

DIVERSITY ON CORPORATE BOARDS: A SYSTEMATIC REVIEW

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Abstract

How to cite this paper: Boshanna, A. (2021). Diversity on corporate boards: A systematic review. *Corporate Ownership & Control*, 18(4), 8–20.
<https://doi.org/10.22495/cocv18i4art1>

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ISSN Online: 1810-3057

ISSN Print: 1727-9232

Received: 12.04.2021

Accepted: 22.06.2021

JEL Classification: G34

DOI: 10.22495/cocv18i4art1

This study conducts a systematic review and provides a comprehensive up-to-date review of the literature about diversity on corporate boards. Unlike previous studies, we do not restrict our search to a specific type of diversity (e.g., gender diversity) or limited firm outcomes (e.g., firm performance). Our aim is to review, evaluate, synthesize, and summarize the literature and extend our knowledge on five key areas: 1) the theoretical approach (going beyond the theoretical analysis of each article by exploring how the theoretical perspective informs their focus); 2) dominant framing and theorizing (single theory vs multi-theories); 3) determinants and consequences; 4) how board diversity is defined and operationalized; and 5) the outcomes of board diversity. In reviewing the research from 2010 to February 2021 and using Saint Mary's University Business Source Premier (SMU EBSCO) database, we identify 46 articles. Our findings reveal that agency theory no longer dominates board diversity research and has given way to institutional theory. The increasing use of institutional theory, which considers the effect of social structure on organizational outcomes, may be caused by most of the literature (based on our findings) using cross-country data. At the same time, there is a tendency to use a more multi-theoretical approach rather than a single theory one, and there are methodological limitations, including a paucity of rich data collection methods (e.g., surveys, questionnaires, and interviews). In addition, the current literature, according to the findings, focuses more on the consequences than the determinants of board diversity. Finally, our study intends to highlight and outline crucial research gaps that invite future investigation.

Keywords: Board Diversity, Systematic Review, Agency Theory, Resource Dependency Theory, Institutional Theory, Multi-Theories

Authors' individual contribution: The Author is responsible for all the contributions to the paper according to CRediT (Contributor Roles Taxonomy) standards.

Declaration of conflicting interests: The Author declares that there is no conflict of interest.

Acknowledgements: The Author thanks Patricia Bradshaw for constructive comments.

1. INTRODUCTION

Diversity on corporate boards has been extensively explored using various theoretical approaches, such as agency theory (Al Fadli, Sands, Jones, Beattie, & Pensiero, 2019), resource dependence theory (RDT) (Atif, Liu, & Huang, 2019), institutional theory (Cook & Glass, 2014), feminist theory (Cuadrado-

Ballesteros, Martínez-Ferrero, & García-Sánchez, 2017), stakeholder theory (Gazley, Chang, & Bingham, 2010; Harjoto, Laksmana, & Lee, 2015), critical mass theory (Joecks, Pull, & Vetter, 2013; Yarram & Adapa, 2021), complexity theory (Cuadrado-Ballesteros et al., 2017), social identity theory (Ali, Ng, & Kulik, 2014; Markoczy, Sun, & Zhu, 2020), and contingency theory (Park, 2020). Despite

the vital insight of each theory to understanding board diversity, prior research indicates that the most prevalently used theoretical approaches in gender diversity and corporate governance research are agency theory and RDT (Khatib, Abdullah, Elamer, & Abueid, 2020; Li, Terjesen, & Umans, 2020). These two mentioned studies similarly report consistent findings in considering agency theory as the most-used approach and RDT as the second most popular theoretical perspective. In addition, the second article finds that institutional theory alone is the fourth most commonly used theory in corporate governance research (Li et al., 2020).

Therefore, this study focuses on organization theory, exploring not only the theoretical analysis of each article but also how the theoretical perspective informs their focus. More specifically, this study looks at aspects of several elements and highlights the relative and dominant framing and theorizing of each one, including context (legal, regulatory, geographic, etc.), the definition of diversity (gender, age, ethno-cultural, ethnicity, etc.), determinants of diversity, consequences of diversity, the composition of boards and committees (percentages, etc.), gender as a moderator, and various ways to measure diversity.

Theoretical concerns have arisen about using a single theory to directly predict the outcomes of board diversity. According to Carter, D'Souza, Simkins, and Simpson (2010), no theory alone can predict the outcomes of board diversity. The authors argue that neither agency theory nor RDT can independently directly predict the effect of board gender diversity on firm performance (Carter et al., 2010). By the same token, although agency theory is proven to be the most commonly used approach in examining board diversity (Khatib et al., 2020; Nadeem, 2020), because of its dominant use, it has been also criticized as the leading cause of the existence of conflicting findings regarding the outcomes of board diversity. Consequently, it is assumed that the wide use of agency theory is one of the key reasons why we know less about the topic despite the plethora of studies (Ben-Amar, Francoeur, Hafsi, & Labelle, 2013).

Taken together, both the rising criticism regarding the use of a single theory and the shortcomings of drawing on agency theory alone point to the need to reevaluate the past approach to research in this field and to pose a few pertinent questions. First of all, is a single theory still the most common approach used in board diversity research, or is there is a tendency to use a more multi-theoretic approach? Secondly, if a single theory is in fact still dominating board diversity literature, is agency theory alone or resource dependence theory alone still most extensively applied? (And how about institutional theory?) Third, if the multi-theoretic approach is the most widely used technique in board diversity research, then what kind of a theoretical combination is commonly used to study board diversity, and why? More specifically, it is still unclear whether a combination of two or more of the most used theories (agency, RDT, and institutional theory) comprises the most common approach in board diversity literature or a whether researchers are mixing one of these theories with other theories (e.g., agency theory with critical mass theory).

