Influence of organization ethos on research competence of teachers in higher education institutions

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ABSTRACT

The standards of research depend on the maintenance and coordination of research activities that are conducted by the teachers in higher education institutions. The flexibility in ordinances and statutes empowers the higher education institutions to frame the guidelines that empower the research competence of the teachers. This descriptive research has collected the data from 451 regular teachers of higher education institutions from different areas of discipline for the research. The results of the study show that there is a significant difference in measures of the perceptions of the teachers towards the relationship between organization ethos and research competence in higher education institutions. The study indicates the practical and academic importance for teachers to enhance research performance of higher education institutions.

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1. INTRODUCTION

The success of research performance depends on the research competence of individuals. Indeed, research competence plays a prominent role in creating new knowledge and innovation in higher education institutions [1], [2]. One may compare the new knowledge in education to the new sprouts in human development, without which the system would stagnate [3], [4]. Research competence provides ample opportunities for the teachers of higher education institutions to get trained and acquire the expertise to increase the quality of research [5]. Aptitude towards research competence and competent researchers are significant credentials to produce quality research [6]. The quality and quantity indicators affect the research activity of teachers in higher education institutions [7], [8]. Organization ethos of higher education institutions can impact the quantitative indicator with publication and the qualitative indicator with citations level [9], [10]. Shared attitudes, beliefs, and practices or customs of organization ethos are self-sustaining as they strengthen teachers' quality of research and teaching spirit in higher education institutions [11]. Organization ethos emphasizes the knowledge creation process and knowledge exchange program to empower the academic staff of higher education institutions [12].

An extensive body of literature mentioned that organization ethos not only influences teachers' research and teaching performance but also develops the academic ranking of higher education institutions [13]. Teachers who experience good support and facilities from organization ethos of higher education institutions improve their competence in research and perform better in their research work [14], [15]. On the contrary, teachers who do not get the opportunity to enhance their competence in research experiences the low engagement in research activities [16], [17]. Therefore, the organization ethos of higher education institutions must serve the interests and requirement of all the stakeholder to develop trust and innovative work behavior in academic research [18].

However, in the context of higher education institutions, research on research competence, particularly the measurement of research competence of teachers, is still scarce [19]. In addition, research competence and organization ethos influence the academic creativity of teachers and their understanding of teaching and research [20], [21]. Organization ethos also influences the research performance and knowledge assets of higher education institutions [22].

As research competence and organization ethos are essential in teacher development, the present study measures how teachers in higher education institutions reflect on their competence in research [23], [24]. Research in the research competence of teachers working in higher education institutions mainly approaches to organization ethos in which research and innovation are seen as self-regulated [25]. Some researchers argue that teachers' research competence enhances by supporting shared attitudes, belief systems, values, customs, practices, coordination, and norms of behavior acquired by organization ethos [26]. Higher education institutions need the support of organization ethos to promote social support of norms, values, attitudes, behaviors, expectations, and communication within the stakeholders as it also affects the research activity of teachers [27].

A key question is how the research performance of university teachers can be improved [28], [29]. To obtain the more precise information about the research competence of the teachers working in higher education institutions, researcher has evaluated the competence of research of teachers [30]. With access to the relative research competence scale, find out the competence level of research [31]. However, organization ethos tool focuses on an organization's shared beliefs, values, expectations, and behavioral norms [32]. Indeed, research competence and organization ethos of higher education institutions influence the professional development of teachers and the education system [33].

Thus, a more precise research competence measurement scale measures the current research competence of teachers of higher education institutions. The measurement of research competence helps the teachers to develop the different competencies for research. The evaluation of organization ethos of the higher education institutions refers to the shared values, training, collaborative work, teamwork, and attitudes that motivate the teachers to perform better in innovation and research [34]. The present study assesses the relationship between research competence and organization ethos of teachers working in higher education institutions with canonical correlation and multiple regression analysis. The present study creates "win-win" situations for teachers and higher education institutions. Therefore, the study determines the following objectives: i) to examine the relationship between organization ethos dimensions and research competence dimensions of teachers working in higher education institutions, and ii) to investigate whether the dimensions of organization ethos would be significant predictors on the dimensions of research competence of teachers working in higher education institutions.

