

## Developing A Short Measure Of University Citizenship Behavior: A Study In Indian Universities

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### ABSTRACT

*Organizational Citizenship Behavior (OCB) is discretionary behavior that promotes effective functioning by the employees performing beyond their assigned task without the expectation of rewards or any other tangible gain. University Citizenship Behavior (UCB) is derived from OCB, university students are not employees but have several scopes of performing discretionary behavior towards their fellow students, university and teachers without any expectation of favour, reward or score from the university. Their discretionary behavior may include helping a fellow student in studies, circulating study materials useful for the classmates, helping teachers to fix up projectors or accessories in the class, helping the university authority by keeping the campus clean and helping the authorities in community development or spreading good words about the institution.*

*The construct of OCB is under measurement since ages and two most prominent tools of its measurement are one developed by Organ (1988; 1990) and William and Anderson (1991). Organ conceptualized a five and later seven factor model of OCB based on the displayed type of behavior. Williams and Anderson conceptualized a two-factor model based on the target to which OCB is rendered. It is a 14-item measure predicted on two factor conceptualization of OCB-individually directed OCB (OCBI) and organizationally directed OCB (OCBO). Authors Mackenzie Et Al. (1991); Podsakoff and MacKenzie (1994) and some others, preferred Williams and Anderson's Scale as they expressed concern on distinguishability of some of the factors advocated by Organ.*

*U-thaiwat et al. (2017) based on review of literature stated no reliable measure of scale for UCB is available and designed a 35-item scale 5-point scale. Taking cue from Organ it comprises of seven dimensions i.e., altruism, civic virtue, conscientiousness, courtesy, sportsmanship, enthusiasm and inter-personal relations. In the same way as has been expressed by the researchers in the context of OCB these dimensions are often overstepping each other and are narrowly differentiated. Williams and Anderson have broadly classified the direction of OCB into that towards institutions (UCBO) and individual (UCBI) which seems to give a broader scope to these dimensions.*

*We reframed the statements of Williams and Anderson suiting them in the perspectives of university students and conducted a pilot study in a university. 288 university students participated, 14-items based on target is grouped 1 to 7 as UCBI and 8 to 14 as UCBO. Cronbach's Alpha of UCBI 0.856 and that of UCBO 0.276. Pattern matrix shows Item No. 10, 11 and 12 as -.018, -.086 and -.115. Kaiser-Meyer Olka Measure is found to be 0.724 and Barlett's Test of Sphericity was 0.000. Hence, these items were subjected to factor analysis and item no. 10, 11 and 12 has been dropped. After deletion Cronbach's Alpha was found be 0.709 and can be considered as reliable.*

*This study shall be extended on a larger sample to create a generalizability of the scale so that it can be used by the researchers for analysing both UCBI and UCBO.*

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*This study shall be an addition to the literature as no measuring instruments of UCBO and UCBI is available.*

*Purpose:*

*The study is for designing a psychometrical scale to measure University Citizenship Behavior (UCB) and its two dimensions.*

*Design/Methodology:*

*UCB derived from OCB, two-dimensional scale of OCB by Williams and Anderson (1991) widely used, and dimensions specifically-demarcated. Statements of the scale rephrased suiting UCB and initially subjected to a pilot study. We conducted the Main Study wherein 1286 replies from all-over India evaluated. Factor analysis was used to identify the statistical structure of the construct and correlation was used to provide evidence of the construct validity of the dimensions.*

*Findings:*

*Cronbach's alpha of overall UCB (1-14) 0.773, UCBI (1-7) 0.817, and UCBO (8-14) 0.384. Item 10-12 dropped based on Exploratory Factor Analysis as Item-Total Correlations and Component Matrix showed they do not adjust well within UCBO. After dropping Item 10-12, Cronbach's alpha of UCBO became 0.650. We also found mean inter-item correlations moderate in UCBO and UCBI, indicating the uni-dimensionality of the items.*

*Practical Implications:*

*This short and psychometric scale is usable by researchers to measure UCB as they do use Williams and Anderson-Scale in case of OCB.*

*Social Implications:*

*This short tool for measurement of UCB may help university authorities to work its development as practicing this behavior may help students be good citizen of corporate and society.*

