; Sheep, 2006; Whitney, 2002). For example, employees may evaluate the existence of spirituality in the workplace from different lenses including their inner perspective; the act that takes place at work; the behavior of the superiors; the connection between family and work; and the role of the workplace toward the community. The present research effort is devoted to developing a psychometric and multidimensional sound instrument that can measure the key factors that can be used as a measure of the spirituality in the workplace.

**Statement of the Problem**

The topic of spirituality at work is gaining importance in business settings worldwide (Fry, 2003; Garcia-Zamor, 2003; Groen, 2001; Marques & Dhiman, 2006; Marques, Dhiman, & King, 2005; Reave, 2005; Uhrich, 2001). However, up to this point, and to the researchers’ best knowledge, no empirical research has attempted to capture the multidimensional nature of spirituality in the workplace. Most previous research has either used qualitative approaches or unreliable instrument designs to measure spirituality in the workplace. Therefore, the primary purpose of this study was to develop and validate a multidimensional and psychometric measure of spirituality in the workplace especially related to higher education settings.

**Research Questions**

The present study was guided by the following research questions:

1. Will exploratory factor analysis (EFA) of the spirituality in the workplace questionnaire (SWQ) result in an interpretable factor structure of latent constructs?
2. Will confirmatory factor analysis (CFA) of the SWQ determine and confirm the dimensionality and factor structure of the instrument?
Significance of the study

What is needed and what would be an important goal for university administrators is the development of an instrument to measure spirituality in the workplace with validated constructs and known psychometric qualities that add significantly to the understanding of the factors that play a role in enhancing spirituality of faculty members in the workplace. University administrators can use this instrument for diagnostic purposes and needs assessment, which also helps to implement change where and when needed. Such knowledge would allow them to conduct training workshops, seminars, and lectures for existing and prospective faculty members, which may result in increased spirituality in the workplace and long-term organizational effectiveness. In terms of research, the development of a valid and multidimensional set of workplace spirituality scales is important because it would reduce the need for redundant instrument design and it would provide sound foundation for cross-study comparisons.

Research Methods and Procedures

Population and Sample

The target population for this study was all faculty members employed by public universities in Jordan for the academic years 2008/2009. A simple random sample of 1200 faculty members was drawn from six public universities located in the north, south, and middle regions of Jordan. A total of 1008 usable instruments were returned with a response rate of 80%. The sample distribution was 614 males (60.9%) and 394 females (39.1%). There were 169 (16.8%) professors, 229 (22.70%) associate professors, 414 (41.1%) assistant professors, and 196 (19.4%) instructors. With regard to years of experience of faculty members, 217 (21.5%) had an experience less than 5 years, 361 (35.8%) had an experience between 5-9 years, 262 (26.0%) had an experience between 10-14 years, and 168 (16.7%) had an experience above 15 years.

Instrumentation

The instrument used in this study was developed by the researchers after an extensive review of literature in the subject and related theory and following survey design procedures found in the literature (Alreck & Settle, 1995; Gaddis, 1998; Leady & Ormrod, 2001; Long, 1998). We drafted a pool of 57 items, which were submitted to 30 content judges for review and to determine the face and content validity of the items. These judges had expertise in research design, survey design, and workforce development. This panel of content judges included local university faculty members, local human resource professionals, and international professionals (e.g., United States, Britain, and Canada). We requested this panel to check the instrument items for clarity, length, time to complete, difficulty in understanding and answering questions, flow of questions, appropriateness of questions based on the research topic, any
recommendations for revising the survey questions (e.g., add or delete), and overall utility of the instrument.

Based on their feedback, some items were dropped and others reworded where necessary. At this stage, the 57 items were reduced to 32. This preliminary questionnaire was pilot tested with a group of 100 faculty members selected randomly from six public universities which were not included in the final sample of the study. Feedback from this pilot test led to the additional drop of number of items to 22. Long (1998) considered peer reviews to be a form of survey pre-testing. All items in the instrument used a five-point Likert-type scale with the following categories: 1 “Strongly Disagree”, 2 “Disagree”, 3 “Neutral”, 4 “Agree”, 5 “Strongly Agree”.

