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TOP TEAM MANAGEMENT HETEROGENEITY: DOES IT IMPROVE LARGE COMPANIES' FINANCIAL PERFORMANCE?

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Abstract

The most crucial question in strategic management is the role of the top management team (TMT) in a company's overall success. Empirical studies support the thesis that the TMT plays an important role in defining companies' outputs, thereby focusing on TMT structure. The research question of this paper is as follows: What is the impact of TMT heterogeneity on large companies' performance in Croatia? The authors employed a secondary quantitative approach. A panel analysis was conducted from 2015–2020. The research included 62 large companies that met the requirements. The results indicated a positive impact of gender and cultural heterogeneity on companies' performance, as measured by return on assets (ROA). In the return on sale (ROS) model, a positive impact of TMT heterogeneity is not indicated. This paper contributes by identifying the TMT structure from heterogeneous aspects in Croatia and analysing the impact of heterogeneity on companies' performance in line with the recommendations for defining the TMT structure.

Keywords: *top management team, TMT heterogeneity, companies' performance*

JEL Classification: *G34, M14*

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1. Introduction

By separating the ownership and management of the company and hiring company managers, owners face the challenge of establishing top management teams (TMTs) to advance their ownership interests. Waldman, Javidan, and Varella (2004) claim that strategic management in the last few decades has focused on researching TMTs and their impact on strategy development and company performance. Upper echelons theory (UET) was developed to explain the role and operations of the TMT in managing the company, and it serves as the fundamental theoretical framework in strategic management (Tipurić 2014). This theory emphasizes the impact of TMT demographic heterogeneity on the company's outputs, and this heterogeneity serves as a proxy for TMT cognitive

heterogeneity (Angriawan 2009).

Highlights of TMT' demographic characteristics beyond psychological characteristics were crucial during the development of UET (Hambrick and Mason 1984). The concept of organizational demography was developed by Pfeffer. The concept is based on the collection of individual data in the company, but it also describes company characteristics. According to UET, the cognitive heterogeneity of the TMT strengthens TMT competence in data processing and decision-making, thereby improving company performance (Hambrick and Mason 1984). Therefore, Kraiczy, Hack, and Kellermanns (2015) states that the individual interpretation of current situations by managers in which they are operating directly impacts their behaviours and strategic choices, whereas Chin, Hambrick, and Treviño (2013) claim that the basic postulate of UET is that the difference between companies' performance arises from manager heterogeneity.

Numerous researchers have identified the impact of TMT heterogeneity on company performance (Marimuthu and Kolandaisamy 2009; Wang, He, and Zhou 2016; Lo, Wang, and Zhan 2019; Cambrea et al. 2017; Triana, Miller, and Trzebiatowski 2014; Chen and Liu 2018); this impact is regarded as mostly positive (Pfeffer 1985; Naranjo-Gil, Hartmann, and Maas 2008) because of new market entry (Díaz-Fernández, González-Rodríguez, and Pawlak 2014), innovative strategic approaches (Talke, Salomo, and Rost 2010), and companies' diversification (Pitcher and Smith 2001). Today, managers operate in extremely dynamic environments, and they are confronted with a high level of heterogeneity. In accordance with this literature, the research aims were defined as follows: (1) identify TMT demographic heterogeneity level in large Croatian companies and (2) examine the impact of TMT heterogeneity on large Croatian companies' performance. The structure of the paper is as follows: Section 2 provides a literature review on UET and heterogeneity, Section 3 describes the empirical methodology applied, Section 4 discusses empirical results. Finally, Section 5 concludes the paper with notable implications and further research recommendations.

