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To cite this article: Fábio Albuquerque & Paula Gomes dos Santos (2023) A discourse analysis of Russia's invasion of Ukraine by listed European entities from the energy-related sectors, Cogent Social Sciences, 9:1, 2233790, DOI: [10.1080/23311886.2023.2233790](https://doi.org/10.1080/23311886.2023.2233790)

To link to this article: <https://doi.org/10.1080/23311886.2023.2233790>



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Published online: 10 Jul 2023.



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Received: 21 April 2023  
Accepted: 03 July 2023

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Reviewing editor:  
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## MEDIA & COMMUNICATION STUDIES | RESEARCH ARTICLE

# A discourse analysis of Russia's invasion of Ukraine by listed European entities from the energy-related sectors

Fábio Albuquerque<sup>1\*</sup> and Paula Gomes dos Santos<sup>1</sup>

**Abstract:** Russia invaded Ukraine in March 2022, reinitiating a military conflict. Since Europe relied on Russian energy imports, entities in the energy sector may be affected. Based on content analysis, this exploratory paper assesses the disclosures by listed European entities in the energy sector in 2022 regarding Russia's invasion of Ukraine, since the impacts of this event should at least be reported under International Accounting Standard (IAS) 10. The impression management (IM) strategies behind the entities' disclosures are explored by using financial or integrated reporting as a source of information for the period ending in 2021. The findings mostly indicate a lower disclosure level among the entities that reported this event. Further, figures are often missing, and the entities' exposure to this non-adjustable event and its likely future impacts are usually unclear and vague within the notes on the subsequent events. Finally, messages' tone and readability might be aligned with concealment strategies. To the best of the authors' knowledge, this is the first research that uses this theme and IAS 10 notes as the object and source of analysis, respectively. The paper contributes to the literature by providing insights into the different patterns revealed by the entities concerning a current topic that has relevant social and economic impacts globally, as well as the characteristics of the entities' IAS 10 disclosures.

**Subjects:** Organizational Communication; Political Communication; Rhetoric; Business, Management and Accounting

### ABOUT THE AUTHORS

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### PUBLIC INTEREST STATEMENT

This paper includes in its scope the theme of the latest Russian invasion of Ukraine, which started in March 2022 and resulted in a military conflict with humanitarian, social, and economic effects worldwide with no ending perspectives. Despite being restricted to the disclosures made about this event by the European entities from the energy-related sectors, its findings can be of interest to a wider audience than their capital providers, so including a larger set of those entities' stakeholders, such as consumers, policy-makers, auditors, regulatory and supervisory bodies.



**Keywords: content analysis; disclosures; energy sector; invasion; impression management; Russia; Ukraine**

## 1 Introduction

Financial reports are traditionally used by entities to communicate with their stakeholders by providing information on their economic activity, performance, and financial position, as well as their past, present, and future (Falschlunger et al., 2015). By doing so, it legitimizes their claims (Dhanani & Kennedy, 2022). Consequently, entities' disclosures have been "a longstanding pre-occupation of accounting researchers and policymakers" (Leung et al., 2015, p. 275). The evolution of disclosures entails new challenges related to the content of the information since "increasing the amount of information being disclosed does not necessarily imply an improvement in the quality of the disclosure about underlying activities" (Sahyoun & Magnan, 2020, p. 796).

Besides technological advancements, entities' reporting has also evolved over the last few decades, covering a wide range of dissemination methods in addition to financial reporting, non-financial or sustainability reporting, and integrated reporting (Barkemeyer et al., 2014; Pitrakkos & Maroun, 2020). Environmental, social, and governance issues have become increasingly important in society over the last few decades, which, in turn, provides insight into the entities' corporate social responsibility activities from an investor's perspective, enabling investors to make informed decisions (Hamza & Jarboui, 2022).

Users of financial reports face several challenges, including assessing the reliability and accuracy of the information disclosed, since entities can control users' perceptions through a variety of tools, undermining transparency and reducing the quality and accuracy of the information disclosed by entities (Diouf & Boiral, 2017). These processes are referred to as impression management (IM) strategies in the literature.

IM can be defined as the behaviour assumed by management to strategically select and manipulate, through different mechanisms, the graphically or textually reported information about the managers' or entities' image and/or figures to influence and, consequently, distort the users' perceptions of their different aspects, including managers' or entities' characteristics, accountability, historical performance and perspectives (Beattie & Jones, 1999; Clatworthy & Jones, 2006; Godfrey et al., 2003; Merkl-Davies & Brennan, 2007, 2011, 2011).

