Do Upper Echelons Faultlines Affect Strategic Decision-making: The Moderating Role of Managerial Identification

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Abstract-The paper empirically analyzes the relationship between firm strategic decision-making and two kinds of upper echelons’ faultlines which are demographic faultlines and personality faultlines, and the moderating effect of team identification as well. It found that the personality faultlines are significantly related to decision quality and efficiency and moderated by team identification. The relationship between demographic faultlines and team identification are weakly significant, but the moderating effect of team identification is not significant.

Keywords-Upper Echelons; Top Management Team; Team Faultlines; Strategic Decision-Making; Team Identification

I. INTRODUCTION

Past researches on upper echelons (also known as top management team) more often than not looked at demographic attributes of upper echelons in an isolated way, such as age, education, working experience. Almost all researchers focused on analyzing the relationship of each attribute and its difference among team members with organizational outcome (such as strategic selection, enterprise performance, etc.), and often overlooked the combined effect of demographic or even psychological characteristics. The theory of team faultlines argues that the combination of multiple attributes will lead to team faultlines, and as a result may split a group into several subgroups. It’s inevitable that differences exist in demographic characteristics, important cognitions and values among the members of the executive team. The differences lead to different reading of external environment, the organization and the company strategy. What’s more, their relationship network and way of information acquisition are also different. According to the similar-attraction paradigm, similar individual characteristics cause similar cognition of values and attitudes among them so as to form the strong interpersonal attraction, and promote communications among individuals, and finally develop into a small group, which some scholars call the subgroup. Polzer et al (2006) found that when conflicts happened in the team and damaged the interests of someone, he or she would turn to the subgroup he or she belonged to for help, and this would aggravate interest differentiation between the members. Molleman’s (2005) study indicated that the stronger internal cohesion of subgroup was, the more serious the differentiation in team became. Then the faultlines came out. The so-called faultlines of upper echelons mean that the clique constituting of people who have similar characteristics makes the team split.

Scholars have never stopped questioning whether Upper Echelons is a team in the real sense [1]. As a dense convergence of interests, each member of top management is prone to become the representative of departmental and sometimes even individual interests. In the course of competing for interests, upper echelons members tend to form subgroups. This is even more notably true in the Chinese society. Interpersonal relations among the Chinese are traditionally divided into subgroups or subteams in the form of “in-group”, and individuals typically make a distinction between people inside and outside the circle by degree of familiarity and intimacy [2]. Subgroup formation is propitious for protecting the interests of its members [3]. More importantly, in contrast to larger groups, such subgroups feature stronger cohesiveness and stability; therefore, individuals may sacrifice the larger group’s interests to their sub-team’s. Clearly, taking subgroup factors into consideration in the study of upper echelons under the context of China can help to give more convincing explanations for the resulting variables.

First of all, this article reviewed related literature on the heterogeneity, faultlines and strategic decision-making of upper echelons, and then proposed a basic model of the relationship between upper echelons faultlines and strategic decision-making by combining social psychology perspectives, and verified this model empirically.

II. LITERATURE REVIEW AND HYPOTHESE IN THE RESEARCH

A. Researches on Upper Echelons

The basic viewpoint concluded from researches on upper echelons is that demographic heterogeneity of upper echelons can
be used to effectively explain and predict enterprise outcomes. Researchers on top management suggest that a heterogeneous demographic attribute, such as experience, age, education and tenure, is a valid proxy in the cognitive model of upper echelons members in strategic decision-making, and demographic diversity is conducive to productive discussion and strategic innovation within a team, and accordingly, to improving decision-making quality and business performance. This theory attracted extensive attention from both the academic and industrial circles once it was brought forward. Based on this theory, one can have an insight into the strategic decision-making condition of an enterprise and predict its next strategic move, as long as one finds out various characteristics of its upper echelons, without knowing thoroughly the operation process of the top management. Extensive researches are centered on upper echelons heterogeneity, among which measurement of heterogeneity is a top issue. In the past, heterogeneity was mainly measured in two ways: compositional and relational approaches [4].