2. Literature review

Two basic questions in strategic management are why differences exist between companies' strategies and why some companies are more successful than others (Anwar Quttainah 2015). One crucial issue for companies is how to define TMT composition. A TMT is considered balanced when its members come from different fields, which increases its efficiency (Hassan and Marimuthu 2016). A TMT can be regarded as a decision-making entity involved in companies' activities related to competitiveness (Yoon, Kim, and Song 2016). Top managers are individuals with the power and authority to make strategic decisions within the company (Yoon, Kim, and Song 2016), define resource-allocation decisions, and select projects and goals (Ruiz-Jiménez, Fuentes-Fuentes, and Ruiz-Arroyo 2016). Therefore, managers can be considered the most significant resource for companies (Kamran 2012), and company development depends on the power of top management (Wang, He, and Zhou 2016). Hambrick (2007) states that understanding why companies behave as they do requires examining the most powerful actors: top managers. Management is responsible for external and internal company activities, with some limitations in power (Iqbal, Ahmad, and Li 2021).

UET, developed by Hambrick and Mason (1984), presents a model in which top managers play a crucial role in defining a company's outputs (Carpenter, Geletkancz, and Sanders 2004; Tipurić 2014; Kraiczy, Hack, and Kellermanns 2015). According to Dang and Vo (2014), the research has identified a significant relationship between TMT demographic characteristics and company operations. Accordingly, Shen and Zhuo (2022) claim that the cognitive processes of TMT members, influenced by demographic characteristics, shape company strategy. Neely et al. (2020) state that, over the past 35 years, UET has remained among the most significant perspectives in strategic management, and current papers in this field provide evidence of its relevance.

The three elements of UET are limited rationality, measured characteristics, and TMT responsibility (Lee, Choi, and Moon 2018). The major idea of UET is that "*strategic choices are more of the outcome of behavioural factors than that of mechanical calculation for economic optimization*" (Chuang, Nakatani, and Zhou 2009, p. 186). UET defines a company's outputs and performance level partially based upon managers' characteristics (Hambrick and Mason, 1984; Alazzani, Hassanein, and Aljanadi 2017). The theory assumes that people with a high degree of impact in companies, top managers, contribute to formulating and defining strategic decisions on the basis of their values and intellect (Thambugala and Rathwatta 2021), respectively, according to their individual preferences or preconceptions (Mehrabi, Coviello, and Ranaweera 2021). Chadwick and Dawson (2018) define cognitive frames as personal interpretations of the environment shaped by an individual's experiences, values, and personality. Therefore, top managers' decisions are not always driven by utility maximization because

of the managers' individual cognitive frames and values (Lee, Choi, and Moon 2018). Cognitive frames and values affect the filtering and perception of information; therefore, they influence an individual manager's perception of alternatives and business decisions (Plöckinger et al. 2016). In line with these statements, TMT composition directly impacts the potential performance of companies (Moreno-Gómez, Lafuente, and Vaillant 2018).

In their model, Hambrick and Mason (1984) highlight group characteristics, which are the results of the social experiences of every group member since they impact the development of values and perceptions. Furthermore, the authors state that the discourse on group heterogeneity has roots in the sociological research about cohorts and claim that the demographic concept can apply to subgroups such as TMTs. Heterogeneity is expected to have a positive impact on profitability in turbulent and unstable environments, which are the conditions under which most companies currently operate (Hambrick and Mason 1984; Roberts 2018). UET defines two basic ideas. The first is that TMT characteristics have a stronger impact than individual manager characteristics do because leadership is a common activity among team members, and collective abilities, interactions, and cognition across the entire TMT shape strategic behaviour. The second idea is related to using demographic characteristics as proxy variables for TMT cognitive frames because conventional psychological data about managers are difficult to collect (Hambrick 2007). Various authors identify the following demographic characteristics in research: age, organizational tenure, functional background, educational level, socioeconomic roots, financial position, and group heterogeneity (Hambrick and Mason 1984). Abatecola and Cristofaro (2018) claim that, over the years, scientists have expanded the range of characteristics associated with race, gender, and age.