Although there are other systematic review papers on board diversity, this paper presents a new approach to reviewing board diversity literature. It differs from prior research in terms of the scope, database, and objectives. A recent systematic review by (Khatib et al., 2020) focuses on reviewing the board diversity of financial institutions, whereas our paper does not have such a restriction. Additionally, Nguyen, Ntim, and Malagila (2020) conduct a systematic review paper on women on corporate boards, focusing only on gender diversity and firm performance, while our study does not have this constraint. Furthermore, our study uses a comprehensive list of keywords and searches, analyzing and synthesizing board diversity-related literature under the restriction of time (2010-2021) only. We will explain later the reason for using the restricted timeframe in our search.

The rest of the study is organized as follows. Section 2 discusses the literature review. Section 3 presents the research methodology. Section 4 displays the research results. Section 5 describes the discussion of the results, and Section 6 concludes the study.

2. LITERATURE REVIEW

Although a number of previous studies conduct systematic reviews on board diversity, this paper differs from those research efforts in terms of scope, database, and objective. First, this study focuses on board diversity (all types of diversity), so it is not limited to a specific type of diversity (e.g., gender diversity); it is also not limited to specific firm outcomes, such as firm performance. For example, Nguyen et al. (2020) undertook a very recent systematic review on board diversity, but they focus only on gender diversity and firm performance. In the same vein, Khatib et al. (2020) focus on reviewing various types of board diversity of only financial institutions. Similarly, Byron and Post (2016) perform a meta-analysis of women on boards of directors and corporate social performance. Their focus was limited to gender diversity and corporate social performance (Byron & Post, 2016). Motivated by the mixed evidence (positive, negative, and neutral) of the impact of women on boards on firms' financial performance, Post and Byron (2015) also conduct a meta-analysis by reviewing only studies that examine gender diversity and a firm's financial performance. In addition, Halliday, Paustian-Underdahl, and Fainshmidt (2021) perform a meta-analysis on women on boards of directors, investigating the roles of organizational leadership and national context for gender equality (Halliday et al., 2021). Observably, the previous systematic review studies appear to suffer from one comment weakness: they focus on either a specific type of diversity (e.g., gender diversity) or specific firm outcomes (e.g., firm performance), whereas our study does not have such restrictions. For example, our study goes beyond gender diversity to review various types of diversity, such as ethnicity (Zhang, 2012), nationality, education, tenure, occupational and international background (Arnegger, Hofmann, Pull, & Vetter, 2014), age (Shehata, Salhin, & El-Helaly, 2017), and diversity of expertise (e.g., financial background) (Gray & Nowland, 2017; Kaczmarek, Kimino, & Pye, 2014; Katmon, Mohamad, Norwani, & Al Farooque, 2019; Lee & Park, 2019). Second, most

of the recent systematic review studies such as Khatib et al. (2020) and Nguyen et al. (2020), did not use EBSCO in their search. By using EBSCO, we were able to review studies that are not included in their reviews. Moreover, this study is distinct from previous ones that focus heavily on reviewing empirical research looking at positive vs negative associations. This work focuses on both theoretical and empirical studies about board diversity.

Furthermore, our study contributes to the existing research by conducting an in-depth analysis of the theoretical approach. This is accomplished by going beyond the theoretical analysis of each article and exploring how the theoretical perspective informs their focus. We also review and compare dominant framing and theorizing (single theory vs multi-theories). For example, we focus on the three most-used theories (agency, RDT, and institutional theory) in gender diversity and corporate governance research (Khatib et al., 2020; Li et al., 2020), and we provide insights on theoretical frameworks that are currently common for studying board diversity, which previous studies fail to address. For example, we find there is a tendency to use a multi-theoretical approach instead of a single theory one. Despite the increasing use of the multi-theoretical approach, there is a dearth of research on using a combination of agency theory and institutional theory with other theories (not including RDT); similarly, there is only very limited research on mixing RDT and institutional theory with other theories (excluding agency theory). Furthermore, the current systematic review contributes to our knowledge about board diversity by reviewing the determinants and consequences of board diversity.

3. RESEARCH METHODOLOGY

At the beginning of our research, we decided to review the literature using various databases. However, a closer look at the literature on diversity on corporate boards revealed that previous studies have almost exclusively focused on “Scopus”, “Google Scholar” and “Web of Science” as their databases (Khatib et al., 2020; Nguyen et al., 2020). As the focus of prior research was on specific databases, there is a possibility that we may gain more insight and understanding of the topic if we use a different database, for example, the SMU Business Source Premier (EBSCO). Identifying a rigorous research method (e.g., strategies for keywords search), databases (e.g., Scopus), and inclusion criteria are important for a systematic review because methods impact the review’s findings through the inclusion of relevant articles (Gusenbauer & Haddaway, 2020). Therefore, we are motivated to use EBSCO as our database for several reasons. First, the two most recent systematic reviews, i.e., Khatib et al. (2020) and Nguyen et al. (2020), did not use EBSCO in their search despite the fact that EBSCO, Scopus, and Web of Science are the most commonly used databases for searching gender diversity (Kirsch, 2018) and corporate governance research (McNulty, Zattoni, & Douglas, 2013). Second, each database has its own strengths and limitations, so using more than one can overcome the limitations and may serve to complete each other. For example, the key limitation of Google Scholar is “including some non-scholarly citations or for not indexing all scholarly journals”, while