The compositional approach goes for analyzing the relationship between each demographic attribute and organizational outcomes based on its distribution among team members, for instance, the relationship between education background difference of each senior executive and strategic decision-making. Ratio scale data (such as age, tenure) can be measured by the gap among people in an attribute, such as Euclidian distance or coefficient of variation, i.e., the ratio of standard deviation to average value. When nominal scale datas (such as sex) are involved, heterogeneity is usually measured by applying Herfindahl-Hirschman Index. \[ \text{HHI} = \sum p_i^2 \text{, where } p_i = \text{the proportion of a nominal-scale group } i \text{ within the larger group (for example, the proportion of male in the sex attribute, or the proportion of doctors in the education attribute).} \] Nominal scale is unified as ratio scale, and then such proportion is assigned as weight to get the sum, thus, arriving at the metric of the heterogeneity category in question. As HHI is applicable to measurement of all sorts of demographic heterogeneity, it is favored by researchers on upper echelons and adopted in many researches to measure heterogeneity. However, the measurement of heterogeneity in the compositional approach is team-based and puts every member on an equal footing, but doesn’t give enough attention to differences of the role of each individual in a team.

For this reason, Tsui and O’Reilly [5] proposed the relational approach to the study of demographic characteristics and paid attention to the differences of an individual from other team members, among which the difference in “leader-member” vertical dyads attracted the greatest attention. Within upper echelons, CEO is different from other top executives in authority; therefore the differences in other characteristics between the two will produce many subtle effects. Researchers found that leader-members’ demographic differences were negatively correlated to valid evaluation of members by leaders, as well as to personal attractiveness of members to leaders, but positively correlated to members’ sense of role ambiguity. This is an evidence of the act of similarity attraction paradigm. However, empirical researches also show that if the education level of a member is below his or her leader, the tenure of the former is shorter than the latter; he or she is more likely to be liked by the leader [6]. As Parkinson’s Law tells us, a boss likes to hire employees who are not as competent as himself or herself. The relational approach inspired a lot of subsequent researches, and relational differences are used to explain criteria such as upper echelons resignation, organizational performance, and greatly enriched researches on top management.

Researches on upper echelons based on these two approaches have been very fruitful, but the conclusions therein are usually out of accord. In respect of researches based on the compositional approach, some scholars found differences in team tenure, educational background, occupational background and race were positively correlated to performance [7-9]; some scholars found differences in team tenure, age and race were negatively correlated to performance [10, 11]; other scholars even found age, sex and racial heterogeneity had no salient correlation with organizational performance [12]. Similar problem is also seen in the analysis by the relational approach. For example, some scholars found age difference of an individual from other team members was positively correlated to turnover rate [13], while others found this not true [14]. No definite conclusion has been drawn yet on the relationship of relational differences such as tenure, sex and culture, with organizational outcome variable.

There are three possible reasons: firstly, the influence of diversity is circumstantial (including external environment, task nature); secondly, the cognitive process of exceptionally complicated teams is substituted in an overly rough manner; thirdly, characteristics of upper echelons are treated in an isolated way and their combined effect is neglected. Some researchers have improved the study of team heterogeneity based on the first or second reason, but the third one hasn’t received due attention. Because of this, this article introduced the concept of team faultlines to investigate the relationship between combined characteristics of upper echelons and strategic decision-making.

\[ \text{B. Researches on Team Faultlines} \]

Based on relevant theories of social psychology, Lau and Murnighan [15] described the phenomenon of subgroup formation by the combination of multiple diversity characteristics in 1998. They invoked a concept from geology, and named such combination of multiple diversity characteristics “faultline”, that is to say, multiple diversity characteristics held by team members resemble a set of faultlines, along which faultage is produced? The more consistent the direction of these faultlines is; the greater the strength of such faultage is. When the strength of the faultage reaches a certain level, a group will split into several subgroups. For instance, a group can be divided by sex into two subgroups, male vs. female. In this case, sex forms a team faultline, but its power is quite weak. If all members of the male subgroup happen to be aged above 50, and all members of the female subgroup below 50, the split direction of the group along sex and age is the same, which creates stronger faultline.
If members within the same faultline feature little diversity in characteristics, but vast disparity exists between faultlines, each characteristic doesn’t show great diversity, but the faultline strength is tremendous, based on measurement of traditional diversity. Likewise, when highly diverse characteristics are found among team members, the direction of faultlines varies largely, then traditional diversity of each characteristic is very high, but the strength of the faultline is weak. More importantly, even if two groups have identical traditional diversity in all characteristics, the strength of faultlines could still differ vastly. This shows that traditional diversity is inadequate to illustrate group splits that can result from the combination of diversity characteristics.