*Originality:*

*This study evolved a short, internally reliable, robust instrument to measure both UCBI and UCBO separately without interference from each other. It is unique and is an improvement over the original scale on OCB designed by Williams and Anderson.*

**Keywords:** University Citizenship Behavior; Organizational Citizenship Behavior; OCBI; OCBO; Reliability of Scale; Construct Validity

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Organizational Citizenship Behavior (OCB) promotes the effective functioning of the organization as the employees perform beyond their assigned tasks without the expectation of rewards or any other tangible gain (Organ, 1988; 1990). OCB is effectively related to organizational performance and is a subject of study for many. University Citizenship Behavior (UCB) derives from OCB; university students are not employees but have several scopes of performing discretionary behavior towards their fellow students, university, and teachers without any expectation of favor, reward, or score from the university.

Ueda and Yoshimura (2010) defined University Citizenship Behavior as the discretionary contributive behavior of students at their university. Drawing a parallel with what was done by Organ (1988) about OCB, U-Thaiwat et al. (2017) comprehensively defined UCB as discretionary student behavior, not directly or explicitly recognized by earning credits or extra scores from their academic institutions. Their discretionary behavior may include helping fellow students in studies, circulating study materials useful for their classmates, helping teachers fix projectors or accessories in the class, helping the university authority by keeping the campus clean, and helping in community development or spreading good words about the institution. These have far-reaching consequences as many university students are future employees, and their habit of working for the institution and people of the neighborhood without expectation of reward or benefits shall help them become good citizens of the society and organization of work. U-Thaiwat et al. (2017) explained that lack of citizenship behavior in the university may amplify social problems, as in the future, these students need to play a significant role in organizations and society and display the behavior inherited from the university.

Research on UCB is of recent origin; U-Thaiwat et al. (2017) explained why UCB can develop from OCB:

The context of voluntary performance in both organizations and universities has hardly any difference, and the relationship between the organization and employees or that of the university and students forms the backbone of extra-role performance in the respective organizations.

Members of both organizations and universities perform out of the way with the feeling of positive performance without expectation of rewards or favors.

These behaviors constitute citizenship behavior.

While identifying factors leading to extra-role behavior, U-Thaiwat et al. (2017) pointed out that OCB relates to the behaviors of the employees that are discretionary and do not directly or explicitly link to formal rewards in the context of organizations. UCB is discretionary student behavior, not explicitly recognized through earning credits or extra scores from academic institutions. Similarly in no way does fear of punishment propel employees or students to undertake citizenship behavior. They advocated reframing the statements in measuring scales of OCB suiting the context of universities.

OCB has become an important research subject since 1980 (Bateman & Organ, 1983; Smith et al., 1983). It incorporated two dimensions named general compliance and altruism. Organ (1988) brought change and identified five distinct dimensions of OCB:

Altruism (helping others);  
 Civic virtue (maintaining gentleness);  
 Conscientiousness (norms abidance);  
 Courtesy (collaborative action) and  
 Sportsmanship (tolerance of minor inconveniences).

Considering the large use of OCB, Hendersen et al. (2019) strongly argued for perfect measurement of its construct. They cited from Google Scholar, stated that the scale of Williams and Anderson has more than 6000 citations and suggested it to be a simple and accurate measuring tool of OCB.

Williams and Anderson (1991) generated two different views on the dimensions of OCB:

1. Behavior directed at specific individuals and is termed OCBI;
2. Behavior is aimed directly at the organization and is termed OCBO.

The OCB measurement scale designed by Williams and Anderson (1991) is a 14-item measure predicted on the two-factor conceptualization of OCB- 7 to individually directed OCB (OCBI) and 7-on organizationally directed OCB (OCBO). The study has clearly distinguished extra-role behavior based on target analysis of the performance directed to the organization or individuals associated with the organization (William & Anderson, 1991).