the main weakness of the Web of Science is that “it may provide a substantial underestimation of an individual academic’s actual citation impact” (McNulty et al., 2013, p. 6). Because the focus of the previous two studies conducted by Khatib et al. (2020) and Nguyen et al. (2020) was on specific databases (e.g., Scopus and Web of Science), there is a possibility that we may gain more insight and understanding of the topic if we use a different database, such as EBSCO. More importantly, using an alternate or additional database may overcome the likelihood of the study selection bias issue. Basically, it is plausible that there is a high risk of not including some studies if specific databases do not subscribe to their journals, which could have an influence on the obtained findings. For instance, using EBSCO, we were able to identify and review studies related to board diversity, (Haque & Jones, 2020; Zhang, 2020; Zhang, 2012), that are not included in the most recent two studies, e.g., Khatib et al. (2020) and Nguyen et al. (2020). Finally, the objective of this study differs from that of previous studies in that we go beyond the theoretical analysis of each research work by exploring how the theoretical perspective informs the work’s focus. We also identify the dominant framing and theorizing (single theory vs multi-theories). Using EBSCO is appropriate for our study’s goal (focusing on the three most-used theories: agency, RDT, and institutional theory), as it gives us more options, such as time, language, peer-reviewed journals, search keywords in the title and abstract, etc., that other databases such as Google Scholar do not have. These options enable us to select and evaluate what to include in the same way that EBSCO does.

We explain the research methodology of this study after we first look at the methodology of several systematic/literature review studies across various disciplines and published tools for systematic reviews. Khatib et al. (2020) conduct a systematic review paper about diversity in the boardroom, following the research approaches of Amrutha and Geetha (2020), Cruz-González, Rodríguez, and Segovia (2021), and Wan Sulaiman and Mustafa (2020). All of these studies use Scopus and Web of Science as their databases. Li et al. (2020) cover corporate governance in entrepreneurial firms, following the research method used by Tranfield, Denyer, and Smart (2003). These latter researchers’ methods are slightly similar to those mentioned previously, although different databases are sourced, including EBSCO. Wen, Li, Lin, Hu, and Huang (2012) conduct a systematic literature review on machine learning, while Huang and Watson (2015) develop a literature review protocol studying corporate social responsibility in accounting research. More recently, Alhossini, Ntim, and Zalata (2021) review extant corporate board committees and corporate outcomes.

In addition, some of the reviews present as a systematic review guidance. The first of these is Weightman, Farnell, Morris, Strange, and Hallam (2017), whose systematic review document is offered by Evidence Based Library and Information Practice. The work is published by the University of Alberta. We incorporate the mentioned systematic/literature review methods and guidance into our work in order to locate, review, evaluate, separate, analyze, and synthesize literature related to corporate board diversity.

3.1. Strategies for keywords searching

Reviewing the literature, we develop a comprehensive list of keywords related to board diversity, including: “board diversity*” OR “gender diversity*” OR “board director’s diversity” OR “board gender diversity” OR “ethno-cultural* diversity” OR “ethnocultural* diversity” OR “educational* diversity” OR “ethnic* diversity” OR “ethnic* minority*” OR “national* diversity” OR “international* diversity” OR “tenure diversity” OR “board age” OR “women on board” OR “female board” OR “female director*” OR “male director*” OR “foreign director*” OR “board gender” OR “gender composition” OR “gender equality” OR “boardroom gender” OR “boardroom female*” OR “demographic diversity” OR “statutory diversity” OR “racial diversity” OR “racial minorities*” OR “board variety” OR “diversity archetype” OR “board minority*” OR “occupational background” OR “education background” OR “education level” OR “professional background” OR “cognitive diversity”. As discussed in the next section, our strategies for keyword searching are in line with the document of Weightman et al. (2017).

3.2. Literature resources and inclusion criteria

Our first step in the search process is to perform keyword searches using SMU EBSCO without restricting the time frame. As displayed in Table 1, we obtain 2,027 studies when we use the given time frame (1968–2021). Then, we include only studies in English, and this leaves us with 1,988 studies. For quality assessment, we first select studies published in peer-reviewed journals. Next, we adopt the 2019 Australian Business Deans Council (ABDC) Journal Quality List for assessment and include only studies published on the ABDC journal list. After the quality assessment procedure, 1,370 studies are reported.

Interestingly, there is a significant difference between the number of publications before and after 2010. Only 317 reviews are published during the period of 1968–2009, whereas 1,053 articles are

published during 2010–2021. Our findings are consistent with prior research. For instance, Khatib et al. (2020) conduct a systematic review on diversity in the boardroom of financial institutions from 1995 to 2020 and report that only 6 publications were before 2009 while 85 publications were after that year. Similarly, Nguyen et al. (2020) review the literature on women on corporate boards and corporate financial and non-financial performance from 1981 to 2019 and conclude that after 2009, there is considerable growing interest in studying women in these positions. These two mentioned studies similarly use “Scopus”, “Google Scholar” and “Web of Science” as their databases while ours use EBSCO as a database. Our collective results indicate that because diversity on corporate boards is receiving heightened attention over the past decade, we, therefore, restrict our search to the period from 2010 to 2021.

After building our keywords list and restricting the time to the period from 2010 to 2021, we then implement a keywords search strategy that follows what is indicated in Weightman et al. (2017). First, we search the SMU EBSCO database using the list of keywords outlined above, covering only the title and abstract and author-supplied abstract by choosing the option “Title and AB abstract or author-supplied abstract”. As presented in Table 1, we obtain 1,053 studies. Second, we exclude publications that do not primarily consider one or more of the following theories: agency theory, RDT, and institutional theory. To do so, we select the option “All Text” and type the following: and “agency theory” OR “resource dependence theory” OR “institutional theory”. After screening out the titles and abstracts using the keywords for irrelevant studies and then screening out all text searching for one or more of the identified theories in unrelated studies, we eventually identify 46 papers for our study. For instance, we exclude studies that mention one of the target theories, but they do not use them as their main theoretical perspectives.

