

Enhancing Employee Engagement Through a Novel Mathematical Model in the Hospitality Sector of India

** Pramod Kumar Chug*

*** Vibhuti*

Abstract

The purpose of this study was to focus on employee's psychological resources by investigating the effects of organizational culture and communication and develop a mathematical model on the basis of the interrelationships which exist between them. This study explored the direct relationship between various factors of organization culture and communication such as autonomy, external orientation, inter departmental cooperation, human resource orientation, improvement orientation, organization integration, supervisory communication, personal feedback, corporate information, communication climate, co-worker communication, media quality, subordinate communication with employee engagement measured in terms of absorption, vigor, and dedication. Group method of data handling (GMDH) machine learning technique was used to measure, build, test, and validate the full structural comprehensive and non-linear complex relationships which existed among hospitality staff working in Delhi and NCR area. This study represented one of the first mathematical models of employee engagement, and an attempt was made to quantify the effectiveness of each of the organizational aspects on employee engagement discretely. Results provided insights into the weightage of each independent variable in maintaining an optimal organizational culture and communication to elevate the overall level of employee engagement. The results revealed that employees who got personal feedback, especially from their supervisors, had comparatively higher levels of employee engagement. Other important factors of organizational culture and communication, which comparatively carried more weightage are media quality, external orientation, human resource orientation, and organization orientation. The proposed mathematical model can be applied as a general framework to augment organizational culture and communication so as to achieve optimized employee engagement.

Keywords : employee engagement, organization culture, organization communication, reward and recognition, mathematical group method of data handling model

JEL Classification : M00, M1, M12, M120

Paper Submission Date : March 28, 2017 ; **Paper sent back for Revision :** May 10, 2017 ; **Paper Acceptance Date :** July 14, 2017

Employee engagement refers to the kind of involvement and the level of commitment an employee has towards his/her organization. It is a state of mind which motivates the employee to perform his/her duties not only physically, but also emotionally, cognitively, as well as psychologically. Hewitt Associates (2012) defined employee engagement as the state in which employees talk positively about the values of their organization and they have a strong desire to be an effective member of their organization. Positive employee engagement inspires the employees to perform beyond minimal requirements in their organization. In the hotel industry, employee engagement becomes more meaningful because guests' experiences are largely dependent on

** Research Scholar (Corresponding Author), Mewar University, Gangrar, Chittorgarh, Rajasthan.*

E-mail : chugpk@gmail.com

*** Professor, Department of Management Studies, RKG Institute of Technology, Ghaziabad -201 003, Uttar Pradesh.*

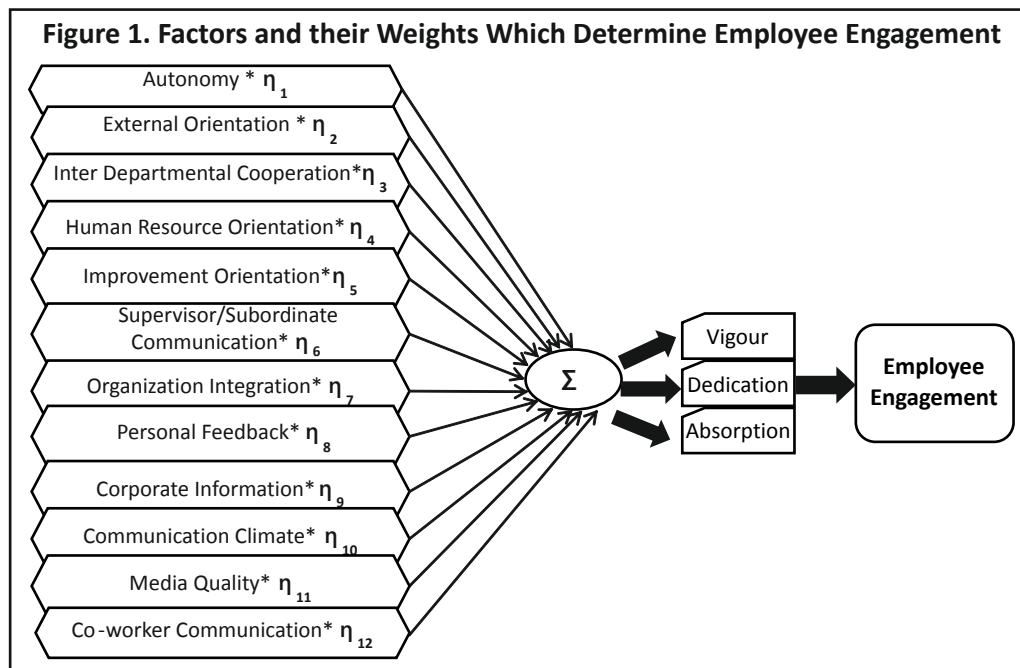
E-mail : mail4vibhu@gmail.com, drvibhuti@rkgit.edu.in

the quality of services delivered by the employees (Shetty, 2010). Any positively engaged employee will definitely improve customer satisfaction, which further provides intangible benefits to the organization (Saks, 2006). Employee engagement has more significance in the hospitality sector because here, the success of any organization is primarily dependent on the interactions between the employees of the organization and their guests. Improved services will translate into better customer satisfaction, which in turn leads to an increased revenue for the business. In the current study, we create a mathematical model by assigning weightage to the various factors of organizational culture and communication, which ultimately helps in optimizing positive employee engagement. Primary data in this study was collected through a survey of 328 employees working in four and five star hotels of Delhi and NCR.

Motivation

In this section, the usefulness of the proposed method is highlighted. India is a country with population size of over 1.25 billion, which is also the origin of many civilizations, religions, and cultures. From the tourism point of view, it is a dream destination for the leisure travelers since it has a great potential for many kinds of tours such as pilgrimages, excursions, adventures, cultural exploration, scenic mountains, business travelers, beautiful beaches, etc. This scenario has given a boom to the hospitality industry in India and has emerged as one of the key sectors driving the country's economy. In order to enhance the level of employee engagement among people working in hospitality sectors, often organizations have to prioritize among many factors such as organizational culture, communication, recruitment, human-resource, etc. They have to make difficult choices about how to judiciously spend the limited time and resources on various activities, so that optimum level of employee engagement could be successfully achieved.

Although, such decisions are usually made during initial days of planning, in the current study, as shown in the Figure 1, we have attempted to precisely estimate the significance of each and every independent variable in terms of coefficients on three most vital pillars of employee engagement, that is, absorption, vigor, and dedication. The



results can be gainfully employed to identify and decide about the most critical factors of organization culture and communication having a positive impact over employee engagement. Based on the weightage carried by each factor, organizations can thoughtfully spend their valuable money, efforts, and time.

