The Impact of Group factors on work group Diversity

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Abstract

The study aims at analyzing the impact of work related diversity of work groups on group factors such as group task, group process, group cohesiveness, group composition and group structure. Descriptive and analytical design is adopted, aim to bring show the relationship between work group diversity and group level factors. A purposive sampling was adopted for the selection of 475 employees from the four firms who have been formed as the sample for the study. The results indicate the attributes of work related diversity i.e. income categories, group membership tenure, group sizes significantly differ with the dimensions of group factors and gender composition attribute does not significantly differ with the dimensions of group factors.

Key Words: Work related diversity, Group task, Group process, Group cohesiveness, Group composition and Group structure.

Introduction:

The demographic composition of the workforce is changing, with organizations increasingly employing people from a greater variety of social groups. This demographic trend, and the increasing popularity of teams makes the demographic composition of teams and work groups particularly pertinent topic, and this is reflected in increasing levels of research. Of particular relevance are the bodies of research on diversity and relational demography, which tend to focus on group and individual-level issues respectively. The increased use of work groups and teams in organizations has been accompanied by an increase in research on group composition effects. Much of this research focuses on the role that work group diversity may play in influencing group outcomes. Studies have examined diversity with respect to numerous attributes including work-related characteristics psychological variables and, most commonly, demographic variables. This study aims at analyzing the relationship of work group diversity with group factors such as group task, group cohesiveness, process and group structure.

Conceptual Background

The term diversity to refer to the distribution of personal attributes among interdependent members of a work unit. The body of research included reflects a perspective that is sometimes referred to as the compositional approach (Tsui and Gutek, 1999) or the configuration approach (Moynihan and Peterson, 2001). Typically, detectable attributes such as age, sex, gender and racial-ethnicity have been considered surface level diversity and they reflect physical features and are generally immutable and immediately observable, and social consensus can usually be assumed about them (Jackson et al., 1995; Milliken and Martins, 1996) whereas the deep level diversity which is related to task and are likely to be related to knowledge, skills and abilities needed in the workplace (i.e., function, tenure, group size, group composition and income) and have been postulated to be more germane to accomplishing tasks than bio-demographic diversity (Harrison, Price and Bell, 1998; Harrison, Price, Gavin, and Florey, 2002; Pelled, 1996).

Literature Review

Based on the notion that, the demographic diversity amongst group members can have impact on the group outcomes, and group with heterogeneity can be more successful with favorable group factors, increased attention are being by the researchers. In particular, measuring the performance of group based on diversity has shown increasing trend in both quantity and quality as well. However, the researches related to measuring the relationship of group diversity with group factors in the real organizational settings are limited in number and these have produced mixed results. An extensive survey of available literature revealed that, group diversity has potential and positive impact on group factors such that more diversity can affect negatively group cohesion, coordination, cooperation and exchange of information (Milliken& Martins, 1996). Kramer (1991) identified, gender diversity affected group process and this was supported by Pelled (1996) who found that group with gender diversity experienced process loss and become less effective. Cox and Blake
In their seminal article on workforce diversity, have stressed, "A core of similarity among group members is desirable ... the need for heterogeneity, to promote problem solving and innovation, must be balanced with the need for organizational coherence and unity of action". Although the quality and effectiveness of teams are largely dependent on members’ unique characteristics and strengths, organizations should understand that a synergistic effect of individual characteristics on team performance can only be achieved through coordinating and integrating diversity into one cohesive "entity Harrison, Price, and Bell (1998) examined the impact of surface-level (demographic) and deep-level (attitudinal) diversity on team integration and found that both surface-level (demographic) and deep-level (attitudinal) diversity have impact on group outcomes and they also found that, surface level diversity (e.g. gender, age) have negative and non-significant relation with group cohesiveness and deep level diversity (e.g. tenure, size) have significant negative relationship with group cohesiveness. Sujin and Irwin (2007) examined the complex relationship between team diversity and team outcomes and the impact of team diversity on team outcomes and moderating variables potentially affecting this relationship. In particular, the effects of task-related and bio-demographic diversity at the group-level were meta-analyzed to test the hypothesis of synergistic performance resulting from diverse employee teams. Support was found for the positive impact of task-related diversity on team performance although bio-demographic diversity was not significantly related to team performance. Jurgen, et.al (2008), examined the influence of gender composition amongst two hundred twenty two natural work unit groups and found the gender composition had a significant effect on group performance and also identified, that both diversity and group size had moderate role on performance depending upon group processes. Valenti and Rockett (2008) in their study of forty nine employees at Midwest consulting firm, found that, individual difference in gender and tenure has relationship with group process and concluded men with more tenure create network than female having short tenure within the work group. Tyran and Gibson ( 2008) in their study, observed the consequences of two types of team heterogeneity; surface level and deep level on team outcomes and found heterogeneity has a negative impact on group efficacy but a positive impact on team reputation. As proposed, teams with lower tenure heterogeneity had higher group efficacy, and teams with higher gender heterogeneity and higher collectivism heterogeneity received better ratings on team reputation. Susan (2009) examined three hundred twenty nine work groups operating in, for profit and nonprofit organizations across the United States to identify the impact of size of the group on group development and productivity. The study concluded that group development and productivity were significantly higher amongst group having less than 8 members than the group containing more than 8 members and increase or decrease in group development and productivity depends upon the size of the work group. Choi, and Thomas (2010), carried out research among sixty two work groups from variety of firms and found relation oriented attributes such as gender, age and task related attribute as tenure had differentiated relationship with task and related to group process and work outcome in a natural work groups.

