

UPPER ECHELON THEORY: A REVIEW AND FUTURE RESEARCH AGENDA

Karolina Kokot¹, Darko Tipurić², Marina Klačmer Čalopa¹

¹University of Zagreb, Faculty of Organization and Informatics, Croatia

²University of Zagreb, Faculty of Economics and Business, Croatia

Abstract

The overarching theme of the literature on upper echelon theory (UET) is to understand the impact that top management teams have on the performance of companies. In this article, the extant literature is used to provide an advanced understanding of UET as one of the most significant perspectives in strategic management (Hambrick and Mason, 1984). Additionally, efforts have been made to systematically review increasingly original and conceptual papers to help identify the gaps in the body of knowledge regarding prior empirical studies and to provide recommendations for future research. The aims of this paper are to define the most common critiques of UET, identify the gaps in previous studies, and provide recommendations for future studies according to the results of the analysis. The analysis includes more than fifty papers published over a 36-year period (1984 - 2020) in the field. To address the gap related to top management team heterogeneity, this article critically reviews prominent prior studies on upper echelon theory and top management team heterogeneity. The analysis indicated that the gaps are the results of employing unsuitable methodologies, omitting moderating variables, failing to utilize psychological variables as a group dynamic, and using only demographic proxies. Finally, the article suggests future research directions and develops a research agenda integrating previous research.

Keywords: *Heterogeneity, Top management team, Upper echelon theory*

1. Introduction:

In recent decades, the focus of strategic management has been directed away from strategy implementation according to the effect of the top management team on company performance (Norburn and Birley, 1988; Waldman et al., 2004). Upper echelon theory (UET) was developed to explain the role and impact of the top management team on the management of companies (Tipurić, 2014). Since Hambrick and Mason (1984) introduced the concept of UET, UET has become one of the most significant perspectives in strategic management, and numerous theoretical and empirical papers have been written by academics. Marimuthu and Kolandaisamy (2009) state that considering the role of the top management team in companies, the interests of the business and academic communities in the characteristics of the top management team has permanently existed. UET was developed from the conceptual model defined by Hambrick and Mason (1984), comprising two main propositions: 1. The top management team acts according to their personal interpretations of strategic situations with which there are confronted; and 2. Personal interpretations are the function of their experience, values and personalities (Tipurić, 2020). Kraiczy (2015) claims that the individual interpretation of a present situation by top managers in which they operate directly affects their behavior and strategic choice. Campbell et al (2019: 1280) state that UET “assumes that executive characteristics are related to strategic decisions”. UET defines organizational outcomes and the level of performance as partially related to managers’ characteristics and states that strategic decisions contain a combination of decision makers’ behaviors, reflecting the cognitive frames of the decision maker (Hambrick and Mason, 1984). The emphasis on the demographic characteristics, instead of the psychological characteristics, of top management teams was crucial for UET development (Hambrick and Mason, 1984). This emphasis leads to the analysis of the composition of top management

teams and their demographic heterogeneity. Cannella et al. (2011) claim that most often examined aspect of top management team composition is the heterogeneity. Pfeffer (1985) introduced the concept of organizational demographics and researched the impact of demographic characteristics on organizational outcomes (Angriawan, 2009). Pfeffer (1985) emphasizes that organizational demography describes the distribution of dimensions, such as age, gender and time at the position; it is based on individual data of employees in an organization, but it also reflects the attributes of an organization.

UET emphasizes the impact of the demographic heterogeneity of the top management team on organizational outcomes and states that the demographic heterogeneity of the top management team is a valid variable for the cognitive heterogeneity of the top management team (Angriawan, 2009). Hambrick and Mason (1984) state that cognitive heterogeneity empowers the information processing and decision-making capabilities of a top management team, consequently improving a company's performance.

Hereafter, this paper addresses studies of the abovementioned concepts of upper echelon theory and the heterogeneity of the top management team by offering a systematization of the literature. Specifically, the aim of this paper is to provide an overview of the literature related to the impact of top management team heterogeneity on the performance of companies.

