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Organisational Citizenship Behaviour: Validating Factorial Structure and Invariance among Employees

Saadia Tayyab
Quaid-i-Azam University, Islamabad

*T*he major objectives of this investigation were (a) to test for the factorial validity of the Organizational Citizenship Behavior Scale (OCBS), for 690 public sector employees including permanent (n=508) and contingent (n=182) workers, and (b) to test for equivalence of factorial measurement and conceptual equivalence across groups. Results of exploratory factor analysis revealed that three items are not psychometrically sound in terms of their target loadings. With a view to further improve the OCBS subsequent confirmatory factor analysis (CFA) resulted in deletion of these three items. A four factor model excluding three problematic items provided the best fit to the data for each group, revealing the homogeneous subscale structure and equivalence of measurement across two groups. Test of invariance revealed the equivalency of the remaining items across permanent and contingent employees indicating that item content was perceived in exactly the same way in both groups of workers and each group responded to the scale items in a similar conceptual frame of reference. The study has important implications for substantive research focusing on multi-group comparisons across employer samples.

The study of organizational citizenship behavior (OCB) has emerged as an extremely popular topic of organizational psychology, human resource management, and organizational behavior. It has been of increasing interest to both scholars and managers (Lepine, Hanson, Borman, & Motowidlo, 2000; Motowidlo, Borman & Schmit, 1997; Motowidlo & Schmit, 1999; Organ & Ryan, 1995).

The roots of construct could be traced back to Barnard (1938) and Katz (1964). Barnad underscored the theoretical and practical importance of the “willingness of persons to contribute efforts to the cooperative system” (p.83). He described this willingness as a posture tending to produce various constructive gestures. Katz (1964) distinguished between dependable role performance (i.e., in role performance) and what he described as spontaneous behavior, ehich includes cooperative gestures, actions protective of system, and behavior that enhances the external image of the organization. Katz (1964) noted that much of the patterned activity that comprises organizations goes beyond formal role prescriptions in the extent to which it is intrinsically cooperative. Furthermore, the incentives (e.g., merit, pay) for excellence of in role performance do not inhere in formal role obligations. The presumption is that many of these contributions aggregated over time and person, enhance organizational effectiveness. Organ (1988) defined OCB as “individual behavior that is discretionary, not

directly or explicitly recognized by the formal reward system, and that in aggregate promotes the effective functioning of the organization: (p.4). Organ (1988) suggested that OCB , in effect, places more resources at the disposal of the organization and obviates the need for costly formal mechanism to provide functions otherwise rendered informally by OCB.

The theoretical significance of OCB lies in the observation that it can not be accounted for by the incentives that sustain in role behavior (Organ, 1997). Greater scholarly interest in this construct, however, seemed to be triggered in the early 1980s after Organ and his colleagues (Bateman & Organ, 1983; Smith, Organ, & Near, 1983) used the term organizational citizenship behavior to describe it. The focus of most of early research on OCB was in response to Organ's (1977) interest in the notion that job satisfaction might influence organizational effectiveness behaviors managers want but cannot technically require.

Dimensionality of the OCB Construct

Law, Wong, and Mobley (1998) suggested that scholars have not adequately defined OCB with respect to its dimensions. They also described several ways to relate dimensions with the overall construct of OCB. If OV|CB conformed to a "latent" model, each dimension would be a manifestation of OCB, and measures of the dimensions would include some variance reflecting OCB, other systematic variance not related to OCB, and error variance. Therefore, OCB would be a latent variable that causes these dimensions. Motowidlo (2000) suggested that if OCB were a latent construct, it would be similar to personality construct. That is, OCB would be like a personality trait that causes behaviors reflected in that dimension. Scholars, however, have not explicitly taken this approach in defining OCB with respect to its dimensions. If OCB conformed to an "aggregate" model, it would be formed as a mathematical function of the dimensions. According to this perspective, each of the dimensions would be part of the OCB construct. OCB would exist to the extent that systematic variance from each dimension would be captured and added together law et al. (1998) used the example of job satisfaction as an aggregate construct because job satisfaction can be thought of as a sum of scores on instrument measuring satisfaction with pay, co-workers, supervisor, and so forth.

Motowidlo (2000) further pointed out that contextual performance is clearly the example of an aggregate multidimensional construct. He defined job performance as the aggregated value to organization of behavioral episodes that have effects on the social, organizational, and psychological context of the organization's technical core. Many OCB scholars view the behavioral dimensions as being related but distinct. Consistent with this view point, scores on OCB measures should reflect common variance as well as specific variance. Indeed many OCB researchers have combined scores on behavioral dimensions into a composite score (e.g., Allen & Rush, 1998; Chen, Hui, & Sego, 1998). However, the creation of scale composites has never been guided by theory or construct definition. Instead, researchers created these composites because they recognized that behavioral dimensions of OCB co-vary rather strongly and that combining the scores makes sense with respect to promoting parsimony. Of course, there is a possibility that OCB is not really a construct at all but instead a set of behaviors that belong together. This approach seems to have been used in developing early OCB scales. For example, Lepine, Erez, and Johnson (2002) observed that scholars have introduced many new OCB measures without adequate construct validity support. They found that there are more than forty measures of behavior that scholars have referred as OCB, however, the authors of these studies did not empirically evaluate the extent to which these measures were different or similar to others that already existed. In fact,

there has been less effort focused on replicating and conducting studies that systematically extend previous empirical research. Indeed, there needs to be an increase in the amount of effort focused on developing the theory that can guide OCB measurement and analysis. Smith et al. (1983) on the basis of structured interviews and supervisors rating identified two dimensions of OCB; Altruism, captured behavior directly intended to help a specific person in a face to face situation, e.g., helping others who have been absent, volunteering for things not required, help co-workers with heavy work loads. The second dimension, generalized compliance, represented impersonal behaviors such as compliance with norms defining a good worker (e.g., being punctual, above the norm attendance, not spending time in idle conversation).

