Measuring Organizational Citizenship Behaviors (OCB) in Secondary Schools in Pakistan and a Comparison with Factors of a School Growth Mindset Culture

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Abstract

This study adds important contributions to the research literature on organizational citizenship behavior by providing empirical evidence of the leader's influence as a factor in the development of OCB at the organizational level in government schools (n=34) in Pakistan. Research has shown that where OCB is present, both teachers and leaders increase work diffusion and move toward increasing productivity in their schools. This study meets the current need for reliable measures that operationalize constructs, such as OCB, by testing the validity and reliability of a new measurement scale for school level OCB; using SEM methods and survey responses from secondary school teachers (n= 408). Results revealed the survey reliably operationalizes school level OCB using three-factors named shared leadership, civic virtue, and collaborative problem solving. These factors compared favorably to the construct of a school growth mindset. Implications for schools include directing resources at professional development to increase the school leader's capacity to promote OCB in their schools.

1. Introduction

As global communications and networks expand, economic aid for education in developing countries has increased dramatically as a means of collaborating toward the improvement of society. However, evidence suggests that foreign aid lacks an impact on the social outcomes of education including "citizenship, honesty, and social cohesion" (Heyneman & Lee, 2016, p. 9). The global focus has shifted to improving learning quality as measured by test scores, shown to predict real per capita gross domestic product. Measuring a school's outcomes alone does not explain how the results occurred. Additional metrics are necessary for variables malleable to administrator influence, such as OCB, that provide evidence of social relational mechanisms in an organization. In the context of Pakistan, Dar and Raja (2014) stated there is a dire need for promoting OCB in educational institutions. There is a distinct advantage for administrators armed with the knowledge of how to measure, develop, and apply OCB successfully in their school faculty. The managerial competence of the leader has been shown to be a key factor in developing positive cultures and systems in schools (Memon & Bana,

2005; Peleg, 2012). Education is a "stabilizing tradition" that enables human cooperation to produce collective outcomes (Heyneman, 2002, pp. 73-75). The process of school improvement is complex and requires persistent interventions of supply and demand-side resources, effort, and focused professional development over long periods in order to make significant and lasting changes (Rahman, 2014, p. 8). Organizations such as UNESCO, WHO, UNICEF, and the World Bank join in global agenda setting and policy development based upon the premise that "…education represents a cornerstone for expanding human capabilities and freedom" (Masino & Niño-Zarazúa, 2016, p. 53; Ahmed, 2014; Unterhalter, 2005). This study, performed in Pakistan schools, is a response to the country specific and worldwide concern for ensuring education in developing countries meets the demands of a changing 21st Century. Therefore, the purpose of this study was to test the reliability of a newly developed instrument for measuring the construct of OCB in secondary public schools in Pakistan. A reliable instrument to collect teachers' perceptions of OCB in their school is useful to inform and support educational leaders in developing continuous improvement processes, develop a school's capacity, and provide a quality education to students.

1.1 Improving Education Quality

Improving education quality results from a variety of factors shown in the research to include supply-side and demand-side interventions. Supply-side include improvements in the quality of physical structures, providing resources, sufficient number of qualified teachers, and developing managers' ability to improve the functioning of the organization. Demand-side interventions include developing transformational leaders who can promote positive behaviors in teachers, students, and parents toward attendance, engagement and collaborations (Masino & Niño-Zarazúa, 2016, pp. 54-55; Miller, 2003). Effective administration in 21st Century schools requires transformational leadership (TL) that can develop school level social identification, systems reorganization, collaborative work routines, and faculty perceptions of organizational justice in schools (Dash & Chaudhuri, 2015; Khan, 2013; Kim, H. S., 2005; Messick, 2012; Tarter & Hoy, 2004). Transformational leaders promote employee perceptions of procedural justice and organizational justice in the design of system processes, policies, and procedures. These are both antecedents to OCB resulting in development of intellectual capital in organizations (Kouhdasht, Davoudi, & Bazvand, 2014; Lian & Tui, 2012; Masterson, Lewis, Goldman, & Taylor, 2000; Messick, 2012; Nunally & Bernstein, 1978; Oğuz, 2010; Podsakoff, MacKenzie, Paine, & Bachrach, 2000; Sadeghifar et al., 2014; Schminke, Ambrose, & Cropanzano, 2000; Tarter & Hoy, 2004). Memon (2007) concurred stating the importance of developing a school leader's capacities to monitor and supervise teaching practices to improve school outcomes.

1.2 Organizational Citizenship Behavior

Organizational citizenship behaviors (OCB) promote employee willingness to cooperate resulting in "…a cohesion of effort, [or] sticking together…" (Barnard, 1938, pp. 82 & 84). Where OCB is present, research has shown both teachers and leaders increase work diffusion and move toward increasing productivity in the schools, less absenteeism, less income intention, more dynamic and effective processes, and the presence of higher customer

demand (DiPaola & Tschannen-Moran, 2001; Podsakoff, Whiting, Podsakoff, & Blume, 2009).

1.3 Theoretical Perspectives

This study uses the theoretical frameworks of resource-based view from business education/human economics (Wernerfelt, 1984), open-systems enabling school structures from education (Tarter & Hoy, 2004), and a school growth mindset culture from social psychology research (Hanson, Bangert, & Ruff, 2016).

1.3.1 Resource-Based View Theory and OCB

The resource-based view approach provides a new perspective for diversification and development by planning and strategizing using the resources of an organization to enhance the human, social, and structural capital of an organization versus focusing on the product side, e.g. outcomes (Wernerfelt, 1984). For example, a leader can choose to develop structural capital by creating time in the day for employees to collaborate enhancing communication, expanding cooperative learning, promoting knowledge creation, and reducing the time necessary for training. The result is an increase in human capital efficiency (Holton & Yamkovenko, 2008; Huang & Hsueh, 2007). Enhancing the resource side of human relations requires building a leader's capacity to improve the employees' perceptions of organizational justice in the system, creating horizontal trust, promoting knowledge sharing, and committed relationships between staff. This indirectly effects teachers' OCB and intellectual capital, thereby improving organizational outcomes (Wernerfelt, 1984; Kianfar et al., 2013; Ortiz, 2011).

1.3.2 Open-Systems Enabling School Structures and a School Growth Mindset Culture

Leadership behaviors influence the creation of open systems that elicit OCB in teachers in schools (Hanson, Bangert, & Ruff, 2016, p. 259). A review of the theory on learning organizations revealed that open relationships are a feature of enabling school structures. Collegial leadership supports teachers' professionalism by demonstrating respect for their expertise and providing appropriate levels of autonomy and decision-making, as described in open-systems enabling school structures. The more innovative the environment, the more teachers are enabled to be active. High teacher activity translates to higher student innovation and motivation (Messick, 2012; Miller, 2003; Popescu & Deaconu, 2013). Research on the influence of organizational structure on OCB showed a collaborative structure, with symmetrical communication through negotiation and dialogue, positively correlated with OCB (DiPaola & Tschannen-Moran, 2001; Kim, 2005). Further, the "open communication and support" variable of a school's growth mindset culture compared favorably with the construct of OCB in schools.