Comparing their measuring instrument with the previous research, Williams and Anderson stated it is wrong to consider both altruism and general compliance dimensions of OCB identical as altruism is a behavior displayed without expectation of external rewards, general compliance is often adhered to either due to the presence of reward or fear of punishment in its absence. Authors MacKenzie et al. (1991) and Podsakoff and MacKenzie (1994) preferred Williams and Anderson's Scale as they expressed concern about the distinguishability of some of the factors advocated in previous theories. Researchers like Hendersen et al. (2019), in the context of OCB formulated by Organ, explained that these dimensions often overstep each other and are narrowly differentiated. In addition, the large number of items on the scale seems inconvenient for the researchers. This inconvenience escalates when the sample size is large. Williams and Anderson have broadly classified the direction of OCB towards institutions and individuals who seem to give a broader scope to these dimensions. However, there seem to be some shortcomings in this measuring scale. Byrne (2005) and Mayer and Gavin (2005) viewed OCBO as demonstrating poor internal reliability compared to OCBI. Based on the observation of researchers like Jepsen and Rodwell (2006) and Yun et al. (2007), Hendersen et al. (2019) stated that OCBO dimensions of the scale have a poor factor analysis model. Despite all these shortcomings, Hendersen et al. (2019) viewed Williams and Anderson's scale as offering content validity of OCB and also contributed to understanding OCB and its utility.

U-Thaiwat et al. (2017), citing existing literature, opined no reliable measures for UCB are available and designed a 35-item 5-point scale. Taking a cue from Organ, it comprises seven dimensions: altruism, civic virtue, conscientiousness, courtesy, sportsmanship, enthusiasm, and interpersonal relations. They applied the scale to a sample of undergraduate students from Thailand and the USA and found it reliable. Dasgupta (2020) used the scale on postgraduate and undergraduate management students in India and observed its reliability.

U-Thaiwat et al. (2017) explained the dimensions in the context of UCB:

Altruism includes all the helping behavior of students;

Civic virtue reflects the positive behavior student's display to society apart from just going to class;

Conscientiousness means the cooperative behavior students exhibit in class and academia;  
 Courtesy indicates a student's concern about how their action may impact others;  
 Sportsmanship is a display of patience and tolerance at times of inconvenience;  
 Enthusiasm shows a student's interest in academic work;  
 Building healthy interpersonal relations expressed in terms of interpersonal relationships.  
 Close examination of the seven dimensions indicates several overlapping in the same manner, as observed by the researchers in the case of OCB.

We looked for a measuring scale following Williams and Anderson in the case of UCB that takes care of the two dimensions UCBI and UCBO. We have gone through Search Engines like Google Scholar and Yahoo and sites like EBSCO, J-Stor, and Infilbnet and did not locate any measuring scale used for measuring UCB of students using a version of the scale of Williams and Anderson.

The study has the following three purposes:

First, to prepare psychometrically robust constructs that are valid and reliable;

Second, generate instruments to measure UCB that are specific and focused so there develops no overlapping of inner components;

Third, to prepare a scale that measures dimensions of citizenship behavior to the university and individuals related to the university separately.

Citizenship Behavior targeting a university or organization can be called UCBO, and University Citizenship Behavior aimed at Individuals such as UCBI. Taking a cue from OCB literature (Henderson et al., 2019), we can infer that these two dimensions are conceptually distinct but have an empirical relationship. Researchers aimed to create a measurement for these phenomena in this study.

We relied on Classical Test Theory (CTT) and Item Response Theory (IRT). CTT and its related methods, such as factor analysis, analyze covariance between items or scales to extract structural relations (Henderson et al., 2019). Numerical output factor loadings determine its appropriateness. IRT uses raw response data within items to estimate the properties of individual items.

### **Review of Studies:**

Clark and Watson (1995) advocated for the Construct validity of an instrument and suggested:

(a) Must articulate a set of theoretical concepts and their interrelationships;

(b) Develop a way to measure the hypothetical constructs proposed by the theory and

(c) Test empirically the hypothesized relationship among constructs and their observables.

They opined that the most precise and efficient measures are those with established construct validity as they are manifestations of constructs in the theory supported by empirical data.

Hopkins (2002) views social exchange theory as the basis of the display of OCB as often performed due to the feeling of reciprocity. Literature indicates the same tenet for the exhibit of UCB (e.g., Ueda & Yoshimura, 2011; U-Thaiwat et al., 2017).

