CORPORATE GOVERNANCE AND ITS IMPACT ON ORGANISATIONAL PERFORMANCE IN THE FOURTH INDUSTRIAL REVOLUTION: A SYSTEMATIC LITERATURE REVIEW

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Abstract

This paper aims to systematically review the existing studies of corporate governance with organisational performance in the Fourth Industrial Revolution and put forward theories, research methods, topics, and variables that emerge from the review. The systematic literature review is based on 42 peer-reviewed journal articles on the topic written by reputable academics on the Science Direct Database focused on corporate governance, board characteristics, and ownership structure. This study's conceptual framework is based on agency theory, which is the most widely used to analyse corporate governance (Fama & Jensen, 1983; Jensen & Meckling, 1976). The majority of results show a positive correlation between corporate governance and organisational performance (Pucheta-Martínez & Gallego-Álvarez, 2020) with agency theory being the most utilised theory of choice (Bergh, Ketchen, Orlandi, Heugens, & Boyd, 2019; Panda & Leepsa, 2017). This paper undertakes a significant thorough systematic review of corporate governance with firm performance and the Fourth Industrial Revolution literature. It gives an 11-year review with a reference index from 2011 to 2021, useful for both academics and professionals. This study recommends more evidence-based systematic reviews for different aspects and within different regions. It is further recommended to expand geographical spread across all continents to cover corporate governance area and to improve studies related to the Fourth Industrial Revolution and its impact on corporate governance. Lastly, it is recommended that more studies that look at the impact of the Fourth Industrial Revolution on corporate governance and firm performance should be performed.

Keywords: Corporate Governance, Business Administration, Management and Accounting, Firm Performance, Company Performance, Fourth Industrial Revolution, Ownership Structure

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1. INTRODUCTION

Many researchers have built a vast body of knowledge in the literature on corporate governance and organisational performance (Adegboye, Ojeka, Adegboye, Ebuzor, & Samson, 2019; Farag, Mallin, & Ow-Yong, 2018; Herndon, 2020; Iqbal, Nawaz, & Ehsan, 2019; Lagasio, 2018; Manukaji, 2018; Nawaz, 2019; Pillai & Al-Malkawi, 2018; Pucheta-Martínez & Gallego-Álvarez, 2020; Saini & Singhania, 2018; Velte, 2017). The reviews have been growing with varying views. There has been sufficient consensus on internal variables that affect and influence corporate governance. A few studies continue to study and argue that external or exogenous variables also have some effect on corporate governance and organisational performance (Bhagat & Bolton, 2019; Chadam, 2019; Chen, Lin, & Yi, 2008; Kammoun, Loukil, & Loukil, 2020; Shao, 2019). Whilst many corporate governance theories led by agency theory explain the core corporate governance challenge, strategic management theories explain the interventionist manner to deal with change and disruption (FitzRoy, Hulbert, & Ghobadian, 2012; Hoskisson, Wan, Yiu, & Hitt, 1999; Oke & Fernandes, 2020; Oosthuizen, 2017; Veselovsky, Izmailova, Lobacheva, Pilipenko, & Rybina, 2019). Change and disruption like the Fourth Industrial Revolution (4IR or Industry 4.0) and COVID-19 are where contingency theory and survival-based theory fit in to explain and address such challenges (Adejare, Olaore, Udofia, & Adenigba, 2020; Effiong, Inameti, Pepple, & Ernest, 2018; Josefy, Harrison, Sirmon, & Carnes, 2017). The Fourth Industrial Revolution and COVID-19 have had a significant impact on corporate governance and company performance (Ebekozien & Aigbavboa, 2021; Gelter & Puaschunder, 2020; Khatib & Nour, 2021). During COVID-19 the adoption of the Fourth Industrial Revolution moved at a faster pace (Akpan, Udoh, & Adebisi, 2020; Allam, 2020; Meotto, 2021; Morgan & Forbes, 2020; Shahzad, Hassan, Abdullah, Hussain, & Fareed, 2020; Tan, 2021; Van Zyl, Venter, & Bruwer, 2021) allowing working from home and advancing company performance.

Corporate governance has received growing interest over the past few decades. There has also been a lot of work done on discovering the link between corporate governance and firm performance. The critical question of this paper is thus to look at how different researchers have gone about answering the very question by reviewing their work. Through the lens of agency theory and supporting theories as anchoring the theoretical framework, we examine factors inherent in the relationship between corporate governance and firm performance in an environment of the Fourth Industrial Revolution.

Firstly, we begin this discussion with a review of the current understanding of corporate governance in Section 2. Next, we introduce the agency theory and other theories of corporate governance supporting and supplementing the agency theory encapsulating the Fourth Industrial Revolution aspects using contingency theory. We then examine and discuss the research methodology followed in selecting journal articles from Science Direct Database for the review in Section 3. We then table and discuss the results of theories, research methodologies, the impact of corporate governance on firm performance, and the impact of the Fourth Industrial Revolution on firm performance in Section 4. Finally, we conclude by looking at the relevance and significance of the study, and the main findings/contributions and provide synthesis on what factors could inform future research in Section 5.

2. LITERATURE REVIEW

The main theories used in corporate governance are mainly rooted in agency theory. The main theories that feature in the studies are:

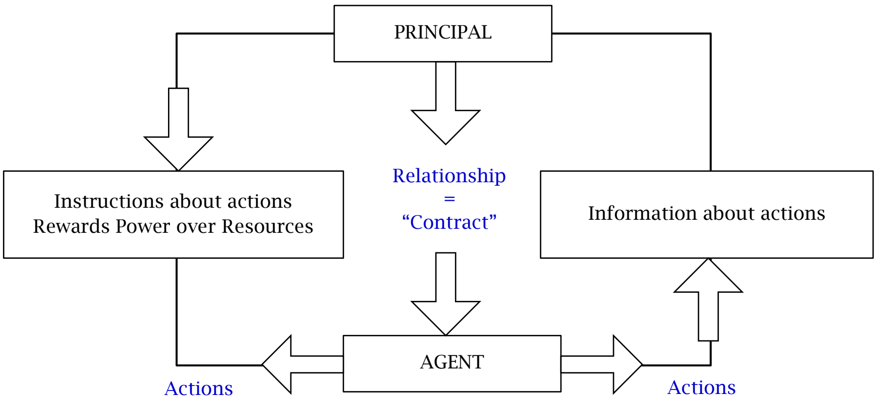
1. Agency theory.
2. Resource theories:
   a) resource dependence theory;
   b) resource-based view theory.
3. Legitimacy theory.
4. Stewardship perspective.
5. Stakeholder theory.
6. Strategic management theories:
   a) contingency theory;
   b) survival-based theory.