Literature Review

Employee engagement is defined as an approach taken by all employees resulting in the right conditions in an organization so that they can give their best each day and commit to their organization's goals and values (Kahn, 1990). In another definition (Hewitt Associates, 2012), employee engagement is defined as the psychological state and behavioral outcomes that lead to better organization performance. Any employee who is positively engaged will consistently demonstrate three general behaviors. First, they consistently speak positive for their organization; second, they have an intense desire to be a member of the organization; and third, they always exert extra time and effort to contribute towards success of the business. Although the definition of employee engagement is very ambiguous, Macey and Schneider (2008a, 2008b) pointed out that the common points in all definitions is the desirability of employee engagement on two fronts, that is, behavioral and psychological. Both the facets involve focused effort, enthusiasm, and energy for the profitability of an organization for which they are working. Organizations face many challenges to sustain in the market, and one of the main challenges is employee engagement (Schaufeli & Salanova, 2005; Schaufeli, 2012).

On the basis of the 65 samples collected from different industries, Macey, Schneider, Barbera, and Young (2011) concluded that any organization can achieve a competitive advantage only through its positive employee engagement. Return on investment (ROI) was higher with those organizations where the employee engagement was greater, whereas for bottom 25% of the industries on the basis of ROI ranking, a decline in employee engagement and disengagement among employees was observed. A huge engagement gap was observed in American workforce (Johnson, 2004), which attributed to the loss of almost \$300 billion a year to U.S. business organizations. Among the many measures suggested by the author, the engagement of employees was pointed as the key issue that needs to be promoted at all levels.

In the hospitality sector, employee engagement becomes more critical (Walsh & Taylor, 2007) because poor morale of the employees can reduce the satisfaction level of the clients which further leads to a reduction in profitability (Bates, 2004; Saks, 2006). In one of the studies conducted by Yang, Liu, Chang, and Wang (2010), they found that the turnover rates in hospitality ranged from 60% to 300%, and the average cost associated with turnover was approximately 1.5 times that of the employee's salary. One of the strategies to increase the turnover of an organization working in the hospitality sector is by increasing job satisfaction and the level of engagement of their employees (Bakker & Leiter, 2010). Since hospitality and tourism are comparatively those sectors which have a high turnover, maintaining higher level of employee engagement is the foremost requirement to sustain in the market (Tian & Pu, 2008). Job satisfaction was found to be highly associated with organizational justice by Wu and Wang (2008); whereas, in one of the other studies conducted by Leung, Wang, and Smith (2001), attitude of an employee was found to be the most significant factor.

Behavioral intentions of employees were studied by Lam, Cho, and Qu (2007), and it was found that motivation remains on a high note if a good support system is provided to the employee. Organizational culture and communication has a sure impact on employee engagement (Murphy, Athanasou, & King, 2002; Porter & Steers, 1973), however, none of the studies explored the individual effect of the constituent independent variable contributing towards positive employee engagement.

Recently, Pandita and Bedarkar (2015) explored the effects of four drivers, communication, work-life balance, leadership, and organizational culture on employee engagement. Further, impact of these drivers on the level of employee performance and well-being was investigated at the workplace. Bharathi (2009) felt that there is a

strong need to align the human resource practices which can enforce the level of engagement among employees to influence the profitability of an organization. Based on the database of 500 companies in India collected from Economic Times Intelligent Group (ETIG), Sharma and Shukla (2015) could not identify direct linkages between HR orientations with profitability, however, a significant relationship with an increase in market capitalization was acknowledged. Bedarkar, Pandita, Agarwal, and Saini (2016) developed a theoretical framework to explore the effect of organizational culture, customer centricity, and knowledge management on organizational effectiveness.

In the current study, we have identified this research gap that although every organization wants to enhance employee engagement, yet they are not sure how to achieve it. We have tried to create a mathematical model by identifying the factors of organizational culture and communication that influence employee engagement and assigned relative weightage to each of them.

Research Methodology

This section provides the research methodology adopted in this study along with the paradigm followed to obtain the results from the observations. In the current study, participants from various departments of a hotel such as front office, general administration, room service, security, etc. were approached personally and through mails using the random sampling process. Structured questionnaire was prepared and presented to over 500 staff members in the current study. The deductions were made in the present empirical study based on the primary data successfully collected from 328 employees working in four and five star hotels in Delhi and NCR who responded positively.

This data was primarily collected between the period of January 2014 to December 2015 ; a 5- point Likert scale was used to collect data from the respondents. We constructed a questionnaire containing 57 items and collected data regarding demographic profile as well as the level of engagement. These 57 variables consist of five variables to measure autonomy, four variables to measure external orientation, four variables to measure inter departmental cooperation, three variables to measure human resource orientation, three variables to measure

Table 1. Details of Independent Variables

| Independent Variables | Description |
|--------------------------------|--|
| Autonomy | Measures the amount of freedom given to the employees. |
| External Orientation | Measures the swiftness with which the organization reacts to new changes in the market. |
| Inter Departmental Cooperation | Measures the inter-departmental cooperation. |
| Human Resource Orientation | Measures the recruitment and appraisal process in an organization. |
| Improvement Orientation | Measures monitoring and guiding of employees for improvement. |
| Organization Integration | Measures the amount of organizational information such as benefits, pay, departmental policies known to employees. |
| Supervisory Communication | Measures communication between an employee and his/her immediate supervisor. |
| Personal Feedback | Measures how the employees are judged by fellow employees. |
| Corporate Information | Measures the amount of corporate information such as financial status, policies, and goals known to employees. |
| Communication Climate | Measures the communication climate such as conflicts handling. |
| Co-worker Communication | Measures horizontal communication of an employee with another employee. |
| Media Quality | Measures the amount of communication in the organization whether it is clear, concise, and healthy or not. |
| Subordinate Communication | Measures the interaction of the employee with his/her subordinates. |

improvement orientation, five variables to measure organization integration, five variables to measure supervisory communication, five variables to measure personal feedback, five variables to measure corporate information, five variables to measure communication climate, five variables to measure co-worker communication, three variables to measure media quality, and five variables to measure subordinate communication.

