

Cohesive Top Management: The Role of Diversity and Human Capital

Drake Mullens, PhD
Tarleton State University

Structured Abstract

Objective: In the context of family firms, this research endeavors to establish human capital as an antecedent of top management team transactive memory systems and examine the deleterious effects of non-family managers on that team. Additionally, the interaction of non-family managers and human capital on the top management team transactive memory system is considered.

Methodology: Primary data were collected from 151 executives at Automobile and Motorcycle dealers. Linear regression analysis was utilized to test the hypothesized relationships.

Findings: Human capital is an important antecedent to the development of transactive memory systems in family firms. Non-family managers' participation in the top management teams reduces the ability of top managers to specialize, view other team members as credible, and effectively coordinate their actions. When family managers possess high levels of human capital, the negative relationship between non-family managers and the top management team's transactive memory system is attenuated.

Originality: This research fills a void by identifying the importance of transactive memory systems in family firms. Moreover, the findings bridge an important gap between the transactive memory system and top management team demography literatures. The findings herein are amongst the earliest to examine transactive memory systems in top management teams and establish the consequences of non-family managers in family firms. Family firms can overcome the liabilities of non-family managers by avoiding nepotism and promoting or hiring the most talented managers.

Limitations: To reduce background noise, the sample is limited to two industries in a single geographic area.

Practical Implications: As family firms grow, increasing participation of non-family managers will be required. Firms should be aware of the deleterious effect of non-family managers' participation in the top management team. To avoid negative consequences of non-family managers, the firm must identify mechanisms, including nepotism avoidance and hiring the most talented managers, to harness the benefits of the diverse top management team.

Keywords: Top Management Team, Transactive Memory Systems, Human Capital, Family Firms, Management

Classification: Research Paper

Introduction

As organizations operate in increasingly complex and dynamic environments, team-based decision making is more common. Top management teams are amongst the most important groups to firms' overall performance as they are responsible for formulating and executing organization-wide strategies. The literature is replete established relationships between collective characteristics of the top management team and firm level outcomes. The utilization of teams in decision making in complex environments is advantageous in that the inputs, including knowledge, from which the organization can draw is increased (Hollenbeck, Johnson, and Jandt, 2005).

Though this potential advantage is available from teams, the benefits of collective information processing may not be realized (Hinsz, Tindale, and Vollrath, 1997); Mesmer-Magnus and DeChurch, 2009). Consequently, streams of research have emerged to facilitate understanding of team cognition, information processing, and knowledge utilization within groups. Amongst the most prominent, Wegner's (1987) transactive memory systems (TMSs) seeks to explain division of labor within a group for learning, storing, and distributing relevant team knowledge.

Wegner (1987) developed TMSs to explain memory processes of intimate partners relative to other dyads. The phenomena under investigation led to the contention that close couples were able to facilitate the memory of one another and develop a means of encoding, storing, and retrieving information (Wegner, Erber, and Raymond, 1991). Laboratory studies provide compelling evidence that group transactive memory systems enhance performance of the group. Hollingshead (1998) demonstrated teams with a transactive memory system could recall significantly more information previously presented to them while Moreland (2000) provided

evidence that undergraduate teams which developed a transactive memory system had higher performance. Newly formed workgroups who developed transactive memory systems experienced performance benefit in assembling AM radios (Liang, Moreland, and Argote, 1995; Moreland, Argote, and Krishnan, 1996). Austin (2003) demonstrated groups possessing transactive memory systems were better able to achieve their goals, rated higher by external evaluators, and received higher performance ratings by group members.

However, there is a paucity of research that examines TMSs in the field due largely to the absence of suitable measures (Lewis, 2003). Consequently, no research has endeavored to determine the antecedents of a top management team's TMS. All previous research considered performance as it related to the specific group which were artificially formed for the explicit purpose of research. Top management teams are the most important group to firms' overall performance, yet there has been no consideration of TMSs in TMTs. Herein, TMSs, and antecedents of TMSs, are considered in TMT teams of family firms.

Literature Review

In essence, TMSs address the cohesion of a team, the meta-knowledge present in a team, and how team knowledge is brought to bear on decisions (Mell, Knippenberg, and Ginkel, 2014). Thus, in the context of family businesses, the source of the knowledge input becomes important for a TMT. By definition, a family firm is controlled by the family. Within a family firm, family business leaders comprise the dominant coalition. A dominant coalition can be described as the individuals, or network of individuals, who have the greatest influence over organizational goals and strategies (Cyert and March, 1963; Pfeffer and Salancik, 1978). Although non-family members may work in the firm, they are rarely considered part of dominant coalition (Zellweger, Nason, Nordqvist, and Brush, 2013). Family managers may view non-family managers as

outsiders and be distrustful of their knowledge, skills, and abilities due to divergent goals, values and less familiarity. The presence of non-family members in the decision-making processes patently injects diversity (heterogeneity in managers' attributes).