The theories are discussed in brief below and the analysis of how they have been used in the journal articles are surveyed. Agency theory stands alone in the use of superiority in corporate governance (Madhani, 2017; Wiley & Monllor-Tormos, 2018). Agency theory remains best in explaining the agency problem and how it could be resolved. The emergency of shareholder theory and stakeholder theory comes with alternative means to explain the relationship between the shareholder and agents who can on behalf of principal shareholders.

2.1. Agency theory

The agency problem is how can an organization, through its owners and its stewards, minimize the posited tendency for managers to inappropriately leverage their advantage when managers' interests are not consonant with those of owners (Dalton, Hitt, Certo, & Dalton, 2007). The agency problem has been defined as managerial power and discretion that managers and executives yield (Liang & Renneboog, 2018; Tan & Liu, 2016; Wangrow, Schepker, & Barker, 2015). A formal contract, in theory, is a tool that could mitigate the agency problem, as formal contracts tend to align the interests of shareholders with those of managers (Barako, Hancock, & Izan, 2006; Healy & Palepu, 2001). The board represents a monitoring and control mechanism aimed at analysing and evaluating the work of top management and ensuring profit maximisation for shareholders (Donnelly & Mulcahy, 2008).

Figure 1. Agency relationship model



Source: Adapted from Mitnick (1975), Ross (1973).

2.2. Stewardship theory

The stewardship theory offers a complementary perception and states that the stakeholders are good stewards to firms' resources and can contribute to the improvement of their efficiency (Donaldson & Davis, 1991). A recent study by Gillan (2006) showed a positive relationship between CEO duality and the firm's financial performance. Similarly, Faleye (2007) found that CEO duality is positively correlated to organisational complexity, the CEO reputation, and the level of managerial ownership. These findings are similar to those of Adams, Almeida, and Ferreira (2005) and Jackling and Johl (2009) who argued that the shareholders' benefits are enhanced by the combination of chairman and CEO functions. The stewardship theory vintages that the CEO duality found in more consistent strategies' formulation and implementation; and as a result yields better firm performance (Ahmadi, Nakaa, & Bouri, 2018; Ozbek & Boyd, 2020; Torres & Augusto, 2021).

2.3. Resource theories

The resource theories are namely the resource-based view theory and resource dependence theory. The resource dependence theory is based on the notion that board members whose role is vested in advising and counselling the company owners (Zahra & Pearce, 1989), provide experience and expertise, facilitate better access to resources outside the company, and influence strategic decisions (Hillman & Dalziel, 2003). Resource-based view theory posit that firms stand to benefit and sustain competitive advantages by constructing and employing valuable resources and capabilities which are outside the firm's environment (Collins, 2021; Zawawi et al., 2016). The two theories are discussed below.

2.3.1. Resource-based view theory

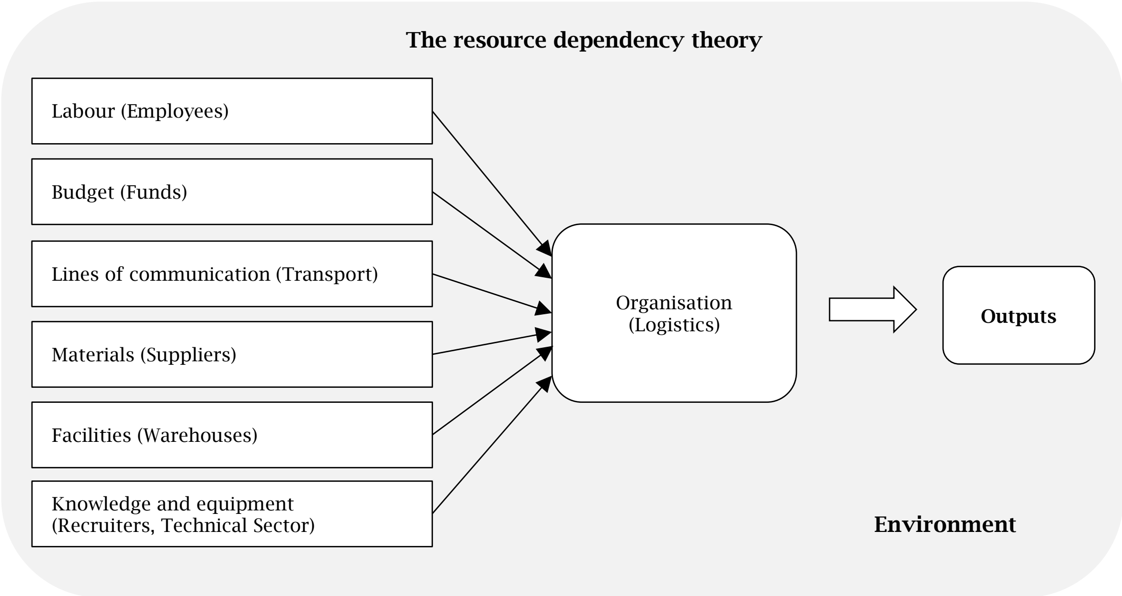
Studies have attempted to integrate institutional theory and the resource-based view theory to explain organisational decision-making as independent motives for organisations (Tehseen et al., 2019), and the different roles of external pressures and internal resources as well as their relationships (Dubey, Gunasekaran, Childe, Blome, & Papadopoulos, 2019). Porter's Five Forces can be described as the outside looking inside the organisation theory as compared to the resourced-based view theory (Hunt & Madhavaram, 2019).
The resources can be differentiated into tangible resources, and intangible resources (Porter, 2011). The tangible resources are those that are identifiable and physical whilst intangible resources encapsulate patents, knowledge, skills, trademarks, etc. (Galati, Tulone, Tinervia, & Crescimanno, 2019). Mahdi, Nassar, and Almsafir (2019), Ying, Hassan, and Ahmad (2019) posit that intellectual capital helps managers in acquiring valuable resources, which in turn enhances sustainable competitive performance.