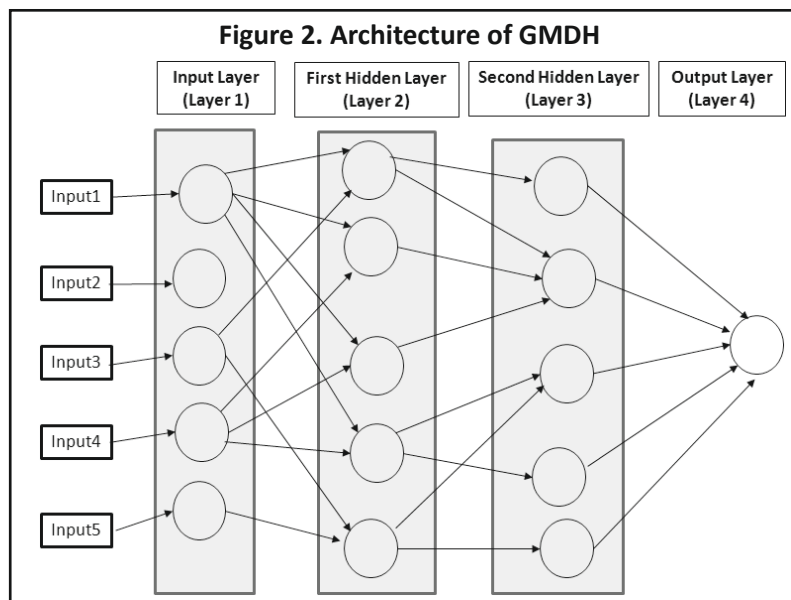
The present study attempts to investigate the correlation of each factor of organizational culture and communication individually to the level of employee engagement among hotel employees.

(1) Independent Variables : In this study, organizational culture and communication are independent variables, which are measured through autonomy, external orientation, inter departmental cooperation, human resource orientation, improvement orientation, organization integration, supervisory communication, personal feedback, corporate information, communication climate, co-worker communication, and media quality. The name of the attributes and their definitions are compiled in the Table 1.

(2) Dependent Variables : Kahn (1990) defined employee engagement as the harnessing of organizational members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances. In the same chapter, he also defined the disengagement of an employee as being contrasted to the above definition. It is a situation when the employees involve an extrication of organizational members' selves from their work roles. The author further stated that engagement involves high levels of energy and identification with one's work due to which an employee feels completely satisfied. In the current study, we have explored employee engagement, and it is measured through three vital factors, that is, vigor, dedication, and absorption. The dependent variables are compiled as well as defined in the Table 2.

Table 2. List of Dependent Variables

| Attribute | Description |
|-------------------|---|
| Vigor | Measures the amount of energy and will of the employee to perform his/her duty. |
| Dedication | Measures how much he/she is proud of his/her job. |
| Absorption | Measures how intensely and happily the employee performs his/her job. |



(3) Group Method of Data Handling (GMDH) Model : The primary goal of this paper is to find the effectiveness of organizational culture and communication on employee engagement. Although, standard multiple regression can successfully identify the linear dependence present between independent and dependent variables, however, it fails to identify the relationship if it is complex and non-linear. GMDH is used for constructing such kind of extremely high order regression type models (Malhotra & Chug, 2014) as shown in the Figure 2.

GMDH can achieve this because during model building, specifications are not required in advance. In this model, the computational burden is quite less in comparison with other models because it automatically filters out those input variables which provide very little information about the shape of hyper surface. Each unit corresponds to the polynomial form as shown in equation (1) or equation (2) :

$$Z = a + bx + cy + dx^2 + exy + fy^2 \quad (1)$$

$$Z = a + bx + cy + dxy \quad (2)$$

where,

variables x and y are input variables, Z is the output variable, and $a, b, c \dots f$ are the parameters. Some GMDH networks can be large, hence, when it has around seven or more input variables, we have to separate it into several sub-networks with six or less input variables since the rule extraction process becomes too complex with many input variables. Using GMDH network structure developed from the dataset of nominal dependent variable y and independent variable x , the following equations (3), (4), and (5) are obtained :

$$\text{Output Layer : } X_i(k) = a(G) + b(G)X_1(G-1) + c(G)X_2(G-1) + d(G)X_1(G-1)X_2(G-1) \quad (3)$$

$$\text{Hidden Layers : } X_i(k) = a_i(k) + b_i(k)X_m(k-1) + c_i(k)X_n(k-1) + d(k)X_m(k-1)X_n(k-1) \quad (4)$$

$$\text{Input Layer : } X_i(1) = a_i(1) + b_i(1)X_m(0) + c_i(1)X_n(0) + d(1)X_m(0)X_n(0) \quad (5)$$

Based on the architecture of forward multi-layer neural network structure, it works in three important phases. Firstly, it computes the error between actual and predicted value of each unit. Secondly, it sorts out all the units in decreasing order as per the error rate. Thirdly, it eliminates bad units, that is, where the error rate is higher. Hence, GMDH is very suitable for modelling complex relationships that other modelling techniques find difficult, if not impossible, to reveal.

Analysis and Results

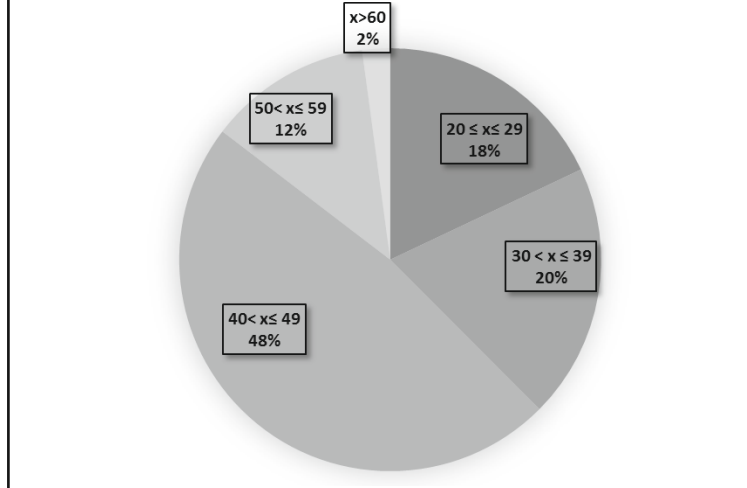
With the help of a structured questionnaire, an attempt was made in this empirical study to find various determinants of employee's engagement with the help of responses received from 328 persons employed at various four and five star hotels working in Delhi and NCR. Further details on results of the research are provided as under :

(1) Employee Demographics : The demographics of the respondents obtained from the analysis of the questionnaire are given in the Tables 3 - 8 on the basis of age, gender, educational qualification, level in organization, work experience, and department, respectively.

When we analyzed the data on the basis of age, from the Figure 3, it can be inferred that the majority of the respondents were from the age group of 41-50 years and accounted for almost 66% of the total respondents. This is followed by the employees in the age group of 31- 40 years who accounted for almost 27% of the total respondents. We also observed that the least number of employees fell into the age of above 60 years.

