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They report – but how well? A comparative study of CSR reporting by Chinese and overseas telecommunications companies

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Master's in Business Administration

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July 2021

BUSINESS
SCHOOL

Department of Marketing, Strategy and Operations

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Resumo

A responsabilidade social corporativa (RSC) tem atraído cada vez mais interesse ao nível da investigação e a sua divulgação e reporte estão a tornar-se práticas comerciais predominante. Num momento em que o setor das telecomunicações está a passar por uma enorme mudança, a forma como as empresas do mesmo desempenham a responsabilidade social é uma preocupação dos seus stakeholders. Uma vez que a maioria das informações de RSC é reportada de forma voluntária e não necessariamente sistemática, ela pode aparecer em vários formatos, por meio de diversos canais e com características diferentes. Isto pode tornar os relatórios difíceis de avaliar e comparar, ao mesmo tempo que a qualidade dos relatórios pode afetar a comunicação e o relacionamento com as partes interessadas. Para ver como as empresas chinesas estão a levar a cabo esta comunicação com os seus *stakeholders*, este estudo avaliou e comparou a qualidade dos relatórios de RSC de três empresas de telecomunicações chinesas e duas empresas internacionais, por meio de análise de conteúdo e um sistema de pontuação de *benchmarking* adaptado dos padrões do *Global Reporting Initiative* (GRI). Verificou-se que embora as empresas chinesas atendam aos requisitos básicos dos seis princípios promovidos pelos padrões de sustentabilidade do GRI, ainda há espaço para melhorias no seu desempenho na maioria desses princípios. Em comparação com as empresas internacionais analisadas, as empresas chinesas ficam atrás no que toca à clareza, comparabilidade e confiabilidade dos seus relatórios. O estudo promove várias sugestões para melhorar os relatórios de RSC das empresas de telecomunicações chinesas no futuro.

Palavras-chave: Responsabilidade Social Corporativa, Relatório de RSC, Indústria de Telecomunicações

Abstract

Corporate social responsibility (CSR) has been attracting increasing interest from researchers, and its disclosure is becoming a mainstream business practice. As the telecommunication industry is facing an enormous change, how the industry performs social responsibility concerns its stakeholders. Since most CSR information is reported voluntarily and not necessarily in a systematic manner, it can appear in various formats, through diverse channels and with differing characteristics. This can make these reports difficult to assess and compare yet reporting quality can affect the communication and relationship with stakeholders. To see how well Chinese companies are communicating with their stakeholders, this study assessed and compared the quality of the CSR reports of three Chinese telecommunication companies and two international companies through content analysis and a benchmark-scoring system that adapted global reporting initiative (GRI) sustainability standard. It was found that although the Chinese companies meet the basic requirements of the six principles promoted by the GRI sustainability standards, there is still room for improvement in their performance in most of these principles. In comparison with their international counterparts, the Chinese companies still lag in clarity, comparability, reliability. The study promotes several suggestions to improve the Chinese telecommunications companies' CSR reports in the future.

Keywords: Corporate Social Responsibility, CSR Report, Telecommunication Industry

General Index

Resumo i
Abstract iii
General Index v
List of Figures vii
List of Tables ix
List of Annexes xi
Glossary of acronyms xiii
1. Introduction 1
2. Literature Review 5
2.1. CSR Reporting 6
2.2. The Triple Bottom Line and CSR reporting 7
2.3. Institutional Theory and CSR reporting 8
2.4. Legitimacy Theory and CSR reporting 10
2.5. Guidelines for Preparing CSR Reports 12
2.6. Factors Influencing Quality of CSR Reports 15
3. Research Questions and Methodology 17
3.1. Research Questions 17
3.2. Methodology 19
3.2.1. Sample 19
3.2.2. Data Sources 21
3.2.3. Assessment Techniques 22
3.2.3.1. Content Analysis 22
3.2.3.2. Benchmarking-scoring 24
4. Findings 27
4.1. General Overview 27
4.2. Clarity 28
4.3. Comparability 30
4.4. Reliability 30
4.5. Accuracy 33
4.5.1. Economic Dimension 35
4.5.2. Environmental Dimension 37

4.5.3. Social Dimension 39
4.6. Balance 41
4.7. Timeliness 42
5. Discussion 43
6. Conclusions, limitations and suggestions for further research 46
References 49
Annexes 59

List of Figures

Figure 2. 1 Pyramid of Corporate Social Responsibility 5

Figure 2. 2 The Three-Domain Model of Corporate Social Responsibility 5

Figure 2. 3 Concepts Related to Institutional Theory 10

Figure 2. 4 Legitimacy theory and corporate social disclosure.....11

Figure 4. 1 Comparison of the Chinese Companies and the International Counterparts about Their Performances in Six Economic Aspects in Percentages.....37

Figure 4. 2 Comparison of the Chinese Companies and the International Counterparts about Their Performances in Eight Environmental Aspects in Percentages.....37

Figure 4. 3 Comparison of the Chinese Companies and the International Counterparts about Their Performances in nineteen Social Aspects in Percentages 40

List of Tables

Table 2. 1 Comparing CASS-CSR with GRI Guidelines 15

Table 3. 1 Revenue and Rank of Sample Companies 20

Table 3. 2 Data Source 21

Table 3. 3 Requirements of the principles 24

Table 3. 4 Proportion of Each Part of GRI Guidelines 25

Table 3. 5 Descriptions of a Four-Level Scale 26

Table 4. 1 Related Third-party organization of Each Company 31

List of Annexes

Annex A Composition of the Reports 59
Annex B Time of Publishing First CSR Report 61
Annex C Titles of the reports 63
Annex D Titles of the Chapters 65
Annex E Reporting Guidelines Reference 67
Annex F Scores of the Report in General 69
Annex G Scores in Economic Part of the Reports 71
Annex H Scores in Environmental Part of the Reports 73
Annex I Scores in Social Part of the Reports 75
Annex J List of Negative Topics 77
Annex K Scores in Negative Topics 79
Annex L Reporting period and the date of the last report 81
Annex M A Snapshot of China Unicom's Report (China Unicom Used a Pie Chart to Describe the Composition of Its Employees) 83
Annex N A Snapshot of China Telecom's Report (China Telecom Used a Figure Explaining Decrease of Mobile Data Tariff) 85
Annex O A Snapshot of China Mobile's Report (China Mobile Used Tables to Present Three Year Data in Its Report) 87
Annex P A Snapshot of AT&T's Report 89
Annex Q A Snapshot of Vodafone's Report 91

Glossary of acronyms

(4G)	Fourth-generation Mobile Network
(5G)	Fifth-generation Mobile Communications Technology for Digital Cellular Networks
(ABI)	Association of British Insurers
(CASS)	Chinese Academy of Social Sciences
(CASS-CSR)	Guidelines for the Compilation of CSR Reports in China
(CSCs)	Corporate Social Commitments
(CSP)	Corporate Social Performance
(CSR)	Corporate Social Responsibility
(CSRC)	China Securities Regulatory Commission
(CRE)	London Stock Exchange's Corporate Responsibility Exchange
(DRSS)	Deloitte Reporting Sustainability Scorecard
(EPA)	Environmental Protection Agency
(EU)	European Union
(G1)	First Edition of GRI guidelines
(G2)	Second Edition of GRI guidelines
(G3)	Third Edition of GRI guidelines
(G4)	Fourth Edition of GRI guidelines
(GHG)	Greenhouse Gas
(GRI)	Global Reporting Initiative
(GRI standards)	Global Reporting Initiative Sustainability Standards
(ISO)	International Standard Organization
(KPI)	Key Performance Indicator
(NYSE)	New York Stock Exchange
(ODS)	Ozone-depleting Substances
(RKS)	Rankins CSR Ratings
(SASAC)	State-Owned Assets Supervision and Administration Commission of the State Council

(SEAR)	Social and Environmental Accountability and Reporting
(SEC)	Securities and Exchange Commission
(SERS)	Sustainability Evaluation and Reporting System
(SPACE)	Bocconi University's Research Centre on Risk, Security, Occupational Health and Safety, Environment and Crisis Management
(SSE)	Shanghai Stock Exchange
(SOE)	State-owned Enterprises
(TBL)	Triple-bottom-Line
(UN)	United Nations
(US)	United States
(WTO)	World Trade Organization

1. Introduction

Corporate social responsibility (CSR) refers to “the firm’s considerations of, and response to, issues beyond the narrow economic, technical, and legal requirements of the firm to accomplish social and environmental benefits along with the traditional economic gains which the firm seeks” (Aguilera et al., 2007, pp. 836–837). CSR no doubt is attracting increasing interest today (Ismail Khan et al., 2021; Pucheta-Martínez & Gallego-Álvarez, 2021), and one of the manifestations of this interest is the increase in CSR reporting.

CSR reporting is the bridge between the company and its stakeholders – i.e., “any group or individual who can affect or is affected by the achievement of the firm’s objectives” (Freeman, 1984, p. 49). It is how companies communicate with their shareholders, users, suppliers, and government regarding CSR activities. Worldwide, CSR disclosure presents a trend of growth (Governance and Accountability Institute, 2017; KPMG, 2017). Due to corporate scandals, failures, business complexities, corruption, and global competition, an informal governance mechanism created by stakeholder groups has pressured organizations toward greater transparency through CSR communication. As a result, the topics of CSR and its disclosure have attracted increasing interest, and CSR reporting is becoming a mainstream activity (Ismail Khan et al., 2021; M. Khan et al., 2020; Pucheta-Martínez & Gallego-Álvarez, 2021).

Even though the increase in the number of CSR reports, there is no worldwide unified mandatory system for companies to follow when disclosing CSR information. So there can be significant variations and result in possible reliability flaws and low transparency levels (Boyce, 2000; Sulub et al., 2018). This leads to the result that reports are not suitable for comparison, which in turn affects the reliability of these reports and the ability to use them for decision making. It is necessary to use a unified method to study and compare the quality of CSR reports and thus knowing about the status of CSR reporting’s quality and giving advice.

The launch of CSR in China[1] happened later than in the western world. While academics have discussed CSR since the 1930s in the West, CSR was only introduced in China in the late 20th century, shortly before China joined World Trade Organization (WTO) in 2001. It has been 15 years since STATE GRID Corporation of Mainland China published the first-ever CSR

[1] The word “China” in this dissertation represents Mainland China

report by a company listed in the Chinese stock market in 2006. Although later than many other markets worldwide, the number of listed companies publishing CSR reports in China grew at a high speed. In 2019, 945 of the 3702 companies listed in the two Chinese exchange markets had published a CSR report of the preceding year (J. Li & Zhang, 2019). Notwithstanding, in comparison with the international markets, the proportion of listed companies releasing CSR reports indicates that the Chinese market is still lagging on CSR disclosure. It has also been noted that there are weaknesses in Chinese companies' CSR disclosure (Z. Li & Xiang, 2007; Noronha et al., 2013; N. Zhang, 2007). For example, previous research found that Chinese listed companies often blindly disclose as much CSR information as possible without emphasizing key issues (Noronha et al., 2013). Due to the recency of CSR reporting in China and the imperfections of CSR disclosure found there, more empirical research in this area has been urgently called for (S. Li & Liu, 2018; Noronha et al., 2013).

CSR practices and their reporting are particularly important in the telecommunications industry, as it is a great industry all over the world. Its market size "was valued at $1657.7 billion in 2020 and is expected to expand at a compound annual growth rate of 5.4% from 2021 to 2028" (GVR, 2021, para. 1). Telecommunication is also one of the basic life supplies in society today. As of December 2020, 0.989 billion people in China were surfing the internet for at least one hour per day (CNNIC, 2021) and "the number of global mobile connections is predicted to reach around 5.86 billion by 2025" (S. O'Dea, 2020). The industry is also going through profound changes, especially in China. With the commercialization of the fifth-generation mobile communications technology (5G), the market scale of 5G is soaring. According to China Telecommunications Corporation Limited (2020, p. 10): "5G is the fifth-generation mobile communications technology for digital cellular networks". The global 5g technology market is expected to be $667.90 billion by 2026 from $5.53 billion in 2020, so 5G is called the fastest growing mobile technology in history (Allied Market Research, 2019). Issues also come with technology: the change of technology leads to the backwardness of equipment, which leads to the disposal of obsolescent equipment and adoption of new wave bands brings concerns of electromagnetic radiation. The other change is that the competition pattern in China is expected to change considerably, due to the entry of a new player in the market. On October 12th, 2020, the new 5G operator in China, China Radio, Film and Television

Network Co., Ltd., was established in Beijing. Although the industry is crucial, we found that rare literature focused on CSR disclosure in this industry not to say from the Chinese market. We are curious about the quality of Chinese companies' CSR disclosure under these paradigms shifting and if they perform at the same level as their international counterparts.

Given the increasing attention to CSR, the need for more research on CSR disclosure in China, and the importance as well as the changing circumstances of the telecommunications industry, this study aims to evaluate the quality and characteristics of Chinese telecommunication companies' CSR reports and to compare them with their international counterparts. The study will combine content analysis and a benchmark-scoring system to assess the reports' qualities through six principles promoted by global reporting initiative (GRI), a promoter of corporate sustainable development, and to compare them with their international counterparts.

This study will add to the literature on CSR disclosure. To the best of our knowledge, it is the first empirical analysis of CSR disclosure of Chinese companies in the telecommunication industry, using both content analysis and the benchmark-scoring system. It is hoped this study will fill this gap in the literature and allow for companies in the Chinese market to know where to improve and initiate more study on CSR disclosure in China.

The remainder of the dissertation is structured as follows: chapter two reviews relevant literature on CSR and CSR disclosure; chapter three will introduce the objectives and methodology; chapter four will present the findings; we will discuss these findings in chapter five and present the main conclusions, as well as limitations and avenues for further research in chapter six.

2. Literature Review

Corporate social responsibility (CSR) is “the firm’s considerations of, and response to, issues beyond the narrow economic, technical, and legal requirements of the firm to accomplish social and environmental benefits along with the traditional economic gains which the firm seeks” (Aguilera et al., 2007, pp. 836–837).