2.3.2. Resource dependence theory

The resource dependence theory posits that organisations are constrained and affected by their environment and that these organizations act to try to control their resource dependencies by creating different forms of inter-organisational arrangements (Pfeffer & Salancik, 2003). The central proposition of this theory is how an organisation can efficiently acquire and utilise external resources to gain a competitive advantage and maximise organisational performance. The role of managers, therefore, is to find a requisite combination of staff and transactions, to maximise the firm's performance (Tran, Yuen, Li, Balci, & Ma, 2020). The firm therefore must consider how it engages with its environment in its long-term operations (Li, Liao, & Albitar, 2020).

The boards must possess highly experienced directors for information exchange with the outsiders, provide advice for insiders and ensure proper access to the external resources that will guarantee organisational success (de Villiers, Naiker, & van Staden, 2011; Oh, Chang, & Martynov, 2011). Experienced directors inhibit technical and business experts. Pfeffer and Salancik (2003) argue that the resource dependence theory deals with the external resources' influence on a firm's decision-making. Hillman, Withers, and Collins (2009) argue strongly that influential stakeholders have control over outside resources.

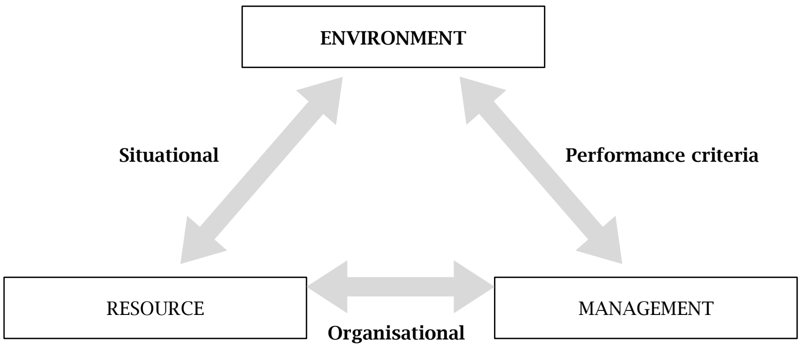
Figure 2. The representation of the resource dependence theory



Source: Adapted from Pfeffer and Salancik (2003).

Ntim, Lindop, and Thomas (2013) suggest that a company with risk-related disclosures can gain different competitive advantages because of their potential resources, and prior literature proves that resource-based directors possess this quality.

Figure 3. Resource dependence theory



Source: Adapted from Luthans and Stewart (1977).

It is therefore critical that directors become resourceful and well-vested in the industry, to create strong relations with different stakeholders and address their differing and competing interests. Implicit and explicit factors, such as political, legal, financial, tax, and regulatory factors, may ensure many benefits that enhance management's expertise and the quality of their decisions and decrease capital costs (Cheng, Ioannou, & Serafeim, 2014; Dhaliwal, Li, Tsang, & Yang, 2014).

2.4. Legitimacy theory

Suchman (1995) defines legitimacy as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions". Legitimacy theory proposes the concept of a "social contract" existing between organisations and society at large, which further helps in the environmental and social disclosures (Choi, Lee, & Psaros, 2013). Firms convince stakeholders that their activities are in line with stakeholders' expectations concerning carbon emissions to legitimise themselves and to keep the social contract (Kılıç & Kuzey, 2019; Yunus, Evangeline, & Abhayawansa, 2016). By doing so, the company asserts itself in the community as a responsible and legitimate company that is doing well for society.

2.5. Stakeholder theory

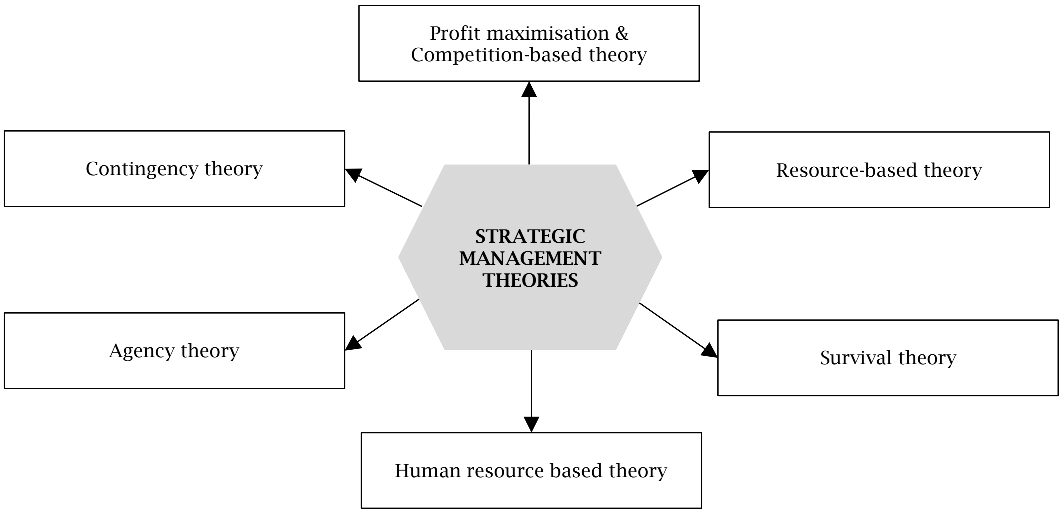
Stakeholder theory was put forward by Freeman (1984) as a proposal for the strategic management of organizations in the late twentieth century. Over time, this theory has gained in importance, with key works of Clarkson (1994, 2016). Stakeholder theory begins with the assumption that values are necessarily and explicitly a part of doing business. It asks managers to articulate the shared sense of the value they create, and what brings its core stakeholders together (Freeman, Wicks, & Parmar, 2004). Stakeholder theory research, which many scholars have framed as a replacement theory, has in actuality been building instead of a well-developed theoretical foundation that now is ready to complement the agency theory behaviour (Kuek et al., 2021).