Currently, most listed entities in the world prepare their financial reports according to International Accounting Standards (IAS) and International Financial Reporting Standards (IFRS), which are issued by the International Accounting Standards Board (IASB). The issuance of Regulation 1606/2002 by the European Parliament and of the Council of 19 July 2002, requiring all listed entities in the regulated market of any Member-State to prepare their consolidated financial reporting under IAS and IFRS from 2005, marked a major step in this process and led to their global dissemination. However, IFRS and IAS are principles-based standards. Therefore, due to the lack of specific rules guiding a significant part of entities' disclosures, the credibility of corporate narratives and their characteristics continue to represent matters of increasing relevance as a guarantee of their usefulness, which include aspects such as the narratives' length, tone, and readability (El-Sayed et al., 2021).

Within the scope of IAS 10, issued by the IASB, the notes to the financial statements should include events after the reporting period. The scope of this report covers all events that occurred before the management board approved the release of financial reports, regardless of whether they were favourable or not. The notes must be adjusted if they relate to existing conditions before the end of the reporting period. Otherwise, they should only be disclosed if they are considered material.

The new military conflict in Ukraine, which began in 2022 after Russia's invasion, is likely to be classified as a non-adjustable event after the reporting period ended in 2021 to be disclosed by those entities.

Therefore, this paper aims to conduct an exploratory approach to perform a content analysis of the disclosures by listed European energy-related companies regarding Russia's invasion of Ukraine in 2022. This purpose is underpinned by the research question: Do the disclosure on Russia's invasion of Ukraine provided by European listed entities to their stakeholders differ?

As a source of information, the consolidated financial or integrated reporting for 2021 is used. The European energy-related sector was chosen due to the significant impact of reducing energy imports from Russia by European countries, considering, for instance, the findings by Korosteleva (2022) and Nerlinger and Utz (2022).

Three different sets of information containing voluntary (i and ii) and mandatory (iii) disclosures are selected for this purpose, as follows:

- (i) the chief executive officer's (CEO) letters;
- (ii) the president's or chairperson's letters, whenever entities have a different person for this position;
- (iii) the notes to the financial statement about events after the reporting period.

Then, the following four specific questions (SQ) were formulated to address the research question proposed:

- SQ1. What component (mandatory or voluntary) of the entities' financial or integrated reporting contains this information?
- SQ2. What is the main nature (qualitative or quantitative) of the information provided by each entity?
- SQ3. Do entities that report under IAS 10 provide data that allows stakeholders to understand their potential adjustments to their financial information at the end of their reporting period (2021), their exposure level, and the likely material impacts of this event, i.e., Russia's invasion of Ukraine in 2022?
- SQ4. What are the levels and main topics covered by the information provided by entities in those pieces, as well as their messages' readability level and tone?

Behind the SQ4, in particular, a discourse analysis through the perspective of IM strategies is proposed. Since the use of IM strategies in entities' financial information can influence stakeholders' decision-making processes, stakeholders must distinguish between reliable and misleading information. Different strategies can be used to perform IM (Sandberg & Holmlund, 2015). According to Merkl-Davies and Brennan (2007), these strategies can be classified into two major categories: concealment and attribution.

The concealment strategies can be used by obfuscating bad news or highlighting the good news, which can include manipulation through readability or rhetoric for bad news, and selection of themes, visual and structural aspects of information, deliberate performance comparisons and selection of figures for good news (Aerts & Yan, 2017; Beattie & Jones, 1999, 2002, 2008; Brennan et al., 2009; Cho et al., 2012; Clatworthy & Jones, 2003; Dilla & Janvrin, 2010; El-Sayed et al., 2021; Leung et al., 2015; Melloni et al., 2017; Merkl-Davies & Brennan, 2007).

The attribution strategies, in turn, correspond to the crediting of certain results to different factors using verbal manipulation, implying that positive results are attributed to internal factors, while negative results are attributed to external factors (Aerts, 2005; Brennan et al., 2009; Clatworthy & Jones, 2003; Edgar et al., 2018; Merkl-Davies & Brennan, 2007).

There are many topics and subjects related to IM research since its use can affect a variety of human behaviours (Merkl-Davies & Brennan, 2011). Therefore, it is a topic of interest in a variety of fields other than accounting, including the social and human sciences, anthropology, communication, law, linguistics, management (including marketing and labour relations), sociology, and medical sciences (psychology and sports).