Table 3. Age

| Demographic profile | Descriptive | Frequency | Percentage |
|---------------------|---------------------|-----------|------------|
| Age | $20 \leq x \leq 29$ | 59 | |
| | $30 < x \leq 39$ | 64 | |
| | $40 < x \leq 49$ | 157 | |
| | $50 < x \leq 59$ | 41 | |
| | $x > 60$ | 7 | |

Figure 3. Distribution of the Respondents as per Their Age**Table 4. Gender**

| Demographic Profile | Descriptive | Frequency | Percentage |
|---------------------|-------------|-----------|------------|
| Gender | Female | 134 | |
| | Male | 194 | |

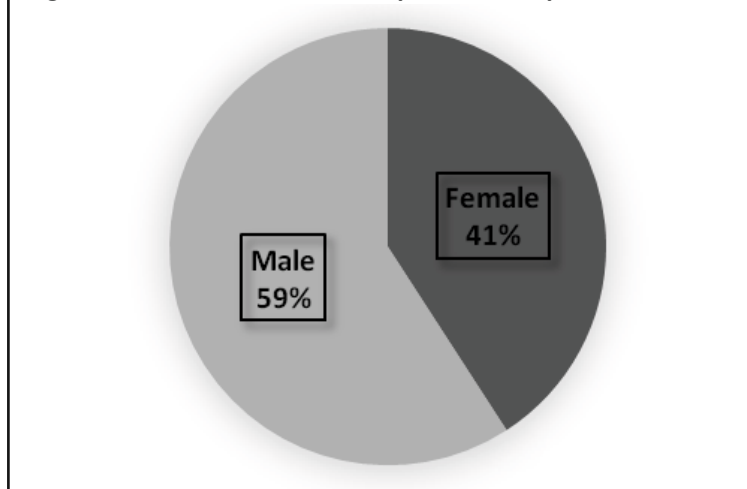
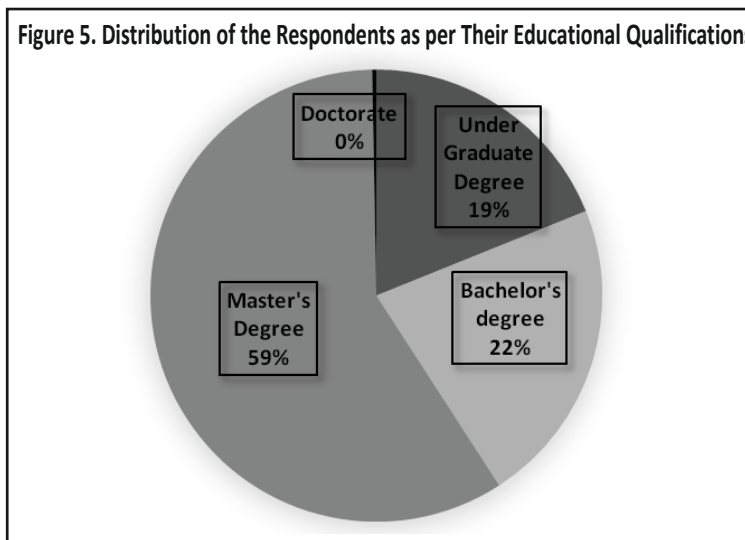
Figure 4. Distribution of the Respondents as per Their Gender

Table 5. Educational Qualifications

| Demographic profile | Descriptive | Frequency | Percentage |
|----------------------------|-----------------------|-----------|------------|
| Educational Qualifications | Under Graduate Degree | 62 | |
| | Bachelor's degree | 72 | |
| | Master's Degree | 193 | |
| | Doctorate | 1 | |

Figure 5. Distribution of the Respondents as per Their Educational Qualifications**Table 6. Level in Organization**

| Demographic profile | Descriptive | Frequency | Percentage |
|-----------------------|---------------|-----------|------------|
| Level in Organization | Lower Level | 88 | |
| | Middle Level | 197 | |
| | Higher Level | 39 | |
| | Highest Level | 4 | |

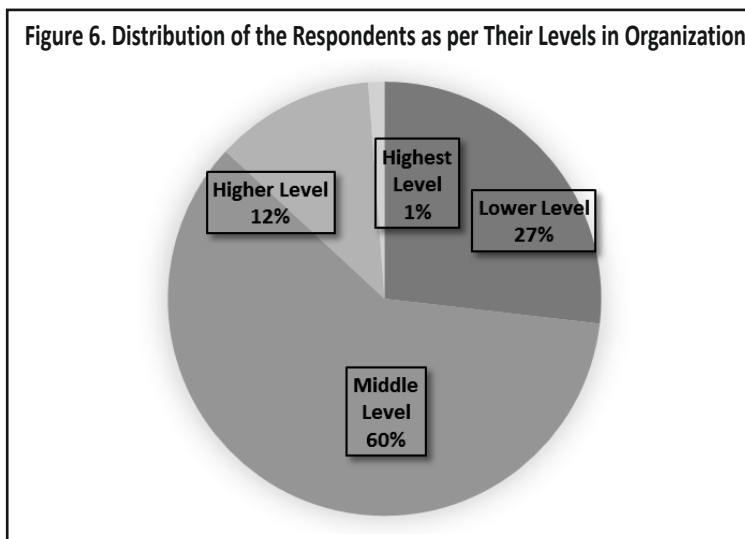
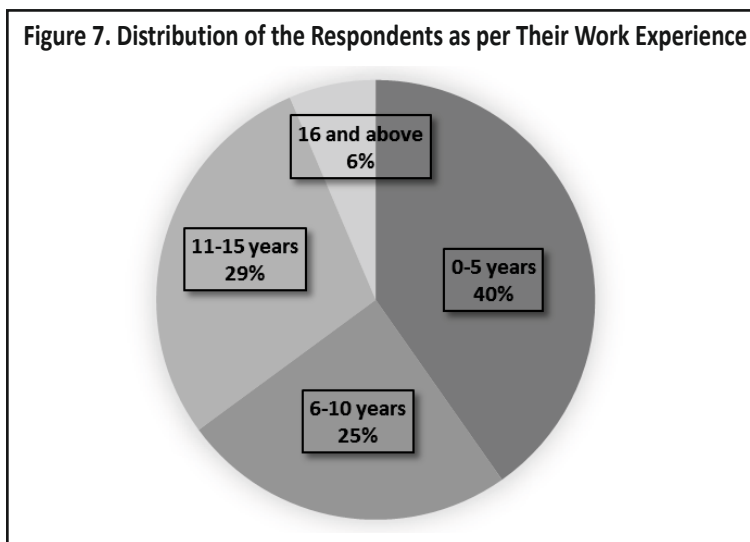
Figure 6. Distribution of the Respondents as per Their Levels in Organization

Table 7. Work Experience

| Demographic Profile | Descriptive | Frequency | Percentage |
|---------------------|--------------|-----------|------------|
| Work Experience | 0-5 years | 132 | |
| | 6-10 years | 81 | |
| | 11-15 years | 94 | |
| | 16 and above | 21 | |

Figure 7. Distribution of the Respondents as per Their Work Experience

In view of the gender-based analysis, we observe from the Figure 4 that there were 194 males, who accounted for almost 59% of the respondents, and 134 females who accounted for 41% ; hence, gender wise analysis shows slight positive biasness towards males, which is a normal trend observed in all blue collared sectors in India (Bhatt & Fukey, 2014 ; Chaudhary & Gupta, 2010).

