Philippine Management Review 2018, Vol. 25, 71-98.

Top Management Team Composition and Firm Performance

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This study investigated the relationship between top management team's (TMT) demographic characteristics and firm performance of listed Philippine holding firms. The TMTs helming these companies have had significant economic impact given their firms large—often dominant—presence in diverse industries. Using organizational demography, a panel of TMT's demographic characteristics (tenure, educational and functional background, age, and gender) and firm performance (revenue growth and return on assets) were regressed. Results showed that increased compositional difference in team member's functional background and gender negatively affected firm performance. Hence, TMT composition matters and the thoughtful selection of its members vital.

Keywords: Top management team, Social identity and self-categorization, Similarity-attraction, Organizational demography, Upper echelon perspective, Firm performance, Holding firms, Philippines

1 Introduction

The importance of a firm's top management team (TMT) cannot be overstated. Its role in deciding the direction of the organization and in establishing organizational policies and philosophies affect all organizational members and ultimately the success of the firm (Robbins, DeCenzo, & Coulter, 2015). The team's composition strongly influences its ability to carry out its role.

TMT members ideally have substantial experience and expertise, as well as have significantly developed their critical management skills. Many top-level managers who become part of the TMT often have mastery over their functional disciplines, and/or depth of industry experience, preferably both. Furthermore, TMT members have honed their conceptual, interpersonal, technical and political skills (Robbins et al., 2015).

Hambrick and Mason's (1984) upper echelon perspective have reinforced this importance of TMT, positing that top executives matter. TMTs have an important impact on organization outcomes because of the decision they are empowered to make for the organization. They ventured further and stated that organization outcomes, strategic choices, and performance levels are practically predicted by managerial background characteristics. This perspective spurs much TMT demographic research[1], with the amount of diversity[2] within the group as one of the relevant focus of these studies.

Interest and research in diversity have grown significantly over the last few decades, driven by shifts in population demographics, and new management methods that require teamwork, to name a few reasons. Though theories of social identity and self-categorization, and similarity-attraction purported that diversity has a negative effect on group processes and performance, research on whether diversity has a positive or negative impact is inconclusive (Williams & O'Reilly III, 1998; Glick, Miller, & Hubber, 1993).

Pfeffer's (1985) organizational demography focused diversity research to the more measurable demographic variables and its effect on the organization's processes and outcomes. He argued that demography might explain more variance in the dependent variable (e.g., firm performance, turnover) than would the presumed intervening construct that has often been underlying mental processes. Demography offers the advantages of objectivity, parsimony, comprehensibility, and logical coherence of cognitive resources.

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[1] E.g., Carpenter, 2002; Eisenhardt, Kahwajy, & Bourgeois, 1997; Simons, 1995; Wiersema & Bantel, 1992.

[2] Diversity is a characteristic of a group of people where differences exist on one or more relevant dimensions. It is a group, and not an individual characteristic (Hitt, Miller, & Colella, 2011).

Focusing on TMT and using organizational demography, this paper aimed to establish a link between the heterogeneity[3] in TMT's demographic characteristics and the firm's outcomes. More specifically, this paper aimed to answer the research question:

What is the relationship between the TMT's demographic heterogeneity and firm performance?

With the theories of social identity and self-categorization, and similarity-attraction underlying organizational demography, this paper proposed several hypotheses on the TMT's demographic characteristics (tenure[4], educational and functional background, age, and gender) and its impact on firm performance (revenue growth and return on asset (ROA)). Using panel regression, results showed that increased compositional difference in team member's functional background and gender negatively affected firm performance.

This paper focused its investigation on the TMT of listed Philippine corporate groups or holding firms[5]. These firms' large—often dominant—presence in diverse industries have a significant influence on the country's economy; and thus, the TMTs helming these groups of firms clearly have a larger and broader impact than TMTs of individual firms. Corporate groups are ubiquitous in emerging markets[6] and even in some developed economies[7], albeit less so now. Typically, these groups have consisted of legally independent firms, operating in multiple industries, which were bound together by persistent formal (e.g., equity) and informal (e.g., family) ties (Khanna & Yafeh, 2015).

This type of organization, and the TMTs leading them, have particular value in developing markets. Khanna and Yafeh (2015) pointed out that they are responses to prevailing economic conditions; and in the case of the Philippines, in line with the poor institutional infrastructure of the country. Furthermore, Ramachandran, Manikandan, and Pant (2013) suggested that holding firms (or group centers) provide strategy and identity value to their affiliated firms. As to strategy, they help the affiliate firms develop and reshape their strategic frames, as well as challenge the affiliates to set their sights higher. As to identity, their brand, reputation, and/or organizational entity may be an important source of value; it can be a lever to shape beliefs, perceptions, and motivation of customers, employees, and business partners.

This paper contributes to the knowledge on diversity, organizational demography in particular, outside of the United States[8]. On an applied dimension, this paper's results may inform the selection of TMT members to support the TMT's success. Furthermore, as this paper establishes a link between diversity and outcomes, it may also open up a rich research agenda, such as: (1) examining the process by which diversity may impact outcomes, and separately why these effects occur; (2) studying the mediating and moderating factors of these links, such as conflict; (3) considering other diversity constructs in measuring team composition (Harrison & Klein, 2007), such as using all variety measures by converting tenure and age into categorical variables, or using all disparity measures by capturing proportional measures within the team; (4) exploring the effect of diversity on other team outcomes, like turnover; (5) determining the antecedents of diversity, as well as drivers for variations in the demographic composition of teams, e.g., hiring patterns, legal pressures, technological regimes (Pfeffer, 1985); and lastly, (6) understanding how successful teams are able to harness diversity.

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[3] The majority of organizational demography studies, whether TMT specific or not, focuses on compositional differences than similarities. Of the 23 organizational demography studies listed in Appendix A, 17 studies, or approximately three-fourths tackle organizational demography via heterogeneity. The six studies that look at similarities/homogeneity are: Eisenhardt et al., 1997; Flatt, 1993; Michel & Hambrick, 1992; O'Reilly III, Snyder, & Boothe, 1993; Riordan & Shore, 1997; and Zenger & Lawrence, 1989.

[4] Tenure refers to the length of time a person holds a job, and is part of an entity.

[5] A company that controls, usually through a majority shareholding, another company or companies ("Holding Company", 2006).

[6] E.g., Brazil, Chile, China, India, Indonesia, South Korea, Mexico, Pakistan, Thailand, and many more

[7] E.g., Italy and Sweden

[8] Almost all of the studies are US focused, with a handful of exceptions, e.g., China (Farh, Tsui, Xin, & Cheng, 1998; Tsui & Farh, 1997; Chen & Francesco, 2000); Japan (Wiersema & Bird, 1993); and Taiwan (Chen, Lin, & Michel, 2010).

This paper divides into five sections, including this section. Section 2 Theoretical Framework reviews the related literature that informs the predictions of Section 3 Hypotheses. Section 4 Methodology and Results describes the sample, measurement, and empirical approach used, as well as elaborates on the empirical results. Lastly, Section 5 Discussion and Conclusion assesses the results of TMT heterogeneity on firm performance, and concludes this paper.

2 Theoretical Framework

Diversity research has been supported by the theories of social identity and self-categorization (Tajfel & Turner's, 1986), as well as similarity-attraction (Byrne, 1971). Organizational demography have focused diversity research on the more visible and measurable attributes of a social entity, such as tenure, background, age, gender, and race, to name a few (Pfeffer, 1985); and upper echelon perspective (Hambrick and Mason, 1984) has further concentrated the study of demographics on the TMT as the entity of interest. This section develops these concepts further as the underlying theoretical framework of this paper.

2.1 Diversity Research in General

Williams and O'Reilly III (1998) presented a systematic literature review of organizational demography and diversity studies. With their review of over 80 studies in both the laboratory or classroom setting, and working groups within an organizational context, they concluded that diversity can increase both the possibility for creativity, as well as the group members' dissatisfaction and failure to identify with the group.

Research supporting that diversity is beneficial for the group has been conducted mostly in the laboratory or classroom setting; the few conducted in the field have more ambiguous findings. These laboratory or classroom setting studies' definition of diversity were often based on variations in individual attributes—such as personality, ability, and functional background—and not on categorical attributes, such as race and gender. Meanwhile, numerous field studies have suggested that heterogeneity often have negative effects on group processes[9], and performance[10]; these studies have supported the hypothesis that diversity is detrimental to the group.