In literature, it has been demonstrated that managers present a different view of reality when reporting past performance and prospects for their companies (Schleicher, 2012), and they also use mechanisms to enhance shareholder perceptions. In turbulent times, such as the global financial crisis of 2008–2009, this resource is particularly useful (Khanna & Irvine, 2018). Through strategies that impact the usefulness of a report, preparers can convey a dissimilar message about reality (Melloni et al., 2017). In addition, auditors, regulators, and other stakeholders are increasingly able to conduct in-depth analyses of information due to the availability of information on websites and social media, as well as to the emergence of new technology (Perkiss et al., 2021). Although underexplored, they can provide rapid and consistent analyses of financial and non-financial information (Corazza et al., 2020).

A diverse set of documents can be used to disseminate IM strategies, including those that integrate the reporting of various entities. These documents include several pieces of information typically included in financial and non-financial reports, along with any supplementary documents included in these reports, called accounting narratives. Accounting narratives provide stakeholders with complementary and relevant information (Clatworthy & Jones, 2003; Tauringana et al., 2014).

A manager's report, such as a CEO, a president's, or a chairperson's letter, or a letter to shareholders or stockholders, is one of the most used sources by researchers to assess the effectiveness of IM strategies within traditional accounting narratives (Al-Sayani et al., 2020; Clatworthy & Jones, 2006; Godfrey et al., 2003; Hadro et al., 2017; Mather & Ramsay, 2007). A growing number of studies have also investigated financial statements, including the information within the notes (for instance, Dilla & Janvrin, 2010; Tauringana et al., 2014; Yekini et al., 2016; Zeller et al., 2012). Further sources for this purpose include prospectuses, press releases, and conference calls (for instance, Aerts & Cheng, 2011; Brennan et al., 2010; Guillamon-Saorin et al., 2012; Kayed & Meqbel, 2022; Mather et al., 2000). Recently, other innovative ways available to entities for releasing information to their stakeholders have been collected, such as messages reported on novel social media platforms, such as Twitter (for instance, Benthaus et al., 2016; Yang & Liu, 2017).

Two different IM strategies are included for the SQ4 assessment proposed above, both included in the set of IM concealment strategies, namely the readability and thematic manipulation.

The first relates to text reading and understanding as a topic that has been repeatedly studied in recent years, with the assumption that the management can intentionally use a language that is harder to read instead of a language that is effective and easier to communicate (Aerts & Yan, 2017; Demaline, 2019; El-Sayed et al., 2021; Fisher et al., 2020; Riley & Luippold, 2015; Sydserff & Weetman, 2002). It also aligns with some obfuscation hypotheses, since simple (more readable) disclosures may improve non-professional investors' judgments about an entity's future performance (El-Sayed et al., 2021). By simply altering the use of predicates (verbs *versus* adjectives/nouns), a more subtle linguistic style can also influence the meaning of a message (Riley & Luippold, 2015).

Thematic manipulation, on the other hand, emphasizes positive performance in narratives using positive expressions (Merkl-Davies & Brennan, 2007). In this IM strategy, managers can conceal bad news either by non-disclosing or by emphasizing positive news more strongly than bad news (Brennan et al., 2010; Cho et al., 2010; Melloni et al., 2017). Merkl-Davies and Brennan (2007) based their theory on the Pollyanna principle, which states that positive and affirmative words and subjects are remembered more often than negative ones. The empirical evidence developed in

this line indicates that managers strive to present their performance or the performance of their organizations as best as they can (Clatworthy & Jones, 2003). In addition, there is evidence that businesses or forecasting analyses that are riskier tend to provide a more positive tone (Schleicher & Walker, 2010).

Due to the lack of literature on a topic with relevant humanitarian, social and economic effects as it is Russia's invasion of Ukraine, the relevance of this research can be justified by the proposed analysis of how entities have disclosed an event of such nature (for instance, Leon et al., 2022; Mbah & Wasum, 2022). To the best of the authors' knowledge, this paper presents an innovative perspective by using IM strategies to assess the entities' disclosures on this event. Additionally, this paper discusses the potential differences between voluntary *versus* mandatory disclosures as well as qualitative *versus* quantitative disclosures, which increase this paper's contribution.