Though not much empirical study of team faultlines has been done, substantial achievements have been made, a sign of promising theoretical value of team faultline. Relevant empirical researches on team faultlines have commonly found that team faultlines are predictors of group splits, because it reduces team cohesiveness and increases team conflicts [16]. Furthermore, Lau and Murnighan [17] found that, under the condition of strong faultlines, interactions among team members would increase negative conflicts, and as a result bring about bad performance; while under the condition of weak faultlines, interactions among team members would increase positive conflicts, and accordingly, engender good performance. However, some other scholars found nonlinear relationship existing between faultline strength and some outcome variables. For example, researches by Thatcher, Jehn and Zanutto [18] revealed that teams with moderate team faultlines had the weakest group conflict and the best group performance. The above researches prove that team faultline is an effective variable for predicting team processes and outcomes by digging into the overlapping conditions of team members’ characteristics.

Applying the above thoughts to researches on upper echelons can help to break the stereotyped research paradigms that investigate the influence of each demographic attribute on team outcomes as the compositional approach and the relational approach do, provide a bird’s-eye view of the overall condition of all sorts of overlapping attributes of upper echelons from a wider perspective, and analyze integrated influence that is neglected in traditional researches. Upper echelons are a power entity inside a corporation in charge of resource and information configuration. It copes with complicated external environment by configuring relatively scarce resources inside a corporation. As intensive convergence point of interests, upper echelons entail all sorts of internal contradictions and conflicts, which may cause teams to split. Team faultline not only provides an effective tool to analyze complicated struggle for interests and power within upper echelons and the resulting group splits, but also builds a bridge in theoretical sense between upper echelons characteristics and complicate internal processes of upper echelons and team outcomes, which can help to relate traditional researches on upper echelons characteristics, and explore the complex inherent mechanism of upper echelons.

Unlike traditional researches on upper echelons and general team faultline study that focus on demographic attributes, this article not only analyzed the effect of demographic faultlines of upper echelons, but also discussed the influence of upper echelons personality faultlines on strategic decision-making. As far as traditional researches on upper echelons are concerned, superficial demographic variables cannot really represent or profile personality variables. For example, education level and its heterogeneity can hardly reflect the personality of team members, such as extraversion, emotional stability. However, most traditional researches on upper echelons exclude personality from their actual research framework, and even replace personality with demographic attributes, making their conclusions unreliable more often than not and sometimes even contradictory. Meanwhile, more and more scholars are calling for introducing personality variables into team faultlines. Harrison, Price, Gavin et al. [19] suggest, as team members work together day by day, continuous interactions among them will fade the stereotyped impression at the formative stage of the team. This implies the faultline effect of superficial attributes like demographic characteristics will weaken, while that of deep-seated attributes like personality will become more salient as members know each other more deeply and accurately [20]. For a team as highly interactive and familiar with each other as upper echelons, it is very likely that faultline formation doesn’t stay at the level of demographic attributes, but moves to deeper level of personality. Incorporating personality variables will largely broaden the horizon of research and make the model of upper echelons faultlines more convincing. To this end, this article on one hand studied the faultline effect of four types of frequently seen demographic attributes, i.e., sex, age, education and tenure, with aim to relate traditional researches on demographic attributes of upper echelons; and on the other hand, surveyed the faultline effect of five types of personality, i.e., extraversion, emotional stability, openness, agreeableness and conscientiousness, so as to examine the influence of upper echelons faultlines on outcome variables, including strategic decision-making, from a more global perspective.

