GROUP COHESION: THE EFFECT OF DIVERSITY

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ABSTRACT

This paper entails the empirical research investigation of a proposed correlation between group diversity and workgroup cohesion contingent on group size. The primary hypothesis examines the statistical relationship between group cohesion, as measured by entitativity, and group diversity, as measured by Blau’s Index (1977). The study details a proposed positive relationship between measures of cohesion and diversity in relation to group size. The data collection procedure focuses on the collection of respondent data from four business units ranging in group size from 7 to 12 members. The descriptive statistics demonstrate the more homogenous the workgroup, the greater unit cohesiveness along with revealing an inverse relationship between group cohesion and diversity. This paper includes an examination of the data using a bivariate correlation and analysis of variances which produced findings failing to support the hypothetical correlation.

INTRODUCTION

Businesses initiatives such as management development, leadership engagement, executive developmental programs, and corporate social responsibility (CSR) programs, present more compelling options for favorably impacting organizational performance outcomes. To a greater degree than workgroup cohesion, business entities champion the concept of diversity, not only as a competitive advantage but as “the right thing to do”. Currently, there exists a paucity of business research informing the optimum amount of diversity within a business unit. The implications of diversity on group cohesion remains an understudied phenomenon. Robinson and Dechant (1997) endeavored to create a business case for workplace diversity and recommended the use of cross-cultural teams, creative heterogenous workgroups, and the development of non-traditional talent. The researchers acknowledged a fundamental challenge of linking these diversity initiatives to tangible business results.

This research intends to examine the implications of task diversity on the cohesion of a business unit. The contents of this study encompass a review of the literature focused on group behavior concepts and diversity. This empirical research details the formation of a quantitative research design and methodology used for furthering the study of group cohesion behavior by investigating a hypothesized correlation between group cohesion and diversity. The study also includes an investigation of propositions informing the causal relationship between cohesiveness and the magnitude of diversity based on business unit size.

This study extends group behavior theory in three directions. Primarily, this paper furthers the study of group behavior by investigating the hypothesized relationship between group cohesion and group diversity. Secondly, the contents of the study extend the theory of group cohesiveness by considering group size as a factor. Finally, this research addresses the significance of diversity within a business unit based on group size. The quantitative design of the study seeks to produce statistically findings quantifying the theorized organizational benefits derived from business diversity initiatives.
LITERATURE REVIEW

Weick and Roberts (1993) characterized group behavior phenomenon as a condition and product of the actions of individuals driven by social forces contributing to the group dynamic. The acknowledgment of a group’s identity allowed for the distinguishing of members from non-members couple with a recognition of a work unit’s social identity by non-members. Weick and Roberts stated, “Group action achieves the kind of result that would be understandable if all participants were acting under the direction of a single organizing center” (p. 2). The researchers concluded the interrelated group behaviors or characterized the properties of group performance prescribed the social reality of the group. They considered the group dynamic the foundation of group cohesion.

Forsyth (2009) later identified cohesiveness as one of five characteristics affecting a group dynamic. The other factors included group interaction, goals, interdependence, and structure. A group’s cohesiveness united group members together in a network of interpersonal relations founded on the member’s interactions, goals, interdependence, and structure. Forsyth defined the elements of group cohesion as “the integrity, unity, and groupiness, of a group” (p. 10).

Group cohesion promoted the increase of solidarity amongst group members. Campbell (1958) sought to quantify the extent to which individual members appeared to function as a single unified entity by developing a scale to measure cohesion. Calling the measurement entitativity, the researcher developed a construct for assessing the magnitude of group cohesiveness present within a workgroup. McGarty, Haslam, Hutchinson, and Grace (1995) sought to further Campbell’s (1958) research on the measure of entitativity by analyzing the factors affecting the measurement of group cohesion. Based on their empirical study, they determined factors of intra-group variability, group size, and diversity, acted as moderating variables affecting entitativity.