Diversity can be job related diversity (e.g. tenure and functional background), demographic diversity (social categorization often based on demographic attributes), or psychological diversity (which can be defined as differences in values, attitudes, beliefs and opinions) (Priem, Lyon, and Dess, 1999) in nature. Invariably, non-family members will bring demographic and psychological diversity to a TMT. Members of the same family to share values, attitudes, beliefs and opinions but non-family managers who are raised in other beliefs system bring a different set of values. Non-family managers bring different knowledge inputs and allow different perspectives to bear on decision-making. Because of this diversity, non-family managers can reduce cohesion and acceptance of knowledge in the TMT. However, heterogeneity in firm decisions makers is necessary, as suggested by Ashby's (1956) law of requisite variety, to conceive and execute complex strategies in dynamic environments and results in higher performance in turbulent environments (Haleblian and Finkelstein, 1993), increased innovativeness (Wiersema and Bantel, 1992), and more creativity (Bantel and Jackson, 1989).

The benefits or detriments of non-family managers participation in the TMT is dependent on the level of human capital possessed by the individual. In order to positively contribute to a TMS, as suggested by the human capital theoretic view (Schultz, 1959; Becker, 1964; Mincer, 1974), non-family managers must have the requisite knowledge, skills, and abilities to contribute efficient and productive cognitive abilities. In addition to integrating and adapting to new situations, human capital assists non-family managers in the integration and accumulation of new

knowledge (Weick, 1996). Human capital is, therefore, critically important to the development of a top management team TMS. It is necessary to encode, decode, and integrate information contained in the team's TMS. In absence of non-family manager human capital, specialized knowledge development is not possible (Faraj and Sproull, 2000). Those non-family managers who lack human capital will not have the requisite skills to develop specialized knowledge, and furthermore, meta-knowledge of who knows what which allows individuals to identify areas in which they can specialize and contribute will not be present.

Theoretical Background and Hypotheses

Non-familiness and TMS

Non-family members' participation in family businesses top management will bring both job-related and psychographic diversity. Extant strategy research has considered demographic diversity and the implications for cognitive task performance (e.g., Bantel and Jackson, 1989; Murray, 1989; Eisenhardt and Schoonhoven, 1990). Although the literature is replete with such studies, the results of those studies remain equivocal. For example, research has proposed and subsequently supported a positive relationship between workgroup diversity and task performance (Bantel and Jackson, 1989). Other research has provided evidence that team diversity yields negative performance consequences (Murnighan and Conlon, 1991).

The inconsistent findings are ascribable to what Lawrence (1997) deemed black box studies which do not measure intervening process variables. Pelled, Eisenhardt, and Xin (1999) implored researchers to espouse more sophisticated theories to explain the relationship between group diversity and performance. I proposed Wegner's (1987) transactive memory system theory

to capture the relationship between TMT non-familiness and performance. Below I sum some key findings in this stream of literature. Diversity in the top management team can reduce communication (Zenger and Lawrence, 1989) increase turnover (Wagner, Pfeffer, and O'Reilly, 1984), and create disharmony (O'Reilly, Snyder, and Boothe, 1993) all of which can inhibit the ability of management to function as a cohesive unit and soundly guide the organization (Priem, Lyon, and Dess, 1999). Additionally, Jehn (1995) argued that dissatisfaction, which arises from diversity related conflicts, results in team member avoidance of working with other team members with whom they experience conflict. The above consequences of TMT non-familiness impede the development and use of the TMT's transactive memory system. Overall, the conflict associated with diversity in the top management team of family businesses can be disruptive to the establishment of a transactive memory system.

When non-family managers participate in a family business and increase TMT non-familiness, I expect there to be less trust amongst the group and reduced tenure. Reduced tenure and diminished trust in non-family TMT members encourage family managers to develop overlapping skills. Diverse non-family managers have less trust granted to them, and there is less cooperation between members of the top management team (Brewer, 1979; Brewer and Brown, 1998; Tajfel and Turner, 1986). Additionally, group cohesion (O'Reilly et al. 1989) and turnover will be adversely influenced (Wagner, 1987). Trust, cooperation, communication, and group longevity are central to the development of an effective transactive memory system.

With respect to specialization, meta-knowledge is needed to understand who knows what and how that knowledge relates to other pieces of knowledge. When there is conflict in the top management team ascribable to diversity, meta-knowledge is not as readily communicated to other members. Further, because of reduced trust in the group, TMT members` are more likely to

develop overlapping skills as opposed to unique and complementary skills. This is a result of the diminished trust in non-family managers' motivation and ability to act in the best interest of the family business. Non-family managers could hoard knowledge or information to the detriment of the firm if they are dissatisfied with the dynamics of the team or some part of the organization. Moreover, if human capital and knowledge reside in the minds of the managers, reduced tenure of non-family managers discourage the development of specializations. Family managers hedge against the exit of members with specialized knowledge or skills important to the success of the firm. Therefore, less specialization would occur as the number of non-family managers who participate in management and the sum of their human capital increases.