Although measures of these dimensions continue to be used by researchers, some have modified the response scale. Organ (1988) proposed an expanded taxonomy of OCB that included altruism, conscientiousness, sportsmanship, courtesy, and civic virtue. Podsakoff, MacKenzie, Moorman, and Fetter (1990) provided the first operationalization of these dimensions. Using the definitions given by Organ, they generated items subjected them to a Q sort and CFA. The resulting OCB scales have served as the basis for OCB measurement in a large number of studies (e.g., Moorman, 1991; Moorman, Niehoff, & Orhan, 1993; Podsakoff, MacKenzie, & Bommer, 1996). Several other taxonomies of OCB like behaviors have been proposed and operationalized (e.g., Morrison, 1994; Van Dyne, Graham, & Dienesch, 1994). However, the behavioral domains of these taxonomies overlap with each other and with organ's 1988 OCB domain. For example, Van Dyne et al.,'s (1994) OCB framework includes social participation, which overlaps with sportsmanship and a bit of civic value; and obedience, which overlaps with civic virtue and conscientiousness. Morrison (1994) offered another OCB framework. Her altruism dimension overlaps with Organ's (1988) altruism and courtesy dimension. Her conceptualization of conscientiousness is a bit narrower than organ's (Lepine, Erez, & Johnson, 2002). She also presented sportsmanship and involvement dimensions, the latter of which includes components of Organ's sportsmanship and civic virtue dimensions. As a final example, Van Scotter and Motowidlo (1996) measured two dimensions of contextual performance by asking supervisors to rate employee on how likely they were to engage in certain behaviors. The first dimension, interpersonal facilitation, overlaps with Organ's (1988) altruism and courtesy as well as Morrison's altruism dimension. The second dimension, job dedication, includes elements of Organ's (1988) sportsmanship, civic virtue, and consciousness dimensions. In recognition to the overlap among dimensions of OCB, scholars have started considering whether elements should be combined into conceptually distinct subgroups. Williams and Anderson (1991), for example, suggested that OCB directed toward individual (OCBI) is distinct from OCB directed toward organization (OCBO). Altruism and courtesy are behaviors that fit in the former category, whereas, sportsmanship, civic virtue, and conscientiousness fit in the latter category.

It becomes obvious from the above discussion that many of the OCB instruments in literature have been developed without explicit theoretical framework. For example, Smith and Colleagues (1983) and Bateman and Organ's (1983) instrument did represent a comprehensive list of citizenship behaviors and emphasized a more theoretically grounded approach for research to proceed rapidly and effectively. Although theoretical foundation provided by political philosophy (Van Dyne & Le Pine, 1998) differs from other OCB conceptualization, it is still important to explore

the construct validity of the OCB measures. The exploration should include exploratory as well as confirmatory factor analysis besides the assessment of nomological network. Pattern of results may provide preliminary support for the construct of the OCB measures. Schwab (1980) suggested that researchers should try to differentiate constructs and that construct redundancy would decrease if constructs were developed and tested on the basis of theory. A key advantage of this approach is that it avoids theoretical expansion of the OCB construct. It is very difficult to say much about hoe the dimensions from different behavioural frameworks relate to one another in a construct validity sense because scholars have not assessed the extent to which new developed constructs are different from similar constructs of other existing behavioral frameworks (e.g., Sportsmanship and loyalty). Thus, because the Organ's (1988) OCB framework is the only one that has been treated consistently over a fairly large number of studies, and because it is highly difficult to confidently map behavioral elements from another framework on to Organ's dimensions, we address our research questions by using measures grounded in his framework.

OCB among Contingent and Permanent Employees

There is very limited research available on comparison between OCB of contingent and permanent employees; the available research, too, provides contradictory results (e.g., Cappelli, 1995; Chang & Chelladurai, 2003; Feather & Rauter, 2004; Kidder, 1995; Pearce, 1993; Van Dyne & Ang, 1998). Van Dyne and Ang, (1998) in a study of professional bankers and hospital employees found that contingent workers engaged in fewer OCBs and had lower affective commitment to their organizations. They argued that there would be less pressure for contingent employees, who receive fewer tangible and intangible rewards from their employing organizations, to perform OCB when the market is one in which there are severe shortages of labor and when their choice of contingent job status would be more likely to be voluntary.

On the contrary, Feather and Rauter (2004) argued that in labor markets where organizations are downsizing or where there is an oversupply of jobs in a particular area, workers would be more likely to enter contingent work arrangements involuntarily. Contingent employees on short term contracts might them perform OCB in the expectation that their doing so would enhance their image as valued employees, thereby increasing their chances of being made permanent within organization.

This argument seems pertinent because contingent worker also face restrictions in their opportunities to satisfy work values such as 'security, upward striving and control'. In an attempt to compensation, they may engage in OCB that would allow them to achieve goals relating to these values, depending on the importance of these values for self. As Organ and Paine (2000) observed, the exchange basis of contingent or marginal employment, while providing certain apparent advantages to employer, tend to discourage employees from rendering spontaneous and discretionary contributions in the form of OCB. Employees who work under contingent arrangements, are consigned to marginal status, or incur unfair treatment because of their permanent but 'captive status' come to vie their psychological contract with the organization as transactional rather than relational. Evidence suggests that the negative effects of contingent and marginal employment on discretionary contributions can be mitigated by certain aspects of the employment relationships. Specifically, the effects appear to depend upon the extent to which such relationships are voluntary and the sense of organization as operating with a long run dynamic toward a microcosm of a just world.

Thus, it is important to consider the motivational functions of OCB for workers with contingent job status, taking account of the goal structure of individuals and the expectations they hold about whether OCBS will be instrumental to attaining goals that are important to them.