This analysis considers tenure heterogeneity, functional background heterogeneity, educational background heterogeneity, gender heterogeneity, and cultural background heterogeneity comprehensively. Tenure heterogeneity is defined as the hiring of managers in TMT positions at different times (Chaganti et al. 2016). Magnanelli, Paolucci, and Pirolo (2021) state that this type of heterogeneity enables the exploitation of advantages and the avoidance of the disadvantages that new and existing TMT members bring. Therefore, this type of heterogeneity enables compensation for differences in managers' skills, experiences, risk attitudes, and business familiarity during strategic decision-making processes (Shakil and Abdul Wahab 2023). Functional background heterogeneity is a proxy variable for the information, skills, knowledge, and expertise that individuals bring to a group (Williams and O'Reilly III 1998). This variable indicates experience; a major related premise is that this type of heterogeneity is related to the diversity in knowledge and skills of top managers (Díaz-Fernández, González-Rodríguez, and Pawlak 2014). Functional background heterogeneity enhances the availability of expertise across different fields, enabling a TMT to operate more efficiently when faced with challenges.

Regarding educational background heterogeneity, Bai, Tsang, and Xia (2018) state that the research supports the idea that university-level educations occur during sensitive periods for individuals, and this experience has a strong impact and a permanent effect on future decision-making. Furthermore, managers' educational backgrounds enhance entrepreneurial skills, improve the information analysis process, and develop cognitive skills (Kotorri and Krasniqi, 2018). This type of heterogeneity can improve problem-solving in a dynamic environment (Díaz-Fernández, González-Rodríguez, and Pawlak 2014), has a positive impact on differentiation strategy and the expansion of the business field (Yang and Wang 2014), and leads to knowledge heterogeneity (Kock and Talke 2012). Regarding gender heterogeneity, Chadwick and Dawson (2018) state that compared with males, females remain underrepresented in managing positions. Not only should the relationship between company performance and manager gender be studied but so should the relationship between performance and TMT gender heterogeneity (Moreno-Gómez, Lafuente, and Vaillant 2018). The inclusion of females on TMTs provides new sets of experience, thinking, and perspectives about company strategies and initiatives (Kolev and McNamara 2020). Dezso and Gaddis Ross (2012) claim that gender heterogeneity on TMTs leads to better management activities and, consequently, better company performance and that gender heterogeneity can be considered an important aspect of a company (Alazzani, Hassanein, and Aljanadi 2017). With regard to cultural heterogeneity, changes in workforce demographics and the high level of business internationalization have resulted in significant shifts in cultural heterogeneity on TMTs (Ponomareva et al. 2022). Cultural values, beliefs, and norms are significant because they influence how people work in companies, and cultural heterogeneity enhances learning by combining different perspectives and interpretations to generate new solutions (Corritore, Goldberg, and Srivastava 2020). Furthermore, Taboroši et al. (2023) claim that national culture affects different types of job performance.

TMT heterogeneity involves differences between

TMT members linked to demographic characteristics and the importance of cognitive aspects, values, and experiences (Zhang 2007). The heterogeneity concept assumes that both individual and group characteristics, i.e., the TMT, are important (Prosvirkina and Wolfs 2021). In accordance with UET, TMT cognitive heterogeneity enhances their information-processing, decision-making, and problem-solving abilities (Zhang 2007), thereby improving company performance (Hambrick and Mason 1984). Yoon, Kim, and Song (2016) highlight that ensuring differences in knowledge and information is a basic postulate of TMT heterogeneity. Previous research has shown that heterogeneity enhances TMT efficiency (Moreno-Gómez, Lafuente, and Vaillant 2018) and influences entrepreneurial behaviour positively (Su, Yang, and Wang 2022). High levels of creativity, innovation, and quality in the decision-making process and high flexibility levels in everyday operations are expected outcomes of TMT heterogeneity (Angriawan 2009). In addition, homogeneity can lead to groupthink (Hambrick and Mason 1984).

Numerous theoretical and empirical papers support TMT heterogeneity as a positive approach. Many empirical studies have reported a significant, positive impact of TMT heterogeneity on company performance, as measured by financial and nonfinancial indicators. Furthermore, the studies show that demographic characteristics influence company strategy, international activities, acquisition activities (Carpenter, Geletkancz, and Sanders 2004), and strategic approaches to social responsibility (Thambugala and Rathwatta 2021). Kock and Talke (2012) conducted research across 317 companies operating in Europe and the USA and reported a positive impact of TMT heterogeneity on the strategic orientation towards innovation, which affects company performance positively. Meng, Yan, and Cao (2019) examined Chinese companies listed on stock exchanges and reported that functional background heterogeneity among TMTs affects direct foreign investment positively. Byron and Post (2016) conducted a meta-analysis including 26710 companies across 20 countries and identified a positive impact of gender heterogeneity on boards with respect to companies' social responsibilities. Companies with more women on their management boards achieve better social responsibility outcomes and greater prestige. Therefore, on the basis of the abovementioned statements by different authors, it can be concluded that TMT heterogeneity impacts the definition of company strategy.