Jehad Mohammad et al. (2011), based on the model of Williams and Anderson (1991), stated OCB performed by aiming at two targets. The first target is the balance of the social exchange between employees and the organization, that is, OCB directed toward the organization (OCBO). Williams and Anderson (1991) described it as behaviors that benefit the organization. Podsakoff et al. (2000) pointed OCBO as compliance as it involves following company rules and policies and talking well about the organization in public place; OCBO indicates behaviors benefiting the organization (such as adhering to informal rules and volunteering work for the benefit of the organization).

On the other hand, OCBI focuses on the individual in the organization. Although it seems to have only indirect implications, OCBI helps to maintain a balance in the organization. OCBI indicates behaviors that have a direct impact on individuals. OCBI implies behaviors that benefit specific individuals within an organization. It also helps to facilitate organizational effectiveness (Williams & Anderson, 1991). They narrated behaviors like helping one who was absent at work or taking an interest in other employees' well-being as a display of OCBI. Podsakoff et al. (2000) branded this as helping behavior and defined it as voluntarily helping others. While other researchers (such as Lee and Allen, 2002) have addressed this category of behavior in several ways, all are similar to Williams and Anderson's (1991) definition of OCBI.

Ueda and Yoshimura (2011) considered three motives for the display of UCB. Students identify with the university while studying and are known as 'Alumni of the university after the exit'; Secondly, students on the university campus get a lot of opportunities to interact and get help from professors, classmates, and others;



Thirdly, students develop a hierarchical relationship with professors in the university, senior and junior students.

They stated that the first motive may drive students to work towards the university/ organization, and the rest to the individuals. We can name them as UCBO and UCBI.

Cappelleri et al. (2014) described Classical Test Theory (CTT) as a quantitative approach to test the reliability and validity of a scale based on its items. It is also known as the True Score Theory since it assumes every person has a bonafide score that can be collected if there remains no error in measurement. Item Response Theory (IRT) is a collection of measurement models that attempt to explain the connection between observed item responses on a scale and an underlying construct (Cappelleri et al., 2014). They explained that in CTT, IRT requires each item to be distinct from the other and yet should be similar and consistent with all in reflecting different aspects of the construct (Cappelleri et al., 2014). UCBI and UCBO developed based on OCBI and OCBO, which seems distinct yet similar and consistent, is in line with CTT and IRT.

We hypothesize:

*Ho1: UCBI and UCBO sub-scale are two dimensions of the construct UCB and can be separately measured;*

Jepsen and Rodwell (2006) described Williams and Anderson (1991) operationalizing a two-factor model of OCB, making a distinction between the employees' behavior having either a specific individual as the target (OCBI) or the organization as the primary beneficiary (OCBO).

Williams and Anderson (1991) explained OCBI-OCBO as a separate type of performance with a significant relationship between the two. They found a high-value correlation between these two dimensions of OCB. Considering UCBI-UCBO derivatives of OCBI-OCBO, we hypothesize:

*Ho2: UCBI and UCBO are significantly related to each other;*

U-Thaiwat et al. (2017) framed a scale to investigate UCB of undergraduate students in samples from the US and Thailand. It was created based on a Qualitative study followed by adoption from past literature. They developed a scale comprising 35 items of seven dimensions through quantitative analysis. Out of them, 31 were positive statements and 4-negative. It generated a comprehensive definition and dimensions of the newly developed UCB. The overall scale was highly reliable, and Cronbach's alpha coefficient was 0.929, but less in many components of UCB. Low boundaries between parts of the UCB may lead to overlap and not display the actual influence of respective dimensions, as was pointed out by the researchers in the case of the OCB scale generated by Organ. The OCB scale of Williams and Anderson (1991) comprises 14 items. It is shorter in number than that of U-Thaiwat et al. and is widely accepted, evident from its large citation. Because UCB is a derivative of OCB and the scale of William and Anderson is highly acceptable, we may design it conforming to the definition and characteristics of UCB. We hypothesize:

*Ho3: UCB can be measured based on a scale modifying the OCB Scale of William and Anderson (1991);*