The final instrument was named the “Spirituality in the Workplace Questionnaire” (SWQ) and consisted of two sections, one of which a demographic section. The first section of the instrument consisted of 22 items. Examples of instrument items included “harmony and team performance is practiced in my workplace”; “I can freely express my emotions and feelings at work”; and “I have a healthy balance of life and work”. Internal consistency coefficient for the instrument was calculated using Cronbach’s alpha and found to be .85. Standards for instrument reliability for Cronbach’s alpha by Robinson, Shaver, and Wrightsman (1991) were used to judge the quality of the instrument: .80 – 1.00 – exemplary reliability, .70 - .79 – extensive reliability, .60 - .69 – moderate reliability, and < .60 – minimal reliability. Therefore, the instrument is regarded as a reliable measure of spirituality in the workplace in higher education settings based on the perceptions of university faculty members.

Data Collection

Data were collected from faculty members during the academic years of 2008/2009. The researchers contacted the selected faculty members within each university included in the sample either in person or by telephone, explained the nature and goals of the study, and insured confidentiality, voluntaries, and anonymity. The participants were also informed that the instrument will take less than 10 minutes to complete. The faculty members who agreed to participate in the study were given the instrument and were requested to complete it within two weeks time-frame. At the end of the two weeks, the researcher and his assistants collected the instruments.

Data Analysis

To answer the first research question, exploratory factor analysis was used. Exploratory factor analysis is primarily used in the early stages of instrument development when the researcher is trying to determine the underlying structure of the instrument. Factor analysis is a multivariate statistical technique used to examine the intercorrelations among a large set of variables, and then attempt to find a smaller number of constructs that still capture those relationships (Ary, Jacob, Razavieh, 1996; Benson & Nasser, 1998). The objective of exploratory factor analysis (EFA) is to “reduce the number of dimensions necessary to describe the relationships among the variables” (Gardner, 2001,
In other words, EFA will uncover the underlying structure of the SWQ, thereby allowing understanding of the simple structure of the measuring instrument. There are certain steps to follow when using factor analysis. These steps include: extracting factors, deciding on how many factors to retain, and rotating factors to an interpretable and more meaningful solution.

In exploratory factor analysis, there are two methods of extraction: common factor analysis and principal component analysis. Principal component analysis is used for prediction (Hair, Anderson, Tatham, & Black, 1998; Nunnally & Bernstein, 1994). It is less appropriate for exploratory use because a) it does not account for error variance and attempts to explain everything by placing ones on the diagonal of the correlation matrix as an estimate of communalities (meaning that all variance, even error, is appropriate to explain); and b) it attempts to “represent all of the variance of the observed variables” (Floyd & Widaman, 1995, p. 294). On the other hand, principal axis factoring (or common factor analysis) was more appropriate to use in this study because the purpose of the analysis is to uncover the underlying structure of the instrument. This method has the advantage of accounting for error variance when extractions are made, uses squared multiple correlations (SMC) of each variable with the remainder of the variables when calculating initial communalities, and places communalities on the diagonal of the input correlation matrix “to represent only the common variance of each variable” (Floyd & Widaman, 1995, p. 292) and to remove the unique (error) variance. Further, principal axis factoring produces more accurate estimates of cross-loadings, communalities, factor loadings, and factor correlations than does principal component analysis (Fabrigar, Wegener, MacCallum, & Strahan, 1999).