Methodology

Need and purpose of the study

Rapid emergence of groups in the work place and their recognition as social entities to the productive efficiency of work organization, lead to analysis of work group diversity and their impact on group factors. It is essential to find out effects of work group demographic characteristics on group factors in order to achieve organizational effectiveness in this competitive environment which will ensure enhancement of competencies of group. The purpose of this study is to understand about work group diversity and investigate cognitive explanations for their impact on work group factors consisting of group task, group process, “group” cohesiveness, group composition and group structure dimensions. Descriptive and analytical design is adopted, aiming to bring out the relationship between work group diversity and group level factors.)

Hypotheses

H1: There is no significant difference between the income categories with respect to group factors.
H2: There is no significant difference between the group membership tenure categories with respect to group factors.
H3: There is no significant difference between the work group sizes with respect to group factors.
H4: There is no significant difference between the gender compositions of groups with respect to group factors.

Description of the sample

For this research , the selection of 475 employees from the four firms who have been formed as the sample for the study. One firm from manufacturing, one from consultancy and two firms from software agreed to cooperate for this research. The firms selected are predominantly structured for group work are involved in the similar group activities i.e. Project formation, selection and evaluation and respondents carryout similar task in all these organizations. This sampling method was chosen to include only those respondents who are performing their work as a group and whose task are interdependent and excluded those who perform their job as an individual and their tasks are independent.
Profile of the sample
The demographic details on various aspects of the respondents collected from the four organizations are, with regard to income per month 26.5% of them are in the category of middle income group (Rs. 15000-20000). The group membership tenure more than 12 months labeled as high is 39.8%. The sizes of the group of the participants are small group (less than 8 members) being 54.5%. 53.8% of the participants are male and 46.2% are females. With regard to gender composition of the group, 51.6% are in unequal group i.e. either more males or females. The firm wise the work group diversity details of the samples are, 54.9% being middle income category in manufacturing, 68.6% being low income category in consultancy, 39.5% being upper middle in software I and 91.8% being lower middle income category in software II organization. 100% are having high tenure in manufacturing, 37.3% with low tenure in consultancy; 38.5% with medium tenure in software I, 48.5% are having low group tenure in software II organization. 70.4% are in large group size in manufacturing, 64.7% small group size in consultancy, 57.6% small group size in software and 55.7% small group size in software II organization. 100% are in the group with equal number of males and females in consultancy, 62.4% are in the equal group in software I, 51.5% are in the unequal group in software II organization,

Measures and Scales
A five point scale response format is used for all the measures ranging from Strongly agree to Strongly disagree, with items coded such that a high score indicates a greater amount of the focal construct.

Measures for Diversity: A personal profile consisting of income, group membership tenure, work group sizes and gender composition of group were collected through the details given in the questionnaire.

Measures for Group Factors:


Group composition was measured by 2 items, adapted from Cammann, Fichman, Jenkins and Klesh (1979), The Michigan Organizational Assessment Questionnaire,

Group structure consisting of 9 items was measured by the scales of Guzzo et al. (1993) Group Potency Measure, Schwarzer (1999)& Dona, Sud and Schwarzer (2002) Generalized Efficacy Assessment.

