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ORIGINAL RESEARCH

## Predictors of Teacher's Engagement of Higher Education: An Exploratory Study

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Предиктори спільності викладачів вищої освіти: попереднє дослідження

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Предикторы сообщности преподавателей высшего образования:

предварительное исследование

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### Abstract

**Background:** The study explores the personal characteristic and organisational environment as predictors of engagement. The teacher engagement has job engagement, organisation engagement and research engagement as the second-order construct.

**Purpose:** To explore the different dependent and independent variables contributing towards the construct of teacher engagement and its predictors; to develop an instrument to measure levels of teacher engagement; to predict the factors contributing to teacher engagement to enable institution management to craft job and organisation environment.

**Materials and Methods:** The research aimed to develop an instrument to measure the level of engagement among teachers. The items of the tool were generated from the meta-analysis of the literature. This research was conducted at three educational institutes, and the samples were selected by the probability sampling method. To check sample adequacy KMO test was being conducted. Factors were explored through exploratory factor analysis, and predicting factors were linearly regressed.

**Results:** This study on teacher engagement in the Indian perspective indicated that pay, benefits, objectivity, career growth and interpersonal relation are hygiene factors. However, work ethics and job content are the motivational factors in making teachers engage with their job or organisation.

**Conclusions:** This research emphasised better job design to encourage the teacher and utilise their skills and competencies to the maximum. Focusing on the motivational factors improved work quality and work-life balance as well.

**Keywords:** teacher engagement, personal characteristics, organisational environment.

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### Introduction

Teacher engagement has been identified as one of the most critical factors in the success and future of education (Huberman, 1993; Nias, 1981). It plays a vital role in teachers' work performance, reduces absenteeism, burnout and turnover, and influences

students' achievement and attitude (Firestone, 1996; Graham, 1996; Lewis, 1990; Tsui & Cheng, 1999). Crosswell and Elliott (2002) describe teacher engagement as 'caring', 'dedicated' and 'take the job seriously' from those who 'put their interests first'. Some teachers find engagements as professional

identities as they derive a lot of enjoyment from their job (Elliott & Crosswell, 2001). The innovative potential of modern teacher is essential (Melnik & Pypenko, 2017). Teaching is a complex and demanding profession that requires a high level of engagement in work with both head and heart (Day, 2004; Elliott & Crosswell, 2001; Fried, 1995; Nias, 1996). To quote from Barman and Roy's study (2011), "an engaged faculty will show a high degree of commitment and involvement in the profession. For him/her, teaching is more of commitment than compliance" (p. 143). The levels of engagement can be reflected through job engagement, organisation engagement and research engagement. The engagement for teaching cannot be considered 'luxury, a frill, or a quality possessed by few teachers; instead, a sense of passion is 'essential to all good teaching' (Day, 2004). Sustaining passion for teaching or job is intimately connected with teachers' engagement with employment, which relates to their sense of professional and organisational identity as organisational engagement. Recent research in this area makes this belief even more grounded (Melnik & Pypenko, 2020; Pypenko, Maslov, & Melnik, 2020). *The aim of the study.* To explore the different dependent and independent variables contributing towards the construct of teacher engagement and its predictors; to develop an instrument to measure levels of teacher engagement; to predict the factors contributing to teacher engagement to enable institution management to graft job and organisation environment so that it will contribute to teacher development, institution development, and societal development at large.

The study will explore the personal characteristic and organisational environment as predictors of engagement. The second-order construct's unique aspect will have the locus of control (internal) and work ethics as the independent variable. The second-order organisational environment has benefits, career opportunities, interpersonal relations, job content, objectivity, and pay as independent variables. The teacher engagement has job engagement, organisation engagement and research engagement as the second-order construct. The research aims to construct an instrument to measure the predicting factors contributing to the higher level of engagement among under and post-graduate teachers. The study also will try to answer the research question "how universities and colleges should engage their faculties to enhance teaching effectiveness (job engagement), mutual loyalty (organisation engagement) and research productivity (research engagement)?"

## Materials and Methods

The research aims to develop an instrument to measure the level of engagement among teachers. The items of the tool are generated from the meta-analysis of the literature. This research is an empirical exploratory pilot study to establish the principle variables of all the factors considered for the construct of the study. This research is conducted at three educational institutes of

Delhi, and the samples are selected by the probability sampling method after taking concern of the respective department. To check sample adequacy KMO test is being conducted. Factors are explored through exploratory factor analysis, and predicting factors are linearly regressed to check their variation affecting the dependent engagement variables.