Table 1. Search strategy

No.	Literature resources	Inclusion criteria	No. of findings
1	SMU EBSCO 1968–2021	Title and abstract	2027
2	SMU EBSCO 1968–2021	Language (English)	1988
3	SMU EBSCO 1968–2021	Scholarly peer-reviewed journals	1370
4	SMU EBSCO 1968–2009	Time	317
5	SMU EBSCO 2010–2021	Time	1053
6	SMU EBSCO 2010–2021	All text “agency theory” OR “resource dependence theory” OR “institutional theory”	78
7	SMU EBSCO 2010–2021	One or more of (agency, RDT, and institutional) as the main theory to answer the research question	46

4. RESEARCH RESULTS

4.1. Description of the studies

4.1.1. Geographical sampling areas

As shown in Table 2, samples were collected from various geographical locations and countries, with a vast amount of the literature (12 out of 42 studies) using national data. This is in line with prior research (Khatib et al., 2020) and may also explain the increasing use of institutional theory, as it considers the effect of social structure, which varies from one country to another on organization

outcomes. Additionally, institutional theory can provide deeper insight into the most-used theory (agency theory), which helps to understand agency problems by considering the surrounding environment of the relationship between the agents and the principals and how the external environment affects the relationship (Gómez-Mejía, Wiseman, & Dykes, 2005). The remaining geographical data from the 41 extant sources is used to examine board diversity, as follows: the United States (7 articles); European countries (5 papers); the United Kingdom (4 publications), China (2 studies), and Malaysia (2 studies).

Table 2. Samples from various countries

Country	Number of studies
United States	7
European countries	5
United Kingdom	4
China	3
Malaysia	2
Canada	1
Vietnam	1
Germany	1
Japan	1
Latin America	1
Philippines	1
Spain	1
Turkey	1
Across counties	12
Total	41

4.1.2. Research methodology

As shown in Table 3, the majority of existing studies (44 studies out of 46) use empirical research methods. In contrast, only two studies are theoretical: Booth-Bell (2018) proposes social capital as a new board diversity rationale for corporate governance, and Mori and Richard (2019) study the challenges and implications of board gender diversity in East African firms.

The data collection methods of the empirical studies primarily focus on archival data compiled as annual reports (Abbott, Parker, & Presley, 2012; Hutchinson, Mack, & Plastow, 2015; Mun & Jung, 2018), as well as BoardEx database and SiRi Pro company (Alkalbani, Cuomo, & Mallin, 2019; Labelle, Francoeur, & Lakhali, 2015), Osiris database (Ali et al., 2014; Saeed & Sameer, 2017), Canadian Spencer Stuart Board Index (CSSBI) (Ben-Amar, Chang, & McIlkenny, 2017), and Bloomberg for S&P 500, S&P MidCap 400, and S&P SmallCap 600 (hence, S&P 1500) indexed firms (Atif et al., 2019), among others. Conversely, there is limited use of other rich data collection methods, such as surveys, questionnaires, or interviews (Mun & Jung, 2018). There is, however, a variety of data analysis methods used, including OLS regression; multivariate regression analysis (Nguyen, Locke, & Reddy, 2015); 2SLS regression, quantile regression and GMM regression (Poletti-Hughes & Briano-Turrent, 2019); least-square (GLS) regression; probit regression (Hutchinson et al., 2015); and conditional logistic regression (Abbott et al., 2012). Additionally, the studies employ propensity score matching (PSM) and three-stage least squares (3SLS) (Lu & Herremans, 2019), Hierarchical linear regression (Zhang, 2012), 2SLS instrumental variables (IV) approaches (Katmon et al., 2019), and Poisson regression (de Cabo, Gimeno, & Nieto, 2012) among others.

Table 3. Research methods, determinants and consequences

	Diversity on corporate boards
Research methods	
Theoretical	2
Empirical	44
Total	46
Determinants and consequences	
Determinants	7
Consequences	39
Total	46

4.1.3. Determinants and consequences

Although understanding the determinants of diversity on corporate boards is as important as understanding its consequences, most previous studies focus on examining the consequences. In contrast, the determinants remain insufficiently explored. Our findings show that seven studies examine the determinants, while the rest examine the consequences. For instance, Hutchinson et al. (2015) suggest that the existence of a nomination committee can be a driver of board diversity. In other words, increasing women's representation on nomination committees is a factor that can determine board diversity. However, as only board members can become nomination committee members, the direct effect of nomination committee women on board diversity was not investigated, only their proportional representation on the nomination committee (Hutchinson et al., 2015).

Along the same lines, Mun and Jung (2018) show that women's representation on boards of directors is explained by foreign institutional ownership, measured based on the percentage of a firm's shares held by foreign institutional investors. Other studies have identified the following determinants: shareholder activism (Marquardt & Wiedman, 2016), lower-risk banks, bank size, and banks that have a growth orientation (de Cabo et al., 2012), status, peer group behavior, and institutional change (Rao Sahib, 2015), and firm size (Arnegger et al., 2014). It is worth noting that five out of the seven studies that examine determinants use institutional theory. More specifically, some studies apply institutional theory alone without additional theory to examine the determinants of board diversity, including gender diversity (Mun & Jung, 2018; Saeed, Belghitar, & Yousaf, 2016), women on boards (Gros vold & Brammer, 2011), and racio-ethnic diversity (Rao Sahib, 2015), while another study utilizes the institutional theory combined with agency theory (Marquardt & Wiedman, 2016). Four of the studies are conducted during the last seven years, which may indicate an increasing usage of institutional theory to understand diversity on corporate boards (see Table A.1 in Appendix).

