Developmental, Relational and Facilitating (DRF) Organizational Culture Scale: An Empirical Study in Select Colleges of University of Delhi

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Abstract
The study aims at developing an instrument of organizational culture (OC). The study is based on a quantitative research and used techniques like exploratory factor analysis and the confirmatory factor analysis (CFA) to determine the principal drivers of OC. A 17-item reliable and valid instrument has been developed on OC to enhance the developmental culture (DC), the relational culture (RC) and the facilitating culture (FC) for cultural transformation in the University of Delhi. OC of the University of Delhi is moderate and needs to be improved.

Keywords
Organizational culture, University of Delhi, developmental culture, relational culture, facilitating culture

Introduction
With the globalization of organizations, organizational culture (OC) has become very crucial in differentiating one organization from another and has been critical to the success of an enterprise. The concept of OC is in common use since the 1980s. OC plays a crucial role in improving the overall performance of an enterprise (Dwivedi, 2001; Joshi, 2001; Singh, 2001b; Sinha, 2010; Tripathi & Tripathi, 2002). OC is ‘the collective programming of the human mind, obtained in the course of life, which is common to the member of one group as opposed to another’ (Hofstede, 1980). Schein (1992) defined OC as ‘a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems’. The culture is a combination of beliefs, values and assumptions, as reflected in artefacts,

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rituals, etc. (Pareek, 2006). The concept of OC is true for all types of enterprises. It is equally applicable in the context of social organizations (Caduri & Weiss-Gal, 2015).

There exist some scales on OC, but being a complex and qualitative concept, OC has been described through different variables by different researchers. This study is undertaken to develop a reliable and valid scale of OC at a more holistic level. Although, a lot of research has been undertaken on OC in the banking sector, corporate and health industry, there is a dearth of research, particularly in the education Sector. The study has, therefore, primarily focused on India’s higher education sector through research in select colleges of the University of Delhi. The dynamism, massive transformation and the rising competition of the enterprising education sector require research in this domain. ‘The internationalisation of higher education and open and online learning is currently focused on educational export and setting up partnerships for in-country development and delivery’ (Hanna & Latchem, 2002). ‘Integrating culture and higher education from a pragmatist perspective requires the rejection of the viciousness of competitive globalization and of embracing the virtues of cooperative globalization’ (Badley, 2003). The research study focuses on determining the OC of the select colleges of the University of Delhi. The article is divided into following sections: Literature review, objective, rationale of the study, methodology, analysis, conclusion, managerial implications, practical implications, future area of research and limitations of the study.

**Review of Literature**

Organizational culture refers to a set of values and beliefs that determine the identity of the enterprise. It plays a very significant role in the success of the enterprise, but it cannot be quantified like other variables, for instance, sales and profits. It is one of the qualitative aspects that has an impact on overall employee’s attitude, job satisfaction, teamwork, leadership styles, employee’s commitment, organizational performance and many such other factors. While many formal definitions exist for OC, it is a term used to describe the environment in which people work and the influence it has on how they think, act and experience work. The culture of an organization can be characterized as (a) the prevailing beliefs, norms and values which serve to guide the behaviour of individuals and groups; (b) the beliefs that are shared by people throughout the organization; and (c) the culture that is developed over a period (Joshi, 2001). The concept of culture can be classified in various dimensions. Based on power, it can be classified as four types: autocratic, bureaucratic, technocratic and entrepreneurial. Kluckhohn and Strodtbeck (1961) have proposed five orientations based on the meaning of human existence, the meaning of human labour and endeavour, the relationship of man and nature, time orientation and the relationship of man with fellow beings. Cameron and Quinn (2012) suggested four types of OC: rational (market), developmental (adhocracy), consensual (clan) and hierarchical (hierarchy). ‘Work Culture may be defined as the rules/regulations, policies, Practices, traditions/rituals and values/beliefs of the organization. The business culture of India reflects the various norms and standards followed by its people’ (Jhunjhunwala, 2012). Hofstede (1980) studied dimensions like Individualism versus collectivism, power distance, uncertainty avoidance and masculinity versus femininity. Different dimensions of culture are given by different researchers. Twenty questionnaires were identified on the concept of OC and a summary of these variables was prepared. These dimensions are mentioned in Table 1.
Table 1. List of Dimensions Identified by Different Researchers.

