THE PSYCHOMETRIC PROPERTIES OF SATISFACTION WITH LIFE SCALE FOR POLICE POPULATION IN BANGLADESHI CULTURE

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ABSTRACT

The importance of research on life satisfaction of polices is increasing day by day. One significant measure of life satisfaction of polices is the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, and Griffin, 1985). The purpose of the present study was to translate the measure into Bangla and validate in Bangladeshi Culture. 210 police officer's participated in this survey. Exploratory factor analysis (EFA) of the data from 160 participants (who provided complete responses) identified a single factor structures for SWLS with 5 items. This factor explained 50.64% of the total variance. This study is consistent with the previous study. The SWLS showed good internal consistency (.74), strong translation and convergent validity. Thus, the Bangla version SWLS appears to be a valid and reliable measure and therefore may be used for further research on polices in the country.

KEYWORDS: Psychometric, Satisfaction With Life Scale, Police population, Reliability, Validity, Bangladeshi culture

INTRODUCTION

Life satisfaction refers to a judgmental process, in which individuals assess the quality of their lives on the basis of their own unique set of criteria (Shin & Johnson, 1978) [29]. A comparison of one's perceived life circumstances with a self-imposed standard or set of standards is presumably made, and to the degree that conditions match these standards, the person reports high life satisfaction. Therefore, life satisfaction is a conscious cognitive judgment of one's life in which the criteria for judgment are up to the person.

Satisfaction with life is one of the several aspects of positive mental health. The satisfaction with life scale (SWLS) is perhaps the most commonly used measure of life satisfaction worldwide (Diener et al, 1985;

Pavot, Diener, Colvin & Sandvik, 1991) [6] [26]. People derive their life satisfaction from different sources and vary considerably in their ideas about what constitutes a good life, the SWLS measures people's perception of their life as a whole, using items that are supposedly free from the varying criteria people use when evaluating their lives. The scale thus reflects a global evaluative judgment, partly determined by the respondent's current mood and immediate context and partly by stable personality factors (Fujita, Diener, & Sandvik, 1991; Lucas & Fujita, 2000) [9] [21] and genetic influences (Stubbe, Posthuma, Boomsma & De Geus 2005) [30]. The SWLS was developed to measure levels of global life satisfaction (Diener et al., 1985) which is the cognitive component. The scale consists of

five items and uses a Likert type response format. Exploratory factor analysis suggested that the scale is unidimensioanl. Diener et al (1985) found a single factor accounting for 66% of the variance, and similar findings have been reported by Pavot et al. (1991). A single factor structure was also found for translations in French (Blais et al., (1989) [3] and Dutch (Arrindell et al., 1991) [1]. In terms of reliability the SWLS has been found to be internally consistent and temporally stable. Diener et al. (1985) found a coeffcient alpha of .87. Similar findings were reported by Pavot et al. (1991) and Yardley and Rice (1991) [35].

Although the SWLS is extensively studied and shows good psychometric properties including validity and internal consistency but all the previous studies were done with general people in different cultures. However, it is important to measure the life satisfaction of police population. Yet, no study has attempted to validate the SWLS for this special population. The present study aimed at assessing the psychometric properties of SWLS for police population in Bangladesh.

METHOD

Participants

210 police officers from 28 police stations in Dhaka city conveniently taken as the sample for the study. Among them 160 (Male=145, Female=5, & Unknown=10) police officers provided complete responses to the questionnaires used in this study. The rate of complete response was 76.19%. The age of the police officers ranged from 19 to 58 years with a mean of 33.48 and an SD of 8.06. Their job duration ranged from 1 to 22 years with a mean of 6.78 and an SD of 7.11. The proportions of the married and unmarried respondents were 57.5% and 38.8% respectively. The marital status of 3.8% participants was unknown. Among the participants 22.5% were Constable, 3.1% were Nayek, 18.1% were Assistant sub-inspector (ASI), 48.1% were Sub-inspector (SI), 6.3% were Inspector and 1.9% were

SP.