With respect to the educational qualification of the employees, from the Figure 5, it can be inferred that the highest numbers of employees were found to have secured a Master's degree, accounting for 59% of the total strength. We found only one respondent who held a doctorate degree, which means that people deployed in the hotel sectors are not interested in pursuing research or higher studies. Employees working in the kitchen department were found to be comparatively less qualified as far as the formal degree is concerned. We found that 62 employees were under-graduate, which is almost 19% of the total strength.

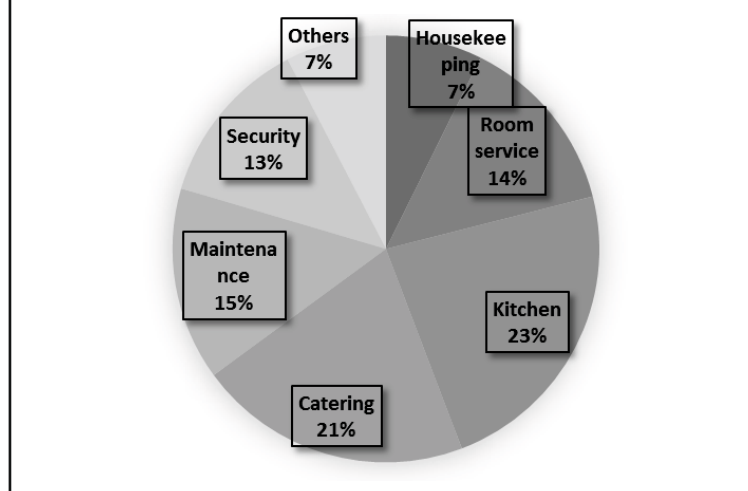
We also analyzed the data on the basis of the distribution of the respondents as per their levels in organization experience and the same is represented in the Figure 6. Highest numbers of respondents were found to be at the middle level which accounts to almost 60%. At the lowest level, 27% respondents provided us valuable feedback. At the higher level, 12% respondents filled the much needed questionnaire, however, only 1% respondents were found to be from the highest level of management.

We also analyzed the data on the basis of experience and the same is represented in the Figure 7. On the basis of the details given by various employees, it was observed that majority of them had 0 to 5 years of experience (40%), followed by those who had 11 - 15 years of experience (28.6%). However, the least number of respondents were observed to have more than 16 years of experience (6.4%).

With respect to the departments in which they were working, from the Figure 8, it can be inferred that the majority of the employees were deployed in either kitchen or catering department (cumulatively accounts for 44%), followed by maintenance, room service, and security (14.6%, 13.7%, and 12.8%, respectively). The least number of employees were from the housekeeping department and accounted for almost 7% of the total

Table 8. Department

| Demographic Profile | Descriptive | Frequency | Percentage |
|---------------------|--------------|-----------|------------|
| Department | Housekeeping | 24 | 7% |
| | Room service | 45 | 14% |
| | Kitchen | 76 | 23% |
| | Catering | 68 | 21% |
| | Maintenance | 48 | 15% |
| | Security | 42 | 13% |
| | Others | 25 | 7% |

Figure 8. Distribution of the Respondents as per Their Department**Table 9. Prominent Variables and Corresponding Weighing Components for Vigor**

| Co-efficient Variable | Independent Variables | Vigor |
|-----------------------|--------------------------------|--------|
| η_8 | Personal Feedback | 22.19% |
| η_2 | External Orientation | 15.70% |
| η_7 | Supervisory Communication | 9.12% |
| η_4 | Human Resource Orientation | 8.61% |
| η_6 | Organization Integration | 7.83% |
| η_9 | Corporate Information | 7.61% |
| η_1 | Autonomy | 6.49% |
| η_3 | Inter Departmental Cooperation | 5.82% |
| η_{10} | Communication Climate | 4.58% |
| η_{13} | Subordinate Communication | 3.43% |
| η_{12} | Media Quality | 3.29% |
| η_{11} | Co-worker Communication | 3.24% |
| η_5 | Improvement Orientation | 2.09% |

respondents. Other services included employees engaged in front office department, accounting department, engineering department responsible for all repairs, and human resource department.

Table 10. Prominent Variables and Corresponding Weighing Components for Dedication

| Co-efficient Variable | Independent Variables | Dedication |
|-----------------------|--------------------------------|------------|
| η_4 | Human Resource Orientation | 18.26% |
| η_{12} | Media Quality | 13.16% |
| η_{10} | Communication Climate | 12.29% |
| η_{11} | Co-worker Communication | 8.54% |
| η_5 | Improvement Orientation | 8.69% |
| η_9 | Corporate Information | 7.08% |
| η_1 | Autonomy | 7.91% |
| η_3 | Inter Departmental Cooperation | 5.82% |
| η_2 | External Orientation | 5.17% |
| η_8 | Personal Feedback | 4.36% |
| η_7 | Supervisory Communication | 3.83% |
| η_{13} | Subordinate Communication | 2.76% |
| η_6 | Organization Integration | 2.13% |

Table 11. Prominent Variables and Corresponding Weighing Components for Absorption

| Co-efficient Variable | Independent Variables | Absorption |
|-----------------------|--------------------------------|------------|
| η_{12} | Media Quality | 17.86% |
| η_6 | Organization Integration | 14.13% |
| η_5 | Improvement Orientation | 12.29% |
| η_8 | Personal Feedback | 11.19% |
| η_2 | External Orientation | 10.70% |
| η_{11} | Co-worker Communication | 9.82% |
| η_7 | Supervisory Communication | 4.68% |
| η_4 | Human Resource Orientation | 4.18% |
| η_{10} | Communication Climate | 3.92% |
| η_9 | Corporate Information | 3.34% |
| η_3 | Inter Departmental Cooperation | 3.29% |
| η_1 | Autonomy | 2.71% |
| η_{13} | Subordinate Communication | 1.89% |

(2) Mathematical Model : The current study provides important practical implications to managers as they are always challenged to find out the ways and means not only to retain employees, but also to foster organizational citizenship behavior in them. Organizations can increase their productivity as well as profitability by increasing vigor, dedication, and absorption among their employees.