Furthermore, the research questions of the study were: i) is there any relationship between organizational ethos dimensions and research competence dimensions of teachers working in higher education institutions? (RQ1); and ii) whether the dimensions of research competence can be predicted by the dimensions of organizational ethos of teachers working in higher education institutions? (RQ2). In addition, the hypotheses of the study were: i) there is no significant relationship between the dimensions of organizational ethos and research competence of teachers working in higher education institutions (H1); and ii) there is no significant predictor of the effect of dimensions of organizational ethos on the dimensions of research competence of teachers working in higher education institutions (H2).

Organization ethos reflects the shared attitude, beliefs, and practices or customs that strengthen the spirit of an organization [35]. The organization attribute of the universities influences the values and attitudes and motivate the teachers to perform better [36]. Teachers play an essential role in shaping the behavior of students. Quality teachers can inspire the nation in the right direction [37]. Schein [38], organization ethos, is "The deeper level of basic assumptions and beliefs that are: learned responses to the group's problems of survival in its external environment and its problems of internal integration: are shared by members of an organization; that operate unconsciously; and that define in a basic 'taken-for-granted' fashion in an organization view of itself and its environment." Organization ethos influences the academic integrity processes of teachers working in higher education institutions [39]. Intrinsic and extrinsic motivations affect higher education institutions' organizational ethos-knowledge-sharing intentions of online knowledge collecting and donating influence organization ethos [40]. However, organization ethos and leadership style of academic leader affects teachers' innovative work behavior in higher education institutions' teaching and research performance [41].

Research competence of higher education teachers refers to the capacity for researchers' cognitive, creative, reflexive, motivational, and communicative qualities [42]. Higher education teachers' continuous professional and personal development results in research-oriented behavior becoming a "measurable person's characteristic" [43]. Teachers' research competence forms the basis for developing a communicative, intellectual, research design, creative abilities, and critical thinking. According to Waskito [44], research

competence is the capacity of teachers to conduct research. Indicators of research competence of teachers refer to the abilities to undertake the research, understand the process of research, and be capable of producing the research reports scientifically. The potential of the research competence of higher education teachers affects the research performance [45].

The organization ethos of higher education teachers emerged from stakeholder theory Freeman's stakeholder theory [46]. In recent decades, higher education institutions must develop their capacity to prepare students for the job market, develop teachers, monitor their performance, and manage relationships with their students [47]. The progress in new production forms and new knowledge creation promotes teaching and research in higher education institutions [48]. The introduction of technology, competitiveness in the market, and new business requirements strengthen the necessity of higher educational institutes to know and meet the requirements of their stakeholders. Educational institutions must identify and develop their ability to meet the requirements, which is essential for organization ethos to enhance their performance [49]. The stakeholder theory considers the higher education institutions' stakeholders: teachers, maintainers, students, alums, community, technical-administrative body, and employees.

The present study follows the self-determination theory Deci and Ryan [36] specifically to assess the research competence of university teachers. Self-determination forms of regulation stimulate cognitive, affective, and behavioral performance by strengthening learning. Less self-determined regulation conditions negatively impact cognitive, affective, and behavioral functioning. This study links self-determination theory and focuses on the highly competent teachers determined longer in research activities than low research-skilled teachers. A literature review shows that research related to self-determination theory has primarily with the competence of the teachers at the school level. The study referred to the self-determination theory to construct and validate a tool to assess the research competence of university teachers.

2. RESEARCH METHOD

The present study has employed a deductive approach for the research. The descriptive method has used a single cross-sectional research design to investigate the relationship between organization ethos and the research competence of teachers working in higher education institutions. The study explored the organization ethos with eight dimensions: openness, collaboration, trust, authenticity, pro-activity, autonomy, confrontation, and experimenting, whereas research competence with research capacity, reflection skills, problem-solving skills, communication skills, and research methodology skills.

2.1. Sample of the study

The population of the present study consists of teachers working in working in higher education institutions in Bengaluru City, Karnataka, India. The stratified random sampling has used to select the participants from various strata subgroups. The sampling method comprised homogeneous subgroups of gender, age group, work experience, subject background, and educational qualification. The sampling technique was based on the size with a confidence 99% and a margin error 10% to select the number of samples of 451 teachers working in higher education institutions.

2.2. Instrument of the study

The questionnaire of organization ethos tool developed by Pareek and Purohit [50] and the research competence tool developed by the researcher has been used to collect primary quantitative data. The suitability of the questionnaires was examined with the validation and reliability tests for organization ethos tool Cronbach's alpha value is 0.969 (found reliable). For the research competence tool, Cronbach's alpha value is 0.810 (found reliable).