Williams and Anderson (1991) in their seminal work pointed the effect on reliability caused by the negatively worded statements. Chyung et al. (2018) recommended not to use a mix of positively and negatively worded items as it can create a threat on reliability and validity of the survey instruments. Regarding negatively worded items (Henderson et al., 2019) stated that negative wordings may cause potential biases in the overall impression and might develop additional methodological factors in the scale. Henderson et al. (2019) viewed three negatively worded statements in the OCB scale designed by Williams and Anderson (1991) as primary causes impacting the reliability and validity of OCBO. Removing the negative items from scale and sub-scales may lead to a shorter questionnaire that may benefit the respondents. We hypothesize:

*Ho4: Removal of the negative items will lead to higher reliability and validity of the sub-scales UCBI and UCBO.*

### **Methods:**

Choosing items of the instrument is vital as no data analytic tools can remedy serious deficiencies of an item pool (Clark and Watson, 1995). Scale of Williams and Anderson aimed at employees of the organization; we reframed the statements of Williams and Anderson from the perspectives of extra-role behavior of university students. Following the tenets of Classical Test Theory, apart from concern for content validity, we also emphasized the proposed statements' item difficulty and item discrimination. We framed wordings relevant to the citizenship behavior of university students in ways that each can discriminate.

To be sure that the wording rightly interprets the concepts that Williams and Anderson developed, we took the help of four Professors, two from English Linguistics and two from Psychology. We framed 14 items based

on the instrument of Williams and Anderson, and the statements grouped from 1 to 7 as UCBI and 8 to 14 as UCBO. The Statements of Williams and Anderson's OCB scale are placed adjacent to the newly formed items of the proposed UCB Scale in the scoresheet for evaluating the target. It helped the Evaluators to compare the words of the statements easily.

In this process, we took a cue from the Index of item-objective congruence (IOC) by Rovinelli and Hambleton (1977). It is a process used in test development for evaluating the content validity at the item development stage. Content validity is the minimum quality requirement for an instrument development at the item development stage (Halek et al., 2017). This 4-member panel of Professors evaluated each item by rating 1 for clearly measuring objectives and -1 for not measuring. We tried to follow the principle of Rovinelli and Hambleton that one item measures only a single goal.

After analyzing the reviewer's notes and changes in some wording and being satisfied, we finalized the scale and undertook a pilot quantitative study wherein 288 university students participated. Clark and Watson's (1995) work on test construction suggested a pilot survey on a moderate-size sample; they recommended the sample size not exceed 300 respondents. They opined that good scale construction is a process of several periods of item writing followed in each case by conceptual and psychometric analysis (Clark & Watson, 1995). Item Response Theory looks for a large sample to obtain an adequate parameter estimate, and we ensured that the examinee sample is large enough to see that proper item calibration is possible.

Williams and Anderson's study is on a 7-point scale, namely 1=Strongly Disagree; 2=Moderately Disagree; 3=Slightly Disagree; 4=neither-Agree, nor disagree; 5=slightly agree; 6=Moderately Agree and 7= Strongly Agree. We followed the same.

Before commencing further work, we need to inspect the distribution of the response items and the normality of the data. We need to identify and eliminate statements that seem highly skewed; however, our study showed responses of all items within +/- 2 in both skewness and kurtosis analysis. Based on literature (e.g., Field, 2013; Gravetter & Wallnau, 2014) we assumed it to be within normality.

Cronbach's Alpha of UCBI is 0.856, and that of UCBO is 0.276. Pattern matrix shows Item No. 10, 11, and 12 as -.018, -.086 and -.115. Kaiser Meyer Olka's Measure was 0.724, and Barlett's Test of Sphericity was 0.000. We applied factor analysis and found item no. 10, 11 and 12 are fit to be dropped. After deletion, Cronbach's Alpha of UCBO became 0.709 and can be considered reliable (Nunnally, 1978).

On being assured of following the right path, we extended the survey to different universities in Delhi, Haryana, and Rajasthan in Northern parts of India; Gujarat and Maharashtra in Western parts; Karnataka and Telangana in South-India and West Bengal and Tripura in Eastern India. We ensured at least 250 respondents from each region participated; of 1,500 questionnaires, 1286 filled questionnaires were usable.