## Results and Discussion

All the 76 statements of the questionnaire were positively worded; hence reverse scoring is not required. Response for the statement is measured through a four-point Likert scale: Not at all true (0); somewhat true (1); largely true (2) and absolutely true (4). The summation of responses to all the assumed variables is the aggregate of an individual respondent's score. Initially, the questionnaire contains 76 statements; after exploratory factor analysis for data reduction through principal component analysis, the final 59 statements are tested for reliability with the help of Cronbach Alpha. Four items were deleted for job engagement; Cronbach's alpha tests the inter-correlations among items to estimate the internal consistency. The alpha values of the assumed 11 variables meet the conventional level of acceptance ( $\alpha > 0.60$ ), indicating inter-correlations among tested items are maximised when all items measure the same construct, as shown in Table 1.

Cronbach's alpha indirectly indicates the degree to which a set of items measures a single uni-dimensional latent construct. With alpha score support, the convergent construct validity of the 11 variables are established through the degree of inter-correlation of the variables found through theoretical review claims is proved to be true in the subsequent analysis.

The KMO Measure of Sampling Adequacy value for a set of variables indicated in Table 1 fall in the range between 0.62 to 0.87, which would be labelled as the range between 'mediocre' to 'meritorious'. Bartlett's Test of Sphericity is significant at 0.05 level, showing the validity and suitability of the responses collected to the problem addressed through this study. Bartlett's sphericity tests also indicate that the correlation matrix is an identity matrix; i.e. all diagonal elements are 1, and all off-diagonal features are 0, implying that all items/statements are uncorrelated.

Table 2 indicates the basic findings of the responses to the 11 variables are discriminating, as the mean percentage score ranges between 42.8 % to 63.23% and is well spread around each mean score.

The response score is fairly high in terms of the level of engagement for the organisation (63.23%) and research (72.16%). The job engagement (49.26%) scored below average, indicating the institutions should work towards policy design to increase teachers' engagement. The difference in engagement scores are statistically insignificant (NS) as  $P < 0.05$  [Job Engagement  $F=0.78$ ,  $Sig=0.379$  (NS); Organisation Engagement  $F=2.77$ ,  $Sig=0.099$  (NS) and Research Engagement  $F=1.40$ ,  $Sig=0.238$  (NS)] indicating no different in the levels of engagement between gender.

**Table 1**

*Summary of Exploratory Factor Analysis (n=100)*

Serial No.	Variable	No. of Items	Score Range	KMO & Bartlett's Test	Statement Indicator	Factor Loading 1	Cronbach Alpha
1.	Organisation Engagement	10	0-30	0.88*	Q8	0.866	0.937
					Q19	0.757	
					Q30	0.820	
					Q41	0.705	
					Q52	0.881	
					Q58	0.909	
					Q62	0.719	
					Q67	0.655	
					Q71	0.812	
2.	Job Engagement	6	0-18	0.80*	Q75	0.864	0.835
					Q14	0.672	
					Q25	0.873	
					Q56	0.796	
					Q60	0.609	
					Q65	0.589	
3.	Research Engagement	4	0-12	0.62*	Q69	0.677	0.631
					Q22	0.810	
					Q44	0.645	
					Q55	0.685	
4.	Locus of Control (Internal)	4	0-12	0.76*	Q65	0.595	0.729
					Q39	0.672	
					Q59	0.524	
					Q68	0.812	
5.	Work Ethics	5	0-15	0.70*	Q76	0.720	0.789
					Q54	0.513	
					Q57	0.710	
					Q61	0.779	
					Q66	0.611	
6.	Benefit	5	0-15	0.81*	Q70	0.551	0.826
					Q1	0.862	
					Q12	0.831	
					Q23	0.878	
					Q34	0.637	
7.	Career Opportunity	5	0-15	0.87*	Q45	0.654	0.896
					Q2	0.892	
					Q13	0.864	
					Q24	0.890	
					Q35	0.658	
8.	Interpersonal Relations	5	0-15	0.85*	Q46	0.888	0.876
					Q4	0.850	
					Q15	0.837	
					Q26	0.730	
					Q37	0.897	
9.	Job Content	5	0-15	0.77*	Q48	0.767	0.780
					Q5	0.787	
					Q16	0.830	
					Q27	0.765	
					Q38	0.613	
10.	Objectivity	5	0-15	0.82*	Q49	0.669	0.869
					Q7	0.817	
					Q18	0.743	
					Q29	0.808	
					Q40	0.849	
11.	Pay	5	0-15	0.83*	Q51	0.835	0.889
					Q9	0.854	
					Q20	0.948	
					Q31	0.897	
					Q42	0.719	
					Q53	0.732	