3. FINDINGS OF THE STUDY

3.1. Normality test for data

The present study has employed the normality tests to decide upon the parametric test's procedures or non-parametric test procedures of the data. The normality test has been conducted on the variables of organization ethos and research competence. The variables are tested at 5% level of significance using Shapiro Wilk's test for normality shown in Table 1.

Table 1 explains the result of Shapiro Wilk's test for normality. The result of the test shows that the data is normal. The result of the tests allows the researcher to use parametric tests such as, correlation and regression analysis of variance to test the hypothesis of the study.

Table 1. Normality test of organization ethos and research competence

Variable		Statistic	Df	Significance (p-value)
Research competence	Research capacity	0.938	451	0.195
	Reflection skills	0.944	451	0.266
	Problem solving skills	0.909	451	0.051
	Research methodology skills	0.918	451	0.060
	Communication skills	0.936	451	0.189
Organization ethos	Openness	0.944	451	0.266
	Confrontation	0.949	451	0.327
	Trust	0.942	451	0.239
	Authenticity	0.949	451	0.320
	Pro-action	0.919	451	0.063
	Autonomy	0.929	451	0.104
	Collaboration	0.909	451	0.053

3.2. Findings based on the tests of canonical correlation and correlation between organization ethos and research competence

The objective and hypothesis 1 of the present study tries to find out whether organization ethos affects research competence or not. In the following section the overall relationship between the two latent variables organization ethos and research competence is measured using the tool canonical correlation and the relationship between every pair of these two latent variables, using Karl Pearson's bivariate correlation coefficient. Figure 1 shows the canonical correlation between the dimensions of organization ethos and the dimensions of research competence

Figure 1. Canonical correlation between the dimensions of organization ethos
and the dimensions of research competence

The result in Figure 1 explains about the canonical correlation between the latent variables organization ethos and research competence is 0.206, which explains only 50.43% of the variance. The significance of this correlation is checked using Wilk's multivariate test of significance using F statistic which resulted into a p-value of 0.537. Hence it is concluded that the canonical correlation is not significant between these two latent variables mentioned in Figure 1.

The table shows about the Karl Pearson's correlation coefficient is used to test whether any construct of the latent variable organization ethos is linearly related to any construct of the other latent variable under study, namely, research competence. The independence of these two concepts for each of their components were tested with 5% level of significance and the results are tabulated in Table 2. The symbol ** stands for significant relationship. It is seen from the above Table 2 that the dimension research capacity, of research competence is influenced by 5 dimensions of organization ethos, namely, openness (r=.103, p=0.028), confrontation (r=-0.083, p=0.078) (at 10% level), authenticity (r=.108, p=0.022), pro-action (r=.094, p=0.047) and experimenting (r=.104, p=0.027). However, overall dimensions of research competence are significantly affected only by dimension collaboration of organization ethos (r=0.791, p=0.000).

Table 2. Karl Pearson's correlation coefficient between the dimensions of organization ethos and dimensions of research competence

Organization ethos	Research competence					
	Research capacity	Reflection skills	Problem solving skills	Communication skills	Research methodology skills	Overall research competence
Openness	.103 (0.028**)	.030 (0.518)	.030 (0.518)	.003 (0.952)	.042 (0.371)	0.060 (0.188)
Confrontation	.083 (0.078)	.018 (.709)	.018 (0.709)	.011 (0.812)	.057 (0.225)	.068 (0.148)
Trust	.064 (0.175)	.040 (0.398)	.040(0.398)	.027 (0.567)	-.016 (0.728)	0.054 (0.256)
Authenticity	.108 (0.022**)	.038 (0.421)	.038 (0.421)	.042 (0.376)	-.207 (0.017**)	0.066 (0.165)
Pro-action	.094 (0.047**)	.020 (0.666)	.020 (0.666)	.003 (0.943)	.044 (0.346)	-0.070 (0.140)
Autonomy	.073 (0.120)	.025 (0.597)	.025 (0.597)	-.013 (0.788)	-.036 (0.448)	-0.056 (0.232)
Collaboration	.066 (0.165)	.037 (0.436)	.037 (0.436)	-.046 (0.329)	.018 (0.704)	0.791 (0.000)
Experimenting	.104 (0.027**)	.051 (0.281)	.051 (0.281)	-.089 (0.073)	.084 (0.075)	0.075 (0.113)

3.3. Findings of multiple regression analysis for the independent variable organization ethos and the dependent variable research competence

The researcher has carried out multiple regression analysis to study the influence of organization ethos on research competence. The analysis was used to develop the linear equation for the dependent and independent variables. The result also shows the significance of contribution of different dimensions of the independent variables are given in Table 3.