| Scale                                           | Author                        | Dimensions                                                                 |
|-------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------|
| ‘Organizational culture assessment instrument’   | Cameron and Quinn (2012)      | (1) Clan; (2) adhocracy; (3) hierarchy; and (4) market                      |
| Organizational culture inventory                | Cooke and Szumal (2000)      | (1) Constructive; (2) passive-defensive; and (3) aggressive-defensive       |
| Organizational culture profile                  | O’Reilly et al. (1991)       | (1) Innovation and risk-taking; (2) attention to detail; (3) orientation towards outcomes or results; (4) aggressiveness and competitiveness; (5) supportiveness; (6) emphasis on growth and rewards; (7) collaborative and team orientation; and (8) decisiveness |
| Organizational culture survey                   | Glaser et al. (1987)         | (1) Teamwork and conflict; (2) climate; (3) involvement; (4) communication; (5) supervision; and (8) meetings |
| Japanese organizational culture scale (JOCS)     | Tang et al. (2000)            | (1) Family orientation and loyalty; (2) open communication; (3) team approach; and (4) manager knowledge |
| Measuring organizational culture                | Ghosh and Srivastava (2014)  | (1) Participation; (2) respect for the individuals; (3) attitude to risk; (4) action orientation; (5) trust; (6) openness; and (7) power distance |
| The perceived cultural compatibility index: an extension | Runge et al. (2004)        | (1) Employee relations; (2) organization climate; and (3) empowerment |
| OCTAPACE profile                                | Pareek (2003)                | (1) Openness; (2) confrontation; (3) trust; (4) authenticity; (5) proaction; (6) autonomy; (7) collaboration; (8) experimenting |
| Organizational culture profile                  | Pareek (2003)                | (1) Autocratic; (2) bureaucratic; (3) technocratic; and (4) entrepreneurial |
| Organizational survey                           | Pareek (2003)                | (1) Future-oriented culture; (2) value-oriented culture; (3) conserving culture; (4) humanistic culture; (5) conservative culture; and (6) innovative culture |

Source: The authors.

Organizational Culture in Education Sector

When universities are pushed ‘far from equilibrium’, they commence adaptation, altering their operations and modes of organization to try and restore equilibrium. Some academic units show proactive adaptation, while some show a passive mode of adaptation. The former academic units rely on heterogeneous cultures to create a climate of intellectual fervour, innovation, flexibility, risk-taking and adaptation, while the latter chooses a homogeneous OC, which involves goal cohesion, the affinity of values and
internal congruence in spatial and temporal orientations (Zilwa, 2007). Research suggests that creating a unified vision of sustainability at the university would likely be a significant challenge, given the divergent and conflicting perspectives held by the faculty members. The divergent perspectives of faculty members across disciplines can be used to develop a more holistic way of thinking about sustainability and solving sustainability-related problems (Sylvestre et al., 2013). Effectively integrating culture and higher education means changing universities from what they have become—economic spaces—to what they should be—cultural and educational spaces. A fruitful integration of the globalized culture and higher education involves democratizing the process and embodying the principles of pragmatist practice—freedom, growth, justice and tolerance (Badley, 2003). There appear to be multiple forms of OC in colleges and universities, and these alternative culture types are differentially effective on different performance criteria (Smart & John, 1996).