Overall, findings of previous research provide good support for the OCBS as a potentially reliable and valid measure. However, as noted by Van Dyne, Graham, and Dienesch (1994), more construct validity research is needed in order to fully establish the psychometric soundness of the instrument. In this regard three limitations of the previous research should be noted. First, although claims of a validated OCB measures have been reported, the measures have never been validated for sample of either contingent or permanent employees. Factorial validity of the OCB measures has been assessed mostly using exploratory factor analysis. Now that several deficiencies of EFA are well documented (Gorsuch, 1997); CFA on the other hand, is now widely accepted as a measure of factorial validity.

Finally, although Chang and Chelladurai (2003) have claimed the evidence of factorial equivalence and invariance across fulltime and part time samples, hypotheses were not tested directly using simultaneous analysis of the data. The literature on OCB suggests that factorial structure of this construct may vary across organizational settings (Chang & Chelladurai, 2003; Feather & Rauter, 2004) the assumption of factor equivalence has not been directly addressed. The purpose of present research is therefore, to (a) assess the factorial validity of the OCBS across two samples using CFA approach to the validation inquiry, (b) to test for equivalence of factorial measurement and structure across two groups.

Method

Sample 1 (Contingent Employees)

Sample 1 included 182 contingent employees from Nationbal Database Registration Authority (NADRA) headquarters located in Islamabad. NADRA is an independent corporate body with requisite autonomy to remain free of political pressure and interventions. It is vested to establish and maintain multipurpose databases, data warehouses, networking facilities, interfacing between database and to develop and implement registration systems for the entire population, including foreigners and immigrants as prescribed by the Federal Government. The employees were involuntary contingent workers on fixed term contract who would prefer permanent employment in the same position as and when given the choice. There were 106 (63%) men and 76 (37%) women in the sample. The age range of the participants was twenty five to thirty six years (Mean = 22.76, SD = 3.45), the average organizational tenure was between five to twelve years (Mean = 1.40, SD = 0.49), the average education of the sample was graduation (Mean = 2.60, SD = 0.89). About 87.5% participants in the sample were married and 12.5% were unmarried. The sample represented about 59% data entry operators and 41% customer service officers.

Sample 2 (Permanent Employees)

Respondents comprised 508 full time permanent employees from different area offices of Pakistan Telecommunication Corporation, Islamabad. Approximately 650 questionnaires were distributed, 508 were returned, yielding a response rate of 78.15. Of these 508 employees, 82.5% were men and 17.5% were women. 37.2% employees were between 26 and 35, while 5.5% were between 56. 35 and 37% employees have acquired a graduation and masters level education, respectively, while 10 and 16.9% had

completed high school and inter level education, respectively. 19.1% employees represented low management (e.g., assistants, upper/ lower division clerks, steno-typists, junior assistant), 44.9% represented middle management (e.g., administration and human resource personnel), approximately 17.9% were technical personnel (e.g., engineers, technicians, radio operators, and telecommunication officers). 5.9% were from accounts section, and 12.2% of the sample held supervisory positions. 38.2% of the sample had completed 11 to 15 years organizational tenure while 4.5% employees had spent 30 and more years with their organization. About 83.1% participants were married and 16.9 % were unmarried.

Description of the OCBS: Four dimensions of the organizational citizenship behavior scale (Podsakoff et al., 1990) were used to assess the organizational citizenship behavior construct. The scale comprises twenty two items. Each item is answered using a five point response anchor numbered from 1 (Never) to 5 (always). Scores on eight items are reverse coded. Following is the description of dimension of the scale.

Generalized Compliance: Discretionary behaviors reflecting a more impersonal form of conscientiousness that does not provide immediate help to any coworker, but is rather helpful to others involved in the system. The behaviors (e.g., punctuality, not wasting time, not complaining insignificant things at work) seem to represent something akin to compliance with the internalized norms defining what a "good employee ought to do". The scale comprises six items.

Conscientiousness: Discretionary behavior by an employee that goes above and beyond the minimal requirement of the organization in the areas of attendance, obeying rules and regulations, taking breaks, working hard and so forth. There are six items in this dimension.

Altruism: Discretionary behavior that is directly and intentionally aimed at helping coworkers with an organizationally relevant task (e.g., orienting new workers learn their job, helping them adjust to the work environment, assisting coworkers with heavy work load). The eliciting stimulus in other words, is someone needing help, as in the fashion of social psychological studies of altruism. Thus, this dimension is referred to as altruism and consists of five items.

Interpersonal Harmony: Discretionary behavior by an employee to avoid pursuing personal powers and selfish gains with detrimental effects on others and the organization. This dimension consists of five items.

These subscales are combined to form a single measure of OCB. The OCBS has been shown to be reliable and valid. Reliability indices reported by previous research range from 0.70 to 0.93 (Farh, Earley, & Lin, 1997).

Procedure

Data were collected by distributing questionnaires accompanied by a covering letter to employees in their respective sections. Participants were approached through their administration and questionnaires were distributed explaining the purpose of the study. They were assured of the confidentiality of any information disclosed and were told that the information provided through questionnaires will be used for research purposes only and that no one in the organization would see their responses. Participants were left to complete the questionnaire by themselves and collections were done approximately one hour later. Some f the questionnaires were sent back by mail since the participants insisted on completing them at home. After completion of data collection, data were subjected to the following statistical analyses.

Data Analysis

Data were analyzed in two stages. First, exploratory factor analysis was conducted separately for each group to investigate the underlying factorial structure of the OCBS. The emergent factor structure was then verified and confirmed using Confirmatory Factor Analysis (CFA). In the second stage, factorial invariance of the OCBS was assessed in a simultaneous estimation of data across groups including tests for equivalence of items and subscale measurement related to numbers of factors and pattern of factor loadings. All CFA analyses were based on analysis of covariance matrices using LISREL8.3 (Jöreskog & Sörbom, 2000). This program provides several goodness of fit static to aid in the assessment of the degree to which a proposed model fits the observed data. However, there is no single statistical test that best describes the strength of a structural model's prediction power. Rather, several measures may be used to assess its goodness of fit. In LISREL models, these measures are divided into three categories: measures of absolute fit, measures of incremental fit, and measures of parsimonious fit (Hair, Anderson, Tatham, & Black,1992).