The review summarized theoretical frameworks and empirical results of studies with the aims of identifying gaps in present studies, finding the most frequent critics in this field and defining recommendations for future research. Three research questions in this paper are as follows: (1) What are the main theoretical frameworks for the heterogeneity of top management teams and its impact on a company's performance? (2) What are the main gaps in the present empirical studies that lead to inconsistency in the present research results? (3) What are the main recommendations for future research in this field to achieve more reliable results?

2. Upper echelon theory and heterogeneity of the top management team

The necessity for engaging management to govern a company instead of owners resulted in the question of how to establish the top management team to increase company performance. As a result of market changes, the globalization process, and weak boundaries between the states, there is a high level of heterogeneity in the top management teams in which managers operate today. Nielsen and Nielsen (2013) state that in recent decades, the top management team has become extremely heterogeneous, and the impact of heterogeneity on company performance in the literature is not clearly defined. Specifically, the results of existing studies indicated positive, negative and insignificant impacts.

In the existing studies of the heterogeneity of top management teams, the majority of authors used the following demographic characteristics (Murray, 1989; Hambrick and Mason, 1984; Díaz-Fernández et al., 2014; Tipurić, 2014): age, functional background, tenure, educational background and industrial background. These demographic characteristics are valid proxy variables for the cognitive frames of top managers (Tipurić, 2014; Hambrick and Mason, 1984), although they are not fully precise variables (Tipurić, 2020). Díaz-Fernández et al. (2014) claim that the heterogeneity of top management teams in their functional background, tenure, educational background, international background and industrial background increases the capability for information processing and cognitive capability and produces a wider base of knowledge that leads to a higher level of performance.

Van Knippenberg and Schippers (2007) define heterogeneity as the level of diversity among group members that can have a negative or positive impact on group processes and performance. A heterogeneous group can have various skills and features that can emphasize a company's ability to adapt but also increase the level of conflict (Murray, 1989). Several academic studies have indicated a negative impact of heterogeneity on performance, although the majority of authors in the field claim that heterogeneity has a positive impact on a company's performance. Top management teams with a high level of heterogeneity have a positive impact on company performance (Marimuthu and Kolandaisamy, 2009), increasing rentability (Pfeffer, 1985; Naranjo-Gil et al., 2008), especially in turbulent business environments (Hambrick and Mason, 1984). Additionally, Talke et al. (2010) state that heterogeneity supports the innovation strategies of companies, and Pitcher and Smith (2001) claim that heterogeneity results in higher levels of innovation and diversification.

Hambrick and Mason (1984) initially define the following demographic characteristics that have an impact on companies' performance: age, functional background, other career experiences, education, socioeconomic roots, financial position and group characteristics. Abatecola and Cristofaro (2018) claim that over the years, academics have extended demographic characteristics to race, gender and international background.

Gender. Dezso and Ross (2012) state that the gender heterogeneity of top management teams leads to better performance on managerial tasks that results in a higher level of company performance. The results of present studies are inconsistent, but numerous authors state that the gender heterogeneity of a top management team has a positive impact on a company's performance (Egerová and Nosková, 2019).

Functional background. Williams and O'Reilly III (1998) claim that functional background is a proxy for the information, skills, knowledge and expertise that individuals bring into a group.

Tenure. Angriawan (2009) claims that tenure is the number of years that members spend on a top management team; however, Abatecola and Cristofaro (2018) state that over the years, the context of tenure gained various properties, such as the number of years on a top management team or the number of years in an industry or a company. Furthermore, Carpenter (2002) states that demographic characteristics are more emphasized in short-tenured teams. The core idea of tenure is that new external top managers are the initiators of changes and lead to a new strategic orientation (Wally and Becerra 2001; Díaz-Fernández et al, 2015). Angriawan (2009) states that tenure heterogeneity in the top management team has a positive impact on performance.