Certo et al. (2006) and Magnanelli, Paolucci, and Pirolo (2021) observed a positive impact of TMT tenure heterogeneity on company performance. Empirical studies by Certo et al. (2006), Cannella, Park, and Lee (2008), and Auden, Shackman, and Onken (2006) revealed a positive impact of TMT functional background heterogeneity on companies' performance. Cambrea et al. (2017) and Akram et al. (2020) identified the positive impact of TMT educational background heterogeneity. The literature on TMT gender heterogeneity has shown a positive impact on companies' performance (Dezso and Gaddis Ross 2012; Cambrea et al. 2017; Chadwick and Dawson 2018). Similarly, Lo, Wang, and Zhan (2019), Marimuthu and Kolandaisamy (2009), Nielsen and Nielsen (2013), and Akram et al. (2020) reported a positive impact of TMT cultural heterogeneity on companies' performance. The formulated hypotheses are as follows:

H1. TMT heterogeneity has a positive impact on the performance of large Croatian companies.

- H1.a. TMT tenure heterogeneity has a positive impact on the performance of large Croatian companies.
- H1.b. TMT functional background heterogeneity has a positive impact on the performance of large Croatian companies.
- H1.c. TMT educational background heterogeneity has a positive impact on the performance of large Croatian companies.
- H1.d. TMT gender heterogeneity has a positive impact on the performance of large Croatian companies.
- H1.e. TMT cultural heterogeneity has a positive impact on the performance of large Croatian companies.

3. Methodology

The research sample included large Croatian companies. According to Financial Agency's online database, info.biz, on November 26, 2020, an initial research sample of large companies was defined. The sample included all economic activities. The initial sample included 364 companies. In accordance with the paper's research aim and the heterogeneity analysis, the final research sample consisted of large companies with TMTs of at least three members (Lo, Wang, and Zhan 2019). To obtain a balanced sample and ensure the possibility of a heterogeneity analysis in the study, companies in the sample had to meet the following criteria: (1) the company continuously operated from 2015–2020, (2) the company was a limited (Ltd.) or a joint-stock company, (3) the company had a dualistic governance model, (4) and the company continuously had three or more TMT members from

2015–2020. The TMT was defined as the management board. This board presents objective and unambiguous indicators of membership in top management (Thompson 1967; Mace 1971, according to Finkelstein and Hambrick 1990), in line with the dualistic governance model typical of Croatian companies. After secondary research was conducted and data on the five characteristics of heterogeneity among TMT members were collected, the final research sample comprised 62 companies. The authors defined two research models (equations (1) and (2)) for two dependent variables.

$$ROA_{i,t} = \alpha 0 + \beta 1\ HTENURE_{i,t} + \beta 2\ HFBACKGROUND_{i,t} + \beta 3\ HEBACKGROUND_{i,t} + \beta 4\ GENDER_{i,t} + \beta 5\ CULTURE_{i,t} + \beta 6\ FSIZE_{i,t} + \beta 7\ ATENURE_{i,t} + \beta 8\ TMT\ SIZE_{i,t} + \beta 9\ INDUSTRY_{i,t} + U_i + \varepsilon_{i,t} \quad (1)$$

$$ROS_{i,t} = \alpha 0 + \beta 1\ HTENURE_{i,t} + \beta 2\ HFBACKGROUND_{i,t} + \beta 3\ HEBACKGROUND_{i,t} + \beta 4\ GENDER_{i,t} + \beta 5\ CULTURE_{i,t} + \beta 6\ FSIZE_{i,t} + \beta 7\ ATENURE_{i,t} + \beta 8\ TMT\ SIZE_{i,t} + \beta 9\ INDUSTRY_{i,t} + U_i + \varepsilon_{i,t} \quad (2)$$