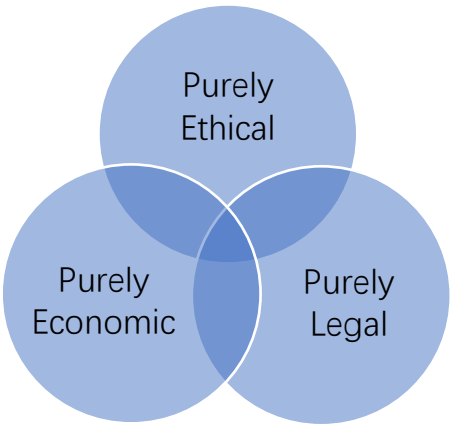
Based on the center of the discussion, the history of CSR can be divided into four phases: the emergence, the debate, the developmental phase, and the prosperous phase. During the emergence phase (before the 1930s), scholars began to consider business not only as economic behavior but also a behavior among society (X. Wang, 2010). For example, Albion W. Small related sociology to economics and asserted that it was a fundamental responsibility of all private businesses to be servants of the larger society (Small, 1895). During the debate phase (from the 1930s to the 1970s), the discussion center shifted to whether corporations have responsibilities beyond earning profits by the debates that Berle (1932, 1962) had with Dodd (1931) on “for whom corporate managers are trustees” and with Manne (1965) on “the functions of the modern corporation” (Berle, 1962). The developmental and prosperous phases, which were similar and have time overlap and thus were considered together in this study, started from the 1980s and lasted until now. The discussion focused on what responsibilities corporates should take on, how, and why.

Figure 2. 1 Pyramid of Corporate Social Responsibility



Source: Carroll (1991, p. 40)

Figure 2. 2 The Three-Domain Model of Corporate Social Responsibility



Source: Schwartz & Carroll (2003, p. 509)

In the last phase, Carroll (1979) introduced a CSR definition that encompasses economic, legal, ethical, and discretionary (philanthropic) business performances and promoted a

“Pyramid of Corporate Social Responsibility”(Carroll, 1991) based on it (See Figure 2. 1). Because the pyramid figure cannot fully capture the overlapping nature of its domains (Carroll, 1993), and philanthropic responsibilities are considered less critical (Carroll, 1991), a three-domain approach with a Venn framework, as Figure 2. 2 shows, was developed (Schwartz & Carroll, 2003).

When Carroll first presented his CSR pyramid, he used the concept of stakeholder and noted that “there is a natural fit between the idea of CSR and an organization’s stakeholders” (Carroll, 1991, p. 43). A stakeholder is “any group or individual who can affect or is affected by the achievement of the firm’s objectives” (Freeman, 1984, p. 49), “without whose support the organization would cease to exist” (Freeman, 2015, p. 1). The stakeholder theory is “a set of propositions that suggest that managers of firms have obligations to some group of stakeholders” (Freeman, 2015, p. 1).

Although the CSR Pyramid was evaluated as “probably the most well-known model of CSR” (Visser, 2006, p. 29), there were still disputes on CSR definitions, and similar concepts such as sustainability also brought confusion to the research field(Lockett et al., 2006). Bansal & Song (2017) categorized these concepts into two groups, CSR and sustainability; they labeled responsibility with ethics and sustainability with science and argued that ethicists discuss values and scientists pursue empirical facts.

CSR reporting as part of CSR is also attracting increasing attention.

2.1. CSR Reporting

CSR reporting is “the process of communicating the social and environmental effects of organizations’ economic actions to particular interest groups within society and to society at large” (Gray et al., 1987, p. 9). A CSR report is a “communication tool that can be applied to company communication between internal and external stakeholders” (Moravcikova et al., 2015, p. 333). It has been referred to variously as corporate citizenship reports; triple-bottom-line (TBL) report; social and environmental accounting; annual social report; integrity report; sustainability development report, among others (Abukari & Abdul-Hamid, 2018). Notwithstanding the extensive research in CSR reporting, there is no consensus on the exact definition of CSR reporting (Gray, 2000; Nielsen & Thomsen, 2007; Ringham & Miles, 2018). The acronym SEAR (social and environmental accountability and reporting) represents the

internal and external accounts of organizations' social, environmental, and sustainability interactions (Gray, 2007). In this dissertation, non-financial report, CSR report, sustainability report, and SEAR are considered the same concept that represents an internal or external, integrated or stand-alone report that includes non-financial information (such as social information and environmental information) of an organization and is released by the organization.

CSR reports have developed for a variety of reasons; for example, to strengthen the company's corporate reputation, to meet the constant requests of corporate stakeholders, and to continue to evolve and develop suitable CSR strategies, which is considered as a key to continuing business success (Idowu & Papasolomou, 2007; Yu & Zheng, 2020). CSR reports are effective means of disseminating information about different aspects of corporate social and environmental performance (Guthrie & Abeysekera, 2006; Law Chapple et al., 2017). According to Giannarakis et al. (2011), "A high-quality CSR report communicates a comprehensive story of the corporate social impacts and performance by providing information about the company's policies and initiatives" (Giannarakis et al., 2011, p. 44).

However, the degree of corporate social reporting varies considerably across firms (Chen & Bouvain, 2009; Ringham & Miles, 2018).The majority of the reports are prepared voluntarily and in a non-systematic way, which can cause impediments to stakeholders' decisions making, owing to potentially low reliability, lack of transparency, or the inability to use this information to compare firms' corporate performance (Boyce, 2000; Khaveh et al., 2012). And et, reporting quality matters: one study found that the quality of CSR reporting increases the likelihood of a company having a higher reputation (Odriozola & Baraibar-Diez, 2017). In another study, the quality of CSR disclosure (measured by analyzing CSR reports) was found to be negatively related to the cost of equity (S. Li & Liu, 2018).

2.2. The Triple Bottom Line and CSR reporting

Initially, CSR reports were focused on environmental and ecological issues, however, additional content, such as that pertaining to social issues has been increasingly added to these reports as societal demands on companies increase (Vartiak, 2016). A sustainability framework that examines a company's social, environmental, and economic impact called the triple bottom line (TBL) was proposed during the mid-1990s (Elkington, 1997, 2018). The TBL

“aims to measure the corporation's financial, social and environmental performance over a period of time. Only a company that produces a TBL is taking account of the full cost involved in doing business” (Elkington, 2018, p. 4). The economic aspects help in producing consistent returns by maintaining sufficient cash (Henriques & Richardson, 2013); the environmental component represents measurements of natural resources and prevent environmental degradation resulting from poor resource management (Slaper et al., 2011); and the social component helps in the job enrichment of employees along with their health and societal welfare (McKenzie, 2004; Yip & To, 2021). The three dimensions are also commonly called the three Ps: people, planet, and profits (Figge et al., 2002; O’Neil, 2018).

Based on the TBL framework, SPACE (Bocconi University’s Research Centre on Risk, Security, Occupational Health and Safety, Environment and Crisis Management) proposed a sustainability evaluation and reporting system (SERS), which comprises (a) the overall reporting system (or the sustainability reporting system), which comprises the annual report, the social report, the environmental report, and a set of integrated performance indicators; (b) the integrated information system, which is based on information and communication technology solutions, enables an organization to collect, process and share physical/technical and financial data, and build a satellite accounting system representing social, environmental, and financial performance; and (c) the critical performance indicators for corporate sustainability, a map for evaluating the companies’ performance and a tool for communicating the information required by the different stakeholder groups (Russo & Perrini, 2010).

The TBL suggests what content companies should communicated with their stakeholders and a possible framework for companies to follow. Meanwhile, other theories, such as institutional theory, argue the motivations of companies to disclose CSR information, which is not included in the TBL theory.

2.3. Institutional Theory and CSR reporting

As a well-established theoretical perspective in the areas of management accounting, accounting controlling, and finance (Gray et al., 2010), institutional theory is also a perspective used in studying CSR disclosure (e.g., Dagilienė & Nedzinskienė, 2018; Khan et al., 2020; Mohamed & Arafa, 2016; Zhao, 2020). It “views organizations as operating within a social framework of norms, values, and taken-for-granted assumptions about what constitutes

appropriate or acceptable economic behavior" (Carpenter & Feroz, 2001, p. 565).

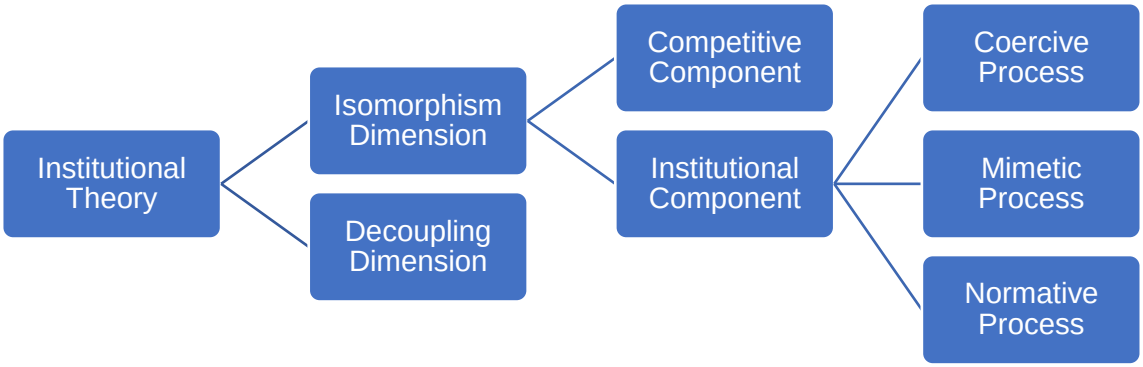
According to DiMaggio & Powell (1983), once an organizational field which is constituted by key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products becomes well established, there is an inexorable push towards homogenization. Isomorphism best captures the process of homogenization as " a process that forces one unit in a population to resemble other units that face the same set of environmental conditions" (DiMaggio & Powell, 1983, p. 149). Competitive isomorphism and institutional isomorphism are two types of isomorphism. Competitive isomorphism "assumes a system rationality that emphasizes market competition, niche change, and fitness measures" (DiMaggio & Powell, 1983, p. 150). Three mechanisms affect institutional isomorphic changing; they are (a) coercive isomorphism which "stems from political influence and the problem of legitimacy," (b) mimetic isomorphism resulting from standard responses to uncertainty, and (c) normative isomorphism associated with professionalization (DiMaggio & Powell, 1983, p. 150).

Isomorphism and decoupling are two dimensions in institutional theory (Boxenbaum & Jonsson, 2017). Decoupling is the idea that "the formal structure or practice is separate and distinct from actual organizational practice" (Dillard et al., 2004, p. 509). Figure 2. 3 shows the relation between the concepts of institutional theory.

Through isomorphism processes including coercion, imitation, and normative pressures, organization adopt institutional practices and become similar to others (Boxenbaum & Jonsson, 2017; Dillard et al., 2004). These practices are considered normal as they accord with the values and norms of the society in which the organization operate and thus through them the organization maintains, gains, and regains legitimacy (Deegan, 2009; Dube & Maroun, 2017).

According to institutional theory, corporations embedded in formal and informal rules are pressured by institutions to adopt specific practices, such as CSR practices, and obtain legitimacy (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). But the pressures differ as to the institutional contexts or institutional environments such as different countries (Deeg & Jackson, 2007; Jackson & Apostolakou, 2010; S. Wang et al., 2018). Specific practices, such as CSR disclosure, also differ across countries because of differences in policies and standards (Carnevale & Mazzuca, 2014).

Figure 2. 3 Concepts Related to Institutional Theory

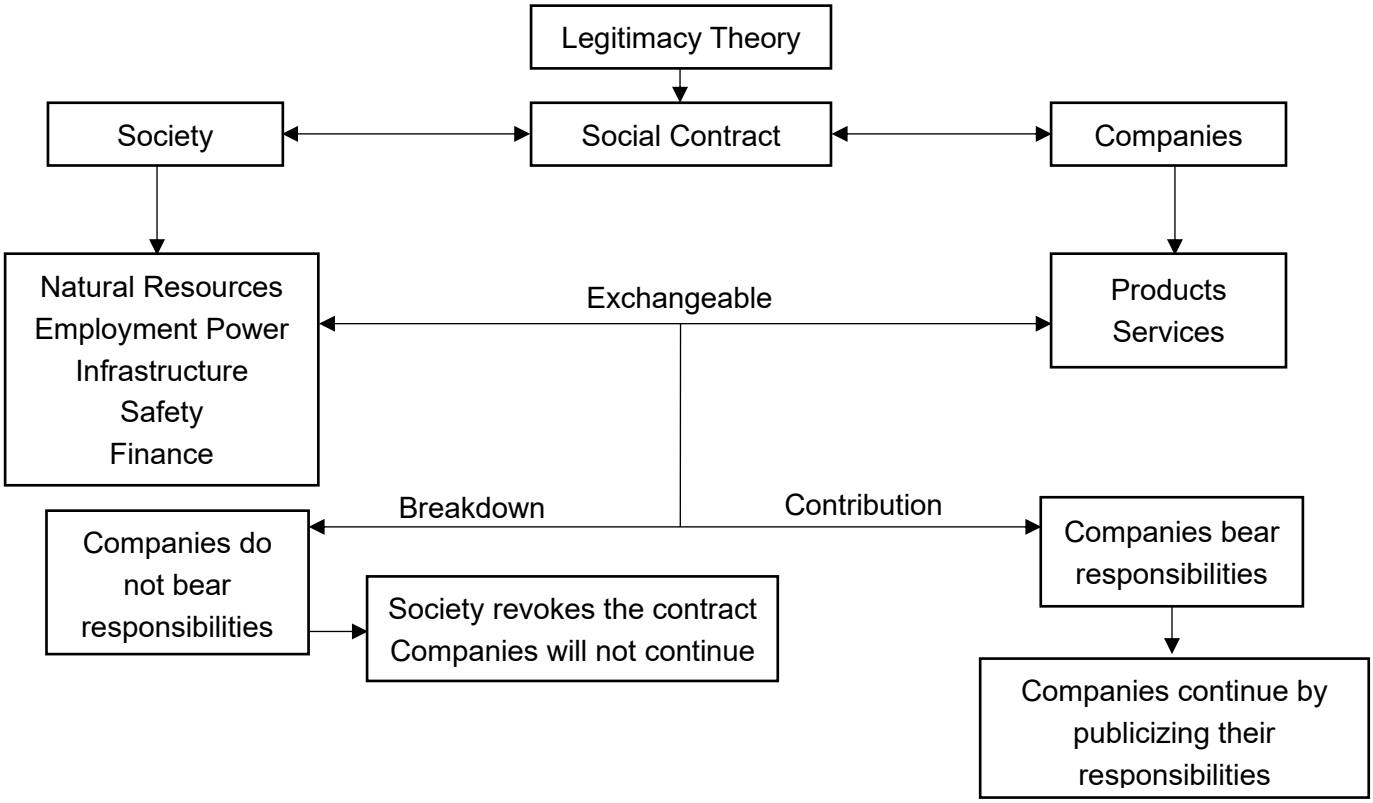


Source: Fernando & Lawrence (2014)

2.4. Legitimacy Theory and CSR reporting

Legitimacy theory is another frequently discussed perspective for studying CSR disclosure (e.g., Asmeri et al., 2017; Dube & Maroun, 2017; Patten, 2019). Legitimacy theory "posits that organizations seek to ensure that they act, or at least appear to act, within the boundaries and norms of the societies in which they operate" (Deegan et al., 2002, p. 319). An organization needs to fulfill the social contract between it and its respective societies to maintain its legitimacy, through which society allows the organization to exist. Expressed or implied social contract includes the exchange between organizations (provide products and services) and society (provide legal standing, attributes, and authority to resources) (Mathews, 1993; Shocker & Sethi, 1974). Under legitimacy theory, organizations operate in society, instead of existing in isolation (Shocker & Sethi, 1974). Organizations are not born with the right to the benefits of absorbing resources from society and giving waste back, and society expects the benefits of the organizations' existence to outweigh the cost to society (Deegan, 2009, 2019). The desire to legitimize an organization's operations, to create good images, to demonstrate regulatory compliance, to gain marketing benefits arising from reputation, and to differentiate themselves from their competitors through CSR disclosure are possible motivations to drive disclosure-related decisions (Deegan et al., 2002; Duff, 2017; Mohamed & Abdel-Hady, 2004). Figure 2. 4 summarizes the relation between legitimacy theory and corporate social disclosure.