Furthermore, this research contributes to mitigating a still-existing research gap in what concerns the analysis of the notes relating to events after the reporting period, along with comparing the same content of a message across multiple pieces of reporting. Research using content analysis from events after the reporting period is still preliminary, which is corroborated by the few studies on this area (Al Nawaiseh & Jaber, 2015; Ambarchian & Ambarchian, 2022; Honko et al., 2020; Kellgren, 2018; Kuzmenko & Shalimova, 2018; Ozdemir & Gokcen, 2016; Soares & Carvalho, 2019).

In particular, the analysis of disclosures about the event proposed for this research within the notes on the subsequent events under IAS 10 by European entities from the energy-related sectors also emerges as a novelty of this research. This theme was specifically assessed from the reports of 14 multinational groups by Ambarchian and Ambarchian (2022) from different economic activity sectors, for instance. However, the authors evaluate the entities' disclosures of this event exclusively from an economic perspective, which is not underlying to the objective of this paper.

As a result of this exploratory research, international reporting setter bodies, regulators, auditors, and supervisors can benefit from its outputs, considering the strategic use of information disclosed in financial reporting by entities which may influence the stakeholders' decisions. It also pertains to users of financial or non-financial reporting, who must consider the possible use of IM strategies in the entities' disclosures and, therefore, must "read between the lines" (Hamza & Jarbouj, 2022).

The paper is divided into four sections, including this introduction. Further details about the materials and methods used in this study are provided in the next section. In the third section, the main findings are presented. Finally, the fourth section discusses those findings and proposes future research avenues in this field, along with their limitations.

## 2 Material and methods

Using content analysis to assess the information collected, this research meets its purpose and evaluates the research question from a scientific perspective that is mainly qualitative. The sample includes entities from the most relevant Euronext indexes in the energy sector, which comprises fourteen entities from six European countries, as follows: France (FR), Portugal (PRT), the Netherlands (NRD), Belgium (BE), Ireland (IRL), and Norway (NOR). Using the reporting period for 2021 as a reference, information from the consolidated financial or integrated reporting published in 2022 is used as the data source. Therefore, this research uses the archival method.

Despite the diversity of papers covering different subjects and investigation lines on the explanatory factors of entities' disclosure on several matters, the analysis of this specific theme has not been previously investigated, to the best of the authors' knowledge. Therefore, it can be assumed that this paper is primarily exploratory, given the limited sample size and the stage of research in this area. As a result, it intends to provide a preliminary overview of the subject, without providing any explanations just yet.

Three specific pieces of information are selected within the entities' reporting to include disclosures:

- (i) the CEO's letter;
- (ii) the president's or chairperson's letters, whenever entities have a different person for this position (hereafter referred to as Chair's messages only for simplicity);
- (iii) the notes on events after the reporting period.

Among the literature on IM strategies, the first two pieces represent the most traditional used. Additionally, it can be considered voluntary information. The third one, however, is included in the set of mandatory financial information under IAS 10. The specific object of analysis in this set of information is Russia's invasion of Ukraine in 2022. To achieve this, all sentences containing "Ukraine" and/or "Russia" as well as "conflict", "war", "military", "invasion", "aggression", or "armed" are selected.

A list of entities included in the research sample can be found in Table 1, including their name, the entities' code for simplification, the Industry Classification Benchmark (ICB) code along with its main and detailed sectors, the Euronext index to which each one belongs, as well as the representative country in which those indexes are based.

To answer the SQ specified in the previous section, the following sources of information and assessment procedures are proposed:

- For SQ1 (a voluntary *versus* a mandatory source for mentioning this event): by identifying any references to Russia's invasion of Ukraine contained within the CEO's and/or the Chair's letters (voluntary disclosures: SQ1.1) or notes to the financial statements (mandatory disclosures: SQ1.2);
- For SQ2 (a voluntary *versus* a mandatory source for providing quantitative references): by assessing the use of quantitative references (for example, some figures) within the information provided by those entities in the pieces of information used as a source for SQ1 (SQ2.1 and SQ2.2 for voluntary and mandatory disclosures, respectively);
- For SQ3 (the content analysis of the note under IAS 10), and based on an analysis of the disclosures made by entities about events that took place after the reporting period on their note that complies with IAS 10, the following elements were collected:
  - SQ3.1: by any reference to adjustments from this event to the financial information that may be made at the end of the reporting period (2021);
  - SQ3.2: by any reference to how this event could have affected entities;
  - SQ3.3: by any reference to the likely future impacts of this event on the entities' financial position, cash flow, or performance;
- For SQ4 (the discourse analysis), by comparing the information (discourse analysis) provided by the entities in the several pieces of information selected for this study, including the following aspects of their disclosures:
  - SQ4.1. the number of words (disclosure levels);
  - SQ4.2. the main topics (themes) covered;
  - SQ4.3. their readability level;
  - SQ4.4. the different aspects of the messages' tone.