Esty, Griffin, and Schorr-Hirsh (1995) determined workgroup diversity advantageous to organizational group behavior as members embraced individual differences of age, class, race, ethnicity, gender, and disabilities. These individual differences constituted the basis for the definition of demographic diversity. Joshi and Roh (2009) espoused a theory advocating a group member’s attitudinal perspectives on diversity resulted in either cohesion or conflict. Conversely, Van Knippenberg, Haslam, and Platow (2007) posited the sameness of shared value-based beliefs by group members served as a contributing factor for increasing group cohesion. Using Tajfel and Turner’s (1979) social identity theory (SIT), they theorized the positive effects of the value of sameness between the individual and group.

Van Knippenberg et al (2007) hypothesized individuals preferred to work with members like themselves. The lack of homogeneity manifested itself negatively in workgroup cohesion through behaviors such as groupthink, employee turnover, and lack of group performance effectiveness. Their research supported the negative correlation between workgroup diversity and workgroup identification based on group member belief. Van Knippenberg et al. ascertained a group unsupportive of diversity dictated the group’s identity. The resulting group shared beliefs compelled the group’s endorsement of workgroup cohesion through a facilitation of homogeneity.

Contrary to previous studies, Horwitz and Horwitz (2007) proposed the positive effects of diversity on group performance and cohesion. In their meta-analytic study, they defined diversity by the presence of demographical differences such as ethnicity, age, and gender. Horwitz and Horwitz predicted group-level demographic diversity resulted in increased performance and creativity. Their results were inconclusive as they produced no empirical evidence supporting their hypothesis of the favorable effects of diversity on group performance when comparing
heterogeneous and homogeneous groups. The researchers realized results supporting a favorable correlation between homogeneity and group cohesion. Horwitz and Horwitz recommended a need for further study as diversity, if not managed by organizations, negatively affected group cohesion.

Kozlowski and Ilgen (2006) asserted the antecedents of group cohesion inclusive of the individual desire for group inclusion, the intention to maintain group membership, and group size. Casey-Campbell and Martens (2009) added diversity as an antecedent but determined only anecdotal evidence supporting any correlation to group cohesion. Casey-Campbell and Martens resolved to depend on the type of diversity the group size potentially mitigated the impact on a workgroup. They reported two types of diversity affecting group cohesiveness – demographic and task diversity. Demographic diversity included differences in individual attributions such as age, class, race, ethnicity, gender, and disabilities. Casey-Campbell and Martens defined task diversity as reflective of the degree an activity varies from another.

The study of demographic diversity extended to encompass factors emerging from cultural differences. Zhang, Lowry, Zhou, and Fu’s (2007) research in the arena of cultural diversity leveraged Hofstede’s (1980) cultural dimensions of power distance, uncertainty avoidance, masculinity-femininity, and individualism-collectivism. Zhang et al. attributed the dimensions of individualism-collectivism as indicators of group cohesion. The researchers stated, “Individualism describes cultures in which the ties among individuals are loose, while collectivism describes cultures in which people are integrated into strong, cohesive groups that protect individuals in exchange for unquestioning loyalty” (p. 58). Zhang et al. discerned culturally heterogeneous groups experienced events differently challenging the group’s ability to maintain group cohesion. They predicted collectivism and cohesion could be produced over time if members developed relationships through shared experiences.

In furtherance of the study of cultural diversity, Stahl, Maznevski, Voigt, and Jonsen’s (2010) research expanded the framework of workgroups to include multicultural workgroups. Their meta-analytic review evaluated the positive and negative effects of cultural diversity associated with increased divergence and decreased convergence. They posited cultural diversity improved divergent processes requiring differing group member ideas, creativity, and values. Alternatively, convergent processes decreased as cultural diversity increased. Stahl et al. advised convergent processes aligned groups around common objectives. The researchers resolved cultural diversity was moderated by team tenure, dispersion, and size. They proposed further research to address research questions as to the appropriate mix of diverse cultures and values.