The overall measure of sampling adequacy (MSA) for the whole data set was used to determine the appropriateness of factor analysis. Hair et al. (1998) suggested values above .90 to be excellent while values below .60 should be deemed unacceptable. When determining the number of factors to extract, the visual scree plot and an eigenvalue greater than or equal to one was used (Benson & Nasser, 1998). An eigenvalue represents the total variance explained by the factor (Benson & Nasser, 1998). Moreover, visual scree plots were consulted to determine the number of factors to extract. Once the factors have been extracted, the next step is to rotate them as an aid in the interpretation of those factors. The main goal behind factor rotation is to produce a simple structure (Gorsuch, 1997) where each variable has the highest loading on its major factor, and the lowest loading on the remaining factors. Because the latent constructs in this study are expected to be correlated, a restriction placed on factors by orthogonal rotation, oblique rotation with direct oblimin was performed. With oblique rotation, the factor pattern matrix was used because the values are “standardized regression weights (betas) reflecting the relationship between the variable and a factor, after partialling out the relationship between the variable and the remaining factors” (Benson & Nasser, 1998, p. 27). The pattern matrix was more appropriate to examine than the structure matrix because “we are interested in the unique variance accounted for by each factor” (Morgan & Casper, 2000, p. 310). Finally, items were considered for retention on factors when they have a loading value above .30.
To answer the second research question, confirmatory factor analysis (CFA) was utilized. CFA is a theory-testing procedure for confirming the factor structure of the scale. More specifically, CFA is a procedure by which variables can be specified to be loaded on certain factors, and the number of factors is fixed in advance (Stevens, 1996). The LISREL 8.12 (Joreskog & Sorbom, 1993) computer program was used to analyze the data. All variables were tested using the covariance metrics generated by PRELIS and utilized maximum likelihood estimation method. In the present data analysis, rigorous constraints were not placed on the data because it is considered inappropriate (Bentler & Chou, 1987). For example, factors were allowed to correlate with one another. Moreover, the value of 1.0 was set to the factor loading parameter of one randomly selected item from each latent factor based on the recommendations of researchers such as Byrne (1998). This type of constraint allows the LISREL program to create a scale for the latent constructs. Finally, error terms were not permitted to correlate. We usually need a strong theoretical justification to allow the correlation of errors. In CFA, the most essential measure of overall fit is the chi-square statistic (Joreskog & Sorbom, 1993). However, the value of chi-square tends to be substantial and unrealistic when the sample size is large (sensitive to sample size), even if the model fits the data well. Therefore it is should not be used as a fit index rather as a comparison index between competing models (Bentler & Bonett, 1980; Byrne, 1998; Steiger & Lind, 1980). Based on that, alternative fit indexes were used to overcome the issue with the chi-square statistic (Tabachnick & Fidell, 1996). Six fit indices were examined in this study in addition to the chi-square test. These indices were the goodness of fit index (GFI), the adjusted goodness of fit index (AGFI), the comparative fit index (CFI), the non-normed fit index (NNFI), the root mean square error of approximation (RMSEA), and standardized root-mean square residual (SRMR). In general, a value of .90 or above for the GFI and AGFI is usually recommended for an acceptable level of fit (Hair et al., 1998). The RMSEA and SRMR values below .06 indicate very good fit while an RMSEA and SRMR values between .06 and .08 indicate a moderate fit. Any values above .08 indicate poor fit (Hu & Bentler, 1995; Joreskog & Sorbom, 1993). The last two fit indices (CFI and NNFI) are considered incremental fit indices because they measure the proportionate improvement in fit of the proposed model relative to a baseline represented by the null model. These measures have the advantage of being the least influenced by sample size when compared to other indices. Generally values above .90 are considered sufficient (Byrne, 1998).

Results

Results Pertaining to Research Question One

Research question one asks “Will exploratory factor analysis (EFA) of the spirituality in the workplace questionnaire (SWQ) result in an interpretable factor structure of latent constructs?” Principle axis factoring was performed utilizing the oblique rotation method to uncover the underlying structure of the SWQ. Before conducting exploratory factor analysis, the data were screened in several ways to ensure their normality and appropriateness for factor analysis. With respect to normality, visual inspection of the histogram, mean, median, mode, skewness, and kurtosis for each item and for the whole
data shows that the data were normally distributed. With regard to the appropriateness of the data for factor analysis, two statistical tests (overall Measure of Sampling Adequacy (MSA) and the Bartlett Test of Sphericity) were conducted. MSA is an index used to determine the appropriateness of the data for factor analysis (Hair et al., 1998). The MSA assesses the degree of intercorrelations among variables and provides information about the appropriateness of the data for factor analysis. An MSA value above .90 are considered meritorious. On the other hand, the Bartlett Test of Sphericity measures the “overall significance of all correlations within a correlation matrix” (Hair et al., 1998, p. 88). The null hypothesis states that there is no factor structure for the data at hand and then the goal is to reject the null hypothesis. A p-value below .05 indicates that there is a factor structure for the data and it is appropriate to run factor analysis. The results of the MSA (.91) and the Bartlett Test of Sphericity (p < .05) indicated that the data were suitable for factor analysis. Another indication of the factorability of the data set was the item-to-respondent ratios, which was 45:1. As a general rule, the minimum item-to-respondents ratio should be 5:1 (Hair et al., 1998). It is also desirable to have at least three items loading on each factor, which was satisfied in the present investigation.

