








Role of Employee Commitment and Citizenship Behaviour in Sustaining Institutional Performance and Governance in Higher Education Systems

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ABSTRACT

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One major concern of all employers across the globe is the same, and that is the commitment of the employees. Organisations need to manage human resources in this highly competitive and dynamic environment. Organisational commitment (OC) improves the organisation's effectiveness. Unfortunately, in the service sector, employee retention is very poor due to poor pay structures, limited career growth opportunities, poor communication, and poor supervision. The current study aims to explore the impact of both demographic and job-related factors on OC and organisational citizenship behaviour (OCB). Another objective of the study is to explore the influence of OC components on faculty OCB in Higher Education Institutes (HEIs) of Uttarakhand, North India. The study used a simple random technique. The sample size was 300 faculty members working in both private and state universities of North India. Also, how OC affects sustainable outcomes (SO). An online structured questionnaire was distributed to the respondents. The first section comprised demographic and job-related factors and another section included questions related to OC, OCB, and SO. The reliability of the data was checked using the Cronbach Alpha test. To check the complex relationship between the variables, Partial Least Squares Structural Equation Modelling (PLS-SEM) was used. The findings of the study reveal that OC plays a decisive and central role in predicting OCB. All the three dimensions of OC affective commitment (AC) ($\beta = 0.318, p < 0.001$), normative commitment (NC) ($\beta = 0.247, p < 0.001$), continuance commitment (CC) ($\beta = 0.221, p < 0.001$) exhibit a positive and significant relationship with OCB. Among these, it can be observed that AC emerges as the strongest predictor, which implies that emotional attachment of an employee with his organisation is a key driver of citizenship behaviour among the faculty members. It can also be stated that there is a substantial influence on SO ($\beta = 0.647, p < 0.001$) which ultimately improves the teaching quality, organisational resilience, and job stability.

1. INTRODUCTION

Higher Education Institutes (HEIs) are the pioneers in education, research, social change, and innovation, which is vital for Sustainable development and impacts society on a large scale. Therefore, across the globe, HEIs are committed towards sustainable outcomes (SO) affecting the education sector [1-3]. Transformation of the HEIs towards SO involves new strategies and concepts that are highly dependent on the commitment of the faculty. HEIs are strategic stakeholder that implements SO with their potential to affect campus operations, governance, teaching, research, organisational resilience and also create awareness amongst the students [3-5]. HEIs collaborate with government agencies, businesses, and non-profit organisations where knowledge and skills are transferred. These collaboration leads in employment opportunities, improving teaching quality, internships for students, particularly, which is a very practical, sustainable outcome [6]. SO lead to effective resource management and achieving cost effectiveness [7, 8]. Education imparted by the

HEIs is necessary to prepare students to face challenges [9-11]. To enhance teaching quality as one of the SO, HEIs have flipped classrooms, which help in active learning and improve social learning experience, which ultimately satisfies the students and results in stability of the faculty, which is another very important sustainable outcome [12, 13]. Though many HEIs often face challenges and resist change, which is a hindrance to the development process [14]. This can be overcome if the academicians and the stakeholders of the HEIs are dedicated and exhibit citizenship behavior. It is certain that SO can be achieved without any delay or problems.

For the past many years, organisational and industrial psychologists have been exploring the work-related behaviour and attitudes of employees that affect the overall effectiveness of the organisation [15-17]. The primary area of interest for scholars studying organisational behaviour is the two main work-related factors: organisational commitment (OC) and organisational citizenship behaviour (OCB). In 1977, Steers [18] defined OC as the ability of an individual to identify himself with the organisation's values and goals. Because OC

has its theoretical importance, there are many factors that are predictors of OC. Some of these factors are included in the personality trait [19-21], perceived organisational support [22], psychological contracts [23-25], demographic characteristics [26], and leadership style [27]. For any organisation to sustain in the market, the employees must be dedicated and committed [28, 29]. Dedicated employees help organisations to meet the goals and objectives effectively [30]. OC reduces uncertainty and absenteeism, which results in improved organisational productivity [31]. Management of an organisation tries to improve and enhance the commitment of the employees to meet the competition in the market and to gain a competitive advantage [32]. Many researchers today are trying to study the phenomenon of OC as it affects the organisation and the individual. The concept of OC was given by Meyer and Allen [28], where a defined model of OC was proposed, identifying the three dimensions of OC, namely, affective commitment (AC), normative commitment (NC), and continuance commitment (CC) [33]. Commitment is a very important concept in the field of psychology to assess the attitude of an individual in the business environment setup [34]. The reason OC has become an area of interest for many scholars and academicians across the world is that it helps business organisations to grow and earn profits. Therefore, the human resource department of many organisations is trying to devise different methods that can clarify the aspects of commitment amongst the employees and can finally come up with different strategies and methods that can improve and enhance the commitment level among the employees, which can help the organisations to earn profit and grow [35]. OC is an important index that can measure the psychological bonding of the staff with the organization [36]. OC can provide the management with the ability to plan, organise, and enhance the efficiency of the organisation. It helps reduce labour turnover and helps in increasing the retention rate [37].

Therefore, today, when organisations are operating in a very dynamic environment that is rapidly changing organizations need employees who are dedicated. The priority of every organisation should be a dedicated workforce that believes in the ideology of the organisation [38]. OC positively influences organisational performance. In the education sector, commitment and responsibility of the faculty is utmost important, because efforts of the faculty leads to the promising careers of the students, which helps in the upliftment of society. In the education sector, especially in the HEI, it's extremely important to teach and train the students and improve the teaching quality. Faculty in the HEIs are expected to be extremely qualified, talented, hardworking, rigorous, and effective. Since HEIs are the major source of income in North India for both the private and the government sectors. Researchers and academicians from across the world did not pay much attention to the employees working in the HEIs of North India. Keeping in mind the competition that is faced by the organisation, it's important for the employees to work beyond the set roles and responsibilities. Organisational citizenship has become a very important area of research amongst academicians and researchers. Today, it has become extremely important for the business organizations to retain employees who exhibit citizenship behaviour within the organisation. The current businesses are crossing boundaries and are globalizing at a very fast pace. This ensures that the employees need to be adaptive, progressive, eager to learn new technology, and productive to accomplish more. Therefore, it's recommended by the psychologist that the employees should

go beyond their defined roles and responsibilities [39]. Citizenship Behaviour is the willingness and cautious behaviour of employees that is not recognised by the organisation. This behaviour of the employees helps the organisations to work effectively and enhance productivity. OCB has a very vital role to play, especially in adverse and critical times [40].

With respect to the faculty, OCB is assumed to be a critical theme. In the education sector, OCB, the altruistic conduct is related to the individual's identity. Both OC and OCB are important subject that needs attention, specifically in the education sector, as education has been recognized as a driver in unlocking an economy's potential, however its difficult if the teachers are not satisfied with the HEIs they are associated with, it becomes very difficult for them to be committed and exhibit citizenship behaviour.

2. REVIEW OF LITERATURE

2.1 Organizational commitment

Commitment is the reflection of loyalty, acceptability, identification, and dependency to achieve the goals and objectives [41]. The concept of commitment derives from employees' assessment which is based on the level of dedication shown by the employee [35]. OC is one of the hidden yet highly effective components of employees' behaviour at the workplace [42]. OC can be described as the employee's ability to identify himself with the organisation [35]. OC can also be explained as the feeling of belongingness [29]. OC can also be explained as a concept where the employees are loyal and put their energy into the organisation [43]. OC can also be explained as an employee's belief in the organisation that helps in reducing the intention to leave the organisation [41, 44]. Also, Organ [45] explained that it's an employee's belief in the organisation's objectives [46], his belief in staying connected and serving the organisation. OC serves as the employees' identification with the organisation and their involvement in it [47]. OC is also defined as the individual's active participation in the organisation and their strong attachment to the organisation [48]. Three main factors define OC: (i) an individual inclined to show substantial dedication towards the organisation, (ii) trust in the organisation's goals and objectives, and (iii) a great desire to be connected to the organisation [49]. A model of OC was presented by Organ et al. [50], which identified three dimensions of OC: affective, normative, and CC.