**Table 2**

*Summary of Basic Findings (n=100)*

Serial No.	Variable	Mean	Standard Deviation	Mean as Percentage
<b>Teacher Engagement</b>				
1.	Organisation Engagement	18.97	7.60	63.23
2.	Research Engagement	8.66	2.31	72.16
3.	Job Engagement	14.78	3.14	49.26
<b>Personal Attributes</b>				
4.	Work Ethics	12.52	2.57	83.46
5.	Locus of Control (Internal)	9.07	2.21	75.58
<b>Organisation Climate</b>				
6.	Job Content	9.97	3.17	66.46
7.	Interpersonal_Relationship	9.21	3.50	61.4
8.	Objectivity	7.70	4.03	51.33
9.	Pay	6.97	4.21	46.46
10.	Career Opportunity	6.68	4.25	44.53
11.	Benefit	6.42	3.91	42.8

The score for two personal attributes is also found to be fairly high; positive work ethics (83.46) mean score is much higher than internal locus of control (75.58%). The fairly high mean score in work ethics helps predict that the teachers from the northern region of India are more integrated, disciplined, and have a sense of responsibility toward their job. Teachers with a higher average internal locus of control believe that decisions and efforts guide rewards in life, so if one fails, it is due to one's lack of effort and understanding. The mean score of the organisational climate shows mixed results. The means score is listed in descending order in Table 2 indicates job content (66.46%) and interpersonal relation (61.4%) are above average. The respondents' teachers have clarity about their job

content, and interpersonal relations between colleagues are well established. Objectivity (51.33%) is averagely scored. Pay (46.46%), career opportunity (44.53%) and benefit (42.8%) are scored below average. Therefore, the institutions' management should set a priority action plan to improve the organisation climate by reconsidering the pay, benefits, and career opportunities for the teachers in the northern region of India.

The study aims to identify the predictors of teacher engagement, which call for bivariate and multivariate analysis. The first step in that direction is 11x11 Pearson's inter-correlation matrix, as indicated in Table 3.

**Table 3**

*Inter-Correlation Matrix of All 11 Variables Selected for Study (n=100)*

Variables	1JE	2OE	3RE	4B	5CO	6IR	7JC	8O	9P	10LOC	11WE
1. Job Engagement (JE)	1										
2. Organisation Engagement (OE)	0.70	1									
3. Research Engagement (RE)	0.55	0.50	1								
4. Benefit (B)	0.54	0.75	0.51	1							
5. Career Opportunity (CO)	0.59	0.81	0.48	0.87	1						
6. Interpersonal Relationship (IR)	0.49	0.58	0.55	0.57	0.62	1					
7. Job Content (JC)	0.75	0.80	0.66	0.78	0.79	0.69	1				
8. Objectivity (O)	0.61	0.80	0.55	0.73	0.86	0.68	0.80	1			
9. Pay (P)	0.60	0.78	0.51	0.88	0.85	0.55	0.73	0.73	1		
10. Locus of Control (LOC)	0.67	0.53	0.51	0.47	0.50	0.36	0.59	0.47	0.43	1	
11. Work Ethics (WE)	0.73	0.65	0.49	0.51	0.54	0.33	0.62	0.53	0.50	0.79	1

*Note.* Table is statistically significant ( $p < 0.01$ ).

The first two-column of Table 3 depicts that all eight independent variables are positively and significantly related to each dimension of teacher engagement at under-graduate and post-graduate levels. The high

multi-collinearity of the data makes it necessary to perform multivariate analysis for the actual predictors of each dimension for teacher's engagement (indicated in Table 4).

**Table 4**  
*Critical Predictors of Teacher Engagement*

Serial No.	Predictors	Zero-order Correlation (A)	Standardised Beta Coefficients (B)	Individual Contribution (A) x (B)
1.	Pay	0.788***	0.318***	0.250
2.	Objectivity	0.801***	0.289***	0.231
3.	Job Content	0.805*	0.207*	0.166
4.	Work Ethics	0.656***	0.211***	0.138
Dependent Variable: Organisation Engagement			Total R <sup>2</sup>	0.785
R=0.887 R <sup>2</sup> =0.787		Adjusted R <sup>2</sup> =0.778	Durbin-Watson 1.685	F=87.867 (P<0.001)
1.	Job Content	0.759***	0.489***	0.371
2.	Work Ethics	0.739***	0.435***	0.321
Dependent Variable: Job Engagement			Total R <sup>2</sup>	0.692
R=0.832 R <sup>2</sup> =0.693		Adjusted R <sup>2</sup> =0.431	Durbin-Watson 2.063	F=109.472 (P<0.001)
1.	Job Content	0.661***	0.661***	0.436
Dependent Variable: Research Engagement			Total R <sup>2</sup>	0.436
R=0.661 R <sup>2</sup> =0.436		Adjusted R <sup>2</sup> =0.431	Durbin-Watson 2.069	F=75.873 (P<0.001)

Stepwise multiple regression analysis was carried out to identify a particular combination of independent variables or variables explaining the highest amount of variance (R<sup>2</sup>) with all regression coefficients statistically significant at least 5 per cent that describe the particular dimension of engagement (refer to Table 4 for details). Organisation engagement has four predictors as pay; objectivity, job content and work ethic explain 78.5% of the variance. Pay and objectivity emerged as the dominant predictors as their individual contributions are 25% and 23.1%, respectively. Job content contributes 37.1%, and work ethics contributes 32.1% in the total 69.2% variance in job engagement. Both variables are equally responsible for the variation, with job content in a little higher position. Job content is the only predictor for research engagement and is accountable for 43.6% of the variance. The Durbin-Watson values of all three regression models lie approximately around value 2, indicating no auto-correlation in the respondents.