To justify the application of factor analysis, it is important to ensure that the correlations of the data matrix for the variables have a substantial number of correlations above .30 (Hair et al., 1998). Visual inspection of the data matrix revealed a substantial number of correlations greater than .30. Moreover, the anti-image correlation matrix (with negative partial correlations) indicated a low partial correlation between the variables. The anti-image correlation matrix is important to consider because it includes information about partial correlations. Low partial correlations suggest “true” underlying factors exist because the variables can be explained by the factor that loads on each variable. Finally, there are certain assumptions associated with factor analysis. These assumptions are multivariate normality, homoscedasticity, and linearity. According to Hair et al. (1998), these assumptions are more conceptual than statistical. Only multivariate normality is necessary if a statistical test is applied to the significance of the factors. The Bartlett Test of Sphericity with p < .05 confirmed this assumption.

Exploratory factor analysis procedures were completed for the purpose of identifying the latent constructs underlying the data. The criteria for determining how many factors to extract included the eigenvalue greater than one rule and a visual inspection of the scree plot (Ary et al., 1996). The initial analysis was run without specifying how many factors to retain. This procedure resulted in five factors explaining 60.52% of the common variance (see Table 1). Moreover, the residual correlation matrix was examined and no meaningful residuals were found, suggesting that the five-factor structure was appropriate and that no more factors could be extracted. These factors were described as follows:

1. The family. The first factor included four items with a reliability estimate of .87 and accounted for approximately 31% of the total variance in all items. The family factor measures the extent to which true connections exist between work and family, which may be regarded as an indication of workplace spirituality. This factor included items such as “I have a healthy balance of life and work”.
2. The workplace. This factor included five items with a reliability estimate of .85 and accounted for almost 11% of the total variance. This factor measures the degree to which spirituality is practiced and instilled in the workplace. This factor included items such as “harmony and team performance is practiced in my workplace”.

3. The authority. This factor included four items with a reliability estimate of .86 and accounted for almost 8% of the total variance. This factor measures the degree to which superiors practice spirituality in the workplace. This factor included items such as “my supervisor is positive about workers who express their emotions”.

4. The community. The fourth factor included four items with a reliability estimate of .76 and accounted for almost 6% of the total variance. This factor measures the degree to which a close connection exists between the work environment and the local community which is an indication of the practice of spirituality in the workplace. This factor included items such as “I have a commitment to promote the well-being of my community”.

5. The self. This factor included five items (α = .81) related to the extent to which individuals perceive themselves as practicing spirituality in the workplace. This factor accounted for almost 5% of the total variance. This factor included items such as “I can freely express my emotions and feelings at work.

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Table 1 Factor Loadings, Eigenvalue, and Variance Explained for the SWQ Factors.

Items were retained on factors if they had a minimum factor loading of .30. Items with a multiple cross-loading of .20 and above on at least three factors were deleted from the factor. The .30 level is a generally accepted minimum factor loading because it indicates that approximately 10% of the variance for a corresponding variable has been explained by a factor (Tinsley & Tinsley, 1987). The pattern matrix was chosen to examine the data instead of the structure matrix because in using the oblique rotation method we were interested in the unique variance accounted for by each factor. Also, because the pattern
matrix yields partial weights, the values in this matrix are more appropriate to interpret (Hair et al., 1998). Using these criteria, all 22 items were retained on the SWQ. All items loaded on their respective factors as suggested during instrument design process. Factor loadings for items retained in this solution ranged from .39 to .87 with an average loading of .60 on major factor and .05 on the rest of the factors. In brief, the loading of items was characterized by an interpretable simple structure, meaning that they had high loadings on the major factor and low cross-loadings on the other factors. All factors had acceptable reliabilities as estimated by Cronbach’s Alpha which ranged from .76 to .87, with an average alpha of .84. These reliabilities exceeded Nunnally and Bernstein’s (1994) suggested minimum reliability of at least .70 for instruments in early stages of development. All items and their respective dimensions are listed in Appendix 1.