Table 3. Multiple regression analysis between the dimensions of organization ethos on dimensions of research competence

Dependent variable research competence	Independent variable organization ethos	B	Std. error	T	p-value
Research capacity	Openness	0.407**	.155	2.625	0.009
	Confrontation	0.247	.132	1.874	0.062
	Trust	0.074	.145	0.509	0.611
	Authenticity	0.298**	.141	2.112	0.035
	Pro-action	0.264	.145	1.829	0.068
	Autonomy	0.058	.137	0.425	.671
	Collaboration	0.037	.122	0.305	0.761
	Experimenting	0.291	.137	2.121	0.034
Reflection skills	Openness	.061	.209	.291	.771
	Confrontation	.095	.178	-.534	.594
	Trust	.101	.195	.517	.606
	Authenticity	.118	.190	-.624	.533
	Pro-action	.139	.196	-.707	.480
	Autonomy	.025	.184	.134	.893
	Collaboration	.026	.165	-.159	.874
	Experimenting	.201	.184	1.092	.275
Problem solving skills	Openness	.061	.209	.291	.771
	Confrontation	-.095	.178	-.534	.594
	Trust	.101	.195	.517	.606
	Authenticity	-.118	.190	-.624	.533
	Pro-action	-.139	.196	-.707	.480
	Autonomy	.025	.184	.134	.893
	Collaboration	-.026	.165	-.159	.874
	Experimenting	.201	.184	1.092	.275
Communication skills	Openness	.230	.234	.982	.327
	Confrontation	.299	.199	1.504	.133
	Trust	.098	.218	.451	.652
	Authenticity	.177	.212	.835	.404
	Pro-action	.088	.219	.400	.689
	Autonomy	-.219	.206	-1.064	.288
	Collaboration	-.230	.184	-1.249	.212
	Experimenting	-.389	.206	-1.890	.059
Research methodology skills	Openness	.038	.196	.196	.844
	Confrontation	.231	.166	1.388	.166
	Trust	-.134	.183	-.734	.463
	Authenticity	-.392**	.177	-2.214	.027
	Pro-action	.164	.183	.898	.370
	Autonomy	.107	.172	-.621	.535
	Collaboration	.007	.154	.047	.963
	Experimenting	.321	.172	1.862	.063

Table 3 shows regression analysis between organization ethos and research competence shows that the research capacity dimension of research competence is significantly influenced by the dimensions of organization ethos that is openness (β=0.407, p=0.009), confrontation (β=0.247, p=0.062,), authenticity

(β=0.298, p=0.035), pro-action (β=0.264, p=0.068) and experimenting (β=0.291, p=0.034) thus showing that these are the significant contributors of research capacity whereas trust (β=0.074, p=0.611), autonomy (β=0.058, p=0.671) and collaboration (β=0.037, p=0.761) are not the significant contributors of research capacity. Reflections skills dimension of research competence does not significantly influence by that the dimensions of organization ethos openness (β=.061, p=0.771), confrontation (β=.095, p=0.594), trust (β=.101, p=0.606), authenticity (β=.118, p=0.533), pro-action (β=.139, p=0.480) autonomy (β=.025, p=0.893), collaboration (β=.026, p=0.874) and experimenting (β=.201, p=0.275).