Much of the prior research on the consequences of diversity on corporate boards has been related to firm performance (Ararat, Aksu, & Cetin, 2015; Hutchinson et al., 2015; Labelle et al., 2015; Nguyen et al., 2015; Shehata et al., 2017; Unite, Sullivan, & Shi, 2019; Zhang, 2020). Moreover, the association between board diversity and corporate social responsibility performance and its quality disclosure, social responsibility performance, and environmental responsibility performance have also gained significant interest among research communities in recent years (Zaid, Wang, Adib, Sahyouni, & Abuhijleh, 2020b; Cordeiro, Profumo, & Tutore, 2020; Katmon et al., 2019; Lu & Herremans, 2019; Yasser, Al Mamun, & Ahmed, 2017; Zhang, 2012). Some research also examines various outcomes of diversity on corporate boards, including financial restatement (Abbott et al., 2012), financial reporting quality (Pucheta-Martinez, Bel-Oms, & Olcina-Sempere, 2016), voluntary intellectual capital (IC) disclosure (Nadeem, 2020), the say-on-pay dissent voting (Dissent) (Alkalbani et al., 2019), corporate risk (Poletti-Hughes & Briano-Turrent, 2019),

disclosure decision (Ben-Amar et al., 2017), employee productivity (Ali et al., 2014), loan book quality (Ward & Forker, 2017), the ratio of cash (Atif et al., 2019), corporate divestitures (Kolev & McNamara, 2020), biodiversity disclosures (Haque & Jones, 2020), and CEO compensation (Adithipyangkul & Leung, 2019).

Additionally, board gender diversity may be used as a moderator. For example, board diversity may moderate the relationship between internal corporate governance structure and firm performance (Alabede, 2016; Chin, Ganesan, Pitchay, Haron, & Hendayani, 2019). Similarly, the gender, age, nationality, education, tenure, and financial background of board members may be used to moderate relationships between interlocking directorships and firm performance (Kaczmarek et al., 2014). In the same vein, board diversity, including encompassing gender, nationality, education, and experience moderates the association between corporate governance and investment decisions (Mirza, Malik, & Mahmood, 2020). Likewise, the association between corporate social responsibility strategy and corporate environmental and social performance may also be moderated by board gender diversity (Orazalin & Baydauletov, 2020).

4.2. Theoretical perspectives

Kinney (2019) suggests that three key questions — what, why, and how — need to be answered in order to communicate our ideas. He highlights the “what” question by stating we need to determine “what affects what” by using theories to understand phenomena and anticipate relationships. He concludes that the “what” question is the fundamental query on which the “why” and “how” questions depend (Kinney, 2019).

In the recent board diversity literature, some researchers use a single theory, such as agency theory, while others use more than one theory, such as a combination of agency theory and RDT. To better understand the field of organization theory in terms of diversity on corporate boards, we review, analyze, and synthesize the related literature by first focusing on applying only one of the identified theories (agency, RDT, or institutional theory) alone. Next, we look for combinations of the three theories (as paired theories), and then for combinations of the three theories with other theories (but not with themselves). Finally, we look at combinations of agency theory, RDT, and institutional theory with other theories, including with themselves. In each of these investigations, we focus on the type of diversity used, the definition of diversity, the operationalization of diversity, and the outcomes of diversity (dependent and independent variables).

In summary, although our findings appear consistent with previous studies in terms of increases in interest in the topic of board diversity in recent years, they seem inconsistent with the sequence of the widespread theoretical framework used in the literature to study the topic. Recent research reveals that agency theory is the most common theoretical approach to study board diversity, followed by RDT, stakeholder, and critical mass theories. In fact, agency theory was

found in 32% of the studies, RDT in 18% of the papers, stakeholder theory in 9% of the articles, and critical mass theory in 7% of the publications (Khatib et al., 2020). However, as Table A.1 summarizes, our results differ from previous findings in the literature, as our results indicate that agency theory alone is not extensively used to study board diversity (8% of the studies). Instead, we find that agency theory is the most prominent and common theoretical approach to studying board diversity if it is used with other theories except for RDT and institutional theory (17% of the studies). Additional theories used with agency theory are critical mass theory, financial theory, stakeholder theory, social psychology theory, bias theory, stewardship theory, signalling theory, managerial power theory, and social identity theory. These findings suggest that agency theory is most often combined with economic, accounting, and corporate governance theories (e.g., signalling theory and managerial power theory), as well as sociological and socio-psychological theories (e.g., institutional theory and social identity theory).

Moreover, our findings suggest that one of the systematic review studies does not consider the institutional theory within the most common theories applied to board diversity literature (Khatib et al., 2020), and the institutional theory is the fourth most widely employed theory in corporate governance research in the other article (Li et al., 2020). Interestingly, our findings reveal that institutional theory alone is also the most used theory (17% of the studies), but they do not seem to support prior research on the second commonly used theory to study board diversity. Although earlier research suggests that RDT is the second most-used theory to study board diversity (18% of the papers) (Khatib et al., 2020), it is not established whether this refers to RDT alone or in combination with other theories. To illustrate, our findings show that combining RDT with agency theory in building and developing a theoretical perspective to answer a research question is the second most-used approach (13% of the papers), as is a combination of agency theory, RDT, and other theories except for institutional theory (13% of the papers). Additionally, Table A.1 shows that combining RDT with other theories (except agency and institutional) is the third most-used theoretical approach (8% of the articles), along with agency theory alone (8% of the studies).

Interestingly, although there exists a considerable body of research that uses different combinations of theoretical perspectives, a combination of agency theory and institutional theory with other theories (excluding RDT), as well as a mixture of RDT and institutional theory with other theories (excluding agency theory) has not been yet explored. Table A.1 shows that there is no combination of either one of these mentioned theoretical approaches.