Therefore, this paper compares factors of a school's growth mindset culture, supported by open-systems enabling school structures, to determine the construct validity of OCB variables operationalized on the instrument tested in this study. Figure 1 shows a comparison and contrast of the features of an enabling school structure, a school's growth mindset culture, and the OCB construct as operationalized by Organ and Ryan (1995). Note there were no

corollaries in the Organ and Ryan (1995) operationalized OCB factors in the area of leadership.
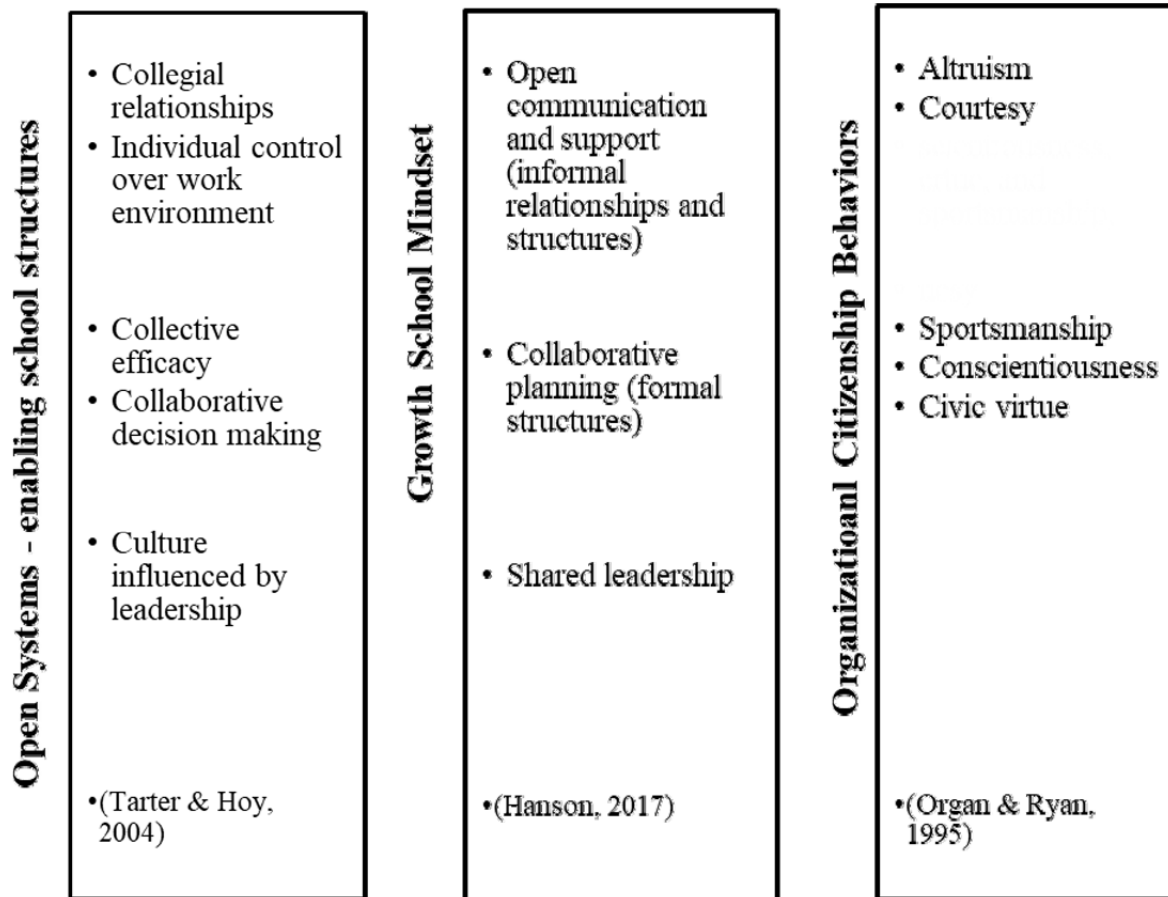

Figure 1. Comparison and contrast of features of an enabling school structure, a school's growth mindset culture, and the OCB construct from the literature

1.4 Education in Pakistan

A realistic concern for researchers and practitioners alike in Pakistan is how to support and equip educational leaders with tools and skills necessary for improved outcomes in schools since the quality of education has shown a declining tendency in Pakistan compared to other developing countries. The Pakistan Social and Living Standards Measurement (PSLM) Survey (2014-2015) reports the literacy rate for males during 2015 was 70% and for females, 49%, one of the lowest in the world (Memon, 2007). Qureshi (2012) used Pakistan Social and Living Standards Measurement Survey (PSLM) 2014-15 to determine gender disparity in school enrollment and its impact on revenue to the education system in Pakistan (Pakistan Bureau of Statistics, 2017). Connecting education with revenue, she summarized that revenue increased with growth in the level of education from primary to secondary and from secondary to tertiary level for both genders. The rate of increase was higher for females than

males. Education has a significant proportionate impact on income at higher levels than at the lower levels. Investing in tertiary education improves the economic welfare of households. Jamal (2015) concurred stating revenue increases with the level of education, particularly investments made in female education showing an increase in sophisticated marginal revenue as compared with males. Average world expenditures in education, in terms of GDP, was reported at 4.8 % worldwide, while for Pakistan only 2.8% (2018). Other countries in the region included Bangladesh at 4.6% (most recent year reported 2016), Afghanistan 3.9% (for 2017), Bhutan 7.1% (2017), and India 3.8% (2013) (World Bank Data Sheet, 2019, para. 1). Factors contributing to Pakistani schools falling behind and low performance include old curriculum, bilingual medium of instruction, untrained and unskilled teachers, unfair means in the examinations, and overcrowded classrooms (Memon, 2007).

1.4.1 Education Policy in Pakistan

Educational policies in Pakistan over the past six decades included several areas of focus. For example, improving primary student participation rates to 100% and education in rural areas to meet the specific needs of female students. Other areas included raising the status of public school teachers, stimulating the private sector to take part in the education system, and promoting improvements in higher education teaching, learning, and research to meet benchmarks set by international perspectives (Sikandar & Hayat, 2000, as cited in Kamboh & Parveen, 2015). Pakistan is steadfast to stimulate education by increasing its literacy rate, focusing on building teacher's capacity and providing additional facilities in all educational institutes (Pakistan Bureau of Statistics, 2017), socio-economic development and technical and vocational education (Jamal, 2015).

However, policy implementation is a major hurdle in accomplishing policy objectives in many contexts. Kamal (2006) in Kamboh and Parveen (2015) reported, "Pakistan has … policies … but instability has not allowed proper implementation" (p. 5). Results of several education reforms introduced in the public sector for teacher education were slight, failing to make a considerable impact. Research found supervisory staff were not proficient in performing the duties of the accountability process in the education system in Pakistan. Without trained administrators, faculty alone lack the needed knowledge, skills, and attitudes to guide other teachers (Chohan & Qadir, 2013).

1.5 Research Questions

Therefore this study explored the validity and reliability of a new measurement scale for use in Pakistan schools that operationalized factors of OCB. School administrators would benefit from a reliable scale to collect data in their schools on factors shown to explain an organization's potential for self-improvement. This study sought to answer the following overarching research questions:

> What is the factor structure of the organizational citizenship behavior scale developed for this study?

> Are the scale reliability indices of the OCB instrument within the predetermined acceptable parameters?

1.6 Definitions

Enabling school structure: *"*[A] hierarchy that facilitates rather than hinders and [includes] procedures that guide rather than…punish. [P]rincipals and teachers work as colleagues while retaining their distinctive roles… [M]echanisms support teachers rather than enhance principal power" (Tarter & Hoy, 2004, p. 540).

