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Coexistence of Species in Exactly Solvable Multi-Species Models

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Undergraduate Student Success Factors: The Role of OCBI and OCBO

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# **Undergraduate Student Success Factors: The Role of OCBI and OCBO**

Shaiful Annuar Khalid  
Ahmad Redzuan Abdul Rahman  
Mahmod Othman

*The authors' main aim in this study was to identify whether lecturers' OCBI and OCBO influence undergraduate students' academic performance. The authors measured academic performance by students' cumulative grade point average. Student age and gender were tested as moderators. Analysis was conducted on a survey data of 162 students in one of the local public institutions of higher learning. By employing the social exchange theory, the results revealed that OCBI was significantly related to students' academic achievement. In addition, OCBO positively predicted students' academic achievement among female students. Interpretations of results, implication and future research are discussed.*

## **INTRODUCTION**

Employees' behaviours that go beyond role-prescribed performance such as helping co-workers or leaders, exhibiting willingness to tolerate inconvenience or hardship at the workplace, complying with organisational rules and procedures and involving actively in the organisational development are considered critical to the success of an organisation (Katz & Kahn, 1978). Because of the assumption that OCB contributes to organisational and individual performance, a great number of empirical studies has attempted to investigate the subordinate

characteristics, task characteristics, organisational characteristics and leadership behaviours as antecedents of OCB, leading to a basic understanding of the causes, but not their effects. Although it is important to understand antecedents of OCB, most prior research fail to assess the extent to which OCB explains variance in organisational and individual relevant outcomes (e.g. Podsakoff & Mackenzie, 1994; Walz & Niehoff, 1996).

Bolino (1999) states, "...in contrast to the numerous studies exploring the antecedents of OCB, there is a paucity of research examining the outcomes of citizenship behaviours in organisations." Early OCB research focused on determining the antecedents of OCB, whereas attempts to investigate their consequences have been more recent. Review of the current literature reveals that studies investigating the effects of OCB such as on student academic performance are relatively sparse. Specifically, the degree to which lecturers engage in these behaviours and their implications on student academic performance have received little empirical attention. To date, only a handful of research (e.g. Dipaola & Hoy, 2005; Allison, Voss & Dryer, 2001) has been conducted that examines the relationships between OCB and academic achievement. Hence, the purpose of this study is twofold. First, this study attempted to determine whether lecturers OCBI and OCBO are related to student academic achievement. The second purpose of this study was to test the role of students' age and gender as moderators of the relationship between lecturers' OCBI and OCBO and students' academic achievement.

## **RESEARCH FRAMEWORK**

### **Organisational Citizenship Behaviour**

OCB has been defined as, "individual behaviour that is discretionary, not directly or explicitly recognised by the formal reward system, and that in the aggregate promotes the effective functioning of the organisation" (Organ, 1988, p.4). The word discretionary, according to Organ (1988) means that the behaviour is not a requirement of a formal job description. Failure to exhibit OCB is not generally considered as cause for punishment and OCB is a matter of personal choice. If an employee fails to achieve a certain standard of task performance, such as meeting a sales target or failing to deliver good customer service, the employee may be punished in terms of low annual increment or delay in promotion. However, if an employee resists helping a co-worker to solve a work-related problem, the employee may not get any punishment since helping a co-worker is considered as discretionary in nature. A good citizen is an employee who offers support to the organisation, even when such support is not verbally demanded (Moorman & Blakely, 1995).

There is no clear consensus within the literature on the number of OCB dimensions. Researchers have proposed from two to seven OCB dimensions within a particular OCB construct. Multidimensional delineations have identified OCB facets such as conscientiousness, sportsmanship, civic virtue, courtesy, and altruism (Podsakoff, MacKenzie, Moorman & Fetter, 1990). Other researchers have divided OCB into two types: behaviour that is directed mainly at individuals in the organisation and behaviour that is concerned more with helping the organisation as a whole. Williams and Anderson (1991) suggest that there are two broad categories of OCB distinguished by the beneficiary of the behaviour: Behaviours that immediately benefit the organisation are called OCBO and behaviours that immediately benefit specific individuals are called OCBI. OCBO reflects the conscientious employees whereas OCBI reflects the altruism dimension. OCBI includes such behaviour as helping others who have heavy workloads and taking a personal interest in other employees; whereas, OCBO includes attendance above the norm and not complaining at work (William & Anderson, 1991). Williams and Anderson (1991) were the first to conduct a study to develop the two-dimensional model of OCB that differentiates between OCB directed toward individuals and OCB directed toward the organisation. Through factor analysis, those items can be distinguished based on the target of the behaviour.