Regarding selection of organizational outcome variables, this article chose upper echelons’ strategic decision-making level. Researches on strategic decision-making are relatively speaking at the mature stage. Many scholars, to name a few, Korsgaard, Schweiger and Sapienza [21], Wang Li and Mao Ning [22], Gu Jiajun and Hu Bei [23], have given in-depth discussion on this topic. On the basis of their work, this article attempted to measure upper echelons’ strategic decision-making level by decision-making quality and efficiency.

Team identification is another focus of researchers on team faultlines in recent years. Under the circumstance of high team identification, team members tend to look for similarities rather than differences. In this case, the negative effect of team faultlines on group and organizational outcomes may become weaker [24]. For this reason, in addition to the relationship between two kinds of upper echelons faultlines and strategic decision-making, this article also analyzed the moderating effect of team identification therein. The outline of this article is shown in Figure 1.
As team faultlines engendered by demographic attributes were dominant in the past researches, not many efforts were devoted to upper echelons. Li and Hambrick [25] studied the relationship between upper echelons faultlines produced by four demographic attributes, i.e., age, tenure, sex and race, and the performance of joint ventures. They found that upper echelons faultlines would act on enterprise performance negatively through emotional conflicts and disintegration. Researches by Barkema and Shvyrkov [26] revealed that the strength of upper echelons faultlines produced by three demographic attributes, namely, age, tenure, and education, was negatively correlated with innovation in investment location choices of enterprises. It is obvious that upper echelons demographic faultlines will bring certain negative effect on outcome variables.

As for ordinary teams, strong faultlines are usually more stable than weak ones [27], and accordingly can enhance the sense of safety among subgroup members, making them more committed to the subgroup instead of the entire group. This is also true of upper echelons. The stronger upper echelons faultlines are; the more easily the team disintegrates. Disintegration of team will result in behavioural disintegration, and subsequently lead to low-level or even zero information exchange, joint decision-making, communication and interaction [25]. Fewer interactions among upper echelons members will weaken team cohesiveness. As a result, the human capital of team members fails to be brought into full play and united together forcefully, and decision-making quality is debased. Meanwhile, strong upper echelons faultlines will also make the team harder to reach agreement on solutions. Even though agreement is somehow reached, it costs lots of time and efforts in coordinating; thus, decision-making efficiency is debased and decision costs go up [26]. In this connection, two hypotheses are made:

Hypothesis 1a: the stronger upper echelons demographic faultlines, the lower decision-making quality;
Hypothesis 1b: the stronger upper echelons demographic faultlines, the lower decision-making efficiency;

D. Relationship between Upper Echelons Personality Faultlines and Strategic Decision-Making

The relationship between team members’ personality and organizational outcome variable has received extensive attention all the time. BARRY and STEWART [28] found a negative linear correlation between extraversion and team’s concentration on tasks. According to the finding of Barrick, Stewart and Neubert et al. [29], the average value of sense of responsibility, amicability and neuroticism of team members is positively correlated with group performance, and the minimum value of sense of responsibility, amicability and extraversion is positively correlated with group performance. Meanwhile, they also found personality diversity of team members was negatively correlated with organizational outcome variable. For instance, diversity of sense of responsibility was negatively correlated with group performance and group internal cohesiveness. How come personality diversity of teams produces negative effect on organizational outcome variable? Barron [30] suggests that personality diversity of team members tends to beget psychological (or emotional) conflict, and such conflict is usually unconscious, and, once incurred, hard to dispel. The greater personality diversity exists among team members, the less commonness is shared by them, the harder they work with each other, the more frequently disagreement and contradiction appears. Personality faultlines of upper echelons split the group into two or more subgroups based on personality. For example, one subgroup is comprised of members of high degree of extraversion and sense of responsibility, while the other is comprised of members of low degree of extraversion and sense of responsibility. For every member of upper echelons, more personality similarities exist inside subgroup than outside subgroup; thus, they are more inclined to back the viewpoints of members within the subgroup and protect the interests of the subgroup. Once disagreement arises among group members in the course of decision-making, it tends to easily evolve into disagreement among subgroups, and conflict between individual members may turn into conflict between subgroups. Consequently, the energy of upper echelons is exhausted by dealing with internal contradiction and conflict of the team, rather than be used to improve decision-making quality. Especially when the power of all subgroups is well matched and all square, coordinating will be costly and decision speed will largely slow down. Hence, this article makes the following hypotheses:

Hypothesis 2a: the stronger upper echelons personality faultlines, the lower decision-making quality;
Hypothesis 2b: the stronger upper echelons personality faultlines, the lower decision-making efficiency;

Faultlines formed by upper echelons characteristics are “igniter fuses” of group disintegration. However, whether the igniter fuses can ignite and the seriousness of the aftermath of “ignition” are subject to some restraints, among which the moderating effect of team identification in this process must not be ignored. Some scholars found that biases within a group
would reduce largely and team faultlines were unlikely to produce negative effect on organizational outcome, when team members had a strong sense of identification towards the entire team [24]. Team identification is the expression of members’ inner feeling about the team. With team identification, team members are highly committed to the team and give first priority to team goals. Team identification serves as a powerful adhesive [31] Therefore, when strong sense of team identification exists within a team, team cohesion can alleviate the negative effect of faultlines on organizational outcome, even though the strength of team faultlines may be mighty. For this reason, this article concluded that the stronger sense of team identification among upper echelons members, the weaker negative influence of team faultlines on strategic decision-making.

Hypothesis 3: as team identification intensifies, the negative correlation between upper echelons faultlines and strategic decision-making weakens.

III. DATA SOURCE, DESIGN AND MEASUREMENT OF VARIABLES

A. Data Source

The research group sent 734 questionnaires in total to 121 private enterprises in Shanghai, Jiangsu, Zhejiang, Guangdong, Hunan, Sichuan, Hubei and Heilongjiang through email, mail, MBA class, joint training class from January of 2009 to June of 2010. 467 questionnaires were returned, representing recovery rate of 63.6%, from 82 enterprises, accounting for 67.8% of all. Among them, 42 questionnaires were invalid. There were five enterprises whose invalid questionnaires went beyond 1/3; thus all questionnaires of these five enterprises were eliminated, altogether 61 copies. Finally, 406 questionnaires from 77 enterprises were adopted, representing 86.9%. Convenience sampling and random sampling methods were combined in the survey. The survey was done by sending and collecting questionnaires to and from upper echelons members through the owners or senior executives of the sample enterprises. The questionnaire mainly consists of multiple choices. Ordinary multiple choices are designed for basic data of enterprises and individuals, and Likert Five-point Scale is used for survey of personality and strategic decision-making.

B. Design and Measurement of Variables

1) Design of Variables:

Demographic attributes mainly adopt variables widely used in the past researches on upper echelons, including sex, age, education, tenure; personality attributes adopt the model of personality description widely acknowledged by the psychology circle, Big Five Personality. It measures personality through five traits, i.e., extraversion, neuroticism or emotional stability, openness, agreeableness and conscientiousness; strategic decision-making is measured by two variables, quality and efficiency. The control variable is size of upper echelons.

2) Measurement of Demographic Variables:

Sex, age and education are used as variables in this article. Age is divided into five ranges, 16 to 30, 31 to 40, 41 to 50, 51 to 60 and above 60. Education is divided into five levels, below junior college, junior college, regular college, master and doctor. Tenure adopts continuous variable. Continuous variable is not adopted for age, because on one hand, individuals often divide team members by age range, and on the other hand, the subjects are usually unwilling to tell their age accurately in actual survey.

3) Measurement of Personality Variables:

Personality is measured by using the Big Five Inventory invented by John, Donahue and Kentle [32]. In comparison with other Big Five questionnaires, BFI takes shorter time, only about ten minutes, and is suitable for testing upper echelons. After the test, this article divided each trait into two types based on the score, high or low, for instance, high extraversion or low extraversion. And then, they are dealt with as class variables.