Intellectual capital: The "knowledge, skills, competencies and abilities that create wealth and also help generate valuable outputs." Intellectual capital has been operationalized as a three-dimensional construct. The three constructs include human capital, structural capital, and relational, or customer capital. Human capital consists of knowledge, tacit experiences, and abilities of the employees to use their experiences for the benefit of the organization. Structural capital includes the existing structures and processes of the organization. Relational, or customer capital, include the inter- and intra-relationships in an organization such as communication networks, customers, brands, etc., leading to customer loyalty (Kianfar, Siadat, Hoveida, & Abedi, 2013, p. 117; Lefter, Bob & Saseanu, 2008).

Organizational citizenship behavior (OCB): Discretionary behavior directed at individuals, or at the organization as a whole, that goes beyond existing role expectations and that benefits, or is intended to benefit, the organization (Organ, 1988a) and "performance that supports the social and psychological environment in which task performance takes place" (Organ, 1997, p. 95).

Five Factors of OCBI (Organ & Ryan, 1995):

Altruism: "[B]ehaviour that is aimed directly and intentionally at helping a specific person in a face-to-face situation" (Profili, Sammarra, & Innocenti, 2016, p. 18).

Conscientiousness (organizational compliance): Behavior "indirectly helpful to others in the organization such as being punctual to meetings" (p. 161) and goes beyond the prescribed duties of the job (Neves, Paixão, Alarcão & Gomes, 2014, p. 1).

Sportsmanship: "[T]olerance to less than ideal circumstances without complaining."

Courtesy: "[B]ehaviour aimed at preventing work-related conflicts."

Civic Virtue**:** "[B]ehaviour indicating concern and active interest in the life of the organization" (p. 2).

Organizational justice: "[Is] concerned with the ways in which employees determine if they have been treated fairly in their jobs and the ways in which those determinations influence other work-related variables. A review of relevant literature revealed two sources of organizational justice routinely cited. Those included distributive justice (the fairness of the outcomes an employee receives) and procedural justice (the fairness of the procedures used to determine those outcomes) (Moorman, 1991, p. 845).

Procedural justice also referred to as interactional justice: "Perceptions of procedural justice can originate from an organization's procedures and from the way in which those procedures

are carried out…The fairness perceptions of the interactions that accompanied an organization's formal procedures" (Moorman, 1991, p. 847).

Reciprocity: The mutual and dynamic interaction and exchange of ideas and concerns; a spirit of returning in kind to others (Lambert et al., 2002).

Resource: "Anything which could be thought of as a strength or weakness of a given firm," such as knowledge, employee skills, contacts, efficient procedures, etc. (p. 172).

The following sections of this paper provide a brief history and background of OCB theory and its development, measurement of OCB in educational settings, a description of the methods used in this study, results of the analyses, conclusion, discussion of the implications, significance of the results, and suggestions for future research.

2. Literature Review

2.1 Background of Organizational Citizenship Behavior (OCB)

Bateman & Organ (1983) studied employee behaviors and coined the term organizational citizenship behaviors for when employees go beyond the requirements of their position to promote the smooth operation of their organization (Kouhdasht et al., 2014). Researchers performed the earliest OCB research in the business and industrial sectors. Later, Somech and Drach-Zahavy (2000) studied OCB in the educational setting. The importance of OCB is its capacity to explain the outcomes of an organization and is a major factor in an organization's efficiency and effectiveness (Felfe & Heinitz, 2010; Organ, 1997; Organ & Ryan, 1995; Podsakoff et al., 2009; Sharma, Bajpai, & Holani, 2011). Studies performed across a variety of contexts and countries connect variables from employees' job satisfaction, organizational commitment, leadership support of employees, leader's organizational justice, transformational leadership behaviors, individual characteristics, organizational culture and climate, and a school's climate to the factor of workplace OCB and with the dependent variable of organizational outcome. Additionally, third-party justice perceptions in an organization influence employee OCB because people care about how others are treated (DiPaola &Tschannen-Moran, 2001; Farooqui, 2012; Kim, 2005; Lee, Kin, & Kim, 2013; Lo & Ramayah, 2009; Oplatka, 2009; Polat, 2009; Schnake, Dumler, & Cochran, 1993; Shah, Memon, Abhamid, & Mirani, 2016; Walumbwa, Wu & Orwa, 2008).

For example, Burns and DiPaola's (2013) large-scale study in a high school in the United States showed significant relationships existed between organizational justice and OCB. Findings also showed a positive and significant relationship between OCB and student achievement. Popescu and Deaconu (2013) conducted a study in Romanian high schools showing OCB to be a moderating variable. OCB reduced workplace tension, enhanced overall school effectiveness, and resulted in a reduction in the managerial load of the leader (DiPaola & Tschannen-Moran, 2001). OCB contributed to improved school processes because of teachers' willingness to go beyond what was required on the job description as needed to achieve school goals (Somech & Ron, 2007). Examples of OCB in schools included collaboration among teachers, gathering information regarding new instructional methods, sharing this information with other colleagues, helping colleagues overloaded with

duties, guiding newly inducted teachers, and dedication to organizational improvement (Belogolovsky & Somech, 2010). Working in schools is a helping profession. The behaviors of professionals in schools would be helping colleagues and students. Researchers have operationalized helping behaviors peformed outside the prescribed job description as OCB. However, as research continues to focus attention on OCB, researchers are not in full agreement on the subdomains that make up the construct (Dikshit & Dikshit, 2014; Tarter & Hoy, 2004; Saks, 2006).

2.2 Measurement of Organizational Citizenship Behavior

The research provides a variety of instruments developed to measure OCB using different operationalizations of the construct depending upon the cultural context and content differences (DiPaola, Tarter & Hoy, 2004; Farh, Zhong & Organ, 2004; Oplatka & Stundi, 2011; Somech & Drach-Zahavy, 2000). Researchers have operationalized the OCB construct on three levels including the individual, the group, and at the organizational level (Dipaola & Tschannen-Moran, 2001). Conway, Kiefer, Hartley and Briner (2014) differentiated OCB into three categories, those directed toward helping the organization (OCBO), helping behaviors directed toward the individual (OCBI), and those toward the customer/public sector (OCBP). Three out of the five factors dominant in the literature on OCB described as directed at the organization (OCBO) are conscientiousness, civic virtue, and sportsmanship. Two of the five factors considered directed at the individual/customer (OCBI/OCBP) are altruism and courtesy (Williams & Anderson, 1991). For a majority of OCB studies, reported in the literature, the unit of analysis was at the individual level. DiPaola and Tschannen-Moran (2001) developed instruments to measure OCB at the organizational level and at the individual level. Self-reportt data collected on individual students' surveys showed a medium level of OCB, while group level OCB showed higher correlations than the individual levels. Organ and Ryan (2005) recommended the organization as the preferred level for analysis.

2.3 Counterproductive Work Behaviors (CWB)

OCB has a corollary in counterproductive work behaviors (CWB). Counterintuitively, when OCB was not a dominant feature of the organization, the CWB positively correlated with OCB. Conscientious employees may feel pressured to perform OCB in order to be productive on the job yet resent others in the workplace if they are not contributing equitably to the tasks. This can be associated with anger and frustration resulting in both OCB and CWB by the same individual(s). This may explain why Castro (2004) in Lo & Ramayah (2009) reported the dimension of OCB, termed "helping behavior," had a negative impact on organizational performance. Attempts to measure one have interfered with the measurement of the other by creating confounding variables from item overlap (Fox, Spector, Goh, Bruursema, & Kessler, 2012). Struggles with the reliability and validity of the OCB measurement instruments have focused on understanding the relationship between these two workplace behaviors.