Educational background. Bai et al. (2018) state that previous studies support the premise that education takes place in a delicate time period of individuals; therefore, experience in this period is strongly reflected on individuals with permanent impacts on their future decision-making processes. Educational background heterogeneity in top management teams can improve the problem-solving process and decision making in a dynamic environment and has a positive impact on companies' performance (Díaz-Fernández et al, 2014). Kock and Talke (2012) state that educational heterogeneity leads to heterogeneity in knowledge and enables the creation of new knowledge. Numerous authors define heterogeneity in educational background as having a positive contribution to performance through the diversification of skills, cognitive possibility, creativity and readiness to change (Angriawan, 2009).

Industry background. Kock and Talke (2012) state that the industry background heterogeneity of top management teams enables additional networks beyond the current industry and leads to the possibility that the strategic orientation of a company deviates from the existing industry standards. Specifically, a high level of heterogeneity in the industrial background of the top management team is related to the high level of strategic dynamics. Team members are more motivated for a new strategic approach based on previous experience and have wider aspects for the adoption of strategic changes and exploring new possibilities and new markets (Díaz-Fernández et al., 2016).

Cultural background. This demographic characteristic was researched in several studies (Lo et al. 2019). For the proxy variable of cultural background heterogeneity, the nationality of team members is used (Lo et al., 2019; Elron, 1997 and Nielsen and Nielsen, 2013). Nielsen and Nielsen (2013) state that growing up in society with specific informal and formal institutions defines how top managers interpret and process strategic opportunities and threats, and this pattern of behavior managers brings it to a top management team outside of their states. Cultural heterogeneity contributes to task solving and leads to an innovative solution, as it is positively related to performance (Nielsen and Nielsen, 2013).

3. Methodology

This paper combines a review of theoretical and empirical scientific articles in the field of upper echelon theory and the heterogeneity of top management teams. The research was performed using the following databases: Web of Science (WoS), Google Scholar and Hrčak as a central portal of Croatian scientific journals. Articles that were published in the time period from 1983 until 2020 were included. More than 90 articles were identified. Hereafter, these articles were reviewed to assess their compatibility with the research questions. Keywords that were used are *upper echelon theory*, *heterogeneity of the top management team* and *demographic heterogeneity*. After the analysis of the relevance of the initial articles, the further analysis included articles that conformed to the research questions. The relevant papers were analyzed, summarized, and synthesized to define the state-of-the-art research in the field of upper echelon theory. Gaps in the body of research were identified; and based on this analysis, the authors defined recommendations for academics for future research agendas.

4. Present research review

Studies in the field of UET have a strong background in the scientific literature, but numerous authors claim that future researches are necessary, especially those with a focus on using advanced statistical methodology to obtain more consistent results on the impact of top management team heterogeneity on a company's performance (Carpenter, 2002; Nielsen, 2010; Díaz-Fernández et al., 2020; Díaz-Fernández et al., 2015), including the moderating variables in the research models (Talke et al., 2010). The majority of authors state that the heterogeneity of the top management team has a positive impact on performance, but van Knippenberg and Schippers (2007) claim that heterogeneity can have a positive or negative impact on group processes and performance. The heterogeneity of teams results in different skills and features that can increase a company's possibility of adaptation but, conversely, can increase the level of conflicts in the team (Murray, 1989). One of the most significant potential problems associated with heterogeneity is interpersonal conflict (Certo, 2006). Accordingly, Triana et al. (2014) and Chen et al. (2018) state that the heterogeneity of top management teams is double-edged in nature because it can encourage or obstruct strategic change depending on firm performance.