In this research, different tools are used to assess SQ4 in particular. These tools were selected based on their availability and the most informative and easily readable information in each context and for each analysis purpose. Despite the different methodologies behind the tools, the comparisons and subsequent analyses of the differences between the sources of information may provide useful insights for future research.

**Table 1. Research sample characteristics**

Entity's name	Entity's code	ICB code	Main Sector	Detailed sector	Euronext index	Country
Total Energies	TE	60101000	Energy	Integrated Oil and Gas	CAC 40	FRA
Engie	ENG	55102000	Industry	General Mining	CAC 40	FRA
EDP Renováveis	EDPR	65101010	Utilities	Alternative Electricity	PSI 20	PRT
EDP	EDP	65101010	Utilities	Alternative Electricity	PSI 20	PRT
GALP	GALP	60101000	Energy	Integrated Oil and Gas	PSI 20	PRT
REN	REN	65101015	Utilities	Conventional Electricity	PSI 20	PRT
GreenVolt	GV	65101010	Utilities	Alternative Electricity	PSI 20	PRT
Royal Dutch Shell	RDS	60101000	Energy	Integrated Oil and Gas	AEX	NLD
Elia Group	EG	65101015	Utilities	Conventional Electricity	BEL 20	BEL
Greencoast Ren.	GR	65101010	Utilities	Alternative Electricity	ISEQ 20	IRL
Scatec	SCA	60102020	Energy	Renewable Energy Equipment	OBX	NOR
Aker BP	AKER	60101010	Energy	Oil: Crude Producers	OBX	NOR
Equinor	EQUI	60101000	Energy	Integrated Oil and Gas	OBX	NOR
Nel	NEL	60102020	Energy	Renewable Energy Equipment	OBX	NOR
Subsea 7	S7	60101030	Energy	Oil Equipment and Services	OBX	NOR

NVIVO was used to summarize the contents within the entities disclosure proposed for SQ4.1 and SQ4.2, through word clouds, word counts, and automatic topic identification and cluster analysis. NVIVO is widely used for assessing qualitative data, including IM research (e.g. Fialho et al., 2020; Perkiss et al., 2021; Phesa & Sibanda, 2022).

To identify the most frequent terms, some words have no significance for research purposes and must, therefore, be excluded from the analysis. They are usually called “stop words”. A set of predefined stop words is used by the NVIVO in a variety of languages (English was used here), including the most common prepositions, particles, interjections, unions, adverbs, pronouns, modal verbs, as well as various forms of common verbs like to be, to have, and similar. Further, NVIVO groups similar terms into one word that sums up the same meaning overall, for a more accurate analysis. As an example, the word “company” may also include its possessive form “company’s” and its plural form “companies”.

We also performed a cluster analysis using this tool to identify possible relationships between these topics. The Pearson correlation coefficient is used to determine the similarity between the topics. Blue lines indicate similarity, whereas higher correlation levels are indicated by thicker lines.

For SQ4.3, the readability level is determined using the Flesch reading ease score, from which the higher the score, the lower the complexity and the greater the readability (e.g. Fisher et al, 2020; Hrasky et al., 2009; Jayasree & Shette, 2021; Mankayi, 2023). Grammarly was used to calculate this score.

SQ4.4 was also supported by Grammarly, as well as an application programming interface (API) available on the platform text2data, which uses text analytics based on natural language processing (NLP) and machine learning. Grammarly was primarily used to identify specific emotions within the message, identifying sentiments such as “formal”, “neutral”, “cooperative”, “joyful”, “sceptical”, and so on. The API tool was then used to assess the negativity or positivity of a message’s tone, with a score that ranged from –1 to 1, respectively, with scores closer to zero indicating a neutral tone.