Figure 2. 4 Legitimacy theory and corporate social disclosure



Source: Mohamed & Abdel-Hady (2004, p. 124)

A legitimacy gap emerges when an organization cannot catch up with society's various changing norms and expectations, and a legitimacy threat appears when an organization falls into unexpected occurrences, which can affect the organization's reputation (Fernando & Lawrence, 2014). Four strategies are suggested to legitimize organizations' operations within society (Lindblom, 1994). They are to: educate relevant stakeholders about the organization's actual performance; change the perceptions of the relevant stakeholders about the underlying issue without changing the organization's behavior; distract or manipulate attention away from the issue of concern and seek to divert the attention to a favorable issue; and/or seek to change external expectations about the organization's performance (Lindblom, 1994). Although these strategies raise differing ethical concerns, a study of the Australian mining industry suggests that all these four strategies are adopted (Yongvanich & Guthrie, 2007) and a study of nineteen companies from Australian food and beverage industry argues that the frequency with which the four strategies (Educate and inform, Seek to change perceptions, Deflect attention, and Change external expectations) are used decreases successively (Cuganesan et al., 2010).

According to legitimacy theory, in order to improve their legitimacy, organizations may refrain from disclosing negative or bad news related to their activities, increase positive news, and even reduce news if they consider that might help to increase or maintain the level of their legitimacy (Fernando & Lawrence, 2014).

This reporting approach of weakening negative information and strengthening positive information points is closely related to the concept of greenwashing: a “communication that misleads people into adopting overly positive beliefs about an organization's environmental performance, practices, or products” (Lyon & Montgomery, 2015). It is the “divergence between socially responsible communication and practices”(Gatti et al., 2019, p. 1); for instance, communicating symbolic actions associated with future plan instead of substantive actions that refer to what a company is doing (Torelli et al., 2020).

When recognized, greenwashing can result in a series of negative consequences (Gatti et al., 2019), such as consumer doubt about CSR claims, increased consumer confusion about corporate CSR, more negative brand evaluations and decreased purchase intentions (Aji & Sutikno, 2015; Furlow, 2010; Parguel et al., 2011; Rahman et al., 2015).

2.5. Guidelines for Preparing CSR Reports

Because the majority of CSR reports are voluntarily prepared and unsystematically compiled (Gamerschlag et al., 2011; Khaveh et al., 2012; Tsalis et al., 2018), possible weakness, such as low reliability, lack of transparency, and the inability to use them for comparison, impairs these reports’ reference value for stakeholders’ decision making (Boyce, 2000; Khaveh et al., 2012). With the underlying assumption that there is a set of universal values that can be applied to all businesses worldwide (Chen & Bouvain, 2009), reporting guidelines such as the Global Reporting Initiative Sustainability Standards (GRI standards), ISO26000, and Guidelines for the compilation of CSR reports in China (CASS-CSR) have been developed. Corporations are expected to report following these guidelines to bring about fairness, transparency, and truthfulness (Reynolds & Yuthas, 2008).

Founded in 1997, the global reporting initiative (GRI) is a promoter of corporate sustainable development and suggests corporations achieve this goal through sustainability reporting. By November 2020, the GRI’s database had records of 15199 organizations. The GRI Standards “represent global best practice for reporting publicly on a range of economic, environmental,

and social impacts. Sustainability reporting based on the Standards provides information about an organization's positive or negative contributions to sustainable development" (GRI, n.d.-a, para. 1). GRI released the first GRI guidelines (G1) in 2000, then the second version (G2) in 2002, the third version (G3) in 2006, and the fourth version (G4) in 2013. In 2016, GRI launched the GRI Sustainability Standards (GRI standards) to replace G serial standards (GRI, n.d.-b). These standards include two groups: universal standards and topic-specific standards. Universal standards have three parts: 101 foundation, 102 general disclosures, and 103 management approach. The main body, general disclosures, includes organizational profile, strategy, ethics and integrity, governance, stakeholder engagement and reporting practice. Topic-specific standards are economic, environmental and social standards. Each of them has 7 to 19 aspects.

ISO26000 is another guideline that has been applied to CSR disclosure. The International Standard Organization (ISO), with 54 nations and international organizations, compiled ISO26000, the latest standard system after ISO9000 and ISO14000. ISO 26000:2010 is "intended to assist organizations in contributing to sustainable development," "to promote common understanding in the field of social responsibility, and to complement other instruments and initiatives for social responsibility, not to replace them" (ISO, 2010b, para. 2). The standard encourages organizations to go beyond legal compliance and take into consideration societal, environmental, legal, cultural, political, and organizational diversity, as well as differences in economic conditions. Unlike previous standards, ISO26000 is not a management system standard. It is not a mandatory requirement, but rather "provides guidance", helping "clarify what social responsibility is" and aiding "businesses and organizations translate principles into effective actions and shares best practices relating to social responsibility, globally" (ISO, 2010b, 2010a, para. 3).

CASS-CSR is a guideline suggested and used in China. The Chinese Academy of Social Sciences (CASS) published its first CSR standard in 2009, named CASS-CSR 1.0. China experienced an explosive growth period of CSR activities and reporting around this time, and it was felt that it was necessary to have a corporate social responsibility report compilation guide close to China's reality (Zhong et al., 2009). One reason is that there were many problems in the disclosure of social responsibility information at that time. For example, many

reports were too short, the mainline was fuzzy, the framework was not clear, and the content seemingly arbitrary, such that there was much room for the timeliness, objectivity, balance, and readability of corporate social responsibility information disclosure to be improved (Zhong et al., 2009). Another reason was that international guidelines were quite different from China's primary national conditions and the stage of enterprise development, which exposed many problems in guiding Chinese enterprises to prepare reports.

CASS-CSR 2.0 came out in 2011. Then CASS published its 3.0 and 4.0 editions in 2016 and 2017. CASS-CSR 4.0's positioning has changed from "report preparation guide" to "comprehensive report guide," integrating report process, report management, and report value to form a "trinity" management system and become a comprehensive guide. CASS-CSR 4.0 initiated the value management of the social responsibility report, which made the report play the role of strengthening internal management and promoting the brand externally (Zhong et al., 2018).

Comparing CASS-CSR with GRI guidelines, as in Table 2. 1, there are three key commonalities: (a) the purpose is similar, that is, to provide a framework and guidance for enterprises to prepare CSR reports; (b) there are similar indicators or concerns in the disclosure of the report and both build their framework around the TBL; (c) both advocate third-party verification (Deng et al., 2014). The two guidelines differ in four aspects: (a) by giving detailed guidance, supplying lots of report templates and examples, and helpful software and website, the CASS-CSR guidelines are more user friendly than GRI guidelines, which are comprehensive and rigorous, but use plenty of text to define the content, quality and boundaries of a report; (b) their suggestions for content arrangement are different: CASS-CSR mainly emphasizes the establishment, management and performance of CSR activities, while the GRI guidelines reflect the CSR performance of enterprises from the perspective of long-term strategy and internal and external management; (c) CASS-CSR requires disclosure of the situation of the enterprise during the reporting period, while G4 requires the top person in charge of the organization to state the short, medium and even long-term strategy and vision of the enterprise, in addition to the CASS-CSR requirements; (d) GRI guidelines propose basic requirements of a report and encourage corporations to go beyond, while CASS-CSR encourages followers to learn from given reports (Deng et al., 2014).

Table 2. 1 Comparing CASS-CSR with GRI Guidelines

	CASS-CSR	GRI guidelines
Similarities	Provide a framework and guidance for enterprises to prepare CSR reports Build framework basing on TBL theory Advocate the third-party verification	
Differences	Detailed guidance and useful tools Performance, establishment, and management The situation during the reporting period Excellent cases	Text description Strategy and management Short, medium, and even long-term strategy Basic requirements

Source: Deng et al. (2014)

2.6. Factors Influencing Quality of CSR Reports

Multiple factors are influential in the quality of CSR reports. The country where the business is headquartered is a crucial factor (Chen & Bouvain, 2009; Kolk et al., 2001; Sibel & van het Hof, 2020). For example, significant discrepancies had been found among Mainland China, Hong Kong, and Taiwan in disclosing CSR information (Zhao, 2020). In Mainland China, companies pay attention to poverty and disaster relief as well as philanthropic activities; in Hong Kong, companies focus on the community's sustainable development and implement CSR activities such as volunteering, sponsorship, and partnerships in a more institutionalized way; and in Taiwan, companies disclose more information regarding arts and culture and employee engagement (Zhao, 2020). In a cross-country analysis of eight top telecommunications companies in Africa using websites as a disclosure medium, although all sampled companies reported their CSR actives, South African firms were found lead among South Africa, Egypt, Nigeria, and Kenya (Sulemena, 2017). In a study of 176 European listed banks, although sustainability reporting was found to be positively related to stock prices, negatively related to book value per share, and not significantly associated with earning per share, these relationships were found varies from country to country (Carnevale & Mazzuca, 2014).

Regulations also influence the quality of CSR disclosure. For instance, a study of the non-financial reports of Italian and German companies before and after the implementation of

Directive 2014/95/EU found that making non-financial disclosure mandatory increased the quality of the sustainability reporting undertaken (Mion, 2019). Another research found that because of more direct incentives and pressures from administration, in China, state-owned enterprises publish reports with higher overall quality than private enterprises (Qiu, 2017).

Company visibility, such as firm size and industry affiliation, is another factor affecting quality of CSR disclosure. For instance, research on the 2003 and 2004 annual reports of twelve Portuguese banks discovered that banks with higher visibility, measured through proxies such as size and industry affiliation in Portugal, tend to disclose CSR at a higher level (Branco & Rodrigues, 2008). A cross-country study analyzed websites of 127 corporations from emerging countries confirmed that country of origin significantly influences seven factors of CSR disclosure, namely: code of ethics, CSR project, CSR project result, CSR partnership, social report, corporate value, and the expression of CSR development on the corporate's homepage; and industry sector also have a relation to CSR disclosure on CSR on homepage, CSR partnership, and social report. (Wanderley et al., 2008).

Which reporting guidelines the report is examined through has also been found to affect the estimation of a report's quality. Giannarakis et al. (2011) examined the use of two mechanisms, the Global Reporting Initiative (GRI) and the Deloitte Reporting Sustainability Scorecard (DRSS), in four Greek telecommunication businesses and found that Greek telecommunication companies' CSR reports were similar in structure, style, length content, and depth, and companies' rankings of performance in different indices are identical. However, the companies presented significantly higher performance with DRSS than GRI because companies choose their communication policy and strategy (such as the degree that a company adopts a guideline) according to their needs and capabilities.

It is clear then, that concomitant with the increasing attention paid to CSR, there has been an increase in CSR reporting, and that this disclosure is pushed by multiple motivations and influenced by complex factors. The next chapter describes the resulting research questions, pertaining to the status of CSR disclosure in the Chinese market and potential gaps between Chinese companies' and their international counterparts' reporting; as well as the methodology applied to address these questions.

3. Research Questions and Methodology

3.1. Research Questions

As awareness of CSR issues increases across the board, for firms, this is increasingly considered a priority issues (Hunjra et al., 2020; Mark-Herbert & Von Schantz, 2007). Meanwhile, companies have been increasing CSR disclosure, moving towards greater transparency and accountability and in the hopes of gaining competitive advantages, reputation, and legitimacy (Ismail Khan et al., 2021).

However, the quantity and quality of CSR disclosure in developing countries are still low (Katmon et al., 2019; Mehjabeen & Bukth, 2020; Nour et al., 2020). As China is still a developing country lagging in CSR development, CSR and its disclosure are important in China. Noronha et al. (2013) noted that CSR disclosure in China was still preliminary, and that more empirical research of Chinese CSR disclosure was needed. In 2020, the news that the Chinese unicorn company, Luckin coffee, expected to be a strong competitor to Starbucks Coffee, was unlisted from Nasdaq for its financial scandal further aroused the public's interest in CSR and its disclosure.

There has already been some research on CSR disclosure in China. For example, Zhang et al. (2014) evaluated 111 CSR reports by Chinese SOEs based on six principles: integrity, substantive[2], balance, comparability, readability, and innovation. They found that the reports scored well in terms of readability but were not so good in terms of comparability, including vertical comparability (historical comparison of the same index) and horizontal comparability (comparison of the same index with the average level of the same industry or international advanced level); and that CSR disclosure quality in these reports was positively related to firm size. Qi et al. (2016) used expert scoring and entropy weight method to study the quality of the CSR reports of 37 Chinese listed companies in the transportation industry based on eight indicators: integrity, inclusiveness, substantiality, responsiveness, comparability, credibility, innovation, and accessibility. Specialists scored three to seven sub-indicators of each one of these indicators and found that the overall score was low, and that there was a wide gap among the scores of the various enterprises in the industry. Xu et al. (2016) adopted results from

[2] Whether the CSR report reveals the most critical impact of the enterprise on the economy, society, and environment, whether the evaluation report covers the key social responsibility issues such as industry characteristics issues and era issues, and whether it covers the key stakeholders who are greatly affected by it.