The measures of absolute fit include the Goodness of Fit Index (GFI) and the Root Mean Square Residual. GFI is a non statistical measure ranging in value from 0 to 1 (perfect fit) that represents the overall degree of fit, but is not adjusted for degrees of freedom. Root Mean Square Residual (RMSR) is a measure of the average of the residuals between observed and estimated input variances. Models with RMSR value below 0.10 are considered to be indicative of good fit.

Measures of instrumental fit compare the proposed model to some baseline model, most often referred to as the null model. The normed fit index (NFI), Non-Normed Fit Index (NNFI), and Comparative Fit Index (CFI) are usually used for this purpose. NFI, NNFI, and CFI values greater than 0.90 are considered to be the indicative of good model fit. Measures of parsimonious fit relate the goodness of fit model to the number of estimated coefficients required to achieve this level of fit. The Adjusted Goodness of Fit Index (AGFI) is often used to measure parsimonious fit. AGFI is an extension of GFI. It is adjusted by the ratio of the degrees of freedom for the proposed model to the degrees of freedom for the null model. AGFI value of 0.90 and more is considered to evidence for good fit (Hair et al., 1992). Test for Factorial Invariance.

CFA approach to factor invariance was used to test the equality of parameter estimates across two groups. Primary interest was in testing for equivalence of invariant item scaling and latent factor co-variances. Nonequivalent scaling units are an indication that the items are differentially valid across groups (i.e., the perception of item content varies across group). Non invariant factor covariance suggests a differential factor structure for the construct being measured across group (i.e., relationships among the underlying factors varu across group). This was determined by testing hypothesis that the parameters of models would be consistent across contingent and permanent employees.

Results

Stage 1 : Test of Factorial Validity

EFA

In the first stage, an explanatory factor analysis using PCA with varimax rotation was conducted. The KMO for the data set was 0.70 and 0.75 for permanent and contingent samples, respectively, indicating the applicability of exploratory factor analysis. The Bartlett'S test for sphericity (BS) based on chi-square statistics was found to be significant (651.346, $p < 0.000$) for contingent and (641.322, $p < 0.000$) for permanent

employees. Only factors with eigen values above 1 and more were extracted. This resulted in a four factor solution explaining 50.13% of the total variance in permanent employees' sample, while for contingent sample the amount of explained variance was 47.33%. the loadings of items after rotation were evaluated to select items with high saturation (i.e., greater than 0.3) for inclusion of items in factor interpretation. Item no. 3 cross loaded on two factors for both the samples, while item no. 7 and 8 loaded minimally, i.e., less than 0.3 for contingent sample and strongly for permanent sample. All other items loaded appropriately on their target factors.

The resulting four factor structure was deemed to be most optimal in representing the data for each group of employees. Of particular importance was the fact that except for these three items, most of the items loaded on their respective factors. Table 1 presents the results of factor analysis. According to this table, the first factor that emerged reflected generalized compliance, the interpersonal form of conscientiousness that does not provide immediate help to any coworker, but is rather helpful to others involved in the system (e.g., punctuality, not wasting time, not complaining insignificant things at work). Second factor on the solution reflected dimension of conscientiousness, that is, discretionary behavior by an employees to goes above and beyond the minimal requirement of the organization in the area of attendance, obeying rule and regulations, taking breaks, working hard and so forth. Third factor indicated behavior that is directly and intentionally aimed at helping coworkers with an organizationally relevant task (e.g., orienting new workers learn their job, helping them adjust to the work environment, assisting coworkers with heavy work load). The fourth and final factor reflected discretionary behavior by an employee to avoid pursuing personal powers and selfish gains with detrimental effects on others and the organization. Although the EFA findings suggest that four dimensional OCB construct underlies the OCBS, and that three items (mentioned above) are possibly problematic when used with particular group of employees, the true test must come from CFA approach to analysis, because EFA is limited in its ability to (a) yielded unique factor solution and define a testable model, (b) assess the extent to which an hypothesized model fits the data or suggest alternative parametrisation for model improvement, and (c) adequately test the factorial invariance across group (Bollen, 1989). In contrast, CFA yields this information and is therefore, a more powerful test of factorial validity.

CFA

CFA were performed with the data of (a) contingent (b) permanent samples, and (c) both groups combined. The raw data matrices from both the groups were used as input file to generate the covariance matrices for the OCB construct. Four models were estimated. Model I was nul model which served as a baseline for comparison. Model II was the hypothesized four factor model. This CFA model hypothesized a priori that:

a) the responses to OCBS could be explained by four factors.

b) each item would have a non zero loading on the OCB factor it is designated to measure and zero loading on all other factors.

c) these factors would be correlated, and

d) the error terms for each item would be uncorrelated.

Model III was the EFA estimated model with item no. 3 cross-loading on two factors; while items 7 and 8 loading differently for contingent and permanent samples, respectively. Model IV was similar to the hypothesized four factor model but item nos. 3, 7, and 8 were deleted from this model.

These models were tested for goodness of fit to the data. Results indicated that the four factor model, in which item nos. 3, 7, and 8 were deleted, provided the best fit. The fit of hypothesized four factor model was adequate for all groups from both a statistical (χ^2) and practical (χ^2/df, CFI. GFI, and NNFI values) view. These results are summarized in table 2. Given both substantive and statistical considerations, this model was deemed to be the most optimal in representing the data for each group of employees. To compare the difference between the estimated and hypothesized models, differences in χ^2 were evaluated. Because this difference is itself χ^2-distributed, with degrees of freedom equal to differences in degrees of freedom (df) it can be tested statistically; a significant χ^2 indicates a substantial improvement in model fit. Results in table 2 indicate a highly significant improvement in fit between model three and four for each group of employees. This model appears to be the best fitting model based on the GFI, CFI,RMR. NNFI, and χ^2 /df ratio. These findings lend further credence to the fact that item nos. 3, 7, and 8 may not be psychometrically sound. Based on results from EFA and CFA analyses, it was considered reasonable to proceed with testing of equivalency of item measurement across groups; Model 4 provided the baseline model for these analyses.