Several authors define performance using financial data, but researchers have also identified performance per a company's strategy (e.g., strategy of initial offers and innovation strategy). Díaz-Fernández et al. (2015) analyzed how the demographic characteristics of the top management team have an impact on strategic changes, and they identified that teams with a higher level of functional and international heterogeneity and shorter company tenure are leaner toward strategic changes. These results clearly highlight the significance of the top management team on business in general and the impact of their demographic characteristics on a company's performance. Carpenter and Fredrickson (2001) analysed the impact of team heterogeneity on global strategic posture and included the moderating variable environmental uncertainty in the US companies. They indicated a positive impact of international background heterogeneity, educational heterogeneity, and tenure heterogeneity and a negative impact of functional background heterogeneity, furthermore, environmental uncertainty moderated this relationship. Kock and Talke (2012) conducted research on companies from Europe and the USA and determined that the heterogeneity of the top management team has a positive impact on a company's strategic orientation to innovation. Bai et al. (2018) conducted research on the initial public offerings of 1479 companies in the private sector in China in the time period from 2005 to 2014, and the results indicated that managers with a prestigious Chinese university degree leaned toward an initial offer on the domestic market, while managers that have a degree from foreign university leaned toward an initial offer on foreign markets. These results clearly show how formal education is important in the strategic decision-making process for managers. Bryon and Post (2016) conducted research on companies from different states and observe a positive impact of the gender heterogeneity of the board of directors on the social responsibility of companies. Triana et al. (2014), in their research conducted on Fortune 500 firms, indicated that board gender heterogeneity is negatively related to the amount of strategic change.

Table 1 shows the comparison of the existing studies that analyzed the impact of the heterogeneity of the top management team on performance defined using financial data. The reason for this approach is to achieve the ability to compare studies. Previous studies were analysed through the following aspects: type of demographics characteristics, authors, moderating variables used in research models, indicated impact on companies' performance, the country in which the research was conducted, and the sample and method used for testing the hypotheses. The analysis indicated an equal presence of gender heterogeneity, cultural heterogeneity, functional heterogeneity, tenure heterogeneity and educational heterogeneity in previous studies. International experience heterogeneity and industry heterogeneity were rarely observed in previous studies. Authors have analyzed whether previous research models include moderating variables that can emphasize the impact of the demographic characteristics of the top management team on performance (Carpenter, 2002; Talke et al., 2010). Several authors used some moderating variables, but those variables were collected as demographics characteristics (e.g., firm internationalization, firm size, socialization, TMT colocation, and TMT group longevity) without collecting data on the psychological information of team members, such as a manager's cognitive frame, skills and knowledge without using proxy variables. The analysis indicated a lack of combining the demographic and psychological variables in the research models to increase the consistency of research results, as Oppong (2014) suggested. The majority of authors are focused exclusively on the demographic characteristics of top managers, and psychological characteristics are omitted because they are labor-intensive to collect. Several authors included moderating variables in research models to avoid collecting psychological data regarding top managers. Previous studies' results show the inconsistency. Specifically, for the majority of analyzed demographic characteristics (gender heterogeneity, cultural heterogeneity, functional

heterogeneity, tenure heterogeneity and educational heterogeneity), the research results indicated positive, negative and insignificant impacts. The consistency of the results is shown for international experience heterogeneity and industry heterogeneity, but in keeping with the few studies describing those characteristics, theses regarding their consistency of results could not be accepted. The countries are analyzed to assess where most studies focus because there is a diversity of markets, corporate governance, management, and cultures among countries. These aspects can lead to different research results. The analysis shows that most of the studies were conducted in the USA and Asian countries, but several studies were also conducted in European countries. The most commonly used methods for hypothesis testing in previous studies are hierarchical regression analyses, ordinary least squares (OLS) regressions, meta-analysis and panel data. One study performed fuzzy-set qualitative comparative analysis and structural equation modelling. This clearly shows that quantitative research is common in empirical studies in the field of UET. Hereafter, only in a study conducted by Lo et al. (2019) was a combination of two statistical methods employed to test the hypothesis with a simultaneous qualitative and quantitative approach. The analysis indicated that there was a lack of a combination of statistical methods in the present studies that could achieve more consistent results.