Company performance, a dependent variable in the research model, is measured by financial indicators. To measure company performance, two financial ratios are used: (1) return on assets (ROA), which is net profit divided by total assets (Díaz-Fernández, González-Rodríguez, and Pawlak 2014) and (2) return on sales (ROS), which is net profit divided by total sales (Díaz-Fernández, González-Rodríguez, and Pawlak 2014). These indicators are chosen in addition to capital profitability because the research on UET has identified greater volatility in capital profitability indicators than in ROA and ROS (Díaz-Fernández, González-Rodríguez, and Pawlak 2014). These variables were used in the research models of Lo, Wang, and Zhan (2019), Cambrea et al. (2017), Díaz-Fernández, González-Rodríguez, and Simonetti (2020), Harrison et al. (2019), Mohr and Batsakis (2019), and Martino, Rigolini, and D'Onza (2020).

The data on the independent variables were collected at the individual level (for each TMT member) and synthesized at the team level using heterogeneity measures to define heterogeneity across all of the TMTs. The TMTs' tenure heterogeneity was calculated by the coefficient of variation (Talke, Salomo, and Rost 2010; Ormiston, Wong, and Ha 2021). The functional background of all of the TMT members was classified into eight categories according to Kock and Talke (2012) and it was measured by the Blau index (Ormiston, Wong, and Ha 2021). The educational background of all of the TMT members were classified into six categories according to *Pravilnik o znanstvenim i umjetničkim područjima, poljima i granama*, br. 34/16, and it was measured by the Blau index (Ormiston, Wong, and Ha 2021). The TMTs' gender heterogeneity is the share of females on the TMTs divided by the total number of TMT members (Byron and Post 2016). The TMTs' cultural heterogeneity was measured by the proxy variable, team members' nationality (Lo, Wang, and Zhan 2019; Elron 1997; Cambrea et al. 2017; Marimuthu and Kolandaisamy 2009).

Therefore, the following control variables were included in the research model: company size (Fung et al. 2020; Magnanelli, Paolucci, and Pirolo 2021), average tenure (Hsieh et al. 2018; Mohr and Batsakis 2019), industry (Tanikawa and Jung 2016; Pemer, Börjeson, and Werr (2020), and TMT size (Jiang et al. 2020; Wrede and Dauth 2020). Company size is a control variable because it is expected to impact performance (Nielsen and Nielsen 2013) and the managerial discretion level (Finkelstein and Hambrick 1990). Average tenure is a control variable in situations in which TMT tenure heterogeneity is measured by the variation coefficient (Carpenter and Fredrickson 2001). Industry is a control variable because different managerial discretion levels are observed across industries (Finkelstein and Hambrick 1990). Tipurić (2020) observes lower managerial discretion levels in the telecommunications, hospitality, gas and oil distribution, and utility industries and higher managerial discretion levels in the fashion, food, and IT industries. Measuring TMT heterogeneity depends on TMT size (Wang, He, and Zhou 2016). TMT size is the total number of TMT members (Marimuthu and Kolandaisamy 2009). The variables are described in Table 1.

To test the paper's hypotheses, panel data (balanced panel) with time and range dimensions were used. The range dimensions pertained to the 62 companies, and the time dimension spanned from 2015–2020. A panel data analysis was employed for several reasons. It is applicable to the analysis of more variables across several time periods in cases of heterogeneity between companies (Gali et al. 2016). Therefore, this analysis has been used in empirical studies concerning UET (Kolev and McNamara 2020; Mohr and Batsakis 2019; Jiang et al. 2020; Kaur and Singh 2019). The paper's hypotheses were tested using two research models with the dependent variables ROA and ROS. Before Hausman's tests were conducted to determine whether the model is more appropriate with fixed or random effects (Jiang et al. 2020), the suitability of the models was assessed; i.e., the statistical assumptions underlying the above analysis were tested.