Rankins CSR Ratings (RKS) on integrity, content, technology, and industry and added weights to those variables to evaluate the quality of CSR reports and found that CSR report auditing has a positive relation to quality of CSR report.

The importance of these contributions notwithstanding, there is room for further study of CSR disclosure in China. Studies with detailed indicators and a specific scoring system are particularly called for, as in previous research scoring approaches were sometimes blurry (Giannarakis et al., 2011; Tsalis et al., 2020),.

In terms of context, the telecommunication industry is one that deserves particular attention. 5G technology is the fastest growing mobile technology in history, the global 5g technology market is expected to be $667.90 billion by 2026 from $5.53 billion in 2020 (Allied Market Research, 2019), and the global number of cities with 5G networks increased 350 percent in 2020 (VIAVI, 2021). The Chinese telecommunication industry is also in transformation. The growth of 5G in China is as strong as in the rest of the world; in the first three quarters of 2020, the total revenue of the Chinese telecom business reached 1022.8 billion RMB, a year-on-year increase of 3.2% (chinabgao.com, 2021), and the Chinese 5G communication industry is expected to reach 3983 billion RMB in 2025 from 225 billion in 2019 (CCID, 2020). The dynamics of competition in the Chinese telecommunication industry has also recently changed significantly, with the entrance of a new competitor, China Broadcasting Network Corporation Limited, into the market in October 2020. It has previously been found that industry and competition growth often lead companies to disclose CSR information as a way to achieve a competitive edge (Imran Khan et al., 2019), because companies in the global business environment are judged beyond economic success and based on their contribution to society as a whole (Wellalage et al., 2018). As such, understanding the quality of the CSR disclosure of the Chinese telecommunication industry is essential. However, existing research on CSR disclosure in China has for the most part been general, not focusing on a single industry in particular (e.g., Du et al., 2016; Naseem et al., 2019; Qiu, 2017; Xu et al., 2016), while research on the telecommunication industry, in particular, is rare and does not focus on CSR disclosure in particular (Gao, 2010; B. Li, 2008; Pei, 2013).

As such, empirical studies of Chinese CSR disclosure were called for, especially those with clear scoring rules and methods. Also, despite the fierce growth and competition of the

Chinese and the global telecommunication industry, literature focusing on CSR disclosure of the Chinese telecommunication industry was still limited. Therefore, we wanted to learn about the status of Chinese telecommunications companies' CSR disclosure and their performance relative to their international counterparts. The following two specific questions were promoted:

Q1: What is the quality of Chinese telecommunication companies' CSR reports?

Q2: Do Chinese telecommunication companies report CSR at the same level as their international counterparts? And if not, what are the main differences among these companies?

In the next sections, we will present our sample, methods through which we studied and tried to answer these questions.

3.2. Methodology

We selected five telecommunication operators (three Chinese companies and two of their international counterparts) and evaluated their reports with content analysis and benchmark-scoring system through six principles promoted by GRI standards.

3.2.1. Sample

There are currently five telecommunication operators in China, and four of them have a 5G license. CITIC Application Service Provider Corporate Limited only services medium or large organizations and does not have 5G license yet. China Broadcasting Network Corporation Limited does have a 5G license but was established in 2020 and so did not yet have an annual CSR report at the time of data collection. Thus, in this study, data was collected regarding the remaining three companies in the industry – all of which had a 5G license and a CSR report at the time of data collection: China Telecom Corporation Limited, China Mobile Limited, China Unicom Limited.

According to Brand Finance (2021), China Mobile ranked third, China Telecom ranked seventh, and China Unicom ranked 14th in the list of the most valuable telecom brands in 2020. Two companies ranked in the top ten in this same list, AT&T Incorporated and Vodafone Group Public Limited Company, were selected as comparisons with the Chinese companies. These two companies were selected because are equal to or bigger in size to the Chinese companies in the sample; and according to Gamerschlag et al. (2011), Khaveh et al. (2012), and Nawaiseh (2015), CSR disclosure is positively related with firm size (especially the number of employees and revenue). These two companies also had similar or higher annual revenues as the three

Chinese companies. According to their respective annual reports, in 2019, the revenue of China Telecom was 53970 million US dollars, China Mobile was 107431 million US dollars, China Unicom was 41730 million US dollars, AT&T was 181193 million US dollars, and Vodafone was 38893 million US dollars, as shown in Table 3. 1. In addition, they covered similar or larger operational area sizes to the Chinese companies. AT&T mainly operates in America, and Vodafone operates in Europe, Oceania, and Asia.

Moreover, the fact that Vodafone has 19 CSR report versions, for headquarter and different local subsidiaries such as India, Ireland, and Italy, which is much more than the rest of the top ten telecom companies, also suggested that Vodafone had good CSR disclosure quality. Another reason that they were expected to have high CSR disclosure quality is the location of the headquarter, which has previously been shown to affect the quality of CSR disclosure (Chen & Bouvain, 2009; Kolk et al., 2001; Sibel & van het Hof, 2020). AT&T's headquarter is in the United States, while Vodafone's headquarter is in the United Kingdom. According to Bhatia & Makkar (2019), developed countries such as the US and the UK have higher CSR disclosure scores than developing countries such as China.

Table 3. 1 Revenue and Rank of Sample Companies

Company	China Telecom	China Mobile	China Unicom	AT&T	Vodafone
Revenue	375,734 (¥m)	747,917 (¥m)	290,515 (¥m)	181,193 ($m)	43,666 (€m)
Revenue In $m	53,970	107,431	41,730	181,193	38,893
Employees (In thousand)	281	456.2	243.7	247.8	92
Rank 2020	7	3	14	2	9

Source: Annual Financial Report of Each Company and Brand Finance (2021)

Furthermore, CSR reports can be categorized into stand-alone reports and integrated reports that are part of the annual financial report, and in this case, all three Chinese companies and the two international counterparts all had stand-alone CSR reports, which was a condition for comparison. Hence, we believed that AT&T and Vodafone had good enough CSR disclosure quality and sufficient representativeness for comparison with the Chinese

companies.

3.2.2. Data Sources

Companies use different methods to communicate their CSR initiatives to stakeholders, such as social and thematic reports, codes of conduct, websites, stakeholder consultations, internal channels, prizes and events, cause-related marketing, product packaging, interventions in the media, and points of sale (CSR Europe, 2000b, 2000a). The annual report tends to be the main channel for CSR communication (Moravcikova et al., 2015; Skouloudis et al., 2009). Some researchers have analyzed information released on the companies' website (Abukari & Abdul-Hamid, 2018; Sulemena, 2017), but website information can often be unorganized, and parts of it can easily go overlooked; in addition, web pages can change. The CSR reports released regularly by companies can be considered a snapshot in time (Fuller, 2018). Firms cautiously select information in this format. Some reports are assured by third-party organizations, which makes these reports more credible. Understanding the quality of the reports released can thus help us evaluate companies' disclosure performance. For these reasons, this dissertation used CSR reports published by selected firms.

Table 3. 2 Data Source

	Source of English version	Source of Chinese version
China Telecom	http://www.chinatelecom.com.cn/shzr/2019shzr/	http://www.chinatelecom.com.cn/shzr/2019shzr/
China Mobile	https://www.chinamobileltd.com/en/esg/sd.php	https://www.chinamobileltd.com/sc/esg/sd.php
China Unicom	https://unglobalcompact.org/participation/report/cop/create-and-submit/active/441176	http://www.chinaunicom.com.cn/duty/duty.html
AT&T	https://about.att.com/csr/reporting	
Vodafone	https://www.vodafone.com/our-purpose/reporting-centre	

Source: Own Elaboration

The three Chinese companies provide their reports in both Chinese and English languages, and in all cases, the two versions were similar in structure and content. The reports used in

this research were the English versions of the headquarters' reports. The Chinese versions of the China Telecom, China Mobile, and China Unicom reports were used for clarifying details. To compare with these Chinese reports, English versions of the of AT&T and Vodafone reports were selected. Table 3. 2 shows the sources of the reports analyzed in this study.

These Chinese companies provided their Chinese version reports on their respective official websites. China Telecom puts its English version and Chinese version on the same page. China Mobile puts the English version on its English website. China Unicom releases its English reports differently: the official entry to these is via the United Nations (UN) global compact website.

3.2.3. Assessment Techniques

Tsalis et al. (2020) classified the techniques that have been adapted for evaluating the quality level of CSR reports into two categories: content analysis and benchmarking scoring. Although these assessment techniques are not originally generated from CSR disclosure research, they have been used by researcher to evaluate the quality of CSR reports (Ismail Khan et al., 2021; Mion, 2019; Nikolaou & Tsalis, 2013; Qiu, 2017; Sethi et al., 2017) Since benchmarking-scoring is limited to specific contents or topics and cannot measure the quality of principles like reliability and timeliness, and content analysis cannot quantify the reports' quality, this study combined the two techniques.

3.2.3.1. Content Analysis

Content analysis is a flexible method for analyzing text data (Cavanagh, 1997) that emerged in the 18th century (Rosengren, 1981) and was widely used by health researchers in the late 20th century, leading to its increased application and popularity (Nandy & Sarvela, 1997).It can be divided into two categories, qualitative content analysis (Abukari & Abdul-Hamid, 2018; Fuller, 2018; Sulemena, 2017) and quantitative content analysis (Chen & Bouvain, 2009; Grossman et al., 2018). Quantitative studies involve identifying and quantifying keywords or content in a text and using statistics to analyze the text (Coe & Scacco, 2017; Hsieh & Shannon, 2005).

Qualitative content analysis is defined as a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns (Hsieh & Shannon, 2005; Lindgren et al., 2020). Qualitative

content analysis focuses on language characteristics as communication, with attention to content or the contextual meaning of the text (Graneheim et al., 2017; Hsieh & Shannon, 2005).

There are three distinct types of qualitative content analysis, including conventional content analysis, directed content analysis, and summative content analysis. The conventional approach is also described as inductive category development (Graneheim et al., 2017; Mayring, 2000). The researcher starts with no structure or theory about the phenomena at hand and avoids using preconceived categories, but rather immerses herself in the data to allow new insights to emerge (Kondracki et al., 2002; Lindgren et al., 2020). The directed approach starts from an existing incomplete theory about a phenomenon or prior research, which can help focus the research question (Assarroudi et al., 2018; Hsieh & Shannon, 2005). The summative approach derives from the quantitative approach that identifies and quantifies certain words or content in text, but also includes latent content analysis which refers to the process of interpretation of content. The summative approach normally includes identifying alternative terms and euphemistic terms (Griffiths, 2016; Hsieh & Shannon, 2005).

In this study, under a structure derived from the GRI sustainability standards, a directed approach content analysis was applied to evaluate the reports' qualities. The Global Reporting Initiative (GRI) (See section 2.5), is a promoter of corporate sustainable development founded in 1997, which encourages corporations to achieve sustainable development by sustainability reporting. The GRI promotes six principles for the evaluation of CSR reports, namely accuracy, balance, clarity, comparability, reliability, and timeliness (Global Reporting Initiative, 2016). Under the GRI standards, reports should be sufficiently accurate and detailed to meet the requirement of the accuracy principle; reflect positive and negative aspects, to meet the requirement of the balance principle; be understandable and accessible to meet the requirement of the clarity principle; report information consistently to meet the requirement of the comparability principle; be subject to examination to meet the requirement of the reliability principle; and report on a regular schedule to meet the requirement of the timeliness principle (Global Reporting Initiative, 2016) (see Table 3. 3).

In the current study, a content analysis was used in evaluating four principles: clarity, comparability, reliability, and timeliness. The clarity principle was embodied in the reports' presentation and the writing of the report. The comparability of the reports was examined with

regard to the presentation of longitudinal information. The number of references to reporting guidelines and assurance of third-party organizations was used as a proxy to examine the reliability principle. The timeliness principle was reflected by the gap between the end of the reporting period and the report's release date.

Table 3. 3 Requirements of the principles

Principles	Requirements
Accuracy	Sufficiently accurate and detailed
Balance	Reflecting positive and negative aspects
Clarity	Understandable and accessible
Comparability	Reporting information consistently
Reliability	Can be subject to examination
Timeliness	Reporting on a regular schedule

Source: Global Reporting Initiative (2016)

The accuracy principle and the balance principle were quantified and examined on the basis of a benchmark-scoring system (described in section 3.2.3.2 below). Under the benchmark-scoring system, the evaluation of each principle was divided into multiple subdivided scoring standards, while content analysis normally assesses the content in general. Because the accuracy and the balance principles represent the completeness of a report, it is necessary to know in which aspect or area the companies perform better. So, the benchmark-scoring system is an approach more appropriately applied here than content analysis.

3.2.3.2. Benchmarking-scoring

Several approaches, based on different benchmarks, have been proposed for a convenient comparison between different reporting practices and distinguishing between poorer and better reporters (Skouloudis et al., 2009). One of these approaches, called benchmark-scoring, is a "simple and systematic manner" of evaluating the quality of CSR reports, that can quantify sustainability reports' content (Nikolaou & Tsalis, 2013, p. 77). Several systems used to score CSR reports based on different criteria have been built since the last decade (Clausen et al., 2005; Davis-Walling & Batterman, 1997; Tohmatsu, 2006). After GRI published its first reporting guideline (G1) in June 2000, it quickly became one of the most prominent institutions worldwide in setting CSR disclosure guidelines. A system for the

quantification of the quality of CSR reports was promoted based on the first version of the global reporting initiative (GRI) guidelines (G1) and a scoring scale from zero to three (Morhardt et al., 2002). Later, a new method for evaluating CRS reports based on the fourth edition of the GRI guidelines (G4) was developed, with a five-level scoring scale from zero to four. The report gets zero when it does not include any information on the specific GRI topic, and it gets one when it provides brief statements, two when it contains valuable information, three when it provides adequate and precise information, and four when it offers complete information on a specific topic (Skouloudis et al., 2009). In 2016, GRI launched the GRI Sustainability Reporting Standards (GRI standards), which replaced its former versions (including G1, G2, G3, and G4), and was used as a benchmark in the current study[3]. The standard has four series, namely Universal Standards (100 series), Economic Standards (200 series), Environment Standards (300 series), and Social Standards (400 series), as shown in Table 3. 4.