2.6. Strategic management theory

A strategic management theory may be said to be a supposition, proposition, or a system of ideas intended to explain the origin, evolution, principles, and applications of strategic management. Strategic management theories stem mainly from the system's perspective, contingency approach, and information technology approach to corporate management. However, we shall only concentrate on the discussion of contingency theory and survival-based theory. The agency theory and resource-based theory have been adequately discussed under theories of corporate governance. Among the common strategic management theories applicable in the industry today are:

- contingency theory;
- survival-based theory;
- agency theory;
- resource-based theory;
- human resource-based theory;
- profit-maximising and competition-based theory.

Figure 4. Theories of strategic management



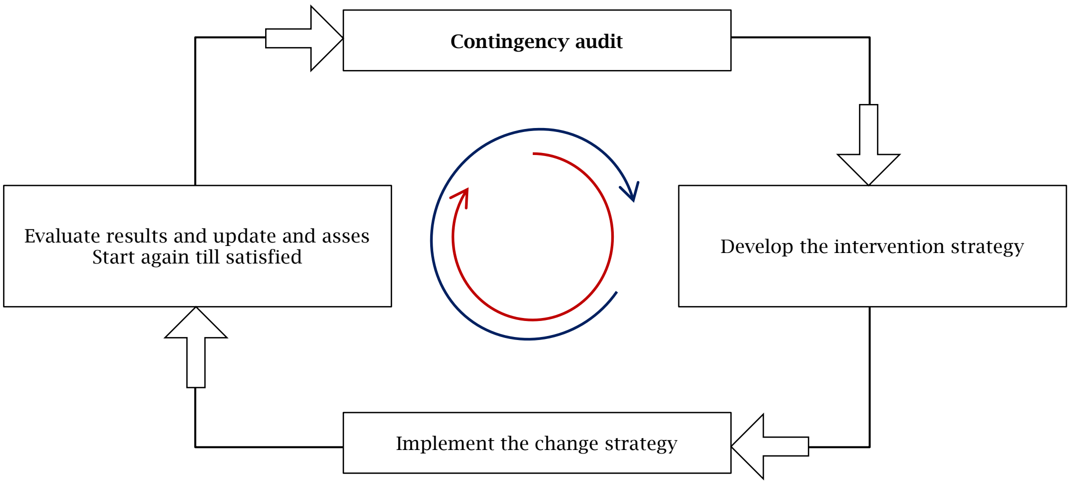
Source: Adapted from David (2005) and Hashim (2005).

2.7. Contingency theory

The contingency theory has been used in strategy and organisational studies and adopted in strategic management (Kelly & Fairley, 2018; Otley, 2016). Contingency theory has been used by many scholars as a theory of choice as compared to 110 others (Sitkin, Sutcliffe, & Barrios-Choplin, 1992). Contingency theory has its roots in organisational theories. It helped revitalise the classical universality of management theory, which emphasised that "there is always one best way of doing things". The contingency theory is broadly applied in strategic management and it is considered to have the most influence on studies on strategy and the organisation (Barney, 2005). The contingency theory's main principle states that every organisation is unique and what works for one organisation cannot be applied in another. Also, no organisation can depend on one strategy based on the current situation that the organization is facing to achieve consistent firm performance. The strategic management approach helps managers to develop, implement and evaluate strategy, and guide them to make other strategic decisions (Lynch, 2000). The contingency theory states that the organisation seeks to be effective by adapting itself to the current situation that the organisation is in at the moment.

So, the early contingency theories held that the organisations that perform highly are projecting the fact that the company is suitably adapted to its environmental situation such as its size, its level of adaptation to the new technology, and changing its products to the changing needs of customers (Miller, 2003). Therefore, if the current situation of an organisation changes and the company does not immediately change to reflect these changes, then that company will perform poorly. We will apply this theory in the next section regarding the Fourth Industrial Revolution.

Figure 5. A contingency approach to managing planned change



Source: Adapted from Luthans and Stewart (1977).