According to Lin and Peng [51], OC is the devotion of an employee towards their employer. OC can develop only if both the employee and employer are ready to stay connected with each other. According to Podsakoff and MacKenzie [52], the involvement of an individual in the organisation and its activity is described as OC. An individual who is morally convinced will always feel compelled to give loyalty to their organisation. They strongly believe that it is their moral responsibility. In all of the organisation, OC influences productivity and efficiency [48, 53]. Employees put in a lot of hard work to do well for the establishment, longing to be associated with the organisation and willing to accept its objectives.

2.2 Organisational citizenship behaviour

Organisational performance and effectiveness depend on

the prosocial behaviour of employees, who are willingly prepared to go above the assigned roles and obligations [54]. The voluntary behaviour of the employees is called OCB. Many researchers and academicians from all over the world have built their interest in OCB itself [50], its determinants and its antecedents. OCB is the individual behaviour that isn't recognized directly by the formal reward system [55]. Engaging in OCB is the personal choice of an individual; it's not forced on the individual, but it certainly encourages effectiveness and enhances productivity. OCB can also be defined as the prosocial behaviour and helping behaviour of an individual. OCB directly affects the members of an organisation and the organisation itself in a very positive way. OCB is the employee behaviour at the workplace that is not included in the employment contract [56, 57]. OCB is the staff conduct that is not included in the job role, but it supports the overall functioning of the organisation [58]. Podsakoff and MacKenzie [52] described OCB as the behaviour of an individual in the workplace that is not mentioned in the job description but that improves and facilitates organisational performance [48]. Such behaviour of an employee involves helping colleagues with a heavy workload, being courteous, defending an organisation, tolerating temporary impositions without any complaints, staying at the workplace after defined working hours, helping new joiners to catch up, and being courteous with colleagues [50, 52].

It has been found that OCB improve employee engagement, job performance, and knowledge sharing [48]. It has also been revealed in the past that OCB improves group cohesiveness and also contributes to the organisational performance and effectiveness [49]. OCB also benefits an organisation in many ways, such as generating creative ideas and offering suggestions to improve organisational culture. Earlier researchers defined OCB in terms of only two factors: serving principles and altruism. Serving principles simply means to maintain the rules and regulations to support team spirit and cooperation, and altruism means helping colleagues at the workplace. In the framework conceptualized by Podsakoff et al., he claimed that helping behaviour simply means that it's the willingness of an individual to help colleagues at the workplace. This helping behaviour is also referred to as peace-making in the organisation. Peace-making refers to cheerleading or solving conflicts at the workplace. The second dimension is organisational loyalty, which simply means promoting the organisation to the outsiders, protecting the organisation from external threats and safeguarding the organisation's interests, remaining loyal to the other organisations even in adverse situations [51]. The next dimension is organisational compliance, where employees can accept the organisation's rules, policies and procedures. In simple words, it's when employees obey organisational norms. The next dimension is civic virtue, which means when an employee participates in the governance policy of the organisation and takes responsibility for the organisation [52]. Here, the employee participates in the organisational meetings and monitors the organisational environment to recognise potential opportunities and threats. It's a voluntary behaviour of the employee towards innovation. The next dimension is sportsmanship, where an employee is uncomplaining and tolerates the inconvenience at the workplace. The last dimension of OCB is self-development, when the employee tries to improve their skills and abilities to contribute more to the organisation [48, 53].

2.3 Demographic, job-related factors and organisational citizenship behaviour

In a study conducted in China, LePine et al. [54] revealed that females exhibit more citizenship Behaviour in enterprises compared to male employees. Glińska-Noweś and Szostek [55] observed in their study that female teachers of the school are more inclined towards the citizenship behaviour as compared to the male teachers. However, in another study conducted in Iran, it was revealed that males exhibit more citizenship Behaviour as compared to females, as females are more skeptical to unfamiliar things [56]. Another study exposed that males are more inclined towards citizenship behaviour as compared to females in the organisation [57]. Previous study stated that there is no exchange between education & marital status and OCB [58-60]. A study in Mohaghegh Ardabili University stated that marital status affects OCB. Experience plays a significant role in enhancing performance and also affects citizenship behaviour significantly [53, 54]. A similar study conducted in the IT sector stated that employees demonstrate the highest level of OCB as they gain experience and age, and they tend to exhibit more citizenship behaviour. Employees who receive a good paycheck are more satisfied and therefore exhibit a higher level of citizenship behaviour, whereas employees who receive less don't exhibit citizenship behaviour [61]. Employees at a higher position are likely to interact with everyone in the organisation, which increases the level of commitment and citizenship behaviour [54]. Another study conducted by Patel and Behrani [62] stated that employees who have spent more than 21 years in an organisation tend to exhibit more citizenship behaviour.

2.4 Demographic factors, Job-Related factors and organisational commitment

Several studies have examined the impact of demographic variables on OC. However, the results of these studies were mixed. A study that surveyed healthcare industry employees found that gender affects OC [63]. Another study that surveyed the software industry of Pakistan stated that gender did not affect the OC of employees [64]. Another study conducted stated that gender has no substantial effect on the OC of the employees working in the Turkish Port [65]. Another study conducted in India stated that gender has no significant effect on OC. A research conducted in Nigeria, in which all university teachers participated, found that demographic variables have a strong, positive effect on OC [66]. Another study conducted on 320 employees engaged in manufacturing and service organisations in Nigeria [67] stated that the demographic profile (age, gender, marital status, education level, and job tenure) has a significant effect on OC. It's also assumed [68], theoretically, that years of experience have a substantial and positive effect on the OC, as is also shown in studies conducted by Wu and Shen [69].

2.5 Sustainability in higher education institutions

Across the globe, sustainability has become a major concern and priority for HEIs. Showcasing the unique role of innovation, teaching quality, institutional resilience, and retention of employees [70]. HEIs are recognised as a major contributor to sustainable development. HEIs are engaged in civic engagement and provide education and research as a key role. The potential of HEIs is beyond education and research

and serves the major purpose of organisational governance, campus operations, and broader community ecosystem [71]. Within HEIs, sustainability is often addressed through three main elements: (1) education quality encompassing innovation in the curriculum, (2) institution resilience focusing on the organisation, and (3) retention of employees [72]. HEIs play a very crucial role in advancing sustainability with the role it has to play, be it research, education, their respective operations within and outside the campus through the engagement of the community [73]. HEIs are able to bring awareness, knowledge and help in enhancing the skills and abilities of the students. HEIs are able to promote novel technologies and also transfer the results of the research for the benefit of society [74]. Despite the progress in enrollment of students in the HEIs and the number of HEIs increasing, there exist challenges, including limited training of the faculty and a lack of standardized procedure of faculty assessment [75]. From the financial standpoint, long-term sustainability of the HEIs primarily focuses on diverse revenue streams, investment in sustainable infrastructure and making procurement of resources transparent [76]. The efforts of HEIs towards sustainability are often compromised due to a lack of OC of the faculty, a lack of funds, and poor staff capacity [77]. HEIs often face problems related to a shortage of qualified and dedicated faculty, limited funds, and policy incoherence. These problems are setbacks for any HEI to perform and sustain in the market. The field of sustainability is evolving continuously, and HEIs are also adapting sustainability concepts and introducing sustainability programs that can improve an organisation's resilience, improve teaching quality, and improve job stability. These efforts enhance the employability of the students by creating social awareness and providing skills that are relevant to the industry [78].