Measures

1. Satisfaction With Life Scale

The Satisfaction With Life Scale (SWLS) was first developed by Diener, Emmons, Larsen, and Griffin (1985) to measure cognitive self-evaluation of global life satisfaction. Then it was revised by Pavot and Diener (1993) [25]. It is a five-item measure in which each item is rated on a 7-point Liker type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Thus an individual's life satisfaction score can range from 5 to 35 with a higher score reflecting greater life satisfaction. A sample item includes "The conditions of my life are excellent". The scale has been reported to have high internal consistency and temporal reliability (Yoon & R. M. Lee, 2008) [36]. The SWLS has moderately strong correlations with other SWB measures (e.g., Rosenberg Self-Esteem Scale, Marlowe-Crowne Social Desirability Scale). The SWLS was also found to be a suitable measure for use with different age groups (Diener et al., 1985). Atienza, Pons, Balaguer, and Garcia-Merita (2000) [2] noted that, the SWLS has high internal consistency, with Cronbach's α values ranging from .89 to .79. With regard to the item-total correlation, Pavot and Diener (1993) obtained values between .80 and .51; Atienza et al (2000) found values between .74 and .57.

2. The Positive Affect Negative Affect Schedule

The Positive Affect Negative Affect Schedule (PANAS) was developed to measure positive affect and negative affect of the participants (Watson, Clark & Tellegon, 1988) [32]. This inventory has 20 items, 10 describe positive affect (PA) and 10 Negative Affect (NA). Each group of descriptors is added separately, providing scores in both scales. Respondents use a 5-point Likert-type scale, ranging from 1(nothing or almost nothing) to 5 (very much), to express the degree to which they generally experience the particular feeling or emotion described by the item. Watson et al. (1988) reported

reliability (Cronbach's α) of .88 and .87 for positive affect and negative affect, respectively. The PANAS has demonstrated good convergent and discriminant validity. Convergent validity ranges from 0.89 to 0.95 whereas discriminant validity ranges from 20.02 to 20.18. Significant correlations with other accepted measures of psychological distress (e.g., Beck Depression Inventory) support its external validity (Trief et al, 2001) [31]. The balance (BAL) between these two variables (PA & NA) is obtained with the formula BAL=PA-NA. The Bangla version of this measure was developed by Sagar and Karim (2014) [28]. The reliability of Bangla version PANAS is .72. Translation validity and construct validity were found satisfactory for Bangla version.

Procedure

a. Translation of the SWLS into Bangla

The SWLS items were first translated into Bangla, called the first draft. It was then given to six judges including two experts in Bangla, two experts in English and two experts in Psychology/Psychometrics. Though their native language was Bangla, but being teacher of university or college they had very good command in English. Their task was to judge the accuracy of translation and relevance/suitability of each item for measuring life satisfaction of Participants in the socio-cultural context of Bangladesh. Each expert independently rated the translation using a 2-point scale (0=Not correct, 1=correct) and the relevance of each item using another 2-point scale (0=Not relevant, 1=Relevant). Following their evaluation, accuracy of the translation was examined by calculating for each item the Accuracy Index (AI=Number of Rating 1/Number of experts; Karim & Nigar, 2014) [15]. The item yielding an AI of 1 (AI=6/6) was considered to be correctly and reliably translated (Karim & Nigar, 2014). All the six experts rated 4 items translation at 1, the AI for each of them becoming 1. The remaining 1 item yielded an AI of less than 1. The expert suggested some corrections to the clarity, wording and organization of these items.

By reviewing those items in the light of their comments and suggestions the accuracy of translation was ensured. The relevance/suitability of the items in Bangladeshi culture was examined by calculating for each item the Relevance Index (RI=Number of Rating at 1/Number of Experts; Karim and Nigar, 2014). The item yielding an RI of 1 or .67 (RI=6/6 or 4/6) was considered to be relevant or suitable. All the six experts rated the relevance of each item at 1, the RI for them becoming 1. Thus, the second draft of the Bangla version SWLS was finalized to administer on the selected participants. The reliability of the Bangla version SWLS was .74. Translation and Construct validity were assessed for Bangla version SWLS.

b. Data acquisition

Standard data collection procedures were followed in this study. At first, permission from the Dhaka Metropolitan Police (D.M.P) commissioner was taken. Then, this permission letter was shown to the Officer in Charge (OC) of the police stations. For taking consent he or she was briefed about the general purpose of the study and requested to cooperate with the researcher. The OC was also informed that the investigation is purely academic and their responses to the questionnaire would be kept confidential. In conducting the study, the police officers in different ranks were contacted in person. Then the above measures were administered to them requesting to respond to the questionnaires during free time. Prior to answering the questions, police officers were requested to go through the standard instructions given on the questionnaires. They were also asked to record their socio-demographic information (e.g. age, sex, rank, educational qualification, marital status, socio-economic status, etc.). Thus data collection from all the participants was completed in 3 months.