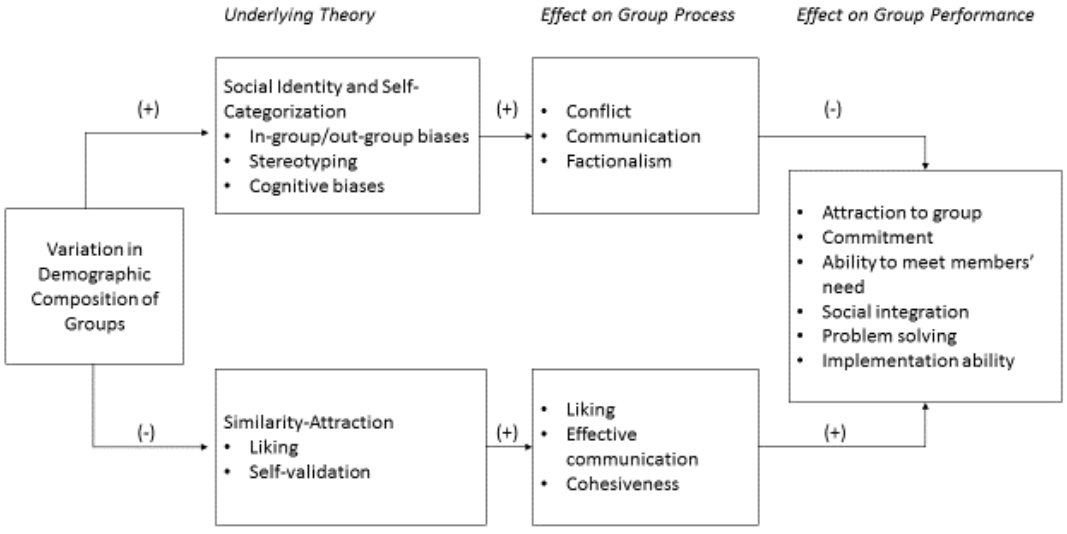
Organizational demography have studied diversity by concentrating on the visible characteristics of tenure, background, age, gender, and race, as these were expected to be the most important markers of diversity[11].

2.2 Explaining Diversity Effects

Social identity and self-categorization (Tajfel & Turner, 1986) and similarity-attraction (Byrne, 1971) theories have been the two conceptual bases that underlie the majority of diversity research, including this paper. William and O'Reilly III (1998) have linked these two theoretical perspectives in a framework[12] (See Figure 1), showing that demographic variations within the group impact group processes (i.e., integration, communication, and conflict), and ultimately group performance (i.e., cognitive outcomes and the well-being of the group and its members).

[9] E.g., O'Reilly III, Caldwell, & Barnett, 1989; Pelled, 1996; Tsui, Egan, & O'Reilly III, 1992.
[10] E.g., Flatt, 1993; Jackson, Brett, Sessa, Cooper, Julin, & Peyronnin, et al., 1991; O'Reilly et al., 1993.
[11] E.g., Pelled, Eisenhardt, & Xin, 1999; Smith, Smith, Olian, Sims, O'Bannon, & Scully, 1994.
[12] This model is just a portion of their model, for the full model also includes an information and decision-making theoretical perspective.

Figure 1. Demographic Impact on Group Process and Group Performance



Source: Williams & O'Reilly III, 1998.

These two theories have been complementary for they have highlighted the possible disruptive effects of "otherness". They have claimed for the positive benefits of homogeneity and the negative impact of heterogeneity on group process and performance. Diversity was anticipated to increase conflict, communication difficulties, and factionalism; and it was hypothesized to decrease the individual's attraction, integration and commitment to the group, the group's problem solving and implementation ability, and its ability to meet the group members' needs. Ultimately, for the individual who is different from others on the salient and relevant demographic attributes, lower organizational attachment may be a consequence of two possible processes: (1) incongruence stemming from one's self-categorization of the group, and its actual demographic composition; and (2) social isolation and lower interpersonal attraction due to attitudinal differences associated with demographic dissimilarities (Tsui et al., 1992).

2.2.1 Social Identity and Self-Categorization

Tajfel and Turner's (1986) social identity and self-categorization theory states that an individual's self-concept derives partly from membership in a group (in-group). The group is a collection of individuals who perceive themselves to be members of the same social category, share some emotional involvement in this common definition of themselves, and achieve some degree of social consensus about the evaluation of their group and of their membership in it. The individuals adopt the identity of the group that they belong to (e.g., family, organization), and act in ways that the perceived members of that group act. As a consequence of the individuals' identification with that group, they develop emotional significance to that identification, and their self-esteems are dependent on it.

Through self-categorization, a process in which individuals categorize themselves and others using salient characteristics[13], individuals perceive themselves as part of a group (in-group), and others as not part of the group (out-group). To maintain the individuals' self-esteem, members of an in-group tend to favorably compare their group against others. Furthermore, they also maximize the differences between their in-group and the others' out-group; this is to maintain that the groups are distinct, and reinforce why they favor their group over the other. Lastly, members of an in-group minimize the differences between in-group members to increase in-group cohesion. (Taylor, Peplau, & Sears, 2006,).

[13] E.g., age, gender, religion, and organizational membership.

This is the theory behind the assertion in organizational demography research, that variations in demographic composition of the team affects group processes (i.e. integration, communication and conflict), and that this process in turn affects group performance (Williams & O'Reilly III, 1998). Empirical research on diversity and demography has noted how individuals within groups may differ from one another, sometimes referred to as relational demography. Diversity can promote the creation of in- and out-groups, and other cognitive biases[14]. Results from these studies have confirmed the negative effects of diversity on group processes and outcomes.

2.2.2 Similarity-Attraction

Similarity-attraction theory posits that people are attracted to others who are similar to themselves in important respects[15]. The importance of similarity extend beyond attitude, with factors like race, religion, politics, social class, education, and age all influencing attraction. There is much truth to the popular adage "birds of a feather flock together" (Taylor et al., 2006).

The similarity-liking connection has been the subject of much research, with Byrne (1971) as a major proponent. Similarity-liking states that one is attracted to others who are similar to them, familiar to them, like them, and are physically attractive (Reis, Aron, Clark, & Finkel, 2013).

There are several reasons why similarity is important in attraction. For one, interaction with a similar other is a likely source of social reinforcement; this similar other likely possesses attitudes and belief that validate one's own. Interaction with a dissimilar other can evolve with (mutual) influencing that increases their similarity over time; or it can result in outright rejection of the dissimilar other. If an outright rejection is anticipated from a dissimilar other, this quickly diminishes the attraction to even interact with them. Furthermore, interaction with a similar other may be more enjoyable as they tend to share interests, values, and activity preferences. Lastly, individuals have more opportunities to encounter and interact with others who have similar attitudes and value, than others with dissimilar preferences.

Some of the earliest organizational demography research were based on the notion that similarity-attraction operate to make heterogeneous groups less effective[16]. Numerous other diversity studies in organization have also invoked this theoretical framework[17]. The similarity-attraction theory yields predictions that have been consistent with the social identity and self-categorization theory. Differences have often result in group processes and performance loss, including less positive attitudes, less frequent communication, and a higher likelihood of turnover from the group, especially among those who are most different (O'Reilly III et al., 1993; Riordan & Shore, 1997).

2.3 Organizational Demography Research in Particular

Organizational demography is the study of the composition of a social entity in terms of its attributes[18], such as tenure, background, age, gender, and race, to name a few (Pfeffer, 1985). It reflects similarity and differences among individuals, making it a meaningful perspective for understanding processes affected by group dynamics, as well as the outcomes of these group dynamics (Wiersema & Bird, 1993).

Demography is measurable, and is oriented toward the essential relational nature of organizations. It is a property of the social aggregate; is important in affecting similarity and social relations; and is a way of understanding certain phenomena in organizations.

Clearly, this approach is a shift from the attention most often paid to intrapsychic processes and psychological constructs (Pfeffer, 1985). These intrapsychic process and psychological constructs have been premised on a number of hypothetical theories that are not directly observable or measurable; have underlying process variables that are not concrete, and/or are ambiguous in their meaning and interpretation; and whose amount of variance explained by these process measures are quite small.

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[14] E.g., Ely, 1994; Pelled, 1996; Pelled et al., 1999; Riordan & Shore, 1997; Tsui et al., 1992.
[15] E.g., attitudes, interests, values, background, personality personalities, and physical attributes.
[16] E.g., McCain, O'Reilly III, & Pfeffer, 1983; Tsui & O'Reilly III, 1989.
[17] E.g., Jackson et al., 1991; Wagner, Pfeffer, & O'Reilly III, 1984.
[18] These variables are treated as the independent variables in organizational demography studies.

"Demography is an important causal variable that affects a number of intervening variables and process, and through them a number of organizational outcomes (Pfeffer, 1983)", quoted Wiersema & Bantel (1992, p. 94). Pfeffer argued that demography might explain more variance in the dependent variable (e.g., firm performance, turnover) than would the presumed intervening construct, which was often underlying mental processes. Demography offers the advantages of objectivity, parsimony, comprehensibility, and logical coherence of cognitive resources.

Nevertheless, simple demographic explanations might generate multiple, mutually exclusive, often implicit theories involving numerous additional concepts (Lawrence, 1997). Furthermore, some demographic indicators may contain more noise than pure psychological measures. For example, a person's educational background may serve as an indicator of socioeconomic background, motivation, cognitive style, risk propensity, and other underlying traits (Hambrick & Mason, 1984).