Informal and formal communications bring salience to the respective skills, knowledge, and abilities of family managers. Non-family participants in management do not share the same level of informal communication as family managers. In addition, the instability or lack of tenure associated with non-family managers creates fewer opportunities to gain familiarity with non-family managers which may hurt their credibility. The lack of familiarity may result in the absence of trust in members's abilities since trust is developed over time. The inherent demographic and psychographic diversity non-family managers bring to the top management team compounds the issue of familiarity or absence thereof. To restate the consequences, heterogeneity in decisions makers can reduce communication (Zenger and Lawrence, 1989) increase turnover (Wagner, Pfeffer, and O'Reilly, 1984), and create disharmony (O'Reilly, Snyder, and Boothe, 1993) all of which can inhibit the ability of management to function as a cohesive unit and soundly guide the organization (Priem, Lyon, and Dess, 1999).

Jehn (1995) argued these manifestations of team diversity cause in-group members (family members) to avoid out-group members (non-family members). In addition to the above,

non-family members' divergent views, values, and goals decrease trust in the group (Ancona and Caldwell, 2002). Non-family managers' views, values, and goals may be in direct conflict with those of family managers. For example, family managers may be desirous of wealth creation for the family, pecuniary and non-pecuniary family benefits, and transgenerational wealth transfer, whereas non-family managers may be more concerned with self-promotion, career advancement, and personal wealth creation. Therefore, trust and credibility in the TMS deteriorate as TMT non-familiness increases.

Diversity brought by those non-family members can result in a lack of communication, cooperation, and cohesiveness, all of which threaten coordination and the desire to work together. Coordination refers to the ability of managers to effectively work together with few misunderstandings which allows the teams to efficiently complete tasks. With TMT non-familiness, misunderstandings may arise out of different values, views, goals, and assumptions by diverse managers, but when social categorization and family versus non-family is considered, diverse members of the TMT may not have desire to work together. Top management team non-familiness has the potential for in-group members (family members) to avoid out-group members (non-family members) (Jehn, 1995) when conflicts arise. Therefore, coordination in the TMS deteriorates as TMT non-familiness increases.

Hypothesis 1: TMT non-familiness is negatively associated with TMS (specialization, credibility, and coordination).

Human Capital and TMS

A partition of the human capital literature addresses team members' knowledge, skills, and abilities which are compulsory to work in a team. Stevens and Campion (1994) hypothesized

that conflict resolution, collaborative problem solving, communication, goal setting and performance management, and planning and task coordination represent human capital necessary to be part of an effective team. McClough and Rogelberg (2003) evaluated the degree to which Stevens and Campion's (1994) manifestations of human capital in groups contributed to higher levels of individual performance. Their results indicate that human capital predicts individual performance in groups.

The above research considers the relationship between human capital and individual performance in a group. In addition to individual performance, a body of research looks at the relationship between the aggregation of individuals' human capital and group performance. Cognitive ability was positively related to group performance in teams of systems analysts (Hill, 1982). In a lab study, Williams and Sternberg (1988) demonstrated cognitive abilities were associated with group performance. Teams higher in general mental ability were associated with team performance and viability according to their supervisor ratings (Barrick, Stewart, Neubert, and Mount, 1998). While the relationship between human capital and team performance is relatively well-established, far less research considers the relationship between human capital and the development of TMSs.

However, research has considered the relationship between human capital and specific components of TMSs. For example, coordination is a central dimension in my conceptualization of TMS, and human capital facilitates greater coordination of team activities (Stevens and Campion, 1994; Edwards, Day, Arthur, and Bell, 2006). As members work together as part of the top management team in a family firm, they develop knowledge about others' skills, knowledge, relevant tasks, common terminology, and the environment. These shared experiences

allow the members to better coordinate and synchronize their actions for the firm's benefit (Berman, Down, and Hill 2002).

The inherent complexities of strategic management compel managers to develop and contribute knowledge from unique domains. Diverse knowledge allows top management to effectively accomplish organizational goals. The possession of unique knowledge is indicative of member specialization. Additionally, for members to develop a specialization, individuals on the top management team would need to have the requisite skills in that specialty area. Prior research suggests that the emergence of TMSs and subsequent structure are dependent upon members' preconceptions about one another (Hollingshead and Fraidin, 2003). Due to the historical interaction of managers, individuals know other members' specialization and are incited to develop different but complementary knowledge (Hollingshead, 2001). Faraj and Sproull (2000) found that team members' human capital and prior knowledge are the basis of this specialization for two reasons. First, it contributes to the development of the meta-knowledge of who knows what which allows individuals to identify areas in which they can specialize and contribute. That is, members of the top management team recognize other members' expertise. Second, prior knowledge and absorptive capacity (Cohen and Levinthal, 1990) allow managers with high levels of human capital to develop their own expertise or specialization.