**Results Pertaining to Research Question Two**

Research question two asks “will confirmatory factor analysis (CFA) of the SWQ determine and confirm the dimensionality and factor structure of the instrument?” To examine the predicted model resulting from EFA, confirmatory factor analysis (CFA) using LISREL 8.52 (Joreskog & Sorbom, 1993) was used to determine the dimensionality and factor structure of the SWQ with five latent constructs. The data showed no signs of problematic outliers or violations of multivariate normality assumptions. The maximum likelihood method was used to estimate data fit and the latent constructs were allowed to correlate. In addition, CFA permitted examination of the measurement properties as well as the goodness of fit of the common factor model. The initial measurement model consisted of five latent constructs and 22 observed variables. Each subscale was constrained to load onto its parent factor. The initial model was moderately consistent with the data ($\chi^2$ (199) = 710.12, $p = .00$). In this model, the chi-square value was significant. A significant chi-square value indicates that the proposed model does not completely fit the observed covariances and correlations (Hair et al., 1998). However, the chi-square by itself should not be used as the sole indicator of model fit due to its sensitivity to sample size. Moreover, its results are unrealistic even if the model fits the data well and should be used for comparison purpose and not as a test statistic (Bentler & Bonett, 1980; Byrne, 1998; Steiger & Lind, 1980). Therefore, consideration of other fit indices is considered essential. For example, the values for GFI (.93), AGFI (.92), CFI (.96), and NNFI (.95) surpassed the acceptable threshold value of .90 and thus provide evidence of acceptable fit (Byrne, 1998; Tabachnick & Fidell, 1996). The RMSEA (.05) and SRMR (.04) values indicated that there was a minimal amount of error associated with the tested model (Byrne, 1998) and is an indication of a good fit (Browne & Cudeck, 1993). Further, the standard errors of all the estimates represented by were small enough to say that the estimates are relatively precise (Joreskog & Sorbom, 1989). Finally, the modification indices provided by LISREL did not suggest any significant changes to improve the model, implying that this model fits the data relatively well.
Discussion

The concept of spirituality in the workplace has received escalating attention in the literature, yet little is known about how to measure and quantify this construct. Previous research has primarily focused on qualitative research designs or unreliable measures and tools for generally addressing spirituality in business work environments. From a theoretical perspective and for research purposes, researchers need to know the dimensionability of this concept in all types of work environments. Therefore, the present research effort is devoted to develop a psychometrically and multidimensional sound and convenient instrument that can measure the key system factors that represent spirituality in the workplace especially related to higher education institutions. A systematic validation process including a critical review of the literature, content validity, pilot testing, factor analyses, and calculation of reliability coefficients led to the development of a reliable and valid instrument with known psychometric properties and high internal consistency as described by its Cronbach’s alpha, which ranged from .76 to .87. Based on exploratory factor analysis (EFA), the spirituality in the workplace questionnaire (SWQ) has a clear factor structure. The EFA procedures suggested a five-factor solution with all 22 items retained and were named as follow: the family (4 items), the workplace (5 items), the authority (4 items), the community (4 items), and the self (5 items). Confirmatory factor analysis (CFA) indicated adequate fit for this five-factor model. All indices of CFA suggested that this five-factor model fit the data well; implying good construct validity of the SWQ.

Based on the above, the data revealed that spirituality in the workplace is multidimensional in nature and can be measured by a number of factors. University administrators and human resource professionals in higher education institutions should look at their universities from a system perspective when evaluating the spirituality concept. It is important to evaluate the individual perceptions and feelings toward the concept of spirituality. For example, we need to understand whether faculty members have a sense of passion about their work; experience a sense of meaning in their work; freely express their emotions; feel connected with everybody at work; and are driven by an inner power to do the right thing. These qualities should be complimented with the right workplace practices. A workplace that has flexibility in dealing with faculty members (e.g., work schedules); practice harmony and team performance; promote the culture of the family in workplace; and maximize the potential of employees’ knowledge and feelings through training, seminars, conferences, and business consultations. Moreover, these workplace practices cannot be achieved without the help of the authority represented by department chairs, college deans, and the university administration who play a primary role in maximizing the perceptions of faculty members regarding their individual sense of spirituality. Moreover, this authority should pay close attention to the families of their faculty members to maximize spirituality. For example, there should be a healthy balance of life and work; allow faculties to take time off to solve personal problems or be with the family; and offer programs that nurture the relationship between family and work. Finally, the authority should encourage and promote the culture of the “care for the community” among their faculty members. Actions such as providing and
sponsoring charitable social service to the local community and becoming a responsible community member to help improve the conditions of community are desired.