c. Data analyses

Each participant's responses to the test items were scored according to the scoring principles of the SWLS. Fifty participants left a few SWLS items with

missing responses and were therefore excluded from further processing. Data of 160 participants were fed into computer for factor analysis on IBM SPSS Statistics 20. According to standard textbook authors and researchers, the minimum sample size for factor analysis varies from 100 (e.g., Kline, 1979; Gorsuch, 1983) [17] [11] to 250 (e.g., Cattell, 1978) [5], and there is practice of applying factor analysis even to the data for less than 100 participants (e.g., Widyanto and McMurran, 2004) [33]. There is another set of recommendations varying from a minimum SV (subjects-to- variables) ratio of 2:1 (e.g., Guilford, 1956; Kline, 1979) [12] to 10:1 (e.g., Everitt, 1975; Kunce et al., 1975; Nunnally, 1978; Marascuilo and Levin, 1983) [7] [19] [24] [22]. The number of participants in this study was about 32 times the number of SWLS items/variables (5). Thus the sample size required for factor analysis was satisfied. However, before carrying out factor analysis we examined the response distributions of all SWLS items and estimated their internal consistency by investigating inter-item correlations and item-

Table 1
Correlation matrix for the SWLS

total correlations. Then we analyzed the data in Exploratory Factor Analysis (EFA), a method widely used to uncover the underlying structure of a relatively large set of variables (e.g., Gratz and Roemer, 2004; Hawi, 2013; Korkeila et al., 2010; Muris, 2001; Widyanto et al., 2011; Widyanto and McMurran, 2004) [10] [13] [18] [23] [34].

RESULTS

Factor structure of SWLS
a. Item Analysis
Response distribution of the SWLS items indicated that none of these variables/items were excessively skewed or kurtotic. So, no item was excluded on the basis of the item response distribution. (Kendall & Stuart, 1958; Karim & Nigar, 2014) [16]. However, the obtained inter-item correlation matrix (Table 1) contained no negative values. Out of 10 inter-item correlation coefficients 9 are significant ($p \le .01$) which range from .13 to .58 (Table 1). All the item-total correlations are significant ($p \le .01$) and range from .55 to .81 with a mean of .70 (Table 1.

Item	1			2	3	4	5	SWLS
1	1							
2	.53**			1				
3	.37**			.57**	1			
4	.32**			.58**		1		
5	.13			.21**			1	
SWLS	.67**	.81**	.77**				1	

* $p \le 0.05$, (one-tailed)   ** $p \le 0.01$, (one-tailed)

b. Factor analysis
First, in order to examine whether data were suitable for factor analysis, measures of sampling adequacy were carried out on the 5-item SWLS. The determinant of the R-matrix was 0.269 (>0.00001, Field, 2005) [8], indicating that there was no multicolinearity (very highly correlated variables) or

singularity (perfectly correlated variables) problem. The Kaiser– Meyer–Olkin (KMO) measure indicated a value of 0.74 which exceeded the recommended value of .60 (Kaiser, 1970) [14] and Bartlett's test of sphericity indicated a x^2 value of 205.28 (p < 0.001). All this together supports the factorability of the R-matrix. Data for the full set of SWLS items were

therefore subjected to exploratory factor analysis (EFA). Method of principal component (PC) with varimax rotation was used which identified a single factor structure of the SWLS.
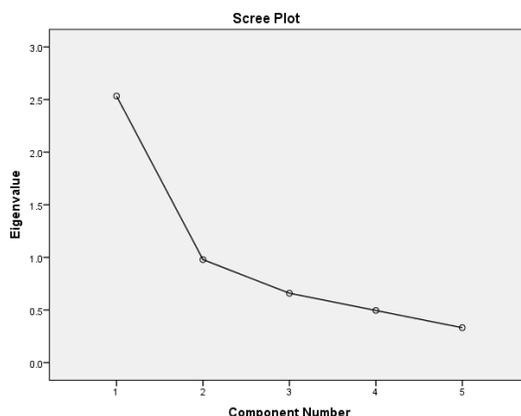

Figure 1. The scree plot of SWLS generated in EFA for 5 items

Consistently, inspection of the scree plot (Figure 1, Cattel, 1966) [4] reveals a clear break after the first component. This led us to retain 1 component which explained 50.64% of the total variance.