Enhancing teaching quality and improving research and development are the driving forces of sustainable innovation, and they can align with the relevant SDG goals. HEIs bridge the gap between societal development and scientific research by collaborating with industries, which helps in innovation, deepening understanding, and converging different scientific domains [79].

2.6 Research methodology

The current study adopted an exploratory and descriptive research design to assess the relationship between OC and OCB and its end sustainability outcome of the faculty in the HEIs. The design is appropriate as it helps in understanding the existing patterns, relationships, and attitudinal tendencies within the academic aspects. The target population for this study comprises faculty employed in the higher education institutions in Uttarakhand in North India. Both public and private sector universities were considered to ensure representation of faculty. A simple random technique was employed to ensure that selection bias is minimised and improve generalizability. The sample size of the study consists of 300 faculty members associated with different departments and institutional types (Table 1). The study used a combination of both library research methods and field surveys. Primary data was collected through a structured online questionnaire, which was distributed to the department heads and deans. These authorities were well informed about the purpose of the study and facilitated the circulation of the questionnaire among the faculty members of their respective departments.

Table 1. Demography table

Characteristic	Category	Frequency	%
Gender	Male	193	64%
	Female	107	36%
Age	25-35	82	27%
	35-45	56	19%
	45-55	76	25%
	55 and above	86	29%
Marital Status	Married	183	31%
	Unmarried	117	69%
Designation	Professor	94	32%
	Associate Professor	88	29%
	Assistant Professor	118	39%
Location	Rural	168	56%
	Urban	132	44%
Institution Type	State University	95	32%
	Private University	65	22%
	Deemed University	55	18%
	Central University	85	28%
Qualification	Post Graduate	77	26%
	Ph.D	188	62%
	Post-Doc	35	12%
	0-5 years	27	9%
	5-10 years	88	29%
Service Length	10-15 years	74	25%
	15-20 years	56	19%
	20+ years	55	18%
	30-40	50	17%
Salary (₹ thousands)	40-50	63	21%
	50-60	43	14%
	60-70	84	28%
	70+	60	20%

The questionnaire was divided into two sections:

Section A: captured the respondents' demographic and occupational characteristics, which include age, gender, marital status, area of belongingness, salary, and experience.

Section B: focused on measuring the key constructs considered in the study, namely OC, OCB, and SO Measurement Variables, like OC scale was used to assess commitment. The scale comprises three dimensions, namely AC (8 items), NC (8 items), and CC (8 items). OCB was assessed using Podsakoff et al.'s scale of 24 items distributed across 5 dimensions, namely, Altruism (A) (5), civic virtue (CV) (5), courtesy (C) (5), sportsmanship (S) (5), and conscientiousness (CN) (4). Lastly, SO had three dimensions, namely, teaching quality, organisational resilience and employment stability. All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach's Alpha was calculated the results indicated a satisfactory reliability. AC 0.910, NC 0.889, CC 0.901, OCB 0.953, and sustainable outcome 0.918. All values exceed the threshold value of 0.70, which indicates strong internal consistency. To establish construct reliability, Composite Reliability (CR) was assessed. The CR values were found to be within acceptable limits, further confirming the robustness of the measurement model. To assess the complex relationship between the constructs, Partial Least Squares Structural Equation Modelling (PLS-SEM) was used. This technique is suitable particularly for predictive modelling and exploratory research, especially when complex models are to be dealt with involving multiple latent constructs and indicators. A comprehensive understanding of the relationships between OC, OCB and SO can be understood as PLS-SEM enables simultaneous examination of both the measurement and structural models.

2.7 Research objectives

The purpose of the study is to study the impact of Demographic and job-related factors on OC and OCB. Another purpose of the study is to assess the impact of OC components on the OCB of faculty engaged in HEIs in Uttarakhand, North India. Lastly, the objective of the study is to ascertain the SO of OCB that improves the teaching quality, organization resilience, and job stability.

To measure the sample adequacy Kaiser-Meyer-Olkin (KMO) was used. It can be observed that the KMO value is 0.923 (Table 2), which exceeds the threshold value of 0.60. According to Kaiser, if the value exceeds 0.60 its considered marvellous. Hence, it indicates excellent suitability for factor analysis. It can also be observed that Bartlett's test of Sphericity is statistically significant.

Table 2. Factor analysis

KMO and Bartlett's Test		
KMO Measure of Sampling Adq.		0.923
Aprx. Chi-Square		1505.469
Bartlett's Test of Sphericity	Df	28
	Sig.	0.000

Table 3. Reliability analysis

Construct	Items	CA	CR	AVE
AC	8	0.910	0.927	0.613
NC	8	0.889	0.911	0.563
CC	8	0.901	0.923	0.598
OCB	24	0.953	0.956	0.542
SO	9	0.918	0.934	0.612

Note: AC = Affective Commitment; NC = Normative Commitment; CC = Continuance Commitment; OCB = Organisational Citizenship Behaviour; SO = Sustainability Outcome; CA = Cronbach's Alpha; CR = Composite Reliability; AVE = Average Variance Extracted.

The measurement model was evaluated by examining the Cronbach Alpha (CA), Composite Reliability (CR), & Average Variance Extracted (AVE) (Table 3). These CA scores (all above 0.8) indicate excellent internal consistency for each measurement scale used in this organisational study. Simply put, this means that the questions used to measure each concept (affirmative impairment, normative impairment, continuous impairment, and OCB) work together coherently and reliably to measure what they should measure. High values (above the commonly accepted limit of 0.7) suggest that employees have consistently answered related questions in each category, giving researchers the confidence that the research tool captures significant and reliable information about employee attitudes and behaviours. Each measurement scale used in this organisational study has excellent reliability, as indicated by these composite reliability points (all above 0.88). To simplify, this indicates that the issues used to evaluate each concept – AC, NC, CC, OCB, and sustainability – produce consistently accurate results in evaluating these behaviours and attitudes in the workplace. High values (well above the commonly accepted limit of 0.7) provide strong evidence that these measurement scales are robust and reliable, giving researchers and managers confidence that their assessment tool accurately captures significant information on how employees connect to their work requirements, which are necessary to remain, perform output costs and engage in useful behaviors in addition to employment requirements. It can be realized from the above table that convergent validity was

measured using AVE, as all the constructs report the AVE values above the threshold of 0.50, which ranges from 0.542 to 0.613. The measurement model depicts high reliability and adequate convergent validity, which further makes it suitable for structural model analysis.

Table 4. Outer-loadings

Construct	Indicator	Outer Loading
AC	AC1	0.792
	AC2	0.821
	AC3	0.768
	AC4	0.846
	AC5	0.809
	AC6	0.774
	AC7	0.832
	AC8	0.801
NC	NC1	0.742
	NC2	0.764
	NC3	0.781
	NC4	0.813
	NC5	0.795
	NC6	0.772
	NC7	0.806
	NC8	0.788
CC	CC1	0.753
	CC2	0.776
	CC3	0.804
	CC4	0.819
	CC5	0.791
	CC6	0.768
	CC7	0.822
	CC8	0.807
OCB	A1	0.812
	A2	0.836
	A3	0.794
	A4	0.808
	A5	0.821
	C1	0.776
	C2	0.804
	C3	0.818
	C4	0.792
	C5	0.809
	CN1	0.773
	CN2	0.801
	CN3	0.819
	CN4	0.788
	CV1	0.827
	CV2	0.844
CV3	0.806	
CV4	0.821	
CV5	0.833	
S1	0.775	
S2	0.801	
S3	0.822	
S4	0.794	
S5	0.808	
SO	ERT1	0.826
	ERT2	0.841
	ERT3	0.812
	IRS1	0.804
	IRS2	0.836
	IRS3	0.818
	TQC1	0.829
TQC2	0.847	
TQC3	0.821	

Note: AC = Affective Commitment; NC = Normative Commitment; CC = Continuance Commitment; OCB = Organisational Citizenship Behaviour; SO = Sustainability Outcome.