Overall, I hypothesize that the aggregate level of human capital on an organization's top management team will be positively related to the TMT group's TMS. Specifically, human capital is positively related to higher levels of specialization in the top management team. Human capital allows members to understand how knowledge is distributed throughout the group. Understanding of knowledge distribution within the group helps other individuals identify deficiencies in the TMS or areas in which they could develop a specialization and make a

contribution. Further, members of the TMT with high levels human capital have the requisite knowledge, skills, and abilities to develop a specialization. With respect to credibility, familiarity of TMT members brings salience to their respective skills, knowledge, and abilities. Confidence in other members' contributions (i.e., information, decisions, and specialization) to TMSs are enhanced when members possess high levels of human capital. Human capital allows the group to rely on a single individual for contributions pertaining to his or her specialization. Trust results in other team members developing unique specializations. When a top management team member has low levels of human capital, other members develop overlapping knowledge. The group has little confidence in the work of an individual whose human capital is lacking. Overlapping knowledge undermines a TMS. Therefore, human capital is necessary to develop an effective TMS with credibility.

Finally, coordination is enhanced when members of the TMT have high levels of human capital for the following reasons. For members to combine their individual knowledge, each person needs to understand who knows what and how their complementary knowledge is related (Lewis, 2003) which represents a form of human capital. Ellis, Bell, Ployhart, Hollenbeck, and Illgen (2005) found that human capital increased teamwork competencies and greater proficiency in planning, task coordination, collaborative problem-solving, and communication, all of which will increase coordination in a transactive memory system. Coordination, therefore, is enhanced with members of the top management team have high levels of human capital by allowing individuals to recognize how knowledge is distributed throughout the system, how that knowledge fits together, and how that knowledge can be recombined to maximize organizational performance.

Hypothesis 2: TMT family human capital is positively associated with TMS (specialization, credibility, and coordination).

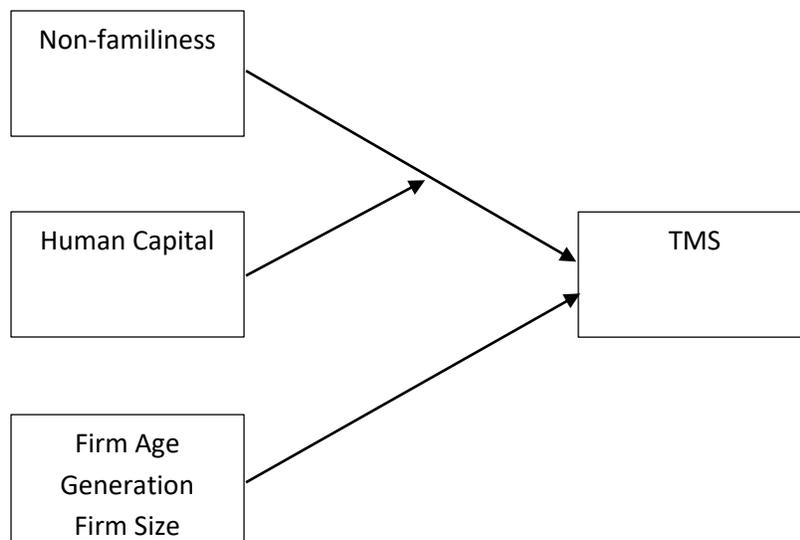
Hypothesis 3: TMT non-family human capital is positively associated with TMS (specialization, credibility, and coordination).

Human Capital and Non-familiness interaction on TMS

Human capital is critical in the understanding and acceptance of non-family members on the TMT. (Hollingshead and Fraidin, 2003). Managers who are high in social capital have the ability to recognize talents and deficiencies within the top management team. (Hollingshead, 2001). Consequently, they are better equipped to harness the diverse knowledge available from non-family managers and reduce conflict. Non-family managers who possess high levels of human capital can overcome the challenges of being an outside in a family firm.

Hypothesis 3: Non-family human capital will attenuate the negative relationship between non-familiness and TMS (Specialization, Credibility, and Coordination).

Conceptual Model



Methods

This research utilized primary data to test and establish the hypothesized relationships. The sample frame includes family businesses participating in the retail automobile and motorcycle industries. By only including these two, as opposed to a heterogeneous sample of industries, the background noise which could affect the results was limited. Additionally, the financial crises which began in 2008 critically affected these two industries and compelled firms to innovate. In these industries, credit for consumers ran short. This was particularly problematic given 90% of U.S. consumers' vehicle purchases utilize financing or leasing (The Economist, 2009). Exogenous shocks affecting these two industries forced firms to innovate to maintain profitability and perhaps even remain solvent. Additionally, there is a relatively large proportion of family firms in these two industries. Therefore, they are ideal candidates to answer the posited research questions.

A list of dealers from these two industries was developed for firms competing in Texas through ReferenceUSA. 3,157 new car dealers were listed for Texas. Additionally, there were 1,150 new motorcycle dealerships in Texas. Of the total 4,307 firms, 497 were in the selected sample vicinity. 497 firms as a family firm. Those firms that did not identify as family firms (N=205) were removed from the list. Top managers were asked to complete the survey in 212 firms. All data were collected via in-person surveys. The final sample is comprised of 151 completed surveys for an effective response rate of 71 percent. To begin data collection, I attempted to schedule an appointment by phone with the owner of the firm. I contacted 10 firms

with this procedure. On the first phone call to the 10 dealerships, I was able to speak directly to one owner of the firm. The owner agreed to meet in person and completed the survey. Three additional surveys were collected by meetings established through returned phone calls and follow up calls to the dealerships within this initial 10.