In conclusion, this study represents one of the few efforts to more precisely develop a multidimensional instrument measuring the constructs of the spirituality in the workplace with appropriate psychometric procedures. It contributes to the literature by developing a multidimensional definition of spirituality in the workplace, measuring it, and providing strong evidence for its construct validity. This questionnaire is particularly relevant for use in higher education institutions and various organizations given its length (22 items) and the short time required completing it (less than 10 minutes). Good organizational measures not only must be valid and reliable but also need practicality (i.e., they should be easy to administer and interpret) (Cooper & Schindler, 2003). So, the SWQ is a valuable and promising new instrument that can be used by researchers and practitioners to provide a quick overall picture of the status of workplace spirituality from a system lens. Thus, intervene to improve workplace spirituality to ultimately enhance individual and organizational performance.

Although further research and development directed at improving the psychometric qualities of the SWQ is warranted, this research suggests that the SWQ may offer considerable benefit to higher education institutions’ practice and research in Jordan. From a research standpoint, this investigation is important because it represents an important effort to draw attention to the importance of spirituality in the workplace research in Jordan and open up new avenues of investigation. Also, this research represents an important effort to disseminate and share important tools and expertise across geographic and cultural boundaries. From the practical standpoint, the ability of Jordanian higher education institutions to use the SWQ effectively can reap many benefits to the growth, development, and sustainability of organizations as well as to the economic growth of the whole nation. Such combined efforts can contribute greatly to the economic growth of the nation as a whole by developing and nurturing the expertise and competencies of the future national workforce.

It is clear that further refinement of the SWQ is needed. Future studies may consider incorporating additional items. Further studies are needed for the scale with different types of organizations (e.g., private universities) and populations (e.g., administrative employees). More studies are also needed to cross-validate the instrument with different cultures and nationalities to firmly establish its utility and validity. A nomological network between dimensions of the SWQ and selected organizational outcomes should be tested as an additional step toward construct validity. According to Baumgartner and Jackson (1999), besides examining the factor validity of an instrument, other forms of construct validity such as discriminant validity and convergent validity should be evaluated in future studied.

References


Appendix 1: *Constructs of the SWQ*

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<tr>
<th>Construct</th>
<th>Items</th>
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| **The Family** | 1. I have a healthy balance of life and work.  
2. I can take time off if I need to solve personal problems or be with my family.  
3. My workplace offers programs that nurture the relationship between family and work.  
4. I found creative ways to integrate family and work. |
| **The Workplace** | 1. There are flexible work schedules for faculty members.  
2. The work environment allows people to maximize their potential.  
3. Harmony and team performance is practiced in my workplace.  
4. My organization’s primary goal is to nurture the feelings and knowledge of their workers.  
5. People at my work help each other out very often. |
| **The Authority** | 1. My supervisor is positive about workers who express their emotions.  
2. My supervisor encourages me to share my thoughts and feelings about the emotional impact my work has on me.  
3. My superiors help create meaning and purpose for their subordinates.  
4. My superiors listen attentively to my suggestions. |
| **The Community** | 1. I have a commitment to promote the well-being of my community.  
2. My employer provides and sponsors charitable social service to the local community.  
3. My organization is a responsible community member.  
4. My organization's primary purpose is to help improve the conditions of community. |
| **The Self** | 1. I have a sense of passion about my work.  
2. I experience a sense of meaning in my work.  
3. I can freely express my emotions and feelings at work.  
4. I feel connected with everybody in my work.  
5. I am driven by an inner power to do the right thing. |