Growth and development is a continual process, and learning should never be stagnated through the mental blocks caused by the promotion of the people. There should be a continual growth and development in academia (Barrett et al., 2009). A consensual refocussing and rebalancing of teaching and research efforts are required such that a developmental culture (DC) arose to complement the existing collegial OC. The conditions necessary to achieve change are created through systems of mutual support, clear communication, astute political moves and a good deal of patience, determination and optimism (Thomas & Willcoxson, 1998). Giles and Yates (2011), based on the perceptions and experiences of faculty members, emphasized on the required reculturing practices and their influence on the formation of a RC within the department. There exists OC, that is, facilitating and supporting type. Cooperation culture, culture of learning, culture of knowledge sharing and culture of trust are the salient features of facilitating OC of knowledge management practices (Baruji et al., 2016).

The perception of academics from the South African University of Technology was positive for the existing OC in their institute. There exists a moderate relationship between OC and job satisfaction. It is important to establish academic employees’ adjustment to the OC of a higher learning institute in the developing context (Chipunza & Malo, 2017). Omerzel et al. (2011) examined and explained the relationship between OC and knowledge management. The study discovered a statistically significant correlation between knowledge storage and market culture, between knowledge transfer and clan culture, between knowledge transfer and market culture, and, finally, between knowledge application and clan culture and between knowledge application and market culture. Success in higher education teaching is not exclusively reflected in better learning outcomes as seen in the learners’ reproduction or transfer of taught materials; it can also be part of a pleasant teaching experience and increased job satisfaction in the instructive role of a lecturer (Hellmann et al., 2014).

From the literature review, it was observed that a tremendous amount of research has been done and efforts are made in measuring the OC in both the public and private sector. But the study is mainly restricted to the corporate sector and the banking sector. Fewer initiatives have been taken to measure the OC in the education sector. Thus, with this identified research gap, the study intends to undertake an exploratory study to identify various factors that can measure the OC in the education sector.

**Objectives**

The objective of the study is to develop the scale for measurement of the OC in the higher education sector.
Rationale of the Study

Education sector is the backbone of all other sectors. It prepares the future entrepreneurs. It was of utmost importance to understand the sector from a cultural point of view. This sector has a very important role to play that is to inculcate not just the academic knowledge but also nurture and develop the values and growth-oriented ideologies among the students. However, there is a dearth of research in this direction. A lot of research is undertaken on the OC of the Banks and Corporates but research is very limited in this education sector which is the very foundation of all organizations. Thus, the authors have undertaken study of OC in higher education sector.

Methodology

The Methodology section is divided into three sub sections, that is, data collection, sample frame and empirical model of the study, which are as follows.

Data Collection

The population considered for this study are the faculty members of 90 different colleges of the University of Delhi. As per Delhi University Teachers’ Association office of the University of Delhi, there are 10,000 faculty members in the Colleges of the University of Delhi. In total, 279 responses were obtained from faculty members, including both online and offline mode. For offline mode, the response rate was 32.33 per cent wherein 97 responses were obtained out of 300 distributed questionnaires. The remaining 182 responses were obtained through the online mode. A Google form was generated for the questionnaire and was mailed to all the faculty members of the select colleges of the University of Delhi.

Sample Frame of the Study

The revised instrument was distributed to the faculty members of North, East, West and the South Delhi Colleges of the University of Delhi. The University of Delhi is an epitome of Diverse India. Students and faculties from different parts of the country study and work here. In order to have representatives reflecting a diverse India, the authors have undertaken this study in University of Delhi.

The researchers used the simple random sampling technique. A simple random sample is a subset of a statistical population, in which each member of the subset has an equal probability of being chosen. The questionnaire was mailed to all the faculty members for whom email Ids could be obtained from their respective college websites. Some of the faculty members requested for the offline questionnaire and were provided with a hard copy to obtain their response.