4) Measurement of Team Faultlines:

The upper echelons surveyed in this research include 3 to 10 members. Like most researches on team faultlines, this research has only considered the faultline situation of splitting a group into two subgroups. Thatcher, Jehn and Zanutto [18] gave two reasons for this: on one hand, in a small group, the likelihood of splitting into three or more subgroups is small; on the other hand, if three or more subgroups are taken into consideration, calculation will be much more complex. If splitting a group of size \( S \) into two subgroups, there will be \( 2^{S-1} \) ways of division; thus, the team faultline strength (\( F_{au,g} \)) of each possible way of division must be measured; and then the maximum value is used as the final value of team faultline strength (\( F_{au} \)). Thatcher, Jehn and Zanutto [18] also provided a formula to measure the strength of team faultline produced by each way of division.

\[
F_{au,g} = \left\{ \sum_{j=1}^{p} \sum_{k=1}^{n} n_j^g (\bar{X}_{j,k} - \bar{X}_{g,*})^2 \right\}^{\frac{1}{2}} \left\{ \sum_{j=1}^{p} \sum_{k=1}^{n} (\bar{X}_{j,k} - \bar{X}_{g,*})^2 \right\}^{-\frac{1}{2}}
\]

(1)
In the above formula, \( x_{jk} \) stands for the value of attribute \( k \) of the \( i \) member within the \( k \) subgroup, \( \bar{x}_{jk} \) the average value of attribute \( j \) within the \( k \) subgroup, \( \bar{X}_{.j} \) the average value of attribute \( j \) within the upper echelons, and \( n_g^k \) the number of members of the \( k \) subgroup in \( g \) division method.

As the attributes contain class variables and continuous variables, Thatcher, Jehn and Zanutto [18] suggest rescaling the variables in order to apply Formula (1) to both types of variables. First of all, class variables are described as virtual variables. For class variables that can be divided into more than two classes, the number of virtual variables equals that of classes, because measurement of distance between variables is unfair, if usual method is adopted, i.e., the number of virtual variables is one less than the number of classes (for detailed analysis, please refer to Thatcher, Jehn and Zanutto [18]). To be more specific, each age range mentioned above can be represented as \((1,0,0,0,0)\), \((0,1,0,0,0)\), \((0,0,1,0,0)\), \((0,0,0,1,0)\) and \((0,0,0,0,1)\) respectively. The distance between them is measured by Euclidean distance. Next, measurement of class variables and continuous variables is normalized. To be more specific, the distance between class variables is set to be 1, and the gap between continuous variables is unified.

5) Measurement of Strategic Decision Variables:

Strategic decision-making scale is divided into two subscales, decision-making quality and decision-making efficiency. As for the dimensions of the scale, mainly the achievements of Wang Li and Mao Ning [22], and Gu Jiajun and Hu Bei [23] are used as reference.

Major dimensions in decision-making quality scale are environmental adaptation and process quality, measured through six items. Two items reflect the environmental adaptation dimension: strategic decision-making solution fits the existing competitive environment (factor loading=0.84); strategic decision-making reflects current financial status (0.78). Four items reflect process quality: adequate information is collected to serve as the basis for strategic decision-making (0.73); a lot of solutions are evaluated and compared before strategic decision is made (0.87); the upsides and downsides of the plan to be implemented is thoroughly examined in strategic decision-making (0.79); complete arrangement is made for the implementation and corrective measures of strategic solution (0.81). This scale is designed based on Likert Five-point Scale. Cronbach coefficient \( \alpha \) of internal consistency of the scale arrived at from preliminary trial test is 0.81. In actual measurement, coefficient \( \alpha \) is 0.78. Both show high reliability. Confirmatory Factor Analysis (CFA) shows the factor loading value of each item is larger than 0.7 and all average values are above 0.5, which means these items have good convergent validity [33].

Decision-making efficiency scale has two items: responsivity of upper echelons to environmental changes (0.82); time spent on making significant decisions (0.83). These two items are also designed by using Likert Five-point Scale. Cronbach coefficient \( \alpha \) of the scale arrived at from preliminary trial test is 0.82. In actual measurement, coefficient \( \alpha \) is 0.82. Both show high reliability. The factor loading values of both items are larger than 0.7 and the average value is 0.54 and 0.59 respectively, which means these items have good convergent validity.

After the survey finished, the scores of all items were weighted and averaged to arrive at individual’s score of strategic decision-making variable. And then, the scores of all members within the team were weighted and averaged to arrive at the final strategic decision-making value.