The study procedure was slightly adjusted after the initial 10 firms. I attempted to schedule appointments by phone with the owners of the remaining firms in the sample. However, accessing an owner of the firm by phone presented a great challenge. The administrative assistant, in many cases, indicated the owner was not available to speak and asked that I leave a message. The owner may or may not return the call. Therefore, in combination with the appointments scheduled by phone, I began to visit dealerships in-person along a pre-designated route. At this point, the sample was expanded to include any member of the top management team as a respondent, though a respondent with an ownership position in the firm was always targeted. Because organizational forms and titles varied within and across these two industries, firms identified members of the top management teams.

After introducing myself and my intention, I began each in-person visit by asking the point of contact to speak with the owner of the firm. Like by phone, the point of contact indicated the owner was often not available to speak or not on the premises. I would then ask to speak to a member of the top management team. This generally resulted in speaking to the sales manager. After introducing myself and my purpose for the visit, I would ask if he or she was a member of the top management team. Two sales managers included themselves as members of the top management team. In both those cases, they were members of the controlling family. When the sales manager was not a member of the top management team, I asked that I be directed to the appropriate individual. When that individual was not available, I would leave my

contact information and ask when the individual would be available. I entered the information on availability into a database and subsequent trips were planned around top management member availability. 57% of the surveys were administered on the first visit, 22% on the second visit, 17% on the third visit, and 4% on the fourth visit.

Measurement

Human Capital

Although widely used in the various business literatures, human capital remains an elusive construct with no widely-accepted operationalization. However, as noted by Rauch, Frese, and Utsch (2005), single respondents within an organization are unable to provide specific facts on human capital (education, experience, skills, and knowledge) for each of the employees in the organization. Therefore, Rauch, Frese and Utsch's (2005) scale with three items was adapted for this research and respondents. For example, respondents were posed questions such as, "Family members of the top management team are qualified to do their job." Respondents evaluated the items on a 7-point Likert scale (1=Strongly Disagree, 7=Strongly Agree). These questions were repeated for both family and non-family members. The specific items are included in Appendix A. The items for both family human capital and non-family human capital had the highest reliability of all constructs included in the model, family human capital ($\alpha=.95$) and non-family human capital ($\alpha=.93$).

Non-familiness

To assess the non-familiness of the TMT, I used the TMT family ratio developed by Minichilli, Corbetta, and MacMillan (2010). The ratio is calculated as follows: $((F-NF) / F)$ where F equals

the number of family members on the TMT and NF equals the number of non-family members on the TMT.

TMS

The scale used to assess the top management team's TMS was adapted from Lewis' (2003). At a group level, the scale is conceptually valid and has been demonstrated to be statistically valid (Lewis, Lange, and Gillis, 2005; Kozlowski and Ilgen, 2006; Zhang, Hempel, and Han, 2007; Kanawattanachai and Yoo, 2008). Each of the three dimensions, specialization, credibility, and coordination, is comprised of five indicators and were measured on a 7-point Likert scale (1=Strongly Disagree, 7=Strongly Agree). Individual items are contained in Appendix A. The five-item scale for specialization had a coefficient alpha of .87 with a mean of 5.60, a coefficient alpha of .88 with a mean of 5.57 for credibility, and a coefficient alpha for .85 and mean of 5.51 for coordination. These established scales demonstrated similar reliabilities and means of established research (Lewis, 2003).

Control Variables

The size of the firm, the generation of family in control, and the age for the firm were included as controls in the analyses.

Analysis

Although all the scales utilized in this research are established scales, I began the analysis by assessing the constructs' reliability, all of which were sufficiently high (range=.84 to .95). A table containing all the coefficients alphas in included in Appendix A. With the reliability of the constructs established, regression analysis was utilize to test the hypothesized relationships.

Descriptive Statistics

The survey procedure yielded 151 usable surveys. The sample is comprised of 27.81 (42 firms) per cent new motorcycle dealerships while the remaining 72.19 per cent are new automobile dealerships (109 firms), roughly representative of the rate at which the two firms exist. The average firm in the sample was founded in 1972. The respondents had the following characteristics: 59.23 per cent reported holding an equity position in the firm and the other respondents reported a position on the top management team. All the respondents held a sufficiently high enough position in the organization to adequately respond to the questions about their firms and other top management team members. Respondents were overwhelmingly male 96%. Respondents in the study were moderately educated with 2.2 years of post-high school education on average, had an average age 48 years, had 14 years of industry experience, and average tenure with the current employer was 8 years. Seventy-nine percent (79%) of respondents were members of the controlling family.