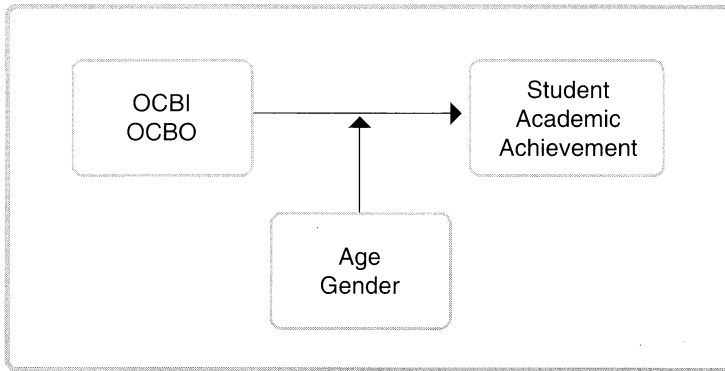


Figure 1: A Schematic representation of the hypothesized relationship between OCB, needs for achievement and academic achievement.

Figure 1 provides a schematic representation of the relationship between variables examined in this study. It is hypothesized that OCBI and OCBO will be related to student academic achievement. It is further hypothesized that the OCBI-academic achievement and OCBO-academic achievement relationship will be moderated by the student age and gender. In the next section, we review the related literature that underpins the relationship depicted in Figure 1.

## **Student Academic Achievement**

One of the most important components of university effectiveness is students' academic achievement (Dipaola & Hoy, 2005). A primary aim of educators is to prepare students for successful careers in public as well as private sectors. This preparation would itself be reflected in our graduates securing well-placed positions in industry and demonstrating superior performance. This preparation is partly done based on evaluation by lecturers on ongoing assessments (e.g. monthly tests, assignments, quizzes, etc) and standardized tests (e.g. final examinations). Students get their results (grades, GPA, CGPA) for a particular semester based on this method of assessment. The degree to which students attain high academic achievement will much depend on the lecturers' determination in guiding and facilitating the students' learning process.

## **Organisational Citizenship Behaviour, Student Academic Achievement and Social Exchange Theory**

Successful organisations have employees who go beyond their formal job duties to carry out their task successfully. Teaching is a challenging task due to the continuous interaction with students from various backgrounds for the purpose of imparting knowledge. It cannot be sufficiently prescribed in lecturers' job descriptions (Dipaola & Hoy, 2005). Hence, OCB should be considered as an important component of lecturers' job performance. The willingness of lecturers to exert greater efforts through OCBI (e.g. helping students to understand a difficult subject matter) and OCBO (e.g. efficient use of time allocated for lectures and tutorials) can be expected to improve students' academic achievement.

Studies in OCB have generally adopted the social exchange theory as the theoretical underpinning. The social exchange theory proposes the giving and receiving of material or intangible resources on the expectation of some return in future (Blau, 1964). The social exchange theory has long been used by organisational researchers to describe the motivational basis behind employees' behaviours and the formation of positive employees' attitudes (Etzioni, 1961). In general, research findings suggest that positive and beneficial actions directed at employees by an organisation and/or its representatives contribute to the



establishment of high-quality exchange relationships (Konovsky & Pugh, 1994). The act of OCBI and OCBO by lecturers will make the recipient of the benefits (students) to feel morally obligated to repay the lecturers in beneficial ways by exerting greater efforts to attain higher academic achievement. Lecturers may provide support in terms of providing personal attention to the students, coaching the students in their career, or being available if needed. It is possible that recipients of positive actions from the lecturers may seek to reciprocate in beneficial ways by not only viewing OCB as an acceptable commodity for exchange (Settoon, Bennett, & Liden, 1996) but also demonstrating a strong determination to succeed in their studies. To date, there is only one research conducted to investigate the relationship between educators' level of OCB and students' academic achievement. A study by DiPaola and Hoy (2005) and Rahman, Khalid and Othman (2006) found a significant relationship between OCB and student achievement on standardized tests among a group of high school students in USA and Malaysia respectively. The above logic supports the possibility that lecturers' OCBI influences student academic performance. Thus, our first hypothesis is:

**Hypothesis 1: OCBI will be positively related to student academic achievement.**

The connection between OCBO and student academic achievement is not as obvious as that between OCBI and student academic achievement. Still, one could imagine that a "conscientious" disposition would contribute to better student academic achievement in a number of ways. By being punctual at work, efficiently using time for classes and willing to work longer hours would definitely enhance and facilitate students' learning process. This is possible since all these behaviours will create more allocation of time and attention to the students. Moreover, because OCB consists of two distinct performance dimensions, each predictor was investigated separately rather than as a composite. Hence, our second hypothesis is:

**Hypothesis 2: OCBO will be positively related to student academic achievement.**

### **Moderating Role of Age and Gender**

There is evidence to suggest that the relationship between the two forms of OCB and student academic achievement may be moderated by gender and age (i.e., more important for females and younger students). The extent to which lecturers' OCBI and OCBO in facilitating students' learning may depend on student age and gender. To demonstrate support for the proposed moderators, this research needs to support the relationship between the two moderators and the criterion variables (Martins, Eddleston & Veiga, 2002). In view of existing literature, it is expected that an individual's differences, including age and gender,



would affect the individual academic performance. Moreover, age is also expected to play a moderating role in explaining the OCBs and student academic achievement. Some studies have found a negative and significant relationship between student age and academic performance (e.g., Peiperl & Trevelyan, 1997; Ahmadi, Raiszadeh & Helms, 1997; Ekpenyong, 2000). Sulaiman and Mohezar (2006) state that younger students had more recent experience with academic environment and, therefore, were better primed for the challenges of studies in universities. Moreover, Deckro and Woudenberg (1997) and Cheung and Kan (2002) found that female students performed better academically than did their male counter parts. One explanation for this was that female students tend to put more time and effort into their studies than did male students. Thus, there is some conceptual and empirical evidence suggesting a moderated relationship between OCBs and student academic achievement. In order to determine whether the relationship between both forms of OCBs and student academic achievement are moderated by students age and gender, we tested the following hypothesis:

**Hypothesis 3: Student age will moderate the relationship between (a) OCBI and student academic achievement and (b) OCBO and student academic achievement.**

**Hypothesis 4: Student gender will moderate the relationship between (a) OCBI and student academic achievement and (b) OCBO and student academic achievement.**

## METHOD

### Subjects and Procedure

The sample of this study consisted of 162 students from one of the local public universities. The sample consisted of 44 males (27 percent) and 118 females (73 percent). The mean age of the subjects was 21.44 years ( $SD=1.64$ ). Students responded to questionnaires that were administered during classes. The questionnaire given to the students contained items on demographic information, two forms of lecturers' OCB (OCBI and OCBO) and the current CGPA.

### Measures

*OCBI and OCBO.* The independent variables of the present study are OCBI and OCBO. Behaviour that is directed mainly at students is called OCBI and behaviour that is concerned more with helping the university as a whole is called OCBO. Altruism is viewed as mainly benefiting individuals, whereas conscientiousness is directed at the organisation (William & Anderson, 1991). Some of the items representing these classes of behaviour were selected from previous work,

including Podsakoff and MacKenzie (1994), and some new items were generated based on the definitions of OCBI and OCBO given earlier in an effort to capture site-specific citizenship behaviours among lecturers. In this study, OCBI was measured by a 7-item scale, whereas OCBO was measured by a 5-item scale. The wording of the items were modified to accommodate the context of the present study. Each dimension of OCB was scored by obtaining the average rating of its component items. Students were asked to rate the overall level of OCBI and OCBO among their lecturers since the first semester of their study in the university.

*Student Performance.* Students' academic performance, that is, GPA is the dependent variable of this study. GPA was measured through a single question: "On a 4.0 scale, what is your cumulative GPA?". The cumulative grade point average (CGPA) has consistently been used as a predictor of success in university (Harackiewicz, Barron, Tauer & Elliot, 2002). Except for academic achievement which was measured as a ratio-scale, all items were rated on five-point Likert scales ranging from strongly disagree (1) to strongly agree (5).

*Demographic data.* Demographic data collected included age and gender. Age was treated as a ratio scale whereas gender was treated as a nominal or dummy variable in regression analyses, to capture any main or moderated effects of the two forms of OCB.