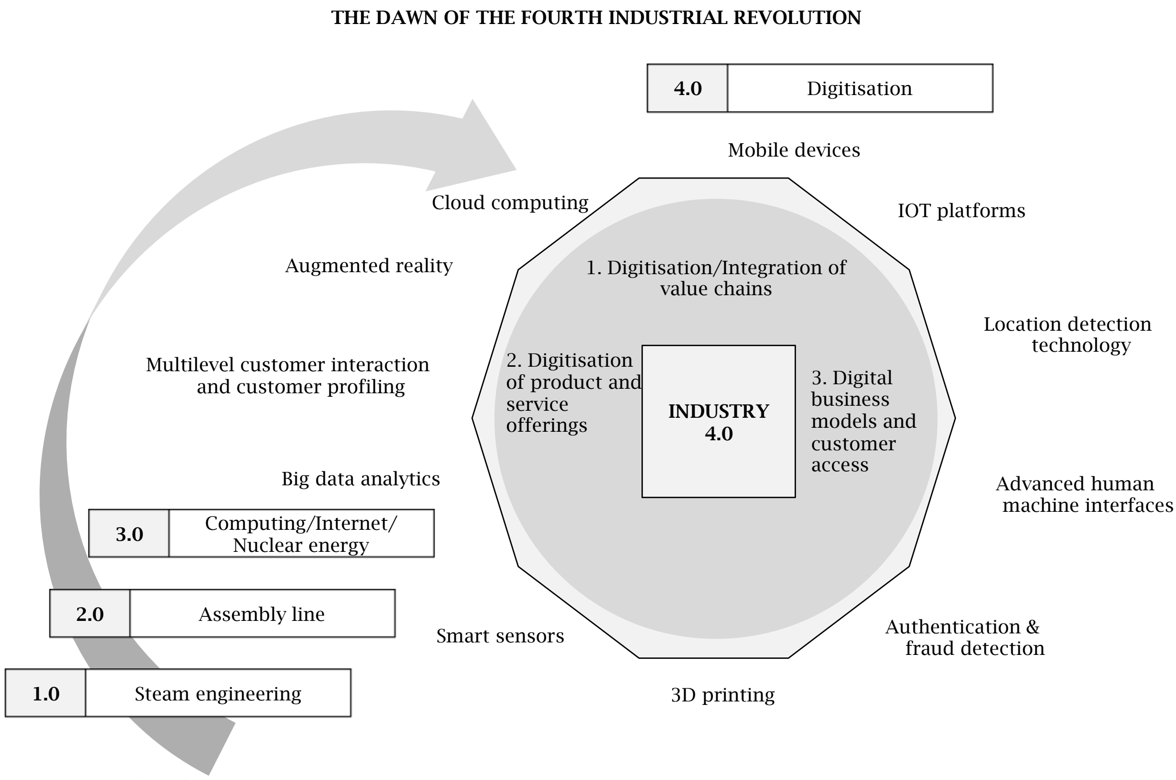
2.7.1. Contingency theory and the Fourth Industrial Revolution

The Fourth Industrial Revolution, like the ones that have preceded it, has enormous benefits for humankind (Morrar, Arman, & Mousa, 2017; Radanović & Likić, 2018; Sendler, 2017). Corporate governance has evolved over the past three decades as a consequence of company failures and the growing conflict between the agent and the principal. Corporate governance has developed alongside the Fourth Industrial Revolution. There have been more studies on corporate governance than there have been on the Fourth Industrial Revolution. The Fourth Industrial Revolution has been conceptual for some time, giving rise to speculation and theory development. The world is on the verge of a Fourth Industrial Revolution, which is ready to transmute the way businesses exploit the markets, innovate and adopt technologies (Mahmood & Mubarik, 2020; Manesh, Pellegrini, Marzi, & Dabic, 2020; Monostori, 2014). Technology can enhance service delivery by, for example, using drone technology to deliver medical supplies to underdeveloped rural areas, enhancing citizen communication, allowing doctors to conduct surgeries remotely, or even utilising big data analysis to enhance policymaking (Jarbandhan, 2021; Nalubega & Uwizeyimana, 2019). This saves time and money and improves firm performance.

However, the converse also rings true in that technology in the hands of unethical governments and individuals can pose a major threat to peace and stability across the globe. Mahmood and Mubarik (2020) posit that the creation of specific policies aimed to develop intellectual capital (IC) of a firm, which, in turn, can enable a firm to maintain a balance between innovation as a result of the Fourth Industrial Revolution and market exploitation activities in a study of 217 SMME in Pakistan. Similarly, in Africa, the adoption of the Fourth Industrial Revolution is significantly slow (Kalantari, 2017; Kamble, Gunasekaran, & Sharma, 2018; Radanović & Likić, 2018; Schwab, 2017). The emergence of COVID-19 raises the need to transform and shape the 4IR paradigm (Abdulrahim & Mabrouk, 2020; Ebekozien & Aigbavboa, 2021; Sokhulu, 2020) for businesses is ever-increasing as the firms seek to improve productivity and firm performance (Schwab, 2017). Education and skills development are central in responding to the 4IR, as skills underpin national performance in terms of innovation, economic competitiveness, and the capacity to utilise and benefit from new technologies (Gastrow, 2020).

There are clear challenges to the adoption of the Fourth Industrial Revolution in many parts of the world because as much as it brings about technological advancement, it also poses dangers of unemployment to the unskilled labour force (Brunello & Wruuck, 2019; Lahtinen, Sirniö, & Martikainen, 2020; Nonyana & Njuho, 2018). Whilst reskilling is an option, the cost of such has not been negotiated or agreed upon. Governments have been slow in moving and understanding the benefits of the Fourth Industrial Revolution so that they could regulate how firms could benefit when they adopt the Fourth Industrial Revolution and where there is resistance (Ghadge, Kara, Moradlou, & Goswami, 2020; Ivanov & Webster, 2017; Nagy, Oláh, Erdei, Máté, & Popp, 2018), governments could bring in some incentives. The Fourth Industrial Revolution, unfortunately, is inescapable. The poor nations stand to lose a lot if their governments adopt the wait and see attitude instead of expanding the internet spectrum, reducing data costs, and regulating how firms could take a lead in adopting the Fourth Industrial Revolution and hence assist the populace. What is undeniable is that the Fourth Industrial Revolution is an enabler for change and improved performance (Dallasega, Rauch, & Linder, 2018; Horváth & Szabó, 2019; Lee et al., 2018; Schwab, 2017; Stock, Obenaus, Kunz, Kohl, & Protection, 2018; Syam & Sharma, 2018).

Figure 6. The Fourth Industrial Revolution (From 1IR to 4IR)



Source: Otanez (2017).