6) Measurement of Team Identification Variables:

The achievements of Brown and Kenny [34] are used for reference for team identification variable, measured by two items: I care for others’ comment on the entire upper echelons very much (0.79); when someone criticizes the entire upper echelons, I feel insulted (0.85). These two items are also designed by using Likert Five-point Scale. Cronbach coefficient \( \alpha \) of team identification scale is 0.85. The factor loading values of both items are larger than 0.7 and the average value is 0.57 and 0.61 respectively, which means these items have good convergent validity. Finally, the team identification values of all members are weighted and averaged to arrive at the team identification value in this research.

IV. EMPIRICAL ANALYSIS

Please refer to Table 1 for descriptive statistics and correlation analysis of variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Average</th>
<th>Variance</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision making quality</td>
<td>3.85</td>
<td>1.323</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decision making efficiency</td>
<td>3.76</td>
<td>1.472</td>
<td>-0.139*</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team size</td>
<td>4.545</td>
<td>2.452</td>
<td>0.039</td>
<td>-0.137*</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demo graphic fault line</td>
<td>0.476</td>
<td>0.287</td>
<td>-0.073</td>
<td>-0.063</td>
<td>0.103*</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personality fault line</td>
<td>0.503</td>
<td>0.312</td>
<td>-0.086</td>
<td>-0.198</td>
<td>0.212**</td>
<td>0.015</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Team identification</td>
<td>3.421</td>
<td>2.358</td>
<td>0.038</td>
<td>0.382</td>
<td>0.084</td>
<td>0.012</td>
<td>-0.127*</td>
<td>1.000</td>
</tr>
</tbody>
</table>

n=77, * p<0.05, ** p<0.01, two-tailed test
Please see Table 2 for the results of regression analysis. From collinearity analysis of the models, it is found that neither variance inflation factor (VIF) of these two models is larger than 5. We may conclude serious collinearity problem doesn’t exist. From the F value of each model, it can be seen that above 90% salience is attained, which means the models are valid. After adjustment, R2 value of Model 2 is higher than that of Model 1, which proves the addition of team identification variable makes the model more convincing.

| TABLE II REGRESSION RESULTS OF TOP MANAGEMENT TEAM FAULTLINES, TEAM IDENTIFICATION AND STRATEGIC DECISION-MAKING |
|---|---|---|---|
| Variable | Model 1 Decision-making quality | Decision-making efficiency | Model 2 Decision-making quality | Decision-making efficiency |
| Team Size | 0.874 | -0.102 | 0.928 | -0.201 |
| Demographic Faultlines | -0.451** | -0.182 | -0.553** | -0.324** |
| Personality Faultlines | -0.342** | -0.465** | -0.594*** | -0.359*** |
| Team Identification | 0.056 | 0.785 |
| Team Identification and Demographic Faultlines | 0.383 | 0.019 |
| Team Identification and Personality Faultlines | 0.368* | 0.099* |
| Adjusted R² | 0.02 | 0.021 | 0.095 | 0.120 |
| Change of F change | 0.053 | 0.172 |
| F Value | 0.354 | 0.020* | 0.037*** | 0.472*** |

n=77, * p<0.1, ** p<0.05, *** p<0.01

The proof-testing result of Model 1 in Table 2 shows that the strength of upper echelons personality faultlines is negatively correlated with strategic decision-making quality and efficiency; thus hypothesis 2a and 2b are proven; but the strength of upper echelons demographic faultlines is only negatively correlated with strategic decision-making quality weakly, and doesn’t have a salient relationship with decision-making efficiency; thus hypothesis 1b is proven, but not 1a.

Fig. 2 The moderating effect of team identification on the relationship between upper echelons personality faultlines and decision-making quality

After the above relationships moderated by incorporating team identification variable, the proof-testing result of Model 2 shows that team identification has moderated the relationship between upper echelons personality faultlines and strategic decision-making in a negative direction, but hasn’t obviously moderated the relationship between upper echelons demographic faultlines and strategic decision-making. That is to say, when sense of team identification is strong, the effect of upper echelons personality faultlines changes from negative to positive (please see Figure 1 and Figure 2), partially proving Hypothesis 3.