The reliability of all the items was assessed. Outer loadings

(Table 4) indicate the degree to which each item contributes to its overall construct. The acceptable threshold for outer loading is above 0.5, which ensures that each item significantly impacts its respective construct. Outer loadings above 0.70 are considered. It can be observed that for AC, all the items (A1-A8) exhibit loadings that range between 0.768 and 0.846, confirming that each item contributes to the construct. Similarly, NC indicators (NC1-NC8) exhibit loadings that range between 0.742 and 0.813, all exceeding the threshold, supporting the reliability of the indicators. The construct CC also shows satisfactory loadings, as the values are above the threshold and range from 0.753 to 0.813, supporting the reliability of the indicator. All indicators of OCB across its 5 dimensions, namely (A, CV, C, S, CN). These values show that each items clearly reflect the underlying construct significantly, though the nature of OCB is multidimensional, the high loadings indicate that the scale is robust. Lastly, it can be observed that sustainability indicators (ER1- TQC3) clearly show that the outer loading of each item ranges between 0.804 to 0.847, demonstrating that all the items measure the construct.

Discriminant validity among the constructs was evaluated (Table 5). It can be observed from the table that all constructs satisfy this requirement. Specifically, the square root of AVE for AC (0.783) is greater than its correlation with NC (0.612), CC (0.587), OCB (0.476), and SO (0.402). Similarly, NC also shows adequate discriminant validity, with its square root of AVE (0.750), which exceeds its correlations with CC (0.629), OCB (0.418), and SO (0.384). For CC, the square root of AVE (0.773) is higher than its correlation with OCB (0.356) and SO (0.365), which confirms its distinctiveness. OCB also meets the criterion as its square root of AVE (0.736) is greater than its correlation with SO (0.647) and all other constructs. Finally, SO shows a square root of AVE of 0.782, which also exceeds its correlation with AC (0.402), NC (0.384), CC (0.365) and OCB (0.647). Hence, the findings of the test confirm that each construct is unique and also captures the unique aspects of the model.

Table 5. Fornell-Larcker criterion

Category	AC	NC	CC	OCB	SO
AC	0.783				
NC	0.612	0.750			
CC	0.587	0.629	0.773		
OCB	0.476	0.418	0.356	0.736	
SO	0.402	0.384	0.365	0.647	0.782

Note: AC = Affective Commitment; NC = Normative Commitment; CC = Continuance Commitment; OCB = Organisational Citizenship Behaviour; SO = Sustainability Outcome.

Variance Inflation Factor was utilized (Table 6) to check if there is no multicollinearity among the indicators. As per the established guidelines, the VIF values should be below 3.3, which indicates that there is an absence of multicollinearity and hence further confirms that the indicators are not excessively correlated. It can be observed that the VIF values for AC range from 1.978 to 2.451, which means low to moderate correlation among indicators without any risk of collinearity. Similarly, NC exhibits VIF values between 1.842 and 2.273 which are well within the acceptable limits. The indicators of CC show the VIF values ranging from 1.964 to 2.361, which confirms that this construct has no concern of multicollinearity. For OCB, which consists of five dimensions, the VIF values range from 1.983 to 2.586 although the number

of indicators is large, yet the indicators are distinct and do not suffer from redundancy. Multicollinearity is also missing in SO as the VIF values range between 2.104 and 2.481. Hence, the indicators are sufficiently independent and contribute uniquely to their respective constructs. These findings further support the suitability and robustness of the model for further structural analysis.

Table 6. Variance Inflation Factor (VIF)

Construct	Indicator	VIF
AC	AC1	2.104
	AC2	2.286
	AC3	1.978
	AC4	2.451
	AC5	2.217
	AC6	1.994
	AC7	2.368
	AC8	2.145
NC	NC1	1.842
	NC2	1.913
	NC3	2.061
	NC4	2.273
	NC5	2.144
	NC6	1.998
	NC7	2.219
	NC8	2.082
CC	CC1	1.964
	CC2	2.051
	CC3	2.214
	CC4	2.347
	CC5	2.138
	CC6	1.992
	CC7	2.361
	CC8	2.276
OCB	A1	2.308
	A2	2.472
	A3	2.186
	A4	2.231
	A5	2.357
	C1	2.041
	C2	2.219
	C3	2.342
	C4	2.154
	C5	2.276
	CN1	1.983
	CN2	2.118
	CN3	2.269
	CN4	2.094
	CV1	2.421
CV2	2.586	
CV3	2.308	
CV4	2.354	
CV5	2.441	
SO	S1	2.063
	S2	2.198
	S3	2.321
	S4	2.172
	S5	2.287
	ERT1	2.241
	ERT2	2.389
ERT3	2.217	
IRS1	2.104	
IRS2	2.286	
IRS3	2.195	
TQC1	2.347	
TQC2	2.481	
TQC3	2.263	

Note: AC = Affective Commitment; NC = Normative Commitment; CC = Continuance Commitment; OCB = Organisational Citizenship Behaviour; SO = Sustainability Outcome; VIF = Variance Inflation Factor.

Hypotheses were assessed based on standardised path coefficients (β) and p-values, a conventional threshold of $p < 0.05$ for supporting statistically (Table 7). 36 hypotheses were tested, and 28 were supported (Figure 1), which simply means that 77.8% of the hypotheses were supported. Demographic predictors of OCB and commitment dimensions were assessed, and it was revealed that job profile, marital status, income, age, gender, education, and length of service significantly predict the key dimensions of OCB and all three dimensions of OC. It is suggested that employee background characteristics are significantly associated with attitudinal outcomes in the model. It can also be observed that Age \rightarrow OCB was not supported, indicating that the difference in age straightforwardly affects discretionary citizenship behaviour, whereas age demonstrated a positive association with commitment, which simply implies that older employees may show strong attachment with the organisation and do not manifest higher

OCB. The same pattern was observed for Education \rightarrow OCB wasn't supported. The findings of the study imply that education may shape skills and knowledge, but doesn't predict OCB. Most demographic paths in this section supported a conventional threshold, which indicates that demographic segmentation is very informative for enlightening the variance in the attitudinal model outcomes. It was also revealed that the area of belongingness shapes both the employees' discretionary and attitudinal behaviours. It can also be revealed that OCB has a positive and significant influence on SO ($\beta = 0.647$, $p = 0.000$). The magnitude of the path coefficient (0.647) also suggests that there is a strong exchange between the discretionary behaviour of the employees that enhances the sustainability-related outcomes, that is, teaching quality, organisational resilience and employee stability.