Table 3. 4 Proportion of Each Part of GRI Guidelines

Series	Topics	Weight
Universal Standards	59	43.38%
Economic Topics	13	9.56%
Environment Topics	30	22.06%
Social Topics	34	25.00%
Total	136	100.00%

Source: Own Elaboration

Some authors use a four-level scoring system (Giannarakis et al., 2011; Tsalis et al., 2020). Distinguishing between the last two levels of a five-level scoring system (the five-level scoring system in article of Skouloudis et al. (2009), for instance) can be subjective because the bound between adequate and complete information can be blurry. In this study, a four-score scale was applied to evaluate each topic of completeness (see Table 3. 5). The first level scores zero, which means the company does not disclose information under this topic. When a company disclosed limited qualitative information under a topic, it got one point. If the limited information

[3] the aspects tax (207), water and effluents (303), and occupational health and safety (403) have new editions after 2016. Still, they are not adopted in this study because they only become effective for reports published on or after January 1st, 2021

was revealed quantitatively, it was the third level and scored two points. Only when a company comprehensively disclosed information on a topic and provided a clear indication of the progress of corporate performance for a particular topic did it achieve the fourth level and get three points. The final scores thus reflect how detailed the reports are.

Table 3. 5 Descriptions of a Four-Level Scale

Score	Description
0	No information
1	Statements/Qualitative information
2	Details/Quantitative information
3	Comprehensive information with a clear indication of the progress

Source: Own Elaboration

Because most information is positive, specific topics requiring negative information such as topic 308-2 (Negative environmental impacts in the supply chain and actions taken) can express the balance of the reports.

This chapter clarified the formulation of our research questions and explained why the samples were selected and where the data came. Besides, two methods applied in this study were also introduced. The content narrated in this chapter was a foundation support for the detailed in next chapter which will introduce the findings in this study.

4. Findings

In this chapter, an overview will be given of the reports selected in this study. Then, the evaluation results of the six principles, namely accuracy, balance, clarity, comparability, reliability, and timeliness, will be presented; where the accuracy and the balance principles were assessed under a benchmark-scoring system, and the remaining four based on content analysis.

4.1. General Overview

The non-financial reports for the year 2019 of the five companies in the sample were selected for analysis. The lengths of the reports varied from 40 pages to 89 pages, and the average was 72.4 pages. The shortest report, AT&T's, was only 40 pages, which was 55% of the average length of all the reports.

Companies each had their own approach to organizing the CSR reports and compiled their content differently, rather than consistently classifying it into the environmental, social, and economic categories promoted by the TBL. As such, and to facilitate comparisons, we sorted the content of the five reports into four categories: the environmental, social, economic as promoted by the TBL, and a general category which was for content which could not be classified into those three categories, such as table of contents or the cover, for instance.

Content related to operational activities, such as that related to the companies' core-business (5G, cyber, and other telecommunications operational activities, in this case) was sorted into the economic category. The content relating to employment, philanthropy, and community affairs was categorized into the social category. Environmental content included topics such as carbon emissions and energy consumption. The remaining pages that could not be sorted into these three categories (such as managers' statements) were put into the general category.

This categorization showed that most of the sample reports had an uneven structure. Chinese companies used close to or more than half of the report to cover operational activities; and, in contrast, had a much fewer pages covering the environmental category. Even China Mobile, the company expanding the most on environmental content among the three was lagging in comparison to its international peers. AT&T's report also showed an uneven structure: although it had a higher percentage of its report dedicated to environmental activities,

this was still less than the economic and general categories. Vodafone's report was the only one that had an almost even structure – dedicating a similar amount of space to all the categories. China Mobile and Vodafone had similar lengths with regard to social activities, which was higher than that of the other companies. Annex A summarizes the compositions of the reports.

It is worth noting that the percentages dedicated to the social category might be higher (if another form of categorization was used, for instance), because the boundary between the categories was sometimes ambiguous. Chinese companies, in particular, tended to report on operational activities that give benefit to society (and which were classified as economic), while their international counterparts tended to report operational information and society-related information separately and purely. For example, China Telecom mentioned how their fiber-optic internet service helped rural primary schools improve education quality. Although it had a social impact, this activity was categorized as economic, because it is related to the company's core business. Hence, the percentages in the social category could be higher in other calculation methods. That said, these borderline situations were not frequent and classifying operational activities as social or even double counting them, would not change the conclusion that the reports' structures were uneven.

Looking more closely at the economic content, we found that the Chinese companies spent more efforts covering 5G than their international counterparts. China Telecom and China mobile had a separate section for introducing 5G. The word 5G showed up 271 times in China Mobile's CSR report (including the special section for 5G) and 267 times in China Telecom's report (including the special section for 5G). Although China Unicom did not have a special section to report 5G, the word still showed up 126 times in its report. However, in reports of their international counterparts, the term only showed up 16 times in Vodafone's and 7 times in AT&T's. This finding may explain why the portions of the economic category in the Chinese reports were higher than the others.

The next sections will present the assessment of reports based on the six principles of the GRI.

4.2. Clarity

The principle of clarity requires reports to be understandable and accessible to stakeholders.

To be accessible, the reports should be easily acquired. For evaluating if the reports were accessible, we accessed the companies' official websites, an outside website dedicated to CSR reports, and the GRI data base. We found that most of these CSR reports can be easily downloaded via the official company websites, while the English version of China Unicom report can only be accessed via the UN global compact's website. (See section 3.2.2 and Table 3. 2 Data Source) The GRI database had these companies' aged reports and reports from their oversea branches but lacked latest versions.

Further, it was found that all five companies started releasing CSR reports in the first decade of the 21st century. Vodafone started earlier than the others, and its first report on the official website came out in 2000. Vodafone, China Mobile and AT&T had all their reports, from the first to the latest, on their official websites. All five companies had their latest reports on their official website. China Telecom and China Unicom did not present their CSR report before 2015 on their website, although those earlier reports could be found on the GRI database (for China Telecom) and the UN global compact (for China Unicom). This suggests these companies achieve a lower level of accessibility than China Mobile and their international counterparts. Making the complete set of reports available indicates publishing CSR reports is viewed as a long-term task and that the companies have a strong willingness to communicate with their stakeholders consistently. Annex B shows the time that the companies' first report came out, and the earliest CSR report that can be found on the official website of each company.

The second aspect of clarity relates to how easy the reports are to understand. To begin with, we looked at the titles of the sample reports, and found that the Chinese companies in the sample performed worse than their international counterparts in this respect. All the reports convey the reporting period and the definition of the report. China Telecom, China Unicom, and AT&T use the term "CSR report" while China mobile and Vodafone use the term "Sustainability report". With the exception of Vodafone, the rest have subtitles to emphasize the topic, but these subtitles appeared more like slogans, from which readers can hardly gain substantive information. The reports' titles are summarized in Annex C.

To further evaluate the understandability of these reports, we then went through the chapter titles. We found that whereas the Chinese companies often used whole sentences as

chapter titles, their international counterparts mostly opted for shorter titles, such that the chapter titles of the Chinese reports were more ambiguous and more difficult to understand than chapter titles of their counterparts. All the Chinese companies in the sample used at least one rhetoric technique in their chapter titles, including parallel sentences and analogy. These rhetoric techniques are common in Chinese writing. The application of parallelism sentence was more visible in the Chinese version of the report (see footnotes 6, 7, 8). Although rhetorical techniques can make the reports more vivid, they also increase reading difficulty for the public, especially English readers. Compared to their Chinese counterparts, AT&T and Vodafone used briefer and more directive titles which indicated what would be discussed in the chapter and used no more than three words per title. Annex D shows main chapter titles from the reports.

4.3. Comparability

The principle of comparability requires companies to consistently report information that enables stakeholders to analyze changes in the organization's performance over time. In order to assess this, we looked at how many reporting periods were disclosed in each report, as well as to the charts used to explain the data reported. We found that all three Chinese companies' reports and the Vodafone report meet the requirement of the comparability principle, by providing three years of data. However, the Chinese companies' reports lack charts illustrating the data.

AT&T stands eminent among the sample, because it not only offers five years' worth of data, but also applies line charts to clearly show changes over time (e.g.: Annex P). Vodafone's report also includes more explanatory data charts (e.g.: Annex Q) than the Chinese reports. The Chinese reports use fewer charts, and instead present the data in the form of tables, which are less visual and typically harder to interpret than charts. China Mobile, in particular, delivers all its data in table form (see Annex O).

The graphs used by the Chinese companies also reflect some weaknesses. For example, the chart of China Telecom, shown in Annex N, only compares two years' data (rather than a three comparison as they did in the table of key performance indicators), and the chart of China Unicom shown in Annex M, does not compare with past data at all.

4.4. Reliability

The reliability principle requires the reports to communicate authentic data and to disclose the

reporting principles applied. External assurance, defined by GRI as “activities designed to result in published conclusions on the quality of the report and the information (whether it be qualitative or quantitative) contained within it” (GRI, 2016), is an important test for the reliability principle. Thus, in order to assess this principle, we looked into the assurances of third-party organizations and reporting guidelines referred by the reports. We found that most of the sample companies (four out of five) named a third-party organization. China Mobile had third-party organization assurance by EY; AT&T by Trucost; and Vodafone by Grant Thornton. China Telecom attached the Chinese Expert Committee report on CSR Report Rating (Expert Committee) in its CSR report. This report is different from an assurance report, because it does not give conclusions on the quality of the information, and readers cannot assess the veracity of data from it. The Expert Committee evaluates reports on seven aspects, including Procedural Performance, Substantive Performance, Completeness, Balance, Comparability, Readability, and Originality, referring to CASS-CSR 4.0, and gives zero to five stars for each aspect. It then gives an overall rating, based on these aspects, to the report. It worth mentioning that the Committee provides no assurance for data veracity, but rather only rates the report. This was the case for China Telecom who received five stars for overall rating from the Chinese expert committee on CSR report rating. China Unicom was the only company in the sample that did not name a related third-party. The third-party organizations of each sample company are summarized in Table 4. 1.

Table 4. 1 Related Third-party organization of Each Company

	Related third-party organization
China Telecom	Chinese Expert Committee on CSR Report Rating
China Mobile	EY
China Unicom	N/A
AT&T	Trucost
Vodafone	Grant Thornton

Source: Data from the reports, Summarized by This Author

Having assessed third party assurances, we then looked at the reporting guidelines referred to in the reports. It was found that the GRI standards were included by all sample companies. Although China Unicom stated that the G4 edition was applied, the index attached

at the end of the report that illustrated how the report was compiled according to a guideline indicates that the report was developed according to the GRI Sustainability Standards. This may be an error of translation, because in the Chinese version of the report they stated they used the latest version of GRI guidelines, not the G4.

A similar situation occurred with China Telecom's report. They said "Sustainability Reporting Guidelines (G4)" were applied in the report. However, it was not clear if China Telecom was really using the G4 (abolished in 2018), because the report did not have an index table as an appendix. Hence, it is not clear from the report which guideline was actually applied.

The second most used guideline in the sample was CASS-CSR 4.0, by the Chinese Academy of Social Sciences, although neither international company adopted this guideline. All three Chinese companies applied CASS-CSR 4.0, but they used three different translations to name it. China Telecom called the guideline "Guidelines for Preparation of CSR Reports in China", China Unicom called it "Guide on Preparation of China Corporate Social Responsibility Report", and China Mobile called it "Chinese CSR Report Preparation Guide". Similar translation differences were found with respect to the guidelines by the SASAC. The guideline was called "Guidelines for SOEs to Better Fulfill Corporate Social Responsibilities" by China Telecom and "Guiding Opinions on State-owned Enterprises to Better Perform Social Responsibilities" by China Unicom.[4] There is no existing unified official translation, and these differences in translations can bring confusion to readers and negatively impact on the reports' clarity. Guidelines by stock exchanges, including Hong Kong Stock Exchange (HKEx) and Shanghai Stock Exchange, were adopted by China Mobile and China Unicom.

We also found that the sample companies took one to seven reporting guidelines as references. China Unicom took the most significant number (seven) of guidelines among the selected companies. China Telecom and China Mobile both took six guidelines. Most reporting guidelines adopted by China Unicom and China Telecom were standards promoted by the Chinese government or Chinese organizations, while China Mobile used more international standards. AT&T took five references, and Vodafone took only the GRI standards. Annex E shows the guidelines referred by the reports and the order in which the reports presented these

[4] 国务院国有资产监督管理委员会《关于国有企业更好履行社会责任的指导意见》

guidelines.

Although all the companies mentioned at least one guideline as a reference, only China Mobile and China Unicom attached index tables as appendices regarding these reporting guidelines. AT&T and Vodafone put those index tables on the website. The report of China Telecom did not show further information regarding the guidelines used.

From the discussion above, we can summarize that the Chinese companies basically met the requirement of the reliability principle, with two of three Chinese companies providing a report by a third-party organization and all of them presenting the references of reporting guidelines. Notwithstanding, their international counterparts performed better in terms of external assurance and reporting guidelines references. Next, the accuracy principle will be examined.

4.5. Accuracy

The accuracy principle requires the report to be sufficiently accurate and detailed. We examined each report through a benchmark-scoring system based on GRI guidelines and gave scores representing the report's performance on the accuracy principle and how far the report accorded with the requirements of the GRI guidelines. In the AT&T case, their GRI index table of GRI guidelines on the website did not cover exactly the same content as their CSR report. For example, in the CSR report, AT&T disclosed the total sum number of green-house gas emissions (GHG) - scope one, two, and three[5]; while in the GRI index, the three scopes are reported separately.

It was therefore decided to include AT&T's index table in this part for analysis, as it was considered it would assist in analyzing the quality of AT&T's CSR disclosure. Simultaneously, although Vodafone also had a GRI index separated from the report, this only guided the reader to financial or non-financial reports; it is unlike the AT&T situation, where different information in the report and the index. As such, it was not deemed necessary to include Vodafone's GRI index in this analysis.