Task diversity defined the differences in job functionality, expertise, and skill level (Casey-Campbell & Martens, 2009). Van Knippenberg and Schippers (2007) considered the effects of workgroup work-related tasks and overall group performance. They acknowledged the existing literature presented a framework guided by social categorization and decision-making. The social categorization perspective identified comparisons resulting in the favoring of ingroup versus outgroup members. This perspective led to the assertion the more homogeneous a workgroup, the more cohesive, satisfied, collaborative, and task-productive the group members. Conversely, Van Knippenberg and Schippers determined a decision-making perspective supported diversity. The group task activity of decision-making fostered cohesion as members contributed to a range of ideas, experience, abilities, and perspectives. The diverse group behavior prevented groupthink practices while stimulating innovativeness during problem-solving exercises. Van Knippenberg and Schippers posited the integration of ideas increased task performance effectiveness through an interactive process.
The task-oriented diversity research study conducted by Hülsheger, Anderson, and Salgado (2009) encompassed an empirical evaluation of more than 30-years of group dynamic research. They examined a group’s affinity for cohesion associated with an individual’s background and job-relevant task diversity. Their definition of background diversity aligned with the traditional definition of demographic diversity. However, Hülsheger et al. considered job-relevant diversity inclusive of task-related functions, knowledge, and expertise. They contended the more heterogeneous the job-relevant tasking the more innovative, integrated and cohesive the workgroup. They concluded a workgroups ability to leverage divergent approaches to processes and procedures using a variety of task orientations provided a broad range of expertise resulting in innovation and group cohesion.

THEORETICAL FRAMEWORK

McGarty, Haslam, Hutchinson, and Grace (1995) concluded diversity served as a significant factor influencing group cohesiveness. The researchers noted entitativity decreased as diversity increased. Conversely, they realized results showing entitativity increased as group size and diversity increased concurrently. McGarty et al. concluded organizational groups realized the benefits of innovation and creativity from the management of diversity.

This quantitative research sought to explore group cohesion by investigating the relationship between diversity and group cohesion within groups of varying size. Based on the review of the literature, this research entails a research methodology for assessing a workgroups entitativity in relation to a workgroups diversity as proposed by Hülsheger, Anderson, and Salgado (2009). This research seeks to further the existing research by examining workgroup size as a factor affecting the impact of workgroup diversity on group cohesion by examining the following hypothesis:

\[ H1: \text{There is a positive correlation between group cohesion and workgroup task diversity based on workgroup size.} \]

Furthermore, this empirical study seeks to test the hypothesized differences in perceived cohesion and diversity present within each business unit based on group size.

\[ H2: \text{The average measure of group cohesion increases as workgroup size increases.} \]
\[ H3: \text{The average measure of group diversity increases as workgroup size increases.} \]

METHOD

This research methodology aimed to affirm a positive relationship between group cohesiveness and group diversity. Utilizing quantitative data collected from a sample population of four small workgroups ranging in size from 7 to 12 members, the method consisted of a comparative statistical analysis examining the presence and magnitude of any correlation. For quantifying the level of group cohesion, the procedure consisted of a 4-item entitativity scale instrument for measuring the cohesiveness of a unit. For the evaluation of a group’s diversity, the calculation of Blau’s (1977) Index proved useful for empirically assessing the amount of task diversity within each small group.
The procedure tested the relationship between group cohesion and diversity within groups of varying size. The methodology included a correlation-based research design inclusive of a purposive sampling strategy, instrumentation assessment, data collection procedure, and analysis of results. The resulting methodology presented an approach addressing the research hypotheses.

Sample Strategy

Zenger and Lawrence (1989) in an empirical study on organizations and the effects of age and tenure defined a small group as “a subgroup of ten employees, a number that we arbitrarily selected as being neither too small nor too large, was used to calculate the within-the-organization similarity measures” (p. 363). For the purposes of this study, data collection occurred leveraging four task-diverse groups representing four distinct business units working towards shared business objectives. Thus, the workgroup size of ten members represented the recommended membership for an appropriate small group.