### Results:

In the large sample, Cronbach's alpha of UCBI was 0.817 (Item 1 to 7); UCB (1 to 14) Cronbach's alpha was 0.773; and that of UCBO (Item 8 to 14) was 0.384. UCBO of the sample was once again evaluated, Kaiser-Meyer-Olken measure of sampling adequacy 0.682 above 0.6 and subjected to factor analysis. The significance of Barlett's Test of Sphericity was 0.000, and the Eigen value was 2.049 and 1.644.

The component matrix showed the following score regarding the three negatively worded items (UCBO10, 11, and 12):

UCBO10	-0.336	0.704
UCBO11	-0.309	0.560
UCBO12	0.459	-0.555

Item-total Correlations of the three items UCBO10 -0.089, UCBO11 -0.051, and UCBO 12 -0.018, Hambleton & Jones (1993) explained Classical Test Theory that identifying poor items is straightforward as it will show a poor item-total score correlation. Based on the exploratory factor analysis and tests mentioned, three items named UCBO10, UCBO11, and UCBO12 dropped. After dropping these, Cronbach's alpha of OCBO became 0.650 and is reliable (Nunnally, 1978).

Item-total correlations (ITCs) reflect the correlation between the item in question and the total score of others on the scale. For example, ITC for UCBO 08 is the correlation between scores on UCBO8 and the total score calculated from UCBO9 to UCBO14. We took this example from Allen and Yen (1976). The ITCs for UCBO 10, 11, and 12 are negative. Item Response Theory (IRT) is a method for identifying whether or not the additional factors in factor analysis result from methods or distinct constructs.

If UCBO is the same construct, negatively worded items will still differentiate between respondents with low levels of the constructs and have poor item discrimination parameters; these items will also exhibit higher statistical similarity to one another than they do to the rest.

We can infer from their negative correlations with others and higher affinity to negatively worded items that these three items do not relate well to the full-scale score and further suggest that the negatively worded items do not adjust in the UCBO scale.

*It proves hypothesis Ho4 as the reduction of three items in UCBO has led to higher reliability in the scale.*

**Table I:** shows the Descriptive Statistics of UCBI (1-7 Items):

	Mean	Standard Deviation	Skewness	Standard Error	Kurtosis	Std. Error
OCBI1	5.69	1.64	-1.488	0.068	1.663	0.136
OCBI2	5.32	1.51	-1.101	0.068	0.988	0.136
OCBI3	5.5	1.57	-1.119	0.068	0.732	0.136
OCBI4	4.61	1.63	-0.441	0.068	-0.260	0.136
OCBI5	5.54	1.44	-1.209	0.068	1.374	0.136
OCBI6	4.92	1.74	-0.732	0.068	-0.229	0.136
OCBI7	5.71	1.52	-1.365	0.068	1.593	0.136

**Table II:** shows the Descriptive Statistics (UCBO- after deletion of 3 items):

Item No.	Mean	Standard Deviation	Skewness	Standard Error	Kurtosis	Std. Error
OCBO8	5.58	1.66	-1.203	0.068	0.660	0.136
OCBO9	4.60	1.81	-0.396	0.068	-0.734	0.136
OCBI3	5.84	1.56	-1.528	0.068	1.799	0.136
OCB 14	5.35	1.69	-0.929	0.068	0.191	0.136

Pearson's Correlation between UCBI and 4-item UCBO,  $r = 0.497$ ,  $p < .001$ , shows a significant relationship. Review of Studies indicated them as separate dimensions of OCB (UCB is derived from OCB) and have distinct characteristics, significant correlation, and descriptive statistics add meanings to it.

*Ho2 UCBI and UCBO significantly relate to each other and stand vindicated.*

**Table III:** shows the Item-Total Correlations of UCBI:

Item No.	Statements	Item- total Correlation
UCBI1	I help other classmates when they remain absent	0.545
UCBI2	I help other students who have a heavy load of studies	0.604
UCBI3	I help new students to adjust themselves to the university environment, even if it is not required, on my part	0.609
UCBI4	I assist teachers in the class voluntarily without being asked	0.498
UCBI5	I take time to listen and empathize with other students about their problems and worries	0.584
UCBI6	I take a personal interest in the well-being of the other students	0.509
UCBI7	I often pass on required study materials to my classmates	0.534