The sample size should be 100 or greater, Hair et al. (1995). Before carrying out the exploratory factor analysis (EFA), there is a requirement to determine the adequacy of the sample size. For this, the Kaiser–Meyer–Olkin (KMO) test, (Kaiser & Rice, 1974) and Bartlett’s test of sphericity (Barlett, 1954) are conducted. For, the KMO test, the values greater than 0.50 are termed as acceptable (Kaiser & Rice, 1974). Values between 0.5 and 0.7 are considered as mediocre, values between 0.7 and 0.8 are considered
good, values between 0.8 and 0.9 are deemed great and values above 0.9 are considered superb (Hutcheson & Sofroniou, 1999). For Bartlett’s test of sphericity (Bartlett, 1954), the value should be significant \( (p < 0.05) \) for factor analysis to be suitable. It was inferred that the sample size of 279 was adequate for conducting the EFA, for the KMO value was greater than 0.70, that is, 0.955. Bartlett’s test of sphericity was significant, as the \( p \)-value was 0.000, that is, the \( p \)-value was lower than 0.05, hence significant. This was highly desirable as it ensured a significant correlation among the items, thus, making the use of EFA analysis appropriate for the study.

**Empirical Model**

The researchers have undertaken an exploratory study for developing an instrument on OC. Firstly, the extensive literature review has been undertaken to identify various existing instruments as developed by various researchers overtime on OC. All the questionnaires were then analysed and grouped by studying their different variables, (Ghosh & Srivastava, 2014; Jung et al., 2009; Makkar & Singh, 2018; Moore et al., 2004; Singh & Jha, 2017). Based on these 26 identified variables, a questionnaire having 104 statements was constructed (4 statements per variable) using Likert scale, where respondents were asked to score the statements between 1 and 5. 1 implied that the statement is not relevant in context to the surveyed organization and 5 implied that the statement is most relevant in the context of the surveyed organization.

The questionnaire was used for pilot testing on a sample size of 36 faculty members through simple random sampling. In the pilot survey, the constructs having lower reliability were dropped. The questionnaire was revised with 22 variables and 88 items. The revised questionnaire was then shared with various experts of the organizational behaviour, and their feedback and comments were obtained and incorporated to further modify the instrument and variables, as provided in Table 2.

**Table 2.** List of Variables Identified After Pilot Survey and Face Validity.

| Variables                      | Variables                  |
|-------------------------------|----------------------------|
| Collaborative and team orientation | Employee engagement       |
| Internal communications       | Trust                      |
| Vision orientation            | Risk-taking                |
| Values and ethics             | Leadership                 |
| Relationship orientation      | Confrontation              |
| Task orientation              | Pro-action                 |
| Growth and development        | Reward orientation         |
| Power distance                | Student-centric approach   |
| Decisiveness                  | Coordination and integration|
| Attitude towards change       | Creativity and innovation  |
| Empowerment                   |                            |

**Source:** The authors.
After the pilot survey and the face validity, the questionnaire with 21 variables and 88 items was distributed to the faculty members of the University of Delhi. The reliability was tested using Cronbach’s alpha. EFA was undertaken to recognize principal engagement drivers (Pallant, 2005). Resulting factors of EFA were further validated using confirmatory factor analysis (CFA) (Jöreskog & Sörbom, 1989).

**Data Analysis**

After data cleaning, the reliability test and Cronbach’s alpha were conducted. The acceptable value for Cronbach’s alpha is 0.70. If it is greater than 0.70, then the instrument is considered to be reliable or else it is taken to be not reliable (Sijtsma, 2009). The reliability measure for Cronbach’s alpha using SPSS Software was 0.980 for 84 items in the questionnaire. The item to total statistics was computed and the items that had very low corrected item to total correlation were eliminated. EFA was undertaken to bridge the study composition, eliminate gratuitous variables and recognize principal engagement drivers (Pallant, 2005).

Principal Component Analysis (PCA) considers the total variance and obtains the factors that hold little percentage of unique variance, (Hair et al. 2010). If the data reduction is the primary concern, then PCA is the best method to be used and, thus, the researchers adopted the PCA method for analysis.