These criticisms on organizational demography were addressed by the later evolution in research (Williams & O'Reilly III, 1998). The early research investigated the linkages between measures of diversity and outcomes[19]. After demonstrating that diversity was associated with important outcomes, research then focused on opening the "black box" of organizational demography, and explicitly examined the process by which diversity may impact group outcomes[20].

Research in organizational demography has come up with two conclusions, as synthesized by Williams and O'Reilly III's (1998) systematic literature review article. First, there has been substantial evidence from both the laboratory and field studies that variations in group composition can have important effects on group functioning. Increased heterogeneity, especially in terms of tenure and age, has had negative effects on social integration (O'Reilly III et al., 1989) and conflict (Pelled et al., 1999); the one exception to this pattern has been with increased heterogeneity in educational or functional background (e.g., Bantel & Jackson, 1989; Hambrick, Choo, & Chen, 1996). Steps need to be taken to actively mitigate these negative effects, in order to minimize the negative impact of diversity on group performance.

Second, at the micro level, increased diversity typically has had negative effects on the ability of the group to meet its member's needs, and to function effectively over time. Individuals have been affected by the demographic composition of their work groups. Research showed that increased heterogeneity within groups could be associated with lower levels of commitments (Tsui et al., 1992), lower effectiveness, increased role ambiguity (Tsui & O'Reilly III, 1989), and higher levels of turnover (e.g., Wagner et al., 1984; Wiersema & Bird, 1993).

2.3.1 Upper Echelon Perspective

Hambrick and Mason (1984) reinforced the emphasis on background characteristics with its upper echelon perspective. They stated that organization outcomes, strategic choices, and performance levels are practically predicted by managerial background characteristics. One can then consider this a very specific application of organizational demography.

The focus on background characteristics, rather than psychological dimensions, becomes especially important when considering the TMT. For one, the personal experiences, cognitive bases, values, and perceptions of upper level managers have neither been convenient to measure nor even amenable to direct measure. Access to executives to measure psychological or group dynamic variables have been difficult because of the reluctance of top executives to participate in a psychological battery of tests. Besides, some of the background characteristics of greater interest—such as tenure, educational and functional background—have not had close psychological analogs.

Furthermore, upper echelon perspective says top executive matters. They have an important impact on organizational outcomes because of the decision they are empowered to make for the organization. This has been contrary to the view of population ecologists that organizations are swept along by the environment (Hannan & Freeman, 1977).

Some researchers have demonstrated such associations between demographic characteristics of top executives and their behaviors, or organizational outcomes[21]. Yet similar to diversity research in general, there was little consensus about the effects of upper echelon management diversity (Glick et

[19] E.g., Wagner et al., 1984.
[20] E.g., Pelled, 1996; Pelled et al., 1999; Smith et al., 1994.
[21] E.g., Carpenter, 2002; Eisenhardt, et al., 1997; Simons, 1995; Wiersema & Bantel, 1992.

al., 1993). One line of reasoning was that diversity stimulates creativity, change and innovation, and/or comprehensive decision-making, thus leading then to increased organizational performance (e.g., Bantel & Jackson, 1989). The other line of reasoning was that diversity leads to conflict, lack of cohesion, misunderstanding between diverse groups, parochialism, and negative political activity, thus leading to poorer organizational performance; or the flipside, homogeneity has a beneficial stabilizing influence (Eisenhardt & Schoonven, 1990). This latter line of reasoning was in line with the prediction of the social identity and self-categorization, and similarity-attraction theories.

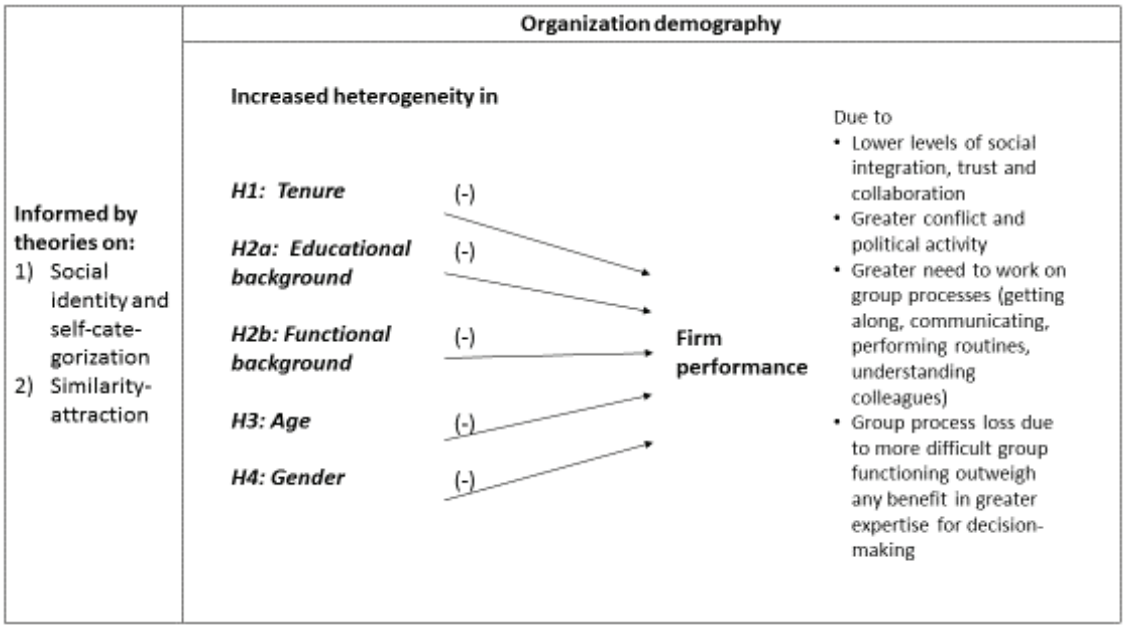
3 Hypotheses

Organizational demography explores the direct effect of demographic characteristics (such as tenure, educational and background, age, and gender) on performance. It eliminates the difficulty of measuring all the possible intervening process variables to understand performance.

Meanwhile, the theories of social identity and self-categorization, and similarity-attraction argue for the negative effects of diversity on group performance and processes. The presence of others who are different increases the categorization of in- and out-groups, as well as increases cognitive bias; and a diverse group offers less opportunity for interpersonal attraction based on similarity. There have also been several studies supporting these negative effects of increased heterogeneity/decreased homogeneity (See Appendices A and B).

Thus, this study hypothesized that heterogeneity in the various TMT demographic characteristics has a negative impact on firm performance (See Figure 2).

Figure 2. TMT Demographic Model: Summary of Hypotheses



3.1 Tenure

Tenure homogeneity, that is compositional similarity in the length of stay in the entity, benefits the group through better team dynamics and adaptation to organizational change (O'Reilly III et al., 1993); increased communication frequency (Zenger & Lawrence, 1989); and better implementation of innovation (Flatt, 1993). O'Reilly III et al. (1993) showed that tenure homogeneity has more effective patterns of interaction. This did not mean that these teams do not have conflict; they were just better able to deal with conflict, and build consensus around important issues.

Furthermore, there was also evidence that showed tenure heterogeneity, that is compositional difference in the length of stay in the entity, was associated with lower levels of social integration (O'Reilly III et al., 1989), greater emotional conflict (Pelled, 1996; Pelled et al., 1999), and less diversification (Michel & Hambrick, 1992). O'Reilly III et al. (1993) found that teams with more tenure heterogeneity have lower levels of trust and collaboration, and higher levels of conflict and political activity.

The consequence of tenure heterogeneity may lead to turnover in teams (McCain et al., 1983; O'Reilly III et al., 1989; O'Reilly III et al., 1993; Wagner et al., 1984; Wiersema & Bird, 1993). To find out the causality of these findings, O'Reilly III et al. (1989) examined both the direct and indirect effects of heterogeneity in tenure on social integration and turnover. Results showed that tenure diversity has an indirect effect on turnover through its effect on social integration; increased diversity leads to lower social integration, which resulted in higher turnover among those who are not socially integrated.

Wagner et al. (1984) suggested that people who enter at roughly the same time are more likely to communicate with each other, than those who enter either much earlier or later; this is because of free communication capacity, and interest in forming relationships. Furthermore, as communication frequency increases, the more likely those interacting become more similar in terms of their beliefs and perception of the organization, and how to cooperate; they also become more integrated and cohesive.

Eisenhardt and Schoonven (1990) echoed these thoughts as they posited that executives who have a history of working together have probably learnt how to get along, and communicate with each other. They were also likely to have learnt performance routines for making decisions quickly and were more likely to understand the idiosyncrasies and strength of their colleagues. They can save valuable time in building coordination and trust, and focus quickly on firm problems, rather than on group process issues.

Thus, it was hypothesized that:

H1A: Heterogeneity in tenure is negatively related to firm performance.

3.2 Background

Educational and functional backgrounds are used as a proxy for information, knowledge, skills and expertise, and networks and affiliations that individuals bring to a group (Hambrick et al., 1996). On one hand, heterogeneous groups are expected to contain more relevant expertise than homogeneous groups, and the prediction is that this makes for better decisions. However, individuals who share similar educational and/or functional background are also likely to have similar sets of values, and the prediction is that this makes for smooth group processes. Thus, background heterogeneity may not be unambiguously positive, as it makes group functioning more difficult.