2.8. Survival-based theory

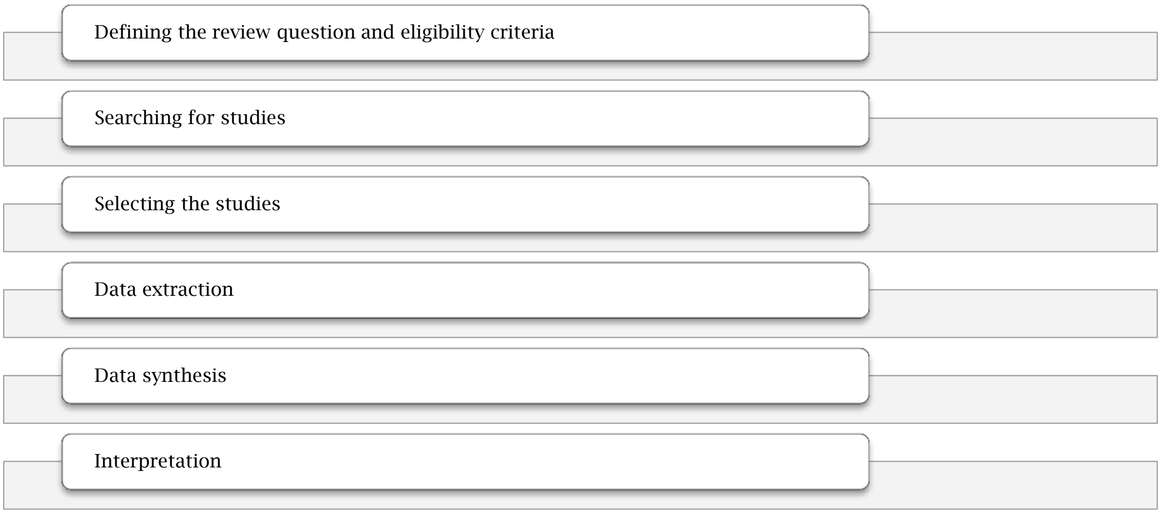
The survival-based theory is based on the concept that firms need to adapt to the agile environment to keep afloat. Technological changes and emerging innovations in business environments influence both the firms' short-term performance and long-term sustainability (Ghobakhloo & Fathi, 2019). The companies use differentiated business models to improve operations, understand the market, compete better for long-term profitability this is done through continuous research and development (Ghobakhloo & Fathi, 2019). The concept of survival-based theory or some might call it "survival of the fittest theory" was originally developed by Herbert Spencer. The survival-based view in strategic management emphasised the assumptions that to survive, organisations have to deploy strategies that should be focused on running very efficient operations which can respond rapidly to the changing of the competitive environment (Khairuddin, 2005) since the one that survives is the one that is the fittest and ablest to adapt to the environment. The application of this theory in the field of corporate turnaround is also quite straightforward. An ailing company usually faces lots of problems simultaneously, such as financial difficulties, failing products, losing key personnel, and many others. The Fourth Industrial Revolution poses challenges.

3. RESEARCH METHODOLOGY

3.1. Systematic literature review into corporate governance and its applicability

The systematic literature review method has been adopted in this study to discover the theories, methods, and topics used in corporate governance research published in different journals under the Science Direct family of journals. The research follows fundamental guidelines stated by Petticrew and Roberts (2008) for conducting a systematic review in the social sciences. Also, this research followed an amended five-step process (Ahmad, Jamshidi, & Pahl, 2012), as shown in Figure 7 below:

Figure 7. The steps to conducting the systematic review



Source: Adapted from Petticrew and Roberts (2008) and Ahmad and Omar (2016).

3.2. Defining research questions

The study intends to survey the corporate governance studies from the Science Direct Database. These studies are related to corporate governance and firm or company performance. The study will, therefore, survey and check corporate governance theories, and the research methodologies used. The study aims to review theories, research methods, topics, and variables that are mostly addressed in corporate governance literature.

3.3. Systematic literature review

The systematic literature review methodology looks at the identification of keywords, the selection of the database, and selecting the search period, all of which shall be discussed hereunder.

3.3.1. The search strategy and identification of keywords

The search strategy was related to keywords as shown in Table 1 below. The three keywords, namely independent variable, firm performance, and corporate governance, as well as the Fourth Industrial Revolution, as independent variables. We selected papers with these keywords in at least one of the following fields, namely, title, abstract, and keywords. The following keywords were identified:

- corporate governance;
- organisational or firm performance;
- ownership structure;
- Fourth Industrial Revolution;
- systematic literature review.

Table 1. The search variables utilised to search for journal articles

No.	***Dependent variable***	***No.***	***Independent variable***
1.	Performance	1.	Corporate governance
2.	Profitability	2.	Board performance
3.	Firm performance	3.	Ownership structure
4.	Corporate governance	4.	Fourth Industrial Revolution

3.3.2. Selection of the database and journals

The Science Direct Database is highly reputable and has many peer-reviewed journals; and for that particular reason, it became the best candidate to search for corporate governance and firm performance. The following Tables 2 and 3 indicate the number of journals that returned studies according to the above keywords used and to analysis, respectively. The limiting criterion was the 11-year duration from 2011 to 2021.

The search period for the study spans from 2011 to 2021 which is 11 years of corporate governance studies.

Table 2. Studies from Science Direct Database per journal per year utilised in the corporate governance studies

	Journal name from Science Direct Database	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
1	Emerging Markets Review	1						1				2	4
2	European Management Journal						1		1	1	1		4
3	International Business Review							1		1			2
4	International Review of Economics and Finance		1					1			1		3
5	Journal of Business Research	1						1	2				4
6	Journal of Cleaner Production									1	1		2
7	Journal of Corporate Finance									2			2
8	Pacific-Basin Finance Journal	1				1							2
9	Procedia-Economics and Finance		1				4						5
10	Procedia — Social and Behavioural Sciences		1		3								4
11	Research in International Business and Finance					1		1	2	1	1	2	8
12	The British Accounting Review		1							1			2
Total number of journals													***42***

Table 3. Analysis of research methods and theories utilised in the corporate governance studies