3. Methods

3.1 Research Design

This study used exploratory factor analysis to determine the validity of the scale for use with teachers in Pakistani schools. The researchers used SPSS v. 22 (IBM, 2013) to test the relationships of the survey data and examine the construct validity of the OCB instrument.

3.2 Data and Sample

Data collection occurred in 2014, as allowed by the sample schools' regional directors. Researchers distributed surveys to 465 teachers in 34 secondary schools. Four hundred eight teachers returned complete and reliable questionnaires useful for the study analysis (90.6 % response rate) which was an excellent level (Babbie, 1990). The total population, from which the sample was drawn, included 1,267 secondary school teachers in 74 secondary schools operated by three organizations in Pakistan including the Federal Government, the Pakistan Army, and the Fizaia (Air force), affiliated with the Federal Board of Intermediate and Secondary Education (FBISE) Islamabad, situated in Khyber Pakhtunkhwa province of Pakistan. Appendix A provides the distribution of the sample schools used in the study according to the Federal Board of Intermediate and Secondary Education (FBISE), Islamabad, Pakistan.

3.3 Instrumentation

The close-ended Likert-style questionnaire used in this study included 20 items for data collection, operationalizing five sub-domains using the titles outlined by Organ and Ryan (1995), with permission, including altruism, courtesy, conscientiousness, sportsmanship, and civic virtue (Netemeyer, Boles, McKee, & McMurrian, 1997). A five-point Likert scale captured teachers' perceptions as self-reports regarding OCB as a cultural construct. The referent for the OCB survey was the principal and teachers' behavior at the school level. The researchers calculated an overall school mean from the data. The survey instrument was comprised of two parts - Part A – Demographic data and Part B– the 20 items (numbered 19-38) related to the five sub-dimensions of OCB. The scale ranged from 1- *Not True*, 2- *Somewhat True*, 3- *Quite True*, 4- *True*, to 5- *Very True*. The study sought to determine the validity of the self-developed OCB scale and to discover whether using the organization as a referent would provide results that diverged from the five subdomains listed in the literature. Appendices B and C provide the survey items and dimensions.

3.4 Data Analysis

Tests of normality, skewness, and kurtosis were performed on the data collected in this study using quantitative analytical software SPSS v. 22 (IBM, 2013). The researchers applied the percentage-distribution technique to determine results by gender. The teachers' perceptions of the level of OCB in their schools varied somewhat by country in the literature (as observed from a review of studies across a multitude of countries). An average arithmetic mean was the predetermined indices used to interpret the data, divided into three categories of Low, Medium, and High. *Low* ranged from 1.00-2.33. *Moderate* ranged from 2.34-3.67. The *High*

OCB category ranged from 3.68-5.0 on the Likert-type scale. Researchers made the determination of model fitness from analyses results of factor loadings, validity, reliability, and normality, and results from the confirmatory factor analysis. These values provided dimensions to determine whether the self-developed instrument was reliable for measuring the level of OCB in educational settings in the population under study. For determining construct validity, researchers compared the results of the analyses to factors of a school's growth mindset culture, shown similar in a previous study (Hanson, Bangert & Ruff, 2016).

4. Results

4.1 Demographic Profile of the Respondents

Respondents, who took part in this study, provided 408 usable responses. One hundred and seventy-seven (43%) were male and 231 (57%) teachers were female. In terms of age, 30% of the sample was between 25 to 30 years-of-age; 23% were between 31 to 35 years-of-age; 17% were between 36 and 40 years-of-age, and the remaining 30 % were more than 40 years-of-age. Thirteen (3%) of the teachers were certified; 202 (50%) of the teachers possessed a bachelor degree in education; 130 (32%) had their master's degrees, and 63 (15%) of the teachers reported other professional qualifications, such as M. Phil., diploma, etc. With regard to experience, 2% of the teachers had less than 5 years' experience and 20% possessed between 6 to 10 years of experience. The majority (61%) of the teachers possessed between 11 to 15 years of experience. The remaining 17% had more than 15 years of experience. In particular, none of the participants had more than 20 years of experience as teachers. The academic qualifications included less than 1% of teachers were undergraduates, while 17% of the sample were graduates. The majority of the sample (78%) had master's degrees with another 4% having earned a higher degree than the master's level.

4.2 Reliability, Validity and Normality Indices

An analysis of items from the OCB revealed that the items were significantly skewed, non-normal, when evaluated with the Shapiro-Wilks test. However, according to Bryne (1998), this condition does not interfere with analyses if all distributions are skewed in the same direction. The 20 OCB items were all skewed in the negative direction. The analysis of the variable "gender" revealed that gender differences were not significant when measuring the overall OCB in this population ($p = 0.19$). However, two-way ANOVA tests were run on each of the items on the scale to identify any significant influences on the OCB mean scores at the item level. Results revealed item 35, "Teachers in our school never lose heart, when they are not awarded on their achievements," showed a significant difference between male gender classification ($\bar{x} = 3.66$, n=177) and female gender classification ($\bar{x} = 3.20$, n=231) ($F_{(1, 406)} = 12.84$; $p < .001$).

4.3 Results of the Factor Analysis

A three-factor solution using principal components extraction was the most interpretable factor pattern with each of three factors including at least three items and exhibiting factor loadings between $.30 \leq x \leq .80$. Seven of the original 20 items, written to assess OCB, were

removed due to their cross loading with other items in the OCB scale. Stevens' (2009) recommendation is that item loadings should differ by at least .20 to be interpreted as not cross-loaded with other factors.

4.4 Proposed Factors

SPSS v. 22.0 (IBM, 2013) was used to conduct the exploratory analysis. The most interpretable factor pattern yielded a three-factor solution using principal components analysis with an oblique rotation method that allows factors to correlate. The full-scale internal consistency reliability of the OCB scale was .91. Researchers interpreted the three factors yielded by the exploratory analysis as supportive leadership, civic virtue, and collaborative problem solving. Following is a discussion of the results of the analyses. Table 1 provides the statistics for the individual item factor loadings, significance, percentage of variance, eigenvalues, means, and standard deviations for items on the OCB scale (n=408). The thirteen items in Table 1, with bolded factor loadings, were those retained for the confirmatory factor analysis.