Results

Table 1 presents the means, standard deviations and correlations. There were strong, observed correlations between the control variables and hypothesized variables. No significant correlations were observed in the hypothesized variables to the exclusion of the non-familiness and non-family human capital.

Table 1: Means, Standard Deviations and Intercorrelations Among Study Variables

	M	SD	Age	NF	Size	TMS	FHC	NFHC	GEN
Age	1972	19.8	—	-0.198*	-0.269 ***	0.061	-0.096	-0.235**	-0.614***
NF	.6	.6		—	0.263**	-0.332***	-0.072	0.781***	0.042
Size	95	145.1			—	0.120	0.143	0.273***	0.221**
TMS	5.4	.8				—	0.593***	-0.060	0.048
FHC	6.0	1.1					—	0.039	0.131
NFHC	5.4	1.5						—	0.175*
GEN	1.6								—

N=151

* p < .05, ** p < .01, *** p < .001

Table 2: Linear Regression Results

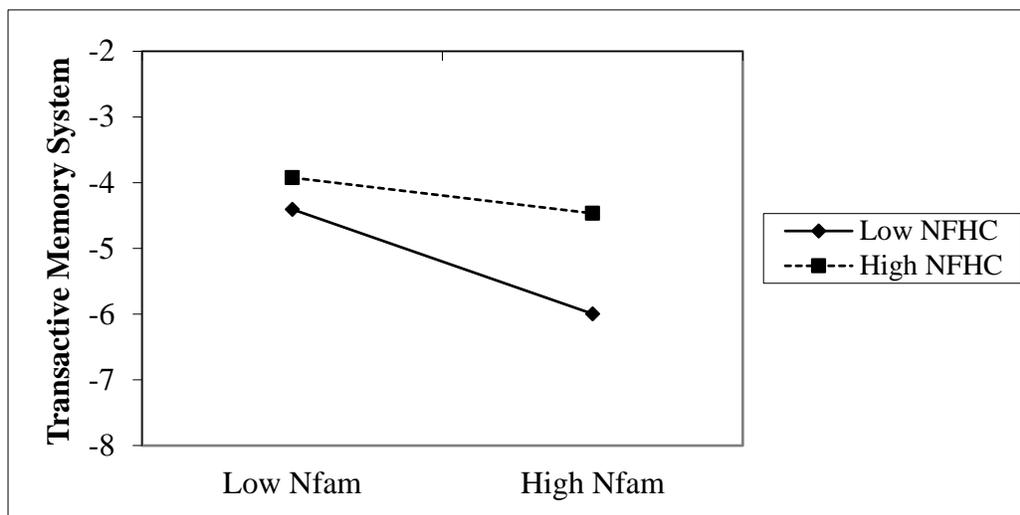
	Model 1	Model 2	Model 3
intercept	-10.598 (9.57)	-5.802 (7.00)	-4.166 (6.90)
Age	0.008† (0.01)	0.004 (0.003)	0.004 (0.003)
Size	0.001† (0.00)	0.001 (0.00)	0.001 (0.00)
GEN	0.174 (0.14)	-0.047 (0.11)	-0.022 (0.10)
NFHC		0.133*** (0.03)	0.051 (0.05)
FHC		0.468*** (0.05)	0.397*** (0.06)
NFam		-1.760*** (0.28)	-2.860*** (0.51)
NFHC*Nf			0.302* (0.12)

P<.1 †, * p < .05, ** p < .01, *** p < .001

In the examination of the antecedents of TMS, the analysis sought to control for the age of the firm, the size of the firm and generation of the family business. TMS was regressed on age, size and generation. The results in Model 1 of Table 2. Both age and size were moderately significant. As the firm grows in size and age, the TMT increasingly develops a TMS. In Model 2 of Table 2, the main effects for non-family human capital, family human capital, and non-familiness are tested. Hypothesis 1 predicted that the presence of non-family members on the TMT would detract from its TMS. Indeed, non-family is significantly, negatively associated with

TMS ($p < .001$). Hypothesis 2 predicated that family human capital would be positively associated with TMS. Human capital possessed by members of the controlling family on the TMT is positively associated with TMS. Hypothesis 3 considered the human capital of non-family members on the TMT and predicted it would be positively associated with TMS. Both Hypotheses 2 and 3 are supported ($p < .001$). In Hypothesis 4, the interaction of NFHC and non-familiness was considered on TMS. The interaction was positive and significant ($p < .05$). To better interpret the interaction, the results were plotted one standard deviation above and below both NFHC and non-familiness.

Figure 1



As depicted in Figure 1, non-familiness is negatively associated with TMS whether high or low levels of non-family human capital are present. However, non-family human capital attenuates the negative relationship between non-familiness and TMS.

Discussion and Limitations

The research endeavored to examine facts that contributed and detracted from the development of TMS in TMTs of family firms. The analysis demonstrates non-family members

participating on the TMT of a family firm reduces the specialization, credibility, and coordination of the TMT. The reduced cohesion and ability of the TMT to work effectively together poses challenges for family firms. As family firms grow, the reliance on non-family members to contribute to the organization increases. Therefore, the challenge for family firms that wish to grow becomes identifying and leveraging mechanisms to overcome the liability of non-family managers.