On the positive, both educational and functional diversity have shown positive effects on performance (Hambrick et al., 1996). Educational diversity has shown positive effects on firm diversification (Wiersema & Bantel, 1992) and firm performance (Carpenter, 2002; Smith et al., 1994). Meanwhile, functional diversity has shown positive effects on innovation (Bantel & Jackson, 1989). Nuancing these results, Simons (1995), and Simons, Pelled, and Smith (1999) found that educational and functional diversity, respectively, are only advantageous when the groups are able to engage in open debate, while Carpenter (2002) found functional diversity only advantageous at low levels of complexity (internationalization).

Yet on the negative, functional diversity has been associated with lower return on investment (ROI), social integration and informal communication (Smith et al., 1994); and together with educational diversity, increased turnover (Jackson et al., 1991). It has also shown to increase task conflict, but this translated to improved performance (Pelled et al., 1999).

Given these ambiguous results and the negative effects of diversity predicted by the theories of social identity and self-categorization and similarity-attraction, it was hypothesized that:

H2A: Heterogeneity in educational background of TMT is negatively related to firm performance.

H2B: Heterogeneity in functional background of TMT is negatively related to firm performance.

3.3 Age

Age is a visible demographic characteristic that may easily affect group processes. Individuals born in similar times may develop similar outlooks on life and shared experiences. Those similarities increase the likelihood of interpersonal attraction and shared values, in line with the social identity and self-categorization, and similarity-attraction theories (Zenger & Lawrence, 1989). On the reverse, groups characterized by heterogeneity in age may find communication more difficulty, conflict more likely, and social integration more difficult to attain. However, age diversity may also have a positive impact on creativity and performance within the group.

Age heterogeneity has shown negative effect or no major effect on group performance. Some studies have shown it was negatively associated with TMT dynamics (O'Reilly III et al., 1993) and emotional conflict (Pelled et al., 1999). It was also linked to lower commitment (Tsui et al., 1992); and has been shown to predict turnover (Jackson et al., 1991; O'Reilly III et al., 1989; Wiersema & Bird, 1993). Meanwhile, other studies showed it has no significant relationship with innovation (Bantel & Jackson, 1989; Flatt, 1993), with firm performance (Simons, 1995), or diversification (Wiersema & Bantel, 1992).

Limited research supporting the positive effect of age heterogeneity, and given the negative effects of diversity predicted by the theories of social identity and self-categorization, as well as similarity-attraction, it was hypothesized that:

H3: Heterogeneity in age of TMT is negatively related to firm performance.

3.4 Gender

There are several researches that have focused primarily and/or solely on gender in their diversity studies. These studies offer a more fine-grained examination of the effects of gender diversity on group processes and performance. Only a few organizational demography studies have included gender as one of the demographic variables of interest

The few organizational demography studies that included gender and have shown it to be significant have positively associated increased gender heterogeneity with emotional conflict (Pelled, 1996). Ely (1994) cautioned that these studies that include gender have to be interpreted carefully, because the typical measures of gender diversity may obscure proportionality effect. Relationship between gender diversity and group processes was likely to be dependent on the proportions of men and women present in the group (and not simply the group's heterogeneity), with gender diversity having a negative impact on groups where males are in the minority.

Indeed, research including gender diversity has shown different effects of diversity on males and females (Fairhurst & Snavely, 1993; Tsui et al., 1992). Men did not feel the typical social isolation women did when they were in the minority (Fairhurst & Snavely, 1993). Furthermore, men and women responded differently, and may have asymmetrical experiences as minority. Men displayed lower levels of satisfaction and commitment when they were in the minority (Tsui et al., 1992).

There is a dearth of research supporting the positive effect of gender heterogeneity. Given the negative effects of diversity predicted by the theories of social identity and self-categorization, as well as similarity-attraction, it was hypothesized that:

H4: Heterogeneity in gender of TMT is negatively related to firm performance.

4 Methodology and Results

This study used a panel data of the 40 TMT of holding firms listed in the Philippine Stock Exchange (PHISIX) as its sample. The independent variables were the TMT's demographic characteristics (tenure, educational and functional background, age, and gender), while the dependent variable was the firm's performance (revenue growth and ROA). Panel regression was used to investigate the relationship between these variables.

4.1 Sample

This study used the 40 TMT of holding firms listed in the PHISIX as its sample (see Appendix C). The unit of analysis was the firm. These firms' large—often dominant—presence in diverse industries have had a significant influence on the country's economy; thus, the TMTs helming these groups of firms clearly have a larger and broader impact than TMTs of individual firms. This type of organization, and the TMTs leading them, has had particular value in developing markets. Khanna and Yafeh (2015) pointed out that they are responses to prevailing economic condition and, in the case of the Philippines, in line with the poor institutional infrastructure of the country. Furthermore, Ramachandran, Manikandan, and Pant (2013) suggested that holding firms (or group centers) provide strategy and identity value to their affiliated firms. As to strategy, they help the affiliate firms develop and reshape their strategic frames, as well as challenge the affiliates to set their sights higher. As to identity, their brand, reputation, and/or organizational entity may be an important source of value; it can be a lever to shape beliefs, perceptions, and motivation of customers, employees, and business partners.

A panel data set was used, where the relationship between the holding firms TMT demographic characteristics and firm performance are observed across three time periods— 2009, 2012 and 2015. This resulted in a total sample size of 115 observations. The time gaps between these three time periods made the panel unbalanced. Panel data allowed the study of changes in the dependent variable over time, making it possible to eliminate the effect of omitted variables that differ across entities, firms but are constant over time (Stock & Watson, 2011). Furthermore, the use of panel data increased the sample size, improving efficiency with more precise estimates (Flatt, 1993; Hambrick et al., 1996).

TMT members were defined as the Executive Officers listed in the firm's Securities and Exchange Commission (SEC) Annual Report (SEC 17-A, Part III, Item 9. Directors and Executive Officers of the Issue). The firms' SEC 17-A, as of the end 2009, 2012, and 2015, were the primary source of TMT demographic information, as well as information on ownership structure and firm age. To fill in the gaps in TMT demographic information, available online data from Reuters, Bloomberg, Wall Street Journal, and LinkedIn were leveraged. Meanwhile, firms' financial data were obtained from Thomson Reuters Worldscope.

4.2 Definition and Measurement of Variables

Table 1 summarizes the definition and measurement of variables used.

Table 1 . Definition and Measurement of Variables

Variable	Definition	Measurement
Dependent Variables, Firm Performance		
Growth	• Revenue growth • Used by Eisenhardt & Schoonven, 1990; Simons 1995; Simons et al., 1999; Smith et al., 1994	• Average revenue growth for the last three years as of end 2009, 2012, and 2015
Returns	• ROA • Used by Carpenter, 2002; Michel & Hambrick, 1992	• Average ROA[22] for the last three years as of end 2009, 2012, and 2015
Independent Variables, TMT Demographics		
Tenure	• Number of years the TMT member has been part of the TMT	• Standard deviation (SD)
Educational Background		
• Educational Degree	• Categorical variable based on the highest educational degree attained by the TMT member: 1- College; 2- Masters, including law; and 3- Doctoral/PhD • Used by Jackson et al., 1991; Tsui & O'Reilly III, 1989	• Blau's measure of heterogeneity = $\left(1 - \sum p_i^2\right)$, where p is the proportion of group members in a category and i is the number of different categories represented in the team
• Educational Specialization	• Categorical variable based on the area of specialization of the highest educational degree attained by the TMT member: 1- Liberal arts; 2-	

[22] Income before extraordinary items divided by total assets.