Validity

1. Translation Validity

a. Content Validity

The content validity of the SWLS was assessed by calculating the Accuracy Index (AI) and Relevance Index (RI). The values of both AI and RI revealed that the measure has content validity (For details see method section).

b. Face Validity

The measure seems to have a good translation of the construct on its face. Face validity of the instrument was further assessed based on the responses of the participants. We added six questions with a 2-point scale (Yes- No) at the end of the measure. The questions included whether the items were readable, logical, clear, comprehensive, and answerable. Participants were also asked to indicate whther the style & format of the items were acceptable.

Participants gave their responses to these six questions. The percentages of 'Yes' responses to readability, logic, clearness, comprehensiveness, answerability and style and format were 96.3%, 97.5%, 96.9%, 90%, 81.3%, and 95%. Thus the SWLS has face validity.

2. Construct Validity

a. Convergent Validity

Convergent validity of the Bangla version SWLS was examined by correlating SWLS with PA. It was hypothesized that PA should be significantly correlated with SWLS .Results demonstrated that PA has significant positive correlation with SWLS ($r=.25^{**}$; $p \leq 0.01$; one-tailed). Thus the SWLS has convergent Validity.

b. Discriminant Validity

Discriminant validity of the SWLS was examined by correlating with NA. It was hypothesized that SWLS should be negatively or non-significantly correlated with NA. Results demonstrated that SWLS has non-

significant correlation with NA (r=-.04). Thus the SWLS has discriminant validity.

Reliability

Internal Consistency

The inter-item correlation matrix of SWLS (Table 1) contained no negative values, indicating that the items were measuring the same characteristic. The reliability of the Bangla version SWLS was further examined by estimating internal consistency. The coefficients of Cronbach's α were calculated. Cronbach's α (standardized) for the Bangla version SWLS was .74. Thus the SWLS is reliable.

DISCUSSION

This study aimed at assessing the psychometric properties of SWLS for police population in Bangladeshi culture. Analysis of data in EFA demonstrated a single factor model for the SWLS comprising 5 items. This factor accounted for 50.64% of the total variance. The SWLS showed good internal consistency (Cronbach's α = .74).

The unidimensionality of this scale is also supported by various research in several other cultures such as French (Blais, Vallerand, Pelletier, & Briere, 1989), Dutch (Arrindell, Meeuwesen, & Huyse, 1991), Czech (Lewis, Shevlin, Smekal, & Dorahy, 1999) [20] and Spanish translations (Atienza, Pons, Balaguer, & Garcı´a-Merita, 2000; Pons, Atienza, Balaguer, & Garcı´a-Merita, 2002) [27]. As none of the item was dropped through item analysis and factor analysis, it can be said that the Satisfaction With Life Scale is also a valid scale for measuring the life satisfaction of police in Bangladesh. This is an unique aspect of this study. This further indicates that the Satisfaction With Life Scale is stable across cultures.

Another unique aspect of this study is that it determined the content validity from the comments of the judges and the face validity from the comments of the real participants. Construct Validity was ensured through Convergent and Discriminant Validity. Cronbach's α (standardized) for the Bangla version

SWLS indicates its good internal consistency/reliability.

Like many other studies, this study suffers from a number of limitations, suggesting scope for future studies. The first limitation is the reliance on a small sample size. Though the minimum sample required for factor analysis was satisfied here future studies on larger samples can increase the reliability coefficients, confirm the factor structure and other psychometric properties of the SWLS for police population in Bangladeshi culture. A second limitation is the use of police officer from Dhaka city only. Such a sample of convenience facilities the early phase of a test construction, but generalizing results to other police officers may not be warranted. Despite these limitations, the present findings can serve as a base or open the door of further research on the life satisfaction of police in Bangladesh.

CONCLUSION

This study gives us a valid psychometric tool, the Bangla version SWLS, to be useful for future research on life satisfaction of police population in Bangladesh.

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