Table 1. Individual item factor loadings, significance, percentage of variance, and eigenvalues for the items on the organizational citizenship behavior scale

Item	Supportive Leadership	Civic Virtue	Collaborative Problem Solving	Mean	SD
36. Teachers in this school feel that the principal publically acknowledges the commendable efforts of the teachers in organizing various activities.	**.79**	-.09	.07	3.81	1.07
37. …feel that the principal develops the sportsmanship spirit in them to achieve various academic and non-academic goals.	**.75**	.08	-.02	3.82	1.08
30. …consider that the principal acts as a role model for teacher and student development.	**.69**	-.06	.13	3.95	1.12
26. …are facilitated by the principal for organizing various educational and social activities.	**.67**	.13	-.06	3.87	1.17
38. …act like a team together with the principal to achieve curricular, co-curricular and extra-curricular goals.	**.61**	.14	.09	4.08	.96
31. …resolve their problems amicably among themselves.	.38	.25	.22	3.87	.99

Table 1 cont…

Item	Supportive Leadership	Civic Virtue	Collaborative Mean Problem Solving	Mean	SD
22. …feel a sense of co-operation among themselves.	.35	.20	.28	3.82	1.05
24. …always co-operate in conducting various functions at different occasions.	.00	**.90**	-.05	3.85	1.12
25. …have enough skills to prepare students for various activities.	.20	**.65**	-.06	3.91	1.05
23. …are trained such that they take part in extracurricular and co-curricular activities actively.	.07	**.60**	.10	3.68	1.17
28. …express their views on improving the teaching-learning process.	.10	.36	.27	3.96	1.00
21. …feel no boredom when they find extra work to be done.	.30	.35	.07	3.12	1.28
34. …try to solve the problems of his/her colleagues.	.02	.00	**.83**	4.04	.93
33. …solve students' problems in meetings so the students never find any conflict among teachers	.06	-.11	**.81**	3.98	.98
20. …are found to help each other when there is a sharp notice issued by the principal for any assigned task.	.14	.14	**.52**	3.98	1.02
19. …are committed to complete the given task in a given time.	-.19	.41	.42	3.98	.96
29. …consider themselves as part of the solution, not the problem.	.20	.15	**.40**	3.93	.97
32. …show a sense of respect for each other when they discuss issues regarding job performance.	.34	.11	.40	4.13	.90

Item	Supportive Leadership	Civic Virtue	Collaborative Mean Problem Solving	Mean	SD
27. …always abide by rules and regulations set by the administration.	.18	.04	**.36**	4.13	.90
35. …never loose heart, when they are not awarded on their achievements.	.14	.24	.24	3.80	1.31
Percent of Variance	45.14	6.85	5.67		
Eigenvalue	5.67	1.37	1.13		
Cronbach alpha	.87	.81	.82		

Table Note. Only items with bolded factor loadings were included in the final scale.

The following sections provide a description of the items loading on the three factors of OCB identified from the analyses.

4.4.1 Factor 1 -Supportive Leadership (SL)

This factor combined items 26, 30, 36-38 from the constructs civic virtue (1 each), conscientiousness (1 each), and sportsmanship (3 each). Upon review of the wording of the items in this factor, a common theme found was the *principal's helping and supportive behaviors*. For example, "[the] principal acknowledges efforts of the teachers," "…teachers are facilitated by the principal…," "…the principal develops the sportsmanship spirit in them…," "…[the] principal acts as a role model for teacher and student…" and "…teachers act like a team together with the principal to achieve…goals." The name *supportive leadership* was considered warranted to reflect the constructs captured in this factor. The "supportive leadership" factor item loadings ranged from .61 to .80 and captured 43% of the variance. The reliability of the subscale was measured as Cronbach's Alpha = .87.

4.4.2 Factor 2 - Civic Virtue (CV)

The three items captured for this factor were 23 – 25. A review of the wording in the items revealed the theme of operationalized teacher behaviors demonstrating flexible skills, training, and ability to participate in, and prepare students for, a variety of "occasions and extracurricular and co-curricular activities." The review provided evidence that this identified factor included teacher behaviors supporting students' participation in activities outside the academic day considered related to working well together in the civic group. The researchers, therefore, retained the name for this factor as *civic virtue*. The item loadings for this sub

construct ranged from .59 to .90, capturing approximately 4.6% of the variance with a Cronbach's alpha = .82.

4.4.3 Factor 3 - Collaborative Problem Solving (CPS)

Factor 3 captured items 20, 27, 29, 33 & 34. Items under the construct of courtesy (2 each), altruism (1 each), and conscientiousness combined (2 each) to form this factor. These included operationalized behaviors of employees related to their ability to work together, help each other, and solve problems related to the school context. For example, item wordings included, "…solve student problems in meetings…" , "…solve the problems of his/her colleagues", collaborating to meet directives of the employer, "…help each other when there is a sharp notice issued by the principal…", following the formal structures of the organization such as "…abide by rules and regulations…", and being "part of the solution, not the problem." Therefore, researchers considered the name *collaborative problem solving* reasonable to reflect the common theme in the items for this factor. Loadings for the collaborative problem solving factor ranged from .36 to .83, capturing 60% of the variance and showing a Cronbach's Alpha = .82.

4.4.4 Deleted Items 19, 21, 22, 25, 28, 31, & 32.

The items deleted from the scale, and excluded from the model tested in the CFA, showed cross-loaded correlations differing by < .20 (Stevens, 2009).

4.5 Validity

A unidimensional conceptualization of the OCB scale with three sub factors was suggested. The total percent of variance across sub factors was 57.66, explaining the overall OCB factor. The large factor loadings suggested caution in using the scores of the subscales to interpret their individual influence on the overall OCB mean score (Lane, 2007).

4.5.1 Discriminant Validity

Discriminant validity between sub factors was evidenced by loadings on each sub factor ranging from .68 to .86 and correlations differing by > .20, from all other items loading on the other sub factors, of the exploratory factor analysis pattern matrix (Stevens, 2009).

4.5.2 Convergent Validity

Convergent validity was demonstrated by the identified sub-factors contributing to the overall OCB construct. However, they may not have valid measurable construct validities on their own when interpreting the results of the scale evidenced by high inter-correlations between the sub factors. Table 2 provides the factor inter-correlations.

Table 2. Factor Inter-Correlations (n=408)

Factors	Collaborative Problem Solving	Shared Leadership	Civic Virtue
Collaborative Problem Solving	1.00		
Shared Leadership	.73**	1.00	
Civic Virtue	.68**	.68**	1.00