Problem solving skills dimension of research competence does not significantly influenced by that the dimensions of organization ethos openness (β=.061, p=0.771), confrontation (β=-.095, p=0.594), trust (β=.101, p=0.606), authenticity (β=-.118, p=0.533), pro-action (β=-.139, p=0.480), autonomy (β=.025, p=0.893), collaboration (β=-.026, p=0.874) and experimenting (β=.201, p=0.275). Communication skills, the dimension of research competence is significantly influenced by the dimensions of organization ethos that is experimenting (β=-.389, p=0.059) whereas openness (β=.230, p=0.327), confrontation (β=.299, p=0.133), trust (β=.098, p=0.652), authenticity (β=.177, p=.404), pro-action (β=.088, p=0.689), autonomy (β=-.219, p=0.288) and collaboration (β=-.230, p=0.212) do not influence significantly the component of research competence, communication skills. Research methodology skills, dimension of research competence is significantly influenced by the dimensions of organization ethos that is authenticity (β=-.392, p=0.027) and experimenting (β=.321, p=0.063) whereas openness (β=.038, p=0.844), confrontation (β=.231, p=0.166), trust (β=-.134, p=0.463), pro-action (β=.164, p=0.370) autonomy (β=.107, p=0.535) and collaboration (β=.007, p=0.963) do not influence significantly to research methodology skills the dimension of research competence. The results of regression analysis carried out between overall organization ethos and research competence, and it is seen that the dimension collaboration (β=-.054, p=0.071) is a significant contributor, whereas the other dimensions openness (β=.097, p=0.391), confrontation (β=.063, p=0.510), trust (β=.009, p=0.934), authenticity (β=-.043, p=0.671), pro-action (β=-.032, p=0.769) autonomy (β=-.057, p=0.570) and experimenting (β=.161, p=0.514) do not influence the dimension of research competence significantly.

4. RESULTS AND DISCUSSION

The appropriate statistical methods to test the objectives of the research is of greater importance in any statistical analysis. Previous studies based on the data without normally distributed have made the observations of inaccuracy in normal and chi-square tests as t and F tests are fairly not valid in finite samples with asymptotic character [51]. The robustness of samples for t and F tests long-tailed distribution of data. The non-normality distribution of the observation of homoscedasticity and serial independence observation may result incorrect conclusion. Most of the mentioned the violation of normality tests leads to inaccurate assumptions and invalid inferential statements [52].

Therefore, the researcher has to decide whether to go for the parametric test procedures or non-parametric test procedures based on the basic assumption of the observations of variables follows Gaussian (normal) distribution [53]. The population of the university teachers from the samples of organization ethos and research competence show that the observation of the data is normally distributed. The notable findings of the study about the research competence of teachers of higher education institution are not completely independent. The research performance of teachers depends on the other factor of organization [54]. Organization ethos of higher education plays an important role in the development of research competence. The assumption of the study is confirmed by the data that research competence of the teachers has interdependency with organization ethos of higher education institution. The study shows that most of the teachers of higher education institution confirms about the relationship between the factors of research competence with collaboration, the dimension of organization ethos. Research capacity has significant positive relationship with the dimension of organization ethos.

The study shows that that the teachers of higher education institutions are almost agreeing the effects of organizational ethos on the research competence. Teachers have high degree of functional interdependencies of the factor research methodology skills of research competence on the factors of authenticity and experimenting of organization ethos [55]. The factor of communication skills also has similar findings with high degree of functional interdependencies effect on experimenting. Though the statistical findings show the low and non-significant effects on the factors of reflection skills, problem-solving skills and research capacity with factors of organization ethos [56].

The above result of the study confirms the findings of previous empirical studies. Organization ethos emphasizes the knowledge creation process and knowledge exchange program to empower the academic staff of public university [57]. Organization ethos affects the higher education institutions at the various levels such as teachers, administrative, services and students to increase their competence [58]. The competence of research navigates the acquisition of scientific knowledge and reduces the complexities

related to creation [59]. The result of the study on organization ethos Ciraso-Calí *et al.* [60] explains the influence of leadership style and innovative work behavior in academic research in higher education institutions. The mechanism of organization ethos influences the research activity of researchers. It also helps the universities to improve their quality and research competence in a continuous and planned manner [61].

5. CONCLUSION

Research competence has the capabilities that can augment the research performance of the teachers. Higher education institution plays an important role of new knowledge generator for both economical and societal development. The policymakers and managers in higher education institution are always interested in the growth of research performance of the teachers. However, in terms of organized progress of academic research performance, research competence and organization ethos improve the cohesion among management and teachers working in higher education institutions.

The present study poised the problems of interdependency and impact organizational ethos on research competence of teachers working in higher education institutions. Through review of literature, and expert inputs frames the objective and hypothesis of the study. The statistical analysis of the data collected from survey shows the insight on the development of research performance of the teachers. Hence, the present research recommends to higher education institutions to improve the inter-functional interdependencies of research competence with organizational ethos by cohesion among teachers and policymakers of the institution. The development of research performance in higher education institution forces the institutions to adopt the measures to improve the research competence as well as organization ethos. The present study recommends based on the research that the academic institution ranking shows that research performance attracts the talented professionals to work in higher education institutions.

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