Variable	Definition	Measurement
	Science; 3- Engineering; 4- Business and economics; 5- Law; 6- Others • Used by Carpenter, 2002; Hambrick et al., 1996; Wiersema & Bantel, 1992	
• Educational Institution	• Categorical variable based on the institution where the highest educational degree was obtained from: 1- Local; 2- International • Used by Wiersema & Bird, 1993	
Functional Background	• Categorical variable based on the TMT member's current role: 1- Finance or accounting; 2- Legal; 3- Operations or production; 4- General management; 5- Corporate staff (e.g., human resource, strategic planning); 6- Others • Used by Hambrick et al., 1996; Michel & Hambrick, 1992; Simon, 1995; Simon et al., 1999	• Blau's measure of heterogeneity
Age	• Number of years from TMT member's date of birth	• SD
Gender	• Categorical variable based on the TMT member's gender: 1- Female; 2- Male	• Blau's measure of heterogeneity
Control Variables		
Firm Size	• Total Assets divided by TMT Size, with TMT Size equal to the total number of TMT members	• Log[23] (Total Assets/TMT Size) as of end 2009, 2012, and 2015
Primary Business	• Business providing largest share of revenue • Used by Carpenter, 2002; Flatt, 1993; Wiersema & Bantel, 1992	• Categorical variable based on the Philippine Standard Industrial Classification (PSIC), ("Philippine Statistics Authority", n.d.): 1- Mining and quarrying; 2- Manufacturing; 3- Electricity, gas, steam and air-conditioning supply; 4- Water supply, sewerage, waste management and remediation activities; 5- Construction; 6- Wholesale and retail trade; repair of motor vehicles and motorcycles; 7 Other services: Information and communication; Professional, scientific and technical services; 8- Financial and insurance activities; 9- Real estate activities; 10- Arts, entertainment and recreations
Ownership Structure	• Concentration of ownership; majority (51%) ownership as of end 2009, 2012, and 2015	• Binary variable: 0-Concentrated in one family or shareholder; or 1- More dispersed
Firm Age	• Used by Michel & Hambrick, 1992; Wagner et al., 1984	• Number of years from the date of incorporation as of end 2009, 2012, and 2015

4.2.1 Dependent Variables

The firm's performance— revenue growth or ROA— was the dependent variable. ROA was used instead of return on equity or ROI because it is less sensitive to the firm's capital structure. All these returns were correlated. For both measures, averages over a three-year period were used to capture the effects of decisions that require longer timelines to implement, as well as to smoothen any potential aberrations associated with a single year's firm performance.

[23] Logs are used in order to: (1) smoothen the data given the large differences in total assets among the companies; and (2) capture any changing effect in the TMT size; in a small group, the addition of one person can increase team heterogeneity substantially (Bantel & Jackson, 1989).

4.2.2 Independent Variables

The TMT's demographic characteristics— tenure, educational and functional background, age, and gender— were the independent variables.

Harrison and Klein (2007) strongly espoused that the choice of measure should be driven by the theoretical specification of diversity type[24] to avoid mismatch, and possibly misleading conclusions. Tenure and age are conceptualized as separation, and SD is the heterogeneity measure of choice. The higher the SD, the greater the heterogeneity, while the smaller the SD, the greater the homogeneity. Using SD was a departure from the use of coefficient of variation (CV)[25] in previous studies. CV measures disparity and is an asymmetrical index that may wrongly capture the symmetric conceptualization of separation.

Meanwhile, educational and functional background, and gender were conceptualized as variety, and Blau's index of heterogeneity[26] was the heterogeneity measure of choice. The higher the index, the greater the heterogeneity, while the smaller the index, the greater the homogeneity.

4.2.3 Control Variables

Several variables— firm size, primary business, ownership structure, and firm age— were controlled for because of their potential influence on either heterogeneity or firm performance.

Firm size, which is a ratio of total assets and TMT size, has affected both heterogeneity and firm performance. Larger firms have greater resources, as well as greater complexity, both factors potentially influencing firm performance (Wiersema & Bantel, 1992). Meanwhile, larger TMT sizes have greater potential for heterogeneity. Also, in a small group, the addition of one person has increased team heterogeneity substantially (Bantel & Jackson, 1989; Wiersema and Bantel, 1992).

Ownership and firm age have also affected heterogeneity. Majority family owned firm may have more homogeneous family members in the TMT. Firm age, on the other hand, has placed a boundary on tenure heterogeneity; young organizations have had a lower boundary on team tenure than older organizations (Michel & Hambrick, 1992).

Lastly, firm performance was affected by primary business, a reflection of the firm's industry membership (Carpenter, 2002).

4.3 Results

4.3.1 Descriptive Statistics

Table 2 presents the means, standard deviations, and correlation coefficients among all variables,

Multi-collinearity did not appear to be an issue among the variables upon visual inspection. The largest correlation among the variables was between Return and Growth at -0.63, which was significant.

The large means and standard deviations in Growth and Return reflected the spread and level of activity of the holding firms. Of the 40 holding firms listed in the PHISIX, only three-quarters can be considered actively operating. The remaining quarter were in different levels of low activity: holding/preservation pattern with no revenue from operating business but rather revenues from existing investment; some looking for new investment opportunities, others not; and even two firms suspended from trading in the stock market trading due to failure to meet disclosure requirements. Given these large dispersion, observations (a total of 10) with excessive positive or negative growth were eliminated in the succeeding regression analysis. These large swings in growth were driven by

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[24] Harrison and Klein, 2007 identify three types of diversity: 1) separation, composition of difference in (lateral) position in a continuum, which leads to interval scale measurement; 2) variety, composition difference in kind, source or category, which leads to categorical scale measurement; and 3) disparity, composition difference (vertical) of proportion, which leads to ratio scale measurement.

[25] The following studies use CV as a heterogeneity measure: Bantel & Jackson, 1989; Carpenter, 2002; Flatt, 1993; Jackson et al., 1992; Michel & Hambrick, 1992; O'Reilly III et al., 1989; Pelled et al., 1999; Simon, 1995; Simon et al., 1999; Smith et al., 1994; Wagner et al., 1984; Wiersema & Bantel, 1992; and Wiersema & Bird, 1993.

[26] The following studies use Blau's index of heterogeneity: Bantel & Jackson, 1989; Carpenter, 2002; Jackson et al., 1992; Simon, 1995; Simon et al., 1999; Smith et al., 1994.

one-off gains/losses from disposal of assets, or gains in fair value change in investment properties, or the initial consolidation of subsidiary results.

As to heterogeneity measure, in terms of variety, functional (M = 66.52) and educational specialization (M = 54.52) showed the largest heterogeneity. It is not surprising to see greater heterogeneity in these two categorical measures given they have more categories (six each); the other categorical measures of educational degree and institution, and gender measures, only have two or three categories each. Meanwhile in terms of separation, age heterogeneity showed larger heterogeneity and dispersion (M = 10.28, SD = 4.46) than tenure heterogeneity (M = 5.48, SD = 3.41).

Figure 3 graphically shows the distribution of the seven heterogeneity measures. For each demographic variable, the heterogeneity measures were ranked ordered and an area chart created to show its compositional spread.