## Analysis

Bivariate correlation was used to test the relationship between OCB dimensions, needs for achievement and students' academic achievement. Correlation coefficient reveals the magnitude and direction of relationships. The magnitude is the degree to which variables move in unison or in opposition (Sekaran, 2000). Hierarchical multiple regression was utilised to test the research hypothesis outlined relating to the main effect of each OCB dimensions on students' academic achievement and the interaction terms between OCB dimensions and students' age and gender. Aiken and West (1991), Cohen and Cohen (1983) and Stone-Romero and Hollenbeck (1984) recommended the use of hierarchical multiple regression in research concerned with the detection of moderating effects. The general procedure for testing moderating effects was to enter the sets of predictors into the regression equation in the following order. At step 1, the main effects of the OCBI and OCBO were entered. At step 2, the moderator variables of age and gender were entered into the equation. The two-way interactions obtained by multiplying the moderator variable by the independent variables were added at step 3 (Zhang & Leung, 2002). All the variables were mean-centered to minimise the threat of multicollinearity in equation when interaction terms were included (Aiken & West, 1991).

Although regression analysis with tests for anticipated interactions are appropriate for assessing the moderating effect, split regression is useful to illustrate the effect. Significant interactions were further analysed via sub-grouping analysis, in which participants were split into appropriate groups on the basis of hypothesised moderator variable (Sharma, Durand & Gur-Arie, 1981). In this study, the moderator variables of students' age is split at the median into 2 groups (lower age and high age) whereas gender into male and female. After sub-grouping the respondents, regression analysis was used to investigate the relationship between the predictor variable and the criterion variable for each subgroup, and then the differences between the regression coefficients are compared (Arnold, 1982; Sharma *et al.*, 1981). A moderator exists if participants in one subgroup have significantly higher regression coefficient between the predictor and the criterion than those in other groups (Weiner, Muczyk & Martin, 1992). Additionally, variables were plotted separately for each group on a multiple line graph so as to aid in interpreting the interaction terms (Aiken & West, 1991; Cohen & Cohen, 1983; Stone-Romero & Hollenbeck, 1984). The independent variable was divided into low and high score. Dependent variable was plotted on the Y axis and the independent variable on the X axis.

## Results

Responses to the 12-items of OCB were subjected to an exploratory factor analysis using varimax rotation. The Kaiser-Meyer-Olkin measure of sampling adequacy was .85, which indicated that the data were suitable for factor analysis. Factor analysis revealed that two factors had eigenvalues greater than 1. The first factor (OCBI) consisted of 8 items and explained 39.7% of the variance in OCB. The second factor (OCBO) consisted of 5 items and accounted for an additional 10.9% of the variance. Table 1 shows the factor loadings of the two-factor solution.

Table 2 presents the reliabilities, descriptive statistics, and zero-order correlations of the study variables. All variables were tapped on a five-point scale except for students' academic achievement, which was measured as a ratio-scale. It can be seen that the mean of student academic achievement is 2.98, which is rather high. The data in Table 2 indicate that the use of OCBI and OCBO among lecturers were relatively high, with the mean of all OCB dimensions exceeding the scale midpoint of 3. The Cronbach-alpha for each variable is presented in parentheses. Internal consistency of the scales can be gauged through these coefficients. All the Cronbach-alpha was above .70, which suggested the specified indicators are sufficient for use (Nunnally, 1978). No alpha coefficient existed for the academic achievement variable because it consisted of only one item.

Table 1: Factor Loadings for Organisational Citizenship Behaviour

Items	Factor 1	Factor 2
1. help you with demanding study assignment.	<u>.72</u>	.08
2. voluntary clarify university procedures or regulations upon your request.	<u>.70</u>	.03
3. willingly give their time to help you with study-related problems	<u>.66</u>	.22
4. help you facilitate your learning process.	<u>.65</u>	.39
5. help you to get accustomed to university environment	<u>.60</u>	.35
6. are there to help you solve your study difficulties.	<u>.52</u>	.15
7. are willing to share their knowledge and expertise to help you improve your academic performance.	<u>.51</u>	.32
8. are not willing to work longer hours (e.g. extra classes)*	.39	<u>.82</u>
9. efficiently use time for classes.	.17	<u>.81</u>
10. always maintain a tidy work area.	.31	<u>.77</u>
11. obey university regulations and procedures even when no one is watching.	.15	<u>.76</u>
12. are always punctual.	.20	<u>.73</u>
<b>Eigenvalue</b>	<b>4.76</b>	<b>1.31</b>
<b>Percentage of variance</b>	<b>39.66</b>	<b>10.89</b>
<b>Cummulative percentage of variance</b>	<b>39.66</b>	<b>50.</b>