The business units consisted of a mix of repair technicians, customer service agents, administrative support, and sales staff from an automotive group. Identified were two 10-member groups. One group identified for its task-heterogeneous characteristics in comparison to the other, and the other a homogeneous group comprised completely of account representatives performing identical tasks. The other two groups, considered heterogenous included a 7-member workgroup and a 12-member workgroup.

To meet the heterogeneous criteria the purposive selection of eligible small groups included requirements of group size and task-oriented diversity. Harrison and Klein (2007) determined task-relevant diversity inclusive of differences in individual knowledge, skills, information, and experience. The variable size of each group provided statistical information for the analysis of entitativity and diversity with size as a variable. The magnitude of task heterogeneity between the two 10-member workgroups allowed for a comparative analysis of homogeneity and heterogeneity.

Instrumentation

For the determination of group diversity, the research design included the employment of Blau’s (1977) index. Biemann and Kearney (2010) considered Blau’s (1977) index the most appropriate categorical scale for measuring diversity. Blau's Index calculated the amount of in-group diversity by adding the squared percentage of individuals in an identified category, summing the proportions, and then subtracting the addend from one. Based on the assumption of all groups possessing an equal variable distribution, Harrison and Klein (2007) deemed the calculation appropriate for groups with sizes smaller than 20 with less than two categorical differences.

Postmes, Brooke, and Jetten (2008) sought to quantify the extent to which individual members appeared to function as a single unified entity. The researchers developed entitativity items based on Campbell’s (1958) research on measuring group cohesiveness. Postmes et al. developed a 4-item entitativity questionnaire which consisted of the following statements:

- I feel the people in this group are a unit;
- I think the people in this group can act in unison;
- I experience a feeling of togetherness between the individuals in this group;
- I feel the people in this group are as one (Postmes et al, 2008).
The individual group participant responded to each statement using a 5-point Likert scale ranging from “0” – Not at all, to “4” – Frequently, if not always. Lakens and Stel (2011) deemed the questionnaire reliable after conducting a factorial analysis with a varimax rotation. The statistical procedure produced a Cronbach $\alpha$ of 0.84. The construct reliably measured the in-group entitativity in relation to similar group behaviors such as rapport, agreeableness, and conformity.

**The Procedure**

The procedure encompassed the administration of a 2-part electronic survey instrument to collect participant data. The initial section of the survey obtained participant task-relevant categorical data used for calculating task diversity. The respondent information included task experience, task difficulty, and task type. The final section entailed the 4-item entitativity scale statements informing respondent perception of group cohesion.

Each team member belonging to a business unit meeting the study criteria received the study questionnaire for completion. The individual workgroups received the instrument through electronic mail on the same day along with an overview reiterating the purpose of the study. To ensure the integrity of the responses from the four respondent clusters, participants received the survey through a cloud-based customizable survey tool.

The selected survey platform allowed for the real-time collection, segmentation, and aggregation of workgroup statistical means as shown in Table 1. The findings captured from the data collection procedure using the entitativity scale and diversity index produced the group level responses. To analyze the data, the procedure included the importation of survey data into the statistic software allowing for a correlational analysis and an analysis of variances (ANOVA) between Blau’s Index and each entitativity sub-item.

Table 1.

<table>
<thead>
<tr>
<th>Group</th>
<th>Feel Unity</th>
<th>Act United</th>
<th>Togetherness</th>
<th>As One</th>
<th>Mean</th>
<th>Blau</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>2.857</td>
<td>2.714</td>
<td>3.143</td>
<td>2.286</td>
<td>2.750</td>
<td>0.896</td>
</tr>
<tr>
<td>10</td>
<td>3.000</td>
<td>2.900</td>
<td>3.200</td>
<td>3.100</td>
<td>3.050</td>
<td>0.708</td>
</tr>
<tr>
<td>12</td>
<td>3.250</td>
<td>3.167</td>
<td>3.333</td>
<td>3.083</td>
<td>3.208</td>
<td>0.681</td>
</tr>
<tr>
<td>*10</td>
<td>3.200</td>
<td>3.111</td>
<td>3.300</td>
<td>3.200</td>
<td>3.203</td>
<td>0.306</td>
</tr>
</tbody>
</table>