** $p < .01$ (2-tailed).

4.6 Confirmatory Analysis

The results of the confirmatory factor analyses, using Lisrel v. 9.2, (Jöreskog & Sörbom, 2009) revealed an acceptable model fit for the data collected. Results from the CFA indicated that the independence model, which tests the hypothesis that all items are uncorrelated, was easily rejected $\chi^2_{25} = 409.483, p < .001$. The hypothesized three-factor model represented in Figure 2 was found to be a superior fit to the data $\chi^2_{25} = 84.773, p < .001$. There is no clear consensus regarding the indices that are most appropriate for evaluating model fit. However, Byrne (1998) and others (e.g., Bentler, 1992; MacCallum, Browne, & Sugarwara, 1996) have suggested that the Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), and the Non-Normed Fit Index (NNFI) provide optimal information for evaluating model fit. The RMSEA has been recently recognized as an informative index of fit because it provides a value that describes the discrepancy, or error, between the hypothesized model and an estimated population model derived from the sample. RMSEA values less than .05 are indicative of a close fit; values ranging from .05 to .08 are indicative of a reasonable fit; with values ≥.09 considered a poor fit (Browne & Cudek, 1993). Both the CFI and the NNFI indexes developed by Bentler are advantageous for evaluating model fit because they consider both sample size and model complexity. CFI and NNFI values greater than .90 are indicative of a good model fit (Hanson, Bangert, & Ruff, 2016).
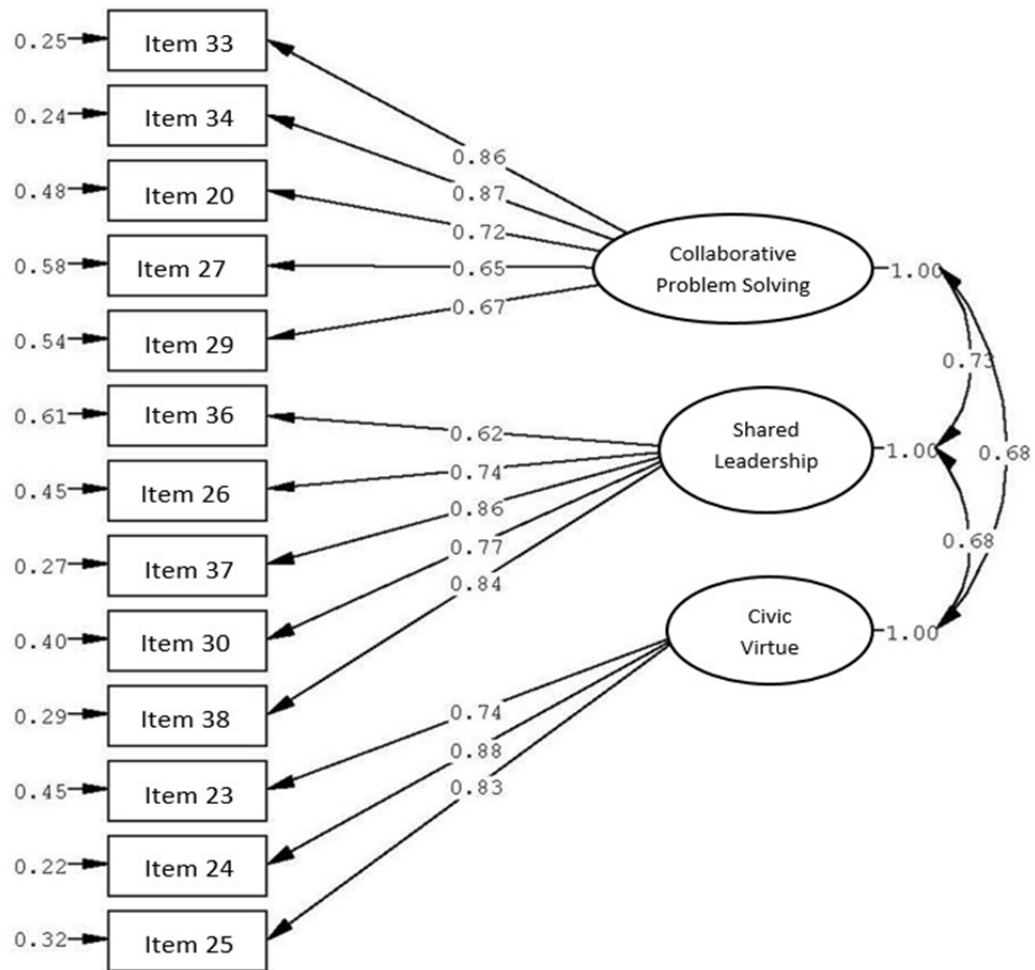
Figure 2. An estimated model of organizational citizenship behavior

Results from the CFA analysis using the Satorra-Bentler Scaled Chi-Square (Satorra & Bentler, 1994) for the hypothesized three-factor model yielded an RMSEA of .076. The Satorra-Bentler adjusted chi-square was used because of the multivariate nonnormal distribution of the variables analysed. The 90% confidence interval (.064 -.087) surrounding the RMSEA result provided supporting evidence that the proposed model was a good fit to the estimated population (Browne & Cudek, 1993; MacCallum et al., 1996).

The accuracy of this fit was strengthened by a CFI of .96 and an NNFI of .95—both well above the suggested threshold.

The Expected Cross Validation Index (ECVI) (Browne & Cudeck, 1989) was used to provide evidence for replication in the population. The advantage is that a single sample can be used for cross-validation, or evidence of replicability of results, in the population. The ECVI for the independence model was 8.31, the ECVI for the saturated model was .447 and for the OCB model was .648. The ECVI with the lowest value is considered the model that could best be replicated in the population. However, the ECVI of the OCB model was .648, which

is relatively close to the ECVI value of the saturated model; suggesting the OCB model would be replicated using other samples from the population.

5. Discussion

The results of the analyses revealed the OCB scale tested in this study provided a three-factor model including supportive leadership (SL), civic virtue (CV), and collaborative problem solving (CPS) as combinations of items from four of the five theoretical constructs operationalized in this study (Organ & Ryan, 1995). The following discussion explores theories and prior research useful to understand the results of this study and suggests implications.

5.1 Three-Factor Result

The scale tested in this study asked teachers to rate their agreement to items describing the administrator and teachers' behaviors at the organizational level. Nielsen, Hrivnak and Shaw's (2009) meta-analysis reported, "…there is a significant difference between aggregating ratings of OCB in a group using the individual as the referent versus asking individual group members to consider the group as the referent when rating its OCB" (p, 570). Organ and Ryan (1995) recommended using the group level as the preferred level for analysis. In contrast, a majority of the OCB studies reported in the literature used individual-level referents and provided results with five-factor OCB models (Becker & Randall, 1994; Lam, 2001; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). Results from this study were consistent with Williams and Anderson (1991) suggesting a three-factor model for OCB at the organizational level. A discussion of the three factors confirmed by the CFA in this study follows.

5.2 Supportive Leadership (SL)

Items 26, 30, & 35-37 loaded on this factor from the operationalized constructs of civic virtue, conscientiousness, and sportsmanship. The items forming this factor described leadership behaviors to support the faculty as well as responsive and collaborative behaviors of the faculty for the leader. The concept of supportive leadership compared favorably with the WMSM, school's growth mindset culture factor "shared leadership." In enabling school structures, shared leadership is a leadership behavior "to support teachers rather than to enhance principal power" (Tarter & Hoy, 2004, p. 540; Hanson, Bangert & Ruff, 2016). The literature on OCB is saturated with the importance of supportive leadership as a predictor of OCB (Organ & Ryan, 1995), though prior research has not empirically tested and validated the leader's role behaviors as a unique factor operationalized in the OCB construct.

Further, one can find the terms *shared, distributed, transformational, and collaborative leadership styles* used almost interchangeably to describe supportive leadership behaviors and perceptions of fairness leading to the development of effective collaborative teams within an organization (Bostanci, 2013). Therefore, the name supportive leadership (SL) was considered reasonable for describing the constructs combining to form this factor.

5.3 Civic Virtue (CV)

The three items forming the second factor (items 23-25) were from the civic virtue construct described as "…behaviour indicating concern and active interest in the life of the organization" (Neves et al., 2014: p. 2) and is consistent with Williams and Anderson's (1991) description of CV as an OCBO level construct. In a western context, authors described CV behaviors as "lubricat[ing] the social machinery of the organization but … do not directly inhere in the usual notion of task performance" (Bateman & Organ, 1983, p. 588). Also, personal choice to participate in social relationships, constructive communication, and supportive behaviors contributing to the development of social identification and belonging, development of trust, collective efficacy, and improved organizational efficiency/outcomes (DiPaola & Tschannen-Moran, 2001). However, these descriptions are from a western operationalization of the OCB sub construct suggesting participation in group and community norms are a matter of "personal choice." In the context of a traditional eastern, hierarchical social structure, such as Pakistan, the "community" norm is regarded as a formal requirement with individuals subject to group sanction for non-compliance (Niqab, Hanson, Nawab, & Ahmad, 2019). For example, item 23 reads, "Teachers are trained such that they take part in extracurricular and cocurricular activities actively" and "…*always* co-operate in conducting various functions…" (Author's emphas). Civic virtue behaviors are the groups' ability to understand the complex social norms of engagement in an organization, increasing cognitive consonance, perceptions of the groups' contributions as significant, feelings of job satisfaction, and a reduction in social and organizational complexity (Neves et al., 2014, p. 2). Therefore, the researchers considered the CV factor part of the formal structure of the school where teachers are expected to model skills for performing social requirements in an eastern context.