4.2.1. Type of board diversity and its outcome

In general, the focus is on the effect of board gender diversity on firm performance and corporate social responsibility performance. First, using agency theory alone, nationality and gender diversity are positively and insignificant associated with corporate sustainability (Zaid et al., 2020b). The percentage of females on boards mitigates

the possibility of restatement (Abbott et al., 2012). Gender diversity is positively associated with performance in countries where a voluntary approach is applied, but it is negatively associated with performance in countries using the regulatory approach (Labelle et al., 2015). Second, when using RDT alone, there is a positive relationship between gender diversity and firm environmental performance mainly in the more environmentally influencing industries (Lu & Herremans, 2019). Board racial and gender diversity are associated with lower divestiture rates and longer divestiture competition times. At the same time, board racial diversity is connected to lower divestiture returns, while board gender diversity is related to higher divestiture returns (Kolev & McNamara, 2020). Third, when using institutional theory alone, because of the considerable difference among countries and industries, the relationship between gender diversity and firm performance differs due to the variation in institutional context (Zhang, 2020). There is a positive association between gender diversity and firm size, but a negative relationship between gender diversity and corporate risk throughout the emerging and developing economies under study (Saeed et al., 2016).

Next, let us look at using a combination of two of the following theories: agency, RDT, and institutional, starting with a mixture of agency and resource dependence theories. In examining the relationship between gender diversity and firm performance, one study concludes that there may be a trade-off between the benefits and the costs of including diversity on a board (Nguyen et al., 2015). At the same time, there is a positive association between gender diversity and both institutional and technical strength ratings, whereas racial diversity is positively associated with only institutional strength rating (Zhang, 2012). Second, when using a combination of agency and institutional theories, female director representation and board independence are negatively related to the possibility of being objective by the shareholder proposal associated with gender diversity (Marquardt & Wiedman, 2016). Furthermore, including gender diversity in the compensation committees does not have any effect on restraining CEO compensation. Instead, government regulation and socialist ideology can decrease CEO compensation, though the efficiency of either one seems to be context-specific. For example, CEO power from various sources can be prevented by distinct institutional forces (Adithipyangkul & Leung, 2019). Third, when considering a combination of resource dependence and institutional theories, the relationship between female management representation and supervisory boards varies based on the country's development stage, gender equality, and cultural institutions (Tyrowicz, Terjesen, & Mazurek, 2020). In addition, higher female board representation exhibits heightened sensitivity to apprehensions of institutional pressures and leads the board to improve firm biodiversity disclosures (Haque & Jones, 2020).

Using a combination of only one of the identified theories (agency, resource dependence, and institutional) with one or more of the other theories, various findings emerge. First, let us look at a combination of agency theory with other

theories. Utilizing agency theory and critical mass theory, one study shows that women board compensation committee representation decreases shareholders' dissent via say-to-pay. Nevertheless, the findings are only valid where there is more than 30% of women on the compensation committee (Alkalbani et al., 2019). Furthermore, using agency theory with stakeholder theory reveals a negative association between gender diversity and cash dividend payments in all emerging economies (Saeed & Sameer, 2017). Second, when using a combination of RDT and other theories, we can see that applying RDT and critical mass theory shows an increase in women's presence on the board, which then increases the possibility of voluntary climate change disclosure (Ben-Amar et al., 2017). By implementing RDT and social identity theory, research shows a positive linear association between gender diversity and employee productivity, but a negative linear association between age diversity and return on assets. However, it also reveals an inverted U-shaped curvilinear association between age diversity and returns on assets (Ali et al., 2014). Third, when employing a mixture of institutional theory and other theories, other results are revealed, one study, published in "C" journal, uses institutional theory with other theories (stakeholder theory). The study found that the existence of board gender diversity boosts the adoption of corporate social responsibility in emerging markets (Yasser et al., 2017).

Next, we mix two of the identified theories (agency, resource dependence, and institutional) with themselves and with one or more other theories. To do that, we first look at using a combination of agency theory and RDT with other theories. Drawing on agency theory, RDT, and critical mass theory, the research uncovers a negative significant association between gender diversity and cash holdings and voice on cash holdings (Atif et al., 2019). Additionally, a study that also uses agency theory, RDT, and critical mass theory concludes that there is a strong positive association between board gender diversity and intellectual capital disclosure consistent with RDT. It was also found a negative effect of women directors on intellectual capital disclosure, a finding which is contradictory to agency theory prediction. The study moreover indicates that the association between board gender diversity and intellectual capital disclosure is usually significant for corporations whose board includes two or more women, which is aligned with critical mass theory in China (Nadeem, 2020). On the other hand, intriguingly, neither of the prior studies use a combination of agency theory and institutional with any other theory (excluding RDT) or a combination of RDT and institutional with any other theory (excluding agency theory).

4.2.2. Defining and operationalizing board diversity

Gender diversity is defined as (sex) male and female (Zaid et al., 2020b; Mori & Richard, 2019; Nguyen et al., 2015; Terjesen, Couto, & Francisco, 2016). Other forms of diversity that have been studied include nationality (Zaid et al., 2020b), race (Zhang, 2012), ethnicity, age, education, tenure, financial background (Kaczmarek et al., 2014), demographics

(Ararat et al., 2015), racio-ethnic diversity and percentage of foreigners (Rao Sahib, 2015), occupational, and international background (Arnegger et al., 2014).