The weightage of each independent variable is shown in Table 9, Table 10, and Table 11 for vigor, dedication, and absorption, respectively. We observed that personal feedback and external orientation were considered as the most important factors among employees to enhance vigor and account for almost 38% of the total factors. Human resource orientation, media quality, and communication climate were cumulatively considered as the most important factors for increasing dedication and account for almost 44% of the total organizational factors. Media quality, organization integration, improvement orientation, personal feedback, and external orientation are the

most important factors and have almost 64% weightage of the total effects on the absorption pillars of employee engagement.

(3) Comprehensive Mathematical Model : After examining the individual relationship among all factors of organizational behavior, we also calculated cumulative relationship among these critical factors. Hence, this research presents a new mathematical model of employee engagement and reveals the relative importance of each factor which can contribute in enhancing positive engagement among employees. In Table 12, we have compiled Tables 9, 10, and 11 in totality to find out the weightage of each η_i ($i=1 \dots n$).

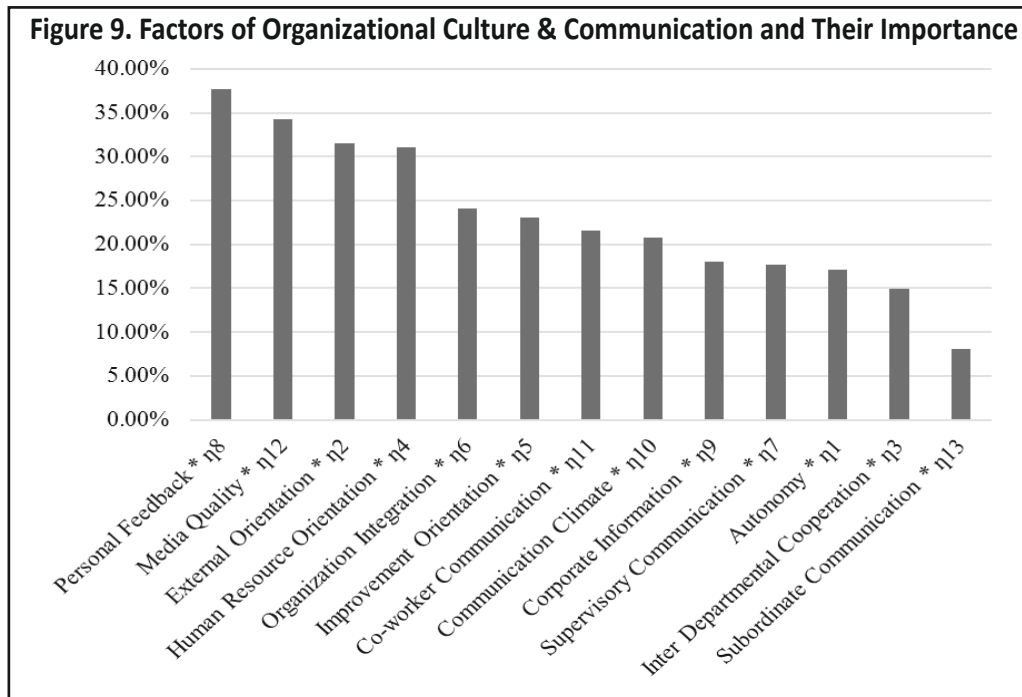
In the current study, an attempt has been made to measure employee engagement in a comprehensive manner using different factors associated with organizational culture and communication. A structured questionnaire

Table 12. Prominent Variables and Corresponding Weighing Components

| Independent Variables | Vigor | Dedication | Absorption |
|---|--------|------------|------------|
| Autonomy * η_1 | 6.49% | 7.91% | 2.71% |
| External Orientation * η_2 | 15.70% | 5.17% | 10.70% |
| Inter Departmental Cooperation * η_3 | 5.82% | 5.82% | 3.29% |
| Human Resource Orientation * η_4 | 8.61% | 18.26% | 4.18% |
| Improvement Orientation * η_5 | 2.09% | 8.69% | 12.29% |
| Organization Integration * η_6 | 7.83% | 2.13% | 14.13% |
| Supervisory Communication * η_7 | 9.12% | 3.83% | 4.68% |
| Personal Feedback * η_8 | 22.19% | 4.36% | 11.19% |
| Corporate Information * η_9 | 7.61% | 7.08% | 3.34% |
| Communication Climate * η_{10} | 4.58% | 12.29% | 3.92% |
| Co-worker Communication * η_{11} | 3.24% | 8.54% | 9.82% |
| Media Quality * η_{12} | 3.29% | 13.16% | 17.86% |
| Subordinate Communication * η_{13} | 3.43% | 2.76% | 1.89% |

Table 13. Independent Variables Sorted as per Their Weightage Importance

| Independent Variables | Vigor | Dedication | Absorption | Total Weightage |
|---|--------|------------|------------|-----------------|
| Personal Feedback * η_8 | 22.19% | 4.36% | 11.19% | 37.74% |
| Media Quality * η_{12} | 3.29% | 13.16% | 17.86% | 34.31% |
| External Orientation * η_2 | 15.70% | 5.17% | 10.70% | 31.57% |
| Human Resource Orientation * η_4 | 8.61% | 18.26% | 4.18% | 31.05% |
| Organization Integration * η_6 | 7.83% | 2.13% | 14.13% | 24.09% |
| Improvement Orientation * η_5 | 2.09% | 8.69% | 12.29% | 23.07% |
| Co-worker Communication * η_{11} | 3.24% | 8.54% | 9.82% | 21.60% |
| Communication Climate * η_{10} | 4.58% | 12.29% | 3.92% | 20.79% |
| Corporate Information * η_9 | 7.61% | 7.08% | 3.34% | 18.03% |
| Supervisory Communication * η_7 | 9.12% | 3.83% | 4.68% | 17.63% |
| Autonomy * η_1 | 6.49% | 7.91% | 2.71% | 17.11% |
| Inter Departmental Cooperation * η_3 | 5.82% | 5.82% | 3.29% | 14.93% |
| Subordinate Communication * η_{13} | 3.43% | 2.76% | 1.89% | 8.08% |



approach was adopted in this research study to identify the challenges and barriers of employee engagement. Accordingly, in Table 13, all the factors are added and arranged as per the order of their importance. Finally, all the factors of organizational culture and communication as per their cumulative importance are visually depicted in Figure 9.