In the literature on IM in diverse accounting areas, this latter aspect is most extensively discussed (e.g. Ben-Amar et al., 2021; Ben-Amar et al., 2022; Benthaus et al., 2016; Hamza & Jarboui, 2022; Nik Ahmad & Hossain, 2019). Along with this general qualitative aspect of the message’s tone, this tool also offers information on how subjective, neutral or objective the messages are. Furthermore, the magnitude score was collected, which indicates the level of emotional content within the document. As suggested by Aerts and Yan (2017), who point out that a language-based analysis of positive and negative emotions is limited, this approach assesses the message’s tone more broadly. Consequently, this aspect can be seen as an additional contribution to this research.

This research’s findings are presented in the next section.

### 3 Results

This section is divided into two subsections, with the first providing an overall data assessment that aims to provide answers to SQ1 to SQ3 and the second specifically addressing the answers to SQ4, based on a more detailed qualitative analysis of those data.

#### 3.1. Overall data assessment (SQ1 to SQ3)

Table 2 summarises the information collected on Russia’s invasion of Ukraine in 2022 from the different components of financial or integrated reporting. Data include the analysis of the messages from the CEO’s and/or the Chair’s letters. In addition, they include the ones from the subsequent events within the notes to the financial statements. The first group was classified as voluntary information, while the second represents, whenever the issue is applicable, mandatory disclosures. The table indicates with yes (Y) or no (N) whether the expected information was found by each component assessed. Furthermore, the data provide information regarding any numerical references (figures), the entities’ expositions to the effects of Russia’s invasion of Ukraine, and, finally, the likelihood that this event will influence the entities’ cash flows, financial position, or performance in the future. The cases where Y\* is signalled represent those where the figures were only indirectly or indefinitely provided. Uncertain or unclear information (U) was also codified.

Table 2 indicates that 10 out of 15 entities (TE, ENG, GALP, REN, GV, RDS, SCA, AKER, EQUI, and NEL) have made at least one reference to Russia’s invasion of Ukraine in 2022 in the components selected from their financial or integrated reporting (SQ1). Six of those 10 entities that reported information on this event did so voluntarily (SQ1.1). In turn, most of those entities (eight) provide this information mandatorily (SQ1.2). Half of those 10 entities reported this information (GALP, REN, RDS, SCA, and EQUI) in the scope of either voluntary or mandatory disclosures, which means that only one-third of those 15 provided this information transversally (**at least one source of information proposed for SQ1.1 and SQ1.2 simultaneously**).

Furthermore, two different cases should be highlighted when assessing SQ1. On the one hand, three of those 15 entities (TE, GV and NEL) reported their financial statements only within the

**Table 2. Information on Russia's invasion from different components of financial or integrated reporting**

Entities' code	Voluntary disclosures				Mandatory disclosures				
	Chair's message (SQ1.1)	With figures (SQ2.1)	CEO's message (SQ1.1)	With figures (SQ2.1)	Subsequent events (notes) (SQ1.2)	With adjustments (SQ3.1)	Entities' exposition (SQ3.2)	With figures (SQ2.2)	With likely impacts (SQ3.3)
TE					Y	N	Y	N	U
ENG	Y	N	Y	Y*					
EDPR									
EDP									
GALP	Y	N	Y	N	Y	N	Y	N	U
REN	Y	N			Y	N	N	N	N
GV					Y	N	Y	Y*	N
RDS	Y	N	Y	Y	Y	N	Y	Y	Y
EG									
GR									
SCA			Y	N	Y	N	Y	Y*	Y
AKER	Y	N	Y	N					
EQUI	Y	N	Y	N	Y	N	Y	Y	Y
NEL					Y	N	Y	N	U
S7									
<b>Total Y</b>	<b>6</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>8</b>	<b>0</b>	<b>7</b>	<b>4</b>	<b>3</b>

notes to the financial statements (**SQ1.2 exclusively**). On the other hand, there were two cases (ENG and AKER) in which the information was exclusively reported in the Chair's and CEO's messages (**SQ1.1 exclusively**). Finally, there were only three other entities (GALP, RDS and EQUI) that presented references within all three pieces of information assessed (**the two sources of information proposed for SQ1.1 and SQ1.2 simultaneously**).

In what concerns the figures provided in those pieces of information, five out of those nine entities (ENG, GV, RDS, SCA and EQUI) also included numerical references to illustrate the potential impact of this event or how the entity is financially vulnerable to that (**SQ2**). Notwithstanding, none of them addressed this element in the Chair's message and only two of those entities provided this data within the CEO's message (ENG and RDS), one of which (ENG) with only indirect or vague numerical references (**SQ2.1**). In the notes, this can also be found in more cases: specifically, in four cases (GV, RDS, SCA, and EQUI), of which two (GV and SCA) lack specific references again (**SQ2.2**). It is also worth mentioning, therefore, that the RDS was the only entity to provide figures for both components (voluntary and mandatory sources) under assessment (**at least one source of information proposed for SQ2.1 and SQ2.2 simultaneously**).