Board diversity is a measure that employs various approaches. Gender diversity indicates the proportion of female directors on the board (Zaid et al., 2020b; Adithipyangkul & Leung, 2019; Labelle et al., 2015). Gender and national diversity are indicated by the number and proportion of females, using the Blau and Shannon indices as a measure (Zaid et al., 2020b; Ali et al., 2014; Alkalbani et al., 2019; Lu & Herremans, 2019; Saeed & Sameer, 2017; Tyrowicz et al., 2020; Yasser et al., 2017). In general, gender diversity is measured according to whether a board has at least one female director (Abbott et al., 2012). Using the Blau index, racial diversity is measured based on the four categories of Asian, black, Hispanic, and white (Kolev & McNamara, 2020). Blau's index is also used to measure board diversity (Saeed et al., 2016; Zhang, 2020; Zhang, 2012), while the female directors' percentage is used to measure gender diversity (Haque & Jones, 2020; Marquardt & Wiedman, 2016).

Some studies combine more than two indices to measure board diversity, such as the percentage of female directors, the gender diversity dummy variable, and the Blau index (Nguyen et al., 2015). The research in the literature utilizes six measures of gender diversity: 1) the number and 2) a percentage of women on the board, 3) the Blau index, 4) a dummy variable equal to 1 if at least one woman is sitting on the board of directors (and zero otherwise), 5) a dummy variable equal to one if at least two women are sitting on the board of directors (and zero otherwise), and 6) a dummy variable equal to one if there are at least three women sitting on the board of directors (and zero otherwise) (Atif et al., 2019; Ben-Amar et al., 2017).

5. DISCUSSION OF THE RESULTS

5.1. Theoretical focus

Theoretically, prior research has highlighted the limitations of using a single theory to examine board diversity outcomes, one of which is its shortcomings indirectly predicting the phenomenon. For instance, even agency theory or RDT alone cannot directly predict the relationship between board gender diversity and firm performance (Carter et al., 2010). In addition, although agency theory has long been considered the most dominant theory (Khatib et al., 2020), for the same reason, it has been criticized as the cause of reporting conflicting findings of the outcomes of board diversity (Ben-Amar et al., 2013). Considering the limitations, this may explain why our results reveal a minimal use of one theory. Also, it seems that agency theory alone is, in more recent research, no longer the most-used theory in board diversity research. Consequently, we should see increasing use of the multi-theoretic approach.

At the same time, multi-theoretic strategies are gaining in popularity, either as a combination of only one theory (agency, resource dependence, and institutional) with one or more other theories or as a mixture of two theories (agency, resource dependence, and institutional) with one or more

other theories. In contrast, and to the best of our knowledge, no study has yet applied a combination of agency theory and institutional theory with any other theory (excluding RDT), or a combination of RDT and institutional theory with any other theory (excluding agency theory), despite the widespread application of institutional theory. Consequently, it would be advisable for future scholars to use either of these theoretical frameworks.

5.2. Research methodology

Our knowledge of board diversity is primarily based on national data, even though not much is known about single countries. In particular, very little is known about board diversity in developing countries. Despite the usefulness of other data collection methods (e.g., surveys, questionnaires, observations, and interviews) in producing rich quantitative and qualitative data (Nguyen et al., 2020), our review indicates that they are not being used. Regarding data analysis techniques, as we discussed earlier, there is considerable use of regressions, mainly ordinary least square regression. One of the main concerns is the potential endogeneity problem, which researchers handle by using techniques such as the one-step system generalized method of moments (GMM) estimator and dynamic panel GMM, two-stage least squares (2SLS), and instrument variable (IV). However, we think that the mentioned techniques do not always solve the core issues in the development of the hypothesis. In other words, the results, even if checked for robustness, cannot replace the limitations in the theorizing leading to the hypotheses.

Furthermore, we would like to underline that other studies which adopted the same instrument variable (IV) do not ensure that an instrument is valid because other studies probably had a different outcome as the dependent variable. Researchers need to justify theoretically why their instruments are valid (the Hansen J statistics is not sufficient). Therefore, we encourage future researchers to consider examining the topic in developing countries as well as in individual countries and to apply various data collection methods and data analysis techniques. Furthermore, there are currently only two theoretical studies, so future investigations could include "how" and "what" research questions using qualitative research.

5.3. Determinants and consequence

While the published literature within our time frame examines the consequences of board drivers, there is limited research on the determinants. Five out of seven determinant studies use an institutional theory that is in line with our previous directions for future research to discover the usefulness of institutional theory. Moreover, we suggest further research on board diversity determinants, as such investigations would help when examining the consequences of board diversity. This approach would also help to acknowledge that endogeneity, which leads to biased and inconsistent results, is a serious issue in board diversity studies. Identifying the determinants may shed more light on the unobserved variables that affect both the independent and dependent variables.

5.4. Outcomes of board diversity

We acknowledge the ongoing and considerable discussions among researchers across various disciplines regarding board diversity. The disciplines are themselves diverse and include management, organizational behavior, sociology, economics, finance, and marketing, among others. However, our findings highlight that little is known about board diversity in accounting research. For example, only one study examined the association between female board presence and the possibility of a financial restatement. Therefore, further research may consider exploring the impact of board diversity on various accounting variables, such as earnings management, accounting conservatism, and financial reporting quality.

6. CONCLUSION

This research aimed to review board diversity literature to understand the state and position of organizational theory in terms of understanding diversity on corporate boards. In our work, we identified and analyzed 46 studies across various disciplines. This study extends board diversity literature by providing a very recent comprehensive review on the topic and first underlining the most widely used theoretical precepts for examining board diversity. The findings show there is a tendency to use a more multi-theoretic approach than a single theory, agency theory does not dominate board diversity literature whereas institutional theory is. Agency theory is widely used to studying board diversity if it is applied with other theories except for RDT and institutional theory. Second, research method (sampling/geographical locations, data collection, and data analysis), we found more use of cross countries data, lack of use other data

collection methods, such as survey and interview, and various use of data analysis techniques. Third, determinants and consequences, the results indicate that prior research focuses more on the consequences than the determinants of board diversity. Fourth, the type of diversity and how diversity is defined and operationalized, more attention is given to gender diversity, and the Blau index is widely used to measure board diversity. Finally, the outcomes of board diversity, generally speaking, the focus is on the effect of board gender diversity on firm performance and corporate social responsibility performance. This review offers several avenues for future research in each of the elements that are discussed above.