Stage 2: Test for Factorial Invariance

In an effort to further explore the conceptual equivalence of the OCBS across groups, two component measures were examined for each employment group – (a) the parameter estimates and (b) the item reliabilities. The parameter estimates for the best fitting model are presented in Table 3. All of the lambda coefficients were statistically significant and positive. Also, inspection of the item reliabilities (squared multiple correlations), for the observed indicators revealed that latent variables well explained the item variance across the two groups. Overall, findings in table 3 indicated the conceptual equivalence of the constructs across the employment sample group thus leading to the conclusion that contingent and permanent workers responded to the sale items in a similar conceptual frame of reference. However, the fact that item nos. seven and eight loaded differently for the contingent and permanent samples in no way lessened the importance of testing for equivalence of the OCBS across employees groups (Byrne, 1989). Primary interest in testing for equivalence was the question of invariant item scaling units and factor co-variances. Non-variant scaling units are an indication that items are differently valid across groups (i.e., the perception of item content varies across group); non-variant factor co-variances suggest a differential structure for the construct being measures across groups (i.e., relations among the underlying factors vary across groups). To test for the invariance, following procedures involving partial measurement invariance demonstrated by Byrne (1989), a model was specified in which certain parameters were constrained to be equal across groups and then comparing that model with a less restrictive model in which these parameters were free to take on any value. χ^2 between competing models provided a basis for determining the tenability of the hypothesized equality constraints, a significant χ^2 indicating non-variance.

Equivalence of Items

All items were found to be equivalent across group except for item nos. 3, 7, and 8. item no, 3 cross loaded on two factors, while item nos. 7 and 8 were non-equivalent across two employees group. Evaluation of item loading revealed substantial differentiation in interpretation of these two items by contingent and permanent employees, these two items were found to be invariant indicating that contingent employees interpreted these items somewhat differently from their permanent counterparts. To derive further insight

Table 1: Exploratory and Confirmatory Factor Loadings of the Organizational Citizenship Behavior Scale

	Contingent Sample				**Permanent Sample**			
Items	COMP	CONS	ALT	INT	COMP	CONS	ALT	INT
1. attendance at work	**.79(.92)**	.22 —	.13 —	.14 —	**.71(.67)**	.20 —	.13 —	.15 —
2. gives advance notice	**.75(.65)**	.23 —	.12 —	.09 —	**.79(.65)**	.13 —	.02 —	.09 —
3. coast towards the end of day	**.34(.34)**	**.32(.38)**	.17 —	.13 —	.27 —	.28 —	.17 —	.03 —
4. undeserved work breaks	.15 —	**.46(.75)**	.11 —	.22 —	.11 —	**.59(.78)**	.15 —	.10 —
5. Personal phone conversations	.09 —	**.69(.81)**	.03 —	.23 —	.04 —	**.67(.74)**	.09 —	.21 —
6. complain insignificant things	.14 —	**.56(.38)**	**.13—**	.10 —	.11 —	.54(.72)	.17 —	.10 —
7. passes information to co-workers	.24 —	**.29 —**	**.23 —**	.21 —	**.54(.56)**	.27 —	.29 —	.22 —
8. protect organizational property.	.23 —	.11 —	**.16 —**	.07 —	**.43(.57)**	.17 —	.16 —	.02 —
9. adherence to informal rules	**.62(.56)**	.09 —	.22 —	.19 —	**.67(.63)**	.02 —	.28 —	.14 —
10.makes innovative suggestions	**.73(.85)**	.26 —	.23 —	.09 —	**.79(.74)**	.22 —	.29 —	.06 —
11. meets performance requirements	.02 —	**.73(.57)**	.12 —	.19 —	0.09	**.72(.82)**	.10 —	.17 —
12. volunteer to do things required	**.67(.53)**	.11 —	.09 —	.09 —	**.63(.73)**	.09 —	-08 —	.15 —
13. uses position power	.09 —	.09 —	.02 —	**.81(.90)**	0.07	.08 —	.09 —	**.86(.87)**
14. take personal interest in others	.13 —	.08 —	**.75(.81)**	.07 —	0.19	.05 —	**.70(.69)**	.05 —
15. uses tactics to seek personal influence.	14 —	.21 —	.02 —	**.70(.87)**	.11 —	.25 —	**.09 —**	**.71(.85)**
16. takes credit and fight fiercely	.24 —	.11 —	.15 —	**.65(.57)**	.21 —	.12 —	**.05 —**	**.67(.77)**
17. speaks ill of supervisor	.10 —	.13 —	.19 —	**.59(.66)**	.11 —	.00 —	**.09 —**	**.56(.55)**
18.speak ill of colleagues	.17 —	.09 —	.20 —	**.61(.48)**	.10 —	.12 —	**.23 —**	**.51(.58)**
19. assists new workers adjust to their jobs..	07 —	.07 —	**.52(.87)**	.11 —	.01 —	.13 —	**.53(.67)**	.03 —
20. Coordinates with co-workers	.08 —	.25 —	**.56(.85)**	.16 —	.02 —	.22 —	**.54(.45)**	.19 —
21. willing to help co-workers	.11 —	.03 —	**.60(.89)**	.12 —	.09 —	.08 —	**.65(.73)**	.08 —
22. helps co workers with heavy work loads.	18 —	.10 —	**.70(.80)**	.12 —	.08 —	.17 —	**.72(.70)**	.04 —
Mean	16	16	**15.09**	9.79	11.29	17.2	**15.53**	9.62
SD	2.06	2.48	**2.57**	3.14	2.98	5.88	**2.75**	2..18

Note: COMP = Compliance; CONS = Conscientiousness, ALT = Altruism; INT = Interpersonal Harmony; Loadings of > 0.30 are presented boldfaced; Significant CFA loadings are reported in parentheses.