Preliminary analysis
A pilot study was under taken by distributing the developed measure to a sample of 45 respondents drawn from all the participating organization. The Cronbach Alpha coefficient computed for the measures range from 0.77 to 0.96 for group factors, indicating sufficient internal consistency of the measure for their use in the main study.

Data collection procedure
For the collection of data the researcher personally visited all the organizations under study and had detailed discussion with the HR managers for the modality of data collection. A structured questionnaire was then distributed amongst 600 respondents of different organizations under study. 491 filled in questionnaire were received, with the percentage of response rate being 81.83%. A check was carried out on the received questionnaire and it was found that 16 questionnaire were incomplete and were excluded from further analysis.

Data analyses
Statistical software program were used to perform all the statistical analysis. As a preliminary step to the data analyses, statistical information in several areas was examined. The demographic data were tabulated to gain an understanding of
the sample. Then further analyses were carried out to determine if there were any statistically significant differences in the mean scores of group dimensions with the demographic details. These analyses included one way ANOVA for analyzing the significant differences between the demographics such as income level, group membership tenure and group factors and independent sample t-tests for gender composition of the group, work group size and group factors.

Results and Discussion

1) The reliability (Alphas) of the items of group dimensions was computed through Cronbach Alpha. The result showed the Alpha coefficient value is .96, indicating the instrument is having high-reliability.

2) Variable formation

2.a. Income: The monthly income of the respondents were categorized into five groups, namely, Low having income below Rs. 10000, Lower middle having Rs. 10000-15000, Middle having Rs. 15000-20000, Rs. 20000-25000 as Upper middle and above Rs. 25000 as Upper income group.

2.b. Group membership tenure: The duration of association of individuals with same group is termed as group membership tenure and has been classified as Low having tenure below 6 months, Medium having 6 to 12 months and High, having above 12 months of association in the same group.

2.c. Work group size: The size of the group has been grouped into Small, having less than 8 members and Large, group having more than 8 members.

2.d. Gender composition: The number of men and women present in the group has been termed as gender composition and categorized as Equal if the number of both genders are same and Unequal, which has either more men or more women.

Results of ANOVA for income categories and group factors

Schaffer’s homogeneity test conducted revealed that on the basis of the group task, group cohesiveness, the low, lower middle income categories have formed one sub set, lower middle, middle and upper income categories are grouped together as second set and middle, upper middle and upper are grouped as another set. As far as the group process is concerned there is a significant difference among the income categories and each of them placed as separate groups. In group composition and group structure the low income category is placed as separate group and other income categories have formed as other subsets. As far as the means of group task, group process, group cohesive, group composition and group structure are concerned the test results indicate that there is a significant difference exists between the various income categories. (Refer table 1).

<table>
<thead>
<tr>
<th>Income categories</th>
<th>Low</th>
<th>Lower middle</th>
<th>Middle</th>
<th>Upper middle</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD) n=85</td>
<td>112.05 (16.18) I</td>
<td>118.34 (14.40) 1,11</td>
<td>120.88 (12.44) II, III</td>
<td>125.58 (15.66) HI</td>
<td>124.20 (16.78) 11, III</td>
</tr>
<tr>
<td>Mean (SD) n=126</td>
<td>82.29 (10.90) II</td>
<td>85.51 (8.34) III</td>
<td>89.46 (10.11) IV</td>
<td>84.28 (12.06) V</td>
<td>22.62</td>
</tr>
<tr>
<td>Mean (SD) n=98</td>
<td>20.39 (3.64) I</td>
<td>21.94 (3.69) UI</td>
<td>23.00 (3.00) 11,111</td>
<td>23.73 (3.59) III</td>
<td>22.88 (3.99) II, III</td>
</tr>
<tr>
<td>Mean (SD) n=40</td>
<td>7.00 (1.45) I</td>
<td>7.90 (1.34) II</td>
<td>8.07 (1.08) II</td>
<td>8.01 (1.26) II</td>
<td>7.90 (1.45) II</td>
</tr>
<tr>
<td>Mean (SD) n=70</td>
<td>30.87 (6.45) I</td>
<td>34.85 (5.66) II</td>
<td>35.35 (4.83) II</td>
<td>37.47 (5.55) II</td>
<td>35.60 (6.20) II</td>
</tr>
</tbody>
</table>

** All F values p < .01; I, II, III, IV, V indicate homogeneous
The mean score of group task, group process, group cohesive, group composition and group structure dimensions are significantly higher with the upper middle income category than other income categories. Hence the following hypothesis is rejected

H1: There is no significant difference between the income categories with respect to group factors.