Human capital, both from family and non-family managers, increases the cohesiveness specialization, credibility, and coordination of the TMT. Family firms must be cognizant of nepotism and the consequential under-skilled managers. When hiring or promoting individuals to the top management team, the skills of those managers will impact the ability of the entire top management team to work cohesively and effectively. One mechanism to cope with increased diversity and divergent goals of non-family managers is to hire or promote those with the highest levels of human capital. Highly skilled non-family managers reduce deleterious effects of diversity and enhances the ability of the top management team to specialize, see each other as credible, and coordinate their actions.

When interpreting the findings herein, it is important to consider the limitations. The sample is comprised of two industries from one geographic region. Expanding both the number of industries considered and the geographic area would enhance extensibility. Future studies are encouraged to examine the relationship beyond the motorcycle and automobile industries and in other geographic areas.

References

- Ancona, D. G., & Caldwell, D. F. (1992). Demography and design: Predictors of new product team performance. *Organization Science*, 3(3), 321-341.
- Ashby, W. R. (1956). *An introduction to cybernetics* Taylor & Francis.
- Austin, J. R. (2003). Transactive memory in organizational groups: The effects of content, consensus, specialization, and accuracy on group performance. *Journal of Applied Psychology*, 88(5), 866-878.
- Bantel, K. A., & Jackson, S. E. (1989). Top management and innovations in banking: Does the composition of the top team make a difference? *Strategic Management Journal*, 10(1), 107-124.
- Barrick, M. R., Stewart, G. L., Neubert, M. J., & Mount, M. K. (1998). Relating member ability and personality to work-team processes and team effectiveness. *Journal of Applied Psychology*, 83(3), 377-391.
- Becker, G. S. (1964). Human capital. New York. *Columbia University for the National Bureau of Economic Research*.
- Berman, S. L., Down, J., & Hill, C. W. L. (2002). Tacit knowledge as a source of competitive advantage in the National Basketball Association. *Academy of Management Journal*, 45(1), 13-31.
- Brewer, M. B. (1979). In-group bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin*, 86(2), 307-324.
- Brewer, M. B., & Brown, R. J. (1998). *Intergroup relations*. McGraw-Hill.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128-152.
- Cyert, R. M., & March, J. G. (1992). *A behavioral theory of the firm* Wiley-Blackwell.
- Edwards, B. D., Day, E. A., Arthur Jr., W., & Bell, S. T. (2006). Relationships among team ability composition, team mental models, and team performance. *Journal of Applied Psychology*, 91(3), 727-736.
- Eisenhardt, K. M., & Schoonhoven, C. B. (1990). Organizational growth: Linking founding team, strategy, environment, and growth among US semiconductor ventures, 1978-1988. *Administrative Science Quarterly*, 35(3), 504-529.
- Ellis, A. P. J., Bell, B. S., Ployhart, R. E., Hollenbeck, J. R., & Ilgen, D. R. (2005). An evaluation of generic teamwork skills training with action teams: effects on cognitive and skill-based outcomes. *Personnel Psychology*, 58(3), 641-672.
- Faraj, S., & Sproull, L. (2000). Coordinating expertise in software development teams. *Management Science*, 46(12), 1554-1568.
- Haleblian, J., & Finkelstein, S. (1993). Top management team size, CEO dominance, and firm performance: The moderating roles of environmental turbulence and discretion. *The Academy of Management Journal*, 36(4), 844-863.
- Hill, G. W. (1982). Group versus individual performance: Are two heads better than one? *Psychological Bulletin*, 91(3), 517-539