The GRI Sustainability Reporting Standards (GRI standards) have four series (see section 3.4.2), namely universal standards (100 series), economic standards (200 series),

[5] Scope 1: Direct GHG Emissions. Scope 2: Indirect GHG Emissions. Scope 3: Other Indirect GHG Emissions

environment standards (300 series), and social standards (400 series). Each series has multiple aspects. For example, 201 (Economic performance) is an aspect of economic standards. Meanwhile, each aspect has several topics. For instance, 201-1 (Direct economic value generated and distributed) is a topic of 201.Topics in universal standards such as Disclosure 102-1 (Name of the organization), Disclosure 102-2 (Activities, brands, products, and services), and Disclosure 102-3 (Location of headquarters) are not suitable for scoring. These topics are also less related to CSR than to daily operations. Hence, they were not chosen as indicators in this benchmark scoring system. The reports were examined through each topic of the economic dimension, the environmental dimension, and the social dimension, which were 77 in total.

A benchmark-scoring system was applied to analyze the reports. Under this system, the maximum possible score of all topics was 231. We found that the average score of all the companies selected was 63.6, the average score of the Chinese companies was 70.33, and the average score of their international counterparts was 53.5. Among the 77 topics, the average number of topics covered by all the companies in the sample was 38.4, the average number of topics covered by the Chinese companies was 41, and the average number of topics covered by their international counterparts was 34.5. The results indicate that overall, there is still a long way to go before arriving at good quality on accuracy because they do not even reach the halfway point for the overall score and are at or just over half for the number of topics covered. But even so, the Chinese companies obtained slightly better scores than their international counterparts.

China Mobile achieved the highest score (81) among the three Chinese companies, followed by China Unicom (75) and China Telecom (55). Vodafone achieved 67 points, AT&T achieved 40, and AT&T's GRI index achieved 43. In terms of the number of topics covered, China Mobile (47), China Unicom (42), and Vodafone (43) covered over 40 topics, while China Telecom covered 34 topics. AT&T's report covered 26 topics and its GRI Index covered 17.

In addition to number of topics it was also of interest to see number of topics fully disclosed. China Mobile (4), China Unicom (5), and Vodafone (5) performed similarly in numbers of topics for which there was full disclosure (those topics obtained three points). China Telecom had two topics disclosed comprehensively. AT&T had none in its report but had 11 in its index. The ratio,

the sum score of all categories to the number of topics covered, presented average score for each topic covered and it also indicated the average quality of each topic covered. AT&T's GRI Index had the highest ratio (2.53), while AT&T's report had the lowest (1.54), which also supported that the index discloses more comprehensive information than the report. The ratio of China Unicom's report was 1.79, of China Mobile was 1.72, of China Telecom was 1.62, and of Vodafone was 1.56.

It worth mentioning that a higher number of topics covered did not necessarily mean a higher accuracy score, because the number of topics fully covered can massively affect the final score (the sum score of all categories). For example, Vodafone covered more topics than China Unicom, but it received a lower score, because China Unicom received 1.79 points for each topic covered while Vodafone received 1.56 points. Another example is that although AT&T's GRI Index covered less topics (17) than its report (26), it achieved a higher score than the report (the report received 40 points and the GRI index received 43), because AT&T had more topics reported comprehensively in its GRI Index than in its report. For example, in topic 201-1 (Direct economic value generated and distributed), the annual financial report was attached to the index, and thus the disclosure was more comprehensive. In topic 305-1 (Scope 1 Greenhouse Gas (GHG) emissions), 305-2 (Scope 2 GHG emissions), and 305-3 (Scope 3 GHG emissions), AT&T disclosed information in the index exactly as required by the GRI standards required. In the report, on the other hand, disclosure about GHG emissions missed some information such as the base year. Annex F shows the score and the number of topics covered in each category and total.

4.5.1. Economic Dimension

The GRI sustainability standards include six aspects in the economic dimension: 201 (Economic performance), 202 (Market presence), 203 (Indirect economic impacts), 204 (Procurement practices), 205 (Anti-corruption), and 206 (Anti-competitive behavior). China Unicom ranked first in this dimension with 21 points, while China Mobile and China Telecom received the same scores (17). Vodafone had 14 points, AT&T GRI Index had 11 points, and AT&T's report had only seven points in the economic dimension. Regarding the number of topics covered, China Unicom and China Telecom covered the most, reporting on 11 and 10 of the economic topics, respectively. China Mobile and Vodafone both covered 8 topics. Both

the AT&T report (5) and its GRI Index (4) covered fewer topics in the economic category.

Most companies performed well in 203 (indirect economic impacts). In this aspect, companies achieved 76% of the full mark on average. Followed by 201 (economic performance), where they received 43% of the full mark on average. Anti-competitive behavior (206) was the aspect where all these companies performed the worst, with only 6% of the full mark on average, since only one of the five reports covered this aspect. All the companies mentioned topics 201-1 (Direct economic value generated and distributed), 201-2 (Financial implications and other risks and opportunities due to climate change), and 203-2 (Significant indirect economic impacts). None mentioned 201-4 (Financial assistance received from government).

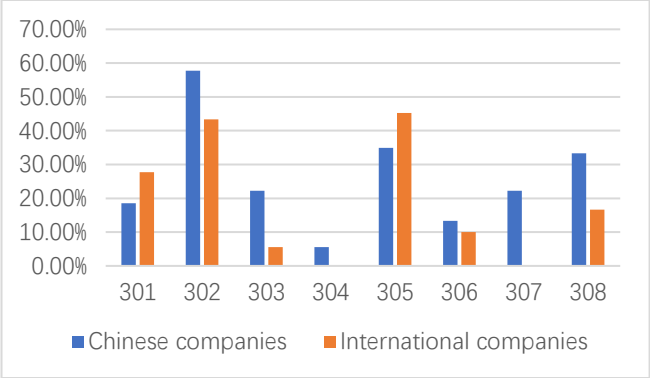
In 201 (Economic performance), the Chinese companies obtained 4.67 points on average, and the international companies received 5.5 points on average. It was the only aspect among the six in the economic dimension where the international companies achieved a higher average score than the Chinese companies, because the international companies disclosed more information about climate change and retirement benefit plans than the Chinese companies did. In 202 (Market presence), 203 (Indirect economic impacts), 204 (Procurement practices), and 205 (Anti-corruption), the Chinese reports performed better than the international companies' reports. For example, in 203 (Indirect economic impacts), the average score of the Chinese reports was 5.0 while the average score of the international reports was 2.5. The Chinese companies performed well in both topics in this aspect. Especially for 203-2 (Significant indirect economic impacts), the Chinese companies provided comprehensive data and cases. For instance, China Unicom used at least three pages and eight existing cases to introduce their work on poverty alleviation. For 205 (Anti-corruption), the Chinese reports achieved 4.3 on average while the international companies' reports received 1.5 on average. Figure 4. 1 compares the Chinese companies with their international counterparts in terms of their performance in the economic dimension, and Annex G shows the companies' performances on disclosing CSR information in this regard. Overall, then, and as shown in Figure 4. 1, and Annex G, the Chinese companies have a better performance than their international peers in the economic dimension.

Figure 4. 1 Comparison of the Chinese Companies and the International Counterparts about Their Performances in Six Economic Aspects in Percentages



Source: Own Elaboration

Figure 4. 2 Comparison of the Chinese Companies and the International Counterparts about Their Performances in Eight Environmental Aspects in Percentages



Source: Own Elaboration

4.5.2. Environmental Dimension

The GRI sustainability standards include eight aspects in the environmental dimension: 301 (Materials), 302 (Energy), 303 (Water), 304 (Biodiversity), 305 (Emissions), 306 (Effluents and waste), 307 (Environmental compliance), and 308 (Supplier environmental assessment). Examined through the benchmark-scoring system, with a maximum possible score of 90, China Mobile achieved 34 points in the environmental category, which was much higher than others, and was followed by the AT&T GRI Index, which obtained 24. China Unicom and Vodafone both received 23 points. China Telecom and AT&T received 18 and 20 respectively.

In terms of the number of topics covered, while there were 30 topics in total, China Mobile covered 20 topics and was the company that covered most topics among the samples. Vodafone, China Unicom, China Telecom, AT&T's report, and AT&T GRI Index covered 14, 13, 10, 11, and 8 topics, respectively.

With regard to specific aspects, the companies under study performed best in 302 (energy) and 305 (emissions). On average, they achieved 53% of the full mark on the energy aspect on average and 44% regarding emissions. Effluents and waste (306) and Environmental compliance (307) were the two aspects least covered in the reports. The companies in our sample obtained only 10% of the full mark for 306 (Effluents and waste) and 11% for 307 (Environmental compliance).

Among the eight aspects of the environmental category, 301 (Materials) and 305 (Emissions) were two where the international companies' reports achieved higher scores than

the Chinese reports. In 301 (Materials), the Chinese companies' reports obtained 1.67 points on average and the reports of their international counterparts received 2.5 points. In this aspect, China Telecom received only one point, whereas China Unicom did not cover any topic and received zero. In 305 (Emissions), the Chinese reports achieved 7.3 points compared to 9.5 points for the international companies. China Telecom only covered one of the seven topics in this aspect, and the topic 305-3 (Other indirect (Scope 3) GHG emissions) was covered by the international companies, but none of the Chinese companies.

On the rest aspects, 302 (Energy), 303 (Water), 304 (Biodiversity), 306 (Effluents and waste), 307 (Environmental compliance), and 308 (Supplier environmental assessment), the reports of the Chinese companies performed better than their counterparts'. China Mobile had sections covering 303 (Water) and 304 (Biodiversity), while the rest covered these two aspects with few words or did not mention them at all, which helped the report of China Mobile stand out among the five reports on these two aspects.

Although the Chinese companies used fewer pages to cover environmental issues, their scores were not significantly lower than their counterparts. The three Chinese companies used 9.3% of their reports on average to cover environmental information, compared to their international counterparts, that used 21%. Notwithstanding, the Chinese companies achieved 25 points on average on the environmental category, whereas their counterparts received 21.5 on average. Hence, Chinese companies' reports used less length but achieved higher scores in the environmental category. Figure 4. 2 compares the Chinese companies with the international counterparts in the eight environmental aspects.

Chinese companies' reports used more tables with higher information intensity than words and figures, which might explain this phenomenon. For example, in China Mobile's report, information on GHG was mostly presented in key performance indicator (KPI) tables which took only one page. In contrast, Vodafone's report used ten pages to introduce it. Meanwhile, the reports of the Chinese companies used more pages to cover other content, such as environment protection with apps, garbage sorting, and spreading green ideas in the report of China Mobile, for example. This difference in focus between the Chinese companies and their counterparts in disclosing environmental information may also help explain the similarity in scores despite the difference in the number of pages.

With regards to specific topics, all companies reported on 302-1 (Energy consumption within the organization) and 305-1 (Direct (Scope 1) GHG emissions). On the other hand, 301-2 (Recycled input materials used), 304-3 (Habitats protected or restored), 304-4 (IUCN Red List species and national conservation list species with habitats in areas affected by operations), 305-6 (Emissions of ozone-depleting substances (ODS)), 306-1 (Water discharge by quality and destination), 306-3 (Significant spills), and 306-5 (Water bodies affected by water discharges and/or runoff) were not reported by any of the companies. Annex H shows the companies' performances on disclosing CSR information in the environmental category.

4.5.3. Social Dimension

The GRI sustainability standards include 19 aspects in the social dimension: 401 (Employment), 402 (Labor management relations), 403 (Occupational health and safety), 404 (Training and education), 405 (Diversity and equal opportunity), 406 (Non-discrimination), 407 (Freedom of association and collective bargaining), 408 (Child labor), 409 (Forced or compulsory labor), 410 (Security practices), 411 (Rights of indigenous peoples), 412 (Human rights assessment), 413 (Local communities), 414 (Supplier social assessment), 415 (Public policy), 416 (Customer health and safety), 417 (Marketing and labeling), 418 (Customer privacy), and 419 (Socioeconomic compliance).

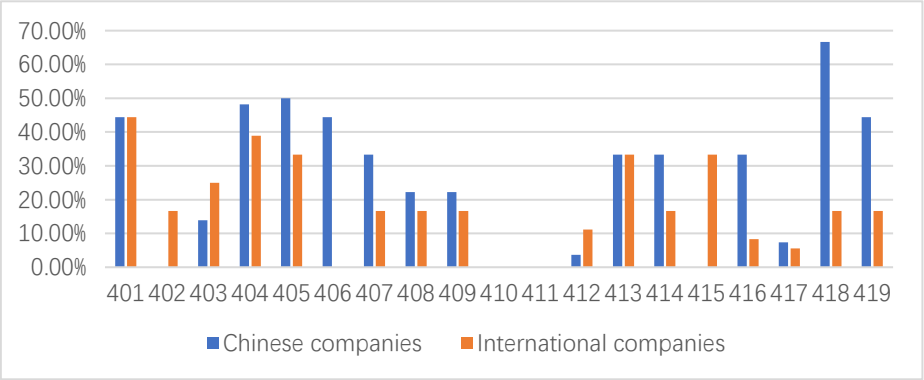
There were 34 topics in the social category, and if a report received all three points in each, the maximum possible score would be 102. In terms of scores, China Unicom ranked first with 31 points. China Mobile and Vodafone achieved 30 points. China Telecom, AT&T's report, and AT&T GRI Index obtained 20 points and 13 points, and 8 points, respectively, as shown in Annex I. Regarding the number of topics covered, Vodafone, China Mobile, China Unicom, China Telecom, AT&T's report, and AT&T GRI Index covered 21, 19, 18, 14, 10, and 5 topics, respectively.

Our sample companies performed well in 404 (Training and education), 417 (Marketing and labeling), and 405 (Diversity and equal opportunity), with an average of 46%, 44%, and 42% of the full possible marks of these aspects respectively. None of the companies covered 410 (Security practices) and 411 (Rights of indigenous peoples). Aspect 402 (Labor-management relations), 412 (Human rights assessment), and 417 (Customer privacy) were all sparsely covered, and the scores of these subtopics were under 10% of the full mark on

average.