Results of ANOVA for group membership tenure and group factors
The ANOVA test results indicate there is significant difference between the group membership tenure with regard to group task, group process, group cohesiveness, group composition. Whereas there is no significant difference in respect of group structure, this may be due to that the members of the group have same perception about the degree of importance about group potency and collective efficacy. (Refer table 2). Based on the test results the main hypothesis H2 is rejected partially

H2 There is no significant difference between the group membership tenure categories with respect to group factors.

<table>
<thead>
<tr>
<th>Group membership tenure and group factors</th>
<th>Low Mean (SD) n=152</th>
<th>Medium Mean (SD) n=134</th>
<th>High Mean (SD) n=189</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group task</td>
<td>115.28 (14.97) I</td>
<td>119.54 (16.90) II</td>
<td>123.81 (13.37) III</td>
<td>13.77**</td>
</tr>
<tr>
<td>Group process</td>
<td>81.42 (11.86) I</td>
<td>82.49 (13.37) II</td>
<td>85.77 (10.02) III</td>
<td>6.53**</td>
</tr>
<tr>
<td>Group cohesive</td>
<td>21.81 (3.73) I</td>
<td>22.41 (4.18) II</td>
<td>22.85(3.17) II</td>
<td>3.42*</td>
</tr>
<tr>
<td>Group composition</td>
<td>7.57(1.40) I</td>
<td>7.90(1.43) [I]</td>
<td>7.93(1.20) II</td>
<td>3.27*</td>
</tr>
<tr>
<td>Group structure</td>
<td>34.06 (6.28)</td>
<td>34.87(6.46)</td>
<td>35.53 (5.29)</td>
<td>2.58</td>
</tr>
</tbody>
</table>

Significant at **p<0.01, *p<0.05 level, I, II, III indicate homogeneous subsets

The mean score is higher with high group membership tenure category, indicating the longer the association of members with the group the better is their perception about group factors. Increased association with the same group makes the members of the group to believe that their tasks are adequately framed in respect of task autonomy, task variety, task identity, task significance, feedback system and interdependency of task. It improves their communication, cooperation, supportiveness and group climate. It also improves the sense of togetherness and believes on ability of the group in completion of the group task effectively. The diversity in the group tenure has significant effect on group process as the tenure differences diminished the chances of in-group tie formation. These findings are confirming to the group tenure related studies such as O'Reilly, Snyder & Boothe (1993) who found that tenure diversity is having significant effect on group process and the study of Mason (2006) who found that the group tenure is having positive effect on group potency, task identity and the findings of Mitchel & Hambrick (1992), the group tenure is associated with group cohesion. However it differs with study of O'Reilly et.al. (1989) which stated that the longer group tenure members are likely to experience lessened cohesion. In Scheffe's homogeneous test, the low, middle and high categories have formed as separate groups with respect to group task and group process. With regard to group cohesiveness and group composition the low tenure has formed as one set and middle and high group tenure has formed as another sub set.

Results of t test: Work group size and group factors
The test results indicate that there is significant difference between the work group size with respect to group task, group process, group cohesiveness, group composition and group structure (Refer table 3). Based on the test result the hypothesis H3 is rejected

H3: There is no significant difference between the work group sizes with respect to group factors.
Table 3: Work group sizes and group factors

<table>
<thead>
<tr>
<th></th>
<th>Small group</th>
<th>Large group</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD) n=259</td>
<td>Mean (SD) n=216</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group task</td>
<td>118.11 (14.33)</td>
<td>121.99 (16.26)</td>
<td>-2.76**</td>
</tr>
<tr>
<td>Group process</td>
<td>82.37 (11.36)</td>
<td>84.76 (12.14)</td>
<td>-2.22*</td>
</tr>
<tr>
<td>Group cohesiveness</td>
<td>22.05 (3.53)</td>
<td>22.81 (3.81)</td>
<td>-2.26*</td>
</tr>
<tr>
<td>Group composition</td>
<td>7.66 (1.35)</td>
<td>7.99 (1.30)</td>
<td>-2.69**</td>
</tr>
<tr>
<td>Group structure</td>
<td>34.17 (5.81)</td>
<td>35.72 (6.09)</td>
<td>-2.84**</td>
</tr>
</tbody>
</table>