Note: *Control Group

**RESULTS**

An assessment of mean-level data superficially suggested support for a plausible correlation between constructs. However, the analysis of the findings revealed a lack of statistical significance with respect to the hypothesized positive correlation between group cohesion and diversity. The lack of statistical significance disconfirmed the hypothetical correlation between group cohesion and group diversity. A review of the group level findings revealed statistical differences between data obtained from the 10-member homogeneous group and the 10-member heterogeneous group. The homogeneous workgroup produced a high mean cohesion score aligning the research results with Tajfel and Turner’s (1979) SIT proposition valuing sameness. The task demographical data served to manifest the calculation of the Blau Index for the homogeneous and heterogeneous workgroups. The heterogeneous group possessed 0.71 index score compared to a 0.31 index rating of the homogeneous workgroup.
Based on the group entitativity mean from the descriptive statistic coupled with the group task diversity measures, the results suggested a statistical relationship between each of the four entitativity items and the associated Blau Index value consistent with the research of McGarty, Haslam, Hutchinson, and Grace’s (1995). The researchers concluded the magnitude of diversity present in a group influenced the group’s cohesiveness. McGarty et al. observed an inverse relationship between group entitativity and group diversity. The methodology produced findings across three of the four entitativity scales showing a corresponding increase in group cohesion as the group size increased. The “As One” scale represented the exception as the heterogeneous 10-member group scored 0.02 higher than the 12-member heterogeneous group. Group cohesiveness increased as group diversity decreased across the three heterogeneous groups.

To test the significance of the hypotheses the study warranted a bivariate analysis to confirm a correlation and an analysis of variation to assess any group differences. The resulting correlation analysis output, as shown in Table 2, depicted the inverse linear relationship between variables.

### Table 2.

<table>
<thead>
<tr>
<th>Correlation</th>
<th>Blau's Index</th>
<th>Pearson Correlation</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Cohesion Mean</td>
<td>-0.763</td>
<td>0.237</td>
<td></td>
</tr>
<tr>
<td>Feel Unity</td>
<td>-0.708</td>
<td>0.292</td>
<td></td>
</tr>
<tr>
<td>Act United</td>
<td>-0.712</td>
<td>0.288</td>
<td></td>
</tr>
<tr>
<td>Togetherness</td>
<td>-0.674</td>
<td>0.326</td>
<td></td>
</tr>
<tr>
<td>As One</td>
<td>-0.754</td>
<td>0.246</td>
<td></td>
</tr>
</tbody>
</table>

*Note: *Correlation is significant at the 0.05 level (p < 0.05)*

**ANALYSIS**

The output revealed a negative Pearson correlation value between Blau’s Index and each of the four entitativity scales. Dixon and Massey-Frank (1950) declared a positive Pearson r value indicated variable agreement, whereas a negative Pearson r coefficient indicated a dissimilar relationship. The correlation coefficient values advised an inverse relationship between constructs measuring cohesiveness and diversity as evidenced by the following items: As One, r = -0.75; Act United, r = -0.71; Feel Unity, r = -0.70; and Togetherness, r = -0.67.

The interpretation of the correlation coefficients reflecting the relationship between Blau’s Index and each entitativity item indicated a Pearson r greater than -0.70, which is deemed a strong negative linear relationship (Taylor, 1990). Thus, based on the statistical analysis the r-value expressed a correlation, albeit negative, between the amount of group cohesion and the magnitude of group task diversity. The negative correlation supported McGarty et al. (1995) contention as task diversity decreased cohesion increased. Despite the presence of the hypothesized correlation, the associated p-values for each correlation revealed values greater 0.05 for each relationship informing a lack of statistical significance. The empirical data failed to support the research hypothesis. The p values realized were as follows: As One, p = 0.25; Act United, p = 0.29; Feel Unity, p = 0.29; and Togetherness, p = 0.33.
The mean entitativity values increased whereas the mean Blau Index value decreased in relation to workgroup size. An analysis of variances performed on respondent data produced findings failing to support the $H2$ and $H3$ hypotheses as shown in Table 3. The statistical procedure failed to inform the statistical significance of group cohesion or diversity based on group size as a variable. The findings showed as group size increased group cohesion increased in proportion. Subsequently, the results showed as group size increased task-diversity became less significant.