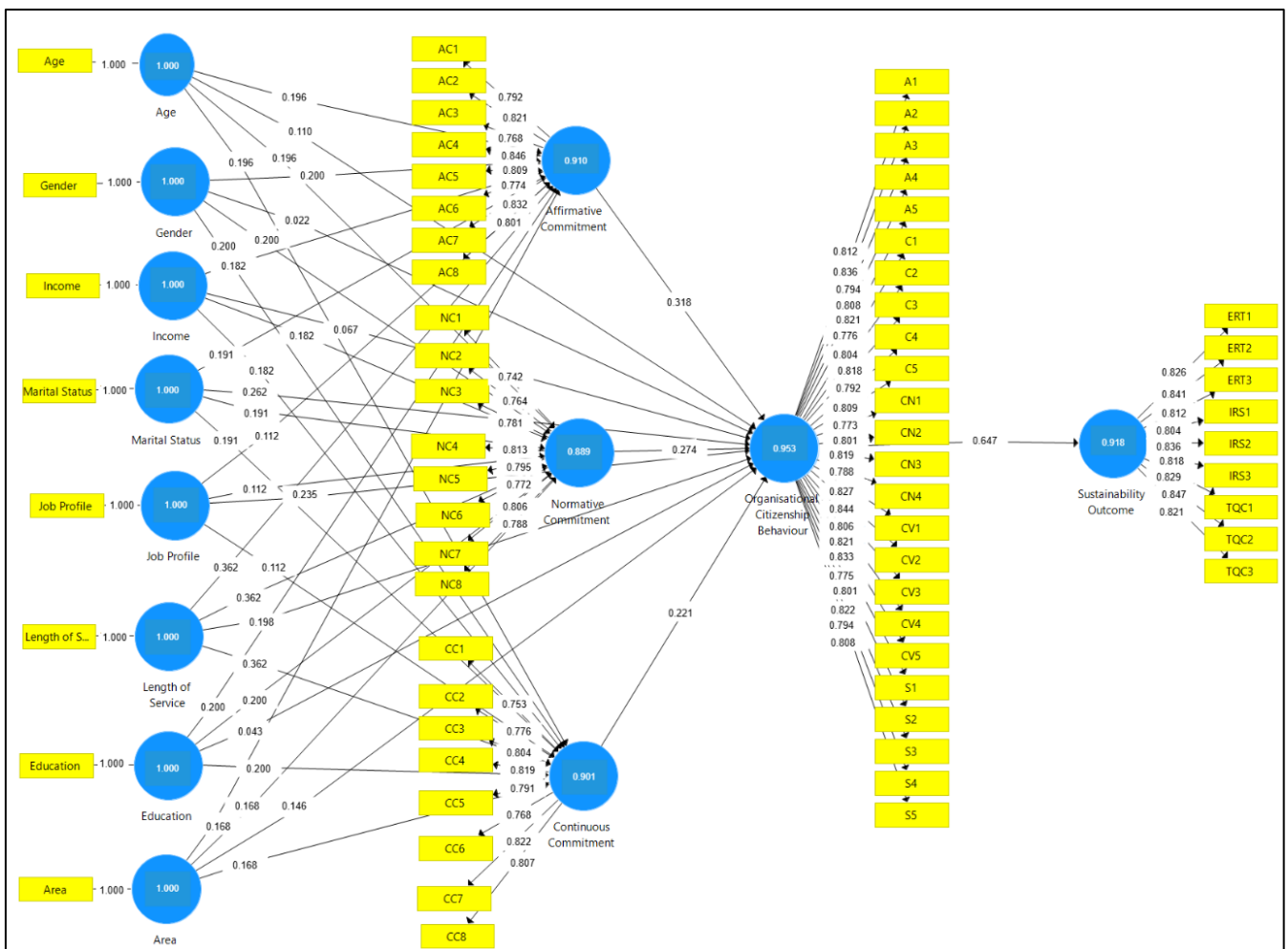


Figure 1. Effect testing

Table 7. Direct effects

Hypothesis	Relationship	Beta Value	P-Value	Status
H01	Age -> OCB	0.110	0.252	Null Hypothesis Accepted
H02	Age -> AC	0.196	0.000	Null Hypothesis Rejected
H03	Age -> NC	0.196	0.000	Null Hypothesis Rejected
H04	Age -> CC	0.196	0.000	Null Hypothesis Rejected
H05	Education -> OCB	0.043	0.386	Null Hypothesis Accepted
H06	Education -> AC	0.200	0.000	Null Hypothesis Rejected
H07	Education -> NC	0.200	0.000	Null Hypothesis Rejected
H08	Education -> CC	0.200	0.000	Null Hypothesis Rejected
H09	Gender -> OCB	0.022	0.444	Null Hypothesis Accepted

H010	Gender -> AC	0.200	0.000	Null Hypothesis Rejected
H011	Gender -> NC	0.200	0.000	Null Hypothesis Rejected
H012	Gender -> CC	0.200	0.000	Null Hypothesis Rejected
H013	Marital Status -> OCB	0.262	0.029	Null Hypothesis Rejected
H014	Marital Status -> AC	0.191	0.000	Null Hypothesis Rejected
H015	Marital Status -> NC	0.191	0.000	Null Hypothesis Rejected
H016	Marital Status -> CC	0.191	0.000	Null Hypothesis Rejected
H017	Salary -> OCB	0.067	0.200	Null Hypothesis Accepted
H018	Income -> AC	0.182	0.042	Null Hypothesis Rejected
H019	Income-> NC	0.182	0.042	Null Hypothesis Rejected
H020	Income-> CC	0.182	0.042	Null Hypothesis Rejected
H021	Length of Service -> OCB	0.198	0.056	Null Hypothesis Rejected
H022	Length of Service -> AC	0.362	0.009	Null Hypothesis Rejected
H023	Length of Service -> NC	0.362	0.009	Null Hypothesis Rejected
H024	Length of Service -> CC	0.362	0.009	Null Hypothesis Rejected
H025	Job Profile-> OCB	0.235	0.014	Null Hypothesis Rejected
H026	Job Profile -> AC	0.112	0.21	Null Hypothesis Accepted
H027	Job Profile -> NC	0.112	0.21	Null Hypothesis Accepted
H028	Job Profile -> CC	0.112	0.21	Null Hypothesis Accepted
H029	AC → OCB	0.318	0.000	Null Hypothesis Rejected
H030	NC → OCB	0.274	0.000	Null Hypothesis Rejected
H031	CC → OCB	0.221	0.000	Null Hypothesis Rejected
H032	OCB → SO	0.647	0.000	Null Hypothesis Rejected
H033	Area → OCB	0.146	0.021	Null Hypothesis Rejected
H034	Area → AC	0.168	0.012	Null Hypothesis Rejected
H035	Area → NC	0.168	0.012	Null Hypothesis Rejected
H036	Area → CC	0.168	0.012	Null Hypothesis Rejected

Note: AC = Affective Commitment; NC = Normative Commitment; CC = Continuance Commitment; OCB = Organisational Citizenship Behaviour; SO = Sustainability Outcome.

3. PATH COEFFICIENT WITH P-VALUES

It can be observed from the result that OCB has an R^2 value of 0.587 and an adjusted R^2 OF 0.583, which implies that 58.7% (Table 8) of the variance in OCB is explained by its antecedent variables included in the model. Similarly, the SO demonstrates an R^2 value of 4.19 and an adjusted R^2 of 0.417, implying that about 41.9% of the variance in the SO is explained by the model. This can also be explained as a moderate level of predictive accuracy, which suggests that while the model can capture a significant portion of the variance, additional factors that are beyond also included in the study can also influence SO. The proximity between R^2 and adjusted R^2 shows that the model is well specified with minimal overfitting and the predictors are appropriate without any complexity.

Table 8. R^2

Construct	R^2	Adj R^2
OCB	0.587	0.583
SO	0.419	0.417

Note: OCB = Organisational Citizenship Behaviour; SO = Sustainability Outcome.

The Standardized Root Mean Square Residual (SRMR) value for the estimated model is 0.068 (Table 9), which is lower than the threshold value of 0.08. The discrepancy measures d_{ULS} (3.915) and d_G (2.296) remain within the acceptable limits. These values are used primarily for model comparison rather than a strict cut-off assessment, and a marginal increase doesn't mean poor fit. The Chi-square value of the estimated model is 1589.471. Normed Fit Index (NFI) for the estimated model is 0.907, which exceeds 0.90, which is the threshold value that reflects a satisfactory incremental fit, which implies that the proposed model significantly improves over the null model.