\*Item was reverse scored

Correlation analysis was done to explain the relationship between all variables in the study. Pearson correlation was used to examine the correlation coefficient among the variables. As can be seen from Table 2, the measure of student's academic achievement is significantly correlated with OCBI ( $r=.40, p<.01$ ) and OCBO ( $r=.26, p<.01$ ). More importantly, each of these variables is significantly correlated with the two forms of OCB in the direction predicted by the study hypothesis. The positive relationship indicates that high levels of OCBs among lecturers were more likely to result in high academic achievement among students. The intercorrelations were also inspected for multicollinearity. All the correlation coefficients were below .70. Therefore, variable redundancy did not appear to be of concern (Nunnally, 1978).

Table 2: Means, Standard Deviations, and Zero-Order Correlations of Study Variables (N=162)

	Means	SD	1	2	3	4	5
1. OCBI	4.07	0.45	(0.8)				
2. OCBO	3.89	0.6	.61 **	(0.75)			
3. Age	21.38	1.61	0.08	0.09	–		
4. Gender	–	–	.05.	0.07	0.03	–	
5. Student Academic Achievement	2.98	0.38	.40 **	.26 **	0.15	0.1	–

Note: OCBI = citizenship behaviour directed toward student;  
 OCBO = citizenship behaviour directed toward organization  
 Number in parentheses are the coefficient alphas

\* $p < .05$ ; \*\* $p < .01$ , two-tailed

Results of these regression procedures are shown in Table 3. The set of main effect of OCB dimensions entered at step 1 accounted for approximately 16% of the variance in student academic achievement. However, only OCBI ( $\beta = .38$ ,  $t = 4.01$ ,  $p = .00$ ) was significantly and positively related to student academic achievement. OCBO ( $\beta = .03$ ,  $t = .33$ ,  $p = .74$ ) was not significantly related to student academic achievement. Thus *hypothesis 1* is supported whereas *hypothesis 2* is rejected. The moderator variable entered at step 2 accounted for only 2% of the variance in student's academic achievement. Both moderator variables were not significantly related to student academic achievement. At step 3, when the two-way interactions were entered, an increase in  $R^2$  was observed and one of the interactions was significant. This interaction is between OCBO x gender ( $\beta = 1.52$ ,  $t = 1.98$ ,  $p = .04$ ). Hence, only *hypothesis 4b* is supported.

To test the significant interaction term, split regressions and graphical method were conducted. Figure 2 reveals the nature of the interaction between conscientiousness and gender. Among the two groups, the line representing females is more positively sloped ( $\beta = .58$ ,  $t = 4.71$ ,  $p = .00$ ) than the line representing males ( $\beta = .13$ ,  $t = 1.42$ ,  $p = .16$ ). Based on the graphs and the standardised beta weights, it can be seen that conscientiousness is an important determinant of academic achievement for females than for males.

Table 3: Hierarchical Multiple Regression

Variables	$\beta$	$t$	Sig.	$R^2$	$R^2\Delta$	$F$
<b>Step 1 (Main Effect)</b>				0.16	–	14.25 **
OCBI	.38 **	4.01	0			
OCBO	0.03	0.33	0.74			
<b>Step 2 (Moderator)</b>				0.18	0.02	8.45 **
Age	0.12	1.57	0.12			
Gender	0.11	1.5	0.14			
<b>Step 3 (Interaction Effect)</b>				0.21	0.03	4.94 **
OCBI x Age	1.02	0.72	0.47			
OCBI x Gender	0.85	0.94	0.35			
OCBO x Age	1.48	1.06	0.29			
OCBO x Gender	1.52 *	1.98	0.04			–

\* $p < .05$  \*\* $p < .01$



Figure 2: Plot of the two-way interaction between conscientiousness and gender on academic achievement