Table 1: Previous studies

Demographics characteristics	Authors	Moderating variables	Impact on performance	Country	Method
Gender heterogeneity	Marimuthu and Kolandaisamy (2009)	No	insignificant	Malaysia	Panel data
	Dezso and Gaddis Ross (2012)	Innovation intensity (non-psychological variable)	positive	USA	Panel data
	Cambrea et al. (2017)	No	positive	Italy	Ordinary least squares (OLS) regression
Cultural heterogeneity	Lo et al. (2019)	Socialization (non-psychological variable)	positive	USA	Multiple regression analysis Fuzzy-set qualitative comparative analysis
	Marimuthu and Kolandaisamy (2009)	No	positive	Malaysia	Panel data
	Nielsen and Nielsen (2013)	Tenure, firm internationalization, and industry (non-psychological variables)	positive	Swiss	Hierarchical linear modeling (HLM)
	Cambrea et al. (2017)	No	insignificant	Italy	Ordinary least squares (OLS) regression
Functional heterogeneity	Certo et al. (2006)	No	positive	N/A	Meta-analysis
	Cannella et al. (2011)	TMT colocation and environmental uncertainty (non-psychological variables)	positive	USA	Panel data (a pooled cross-sectional time series)
	Díaz-Fernández et al. (2014)	No	insignificant	Spain	Hierarchical regression analyses

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	Chen et al. (2018)	TMT group longevity (non-psychological variables)	negative	Taiwan	Hierarchical regression analyses
	Díaz-Fernández et al. (2016)	Strategic change (non-psychological variables)	positive	Spain	covariance-based structural equation modelling
Tenure heterogeneity	Certo et al. (2006)	No	positive	N/A	Meta-analysis
	Cannella et al. (2011)	TMT colocation and environmental uncertainty (non-psychological variables)	positive	USA	Panel data (a pooled cross-sectional time series)
	Tanikawa et al. (2016)	TMT average age (non-psychological variables)	negative	Japan	Hierarchical regression analyses
	Díaz-Fernández et al. (2016)	Strategic change (non-psychological variables)	positive	Spain	covariance-based structural equation modelling
Educational heterogeneity	Certo et al. (2006)	No	insignificant	N/A	Meta-analysis
	Díaz-Fernández et al. (2014)	No	insignificant	Spain	Hierarchical regression analyses
	Chen et al. (2018)	TMT group longevity (non-psychological variables)	negative	Taiwan	Hierarchical regression analyses
	Cambrea et al. (2017)	No	positive	Italy	Ordinary least squares (OLS) regression
	Díaz-Fernández et al. (2016)	Strategic change (non-psychological variables)	positive	Spain	covariance-based structural equation modelling
International experience	Díaz-Fernández et al. (2014)	No	positive	Spain	Hierarchical regression analyses
	Cambrea et al. (2017)	No	positive	Italy	Ordinary least squares (OLS) regression
Industry heterogeneity	Díaz-Fernández et al. (2014)	No	positive	Spain	Hierarchical regression analyses