- Hinsz, V. B., Tindale, R. S., & Vollrath, D. A. (1997). The emerging conceptualization of groups as information processors. *Psychological bulletin*, *121*(1), 43.
- Hollingshead, A. B. (1998). Retrieval processes in transactive memory systems. *Journal of Personality and Social Psychology*, *74*(3), 659-671.
- Hollingshead, A. B. (2001). Cognitive interdependence and convergent expectations in transactive memory. *Journal of Personality and Social Psychology*, *81*(6), 1080-1089.
- Hollingshead, A. B., & Fraidin, S. N. (2003). Gender stereotypes and assumptions about expertise in transactive memory. *Journal of Experimental Social Psychology*, *39*(4), 355-363.
- Ilgen, D. R., Hollenbeck, J. R., Johnson, M., & Jundt, D. (2005). Teams in organizations: From input-process-output models to IMO models. *Annu. Rev. Psychol.*, *56*, 517-543.
- Jehn, K. A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly*, *40*(2), 256-282.
- Kanawattanachai, P., & Yoo, Y. (2008). The impact of knowledge coordination on virtual team performance over time. *Management Information Systems Quarterly*, *31*(4), 783-808.
- Kozlowski, S. W. J., & Ilgen, D. R. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest*, *7*(3), 77-124.
- Lawrence, B. S. (1997). The black box of organizational demography. *Organization Science*, *8*(1), 1-22.
- Lewis, K. (2003). Measuring transactive memory systems in the field: Scale development and validation. *Journal of Applied Psychology*, *88*(4), 587-604.
- Lewis, K., Lange, D., & Gillis, L. (2005). Transactive memory systems, learning, and learning transfer. *Organization Science*, *16*(6), 581-598.
- Liang, D. W., Moreland, R., & Argote, L. (1995). Group versus individual training and group performance: The mediating role of transactive memory. *Personality and Social Psychology Bulletin*, *21*(4), 384-393.
- McClough, A. C., & Rogelberg, S. G. (2003). Selection in teams: An exploration of the teamwork knowledge, skills, and ability test. *International Journal of Selection and Assessment*, *11*(1), 56-66.
- Mell, J., van Knippenberg, D., & van Ginkel, W. (2014). The catalyst effect: how meta-knowledge can improve team performance. *RSM Discovery-Management Knowledge*, *20*(4), 18-19.
- Mesmer-Magnus, J. R., & DeChurch, L. A. (2009). Information sharing and team performance: a meta-analysis.
- Mincer, J. (1974). Schooling, experience, and earnings. *human behavior & social institutions* no. 2.
- Minichilli, A., Corbetta, G., & MacMillan, I. C. (2010). Top management teams in family-controlled companies: 'familiness', 'faultlines', and their impact on financial performance. *Journal of Management Studies*, *47*(2), 205-222.
- Moreland, R. L., & Myaskovsky, L. (2000). Exploring the performance benefits of group training: Transactive memory or improved communication? *Organizational Behavior and Human Decision Processes*, *82*(1), 117-133.

- Moreland, R. L., Argote, L., & Krishnan, R. (1996). Socially shared cognition at work: Transactive memory and group performance. In J. L. Nye & A. M. Brower (Eds.), *What's so social about social cognition? Social cognition research in small groups* (pp. 57–84). Thousand Oaks, CA: Sage.
- Murnighan, J. K., & Conlon, D. E. (1991). The dynamics of intense work groups: A study of British String Quartets. *Administrative Science Quarterly*, *36*(2), 165-186.
- Murray, A. I. (1989). Top management group heterogeneity and firm performance. *Strategic Management Journal*, *10*(S1), 125-141.
- O'Reilly, C., Snyder, R. C., & Boothe, J. N. (1993). Effects of executive team demography on organizational change. In: Huber, G., Glick, (Eds.), *Organizational Change and Redesign*. Oxford University Press, New York, pp. 147-175.
- Pelled, L. H., Eisenhardt, K. M., & Xin, K. R. (1999). Exploring the black box: An analysis of work group diversity, conflict, and performance. *Administrative Science Quarterly*, *44*(1), 1-3.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper and Row.
- Priem, R. L., Lyon, D. W., & Dess, G. G. (1999). Inherent limitations of demographic proxies in top management team heterogeneity research. *Journal of Management*, *25*(6), 935-953.
- Rauch, A., Frese, M., & Utsch, A. (2005). Effects of human capital and long-term human resources development and utilization on employment growth of small-scale businesses: A causal Analysis. *Entrepreneurship Theory and Practice*, *29*(6), 681-698.
- Schultz, T. W. (1959). Investment in man: An economist's view. *The Social Service Review*, *33*(2), 109-117.
- Stevens, M. J., & Campion, M. A. (1994). The knowledge, skill, and ability requirements for teamwork: Implications for human resource management. *Journal of Management*, *20*(2), 503-530.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup conflict. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7–24). Chicago: Nelson-Hall.
- Wagner, W. G., Pfeffer, J., & O'Reilly, C. A. (1984). Organizational demography and turnover in top-management group. *Administrative Science Quarterly*, *29*(1), 74-92.
- Wegner, D. M. (1987). Transactive memory: A contemporary analysis of the group mind. In *Theories of group behavior* (pp. 185-208). Springer New York.
- Wegner, D. M., Erber, R., & Raymond, P. (1991). Transactive memory in close relationships. *Journal of personality and social psychology*, *61*(6), 923.
- Weick, K. E. (1996). Drop your tools: An allegory for organizational studies. *Administrative Science Quarterly*, *41*(2), 301-313.
- Wiersema, M. F., & Bantel, K. A. (1992). Top management team demography and corporate strategic change. *The Academy of Management Journal*, *35*(1), 91-121.
- Williams, W. M., & Sternberg, R. J. (1988). Group intelligence: Why some groups are better than others. *Intelligence*, *12*(4), 351-377.

- Zellweger, T. M., Nason, R. S., Nordqvist, M., & Brush, C. G. (2013). Why do family firms strive for nonfinancial goals? An organizational identity perspective. *Entrepreneurship Theory and Practice*, 37(2), 229-248.
- Zenger, T. R., & Lawrence, B. S. (1989). Organizational demography: The differential effects of age and tenure distributions on technical communication. *The Academy of Management Journal*, 32(2), 353-376.