Items described in the CV factor compared favorably with the factor "collaborative planning" (CP) of a school's growth mindset culture operationalized on the WMSM scale. For example, CP item 11 states "…protocols are made clear," and "…time is provided in the day for coaching…". The formal school structures contribute reciprocally to the development of OCB in an organization's members as described in an open systems organizational learning model (Hanson, Bangert, & Ruff, 2016, pp. 252 & 259).

5.4 Collaborative Problem Solving (CPS)

This factor captured items 27, 29, 30, 33, & 34, operationalizing constructs of conscientiousness and courtesy. The items from conscientiousness loading on this factor describe intrinsic motivations and personal incentives of employees for persisting through problem-solving tasks. Problem solving refers to a group's collaborative activity to meet the pressing expectations of the organization directed by the administrator. Courtesy has been described as those behaviors directed toward individuals when using the individual as the referent (OCBI) (Williams & Anderson, 1991). Conscientiousness is described as individual initiative, potentially related to the "good soldier syndrome" (Bolino & Turnley, 2005:1). Organ and Ryan (1995) described conscientiousness as the only trait-based predictor of OCB. However, when courtesy combines with conscientiousness viewed at the group level the resulting factor could be describing the informal relational willingness of individuals to work

together as a group to solve problems that meet organizational needs. This organizational-level view of the factor compared favorably with the open communication and support (OCS) factor of a school's growth mindset, on the WMSM scale. The activity of individuals collaborating together within the informal operations of the organization, to create improved organizational outcomes, is found in the literature on organizational learning and described in open-systems enabling school structures (Hanson, Bangert & Ruff, 2016; Tarter & Hoy, 2004). For example, item 20 states, "The teachers are found to help each other…" and item 32, "Teachers show [a] sense of respect for each other…" (p. 253). This informal cooperation operates outside the hierarchical structure and transfers information related to the job for the purposes of the organization (Kandlousi, Ali, & Abdollahi, 2010). The name collaborative problem solving (CPS) is reasonable and consistent with the literature for the organizational-level construct formed by the combining of the items into this factor.

5.5 Absent Factor - Altruism

No items operationalized as altruism on the OCB scale, used in this study, demonstrated item loadings of $\geq .20$ in the exploratory factor analysis. Therefore, they were excluded from the proposed model tested in the CFA. The absence of the altruism sub factor is consistent with Williams and Anderson's (1991) suggestion that altruism is directed at individuals (OCBI), and would not be included in the items at the organizational (OCBO) level.

6. Summary and Conclusions

This quantitative survey validation study confirmed a three-factor structure for the construct of OCB in secondary schools in Pakistan including supportive leadership, civic virtue, and collaborative problem solving. The proposed three-factor EFA factor structure tested in this study was supported by the CFA analysis and is consistent with a three-factor solution for participant perceptions of OCB behaviors at the organizational level (Williams & Anderson, 1991), and is distinct from the five-factor model found in the literature when using the individual as the referent.

The results of this study add important contributions to the current literature on OCB by providing empirical evidence of the leader's influence on the development of the OCB behaviors at the organizational level. The results of this study demonstrated a theoretical similarity between the group-level construct of a psychosocial mechanism operating to form the organizational level OCBO construct and a school's growth mindset culture using the WMSM scale. The key elements of informal and formal structures developed in a system, supported by the leader's behaviors, contribute to the overall development of relationships between employees leading to a willingness to contribute beyond their specified job roles. Additionally, the results of the three-factor structure empirically supports an operationalized difference between the factor structures of individual versus organizational level OCB constructs. Figure 3 provides the results of this study using the factors of the OCB construct from the validated measure tested in this study with the factors found for a school's growth mindset culture, and factors of enabling school structures in schools (Hanson, Bangert, & Ruff, 2016; Tarter & Hoy, 2004).
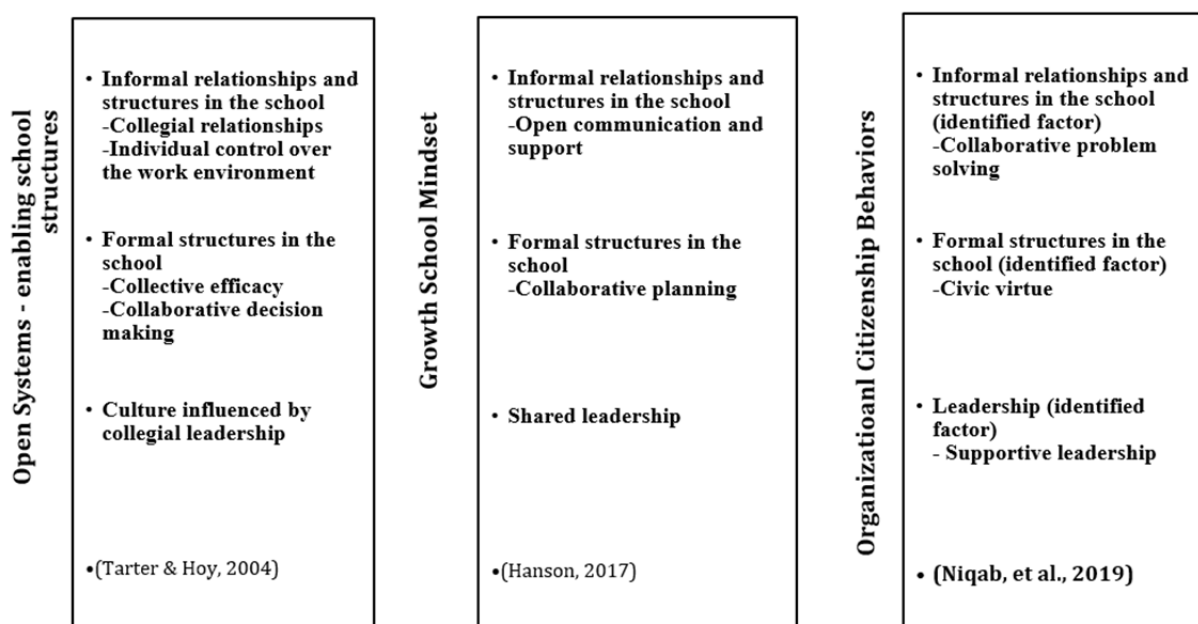
Open Systems - enabling school structures

• **Informal relationships and structures in the school**
  -Collegial relationships
  -Individual control over the work environment

• **Formal structures in the school**
  -Collective efficacy
  -Collaborative decision making

• **Culture influenced by collegial leadership**

• (Tarter & Hoy, 2004)

Growth School Mindset

• **Informal relationships and structures in the school**
  -Open communication and support

• **Formal structures in the school**
  -Collaborative planning

• **Shared leadership**

• (Hanson, 2017)

Organizatioanl Citizenship Behaviors

• **Informal relationships and structures in the school (identified factor)**
  -Collaborative problem solving

• **Formal structures in the school (identified factor)**
  -Civic virtue

• **Leadership (identified factor)**
  - Supportive leadership

• (Niqab, et al., 2019)

Figure 3. Model of validated constructs on the OCB instrument tested in this study compared with constructs found in a school's growth mindset culture and features of an enabling school structure

The empirical results of this study also revealed OCBO factors as consistent with group level self-organizing behaviors described in open systems, organizational learning theories, and resource-based view theory (Hanson, 2015; Hoy, Tarter & Kottkamp, 1991; Von Bertalanffy, 1968; Wernerfelt, 1984). Finally, the results of this study provided empirical evidence of the reliability of the newly developed OCB scale, tested in this study, to quantify teachers' perceptions of their school's OCB in the context of Pakistani secondary schools.