Table 3.

<table>
<thead>
<tr>
<th>Group Size</th>
<th>Group Cohesion</th>
<th>Diversity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>2.750</td>
<td>0.896</td>
</tr>
<tr>
<td>10</td>
<td>3.050</td>
<td>0.708</td>
</tr>
<tr>
<td>12</td>
<td>3.208</td>
<td>0.681</td>
</tr>
<tr>
<td>*10</td>
<td>3.203</td>
<td>0.306</td>
</tr>
<tr>
<td>t</td>
<td>5.410</td>
<td>0.633</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.291</td>
<td>0.664</td>
</tr>
</tbody>
</table>

*Note. *Value is significant at the 0.05 level ($p < 0.05$)

The proposed correlation was not supported by the results. The results associated with the procedure paralleled the findings produced by similar efforts to establish a correlation between cohesion and diversity. While entitativity and Blau Index statistical means possessed a similar inverse linear relationship to the results of McGarty, Haslam, Hutchinson, and Grace’s (1995) research, the procedure produced inconclusive findings consistent with the results of Horwitz and Horwitz (2007).

**CONCLUSION**

Organizations considered the presence of both diversity and workgroup cohesion essential to achieving effective performance and financial outcomes. As this study demonstrated in its review of existing research on the effects of diversity on group cohesion, further investigation is required. The findings varied in the same manner as the approaches taken, and few empirical conclusions have been drawn in terms of a correlation between cohesion and diversity. The research question asked not whether organizations should embrace diversity, but a need for an understanding of the correlation between the amount of diversity while still affecting maximum group cohesiveness.

This study sought to empirically address the question by analyzing the relationship between group cohesion, as measured by entitativity, and task diversity, as calculated by Blau’s Index. The findings did not support the research hypotheses. A comparative assessment of the 10-member groups produced descriptive statistics supporting a proposition theorizing greater group cohesiveness of homogeneous task groups than heterogeneous task groups. However, as the statistical analysis produced a correlation coefficient indicating an inverse linear relationship, the results lacked statistical significance.

This empirical study endeavored to further group dynamic research. The limitations of this study provided an opportunity for future research. As the findings exhibited an inability to support the suggested correlation between diversity and group cohesiveness, there exists an opportunity for a revised and improved sampling strategy. Based on McGarty, Haslam, Hutchinson, and Grace’s (1995) empirical study, factors of intra-group variability and unit performance required consideration as mediating variables affecting entitativity in conjunction with diversity and group size.
For future study, the procedure should include an increased sample of task-diverse groups. The four business units reflected in this studies sample potentially contributed to the lack of statistical significance due to relative sample size. A statistical power analysis prior to data collection would facilitate a more representative sample as part of the research design. The limited number of groups in this study potentially mitigated the evaluation of group size and diversity as factors when determining a correlation or variances.

The 4-item entitativity scale provided a necessary vehicle for measuring the concept of cohesion. However, the instruments assumption of an equal distribution of task-related variables may misrepresent the magnitude of diversity. In furtherance of this empirical study, a more in-depth instrument, such as the Group Environment Questionnaire (GEQ) (Carron, Widmeyer, and Brawley, 1985), recently developed to measure dimensions of the task and social cohesion should be considered. Any future research should engage in a qualitative exercise to gain a more in-depth understanding of the antecedents enabling group cohesiveness. Lastly, further research should support the development of a diversity scale addressing any confounding variable concerns by mitigating the confusion between demographic and task diversity attributes.

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