Figure 3. Graphical Representation of the Heterogeneity Measures

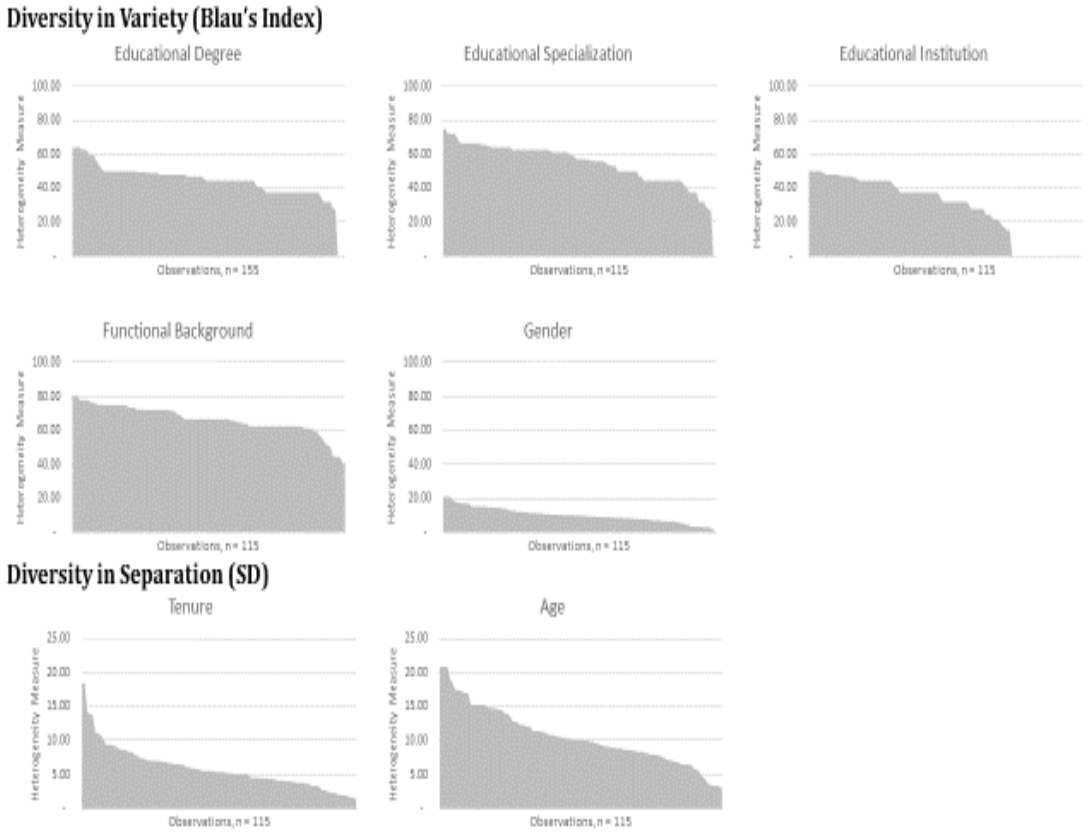

Table 2. Mean, Standard Deviation and Correlation Matrix

	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Growth	-80481	3166953	1.00												
2. Return	-40.25	348.92	-0.63*	1.00											
3. Tenure Heterogeneity	5.48	3.41	-0.03	0.14	1.00										
4. Educational Degree Heterogeneity	43.95	11.32	-0.03	0.01	0.00	1.00									
5. Educational Specialization Heterogeneity	54.52	13.09	-0.07	0.06	0.11	0.07	1.00								
6. Educational Institution Heterogeneity	27.85	18.49	-0.10	0.17	-0.04	0.03	0.00	1.00							
7. Functional Heterogeneity	66.52	8.37	-0.01	0.03	-0.06	-0.01	0.36*	0.25*	1.00						
8. Age Heterogeneity	10.28	4.46	-0.08	0.23*	0.25*	-0.12	-0.05	0.08	-0.09	1.00					
9. Gender Heterogeneity	36.01	15.61	-0.04	-0.06	-0.09	-0.03	-0.06	-0.24*	-0.08	-0.23*	1.00				
10. Firm Size	5.88	1.40	-0.15	0.33*	-0.01	0.22*	-0.02	0.26*	0.02	-0.02	0.10	1.00			
11. Primary Business	6.38	2.89	-0.19*	0.17	0.27*	0.00	0.17	-0.01	0.06	0.09	-0.20*	-0.13	1.00		
12. Ownership Structure	0.33	0.47	0.11	-0.14	-0.25*	0.20*	0.08	-0.11	0.01	0.09	-0.16	-0.22*	0.27*	1.00	
13. Firm Age	40.03	21.05	0.02	-0.07	0.06	-0.07	0.10	-0.07	-0.01	-0.12	-0.08	-0.02	-0.07	-0.15	1.00

Table 3. Descriptive Statistics: Holding Firms

TMT Team Size	Share
1-5	56%
6-10	31%
10-15	10%
16-20	3%
Total	100%
Mean	6.28
Median	5
Mode	4

Ownership Structure	Share
Concentrated with a Family or Shareholder	67%
More Dispersed	33%
Total	100%

Primary Business	Share
Mining and Quarrying	7%
Manufacturing	12%
Electricity	7%
Water Supply	3%
Construction	3%
Wholesale and Retail Trade; including Motor Vehicles	4%
Other Services: Information & Communication; Professional, Scientific and Technical Activities	3%
Financial and Insurance Activities	37%
Real estate activities	21%
Arts, Entertainment & Recreation	3%
Total	100%

Table 4. Descriptive Statistics: TMT Members

Educational Degree (Highest level)	Share
College	48%
Masters, including Law	50%
Doctoral	2%
Total	100%

Educational Specialization (Highest level)	Share
Liberal Arts	3%
Science	3%
Engineering	7%
Business and Economics	49%
Law	27%
Others	11%
Total	100%

Educational Institution (Highest level)	Share
Local	74%
International	26%
Total	100%

Functional Specialization	Share
Finance and Accounting	34%
Legal	24%
Operations and Production	5%
General Management	20%
Corporate Staff	12%
Others	5%
Total	100%

Gender	Share
Male	67%
Female	33%
Total	100%

Table 3 and 4 further describe the data set in terms of the various dimensions of the holding firms and TMT members, respectively.

The profile of the holding firms was as follows: (1) TMT size ranged from three to 20 members, with mean = 6.28, median = 5, and mode = 4; (2) majority (67%) are family owned or controlled by a major shareholder; and (3) most were involved in financial and insurance (37%), and real estate (21%) activities, with revenue coming anywhere from rental income, investment income, and gains on investment or disposal.

Meanwhile, the profile of the TMT members was as follows: (1) average tenure of 9 years, tenure ranging from recent appointment to 42 years in the TMT, and median tenure of 27 years; (2) all college graduates, with over half (52%) obtaining a post-graduate degree; (3) almost majority (49%) with a degree in the field of business and economics, and over one-quarter (27%) with a law degree; Philippine corporate governance law requires a Corporate Sectary, preferably with a law degree, to be an officer of the firm (Revised Code of Corporate Governance, 2009); (4) majority educated locally (74%); (5) three functions dominate the TMT reflecting the three major roles seen in every team— general management (President and/or CEO), finance and accounting (CFO and/or Treasurer), and law (Corporate Secretary); (6) dominated by males (67%); and (7) average age of 53, age ranging from 27 to 94, and median age of 60 years old.

4.3.2 Regression Results

Panel regression was used to analyze the data. In particular, fixed effect panel regression was used, which controlled for omitted variables in panel data when the omitted variables vary across entities (states) but did not change over time; the slope coefficients β in the regression were the same for all states, but the intercept of the regression line varied from one state to the next (Stock & Watson, 2011).

Table 5 shows the results of the panel regressions.

Table 5. Summary of Regressions

	Revenue Growth			ROA		
	1	2	3	4	5	6
	Control Variable	Heterogeneity Variables	All Variables	Control Variable	Heterogeneity Variables	All Variables
Firm Size	419.96		182.81	7.78		7.84
	(163.18)**		(94.38)*	(2.53)***		(2.90)**
Primary Business	0.96		10.10	0.07		0.04
	(3.67)		(3.19)***	(0.06)		(0.05)
Ownership Structure	1581.01		-23.67	4.43		2.46
	(1021.47)		(455.53)	(2.54)*		(6.41)
Firm Age	19.10		40.50	-0.12		0.14
	(17.18)		(20.43)*	(0.49)		(0.70)
Tenure Heterogeneity		9.59	-21.17		-0.80	-1.31
		(27.74)	(27.36)		(0.82)	(1.26)
Educational Degree Heterogeneity		74.88	71.91		0.06	-0.08
		(25.00)***	(19.98)***		(0.17)	(0.26)
Educational Specialization Heterogeneity		4.41	0.02		0.13	-0.10
		(6.09)	(6.55)		(0.30)	(0.30)
Educational Institution Heterogeneity		-29.85	-27.55		0.28	0.29
		(12.53)**	(8.60)***		(0.15)*	(0.18)
Functional Heterogeneity		-15.75	-12.50		-0.23	-0.19
		(10.03)	(6.59)*		(0.14)*	(0.17)
Age Heterogeneity		27.29	10.84		0.04	0.09
		(19.79)	(18.77)		(0.40)	(0.56)
Gender Heterogeneity		-9.64	-11.68		0.13	0.04
		(5.37)*	(5.11)**		(0.16)	(0.12)

Table 5, cont'd

	Revenue Growth			ROA		
	1	2	3	4	5	6
	Control Variable	Heterogeneity Variables	All Variables	Control Variable	Heterogeneity Variables	All Variables
Adjusted R-squared	0.48	0.64	0.76	0.24	0.06	0.30
No. of Observations	105	105	105	105	105	105
Primary Business F-Statistic(1)	1.93		4.88	20.50		16.54
Primary Business -p-value(1)	0.09		0.00	0.00		0.00

Note: Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01; constants estimated but not reported. (1)These F-Statistic and p-value are joint significant test of the control categorical variable Primary Business.

The first set of regression (1 to 3) regressed the variables on Revenue Growth, while the second set (4 to 6) on ROA. Regressions against Revenue Growth presented better results. Meanwhile regressions 1 and 4 regressed with only the control variable, 2 and 5 with only the heterogeneity variable, and 3 and 6 the full model including both set of variables.

Results of regressions against Revenue Growth improved with the addition of the heterogeneity variables over the control variables (adjusted R^2 from 0.48 to 0.76). Also, four of the seven heterogeneity variables— education specialization, educational institution, functional and gender heterogeneity—were significant. The same improvement in regression results with the addition of heterogeneity variables cannot be said for regressions against ROA, with no heterogeneity variable showing statistical significance.

Results from regression model 3 showed majority of the heterogeneity variables were statistically significant and were related to firm performance, except for tenure, educational specialization and age heterogeneity. However, only two of the five hypotheses are supported – functional (H3) and age (H5) heterogeneity.

Tenure heterogeneity, though correctly signed, was not statistically significant; this rejects H1, which stated the tenure heterogeneity is negatively related to firm performance. The three measures of educational heterogeneity gave conflicting results, making it difficult to support H2 that educational background heterogeneity is negatively related to firm performance: (1) educational institution heterogeneity (β = -27.55, p < 0.01) was statistically significant and correctly signed; (2) educational degree heterogeneity (β = 71.91, p < 0.01) was statistically significant but incorrectly signed; and (3) educational specialization heterogeneity was statistically insignificant, as well as incorrectly signed. Functional heterogeneity (β = -12.50, p < 0.10) was statistically significant, and correctly signed, providing support for H3 that functional background heterogeneity is negatively related to firm performance. Age heterogeneity was not statistically significant, and also incorrectly signed; this rejects H4, which stated the age heterogeneity is negatively related to firm performance. Lastly, gender heterogeneity (β = -11.68, p<0.05) was statistically significant, and correctly signed, providing support for H5 that gender heterogeneity was negatively related to firm performance.

5 Discussion and Conclusions

This paper's objective was to determine if there is a relationship between the heterogeneity in the TMT's demographic characteristics and firm performance. The results do support that differences in TMT composition are associated with firm performance.