The reports of the international companies performed better than the reports of the Chinese companies in aspect 402 (Labor management relations), 403 (Occupational health and safety), 412 (Human rights assessment), and 415 (Public policy). In aspect 403 (Occupational health and safety), the Chinese reports received 1.67 points on average, and China Unicom did not cover the aspect at all, while the average score of the international companies' reports was 3 points. This phenomenon may because occupational health and safety is a less relevant topic in the three Chinese companies. These companies do not undertake the responsibility of building telecommunication infrastructure, such as cable laying. The possibility of occupational injury or illness are thus significant reduced to an almost negligible level by not undertaking the responsibility of building infrastructure. Still, compared to the maximum possible score of aspect 403, which is 12, none of the companies in the sample performed particularly. In 415 (Public policy), no Chinese company covered the aspect, and each international company received 1 point.

Figure 4. 3 Comparison of the Chinese Companies and the International Counterparts about Their Performances in nineteen Social Aspects in Percentages



Source: Own Elaboration

The Chinese companies and their counterparts performed similarly and achieved the same scores on average in 401 (Employment) and 413 (Local communities). In 404 (Training and education), 405 (Diversity and equal opportunity), 406 (Non-discrimination), 407 (Freedom of association and collective bargaining), 408 (Child labor), 409 (Forced or compulsory labor), 416 (Customer health and safety), and 418 (Customer privacy) the Chinese companies performed better than their international counterparts. A possible reason is that the Chinese companies covered more topic than their international counterparts. For example, in aspect

404, two Chinese companies covered all three topics while none of international companies covered all. Annex I shows the companies' performances on disclosing social CSR information, and Figure 4. 3 compares the Chinese companies with their international peers in each social aspect.

4.6. Balance

The balance principle requires companies to disclose both positive and negative CSR information. Topics with a title that include negative words were considered as indicators for companies reporting negative information, which was required by the balance principle. These words were "negative", "incident", "spill", and "non-compliance". There were 15 negative topics in total, as shown in Annex J. These topics were spread among the economic, environmental, and social sectors, but most, 11 of 15, were in the social sector.

While the maximum possible score of negative topics was 45, the average score of the five reports was 7.6, and the average number of negative topics covered was 5.2. The highest score among the reports was 13 by China Unicom. AT&T discloses nearly all information positively, and the rest of the companies also did not perform much better, as shown in Annex K. The score in negative topics and the number of negative topics covered were close because the companies rarely mentioned these aspects directly. For example, on topic 307-1 (Non-compliance with environmental laws and regulations), China telecom reports that it "conscientiously implements the central government's strategic deployment of comprehensive rule of law" to "promote corporate legal compliance for operation under the rule of law and regulated management" (China Telecommunications Corporation Limited, 2020, p. 71). When companies addressed the topic directly, they tended not to disclose comprehensive information. For example, on 408-1 (Operations and suppliers at significant risk for incidents of child labor) and 409-1 (Operations and suppliers at significant risk for incidents of forced or compulsory labor), China telecom reported that "the use of child labor is prohibited in the Company in accordance with the law and forced labor is prevented" (China Telecommunications Corporation Limited, 2020, p. 66).

The Chinese companies performed better than their international counterparts in the balance principle, supported by the following three indicators. First, the Chinese companies covered 6.67 topics on average, while their counterparts covered 3 topics on average. Second,

the Chinese companies' average score on negative topics was 10 comparing to their counterparts' 4. Thirdly, the Chinese received average 1.53 points on average of each negative topics covered and their international peers received 1.2 points. Even though the Chinese companies performed better than their international counterparts, they all reported limited negative information and barely met the requirement of balance. Annex K shows the companies' performances on disclosing negative CSR information.

4.7. Timeliness

Timeliness requires organizations to report on a regular schedule. GRI suggests two tests to examine if the report meets the requirement: (a) "information in the report has been disclosed while it is recent, relative to the reporting period" and (b) "The information in the report clearly indicates the period to which it relates" (Global Reporting Initiative, 2016, p. 16). Vodafone used the fiscal year ending on 31st March while the rest used the fiscal year ending on 31st December, but all the companies compiled non-financial reports annually.

If a report was published in time (timeliness of the report) can be examined through the interval between the last day that the report covered and the date that the report published. Our sample reports (2019) included the date of the most recent report (in our case, the most recent report before the sample was 2018) as the requirement of GRI standards. The last day covered by report 2018 and 2019 were the same in month and day but different in year. Through these intervals, we found that most of the companies released their reports within half a year since the end of last fiscal year, while China Mobile and Vodafone published within three months. Annex L shows the reporting period of reports for the year 2019 and the dates when the year 2018 reports were released.

All five reports selected provided data and marked the period that the data related to. Except for China telecom who did not disclose the date of the most recent report, the rest met the requirement of the timeliness principle, and the Chinese companies performed similarly to their international counterparts.

In the next chapter, the findings of this chapter will be further discussed and related to the literature.

5. Discussion

We examined non-financial reports of the sample with content analysis and benchmark-scoring system through six principles promoted by GRI standards and found that the CSR disclosures of the Chinese telecommunication companies basically meet GRI's quality requirement, despite some weaknesses, especially in the accuracy and balance principles. Their international counterparts' CSR disclosure performances, AT&T and Vodafone in this case, performed similarly to the Chinese companies in principles of accuracy and balance. Still, the international companies performed better than the Chinese companies in principles of clarity, comparability, and reliability.

In accordance with previous findings (Qiu, 2017), four of five reports in this research were compiled in an uneven structure. However, whereas in Qiu's (2017) study, this unevenness resulted from reporting more in social content; in the current study, the reports used longer length for the economic dimension. Two reasons may explain this difference. The sample companies were different in the two studies: the sample companies in Qiu (2017) were from varied industries, while all the selected companies in this work were from the telecommunication industry, which may have led to the observed differences in reporting lengths. Because the core businesses of the companies in this study were close to its users' day-to-day life, there was potentially more scope for overlap between their business operations (economic dimension) and their CSR practices. For example, when China Unicom reported their poverty alleviation activities, they considered launching low price packages as one of their approaches (China Unicom, 2020).

The other reason for the different reporting lengths of economic and social categories is that sometimes information disclosed simultaneously belonged to both the dimensions. In the example above, the company's activity, promoting low price tariff packages in poor areas, can be seen as an economic activity, because it related to the company's core business which generated cash flow; but it can also be seen as a social activity, because it gave benefits to society. In this study, this information was categorized into the economic category for its strong relationship to the core business. Although this content could also have been labeled social or both social and economic, the result that these report structures were uneven would not have change. Although McWilliams & Siegel (2001) argued that CSR activities are opposed to

shareholder's interests, the intersection of economic activities and social activities that was found in this study suggests that CSR activities can accord with shareholder's interests and are strategically justified (Rowley & Berman, 2000). This convergence, of activities benefiting both the business and society, follows the principle of shared value, which encourages organizations to create positive social consequences inside out from a company's value chain (Porter & Kramer, 2006).

Another important finding in this study pertains to the lack of negative data in these reports. This is also consistent with Qiu (2017), who had found it for Chinese companies; in our study, we found that this trend also extends to their international counterparts. Negative information, compared to positive information, may undermine the company's reputation to their stakeholders. Hence, they tend not to disclose negative information unless it is necessary for meeting mandatory requirements, such as law and regulation. This finding accords with the legitimacy theory, according to which companies decrease disclosure of negative information and increase positive news to acquire or keep their legitimacy (Fernando & Lawrence, 2014).

This study found that the Chinese companies disclose limited CSR information, contrary to Noronha et al.'s (2013) finding that Chinese companies blindly disclose CSR information, disclosing too much without selection. The differences among industries or the development of CSR disclosure since Noronha et al's (2013) study may help explain this contradictory result. Meanwhile, in all of the reports studied, the information disclosed was not comprehensive in most of the topics covered. The companies covered about half of all the topics and received 30% of the maximum score under the benchmark-scoring system. No more than five topics (77 topics in total) in each report achieved three points, which indicated that few topics were disclosed comprehensively.

The performances among the three categories were similar. Even in the economic sector with the best performance among the three, the average score in percentage was 38%, and the portion of topics covered was 65%. The companies performed better in disclosing economic information because the information in this part was related to or had already been disclosed in their annual financial reports. As the samples were of the telecommunication industry, their core businesses did not include agricultural or industrial production; hence some topics in the guidelines, such as waste and emissions, were not as prominent, which may partly

explain their poor performances on environmental topics.

In comparison with the international companies in our samples, there were some weaknesses in the reports of the Chinese companies, namely in clarity, comparability, and reliability. The Chinese reports' readability for the public, especially English readers, is poor because of the literal (or word-for-word) translations used The Chinese companies' reports also used more rhetoric techniques, and this also weakened their clarity. Although these techniques are more commonly used in Mandarin than in English and make the writing more graceful, they lengthen the distance between the real meaning and the word applied and fill the sentence with unnecessary phrases. Another weakness with respect to clarity was the use of the guidelines' names. For example, in the "reliability" part above (see section 4.4), the report of China Unicom stated that it applied GRI G4 while, in fact, GRI Sustainability Standards were applied. Another phenomenon found was that the three Chinese companies used three different translations of CASS-CAR, because no official translation existed, which can become a source of confusion for readers.

Charts were rarely used to present information in the Chinese reports. All three Chinese reports included rare charts describing data in the report, especially China Mobile. AT&T, by contrast, explained and compared data with abundant figures. Vodafone also included figures in the report, although not as many as AT&T. Even though presenting information with tables increased information intensity, which was frequent in our Chinese sample reports, the lack of visual materials, such as charts, increased reading difficulty. In addition, using charts makes it easier to compare longitudinal or horizontal data, which can improve the comparability of the report.

The Chinese companies' reports lacked assurances by third-party organizations. In this work, one of three Chinese companies selected provides assurance of third-party organizations, while both international companies had assurances. China Telecom provided a rating report by the Chinese Expert Committee on CSR Report Rating; however, this organization did not provide assurance to the authenticity of the data provided by China Telecom.

6. Conclusions, limitations and suggestions for further research

In China, the telecommunication industry is experiencing a rapid growth period as the new 5G telecommunication technology comes into commercialization (CCID, 2020; chinabgao.com, 2021). CSR disclosure is a medium for companies to deliver information to their stakeholders, such as owners, creditors, customers, and suppliers; and a way for these stakeholders to get to know companies better. Since most companies voluntarily compile CSR reports, this is often done in a non-systematic way, and their characteristics and quality are not necessarily the same (Boyce, 2000; Khaveh et al., 2012). The quality of the reports is affected by variant factors, such as the location of company headquarters (Chen & Bouvain, 2009; Sibel & van het Hof, 2020).

As one of the major CSR disclosure channels, the quality of CSR reports is highly likely to influence the efficacy of the company in communicating with its stakeholders. Evidence shows that CSR report's quality in developing countries is lower than in developed countries (Bhatia & Makkar, 2019; Katmon et al., 2019; Mehjabeen & Bukth, 2020). Meanwhile, CSR started in China later than in the western world. Knowing the status of the quality of CSR reports in China and gaps between China and developed counties can help Chinese companies participate in economic globalization.

As such, this study aimed to assess the quality of Chinese telecommunication companies' CSR disclosure and compare CSR disclosure in this industry between the Chinese companies and their international counterparts. This study combined content analysis and benchmark-scoring technique and analyzed non-financial reports of the sample companies and found that the Chinese companies basically meet the requirements of six principles promoted by GRI sustainability standards, albeit in different degrees. At the same time, they still need to improve their performance in most of these principles. For example, comparing to their international counterparts, the Chinese companies still lag in clarity, comparability, reliability.

Weaknesses, including those resulting in laggings mentioned above (such as lack of assurance) and those existing in both reports of the Chinese companies and international companies (such as uneven structure), lead to CSR information not being well communicated. Meanwhile, poor communication will weaken stakeholder's trust in the companies, and the companies' development may be hence obstructed.

To avoid these shortages, several movements can be adopted to improve the reports, especially of Chinese telecommunications companies, in the future. First, companies can use a more balances structure to report their CSR activities. Frameworks such as the CSR pyramid (Carroll, 1991) or the TBL (Elkington, 1997) suggest that CSR is multi-dimensional. A balanced structure will help the companies present their CSR information more comprehensively. In a balanced structure, the companies report information on the economy, environment, and society in a balanced way and with both positive and negative information. Second, the Chinese companies can improve the quality of their reports by using more directive and accurate language. Unnecessary rhetoric techniques can be removed to allow for a more precise narration. Meanwhile, accurate translations, especially of the proper nouns, will help improve the reports' quality. Correctly citing guidelines can promote understanding, so translators of the reports must be equipped with more knowledge about CSR. Third, charts and more abundant data are suggested. Reports of Chinese companies disclose data of three years with tables. These tables can transform into charts and figures, which are more vivid than tables with numbers. Fourth, third-party organizations' assurances are needed to improve the reliability of the reports. Assurances provide support for data authenticity. Readers expect the reports to disclose companies' true situation by giving actual operational data.

Previous studies of CSR in the Chinese telecommunication industry discussed topics such as the relationship between government and the companies (B. Li, 2008) and CSR from the employees' perspective (H. Wang, 2007); however, this study focused on CSR disclosure from a more empirical perspective. Among the studies of the Chinese market, the only study that was found using two techniques adopted G4 guidelines, which were no longer available after 2018; and it furthermore focused on the whole Chinese market, and not telecommunications in particular. To the best of our knowledge, this study is the first empirical analysis of CSR disclosure (non-financial reports) by Chinese companies in the telecommunication industry using both content analysis and the benchmark-scoring system. The results help understand the status of the Chinese telecommunication companies' performances in terms of CSR disclosure, and several suggestions have been made for improving performances of the Chinese companies CSR disclosure.

As with any research, this study is not without its limitations. One aspect worth noting is

that the benchmark-scoring system is not perfect. Because GRI Sustainability Standards are not formulated for a given industry, although they have general applicability, they may lead to low discriminative power for tertiary sector companies, such as in the telecommunication industry, when comparing among reports. For example, in 306 (effluents and waste), reports in this study received zero to two points while the maximum possible score was 15. It is difficult to compare the quality of the reports when they are all receiving such low scores. In addition, the system is unable to evaluate principles (other than accuracy and balance) in a quantitative way.

Another limitation of this study was bound with its small sample. In this study, only reports for the year 2019 of five companies were selected. Although the Chinese companies in the telecommunication industry were all included in this study, the number of foreign companies was limited. Thus, we cannot say the gaps found in this study are also existing in comparison between the Chinese market and the rest of the world or the western world before further studies are done. But the shortages of the Chinese company's reports exist realistically, objectively, and obviously.