Table 9. Model fit indices

Model Fit Index	Saturated Model	Est Model
SRMR	0.062	0.068
d_{ULS}	3.482	3.915
d_G	2.174	2.296
Chi-Square	1546.238	1589.471
NFI	0.914	0.907

4. CONCLUSION

The current study provides an extensive examination of the direct effects of the demographic and occupational characteristics on OC and OCB and subsequently on the SO within the HEIs of North India. The findings of the study reveal that OC plays a decisive and central role in predicting OCB. All three dimensions of OC AC ($\beta = 0.318$, $p < 0.001$), NC ($\beta = 0.247$, $p < 0.001$), and CC ($\beta = 0.221$, $p < 0.001$) exhibit a positive and significant relationship with OCB. Among these, it can be observed that AC emerges as the strongest predictor, of citizenship behaviour among the faculty members. It can also be stated that there is a substantial and highly significant influence on SO ($\beta = 0.647$, $p < 0.001$), which implies the strategic importance in fostering teaching quality, enhancing HEIs governance, improving job stability, and sustainability. These findings also highlight the Behaviour of the faculty, which is beyond the job requirements and contributes to meaningful organisational resilience and performance in academic settings. A nuanced picture is presented with respect to the demographic variables, such as length of service, marital status, area, and job profile, which show positive and significant effects on OCB, suggesting that professional experience, personal stability, and contextual factors influence OCB. Whereas education, gender, age, and salary have no significant effect on OCB may be less dependent on these specific demographic characteristics and

influenced by the organisational and psychological factors. However, demographic factors, including gender, marital status, education, age, length of service, area, and income, demonstrate a positive and significant relationship with all three dimensions of OC. This simply means that demographic factors may not influence OCB directly, but they indirectly contribute to strengthening an employee's commitment. However, the job profile has a direct effect on OCB. Overall, the findings validate the mediating role of OC in linking demographic and job-related characteristics to OCB and reinforce the importance of commitment in fostering OCB and SO. In conclusion, the results of the study emphasised that institutional strategies strengthen commitment that can significantly improve OCB and, in turn, improve SO, which ensures long-term success of the HEI.

AUTHOR CONTRIBUTIONS

Conceptualisation and Data Analysis, Kanojia, P., Data Collection, Editing and Revision, Malhotra, R.K., Review of Literature, Novelty of the study, Uniyal, A. K., Data Analysis and Interpretation, Johri, A., Review of Literature and Editing, Qureshi, S. K.

REFERENCES

[1] Giesenbauer, B., Müller-Christ, G. (2020). University 4.0: Promoting the transformation of higher education institutions toward sustainable development. *Sustainability*, 12(8): 3371. <https://doi.org/10.3390/su12083371>

[2] Osorio, A.M., Úsuga, L.F., Vasquez, R.E., Nieto-Londono, C., Rinaudo, M.E., Martínez, J.A., Leal Filho, W. (2022). Towards carbon neutrality in higher education institutions: Case of two private universities in Colombia. *Sustainability*, 14(3): 1774. <https://doi.org/10.3390/su14031774>

[3] Vallez, M., Lopezosa, C., Pedraza-Jiménez, R. (2022). A study of the web visibility of the SDGs and the 2030 agenda on university websites. *International Journal of Sustainability in Higher Education*, 23(8): 41-59. <https://doi.org/10.1108/IJSHE-09-2021-0361>

[4] Manolis, E.N., Manoli, E.N. (2021). Raising awareness of the Sustainable Development Goals through ecological projects in higher education. *Journal of Cleaner Production*, 279: 123614. <https://doi.org/10.1016/j.jclepro.2020.123614>

[5] Wang, X., Waris, I., Bhutto, M.Y., Sun, H., Hameed, I. (2022). Green initiatives and environmental concern foster environmental sustainability: A study based on the use of reusable drink cups. *International Journal of Environmental Research and Public Health*, 19(15): 9259. <https://doi.org/10.3390/ijerph19159259>

[6] Leal Filho, W., Amaro, N., Avila, L.V., Brandli, L., Damke, L.I., Vasconcelos, C.R.P., Hernandez-Diaz, P.M., Frankenberger, F., Fritzen, B., Velazquez, L., Salvia, A. (2021). Mapping sustainability initiatives in higher education institutions in Latin America. *Journal of Cleaner Production*, 315: 128093. <https://doi.org/10.1016/j.jclepro.2021.128093>

[7] Ajiboye, A.A., Popoola, S.I., Adewuyi, O.B., Atayero, A.A., Adebisi, B. (2022). Data-driven optimal planning

for hybrid renewable energy system management in smart campus: A case study. *Sustainable Energy Technologies and Assessments*, 52: 102189. <https://doi.org/10.1016/j.seta.2022.102189>

[8] Mohamed Hashim, M.A., Tlemsani, I., Duncan Matthews, R. (2022). A sustainable university: Digital transformation and beyond. *Education and Information Technologies*, 27(7): 8961-8996. <https://doi.org/10.1007/s10639-022-10968-y>

[9] Baumber, A. (2022). Transforming sustainability education through transdisciplinary practice. *Environment, Development and Sustainability*, 24(6): 7622-7639. <https://doi.org/10.1007/s10668-021-01731-3>

[10] Sandri, O., Holdsworth, S. (2022). Pedagogies for sustainability: Insights from a foundational sustainability course in the built environment. *International Journal of Sustainability in Higher Education*, 23(3): 666-685. <https://doi.org/10.1108/IJSHE-01-2021-0002>

[11] Sewchurran, K., Davids, L.M., McDonogh, J., Meyer, C. (2022). Enlarging sustainability learning through integrative thinking with a focus on cultivating virtues. *Journal of International Education and Business*, 15(1): 126-146. <https://doi.org/10.1108/JIEB-04-2021-0048>

[12] Howell, R.A. (2021). Engaging students in education for sustainable development: The benefits of active learning, reflective practices and flipped classroom pedagogies. *Journal of Cleaner Production*, 325: 129318. <https://doi.org/10.1016/j.jclepro.2021.129318>

[13] Viera Trevisan, L., Machado do Nascimento, L.F., Leal Filho, W., Ávila Pedrozo, E. (2024). A transformative online approach to sustainable development in management education: The case of a Brazilian business school. *International Journal of Sustainability in Higher Education*, 25(1): 1-20. <https://doi.org/10.1108/IJSHE-02-2023-0039>

[14] Serna, J.M., Chaparro, T.S., Purcell, W.M., Aldeanueva, C.M. (2022). Driving transformational sustainability in a university through structural and academic innovation: A case study of a public university in Spain. *Advances in Engineering Education*, 10(1): 1-34. <https://eric.ed.gov/?id=EJ1335697>

[15] Pathan, M.S.K. (2022). The influence of organizational culture on employee commitment and turnover intentions. *International Research Journal of Management and Social Sciences*, 3(4): 34-43. <https://doi.org/10.5281/zenodo.10115346>

[16] Laffaldano, M.T., Muchinsky, P.M. (1985). Job satisfaction and job performance: A meta-analysis. *Psychological Bulletin*, 97: 251-273. <https://doi.org/10.1037/0033-2909.97.2.251>

[17] McDonald, D.J., Makin, P.J. (2000). The psychological contract, organisational commitment and job satisfaction of temporary staff. *Leadership & Organization Development Journal*, 21(2): 84-91. <https://doi.org/10.1108/01437730010318174>

[18] Steers, R.M. (1977). Antecedents and outcomes of organizational commitment. *Administrative Science Quarterly*, 22(1): 46-56. <https://doi.org/10.2307/2391745>

[19] Matzler, K., Renzl, B. (2007). Personality traits, employee satisfaction and affective commitment. *Total Quality Management*, 18: 589-598. <https://doi.org/10.1080/14783360601061528>

[20] Erdheim, J., Wang, M., Zickar, M.J. (2006). Linking the big five personality constructs to organizational