Table 2 : Model Fitting Indices across samples

Model	c^2	df	c^{2a}	df	c^2/df	rmr	GFI	CFI	NNFI
Permanent Sample									
I. Null model (all 22 items)	1879.59	406			4.62	-	-	-	-
II. Hypothesized 4-factor model	416.1	54			7.7	0.06	0.86	0.89	0.9
III. EFA estimated model [b]	384.43	53	31.67***	1	7.25	0.06	0.87	0.89	0.91
IV. Model II with item nos. 3,7,8 deleted	331.85	51	52.57***	2	6.5	0.06	0.9	0.92	0.9
Contingent Sample									
I. Null model (all 22 items)	1605	528			3.04	-	-	-	-
II. Hypothesized 4-factor model	182.51	54			3.07	0.1	0.85	0.67	0.6
III. EFA estimated model [b]	168.98	53	13.69*	1	3.18	0.1	0.86	0.68	0.6
IV. Model II with item nos. 3,7,8 deleted	135.65	51	33.33***	2	2.65		0.92	0.77	0.7
Combined Sample									
I. Null model (all 22 items)	1697.5	573			2.96				
II. Hypothesized 4-factor model	629.88	55			11.45	0.05	0.85	0.9	0.88
III. EFA estimated model [b]	543.07	53	86.81***	2	10.24	0.04	0.86	0.91	0.9
IV. Model II with item nos. 3,7,8 deleted	510.68	50	32.39***	3	10.21	0.04	0.9	0.92	0.9

[a] represents difference in χ^2 from the competing model; [b] item 3 cross-loading on two factors; Items 7 and 8 loading differently for contingent and permanent samples, respectively, *** $p < 0.000$, * $p < 0.05$.

regarding the theoretical structure, correlations among the four latent OCB factors were computed. Results are presented in Table 4. All the four dimensions were found to be highly correlated with each other for both contingent and permanent samples. The highest relationship for contingent sample was between compliance and conscientiousness (0.99) while the lowest relationship was found to be between interpersonal harmony and conscientiousness (0.70). for the permanent sample interpersonal harmony and altruism exhibited the highest relationship (0.99) while the lowest relationship was between interpersonal harmony and compliance (0.89).

Conclusion

Previous researches indicated that contingent and permanent employees differ in citizenship at work, specifically, part time workers have less positive exchange relationship with their organization than permanent employees because the two groups receive different inducements from organizations (Cappelli, 1995; Chang & Chelldurai, 2003; Feather & Rauter, 2004; Kidder, 1995; Pearce, 1993). When employees

Table 3: Parameter Estimates for the OCBS

S.No	Parameter	Contingent Sample Parameter Estimates	Item reliabilities	Permanent Sample Parameter Estimates	Item reliabilities	Combined Grouup Parameter Estimates	Item reliabilities
1	Comp1	0.71 (0.11)	0.47	0.93 (0.12)	0.5	0.93 (0.10)	0.67
2	Comp 2	0.51 (0.13)	0.52	0.82 (0.12)	0.54	0.92 (0.11)	0.62
3	Comp 3	0.59 (0.12)	0.38	0.67 (0.12)	0.39	0.89 (0.10)	0.47
4	Comp 4	0.67 (0.11)	0.46	0.67 (0.11)	0.42	0.92 (0.11)	0.59
5	Cons 1	0.79 (0.12)	0.6	0.82 (0.11)	0.58	0.88 (0.10)	0.7
6	Cons 2	0.88 (0.11)	0.54	0.79 (0.11)	0.57	0.89 (0.10)	0.63
7	Cons 3	0.85 (0.09)	0.41	0.82 (0.13)	0.5	0.91 (0.10)	0.65
8	Cons 4	0.90 (0.09)	0.34	0.80 (0.09)	0.42	0.93 (0.11)	0.46
9	Cons 5	0.89 (0.10)	0.41	0.76 (0.10)	0.39	0.92 (0.09)	0.44
10	Alt 1	0.88 (0.10)	0.45	0.75 (0.12)	0.47	0.89 (0.10)	0.5
11	Alt 2	0.83 (0.11)	0.76	0.80 (0.10)	0.75	0.90 (0.10)	0.68
12	Alt 3	0.85 (0.12)	0.73	0.80 (0.11)	0.79	0.86 (0.11)	0.7
13	Alt 4	0.93 (0.08)	0.78	0.87 (0.10)	0.71	0.87 (0.11)	0.79
14	Alt 5	0.87 (0.09)	0.52	0.83 (0.11)	0.52	0.88 (0.10)	0.6
15	Int 1	0.93 (0.09)	0.53	0.87 (0.09)	0.6	0.91 (0.10)	0.64
16	Int 2	0.61 (0.13)	0.43	0.69 (0.11)	0.53	0.88 (0.10)	0.62
17	Int 3	0.82 (0.12)	0.62	0.76 (0.10)	0.5	0.93 (0.10)	0.63
18	Int 4	0.85 (0.12)	0.64	0.83 (0.11)	0.74	0.93 (.12)	0.73
19	Int 5	0.93 (0.09)	0.52	0.88 (0.10)	0.59	0.86 (0.11)	0.64

COMP = Compliance; CONS = Conscientiousness, ALT = Altruism; INT = Interpersonal Harmony
SE is reported in parentheses

Table 4: Baseline Latent Factor Correlations and Permanent Samples

Factors of OCB	COMP	CONS	INT	ALT
Contingent Sample				
COMP	1			
CONS	0.99	1		
INT	0.97	0.7	1	
ALT	0.91	0.81	0.94	1
Permanent Sample				
COMP	1			
CONS	0.97	1		
INT	0.89	0.95	1	
ALT	0.95	0.9	0.99	1