The second question was regarding the method of rotation to be used. For this study purpose, the researchers have used the varimax rotation method. The varimax criterion is a two-dimensional generalization of the Spearman case; it determines perfect factorial invariance for two pure clusters (Kaiser, 1958). After using the PCA and varimax rotation, the researchers noticed that there were mainly three factors that were being formed based on their eigen values; also, communalities in case of several items were found to be less than 0.50 (Field, 2005), hence all those items that had a loading less than 0.50 on communalities were dropped, and the items that had a cross-loading problem across the three factors identified were also eliminated.

After obtaining the results for the EFA, the next step involves validating the factors obtained by using CFA (Jöreskog & Sörbom, 1989). The steps as mentioned by Hair et al. (2010) were duly followed for conducting CFA. The first step involved the identification of the factors and defining them. Based on the results of EFA and the literature review, the identified factors were named. The second step involved developing the overall model of measurement and ensuring the good fit of the model. The researchers observed the goodness of fit in the model, but there were concerns observed in the discriminant validity. The values for the squared multiple correlation were verified. All the items having low squared multiple correlation and causing cross-loading problems were further dropped. The model was then reconstructed for zero-order CFA.

The goodness of fit measure was above 0.90 and root mean square error of approximation (RMSEA), which is badness of fit measure, was low that is, 0.061. The measures indicated a good fit model. The results showed no validity concern. The composite reliability measure was greater than the threshold limit of 0.70 for all three factors, ensuring the construct reliability, the average variance extracted (AVE) was greater than 0.50, thus, ensuring convergent validity. Discriminant validity was also observed. Since there was an issue of multicollinearity among the factors, with a very strong correlation of 0.771 between RC and DC, 0.609 between RC and facilitating culture (FC), and 0.580 between DC and FC, there was a need to determine the validity of the second-order CFA (Grewal et al., 2004). The goodness of fit measures of the second-order CFA model was above 0.90 and RMSEA, which is badness of fit measure, was low, that is, 0.061. The measures indicated a good fit model. Apart from the goodness of fit, the validity test using the standardized regression weights and correlations was computed. The results showed no Validity concern. The composite reliability measure was calculated to be 0.85, which is much higher and above 0.70, thus, indicating a highly acceptable value. The AVE was computed to be 0.67,
which was greater than 0.50 and was also lower than the composite reliability, thus, indicating convergent validity. Since there was only one construct, there was no need to test the existence of discriminant validity. The factors and their reliability measures are given in Table 4.

Table 3. Factor Loadings of All Three Factors.

| S. No. | Items                                                                 | Factor Loadings |
|--------|-----------------------------------------------------------------------|-----------------|
| 1      | Q1. Knowledge and expertise are recognized and rewarded in the organization. | 0.673           |
| 2      | Q33. There is a continual investment in developing the skills of the faculty members. | 0.770           |
| 3      | Q34. People go deeper rather than doing a surface-level analysis of problems. | 0.831           |
| 4      | Q40. The organization creates a unique ‘family’ atmosphere.            | 0.723           |
| 5      | Q43. Faculty members communicate with one another to solve problems.   | 0.763           |
| 6      | Q48. Everyone in the organization treats each other with respect.      | 0.775           |
| 7      | Q49. Cooperation across different committees and departments is actively encouraged. | 0.798           |
| 8      | Q62. People in the organization have strong associations with each other and look out for each other for suggestions and guidance. | 0.714           |
| 9      | Q72A. Personal power and advantage do not create undue competition in the organization. | 0.747           |
| 10     | Q73A. People can rely on others in times of crisis.                    | 0.751           |
| 11     | Q75A. People can improve their capability as expected by the organization. | 0.785           |
| 12     | Q76A. People in the organization try not to pass the problems on to others rather solve them on their own. | 0.716           |
| 13     | Q79A. People can reach an agreement on key issues in the organization. | 0.770           |
| 14     | Q80A. In this organization, a lot of discussions happen and things get done. | 0.783           |
| 15     | Q82A. The organization has a real interest in the welfare and overall satisfaction of those who work in the organization. | 0.802           |
| 16     | Q83A. People in the organization are concerned for one another.         | 0.744           |
| 17     | Q84A. People in the organization are empowered to make decisions that affect their work. | 0.789           |