After analyzing the results, this study helps us in identifying the main contributors of employee engagement. We observe that personal feedback, media quality, external orientation, and human resource orientation are the main factors which are highly related with the highest weightage to absorption, dedication, and vigor cumulatively. Hence, we can infer from this analysis that the key challenges for elevating employee engagement are to develop an organizational level strategy in such a way that enough time and efforts should be spent on the following four attributes :

(i) Personal Feedback : Employees feel motivated and empowered in the organization if communication is healthy and accurate. Information must be provided to the employees about their work performance and how they are being judged. We found that if the personal feedback is provided to the employees in a decent manner, it definitely enhances their ability to meet organizational goals.

(ii) Media Quality : Media quality is all about time management. We identified that if the meetings are well organized and the information is provided in a clear and accurate manner, employees' engagement is positively enhanced. Written directives and reports should be clear and concise and the healthy attitudes toward communication increases the levels of employee engagement.

(iii) External Orientation : The results of this study reveal that after investigating the wishes and needs of customers, if an organization quickly reacts to the developments in the market, then it certainly enhances employee engagement. Employees also feel motivated if active canvassing of new customers is done in the organization, which gives an edge over local competitors.

(iv) Human Resource Orientation : If the employees feel that recruitment process and performance appraisals are given due importance, they have a higher level of positive employee engagement.

(4) Model Fit : Employee engagement is a condition in which positively skewed employees feel motivated towards their work. They become more sensitive and passionate towards their jobs and remain committed as well as involved. Hence, it is the duty of an organization to provide good organization culture and communication conditions to its employees so that a happy two - way relationship between employees and the employer can be maintained. In this study, GMDH technique is used to identify the important attributes of organization culture and communication having a comparative impact on overall employee engagement. The results are cross-validated using model-fit on the test data and are depicted in the Table 14.

The results presented in the Table 14 show that these important independent variables appear to be useful in elevating employee engagement among workers. Out of 328 responses successfully received, when GMDH method is applied, we found that only 13 responses were wrongly classified which means only 0.03% (13/328) of the responses were wrong. RMSE value is very close to 1, which means the mathematical model constructed in this study is very accurate and can be successfully deployed by the human resource managers in enhancing employee engagement. Values of weighted *F*-measure and *X*-measure are also very close to 1, which means the constructed model is very accurate and can be deployed by HR managers in real time in their organizations.

Table 14. Cross - Validation Results of Model - Fit on Test Data

| Results for Classification | Values |
|----------------------------------|--------|
| Correctly Classified Instances | 315 |
| Incorrectly Classified Instances | 13 |
| RMSE | 1.021 |
| Weighted <i>F</i> -Measure | 0.937 |
| <i>X</i> -Measure | 0.929 |

Managerial Implications

The biggest resource in any business is the human element, which is always a deciding factor in level of success in any business. It is always a huge challenge for the business managers to drive their manpower in such a way that they remain motivated, actively engaged in their tasks, and share responsibility while complimenting other members of the team without looking for directions for each and every small issue. Towards this goal, the independent variables from organization culture and communication play the most vital role in deciding the level of employee engagement determined by three dependent variables, that is, absorption, vigor, and dedication. If a manager can be informed of the most significant of these independent variables, perhaps it would be easy for him/her to decide on his/her skills to manage the affairs with his/her peers, subordinates in such a way that it ends up in augmenting employee engagement, which would be a decisive factor in success of any business. Therefore, the subject of employee engagement has fast caught the attention of the senior managers and researchers to take advantage with an overall aim to keep the work force engaged in their respective jobs. On the contrary, if a manager does not pay attention to these critical independent variables or does not indulge actively in timely identifying them, then he/she may fail in his/her task to ensure best output from the team of manpower under his/her command and control ; thereby affecting overall success of any business. It gains more significance in the service sector due to the fact that the foundation of the service industry is the employees, which cannot be avoided at any cost without having an adverse effect on the key deliverables.

The hospitality industry is growing at a rapid pace in India, and it is considered as the fastest booming industry among all service sectors. Demand for international services has increased as India has been recognized as a major consumer by all giant companies. Employers in the hospitality industry can better understand and address their employees' work-related psychological state, attitudes, and behaviors, and accordingly, organizations can invest more on those factors which have greater weightage to achieve an overall enhanced employee engagement.

Conclusion

In our study, we have developed and tested a mathematical research model, which correlates the impact of organizational culture and communication on employee engagement. Our respondents were full-time employees working in various departments of four and five star hotels in Delhi and NCR area. GMDH mathematical model was used to identify the weights of each factor of organizational culture and communication to employee engagement in the current study. The results demonstrate that personal feedback, media quality, external orientation, and human resource orientation are the main factors which can positively influence the level of employee engagement over other factors of organizational culture and communication.

Unexpectedly, we also found that communication with subordinates and inter-departmental communication have no significant effects cumulatively on all three dimensions of employee engagement, that is, absorption, dedication, and vigor. Further, the results also reveal that an employee provided with autonomy does not feel highly motivated if the media quality in the workplace is not sufficiently maintained.

Limitations of the Study

In the current study, only employees working in Delhi and NCR were involved, hence, in order to get the generalized results, same types of studies need to be conducted at the pan - India level to include other areas as well. Further, it was not easily forthcoming to obtain the responses from the participants working in the service sector and, therefore, any persuasion to respond may lead to an unbiased error.

Moreover, neither the participants directly interacted with us, nor the officials were involved in any kind of voice recording during the process of data collection. Instead, a structured questionnaire was created using Google forms and the link was sent to their e-mail ids. Collecting information through a structured questionnaire through e-mail itself has few limitations such as lack of conscientious responses, respondents may have a hidden agenda, and some questions may be difficult to analyze. Differences in understanding and interpretation of the structured questions was also observed because feelings and meanings are sometimes unable to be conveyed.

As the working hours are flexible in the hotel industry, employees filled the questionnaire as per their convenient timing. Hence, we could not even pressurize the employees to spend little more time in reading and understanding the questions before filling the said questionnaire. The breadth of the data collected was very limited, and hence, qualitative content analysis was the only research design which was appropriate for us to select for the analysis.

Scope for Further Research

The findings of this study highlight main drivers of employee engagement with reference to the organizational culture and communication. We hope that the impact of each attribute can be used wisely by the managers in order to fine tune employee engagement by organizing special workshops and programs to strengthen the important aspects of organizational culture and communication. The results obtained in this study can be utilized by the

managers for increasing employee engagement and retaining talented employees which is always considered as the most critical management issue in the hospitality industry.