Where teachers report high levels of OCB in their school, three variables of OCB are likely to be present including supportive leadership, teacher and student behaviors of civic virtue, and collaborative problem solving. A skilled and competent leader is one who can fruitfully utilize the school's resources to promote self-developing processes in schools to achieve the desired goals set by the school collectively (Akinola, 2013). Leaders' capacity to provide supportive behaviors leading to teacher professional development in knowledge sharing will build skills in the employees for engaging the variety of activities that support the development of OCB within and without the school day (Hang Chan, 2009; Tarter & Hoy, 2004; Wernerfelt, 1984).

Various researchers have shown the importance of OCB in both public and private sectors for the effectiveness and best performance of the organization (Dipaola & Tschannen-Moran, 2001; Felfe & Heinitz, 2010; Messick, 2012; Organ, 1997; Podsakoff et al., 2009). The literature supports overall OCB as a mediator of collaborative systems. As a mediator, OCB leads to improved intellectual and structural capital in schools. Ultimately, a leader's skills in

developing formal structures that promote improved informal relationships between faculty and students can result in increased OCB behaviors, improved school cultures, facilitate school turn-around efforts and lead to improved student learning (Messick, 2012; Popescu & Deaconu, 2013; Tarter & Hoy, 2004).

6.1 Implications

This study focused specifically on OCBO in schools in the developing country of Pakistan (Cohen & Keren, 2010; Khalid, Jusoff, Othman, Ismail, & Rahman, 2010; Kim, 2005). Reliable measures such as the OCB instrument tested in this study can be used to identify the progress of demand-side interventions that develop school structures and social relations where financial resources are scarce leading to organizational effectiveness. OCB promotes engagement in the diverse and complex social activities of teachers in the school organization, resulting in increases in organizational commitment and knowledge sharing. This indirectly increases the potential to develop intellectual capital in the teachers and students. Donors, recipients, and schools can promote policies with incentives for programs to develop leaders' capacity to promote OCB in schools, increasing teacher and parental communication, teacher-student engagement, shared leadership, and other social relational mechanisms resulting from OCB. Ultimately, leaders leaders trained in developoing OCB can develop faculty behaviors leading to improved educational outcomes.

Researched-based data collected through the OCB scale provided in this study can be used to evaluate indirectly a leader's capacity to promote OCB in schools. The reliable instrument can provide data for identifying professional training needs for developing skills in both the leader and the faculty, and to begin dialogues that challenge assumptions of teachers about OCB in their school.

6.1.1 Moderating Risks Related to OCB and CWB

Leaders need to consider ways to moderate risks when promoting OCB behaviors in their schools. Organizational citizenship behavior is a discretionary behavior and studies have shown that OCB can be positively correlated with counterproductive work behaviors (CWB). For example, when only a few individuals in the school contribute OCB, those same individuals may become overworked and develop resentments resulting in counterproductive work behaviors, such as not helping others when they could. OCB may also interfere with the performance of one's own work when employees give their time to help other colleagues. The literature also suggests there may be gender-role effects resulting in greater stress, work overload, and work/family conflict for women demonstrating OCB than for males (Bostanci, 2013; Noble, 2006). This may explain the significant difference in means found in this study between female and male gender on item 35, "Teachers in our school never lose heart, when they are not awarded on their achievements." Male classification ($\bar{x}$ = 3.66, n=177) showed a .46 higher mean score agreement than the female gender classification ($\bar{x}$ = 3.20, n=231);

($F_{(1, 406)}$ = 12.84; $p < .001$) resulting from the two-way ANOVA test.

6.2 Limitations

This study was limited by time and longitudinal data was not collected. Test re-test reliability studies were not performed. Observations were not performed to validate the teachers' self-reports of their level of OCB in the schools. The study did not obtain data relevant to develop a rich, thick description of the teachers and administrators' experiences with OCB in their schools. This study was delimited by place in that only public secondary schools in Pakistan were selected for survey distribution. The results may not generalize to other diverse populations.

6.3 Recommendations for Future Research

Recommended topics for future study include qualitative inquiries to develop rich thick understanding of leaders, employees, and community's perceptions of the possible uses of education aid to promote advancement of OCB in schools. A quantitative exploration of how financial aid to developing countries may, counterintuitively, produce counterproductive work behaviors by directing resources and work inequitably to individuals, or groups, based upon their gender. A study on the effect CWB may have on individuals' perceptions of justice is warranted. Qualitative analysis to explore policies that promote demand-based interventions to develop the perception of equitable and just processes in schools promoting OCB and leading to improved outcomes could yield rich results for policy makers. Further study is warranted in the area of variables described as antecedents of OCB and the directionality of the factors that show correlations with leadership skills, organizational structure, and resource allocation.

Declaration of Interest

None.

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Appendix A

Distribution of sample schools according to Federal Board of Intermediate and secondary education (FBISE), Islamabad, Pakistan

School #	School's parent organization	Category	Actual population	Sample of study
1	Federal Government	Government	34	21
2	Pakistan Army	Semi-Government	23	08
3	Private	Private	08	-----
4	Fizaia (Air Force)	Semi-Government	05	05
5	Frontier Constabulary	Semi-Government	03	-----
6	Fauji Foundation	Semi-Government	01	-----
	Total		74	34

Appendix B

Table of items used for measuring dimensions and sub-dimensions of variables tested

Variable	Dimensions	Items distribution
Organizational citizenship behaviour (OCB) [Mediating variable]	Altruism (ALT)	19 – 22 (4 items)
	Civic virtue (CV)	23 – 26 (4 items)
	Consciousness (CON)	27 – 30 (4 items)
	Courtesy (CSY)	31 – 34 (4 items)
	Sportsmanship (SMS)	35 – 38 (4 items)

Appendix C

Organizational citizenship behaviour survey

I am conducting a survey to find out how different aspects of the principal's leadership develop the

intellectual capital of secondary school teachers. You are invited to respond to the following items by

keeping in view your school situation. Your response will be kept strictly confidential.

Respondent's code_____

Designation   _____

Address of school_____ School

Type (Please tick (√) the relevant category).

Public ☐ Private ☐ Semi-government ☐

Part-A

Teacher's Demography:

1) Sex: Male ☐   Female ☐

2) Age (Years):

25-30 ☐ 31-35 ☐ 36-40 ☐ More than 40 ☐

3) Professional Qualification: ☐

C.T. ☐   B.Ed. ☐   M.Ed. ☐   Others ☐

4) Working Experience:

Less than 1 Year ☐   1-5 years ☐   6-10 years ☐   11-15 years ☐

16-20 years ☐   More than 20 years ☐

5) Academic Qualification:

Undergraduate ☐   Graduate ☐

Masters ☐   Others ☐