- commitment. *Personality and Individual Differences*, 41: 959-970. <https://doi.org/10.1016/j.paid.2006.04.005>
- [21] Panaccio, A., Vandenberghe, C. (2012). Five-factor model of personality and organizational commitment: The mediating role of positive and negative affective states. *Journal of Vocational Behavior*, 80: 647-658. <https://doi.org/10.1016/j.jvb.2012.03.002>
- [22] Aube, C., Rousseau, V., Morin, E.M. (2007). Perceived organizational support and organizational commitment: The moderating effect of locus of control and work autonomy. *Journal of Managerial Psychology*, 22: 479-495. <https://doi.org/10.1108/02683940710757209>
- [23] Bal, P.M., De Lange, A.H., Jansen, P.G.W., Van Der Velde, M.E.G. (2008). Psychological contract breach and job attitudes: A meta-analysis of age as a moderator. *Journal of Vocational Behavior*, 72(1): 143-158. <https://doi.org/10.1016/j.jvb.2007.10.005>
- [24] Zhao, H.A.O., Wayne, S.J., Glibkowski, B.C., Bravo, J. (2007). The impact of psychological contract breach on work-related outcomes: A meta-analysis. *Personnel Psychology*, 60: 647-680. <https://doi.org/10.1111/j.1744-6570.2007.00087.x>
- [25] Cassar, V., Briner, R.B. (2011). The relationship between psychological contract breach and organizational commitment: Exchange imbalance as a moderator of the mediating role of violation. *Journal of Vocational Behavior*, 78: 283-289. <https://doi.org/10.1016/j.jvb.2010.09.007>
- [26] Azeem, S.M. (2010). Job satisfaction and organizational commitment among employees in the Sultanate of Oman. *Psychology*, 1: 295-300. <https://doi.org/10.4236/psych.2010.14038>
- [27] Noor, A. (2009). Examining organizational citizenship behavior as the outcome of organizational commitment: A study of universities teachers of Pakistan. In *Proceedings 2nd CBRC, Lahore, Pakistan*.
- [28] Allen, N.J., Meyer, J.P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, 63(1): 1-18. <https://doi.org/10.1111/j.2044-8325.1990.tb00506.x>
- [29] Sendogdu, A., Kocabacak, A., Guven, S. (2013). The relationship between human resource management practices and organizational commitment: A field study. *Procedia-Social and Behavioral Sciences*, 99: 818-827. <https://doi.org/10.1016/j.sbspro.2013.10.553>
- [30] Rahmanzadeh, A., ParsaYekta, Z., AshghaliFarahani, M., Yekaninejad, M.S. (2013). Organizational commitment in nurses working in hospitals associated to Tehran's medical sciences university. *Iran's Medical Sciences University Nursing Cares Research Center (The Nursing Journal of Iran)*, 86(26): 29-38. <https://doi.org/10.12691/ajnr-7-2-8>
- [31] Stamper, C.L., Van Dyne, L. (2001). Work status and organizational citizenship behavior: A field study of restaurant employees. *Journal of Occupational and Organizational Psychology*, 22: 517-536. <https://doi.org/10.1002/job.100>
- [32] Morrow, P.C. (1983). Concept redundancy in organizational research: The case of work commitment. *Academy of Management Review*, 8(3): 486-500. <https://doi.org/10.2307/257837>
- [33] Cohen, A. (2006). The relationship between multiple commitment and organizational citizenship behavior is Arab and Jewish culture. *Journal of Vocational Behavior*, 69(1): 105-118. <https://doi.org/10.1016/j.jvb.2005.12.004>
- [34] Mowday, R.T., Steers, R.M., Porter, L.W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, 14: 224-247. [https://doi.org/10.1016/0001-8791\(79\)90072-1](https://doi.org/10.1016/0001-8791(79)90072-1)
- [35] Bienstock, C.C., DeMoranville, C.W., Smith, R.K. (2003). Organizational citizenship behavior and service quality. *Journal of Services Marketing*, 17(4): 357-378. <https://doi.org/10.1108/08876040310482775>
- [36] Gautam, T., Van Dick, R., Wagner, U., Upadhyay, N., Davis, A.J. (2005). Organizational citizenship behavior and organizational commitment in Nepal. *Asian Journal of Social Psychology*, 8(3): 305-314. <https://doi.org/10.1111/j.1467839X.2005.00172.x>
- [37] Markovits, Y., Ullrich, J., van Dick, R., Davis, A.J. (2008). Regulatory foci and organisational commitment. *Journal of Vocational Behavior*, 73(3): 485-489. <https://doi.org/10.1016/j.jvb.2008.09.004>
- [38] Kim, W.G., Leong, J.K., Lee, Y.K. (2005). Effect of service orientation on job satisfaction, organizational commitment, and intention of leaving in a casual dining chain restaurant. *Hospitality Management*, 24: 171-193. <https://doi.org/10.1016/j.ijhm.2004.05.004>
- [39] Allen, N.J., Meyer, J.P. (2000). Construct validation in organizational behavior research: The case of organizational commitment. In *Problems and Solutions in Human Assessment*, pp. 285-314. https://doi.org/10.1007/978-1-4615-4397-8_13
- [40] Mowday, R.T., Porter, L.W., Steers, R.M. (1983). Employee-organization linkages: The psychology of commitment, absenteeism and turnover. *American Journal of Sociology*, 88(6): 1315-1317. <http://www.jstor.org/stable/2778990>
- [41] Hackett, R.D., Lapiere, L.M., Hausdorf, P.A. (2001). Understanding the links between work commitments constructs. *Journal of Vocational Behavior*, 58(3): 392-413. <https://doi.org/10.1006/jvbe.2000.1776>
- [42] Porter, L.W., Steers, R.M., Mowday, R.T., Boulian, P.V. (1974). Organizational commitment, job satisfaction and turnover among psychiatric technicians. *Journal of Applied Psychology*, 59(5): 603-609. <https://doi.org/10.37335>
- [43] Mathieu, J.E., Zajac, D.M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108(2): 171-194. <https://doi.org/10.1037/0033-2909.108.2.171>
- [44] Porter, L., Pearce, J., Tripoli, A., Kristi, L. (1998). Differential perceptions of employers' inducements: Implications for psychological contracts. *Journal of Organizational Behavior*, 19: 769-782.
- [45] Organ, D.W. (1997). Organizational citizenship behavior: It is construct clean up time. *Human Performance*, 10(2): 85-97. https://doi.org/10.1207/s15327043hup1002_2
- [46] Appelbaum, S., Bartolomucci, N., Beaumier, E., Boulanger, J., Corrigan, R., Dore, I., Girard, C., Serroni, C. (2004). Organizational citizenship behavior: A case study of culture, leadership and trust. *Management Decision*, 42: 13-40. <https://doi.org/10.1108/00251740410504412>
- [47] Smith, C.A., Organ, D.W., Near, J.P. (1983). Organizational citizenship behavior: Its nature and