Fig. 3 The moderating effect of team identification on the relationship between upper echelons personality faultlines and decision-making efficiency
V. Research Results, Limitation and Direction of Further Study

A. Research Conclusions

Significantly negative relationship is found between UPPER ECHELONS personality faultlines and strategic decision-making, which is subject to degree of sense of identity among team members. The higher the degree is, the less remarkable the negative relationship is. When the team identification is high enough, the relationship between personality faultlines and strategic decision-making will be turned into positive. Only weak relationship is verified of demographic personality faultlines and strategy decision making, finding that UPPER ECHELONS demographic personality faultline has weakly negative relationship while no connection with decision making efficiency. Compared with previous researches, this paper has several new foundings:

1) UPPER ECHELONS feature combined and enterprise output (strategic decision-making) has a significant correlation. This has changed previous most researches about UPPER ECHELONS, which separating the features. We find UPPER ECHELONS feature combined effect----faultlines. This effect further identifies the promising application future of UPPER ECHELONS faultlines in the field. We can expect that, this will largely expand the research field of UPPER ECHELONS, providing better solutions for the company output.

2) UPPER ECHELONS personality faultline and strategic decision-making has significant relationship. This has two theoretical meanings: change previous research’s focusing on demographic feature pushing the UPPER ECHELONS research to psychological direction; second, findings have showed that UPPER ECHELONS faultline effects are more happened to psychology rather than demography. This study extends previous work on the internal interaction mechanism of upper echelons, makes it much clearer, and fills a vacancy in the research on political behaviours within the upper echelons. Comparing to normal team, UPPER ECHELONS members familiar with each other, then decided who the “in-group” persons are according to their internal judgment not demographic information. This in turn, demonstrates “familiar effect” by many scholars. That is, the more familiar with each member, the less demographic faultline degree.

3) In the high identification UPPER ECHELONS, personality faultline is positive correlates with strategic decision-making. This shows that high personality faultline is not surely influence the strategic decision-making. Only strengthen the identification of the team member, can we turn personality faultline from negative to positive, and enhance UPPER ECHELONS decision making.

4) Empirical study focuses on relationship of team faultlines and organizational output in China. Previous foundings based on western culture, pay less attention to Chinese background. In Chinese society, in-group’s culture and personal interaction is a total different picture from western countries, so strengthen the research within Chinese culture is vital for UPPER ECHELONS faultlines research.

B. Limitations and the Direction of Further Study

1) Only private enterprises are taken as samples in this thesis for lack of spaces. However, a further study of faultlines of upper echelons from different cultures as well as different ownerships should be conducted under the current situation in China, in order to detect the influence of upper echelons faultlines upon the output of the enterprises. As for the study in the future, various samples can be taken not only from private enterprises, but also from state-owned companies as well as foreign-funded enterprises, therefore, the comparison could be done among the faultlines of upper echelons in three different enterprises.

2) The study of the relations between faultlines of upper echelons and team process can be conducted in the future, since the relations between the characteristics of upper echelons and the output still remain unknown to the scholars. Though there must be certain kinds of relativity between the two, the mechanic relationship among faultlines of upper echelons, team process as well as team output needs to be clarified in the future, thus enriching the theories of upper echelons.

3) The integration of constitute and relations of upper echelons is far from sufficient. As far as the constitute is concerned, the same kind of faultlines strength could lead to different constitutes, that is to say, the constitute should also be taken into consideration in the research of faultlines of upper echelons, to explore the theories in a more pervasive way; on the other hand, when talking about the relationship, some factors, such as the differences between individuals and the whole team, the differences of discourse power among team members and the like should be taken into consideration in the further study. Therefore, the influence of role differences upon the team faultlines will be explored in details.

4) The depth of the present research is far from sufficient as far as the definition of faultlines is concerned. Not only the faultlines strength, but also other factors can be considered at the same time to detect the characteristics of faultlines overall. For instance, faultlines distance is employed by some scholars to scale the mean differences among sub teams. Therefore, it is expected that some plentiful research outcomes could be reached if those factors related to team faultlines will be taken into consideration in the study of upper echelons.

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