**Table IV:** shows the Item-Total Correlation of all Items of UCBO:

Item No.	Statements	Item-total Correlation
UCBO8	My attendance at class was above the university norm	0.307
UCBO9	I always inform in advance my teachers whenever I am unable to come to the class	0.377
UCBO10	I take unnecessary breaks from classes that others may not like	-0.089
UCBO11	A great deal of my time spent on personal mobile phone/email/chats	-0.051
UCBO12	I complain about insignificant things in class	-0.018
UCBO13	I conserve and protect university properties	0.342
UCBO14	I adhere to the informal norms of the university to maintain order	0.321

**Table V** shows Item-total correlations of UCBO after the deletion of negative-worded statements:

Item No.	Statements	Item-total Correlation
UCBO8	My attendance at class was above the university norm	0.433
UCBO9	I always inform in advance my teachers whenever I am unable to come to class	0.412
UCBO13	I conserve and protect university properties	0.464
UCBO14	I adhere to the informal norms of the university to maintain order	0.407

The following points warrant attention:

Internal consistency Item refers to the degree to which the items that make up the scale are inter-correlated; one-dimensionality or homogeneity indicates whether the scale items assess a single underlying factor or construct. A scale may be internally consistent as it has interrelated components that may not be homogenous and uni-dimensional, as a homogenous and uni-dimensional scale aims to measure parts of the scale to the best possible extent to ascertain its direction of measurement. Apart from Cronbach's alpha, which indicates the internal consistency of OCBI and four items of OCBO, the average inter-item correlation is a straightforward measure of internal consistency, based on it arises no doubt about it in these two sub-scales.

Carol and Watson argued against maximum internal consistency as these create a scale narrow in content; if the scale becomes thinner than the target construct, its validity gets compromised.

Cronbach's Alpha of UCBI and UCBO indicate moderate consistency, which seems to be correct in this context. Uni-dimensionality cannot be achieved simply by focusing on the mean inter-item correlation; instead, the range and distributions of these correlations need examination. Clark and Watson opined to ensure the uni-dimensionality, one should see that almost all the inter-item correlations are moderate in magnitude and surround narrowly around the mean value. None of the mean inter-item correlations exceeded 0.62 in the case of OCBI, and 0.5 in the case of OCBO indicates its moderate magnitude.

Reliability, internal correlations, validity, and item-total correlations prove that the questionnaire is consistent and a robust tool to measure UCB, UCBI, and UCBO of university students. *It proves H03 that UCB can be measured using the reframed version of William and Anderson's scale used to measure OCB.*

Henderson et al. (2019) stated if the scale is reduced in terms of the number of items while keeping its reliability intact, it is the ideal situation as a lengthy questionnaire is the root cause of the exit of the participants from the survey. In the context of OCB, they narrated this as an off-shoot benefit of having a smaller scale. This whole exercise proves that the sub-scales UCBI and UCBO are interrelated dimensions of the construct UCB and can be measured separately. *It proves H01 of the study.*

### Discussion & Implications:

We attempted this study to create measuring instruments of UCB- a derivative of OCB meant for university students, and have chosen to work on the scale designed by Williams and Anderson (1991). In the same line of the scale developed for OCB, we worked on the two subscales jointly and separately. We did this as each sub-scale refers to a situation in which related measures are designed for assessment and analysis separately and also can be dealt with jointly, though considering the purpose here in the study, we did so separately.

An advantage of using the sub-scale method separately is convenience in seeing that the questionnaire remains focused on the objective of measurement. In the study, we made an effort to see that along with internal reliability, the questionnaire needs to be specific and focus on uni-dimensionality. At the outset, we considered the issues of convergent and discriminant validity that helped to delineate the construct boundaries and achieve the desired objective of correct measurement ability of the scale. We took care to continue the study with theoretical clarity as the utility of all items has been clearly explained and analyzed with precision in the psychometric principles and processes adopted in the study. We examined how the sub-scale relates to the total instrument after deleting OCBO10, 11, and 12 and observed that correlation in the sub-scale OCBO increased compared with the previous scenario.