The following diagnostic tests were subsequently performed: normality, multicollinearity, linearity, autocorrelation, and heteroskedasticity. The tests revealed that the residuals were not normally distributed in

Table 1. Variable in the study

Variable	Measure	Source
Return on assets (ROA)	Net profit divided by total assets	Díaz-Fernández, González-Rodríguez, and Pawlak (2014)
Return on sales (ROS)	Net profit divided by total sales	Díaz-Fernández, González-Rodríguez, and Pawlak (2014)
TMT tenure heterogeneity (HTENURE)	The number of years that TMT member had spent in the team up to year t (coefficient of variation)	Talke, Salomo, and Rost (2010)
TMT functional background heterogeneity (HFBACKGROUND)	TMT members was classified into the following categories: financial, marketing, human resource management, production, research and development, information technology, law, and others (Blau index)	Kock and Talke (2012)
TMT educational background heterogeneity (HEBACKGROUND)	TMT members was classified into the following categories: natural science, technical science, biomedical science and health, human science, art, and others (Blau index)	Pravilnik o znanstvenim i umjetničkim područjima, poljima i granama, br. 34/16
TMT gender heterogeneity (GENDER)	The share of females on the TMTs divided by the total number of TMT members	Byron and Post (2016)
TMT cultural heterogeneity (CULTURE)	Number of TMT members of non-Croatian nationality divided by the total number of TMT members	Marimuthu and Kolandaisamy (2009)
Company size (FSIZE)	Total assets	Chen and Liu (2018)
Average tenure (ATENURE)	The average number of years that TMT members have spent on the team in year t.	Hsieh et al. (2018)
TMT size (TMT SIZE)	The total number of TMT members	Marimuthu and Kolandaisamy (2009)
Economic activity (INDUSTRY)	Industries with lower managerial discretion levels were labelled 0, those with higher levels were labelled 1, and the others were labelled 2	Tipurić (2020)

either model. However, Hair et al. (2006) and Tabchnick and Fidell (2007) claim that in situations with more than 200 observations, the present models have 372 observations. Therefore, both models exhibit autocorrelation and heteroskedasticity, and adjustments were made to address these results. Gujarati (2003), Hamid Mohsin (2021), Yaffee (2005), and Abdul Wahab and Hassan Shakil (2018) suggest the application of robust standard errors and covariance (White). Hausman's test indicated that the model with a random effect is more suitable for both of the dependent variables (ROA & ROS). Accordingly, Cannella, Park, and Lee (2008) argue that a random-effects model is more suitable when the sample has stable independent variables over time, as in the present model, because TMTs in some companies are constant, so TMT heterogeneity does not change over time.

The results of the ROA model are presented in Table 2. The ROA model revealed a positive and significant impact of the TMT's cultural heterogeneity on the company's performance, as measured by the ROA ($\beta = 0.0694$; $p<0.05$). On the basis of these results, H1.e is partially accepted. Furthermore, the results show a significant and positive impact of the TMT's gender heterogeneity on company performance, as measured by ROA ($\beta = 0.0694$; $p<0.05$), thereby partially supporting H1.d. The other variables that defined TMT heterogeneity on the basis of tenure, functional background, and educational background were insignificant in the research model. On the basis of these results, H1.a, H1.b, and H1c cannot be accepted.

The results of the ROS model are presented in Table 3. The ROS model revealed a significant and negative impact of the TMT's educational background heterogeneity on company performance measured by the ROS ($\beta = -0.0879$; $p<0.05$); thus, H1.c is not accepted. The other variables that defined TMT heterogeneity—tenure, functional background heterogeneity, and educational background—demonstrated no significant effect in the ROS research model. The results indicate a positive and significant impact of the TMT's gender and cultural heterogeneity on company performance measured by the ROA. Consequently, H1, TMT heterogeneity affects the performance of large Croatian companies positively, is partially accepted.