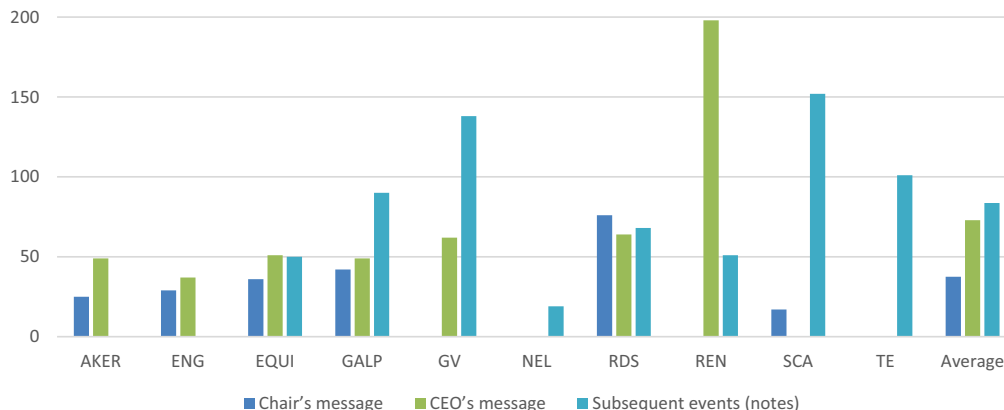
Regarding the further information from the subsequent events specifically (**SQ3**), none of the entities indicated the need to make any adjustments to the financial statements at the end of the reference reporting period for 2021 (**SQ3.1**), which is according to the initial expectations, considering the unpredictable character of this event. Notwithstanding, seven out of eight entities (TE, GALP, GV, RDS, SCA, EQUI, and NEL) that have disclosed this event with the note under IAS 10 also reported that they are somehow exposed to possible impacts from those events in the coming future (**SQ3.2**). However, only three of them (RDS, SCA, and EQUI) were clear regarding their likely impacts on the entities' activities that can influence their future cash flows, financial position, or performance (**SQ3.3**). For the other three cases (TE, GALP and NEL), entities were unclear, imprecise, or vague in referencing them. In the remaining case (GV), the entity indicates that it was exposed but assumed there will be no predictability in the short term.

Finally, either by country or by sector, there is no clear profile to stress based on those figures. Despite this, there are some shreds of evidence that could be further explored in future research.

By sector, four out of five entities (EDPR, EDP, EG and GR) that did not report any information on the event under assessment are from the main sector of the utility industry, which represents two-thirds of the entities from this group in this research sample (**SQ1**). On the other hand, no relevant pattern seems to be found, however, regarding the entities that provided figures since different entities from industry, energy and utilities are represented by, at least, one entity (**SQ2**). Despite that, it is worthwhile to note that two of the four entities (RDS and EQUI) that reported clear and specific figures within the notes to the financial statements are from the energy subsector of integrated oil and gas (**SQ2.2**). Additionally, there were three entities (GALP, RDS and EQUI) that integrated the subsector with information for all components under assessment (**the two sources of information proposed for SQ1.1 and SQ1.2 simultaneously**). Furthermore, the entities from the oil and gas sectors seem to provide more information on the matters under assessment in this research, including how they are possibly exposed to the effects of this event (**SQ3.2**). This is contrary to those related to electricity-related entities. Nonetheless, there was no evidence, by sector, regarding clarity on the likely impacts of this event on the entities' activities, which could influence their future cash flows, financial position, or performance (**SQ3.3**).

By country, and regardless of the reduced sample, some patterns can also be noted. As for Portugal and Norway, sharing two-thirds of the research sample, two of their entities have not mentioned the event in their report, with a globally reduced level of information found in the disclosures made by Portuguese entities in particular (**SQ1** and **SQ2**). Finally, entities from Belgium and Ireland did not report any information on this event as well (**SQ1** and **SQ2**). It should be stressed that all of them are from the utility sector. No patterns have been found in this research,

**Figure 1. Number of words regarding the entities' disclosures on Russia's invasion of Ukraine.**



however, regarding either how they are exposed (SQ3.2) or the likely future impacts (SQ3.3) from this event on the entities' accounts when a breakdown by country is considered.