For further research, it would be of interest to develop a benchmark-scoring system specific to the tertiary sector or the telecommunication industry. Another suggestion for further study is to increase the sample size. A longitudinal study using reports of multiple years would also be of interest, to study the evolution of the quality of CSR reports in the Chinese market. The channel through which firms communicate CSR is also an important issue (Abukari & Abdul-Hamid, 2018); so further studies might also compare the quality of CSR disclosure in annual reports and websites.

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Annexes

Annex A Composition of the Reports

	China Telecom	China Mobile	China Unicom	AT&T	Vodafone
Page number/length	89	70	80	40	83
General (% of the report)	19%	17%	18%	30%	22%
Environmental (% of the report)	6%	14%	8%	20%	22%
Social (% of the report)	17%	23%	14%	13%	28%
Economic (% of the report)	58%	46%	60%	37%	28%

Source: Own Elaboration

Annex B Time of Publishing First CSR Report

	First-year publishing CSR report	The Year of the earliest CSR report can be found on the official website
China Telecom	2006	2017
China Mobile	2006	2006
China Unicom	2007	2015
AT&T	2006	2006
Vodafone	2000	2000

Source: Data from Companies' Official Website, UN global compact, and GRI Databa

Annex C Titles of the reports

	Title of the report
China Telecom	2019 CSR Report (Empower a moderately prosperous society)
China Mobile	2019 Sustainability Report (5G Infinite Future)
China Unicom	Social Responsibility Report of 2019 (Connect You and Me and Let Responsibilities Grow)
AT&T	2019/2020 Corporate Responsibility Summary (Delivering today, shaping tomorrow)
Vodafone	Sustainable Business Report 2019

Source: Data from the reports, Summarized by the Author

Annex D Titles of the Chapters

	Titles of the Chapters
China Telecom	Develop ICT Services for a Moderately Prosperous Society Boost Economic Transformation and Upgrading Toward a Moderately Prosperous Society Synergy to Promote Civilization Development in a Moderately Prosperous Society[6]
China Mobile	Jointly Building the Engine of a Smart Society Jointly Creating an Inclusive Good Life for All Jointly Shaping a Harmonious Ecology[7]
China Unicom	Striving to be a “Pioneer” in Deepened SOEs Reform Striving to be a “Key Contributor” to National Cyberpower Striving to be a “Pillar” for Public Good Striving to be a “New Force” in Technological Innovation and Development Striving to be a “Practitioner” of Ecological Civilization Construction Striving to be an “Aggregator” in Industrial Value Co-creation[8]
AT&T	Global Challenges & Opportunities Governance Progress Toward Goals KPIs
Vodafone	TRANSFORMATION OPERATING RESPONSIBLY OUR PEOPLE

Source: Data from the reports, Summarized by This Author

6 Translation in Chinese: 发展小康社会信息通信服务，助推小康社会经济转型升级，共促小康社会文明发展进步
7 Translation in Chinese: 共鑄 • 智慧社會加速引擎，共創 • 普惠包容幸福生活，共建 • 生態和諧美麗家園
8 Translation in Chinese: 争做深化国企改革“先行者”，争做网络强国建设“主力军”，争做民生事业建设“顶梁柱”，争做科技创新发展“生力军”，争做生态文明建设“践行者”，争做产业价值共创“聚合者”

Annex E Reporting Guidelines Reference

	Name of the guideline
China Telecom	Guidelines for Central SOEs to Fulfill CSR (by SASAC) Guidelines for SOEs to Better Fulfill CSR (by SASAC) Guidelines for Preparation of CSR Reports in China (GB/T 36001- 2015) CSR Management Scheme for ICT Industry in China (2016 version) (by China Association of Communications Enterprises) Guidelines for Preparation of CSR Reports in China (CASS-CSR4.0) Sustainability Reporting Guidelines (G4)
China Mobile	Environmental, Social and Governance Reporting Guide (by HKEx) 2030 Agenda for Sustainable Development (SDGs) GRI Sustainability Reporting Standards Ten Principles of the United Nations Global Compact (UNGC) ISO Guideline on Social Responsibilities (ISO 26000) Chinese CSR Report Preparation Guide (CASS-CSR 4.0)
China Unicom	Guiding Opinions on State-owned Enterprises to Better Perform SR Guidelines for preparation of Report on Performance of CSR (by Shanghai Stock Exchange) Guidance on Environment, Society and Governance Report (by HKEX) Social Responsibility Report Preparation Guidance (by AQSIQ and SAC) Guide on Preparation of China CSR Report (CASS-CSR 4.0) Guide on Sustainable Development Report, Global Reporting Initiative (GRI) (G4 Edition) Social Responsibility Management System for China Information and Communications Companies (by China Association of Communications Enterprises)
AT&T	Global Reporting Initiative (GRI) Sustainability Accounting Standards Board (SASB) Task Force on Climate-Related Financial Disclosures (TCFD) U.N. Global Compact (UNGC) Communication on Progress U.N. Sustainable Development Goals (SDGs)
Vodafone	GRI Standards Index

Source: Data from the reports, Summarized by This Author

Annex F Scores of the Report in General

	China Mobile	China Unicom	China Telecom	Vodafone	AT&T	AT&T INDEX
The Sum Score of All Categories	81	75	55	67	40	43
Topic Covered (Max 77)	47	42	34	43	26	17
Topics Disclosed Comprehensive	4	5	2	5	0	11
Sum/Number of Topics Covered	1.72	1.79	1.62	1.56	1.54	2.53
Economic Score	17	21	17	14	7	11
Topic Covered (Max 13)	8	11	10	8	5	4
Environmental Score	34	23	18	23	20	24
Topic Covered (Max 30)	20	13	10	14	11	8
Social Score	30	31	20	30	13	8
Topic Covered (Max 34)	19	18	14	21	10	5

Source: Own Elaboration

Annex G Scores in Economic Part of the Reports

Aspect	Maximum Score	China Mobile	China Unicom	China Telecom	Vodafone	AT&T	AT&T INDEXS
Economic performance (201)	12	4	5	5	6	5	6
Market presence (202)	6	2	3	3	1	0	0
Indirect economic impacts (203)	6	5	5	5	3	2	5
Procurement practices (204)	3	2	2	0	1	0	0
Anti-corruption (205)	9	4	6	3	3	0	0
Anti-competitive behavior (206)	3	0	0	1	0	0	0

Source: Own Elaboration

Annex H Scores in Environmental Part of the Reports

Aspect	Maximum Score	China Mobile	China Unicom	China Telecom	Vodafone	AT&T	AT&T INDEXS
Materials (301)	9	4	0	1	3	2	0
Energy (302)	15	9	8	9	5	8	9
Water (303)	9	4	1	1	1	0	0
Biodiversity (304)	12	2	0	0	0	0	0
Emissions (305)	21	10	10	2	11	8	15
Effluents and waste (306)	15	2	2	2	1	2	0
Environmental compliance (307)	3	1	0	1	0	0	0
Supplier environmental assessment (308)	6	2	2	2	2	0	0

Source: Own Elaboration

Annex I Scores in Social Part of the Reports

Aspect	Maximum Score	China Mobile	China Unicom	China Telecom	Vodafone	AT&T	AT&T INDEXS
Employment (401)	9	4	4	4	5	3	0
Labor management relations (402)	3	0	0	0	1	0	0
Occupational health and safety (403)	12	2	0	3	4	2	0
Training and education (404)	9	5	6	2	5	2	5
Diversity and equal opportunity (405)	6	3	3	3	2	2	2
Non-discrimination (406)	3	1	3	0	0	0	0
Freedom of association and collective bargaining (407)	3	1	1	1	1	0	0
Child labor (408)	3	1	0	1	1	0	0
Forced or compulsory labor (409)	3	1	0	1	1	0	0
Security practices (410)	3	0	0	0	0	0	0
Rights of indigenous peoples (411)	3	0	0	0	0	0	0
Human rights assessment (412)	9	1	0	0	2	0	0
Local communities (413)	6	2	2	2	2	2	0
Supplier social assessment (414)	6	3	3	0	1	1	0
Public policy (415)	3	0	0	0	1	1	0
Customer health and safety (416)	6	2	4	0	1	0	0
Marketing and labeling (417)	9	1	1	0	1	0	0
Customer privacy (418)	3	2	2	2	1	0	1
Socioeconomic compliance (419)	3	1	2	1	1	0	0

Source: Own Elaboration

Annex J List of Negative Topics

Topic code	Topic name
205-3	Confirmed incidents of corruption and actions taken
306-3	Significant spills
307-1	Non-compliance with environmental laws and regulations
308-2	Negative environmental impacts in the supply chain and actions taken
403-2	Hazard identification, risk assessment, and incident investigation
406-1	Incidents of discrimination and corrective actions taken
408-1	Operations and suppliers at significant risk for incidents of child labor
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor
411-1	Incidents of violations involving rights of indigenous peoples
413-2	Operations with significant actual and potential negative impacts on local communities
414-2	Negative social impacts in the supply chain and actions taken
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services
417-2	Incidents of non-compliance concerning product and service information and labeling
417-3	Incidents of non-compliance concerns marketing communications
419-1	Non-compliance with laws and regulations in the social and economic area

Source: Own Elaboration

Annex K Scores in Negative Topics

	China Mobile	China Unicom	China Telecom	Vodafone	AT&T	AT&T INDEXS
Total score in negative topics	11	13	6	7	1	0
Negative topics covered	9	6	5	5	1	0
Score in social negative topics	7	9	5	6	1	0
Social negative topics covered	6	4	4	4	1	0

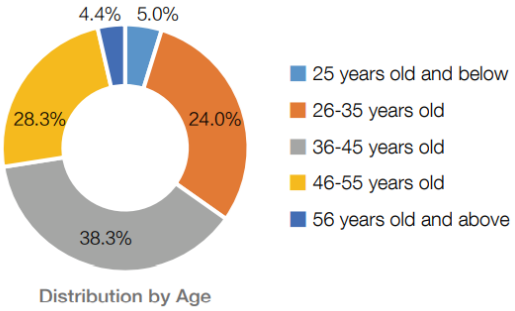
Source: Own Elaboration

Annex L Reporting period and the date of the last report

	Reporting period	Date of the most recent report before this report
China Mobile	1st January – 31st December 2019	March 2019
China Unicom	1st January – 31st December 2019	8th May-2019 (data from unglobalcompact.org)
China Telecom	1st January – 31st December 2019	N/A
AT&T	1st January – 31st December 2019 (data from the index)	30th May 2019 (data from the index)
Vodafone	1st April – 31st March 2019	June 2018 (data from the index)

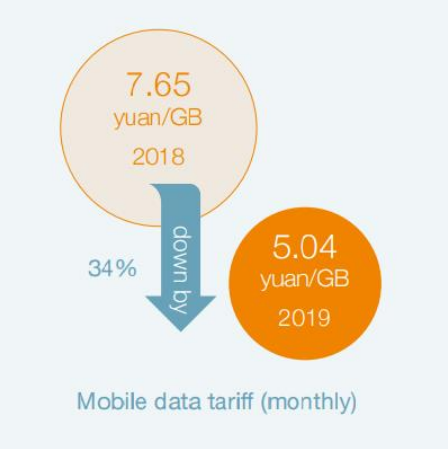
Source: Own Elaboration

Annex M A Snapshot of China Unicom's Report (China Unicom Used a Pie Chart to Describe the Composition of Its Employees)



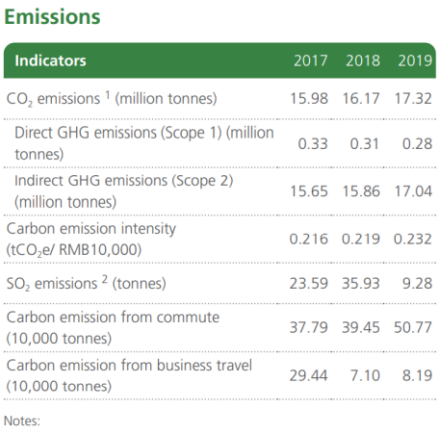
Source: China Unicom (2020)

Annex N A Snapshot of China Telecom's Report (China Telecom Used a Figure Explaining Decrease of Mobile Data Tariff)



Source: China Telecommunications Corporation Limited (2020)

Annex O A Snapshot of China Mobile's Report (China Mobile Used Tables to Present Three Year Data in Its Report)



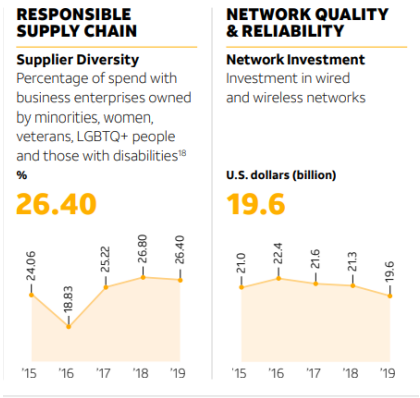
Emissions

Indicators	2017	2018	2019
CO_2 emissions [1] (million tonnes)	15.98	16.17	17.32
Direct GHG emissions (Scope 1) (million tonnes)	0.33	0.31	0.28
Indirect GHG emissions (Scope 2) (million tonnes)	15.65	15.86	17.04
Carbon emission intensity (tCO_2e/ RMB10,000)	0.216	0.219	0.232
SO_2 emissions [2] (tonnes)	23.59	35.93	9.28
Carbon emission from commute (10,000 tonnes)	37.79	39.45	50.77
Carbon emission from business travel (10,000 tonnes)	29.44	7.10	8.19

Notes:

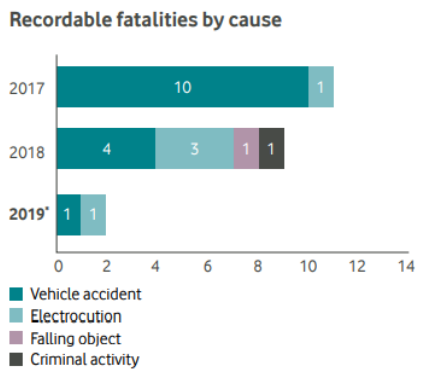
Source: China Mobile (2019)

Annex P A Snapshot of AT&T's Report (Line Charts with Five Year Data in AT&T's Report)



Source: AT&T (2020)

Annex Q A Snapshot of Vodafone's Report (A Horizontal Bar Chart in Vodafone's Report Explaining Historical Data of Fatalities)



Source: Vodafone Group plc (2019)