This review has several limitations. The main one is the study selection bias, as we only use sources that are accessible through SMU EBSCO host during February and March 2021. This approach brings with it a high risk of excluding (not purposely) some studies in journals that the SMU library does not subscribe to. Another limitation is the inclusion criteria, as this review considers only studies that use one or more of the identified theories (agency, RDT, and institutional) as their primary theoretical approach. Under those circumstances, there is some likelihood that other researchers may find different/similar findings if they consider unrestricted use of theories. A third limitation is our strategies for keyword searching. Although we develop a comprehensive list of keywords that are identified based on the relevant literature, we do not cover studies that use different terms related to their research questions in their titles or abstracts. A final limitation could be research findings bias, which occurs when studies may not have reported particular findings if they were not relevant to the study outcome (no relationship).

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APPENDIX

Table A.1. Number of studies and theories across journals

Journal	ABDC list	Agency	RDT	Institutional	Agency & RDT	Agency & institutional	RDT & institutional	Agency & others (not RI)	RDT & others (not AI)	Institutional & others (not AR)	Agency, RDT & others (not I)	Agency, institutional & others (not R)	RDT, institutional & others (not A)	Other single theory	Total
Asian Journal of Accounting and Governance	C				1			1							2
Business Strategy and the Environment	A		1								2				3
Corporate Governance: An International Review	A			2		1		2			1				6
Corporate Governance: The International Journal of Business in Society	C		1		1										2
European Management Journal	B						1		1						2
International Business Review	A			1				1							2
Journal of Business Ethics	A			2					2		1				5
Journal of Management and Governance	A				1				1						2
Others		4	1	3	3	1	1	4	0	1	2			2	22
Total		4	3	8	6	2	2	8	4	1	6	0	0	2	46

Note 1: Others include: 1) Accounting and Finance (A), 2) Accounting Horizons (A), 3) Administrative Science Quarterly (A*), 4) Applied Economics (A), 5) Asia Pacific Journal of Management (A), 6) Asian Journal of Business Research (C), 7) Business Ethics: A European Review (B), 8) Corporate Social Responsibility and Environmental Management (C), 9) Gender, Work and Organization (A), 10) International Advances in Economic Research (C), 11) International Journal of Corporate Governance (B), 12) International Review of Economics and Finance (A), 13) International Review of Financial Analysis (A), 14) Journal of African Business (C), 15) Journal of Business Finance and Accounting (A*), 16) Journal of Cleaner Production (A), 17) Long Range Planning (A), 18) Organization Science (A*), 19) Public Administration Review (A), 20) The British Accounting Review (A*), 21) The Chinese Economy (B).

Note 2: 1) A: agency theory, 2) R: resource dependence, 3) I: institutional theory, 4) AR: agency and resource dependence theories, 5) AI: agency and institutional theories, 6) RI: resource dependence and institutional theories.

Note 3: Other single theory includes: 1) Resource-based view (RBV) theory, 2) Stakeholder theory.

Table A.2. Example of studies using various theoretical perspectives

Author	Journal	Type of diversity	Definition	Operationalization	Independent variable	Dependent variable
Single theory						
<i>Agency theory alone</i>						
Abbott et al. (2012)	Accounting Horizons	Gender	Sex (male/female)	Number	Gender	Likelihood of financial restatement
<i>RDT alone</i>						
Lu and Herremans (2019)	Business Strategy and the Environment	Gender	Sex (male/female)	Blau index	Gender	Firm environmental performance
<i>Institutional theory alone</i>						
Zhang (2020)	Organization Science	Gender	Sex (male/female)	Blau index and percentage	Gender	Firm performance
A combination of agency, resource dependence, and institutional theories						
<i>Agency and RDT</i>						
Zhang (2012)	Corporate Governance: The International Journal of Business in Society	Demographic diversity (gender and race)	Gender: sex (male/female) Race: homogeneous group	Blau index	Demographic diversity	Corporate social performance
<i>Agency and institutional</i>						
Marquardt and Wiedman (2016)	Corporate Governance: An International Review	Gender	Sex (male/female)	Percentage	Shareholder activism	Female director representation
<i>RDT and institutional</i>						
Haque and Jones (2020)	The British Accounting Review	Gender	Sex (male/female)	Percentage	Gender	Firm disclosure of biodiversity
A combination of only one of (agency, resource dependence, and institutional) with one or more of other theories						
<i>Agency and stakeholder</i>						
Saeed and Sameer (2017)	International Business Review	Gender	Sex (male/female)	Number	Gender	Cash dividend payments
<i>RDT and social identity</i>						
Ali et al. (2014)	Journal of Business Ethics	Gender and age	Sex (male/female)	Number	Gender	Employee productivity and return on assets
<i>Institutional and stakeholder</i>						
Yasser et al. (2017)	Corporate Social Responsibility and Environmental Management	Gender	Sex (male/female)	Number	Gender	Adoption of CSR practices
A mixture of two of (agency, resource dependence, and institutional) at the same time with one or more of other theories						
<i>Agency, RDT, and critical mass</i>						
Nadeem (2020)	Business Strategy and the Environment	Gender	Sex (male/female)	Three measures*	Gender	Voluntary disclosure of intellectual capital

Note 1: None of the prior studies use the theoretical perspective (agency theory and institutional with any other theory excluding RDT), nor the combination of the theoretical perspective (RDT and institutional with any other theory excluding agency theory).

Note 2: * Number, percentage, and Blau index.