Research methods and theories	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	Percent
Total number of articles	2	4	3	3	3	4	5	7	3	4	4	42	
Research methods													
Quantitative	1	3	1		3	4	3	3	2	2	2	24	57%
Qualitative		1		2			1	1		1		6	14%
Review	1		2	1			1	3	1	1	2	12	29%
Non-empirical													
Total	2	4	3	3	3	4	5	7	3	4	4	42	
Theories													
Agency theory	1	3	2	3	3	4	4	5	3	3	4	35	83%
Resource theories				3	1	2	1	1	2		1	11	26%
Contingency theory												0	0%
Institutional theory				1		1						2	5%
Stewardship perspective								2				2	5%
Stakeholder theory			1		2	1		3		2	1	10	24%
Shareholder theory			1			1	1		1	2	1	7	17%
Strategic management theories						1	1	1	1			4	10%
Other theories	1	1	1		1	1						5	12%
No. of papers without theory				1			1					2	5%

4. RESULTS AND DISCUSSION

4.1. Evolution of journal papers on corporate governance and firm performance

Previous studies (Ahmadi et al., 2018; Al-ahdal, Alsamhi, Tabash, & Farhan, 2020; Bhatia & Gulati, 2021; Brenes, Madrigal, & Requena, 2011; Pillai & Al-Malkawi, 2018) established a positive relationship between good corporate governance practices and firm performance. However, other studies (Bathala & Rao, 1995; Hutchinson, 2002) have established a negative relationship. Nevertheless, some other researchers (Park & Shin, 2003; Singh & Davidson, 2003) could not establish any relationship. The inconsistencies in the research findings could be attributed to the restrictive nature of the data. Despite these conflicting results, the literature generally attests that there is no doubt as to the importance of good corporate governance in enhancing firm performance. This fact is attested to by the particular attention being given to issues of corporate governance by governments, regional bodies, and private institutions. In the aftermath of the financial crisis in 2007, Blundell-Wignall, Atkinson, and Lee (2009) concluded, on the corporate lessons from the financial crises, that the crises were largely due to failures and weaknesses in corporate governance arrangements which could not serve their purpose to safeguard against excessive risk-taking by the financial institutions.

The studies neither have not concentrated on corporate governance and the Fourth Industrial Revolution per se nor have they looked at firm performance in the era of the Fourth Industrial Revolution. The paper will seek to link these aspects to understand what effects the Fourth Industrial Revolution brings to corporate governance and firm performance.

4.2. Research methodology used

The qualifying studies that met the criterion were 42 and of those 57% used quantitative research methodology, 14% of them utilised qualitative research methodology, whilst 29% used systematic literature review, and none used empirical research methodology. It was further noted that none of the studies used a mixed research methodology. Table 4 shows the analysis of the research methods used by the journal articles. This analysis shows that most of the studies used quantitative analysis closely followed systematic literature review.

Table 4. Research methods utilised in the studies

Research methods	***Total***	***Percent***
Quantitative	24	57%
Qualitative	6	14%
Review	12	29%
Mixed research methodology	0	0%
Empirical	0	0%
Total	42	100%

4.3. Theories used

Agency theory is by far the most used theory of corporate governance with 35 studies of the 42. This is 83% of the studies, showing that by far agency theory as posited by Adegboye et al. (2019), Ahmed and Rugami (2019), Manukaji (2018), Tang, Yang, and Yang (2020). The stewardship theory was utilised by 5% of the journal articles surveyed. The resource theories constitute 26% of the studies. These theories are mainly concerned with the use and allocation of resources to run the organisation effectively. The stakeholder theory was utilised by 24% of the journal articles surveyed. The stakeholder theory enjoys being an alternative theory that is used in conjunction with agency theory to explain the role of stakeholders in the organisation and how the interests of stakeholders can be addressed.

Table 5. Analysis of research methods and theories utilised in the corporate governance studies

Research methods and theories	***2011***	***2012***	***2013***	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***	***2021***	***Total***	***Percent***
Total number of articles	2	4	3	3	3	4	5	7	3	4	4	42	
Theories													
Agency theory	1	3	2	3	3	4	4	5	3	3	4	35	83%
Resource theories				3	1	2	1	1	2		1	11	26%
Contingency theory												0	0%
Institutional theory				1		1						2	5%
Stewardship perspective								2				2	5%
Stakeholder theory			1		2	1		3		2	1	10	24%
Shareholder theory			1			1	1		1	2	1	7	17%
Strategic management theories						1	1	1	1			4	10%
Other theories	1	1	1		1	1						5	12%
No. of papers without theory				1			1					2	5%

Strategic management theories have always found a way into corporate governance and vice versa. This is because both fields share some of the theories, namely agency theory, and resource-based theory. The studies that used strategic management theories constitute 10% of the 42 surveyed journal articles. Legitimacy theory, stewardship theory, survival-based theory, and other theories constituted 12% of the journal articles reviewed. Whilst only 5% of articles did not use any theory.

4.4. Topics discussed

Several topics are discussed in corporate governance and organisational performance. These range from internal corporate governance, which includes board activities, number of board members, gender diversity, racial diversity, CEO duality, board meetings, board committees, board compensation, board qualifications, board experience, board independence, and board leadership (Abdullah, 2004; Banerjee, Nordqvist, & Hellerstedt, 2020; Dalton & Dalton, 2011; Garg, Li, & Shaw, 2018; Herndon, 2020; Patnaik & Suar, 2020; Pucheta-Martínez & Gallego-Álvarez, 2020) to organisational performance measurements. On the organisational performance, three measures of performance are widely used in corporate governance studies; these are: return on assets (ROA), return on equity (ROE), and Tobin's Quotient (TQ) (Alsoboa, 2016; Buallay, 2019, 2021; Buallay, Cummings, & Hamdan, 2019; Pal & De, 2017).