Significant at **p<0.01, * at p<0.05

The mean scores of larger groups consisting more than 8 members, are significantly higher than that of small group, having less than 8 members, indicating that the large group perceive higher about these dimensions. Task characteristics, higher supportiveness, exchange of ideas and information, evenly distributed work load, higher belief on group potency and efficacy could be the reasons for this significant difference. These findings are in confirmation with the study of Handy (1993) who has identified the size of a group as an important factor in its ability to be effective and it is related to group cohesiveness. However it differs with the findings of Zenger & Lawrence (1989) study which identified that, increasing group size affects the quality of group process, Valenti and Rockett (2008) findings, the size of the work group has significant effect on group process, suggesting smaller group has better interaction among group members and with the study of Susan (2009) who identified that the small group experience greater influence of group factors than the larger group size,

Results of Gender composition for group factors

Table 4: Gender composition of groups and group factors

<table>
<thead>
<tr>
<th></th>
<th>Equal Mean (SD) n=230</th>
<th>Unequal Mean (SD) n=245</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group task</td>
<td>119.72 (15.83)</td>
<td>120.02 (14.90)</td>
<td>-0.218</td>
</tr>
<tr>
<td>Group process</td>
<td>83.44 (12.57)</td>
<td>83.46 (11.00)</td>
<td>-0.012</td>
</tr>
<tr>
<td>Group cohesiveness</td>
<td>22.47 (3.85)</td>
<td>22.33 (3.51)</td>
<td>0.410</td>
</tr>
<tr>
<td>Group composition</td>
<td>7.73 (1.44)</td>
<td>7.88 (1.24)</td>
<td>-1.19</td>
</tr>
<tr>
<td>Group structure</td>
<td>34.83 (6.42)</td>
<td>34.92 (5.56)</td>
<td>-1.68</td>
</tr>
</tbody>
</table>

The test results indicate that there is no significant difference between the gender composition of groups with respect to group task, group process, “group cohesiveness, group composition and group structure (Refer table 4). Hence the hypothesis H4 is accepted

H4: There is no significant difference between the gender compositions of groups with respect to group factors.

As far as the gender composition of the groups is concerned, both the equal and unequal groups are having more or less the same extent of perception about most of the group as there is no significant difference in the mean scores of both the
groups. The comparison of different categories of gender composition of groups is an approach adopted in numerous studies like Wheelan (1996), and Bird (2003) to name few. Gender composition has no effects on other variables as they are subjected to other contingency factors like organizational tenure (Harrison, Price & Bell 1998), task routines (Felled, Eisenhardt & Xin, 1999). Bayazit and Mannix (2003) found no significant relationship between gender diversity and the group factors. These studies are confirming to the findings of the present study about gender composition in groups.

Implications

In the organizational setting, diversity is the result of change in social policies and the nature of the work group, hence the managers need to create conducive organizational environment and configure in such a way that can foster the benefits of the work group diversity. Individuals in the group have role expectations and make assumptions about other members of the group based on demographic status, thus, the managers should make determined attempt to understand the mindsets of individuals and act as a facilitator of the benefits of diversity. Value based diversity training to educate and promote pro-diversity belief among the group members can be provided by the practitioners of the management. Based on the results for stimulating positive effect of diversity in ongoing work groups (Vegt & Janssen, 2003), the managers has to advertently create groups with appropriate match of interdependence to enhance effectiveness. They need to make members of the group to perceive the goal interdependence by forming group goals, rewarding and providing feedback. The team designers should encourage cooperation among group members since the benefits of this are greater for teams performing complex and creative works.

Conclusion

As the work group and team structures in the organizations are likely to increase, it is all more the critical to understand the impact of work group diversity on group factors. This study has analyzed the significance of work group diversity on work group factors such as group task, group process, group cohesiveness, group composition and group structure and found there is a significant difference between income categories with all the dimensions of group factors; group membership tenure differs with group task, process, cohesiveness, composition and does not differ with group structure; group sizes significantly differ with all the dimensions of group factors and there is no significant difference between group composition with all the dimensions of group factors. There are, however, some limitations that surfaced in this study such as, data were typically collected from individual employees, but items often referred to characteristics of work groups. The study included only one measurement occasion so there is a strong need for having longitudinal research. More research is needed to examine the generalization of this study to other organizational samples. Field research such as the present study is necessary to analyze the impact of demographic dissimilarity on the functioning of work group. In such studies cultural and ethnic diversity could be added to analyze the impact on group and individual factors?

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