COMP = Compliance; CONS = Conscientiousness, ALT = Altruism; INT = Interpersonal Harmony

feel they are well attached and identified with their organization, they reciprocate and exceed the minimum requirement of their job by going above and beyond what is prescribed by the organization. In contrast, when contingent or part time workers view themselves as short-term, temporary, or dispensable, they reciprocate by performing only required duties and minimum or no extra-role behaviors (Van Dyne & Ang, 1998). Therefore, in interest of advancing theory and measurement related to OCB, it is indeed important to rigorously reexamine and determine the factorial validity across organizational settings, i.e., contingent and full time. This study was conducted to test the factorial validity and item equivalence of the OCBS across contingent and permanent employee samples. Substantively, findings from this study have contributed valuable information to our growing knowledge of OCBS when used with employees of differing organizational status. The findings of both EFA and CFA attested to the psychometric adequacy of the OCB construct across groups. Given that both the groups of worker responded from same frame of reference, it could be confidently predicted that the minor difference between the two groups in their reactions to respective job situation could be reliable. Findings of this study are consistent with previous research (e.g., Farh, Earley, & Lin, 1997: Chang & Chelladurai, 2003).

Indeed, in light of the rigorous testing procedures used in this study, the OCBS, in most part has proven to be remarkably sound in its measurement of the organizational citizenship for contingent and permanent samples, a few items however, appear in need of further investigation. For example, item no. 3, 7, and 8 did not load approximately on their designated factors, this providing sound argument for reexamination of their content. Clearly, these items are functioning inappropriately in the measurement of OCB and need to be revised. Similarly, the invariant loadings of these items across groups, again, argue for a revamping of item content. The question of why these cross loadings should be significant for one group and not for the other, warrants further construct validity research based on these two employees groups to untangle this phenomenon. Additional exploratory work based on CFA revealed substantial improvement in model fit with the deletion of these three items measuring conscientiousness and compliance, and another item cross loading on the same factors. Although these findings argue for further deletion and reconstruction of these items, this recommendation may be challenged on the basis of modestly adequate size of contingent employees (Anderson & Gerbing, 1988). Cross validation with substantively large sample would provide a statistically firm basis for which to assess whether sampling variability bore importantly on the limited clarity of factors. Overall CFA analysis suggested that four dimensions underlie the OCB construct and that three items are psychometrically inadequate.

The findings on equivalence of item measurement across groups speak well for the modified OCBS. These results are a clear indication that aside from differential method effect, item content was perceived in exactly the same way in both groups of workers. In contrast, test for invariant OCBS items across groups were glowing, all the subscales were found to be completely equivalent across groups. The differential interpretation of the three items may be attributed to the ambiguous content of items rather than different perception of the two groups. Similarly, the inter-relationship among the four dimensions was quite high indicating that all the four dimensions underlie the OCB construct. In sum, although this study has demonstrated strong evidence for the factorial validity of the OCBS across samples, future research should test competing models of the

interactions among the dimensions across group.

Future research should also explore the implications of multidimensionality of OCB construct. Although the four dimensions of OCB are correlated, employees may choose among the categories rather than engage equally in all the forms of citizenship. These choices may be based on a variety of factors, such as personality differences, incentives, and recognition, supervisory styles and organizational culture. Future research should examine when and under what conditions particular forms of OCB occur. Another obvious focus of future research should be to explore possible determinants of the OCB. If in aggregate, OCB influence organizational effectiveness, then identifying these determinants would prove useful to managers and researchers alike. Like all empirical investigations, this one, too, has several limitations. A key limitation of this study is the cross sectional nature of data which may have exacerbated common method bias. A longitudinal design could reduce this potential influence. Another limitation of this study is the absence of gender as grouping variable. A limitation to be rectified in the future research. It has been shown that genders differ in their job attitudes including organizational commitment and OCB (Chang, 1995; Diefendorff, Brown, Kamin, & Lord, 2002). The empirical findings presented here could serve as a foundation for a more detailed and differentiated model of each substantive dimension of the OCB with in an overall nomological network.

References

Allen, T.D., & Rush, M.C. (1998). Effects of organizational citizenship behaviour on performance judgments: A field study and a laboratory experiment. *Journal of Applied Psychology, 83*, 247-260.

Anderson, J.C., & Gerbing, D.W. (1988). Structural equation modeling in practice: A review and recommended two step approach. *Psychological Bulletin, 103*, 411-423.

Barnard, C.I. (1938). *The functions of the executives.* Cambridge, MA: Harvard University Press.

Bateman, T.S., & Organ, D.W. (1983). Job satisfaction and the good soldier: The relationship between affect and employees "citizenship". *Academy of Management Journal, 26*, 587-595.

Bollen, K.A. (1989). A new incremental fit index for general structural equation models. *Sociological Methods and Research, 17*, 303-316.

Byrne, B.M. (1989). *A primer to LISREL: Basic applications and programming for confirmatory factor analytic models.* NY: Springer-Verlag.

Cappelli, P. (1995). Re-thinking employment. *British Journal of Industrial Relations*, 33, 563-602.

Chang, E. (1995). A comparative study on organizational commitment: The case of regular and non-regular female employees. *The Korean Personnel Administration Journal. 19*, 301-321.

Chang, K., & Chelladurai, P. (2003). Comparison of part time and full time workers: Commitment and citizenship behaviors in Korean sports organizations. *Journal of Sports Management, 17*, 394-416.

Chen, X., Hui, C., & Sego, D.J. (1998). The role of organizationship behavior in turnover: Conceptualization and primary test of ke hypothesis. *Journal of Applied Psychology, 83*, 922-931.