Henderson et al. (2019) supports the observation that negatively worded items exhibit lower discrimination parameters and greater levels of local independence than positive items. We discarded the negatively worded item observed in the study of Henderson et al. In the study, we created a shorter version of the scale adopted from Williams and Anderson into UCB. Removal of the poor-performing items has the benefit of maintaining a short scale while keeping the psychometrically strong character. In the UCB scale based on the OCB measurement scale of Williams and Anderson (1991), we kept seven items of UCBI and four items of UCBO with high discrimination parameters. Stanton et al. (2002) explained how IRT can be used to judge the loss of



information following the elimination of items. Based on it, we opine this scale has improved convergent and discriminant validity and internal consistency reliability.

Our results have critical research implications. We present a short-form UCB measure for use in future studies. This short-form scale is an improvement over the original OCB scale designed by Williams and Anderson (1991) regarding psychometric properties in the form of factor loading and internal consistency. This UCB scale brings a clear distinction between UCBI and UCBO, unlike the scale of U-Thaiwat et al. (2017), where differences between some dimensions may be narrow and overlap. This scale has greater construct validity and higher association with other items of the same sub-scale. This measure shall produce more valid results, and reduction in the length of the survey questionnaire will lead to lesser participant exit.

### **Limitations & Scope for Further Research:**

The research has certain limitations and scope for further study. The original Williams and Anderson (1991) OCB Scale was a supervisor-report measure of employee behavior. Later, it assessed OCB directly from the employees in some studies (e.g., Bal et al., 2010; Li and Thatcher, 2015). In this study, we aim to measure the determinants of university citizenship behavior of the students. Le Pine et al. (2002) narrated this in their seminal work on OCB. Instead of supervisors, as was done in the original work of Williams and Anderson (1991), we may perform the test on university teachers to ensure equivalence with this result. However, it might not yield reliable results as university students attend classes with several teachers and do not remain under the monitoring of one or two teachers as in the case of supervisor-employees. In any event, our study has provided a psychometrically sound measure for measuring the UCB of the students through self-assessment mode.

One may state that a reduction in items may lead to a decrease in coverage of the behaviors that constitute the citizenship behavior of the students. It may exclude some behaviors performed as citizenship behavior and not included in the questionnaire. Henderson et al. (2019) argued that though it is a limitation, all scales do not arguably cover the entire construct space. However, our psychometric analysis has proved the scale robust, and we believe it has covered the best contents of behaviors that constitute UCB.

Some may question the internal consistency of the UCBO scale as lower than 0.7 (Schmitt, 1996). Cronbach's alpha 0.668 of UCBO found in the study is reliable and advocated by researchers like Nunnally (1978). We do not consider it a serious issue as several psychometric tests have proved its reliability; EFA and IRT analyses show that the items behave in the sub-scale properly.

### **Conclusion:**

We took up the study to develop dimensions and create items for a newly proposed scale to measure UCB. Considering the differentiation in serving the target individuals and organization, changes in citizenship behavior are palpable. This scale is more specific and is different from other scales where the dimensions of OCB are more. The exercise started with reframing statements from the original OCB questionnaire designed by Williams and Anderson (1991). Along with the Researchers, Professors of Linguistics and Psychology ascertained that the spirit of the items existed in the revised UCB Questionnaire. They determined content validity based on Rovinelli and Hambleton's Principle (1977) that each item aims to measure one goal. We conducted a pilot study based on the views of Clark and Watson (1995), and being satisfied with the direction of the research continues on a large sample with pan-India characteristics. Principles of Classical Test Theories and Item Response Theory followed in the study. Hypotheses drew and proved that UCB is measurable on a scale modifying the OCB measuring scale of Williams and Anderson (1991); we also determined that UCBI and UCBO are two dimensions and significantly related to each other, and also removal of three negative items have lead to increase in reliability and validity of UCBO. Exploratory factor analysis has worked to reduce the size of the questionnaire, and Cronbach's alpha reliability and item-total correlation have contributed to establishing the validity of the scale.

We expect this short-form UCB scale shall help researchers measure the citizenship behavior of university students on a large scale and expand their understanding of this behavior. This scale is short, appealing for inclusion in surveys, and demonstrates improved psychometric properties and construct validity that should improve the measurement and study of this organizational construct.

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