## DISCUSSION

Underpinned by social exchange perspective, the present study examined the relationship between two forms of OCB and student academic achievement and the moderating role of gender on these relationships. Consistent with our prediction, OCBI was related significantly to students' academic achievement. This finding suggests that lecturers with high levels of OCBI (e.g., help students with demanding study assignment, willingly give their time to help students with study-related problems) will make the students reciprocate in beneficial ways by exerting greater effort in their studies. However, our prediction that OCBO would have a direct relationship with student academic achievement did not receive support. As discussed earlier, there is evidence to suggest that the relationships between OCBO and students' academic achievement may be moderated by students' gender. Although intuitively appealing, to date, no study has assessed the possible moderating role of student demographic variables in the OCB-academic achievement relationship. Moderator effect was detected in connection with the relationship between OCBO and student academic achievement. The findings of this study are preliminary and regarded as exploratory. The results extend the general pattern of findings by Dipaola and Hoy (2005) and Allison *et al.*, (2001) who found a direct relationship between OCB and student academic achievement. The result of the present study goes beyond this important finding by providing some moderated relationships between lecturers' OCBO and students' academic achievement. There are some possible reasons for this finding. OCBO (conscientiousness) appears to capture a person's internalisation and acceptance of the organisation's rules, regulations, and procedures, which results in adherence to them, even without observer or monitor compliance. Perhaps, by being conscientious (e.g., always punctual, have extra classes), the lecturers will exhibit a true willingness to help the students to attain good academic achievement. Females benefited from the positive actions by the lecturers. However, these behaviours, may not affect male students. Perhaps, females tend to be more concerned than males with building and preserving relationships with others (lecturers). Males tend to be more "positional bargainers" focusing more on their personal position and less on the other's interests. Moreover, Piercy, Lane and Cravens (2002) argue that females have higher tendency for conformance with task requirement and problem at work. Hence, the OCBO exhibited by the lecturers was reciprocated by females by exerting greater effort on their studies and gaining better achievement than males. No significant moderating effects were obtained for student age using the moderated regression analysis.

In terms of implications, this study contributes to the existing literature in several ways. First, one of the hallmarks of university performance is student academic achievement. The present study which attempted to investigate



relationships between lecturer OCB and students academic achievement will supplement other universities' efforts (e.g. physical facilities, trained lecturer, academic regulations, etc.) in increasing the students' academic achievement. Second, research has accumulated considerable evidence that OCB plays a substantial role in the career success of organisation members. The present study adds to this research stream by demonstrating that OCB plays an important role in students' academic success as well. This is because, student academic achievement investigated in this study is one of the elements of university's effectiveness (Dipaola & Hoy, 2005). Third, this study extends beyond previous research by not only investigating OCB as a predictor of student's academic achievement, but also investigating the roles of students' gender as a moderator of the relationships. As such, the present study will provide a more comprehensive explanation on the effects of OCB on students' academic achievement. A previous research by Dipaola and Hoy (2005) only analysed the main effect of OCB on academic performance without paying attention to any possible moderating effects. The fourth contribution relates to the sample investigated. Despite considerable efforts in understanding antecedents and consequences of OCB, there is a dearth of empirical research exploring this concept in the context of the university. This study will also provide practical value for university management. To address students' academic performance, one strategy has been suggested to facilitate students' learning process. University faculty members can act as key players in facilitating students' learning by exerting extra effort, such as OCB.

Whereas this study provides some insights into the importance of OCB, several limitations of the research are notable. First, other potentially important variables beyond facets of OCB, especially student family background, were not controlled in the model. The importance of OCB may have been reduced if these variables are included in the model. Second, this study is based on cross-sectional data and thus, causality cannot be firmly established. More longitudinal studies are needed. Lastly, the sample size of this study is considered small. With these limitations in mind, the current results suggest several avenues of future research which is worthy of pursuit. Since the impact of OCB on individual performance is only beginning to be explored, the findings of the present study suggest that future research should examine the effects of OCB on other forms of student criterion variables such as achievement in extra-curricular activities. Secondly, the present research focused on the relationships between OCB and one of the students' criterion variables at the individual level analysis. Another avenue for future research is to examine this relationship at the organisational level. This is consistent with the suggestion by Schnake and Dumler (2003) that OCB occurs at the individual level. However, it is OCB in the aggregate that impacts organisational effectiveness.

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