5. Gaps in the body of research and recommendations for future research

Research results on top management team heterogeneity remain controversial and inconsistent (Nielsen, 2010; Díaz-Fernández et al., 2020; Carpenter, 2002); therefore, research inevitably focuses on the impact of heterogeneity (Díaz-Fernández et al., 2015) by using new and enhanced methodological approaches in the field of UET to achieve more consistent results (Nielsen, 2010, Díaz-Fernández et al., 2020; Abatecola and Cristofaro, 2018). Pitcher and Smith (2001) state that linking the impact of top management team heterogeneity with strategic outcomes is problematic, and the results of empirical studies are often inconsistent, which is why choosing an adequate research method is an important means of decreasing this inconsistency. Carpenter (2002) claims that the impacts of education, experience and tenure on a company's performance are moderated by the strategic and social context in which managers are acting. Carpenter (2002) indicates that the absence of moderating variables that describe this context in the majority of present research models is the reason for the inconsistency observed in existing research results. Talke et al. (2010) state that the correlation among heterogeneity and performance is indirect and dependent on moderating variables. Díaz-Fernández et al. (2015) claim that top management team effects on managerial dimension as decision, strategy or performance are more complex than researches in demographical literature had assumed. Gil et al. (2019:4) state that "*Part of the reason for the inconsistent findings may be that prior research has largely ignored the role that exogenous factors might play in the relationship between top management team heterogeneity and firm performance*". Oponng (2014) states that there are two ways researchers investigate whether top managers influence organizational performance: 1. assessing top managers' demographic characteristics and relating them to organizational performance and 2. measuring the psychological traits of top managers and examining whether they are related to performance. The majority of UET researchers used demographic approaches in studies instead of 'psychological' approaches, and a minority of studies used both demographic and psychographic variables simultaneously in the research model (Oponng, 2014). Priem et al. (1999) state that identifying the relationship among the top management team and performance has not been feasible due to the absence of demographic data, but demographic proxies of psychographic variables have limitations. Such variables as a top management team's processes, attitudes and judgments are crucial in the UET model, and they have to be measured directly to clarify the top managers' choices (Priem et al., 1999). Analysis of previous studies shows a lack of moderating variables that describe the social and strategic context through psychological data. This lack leads to the gap in present studies.

Wang et al. (2012) state that the majority of empirical studies related to UET are conducted on US companies, although several recent authors attempted to fill this geographical gap by studying other countries, especially China (Abatecola and Cristofaro, 2018), to examine whether the assumptions of UET are applicable in other markets. This analysis confirms the geographical gaps in the field of UET because the majority of studies were conducted in the USA and Asian markets, although several studies were conducted in European countries. The diversity of markets could lead to different research findings; therefore, future research should focus on increasing the number of studies in European and other markets to fill this geographical gap.

Furthermore, the analysis indicated a gap in the methodological approaches. The majority of studies used one statistical method to test the hypotheses. Combining several methods in studies and not omitting the qualitative approach may lead to more consistent results.

In general, the analysis indicated the following gaps in the present studies in the field of UET:

1. The omission of moderating variables to describe the social and strategic context via psychological data.
2. Geographical gaps, since most of the studies were conducted in the USA and Asia.
3. Most studies used one statistical method and mostly quantitative approaches.

In line with the identified gaps, recommendations for future research are as follows:

1. Focusing on moderating variables (e.g., the group process) by including them in research models.
2. Using the psychological approach and merging it with a demographical approach to focus on psychological data.
3. Conducting studies on different markets (especially those in European countries).
4. Using a combination of statistical methods and qualitative and quantitative approaches.

6. Conclusion

In recent decades, numerous papers and empirical studies that analysing top management team heterogeneity have been written. As the most significant issue in the field of UET and heterogeneity inconsistency of results has been expressed. The literature review does not provide an unambiguous postulate of team heterogeneity impact on company performance. This condition leads to numerous critics of UET and also steers the recommendations for the future research agenda.

This paper provides a literature reviews prior studies on upper echelon theory and top management team heterogeneity with the aims of identifying gaps, finding the most frequent critics and defining recommendations for future research. Finally, the paper offers answers on three research questions. The existing literature indicated the double-edged impact of top management team heterogeneity on company performance. The authors' analysis emphasized the most significant gaps in the abovementioned field. In addition, indicated gaps are the omission of moderating variables, geographical gaps of studies, insufficiency of qualitative research approaches and overvalue of demographic variables. Accordingly, recommendations for future research are defined.

Despite numerous previous studies, future studies are necessary to ensure more consistency in the results of the top management team heterogeneity impact on company performance. It is crucial to include moderating variables in research models to take into consideration the social context in which the top management team operate. Additionally, demographic approaches should not be abandoned, and the psychological approaches have to acquire a more significant role in future research to ensure that the social context of the management team will be taken into consideration. The social context could have an important role in moderating the relationship between heterogeneity and performance.

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