Table 2. Panel analysis results for the ROA model

ROA Model	coefficient
Independent variables	
c	0.0380 (0.2174)
TMT tenure heterogeneity	-0.0155 (0.2816)
TMT functional background heterogeneity	-0.0086 (0.8681)
TMT educational background heterogeneity	-0.0089 (0.7630)
TMT gender heterogeneity	0.0432** (0.0499)
TMT cultural heterogeneity	0.0694** (0.0110)
Company size	1.16E-12 (0.2979)
Average tenure	-0.0001 (0.9066)
Industry	-0.0073 (0.4642)
TMT size	0.0053 (0.2021)

*p<0.1; **p<0.05; ***p<0.01

Source: Author calculators

Table 3. Panel analysis results for the ROS model

ROS Model	coefficient
Independent variables	
c	0.0902 (0.1970)
TMT tenure heterogeneity	-0.0200 (0.2237)
TMT functional background heterogeneity	-0.0717 (0.3656)
TMT educational background heterogeneity	-0.0879** (0.0337)
TMT gender heterogeneity	0.0256 (0.2689)
TMT cultural heterogeneity	0.0163 (0.4765)
Company size	9.56E-13 (0.3551)
Average tenure	-0.0009 (0.7910)
Industry	-0.0219* (0.0564)
TMT size	0.0215 (0.1894)

*p<0.1; **p<0.05; ***p<0.01

Source: Author calculators

4. Results and discussion

The analysis identified the positive and significant impact of the TMT gender heterogeneity on company performance measured by the ROA. Similar results have been obtained in the literature: Dezso and Gaddis Ross (2012), Cambrea et al. (2017), and Chadwick and Dawson (2018). Ensuring gender heterogeneity can have a positive impact, because including women in TMTs leads to new experiences, thinking, and perspectives about company strategy and initiatives (Kolev and McNamara 2020), which increases creativity and innovation and improves the process of decision-making (Wellalage and Locke 2013). These results can be linked to requirements to include females in the higher management structure in companies at the European Union level, as in the rest of the world, but empirical studies show that females are still underrepresented in managing positions in companies (Chadwick and Dawson 2018).

It is important to highlight the positive impact of TMT gender heterogeneity, which leads to differences in the experience of and insights into certain business aspects. In addition, these results can be interpreted as females in companies facing the glass ceiling, who are striving harder in business environments, education, and specialization and are often gaining more business experience than men in the same positions are. For the past decade, gender heterogeneity in Europe has been a focus. Additionally, when the Women on Boards Directive was implemented in December 2022, the focus was on larger companies (iod.com 2023), so these results are crucial from an institutional perspective. Furthermore, the ROS model revealed an insignificant effect of the TMT gender heterogeneity on company performance, which is consistent with the results of Marimuthu and Kolandaisamy (2009).

The results indicate a positive and significant impact of the TMT' cultural heterogeneity on company performance measured by the ROA. Some studies have produced identical results: Lo, Wang, and Zhan (2019) and Akram et al. (2020). The positive impact of cultural heterogeneity stems from the fact that cultural values, attitudes, and norms significantly shape how people perform their tasks, accelerate learning, and combine diverse perspectives to generate new solutions (Corritore, Goldberg, and Srivastava 2020). In

addition, the positive impact of cultural heterogeneity can be observed in international experience, which provides top managers with a broader range of experience in international business activities and thereby improves business outcomes. The findings of Cambrea et al. (2017) indicated that TMT cultural heterogeneity had an insignificant impact on company performance, as indicated by the ROS model.

The analysis indicated a significant negative impact of TMT educational background heterogeneity company performance, as measured by the ROS. Chen and Liu (2018) and Li, Zhang, and Zhang (2015) reported similar findings. These results can be linked to the social identity perspective, as noted by Aboramadan (2020), because such heterogeneity can reduce communication and team cohesiveness and negatively impact company performance through intrateam conflicts. Social identity theory has a pessimistic view of heterogeneity (Mannix and Neale, 2005; Kagzi and Guha, 2018 according to Vetchagool (2025). Furthermore, Zhang, Wang, and Wang (2017) argue that the direction of this heterogeneity is influenced by the social context in which managers operate. Differences in educational backgrounds among TMT members can lead to different insights into business activities, bring different fields into focus, and eventually reduce team communication, thereby reducing TMT efficiency and company performance.