Source: The authors.
Table 4. Reliability Measures of Factors.

| Factors                          | No. of Items Summated | Cronbach’s Alpha |
|----------------------------------|-----------------------|------------------|
| Developmental culture (DC)       | 3                     | 0.830            |
| Relational culture (RC)          | 5                     | 0.881            |
| Facilitating culture (FC)        | 9                     | 0.933            |
| Organizational culture (OC)      | 17                    | 0.936            |

Source: The authors.

PCA states that there are three factors of OC namely, DC, RC and the FC, which explains 62.10 per cent of the total variance.

Conclusion

The study aimed at developing a more holistic scale for measuring the ambiguous concept of OC. Intense literature review helped the researchers in discovering the possible variables given by the researchers across time for defining and measuring the OC. The discovery was followed by a pilot survey and face-to-face interview with the experts on the subject of OC to undertake the exercise of the face validity of the instrument designed, and to incorporate their insights on the subject. Finally, the study involved distribution of the final questionnaire of 84 items to 279 faculty members of the Colleges of the University of Delhi. The research concluded with the development of a reliable and valid scale for measuring OC consisting of 17 items.

The three factors defining OC were explored: mainly DC, RC and FC. The reliability of the scale was measured to be 0.936, using Cronbach’s Alpha. The OC can be defined as the level of positive developmental, relational and facilitating (DRF) culture, which determines the growth and developmental attitude towards all employees of the organization. The amiability of the working place reflected by trust, free communication and cooperation among people in the organization indicates that it is a place where deliberations could reach consensus. There is an attitude of respect and genuine care towards the welfare and satisfaction of employees, and a positive environment for improving the capabilities of people. There exists an atmosphere where people could rely upon each other in times of crisis. On a scale of 1–5, the DC of the University of Delhi is 3.3, RC is 3.5, FC is 3.30 and overall OC is 3.38. Thus, there exists a moderately positive OC at the University of Delhi, but the overall culture can be further improved.

Managerial Implications

Developmental Culture is moderate in the University of Delhi, with a mean score of 3.3, on a scale of 1–5. Thus, it is important to improve upon DC by increasing focus and investment in the skill development programmes for the faculty members. RC was also found to be moderate with a mean score of 3.56, on a scale of 1–5. So, it is important to focus on the element of ‘empathy’ in the world of academics. FC is measured as 3.3, on a scale of 1–5. There is a moderate level of FC involved in the deliberations taking place in the college, with a mean value of 3.19 (on a scale of 1–5). With a mean score of 3.13, faculty members believe that in the organization, a lot of discussions happen and things get done. Efforts are needed to improve this FC factor.
Practical Implications

The DRF OC scale can be used by different educational institutes for determining the strength of positive or negative culture prevalent in their organizations. The weak areas can be identified and efforts can be made in the direction of improving them. OC affects the performance of an enterprise, and thus, by improving the DRF OC, a positively contributing and a productive work culture can be created in the globalizing education sector.

Future Area of Research

A rigorous process was followed in developing a reliable and valid scale for measuring OC. However, to further strengthen the rigour of the scale, the researchers recommend undertaking the validation test of the scale developed with a diverse population to support the generalization of the scale. A comparative analysis of the OC can be conducted among various higher education institutions to promote and encourage universities across India for the transformation of culture in the higher education domain.

Limitations of the Study

The researchers have limited the study to the sample taken from the colleges of the University of Delhi. A similar research can be carried out in different universities at both national and international levels. The study is also limited to sharing the perspective of the respondents from the point of view of a central university, but the perspective of private universities and state universities can also be included. The article mainly focuses on the antecedents of OC and explores the development of the scale to measure the DRF OC dimensions; however, the study can be extended further to discuss the consequences of the three dimensions in different types of organizations.

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