### Conclusions

This pilot study on teacher engagement in the Indian perspective indicate that pay, benefits, objectivity, career growth and interpersonal relation are hygiene factors; however, work ethics and job content are the motivational factors in making teachers engage with their job or organisation. This research somewhere implies the Two-Factor Theory of Herzberg (1966) that institutional management must stress upon guaranteeing the adequacy of the hygiene factors to avoid disengagement affecting the quality of education (subjecting to further research). Also, it is crucial to make sure that the work is stimulating and rewarding so that the teachers are motivated to work and perform more challenging and better. This research emphasises better job design to encourage the teacher and utilise their skills and competencies to the maximum. Focusing on the motivational factors will improve work quality and work-life balance as well.

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### Conflicts of Interests

The authors declare that there is no conflict of interests.

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#### Анотація

**Вступ:** У дослідженні розглядаються особистісні показники та організаційне середовище як предиктори залученості. Залученість викладача включає у собі залученість до роботи, залученість до організації та залученість до дослідження як конструкт другого порядку.

**Мета:** Дослідити різні залежні та незалежні змінні, що впливають на побудову залученості викладачів та їх предиктори; розробити інструмент для вимірювання рівня залучення викладачів; спрогнозувати фактори, що сприяють залученню викладачів, щоб надати можливість керівництву навчального закладу пов'язати роботу та організаційне середовище.

**Матеріали і Методи:** Дослідження спрямоване на розробку інструментарію для вимірювання рівня залучення викладачів. Компоненти інструментарію створені з урахуванням мета-аналізу літератури. Це дослідження проводилося у трьох навчальних закладах, а зразки відібрано методом імовірнісної вибірки. Для перевірки адекватності вибірки проведено тест КМО. Чинники вивчалися за допомогою дослідницького факторного аналізу, а прогнозуючи чинники піддавалися лінійній регресії.

**Результати:** Це дослідження залученості викладачів показало, що оплата, пільги, об'єктивність, кар'єрне зростання та міжособистісні взаємовідносини є гігієнічними факторами для Індії. Тим не менш, трудова етика та зміст роботи є мотивуючими факторами, що спонукають викладачів займатися своєю роботою чи організацією.

**Висновки:** У цьому дослідженні особлива увага приділялася кращому плануванню роботи, щоб заохочувати викладачів та максимально використати їхні навички та компетенції. Зосередження уваги на мотиваційних факторах також покращило якість роботи та баланс між роботою та особистим життям.

**Ключові слова:** залученість викладача, особистісні характеристики, організаційне середовище.

#### Аннотация

**Введение:** В исследовании рассматриваются личностные характеристики и организационная среда как предикторы вовлеченности. Вовлеченность преподавателя включает в себя вовлеченность в работу, вовлеченность в организацию и вовлеченность в исследование как конструкт второго порядка.

**Цель:** Исследовать различные зависимые и независимые переменные, влияющие на построение вовлеченности преподавателей и их предикторы; разработать инструмент для измерения уровня вовлеченности преподавателей; спрогнозировать факторы, способствующие вовлечению преподавателей, чтобы дать возможность руководству учебного заведения связать работу и организационную среду.

**Материалы и Методы:** Исследование направлено на разработку инструментария для измерения уровня вовлеченности преподавателей. Компоненты инструментария созданы на основе мета-анализа литературы. Это исследование проводилось в трех учебных заведениях, а образцы отобраны методом вероятностной выборки. Для проверки адекватности выборки проведен тест КМО. Факторы изучались с помощью исследовательского факторного анализа, а прогнозирующие факторы подвергались линейной регрессии.

**Результаты:** Это исследование вовлеченности преподавателей показало, что оплата, льготы, объективность, карьерный рост и межличностные отношения являются гигиеническими факторами для Индии. Тем не менее, трудовая этика и содержание работы являются мотивирующими факторами, побуждающими преподавателей заниматься своей работой или организацией.

**Выводы:** В этом исследовании особое внимание уделялось лучшему планированию работы, чтобы поощрять преподавателей и максимально использовать их навыки и компетенции. Сосредоточение внимания на мотивационных факторах также улучшило качество работы и баланс между работой и личной жизнью.

**Ключевые слова:** вовлеченность преподавателя, личностные характеристики, организационная среда.

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