Functional and gender heterogeneity were negatively related to firm performance, in line with the hypotheses and similar to the results of some prior studies: Carpenter (2002), at high levels of complexity, and Smith et al. (1994) have shown increased functional heterogeneity negatively impacts firm performance. Gender showed the lowest heterogeneity amongst all the diversity in variety measures (See Figure 3), yet increasing compositional changes in gender (i.e., the addition of one more person in the gender minority) can negatively impact firm performance.

Tenure heterogeneity was negatively related to firm performance, in-line with the hypothesized direction, albeit it was not statistically significant. Other studies have reflected the same absence of statistical significance of tenure heterogeneity to firm performance (Michel & Hambrick, 1992; Simons, 1995; Simons et al., 1999). Tenure heterogeneity's impact on group outcomes may be best captured though measures other than firm performance, like turnover (McCain et al., 1983; O'Reilly III et al., 1989; O'Reilly III et al., 1993; Wagner et al., 1984; Wiersema & Bird, 1993). After all, a member discontent with the team due to differences can simply leave the team.

Education heterogeneity's impact to firm performance is inconclusive as the three measures used show both positive and negative coefficients and different significance levels: (1) educational degree shows a positive, significant relationship; (2) educational specialization shows an insignificant relationship; and (3) only educational institution shows a negative, significant relationship supporting H2. Further investigation may consider finding a single, composite measure[27] to capture the various sources of heterogeneity in education (i.e., degree, specialization, and institution).

Lastly, age heterogeneity showed no effect to firm performance, contrary to the hypothesized negative impact, but similar to the results of some prior studies (Simons, 1975; Simons et al., 1999). Similar to tenure, age heterogeneity's impact on group outcomes may be best captured through measures other than firm performance, like turnover (Jackson et al., 1991; O'Reilly III et al., 1989; Wiersema & Bird, 1993).

Aside from the theoretical reason of social identity and self-categorization, and similarity-attraction, the negative impact of diversity in Philippine holding firms may be amplified by the Philippine cultural and economic context, and the resulting business practices it encourages. Culturally, the Philippine is a collectivistic society, manifested in a close long-term commitment to the member group. In collectivist societies, employer-employee relationships are perceived in moral terms (like a family link), hiring and promotion decisions take account of the employee's in-group, and management is the management of groups ("Philippines - Geert Hofstede", n.d.). Thus, harmonious group processes is valued, and conflict and factionalism is minimized.

Economically, the environmental context the firm competes in may dictate what a successful TMT looks like. Hambrick et al. (1996) pointed out that heterogeneous TMTs are valuable for broad gathering of information, decision creativity and boldness; however, these heterogeneous TMTs show friction and slowness in decision-making and action, which homogenous TMT are at an advantage. In the Philippine context, such creativity and boldness may not be necessary. A quarter of the holding firms are at low levels of activity, and those who are active may not face demanding competitive pressure given their already significant influence on the country's economy, through their large—often dominant —presence in diverse industries.

Furthermore, the ownership structure may shape the TMT's composition through its selection process. Ownership and management are not necessarily separate in Philippine holding firms. Given the majority of the holding firms are controlled by a family or a shareholder, having several family members in the TMT is commonplace. Jackson et al. (1991) pointed out that a reliance on internal recruitment contribute to the creation of homogeneous TMT; and in the holding firms' case, it is more like internal family recruitment. Thus, demographic heterogeneity, due to different tenure and ages (especially if family members span different generations), gender, and background, may mask homogeneity in principles, values and beliefs.

This paper contributes to the knowledge on diversity, organizational demography in particular, outside of the United States. On an applied dimension, this paper's results may inform the selection of TMT members to support the TMT's success.

Like any investigation, this study has several limitations. One, the sample is limited to listed Philippine holding firms, so its results may not be generalizable to other firms in and outside the Philippines. Two, this study focuses on the main effect of heterogeneity on firm performance, neglecting interaction effects, moderating, and/or mediating factors that may impact firm performance. Three, though demographic data are very objective and accessible in describing TMT characteristics, replication with clinical and psychometric data is beneficial.

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[27] E.g. combine and create different categorization from this current study, like Business-Undergraduate-Local, Business-Graduate-Local, Business-Undergraduate-Foreign, and Business-Graduate-Foreign.

Other opportunities for future research opens up as this paper establishes a link between diversity and outcomes, such as: (1) examining the process by which diversity may impact outcomes and separately why these effects occur; (2) studying the mediating and moderating factors of these links, such as conflict; (3) considering other diversity constructs in measuring team composition (Harrison & Klein, 2007), such as using all variety measures by converting tenure and age into categorical variables or using all disparity measures by capturing proportional measures within the team; (4) exploring the effect of diversity on other team outcomes like turnover; (5) determining the antecedents of diversity, as well as drivers for variations in the demographic composition of teams, e.g., hiring patterns, legal pressures, technological regimes (Pfeffer, 1985); and lastly, (6) understanding how successful teams are able to harness diversity.

In conclusion, this study shows that TMT composition impacts firm performance. Consequently, the thoughtful selection of the TMT members and the team's composition matters.

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Appendix A

Summary of Some Prior Research on Organizational Demography

Author/s (Year)	Independent Variables	Dependent Variables	Results
Studies Focused on Group Process			
Eisenhardt, Kahwajy, & Bourgeois (1997)	• Organization tenure • Education • Age • Gender	• Conflict	• N = 12 TMT of technology companies • Homogeneous teams have less conflict, and perform less well.
Pelled (1996)	• Organization tenure • Gender • Race	• Conflict • Perceived productivity	• N = 42 blue collar teams of a company • Tenure and gender diversity are associated with emotional conflict. • Race is not significant to conflict. • Emotional conflict is associated with decreased perceived productivity.
Riordan & Shore (1997)	• Team tenure • Gender • Race	• Cohesiveness • Commitment • Productivity • Advancement	• N= 98 teams of a life insurance company • Race is related to the outcomes. • Tenure and gender similarity are not significant to the outcomes.
Tsui, Egan, & O'Reilly III (1992)	• Organization tenure • Education • Age • Gender • Race	• Commitment • Absences • Intent to stay	• N = 151 teams from 3 companies • Increasing age and race diversity are associated with lower levels of commitment. • Asymmetrical effects are found for gender and race diversity, with whites and men experiencing larger negative effects with increased team heterogeneity.
Tsui & O'Reilly III (1989)	• Organization tenure • Job tenure • Education • Age • Gender • Race	• Reputational effectiveness • Supervisory affect • Role ambiguity • Role conflict	• N = 272 superior-subordinate dyads of a company • Increasing differences in supervisor-subordinate demographic characteristics are associated with lower effectiveness, less liking, and increased role ambiguity.
Zenger & Lawrence (1989)	• Organization tenure • Age	• Communication fre quency • Communication inside and outside group	• N = 88 R&D personnel of an electronic company • Inside the team, age homogeneity is positively related to frequency of technical communications; tenure homogeneity is not significant. • Outside the team, both tenure and age homogeneity are positively related to frequency of technical communication, with tenure homogeneity exerting more influence.
Studies Focused on Group Performance			
Bantel & Jackson (1989)	• Organization tenure • Education • Function • Age	• Innovation	• N =199 TMT of banks • Tenure, educational, and age heterogeneity are not significant to innovation. • Functional heterogeneity is positively associated with innovation.
Carpenter (2002)	• TMT tenure • Education • Function	• ROA	• N = 297 TMT of large and medium-sized S&P companies • Tenure and functional heterogeneity are positively related to ROA at low levels of complexity (internationalization); but they are negatively related at high levels of complexity. • Educational heterogeneity is positively related to ROA.

Author/s (Year)	Independent Variables	Dependent Variables	Results
Eisenhardt & Schoonhoven (1990)	• TMT tenure • Industry experience	• Firm growth (sales)	• N= 92 TMT of semiconductor companies • Members' past experience together and members' heterogeneity in industry experience are positively associated with growth.
Flatt (1993)	• TMT tenure • Age	• Innovation	• N= 71 TMT of manufacturing companies • Tenure heterogeneity in vice president teams promotes innovativeness, and the innovations are successfully implemented by homogeneous executive teams. • Age is not significant to innovation.
Hambrick, Cho, & Chen (1996)	• Organization tenure • Education • Function	• Performance (growth in market share and profits)	• N = 32 TMT of airlines • All three types of heterogeneity are independently, and positively related to performance.
Jackson et al. (1991)	• Organization tenure • Education • Industry experience • Age	• Turnover	• N = 93 TMT of banks • Diversity in age, educational degree, college curriculum, and industry experience are most predictive of turnover. • Tenure is not significant to turnover.
McCain, O'Reilly III, & Pfeffer (1983)	• Organization tenure	• Turnover	• N= 32 academic departments of a university • Gaps in the time of entry of new members increase turnover.
Michel & Hambrick (1992)	• TMT tenure • Function	• Strategic diversification • ROA	• N = 134 TMT of Fortune 500 companies • Increased tenure homogeneity is linked to less diversification. • Functional homogeneity is not significant to diversification. • Tenure and functional homogeneity are not significant to ROA.
O'Reilly III, Caldwell, & Barnett (1989)*	• Team tenure • Age	• Social integration • Turnover	• N = 20 work groups of a store chain • Tenure heterogeneity is associated with lower levels of social integration, which in turn is associated with greater turnover. • Age heterogeneity is directly and positively related to turnover; and it is not moderated by social integration.
O'Reilly III, Snyder, & Boothe (1993)*	• Organization tenure	• TMT dynamics • Organizational changes • Turnover	• N = 24 TMT of electronic companies • Tenure homogeneity is positively related to team dynamics and adaptive organization change; but it is negatively related to turnover.
Pelled, Eisenhardt, & Xin (1999)*	• Organization tenure • Function • Age • Gender • Race	• Conflict • Team performance	• N = 45 teams from 3 companies • Functional background diversity drives task conflict, and task conflict is positively related to performance. • Tenure and race diversity are positively associated with emotional conflicts, while age diversity is negatively associated with it. Gender diversity is not significant to any conflict.