In the future, it is planned to explore the major challenges of Indian hospitality industry and suggest various ways to overcome the prevailing challenges in improving employee engagement. Very few studies are currently available which have examined the impact of leadership style on employee engagement. Hence, in the future, researchers can investigate in depth what kind of leadership styles motivate the employees to understand and use their full potential. Another future direction is to explore the cumulative impact of more than one factor such as team support, job responsibility, organizational commitment, and workload factors on employee engagement. We hope that the findings of such studies would be helpful in defining the organizational policies in order to enhance employee engagement.

References

- Bakker, A. B., & Leiter, M. P. (Eds.). (2010). *Work engagement: A handbook of essential theory and research*. East Sussex : Psychology Press. DOI: 10.1111/j.1744-6570.2011.01242_2.x
- Bates, S. (2004). Getting engaged. *HR Magazine*, 49(2), 44-51.
- Bedarkar, M., Pandita, D., Agarwal, R., & Saini, R. (2016). Examining the impact of organizational culture on customer centricity in organizations: An analysis. *Prabandhan : Indian Journal of Management*, 9(2), 19-28. DOI: 10.17010/pijom/2016/v9i2/87229
- Bharathi, N. (2009). Employees' engagement practices in spinning mills : An empirical study. *Prabandhan: Indian Journal of Management*, 2(4), 17 - 25. doi:10.17010/pijom/2009/v2i4/60950
- Bhat, V. A., & Fukey, L. N. (2014). Glass ceiling for women employees in hotel industry : A study conducted in Bangalore City. *Adarsh Journal of Management Research*, 7(2), 38 -55.
- Chaudhary, M., & Gupta, M. (2010). Gender equality in Indian hotel industry : A study of perception of male and female employees. *International Journal of Hospitality and Tourism Systems*, 3(1), 31-41.
- Hewitt Associates. (2012). *2012 Trends in global employee engagement*. Aon Corporation. Retrieved from http://www.aon.com/attachments/human-capital-consulting/2013_Trends_in_Global_Employee_Engagement_Report.pdf
- Johnson, M. (2004). *The new rules of engagement: Life-work balance and employee commitment*. London : Chartered Institute of Personnel & Development.
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, 33(4), 692-724.
- Lam, T., Cho, V., & Qu, H. (2007). A study of hotel employee behavioral intentions towards adoption of information technology. *International Journal of Hospitality Management*, 26(1), 49 -65.
- Leung, K., Wang, Z., & Smith, P. B. (2001). Job attitudes and organizational justice in joint venture hotels in China: The role of expatriate managers. *International Journal of Human Resource Management*, 12(6), 926 - 945.
- Macey, W. H., & Schneider, B. (2008a). The meaning of employee engagement. *Industrial and Organizational Psychology*, 1(1), 3 -30.

- Macey, W. H., & Schneider, B. (2008b). Engaged in engagement: We are delighted we did it. *Industrial and Organizational Psychology*, 1 (1), 76 - 83.
- Macey, W. H., Schneider, B., Barbera, K. M., & Young, S. A. (2011). *Employee engagement: Tools for analysis, practice, and competitive advantage*. UK : John Wiley and Sons. DOI: 10.1002/978144430653
- Malhotra, R., & Chug, A. (2014). Application of group method of data handling model for software maintainability prediction using object oriented systems. *International Journal of System Assurance Engineering and Management*, 5 (2), 165 - 173.
- Murphy, G., Athanasou, J., & King, N. (2002). Job satisfaction and organizational citizenship behaviour: A study of Australian human-service professionals. *Journal of Managerial Psychology*, 17 (4), 287 - 297.
- Pandita, D., & Bedarkar, M. (2015). Factors affecting employee performance: A conceptual study on the drivers of employee engagement. *Prabandhan: Indian Journal of Management*, 8 (7), 29 - 40. doi:10.17010/pijom/2015/v8i7/72347
- Porter, L. W., & Steers, R. M. (1973). Organizational, work, and personal factors in employee turnover and absenteeism. *Psychological Bulletin*, 80 (2), 151-176.
- Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, 21 (7), 600 - 619.
- Schaufeli, W. B., & Salanova, M. (2005). Work engagement: An emerging psychological concept and its implications, *Research in social issues in management*, 5: *Managing social and ethical issues in organizations*. Greenwich, CT: Information Age Publishers.
- Schaufeli, W. (2012, March). Work engagement: An emerging psychological concept. In *30th International Congress on Occupational Health*, March 18 - 23, 2012. IcoH.
- Sharma, J. K., & Shukla, S. (2015). Strategic HR orientation of companies in India: A content analysis approach. *Prabandhan: Indian Journal of Management*, 8 (7), 7 - 22. doi:10.17010/pijom/2015/v8i7/72344
- Shetty, K. K. (2010). *Sustainable competitive advantage in the hotel industry and impact of innovations on occupancy rate : A managerial perspective* (Ph.D. Thesis). Padmashree Dr. D. Y. Patil University, Mumbai.
- Tian, X., & Pu, Y. (2008). An artificial neural network approach to hotel employee satisfaction: The case of China. *Social Behavior and Personality: An International Journal*, 36 (4), 467- 482.
- Walsh, K., & Taylor, M. S. (2007). Developing in-house careers and retaining management talent: What hospitality professionals want from their jobs. *Cornell Hotel and Restaurant Administration Quarterly*, 48 (2), 163-182.
- Wu, X., & Wang, C. (2008). The impact of organizational justice on employees' pay satisfaction, work attitudes and performance in Chinese hotels. *Journal of Human Resources in Hospitality and Tourism*, 7(2), 181-195.
- Yang, K. S., Liu, Y. L., Chang, S. H., & Wang, L. (2010). Constructing a theoretical framework for the ontogenetic development of the Chinese bicultural self: A preliminary statement. *Chinese Journal of Psychology*, 52 (2), 113 - 132.

About the Authors

Mr. Pramod Kumar Chug has an experience of over 20 years at senior managerial positions currently working with a national security organization under Ministry of Home Affairs in Government of India. He is an MBA from Punjab Technical University, Jalandhar, Punjab and has been actively engaged in research on HR and Training. He is currently a Research Scholar with Department of Management, Mewar University, Chittorgarh, Rajasthan.

Dr. Vibhuti is an accomplished researcher primarily in the field of Human Resources with more than 15 years of teaching and 3 years of Industry experience currently working as a Professor in the Department of Management Studies at RK Goel Institute of Technology, Ghaziabad, Uttar Pradesh. She has earned her MBA (HR) from Sikkim Manipal University and PhD in Management from Dr BR Ambedkar University, Agra, Uttar Pradesh. She has a large number of research publications in national and international journals.