Diefendorff, J.M., Brown, D.J., Karmin, A.M., & Lord, R.G. (2002). Examining the role of job involvement and work centrality in predicting organizational citizenship behavior and job performance. *Journal of Organizational Behavior, 23*, 93-108.

Farh, Earley, P.C., & Lin, S. (1997). Impetus for action: A cultural analysis of justice and organizational citizenship behavior in Chinese society. *Administrative Science Quarterly, 42*, 4121-444.

Feather, N.T., & Rauter, K.A. (2004). Organizational citizenship behaviors in relation to job status, job insecurity, organizational commitment and identification, job satisfaction and work values. *Journal of Occupational and Organizational Psychology, 77*, 81-94.

Gorsuch, R.L. (1997). Exploratory factor analysis: Its role in item analysis. *Journal of Personality Assessment, 68*, 532-550.

Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (1992). *Multivariate data analysis.* Prentice Hall, Englewood Cliffs, NJ.

Jöreskog, K.G., & Sörbom, D. (2000). *LISREL 8.30 and PRELIS 2.30.* Chicago: Scientific Software International Inc.

Katz, D. (1964). The motivational basis of organizational behavior. *Behavioral Science, 9*, 131-146.

Kidder, D.L. (1995). *On call or answering a calling? Temporary nurses and extra role behaviors.* Paper presented at the annual meeting of the Academy of Management, Vancouver.

Law, K.S., Wong, C.S., & Mobley, W.H. (1998). Toward taxonomy of multidimensional constructs. *Academy of Management Review, 23*, 741-755.

Lepine, J.A., Erz, A., & Johnson, D.E. (2002). The nature and dimensionality of organizational citizenship behavior: A critical review and meta analysis. *Journal of Applied Psychology, 87*, 52-65.

Lepine, J.A., Hanson, M., Borman, W., & Motowidlo, S.J. (2000). Contextual performance and teamwork: Implications for staffing. In G.R. Ferris & K.M. Rowland (Eds.), *Research in personnel and human resources management* (*Vol.19*, pp. 53-90), Stamford, CT: JAI Press.

Moorman, R.H. (1991). Relationship between organizational justice and organizational citizenship behaviors: Do fairness perceptions influence employees citizenship. *Journal of Applied Psychology,* 76, 845-855.

Mooorman, R.H., Niehoff, B.P., * Organ, D.W. (1993). Treating employees fairly and organizational citizenship behavior: Sorting the effects of job satisfaction, organizational commitment, and procedural justice. *Employee Responsibility and Rights Journal. 6*, 209-225.

Morrison, E.W. (1994). Role definitions and organizational citizenship behavior: The importance of employees' perspective. *Academy of Management Journal, 37*, 1543-1567.

Motowidlo, S.J. (2000). Some basic issues related to contextual performance and organizational citizenship behavior in human resource management. *Human Resource Management Review*, 10, 115-126.

Motowidlo, S.J., & Schmit, M.J. (1999). Performance assessment in unique jobs. In D.R. Ilgen & E.D. Pilakos (Eds.). *The changing nature of performance: Implications for staffing, motivation, and development* (pp. 56-87). San Francisco: Jossey-Bass.

Motowidlo, S.J., Borman, W.C., & Schmit, M.J. (1997). A theory of individual differences and contextual performance. *Human Performance, 10*, 71-83.

Organ, D.W. (1977). A re-appraisal and reinterpretation of the satisfaction causes performance hypothesis. *Academy of Management Review, 2*, 46-53.

Organ, D.W. (1988). *Organizational Citizenship Behavior: The Goof soldier Syndrome.* Lexington, MA: Lexington Books.

Organ, D.W. (1997). Organizational citizenship behavior: Its construct clean up time. *Human Performance, 10*, 85-97.

Organ, D.W., & Paine, J.B. (2000). Contingent and marginal employment, commitment, and discretionary contributions. *Research in the Sociology of Work, 9*, 253-270.

Organ, D.W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology, 48*, 776-801.

Pearce, J.L. (1993). Toward an organizational behavior of contract laborers: Their psychological involvement and effects on

employees co workers. *Journal of Management, 36*, 1082-1096.

Podsakoff, P.M., MacKenzie. S.B., & Bommer, W.H. (1996). Transformational leadership behaviors and substitutes for leadership as determinants of employees satisfaction, commitment, trust, and organizational citizenship behaviors. *Journal of Management, 22*, 259-298.

Podsakoff, P.M., MacKenzie. S.B., & Fetter, R. (1993). Substitutes for leadership and the management of professionals. *Leadership Quarterly, 4,* 1-44.

Podsakoff, P.M., MacKenzie. S.B., Moorman, R.H. & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *Leadership Quarterly, 1*, 107-142.

Podsakoff, P.M., MacKenzie. S.B., Paine, J.B., & Bachrach, D.G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, 26, 513-563.

Schwab, D.P. (1980). Construct validity in organizational behavior. *Research in Organizational Behavior, 2*, 3-43.

Smith, C.A., Organ, D.W., & Near, J.P. (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology, 68*, 653-663.

Van Dyne, L., & Ang, S. (1998). Organizational citizenship behavior of contingent workers in Singapore. *Academy of Management Journal, 41*, 692-703.

Van Dyne, L., Graham, J.G., & Dienesch, R.M. (1994). Organizational citizenship behavior: Construct redefinition, operationalization, and validation. *Academy of Management Journal, 37*, 765-802.

Van Dyne, L., & LePine, J.A. (1998). Helping and voice extra-role behaviors: Evidence of construct and predictive validity. *Academy of Management Journal, 41*, 109-119.

Van Scotter, J.R., & Motowidlo, S.J. (1996). Evidence of two factors of contextual performance: Job dedication and interpersonal facilitation. *Journal of Applied Psychology, 81*, 525-531.

Williams, L.J., & Anderson, S.E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of management*, *17,* 601-617.

Saadia Tayyab, National Institute of Psychology, Quaid-i-Azam University, Islamabad 44000, Pakistan.