- antecedents. *Journal of Applied Psychology*, 68: 655-663. <https://doi.org/10.1037/0021-9010.68.4.653>
- [48] Podsakoff, P.M., MacKenzie, S.B., Paine, J.B., Bachrach, D.G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, 26: 513-563. <https://doi.org/10.1177/014920630002600307>
- [49] Kark, R., Waismel-Manor, R. (2005). Organizational citizenship behavior: What's gender got to do with it? *Organization*, 12: 889-917. <https://doi.org/10.1177/13505084050574>
- [50] Organ, D.W., Podsakoff, P.M., MacKenzie, S.B. (2006). *Organizational Citizenship Behavior: Its Nature, Antecedents, and Consequences*. SAGE Publications, Inc. <https://doi.org/10.4135/9781452231082>
- [51] Lin, C., Peng, T.K. (2000). From organizational citizenship behaviour to team performance: The mediation of group cohesion and collective efficacy. *Management and Organization Review*, 6: 55-75. <https://doi.org/10.1111/j.1740-8784.2009.00172.x>
- [52] Podsakoff, P.M., MacKenzie, S.B. (1997). Impact of organizational citizenship behavior on organizational performance: A review and suggestions for future research. *Human Performance*, 10: 133-151. https://doi.org/10.1207/s15327043hup1002_5
- [53] George, J.M., Jones, G.R. (1997). Organizational spontaneity in context. *Human Performance*, 10: 153-170. https://doi.org/10.1207/s15327043hup1002_6
- [54] LePine, J.A., Erez, A., Johnson, D.E. (2002). The nature and dimensionality of organizational citizenship behavior: A critical review and meta-analysis. *Journal of Applied Psychology*, 87: 52-65. <https://doi.org/10.1037/0021-9010.87.1.52>
- [55] Glińska-Neweś, A., Szostek, D. (2018). Organizational citizenship behaviors in public and private sector. *International Journal of Contemporary Management*, 17: 45-58. <https://doi.org/10.4467/24498939IJCM.18.003.8382>
- [56] Wanxian, L., Weiwu, W. (2006). A demographic study on citizenship behavior as in-role orientation. *Personality and Individual Differences*, 42: 225-234. <https://doi.org/10.1016/j.paid.2006.06.014>
- [57] Zin-Abadi, H.R. (2009). Organizational citizenship behavior-Job satisfaction and commitment to schools. *Journal of Women Research Center*, 3(3): 75. <https://doi.org/10.5430/wje.v3n3p75>
- [58] Ryan, J.J. (2002). Work values and organizational citizenship behaviors: Values that work for employees and organizations. *Journal of Business and Psychology*, 17(1): 123-132. <https://doi.org/10.1023/A:1016246103190>
- [59] Langford, T., Neil, J.M. (2000). The affective bases for the gendering of traits: Comparing the United States and Canada. *Social Psychology Quarterly*, 63(1): 34-48. <https://doi.org/10.2307/2695879>
- [60] Bahrami, M.A., Montazeralfaraj, R., Gazar, S.H., Tafti, A.D. (2014). Relationship between organizational perceived justice and organizational citizenship behavior among an Iranian hospital's employees, 2013. *Electronic Physician*, 6(2): 838. <https://doi.org/10.14661/2014.838-844>
- [61] Yaghoubi, M., Yarmohammadian, M.H., Raesi, A.R., Javadi, M., Saghaiannejad, S., Isfahani, S. (2010). The relationship between the organizational justice and organizational citizenship behavior among medical records staffs of selected hospitals of Isfahan. *Health Information Management*, 506-515. https://him.mui.ac.ir/article_11019_e7fdeae58bfddf97dba9f1f67abf5921.pdf
- [62] Patel, N., Behrani, P. (2023). A study on the relationship between organizational citizenship behavior and work life balance in contemporary work environment. *OPJU Business Review*, 2(1). <https://doi.org/10.63825/opjubr.2023.2.1.839>
- [63] Pala, F., Eker, S., Eker, M. (2008). The effects of demographic characteristics on organizational commitment and job satisfaction: An empirical study on Turkish health care staff. *The Journal of Industrial Relations and Human Resources*, 10(2): 54-75. <https://doi.org/10.4026/1303-2860.2008.0073.x>
- [64] Kayani, B.N., Kayani, U.N. (2021). Factors affecting organizational commitment of employees: Evidence from Pakistan. *Australian Journal of Business and Management Research*, 6(1): 13-27. <https://doi.org/10.52283/NSWRCA.AJBMR.20210601A02>
- [65] Popoola, S.O. (2009). Organizational commitment of records management personnel in Nigerian private universities. *Records Management Journal*, 19: 204-217. <https://doi.org/10.1108/09565690910999193>
- [66] Salami, S.O. (2008). Demographic and psychological factors predicting organizational commitment among industrial workers. *Anthropologist*, 10(1): 31-38. <https://doi.org/10.1080/09720073.2008.11891026>
- [67] Sheikh, L. (2017). Antecedents and consequences of organizational commitment of teachers: Case of University of the Punjab. *Pakistan Economic & Social Review*, 55(2): 391-414. <https://www.jstor.org/stable/26616719>
- [68] Leal, S., Azeiteiro, U.M., Aleixo, A.M. (2024). Sustainable development in Portuguese higher education institutions from the faculty perspective. *Journal of Cleaner Production*, 434: 139863. <https://doi.org/10.1016/j.jclepro.2023.139863>
- [69] Wu, Y.C.J., Shen, J.P. (2016). Higher education for sustainable development: A systematic review. *International Journal of Sustainability in Higher Education*, 17(5): 633-651. <https://doi.org/10.1108/IJSHE-01-2015-0004>
- [70] Serafini, P.G., Moura, J.M.D., Almeida, M.R.D., Rezende, J.F.D.D. (2022). Sustainable development goals in higher education institutions: A systematic literature review. *Journal of Cleaner Production*, 370: 133473. <https://doi.org/10.1016/j.jclepro.2022.133473>
- [71] Souza, M.A., Gonzalez, M.O.A., Pinho, A.L.S.D. (2024). Maturity model for sustainability assessment of chemical analyses laboratories in public higher education institutions. *Sustainability*, 16(5): 2137. <https://doi.org/10.3390/su16052137>
- [72] Canare, F.D. (2024). Strategic communication practices in the institutionalization of environmental sustainability policies in higher education institutions. *Chemical Engineering Transactions*, 113: 217-222. <https://doi.org/10.3303/CET24113037>
- [73] Rodriguez-Guerreiro, M.J., Torrijos, V., Soto, M. (2024). A review of waste management in higher education institutions: The road to zero waste and sustainability.

- Environments, 11(12): 293.
<https://doi.org/10.3390/environments11120293>
- [74] Wafa, W., Sharaai, A.H., Matthew, N.K., Akhundzada, N.A. (2025). Calculation of higher education institution's facilities and services applying the life cycle costing approach contributing sustainability. *Journal of Sustainability Research*, 7(1): e250016. <https://doi.org/10.20900/jsr20250016>
- [75] Aleixo, A.M., Leal, S., Azeiteiro, U.M. (2018). Conceptualization of sustainable higher education institutions, roles, barriers, and challenges for sustainability: An exploratory study in Portugal. *Journal of Cleaner Production*, 172: 1664-1673. <https://doi.org/10.1016/j.jclepro.2016.11.010>
- [76] Abdullahi, A.M., Hussein, H.A., Ahmed, M.Y., Hussein, O.A., Warsame, A.A. (2024). The impact of education for sustainable development on university students' sustainability behavior: A case study from undergraduate students in Somalia. *Frontiers in Education*, 9: 1-11. <https://doi.org/10.3389/educ.2024.1413687>
- [77] Tasdemir, C., Gazo, R. (2020). Integrating sustainability into higher education curriculum through a transdisciplinary perspective. *Journal of Cleaner Production*, 265: 121759. <https://doi.org/10.1016/j.jclepro.2020.121759>
- [78] Sarpong, D., Boakye, D., Ofosu, G., Botchie, D. (2022). The three pointers of research and development (R&D) for growth-boosting sustainable innovation system. *Technovation*, 122: 102581. <https://doi.org/10.1016/j.technovation.2022.102581>
- [79] Bashir, H., Araci, Z.C., Obaideen, K., Alsayouf, I. (2023). An approach for analyzing and visualizing the relationships among key performance indicators for creating sustainable campuses in higher education institutions. *Environmental and Sustainability Indicators*, 19: 100267. <https://doi.org/10.1016/j.indic.2023.100267>