The contingency theory describes the behaviour of firms that respond to change with an aim of adoption and change. Whilst those that do not change are doomed to resist and encounter (Ooi, Lee, Tan, Hew, & Hew, 2018; Vaidya, Ambad, & Bhosle, 2018) challenges or failure. Using the contingency theory, we are able to introduce the Fourth Industrial Revolution and the potential advantages it entails. The Fourth Industrial Revolution pauses such disruption in many firms and governments (Didier, Huneeus, Larrain, & Schmukler, 2021; Girasa, 2020; Santos et al., 2017; Shava & Hofisi, 2017). Every industrial revolution has brought about drastic change and a quantum leap in human development (Attaran, 2017; Rauch, Linder, & Dallasega, 2020; Sengupta, Ruj, & Bit, 2020), however, beneficiaries are those that enjoy early adoption. They lead change and others follow. The Fourth Industrial Revolution promises fundamental changes in the economy and business with enormous profits to be made. Companies that adopt these gradual changes will become learning organisations of the future which will change the manner we see the world very shortly. It will change all aspects of life and how business is conducted. Firm performance and corporate governance must therefore evolve to accept these fundamental changes in the structure of the economy.

5. CONCLUSION

There is a need to ensure that corporate governance is not only taken as a compliance ticking of boxes but it must be to ensure that it creates value for the companies. The Steinhoff South Africa, 2018, fiasco where workers lost a lot of money invested in Public Investment Corporation (PIC) as a result of corporate governance failures. Eskom and South African Airways (SAA) are also close examples of corporate governance shortcomings in the recent past. This is especially critical in state-owned enterprises where the government invests money intending to create value and ensure proper service delivery or generate income for its support. The study of course is limited in terms of geography and the time-bound of 2011 to 2021 studies may show bias to European and Asian countries, and only one study was about an African country. Corporate governance is also mainly focused on private companies — very few studies are aimed at state-owned enterprises. Chinese studies have, however, tried to probe the state-owned enterprises which need to be further studied as government systems, especially in China, Europe, America, and Africa which show distinct differences in economic, social, and political stability (Ziltener & Künzler, 2013). The lack of stability in a country is widely associated with unpredictability and hence the inability for long-term planning. This affects input and output resources which in turn affects firm performance. The purpose of this study is the critical analysis of theories, research methods, and topics that include variables that have been discussed in corporate governance and its impact on organisational performance at the interphase of the Fourth Industrial Revolution also known as "Industry 4.0" on the Science Direct Database during the period from 2011 to 2021. However, not a single study involved corporate governance, firm performance, and the Fourth Industrial Revolution in one. By doing so, a gap arises in that the studies that have been widely studied in this database are in well-developed countries and less in Africa and Australia. These studies have also concentrated on the private sector and less than 5% have looked at corporate governance in the public sector. Notably, vast improvements in the study of corporate governance and organisational performance have taken place over the years with variable results. The results show a growing body of knowledge and studies in corporate governance. Agency theory is most used, whilst quantitative research methods are also highly utilised. A growing number of studies conclusively, positively, and significantly relate firm performance with corporate governance (Almoneef & Samontaray, 2019; Alodat, Salleh, Hashim, & Sulong, 2021; Bhagat & Bolton, 2019; Bhatt & Bhatt, 2017; Danoshana & Ravivathani, 2019).

Technological revolutions mark profound transformations in socio-economic systems. They are associated with the development and diffusion of general-purpose technologies that display degrees of pervasiveness, dynamism, and complementarity (Martinelli, Mina, & Moggi, 2021). Corporate governance has been studied for over three decades now, whilst the Fourth Industrial Revolution is hardly a decade and a half. This study concentrated on the relationship between corporate governance and firm performance with the 4IR as peripheral interphase. The Fourth Industrial Revolution, however, remains a factor whose adoption initially seems to be forced upon businesses and governments alike. Its adoption has remained uneven between firms and governments alike. Its essence and understanding have not been fully understood or realised because of the high costs of adoption, acquisition, and maintenance. It also has a very negative side that must be ethically and legally managed within and amongst nations, raising another challenge of international collaboration. COVID-19 has, to a certain extent, accelerated some aspects of the 4IR adoption and allowed firms to continue to operate and increase their firm performance through online stores. Many authors agree that the Fourth Industrial Revolution has the potential to significantly improve firm performance. There is no conclusive agreement on the improvement of corporate governance as industry and governments adopt the Fourth Industrial Revolution. It must further be noted that corporate governance started in earnest at the dawn of the Fourth Industrial Revolution. Clear concerns are raised on the legislative framework, monitoring and enforcement to protect consumers against misuse of technology, use of robotics, unethical medical use technology as trade takes place between countries without proper regulations as the internet becomes one global village. Martinelli et al. (2021) highlight four problems that remain a stumbling block for the Fourth Industrial Revolution and these are adoptions, industrial dynamics, standards, and government policy (Morgan, 2019). No article combined corporate governance, firm performance, and the Fourth Industrial Revolution in these studies reviewed. Schwab (2017) and Xing and Marwala (2017) have conceptualised the fundamentals and taken a lead in explaining several aspects of the Fourth Industrial Revolution with Xing and Marwala (2017) having done excellent technical work on the Fourth Industrial Revolution aspects.

Further studies should look at corporate governance in the public sector and the effect of the compulsory use of corporate governance codes. Further studies should also look at the Fourth Industrial Revolution and its impact on corporate governance, independently. Notably, the Fourth Industrial Revolution has not reached its peak, more studies should be undertaken as it develops and takes shape. This should lay a foundation for more studies and how they influence corporate governance and firm performance. The uneven continental developments reveal uneven development, adoption, and experiences in all these fields and hence studies that have been undertaken.

The issue of diversity as it relates to women and young people has been understudied (Cicchiello, Fellegara, Kazemikhasragh, & Monferrà, 2021; Dennissen, Benschop, & van den Brink, 2020). Gender diversity is slowly being adopted and taking off positively in Africa and Asia. Women hold less than 10% of board seats (at 9.3%) with 4.2% as board chairpersons (Deloitte, 2019). The study of regional or continental studies on corporate governance and organisational performance is recommended. These studies could reveal gaps in theories, research methods, and topics. Further studies could also look at the impact of COVID-19 on corporate governance and firm performance (Almoneef & Samontaray, 2019), as well as the impact of the Fourth Industrial Revolution and its adoption on corporate governance and firm performance.

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