The other demographic dimensions—TMT tenure heterogeneity, functional background heterogeneity, and educational background heterogeneity—were not identified as having a positive or significant impact in either model (ROA and ROS), in line with the findings of Díaz-Fernández, González-Rodríguez, and Pawlak (2014) and Certo et al. (2006). Moreover, these dimensions have been shown to have both positive (Tanikawa and Jung 2016) and negative effects (Chen and Liu 2018). An explanation for these results could be that TMTs in Croatian companies exhibit lower to medium heterogeneity levels, which may affect the research results. A common problem in UET studies is inconsistent results (Nielsen 2010; Díaz-Fernández, González-Rodríguez, and Simonetti 2020; Díaz-Fernández, González-Rodríguez, and Simonetti 2015). Kokot, Tipurić, and Klačmer Čalopa (2021) claim that gaps in UET research result from the use of unsuitable methodologies, the omission of moderating variables, and the absence of psychological variables as a group dynamic.

Notably, otherwise comparable studies have been conducted in different geographical areas (Malaysia, Spain, the USA, Taiwan, and Italy), demonstrating that the research results can be identical despite differences in market characteristics. Agnihotri and Bhattacharya (2015) state that managers' demographic characteristics are more significant in a developing market because the human talent market is not fully developed; thus, managers must rely on internal talent when making strategic decisions. Therefore, demographic characteristics have a more significant effect in the Croatian market. In line with this concept, the results of the current study indicate that gender and cultural heterogeneities are significant. Less developed markets enable a greater impact of TMT heterogeneity in demographic characteristics on company performance. Additionally, the insignificant impact of some demographic characteristics suggests that managers' markets in Croatia are becoming increasingly developed and internationalized, possibly diminishing the significance of TMT heterogeneity for company performance.

During the interpretation of the results, awareness of research limitations is crucial. The first limitation concerns the sample size, 62 companies. The target research population comprises 364 companies. In line with the research aims and methodology, numerous companies had to be excluded. Furthermore, the lack of transparency about managers' information decreased the sample size. The level of managerial discretion was included in the research model through the industry variable, a proxy that also represents a research limitation. According to the literature, numerous factors can impact managerial discretion, and direct measurement can improve research results (Xie 2014). Moreover, the hypothesis testing excluded the internal and external environments in which the TMT members operate, such as group dynamics, innovation, and corporate entrepreneurship. A recommendation for future empirical studies is to include job demands in the research model. Therefore, a recommendation for future studies is to include more variables to describe the context in which TMTs operate and to explore group dynamics, employee loyalty, internationalization, and other factors that could moderate the association between TMT heterogeneity and company performance. Additionally, it is important to analyse nonfinancial performance because heterogeneity can affect employees' creativity, innovation, and corporate responsibility.

5. Conclusion

The TMT is a significant factor in defining and improving a company's efficiency, as demonstrated in the literature. UET provides the theoretical background for the numerous empirical studies analysed. Today, managers operate in a dynamic environment

while facing high heterogeneity within TMTs. Hence, companies must define a TMT structure that will lead to excellent performance. UET and the relevant research have identified gaps in the scientific knowledge and open questions, especially in Croatia. The scientific contribution of this paper lies in defining the TMT structure in terms of its demographic characteristics, according to the need for more information about TMT members. Additionally, the impact of TMT heterogeneity on the performance of a large Croatian company was analysed.

In line with the results of the secondary quantitative research, answers to the research questions are provided, and the scientific contribution could lead to an increase in studies, especially in Croatia, where heterogeneity dimensions are not well researched. The results indicated the positive impact of TMT cultural and gender heterogeneity on company performance, whereas a negative impact of the TMT educational background heterogeneity was identified. These results suggest that TMT heterogeneity is important and cannot be overlooked because some aspects of heterogeneity can impact company performance in both directions. The research results confirm the inconsistency in UET results. In Croatia and other countries, research gaps remain; thus, the authors offer recommendations for future research.

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