Author/s (Year)	Independent Variables	Dependent Variables	Results
Simons (1995)	• Organization tenure • Education • Function	• Performance (change in sales and profit)	• N = 57 TMT of electronic component manufacturing companies • Educational and functional heterogeneity, interacting with a debate process, are positively associate with change in profit; neither variable influences change in sales. • Tenure heterogeneity is not significant to performance.
Simons, Pelled, & Smith (1999)	• Organization tenure • Education • Function • Age	• Decision comprehensive-ness • Change in sales • Change in profit	• N = 57 TMT of electronic component manufacturing companies • Educational and functional heterogeneity, interacting with a debate process, are positively associated with changes in sales and profit. Decision comprehensiveness partially mediates this interaction effects. • Tenure and age heterogeneity are not significant to performance.
Smith, Smith, Olian, Sims, O'Bannon, & Scully (1994)	• TMT tenure • Industry experience • Education • Function	• Social integration • Communication (informal and frequency) • Sales growth • ROI	• N = 53 TMT of high-tech companies • TMT heterogeneity is indirectly related to performance through process, and process is directly related to performance. • Educational heterogeneity is directly, and positively related to sales growth and ROI. • Industry experience heterogeneity is associated with low ROI, social integration, and informal communication. • Tenure and functional heterogeneity are not significant to the outcomes.
Wagner, Pfeffer, & O'Reilly III (1984)	• Organization tenure	• Turnover	• N = 31 TMT of Fortune 500 companies • Tenure heterogeneity is positively related to turnover.
Wiersema & Bantel (1992)	• Organization tenure • TMT tenure • Education • Age	• Diversification	• N = 87 TMT of Fortune 500 companies • Educational heterogeneity is positively related to diversification. • Tenure and age heterogeneity are not significant to diversification.
Wiersema & Bird (1993)	• Organization tenure • TMT tenure • Prestige of university • Age	• Turnover	• N = 40 TMT of Japanese companies • TMT tenure, prestige of university, and age heterogeneity are positively associated with turnover. • Organization tenure is not significant to turnover.

Appendix B
Summary of Results

Dimensions				
Tenure	**Education**	**Function**	**Age**	**Gender**
Increased Homogeneity				
Positive Effects				
• Positively associated with the successful implementation of innovation (Flatt, 1993) • Positively related to team dynamics and adaptive organization change (O'Reilly III et al., 1993) • Negatively associated with turnover (O'Reilly III et al., 1993) • Positively related to frequency of technical communication outside the team (Zenger & Lawrence, 1989)			• Positively related to frequency of technical communication within, and outside the team (Zenger & Lawrence, 1989)	
Negative Effects				
• Linked to less diversification (Michel & Hambrick, 1992)				
No Effects				
• Not significant to ROA (Michel & Hambrick, 1992) • Not significant to cohesiveness, commitment, productivity, and advancement (Riordan & Shore, 1997) • Not significant to frequency of technical communication within group (Zenger & Lawrence, 1989)		• Not significant to diversification, nor ROA (Michel & Hambrick, 1992)	• Not significant to innovation (Flatt, 1993)	• Not significant to cohesiveness, commitment, productivity, and advancement (Riordan & Shore, 1987)
Increased Heterogeneity				
Positive Effects				
• Positively related to ROA at low levels of complexity (internationalization) (Carpenter, 2002) • Positively related to performance (growth in market share and profit) in airlines (Hambrick et al., 1996)	• Positively related to ROA (Carpenter, 2002) • Positively related to performance (growth in market share and profit) in airlines (Hambrick *et al.*, 1996) • Interacting with a debate process, positively associated with changes in profit (Simons, 1995) • Directly and positively related to sales growth and ROI (Smith et al., 1994)	• Positively associated with innovation (Bantel & Jackson, 1989) • Positively related to ROA at low levels of complexity (internationalization) (Carpenter, 2002) • Industry experience positively associated with firm growth (Eisenhardt & Schoonven , 1990) • Positively related to performance (growth in market share and profit) in airlines (Hambrick et al., 1996) • Drives task conflict,	• Negatively associated with emotional conflict (Pelled et al., 1999)	

Dimensions				
Tenure	**Education**	**Function**	**Age**	**Gender**
	• Positively related to diversification (Wiersema & Bantel 1992)	which is positively related to performance (Pelled et al., 1999) • Interacting with a debate process, positively associated with changes in profit (Simons, 1995; Simons et al., 1999)		
Negative Effects				
• Negatively related to ROA at high levels of complexity (internationalization) (Carpenter, 2002) • Associated with lower levels of social integration (O'Reilly III et al., 1989) • Positively associated with turnover (McCain et al., 1983; O'Reilly III et al., 1989; Wagner et al., 1984; Wiersema & Bird, 1993) • Positively associated with emotional conflict (Pelled, 1996; Pelled et al., 1999)	• Increased heterogeneity of prestige of university positively associated with turnover (Wiersema & Bird, 1993) • Predictive of turnover (Jackson et al., 1991)	• Negatively related to ROA at high levels of complexity (internationalization) (Carpenter, 2002) • Increased heterogeneity of industry experience predictive of turnover (Jackson et al., 1991) • Increased heterogeneity of industry experience associated with lower ROI, social integration, and informal communication (Smith et al., 1994)	• Positively associated with turnover (Jackson et al., 1991; O'Reilly III et al., 1989; Wiersema & Bird, 1993) • Negatively associated with TMT dynamics (O'Reilly III et al., 1993) • Lower levels of commitment (Tsui et al., 1992)	• Asymmetrical effect found, with men showing a larger negative effects (Tsui et al., 1992) • Positively associated with emotional conflict (Pelled,1996)
No Effects				
• Not significant to innovation (Bantel & Jackson, 1989) • Not significant to turnover (Jackson et al., 1991) • Not significant to performance changes in sales/profit (Simons, 1995; Simons et al., 1999) • Not significant to diversification (Wiersema & Bantel, 1992) • Not significant to turnover (Wiersema & Bird, 1993)	• Not significant to innovation (Bantel & Jackson, 1989)	• Not significant to social integration, communication, sales growth, and ROI (Smith et al., 1994)	• Not significant to innovation (Bantel & Jackson, 1989) • Not significant to performance changes in sales/profits (Simons, 1995; Simons et al., 1999) • Not significant to diversification (Wiersema & Bantel, 1992)	• Not significant to any conflict (Pelled et al., 1999)

Appendix C
Holding Firms Listed in the Philippine Stock Exchange

A. Soriano Corporation	Lodestar Investment Holdings Corporation
ATN Holdings, Inc.	Lopez Holdings Corporation
AbaCore Capital Holdings, Inc.	MJC Investments Corporation
Aboitiz Equity Ventures, Inc.	Mabuhay Holdings Corporation
Alliance Global Group, Inc.	Metro Global Holdings Corporation
Anglo Philippine Holdings Corporation	Metro Pacific Investments Corporation
Asia Amalgamated Holdings Corporation	Pacifica, Inc.
Ayala Corporation	Prime Media Holdings, Inc.
BHI Holdings, Inc.	Prime Orion Philippines, Inc.
Cosco Capital, Inc.	Republic Glass Holdings Corporation
DMCI Holdings, Inc.	SM Investments Corporation
F & J Prince Holdings Corporation	SOCResources, Inc.
Filinvest Development Corporation	San Miguel Corporation
Forum Pacific, Inc.	Seafront Resources Corporation
GT Capital Holdings, Inc.	Solid Group, Inc.
House of Investments, Inc.	Synergy Grid and Development Philippines, Inc.
JG Summit Holdings, Inc.	Top Frontier Investment Holdings, Inc.
Jolliville Holdings Corporation	Unioil Resources and Holdings Company, Inc.
Keppel Philippines Holdings, Inc.	Wellex Industries, Inc.
LT Group, Inc.	Zeus Holdings, Inc.