### 3.2. Qualitative data assessment (SQ4)

Figure 1 shows how many words were collected about Russia's invasion of Ukraine in each piece of information selected for this research (SQ4.1).

From the various pieces of information assessed, and excluding the "stop words", a total of 1,404 words were collected, of which 225 were in the Chair's message, 510 in the CEO's message, and 669 in the note on the subsequent events under IAS 10.

Figure 1 shows that the Chair's message is the most concise regarding this event in comparison to the other pieces, whenever some information on it is reported by the entities in those components. RDS represents an exception in this context, with the Chair's message including a higher number of words than those found in the other pieces of this entity's reporting. It is also in RDS where this piece of information contains the highest number of words in comparison to other entities from this research sample.

Conversely, a similar analysis based on Figure 1 identifies that the note on the subsequent events presents the highest level of information on the event under assessment. EQUI and REN are the exceptions in this context. In the first case, a similar number of words about this event can be found within the CEO's message and in the notes on the subsequent events. The latter has a higher number of words in the CEO's message. It also has the highest level of information on this event among all entities in this research sample.

By sector, SCA and GV, both operating in the electricity sector, can be emphasized as those that disclosed more information within the note on the subsequent events. TE and GALP, both oil-related entities, also need to be highlighted in this context for their disclosure levels in this piece of information.

At this point, and based on the findings for SQ1, it is imperative to remember that some oil-related entities consistently mentioned Russia's invasion of Ukraine in the different components of their reports (GALP, RDS and EQUI). Despite these findings, Figure 1 indicates that these entities did not necessarily report more (a higher level of) about this event in comparison to the information found throughout the different pieces under assessment within other entities' reporting.

The word clouds in Figure 2 illustrate, in turn, the most frequently occurring terms in the information collected concerning the event under consideration for this research (SQ4.2).

**Figure 2. Word clouds for the entities' disclosures on Russia's invasion of Ukraine.**



Comparing the main contents found in the Chair's with the CEO's message, the latter provides an increasing focus on the entity's particular context and environment, although both share a personal and, usually, humanitarian viewpoint. Apart from some common words, such as "Russia" and "Russian", "energy" and "Ukraine" found transversely and expectedly, the words "people", "support" and "colleagues" demonstrate this. With the inclusion of words such as "financial" and "materially", the previous indication reaches a higher level of specificity in the context of the disclosures found on the note of subsequent events under IAS 10, which is aligned with the previous findings for SQ2.

The information provided as follows contains non-modified excerpts from the entities' reporting in its English version on this event in all those three pieces of information (GALP, RDS, and EQUI), intending to illustrate the aspect previously mentioned.

- **Chair's message—a lower level of specificity is generally found in comparison to the other pieces of information:**
  - GALP: "I cannot end this letter without expressing our repudiation of Russia's terrible aggression against Ukraine. This act of war violates the values we defend at Galp, such as freedom and human rights. Galp will not contribute to Russia's war efforts and, therefore, promptly decided to eliminate its exposure to oil products either sourced in Russia or from Russian companies. We will do our absolute best to support the humanitarian efforts in support of the people of Ukraine."
  - RDS: "In early 2022, when Russia invaded Ukraine, Shell's people stepped up. In Poland and other neighbouring countries, our employees helped refugees, caring for the victims of a senseless conflict."
  - EQUI: "At the time of publishing this annual report, we are deeply concerned for the people suffering from the invasion of Ukraine. Equinor has made swift decisions to stop trading Russian oil and investments into Russia and has started the process of exiting the company's joint ventures in the country. We are committed to complying with relevant sanctions and continue to take actions to protect our people and operations."
- **CEO's message—a higher level of specificity is generally found in comparison to the previous piece of information:**
  - GALP: "Looking forward, 2022 is already marked by Russia's act of aggression against the Ukrainian people. This represents a harsh blow to the free world and stands against all values uphold by Galp. Galp has no joint ventures with Russian entities and already decided to suspend all trading interactions related with petroleum products sourced by Russia or Russian companies. My heart goes out to all the people of Ukraine, with a special thought to our Ukrainian colleagues. We will continue to strongly support all humanitarian efforts."
  - RDS: "Like many others, I have been appalled by Russia's invasion of Ukraine, an act of aggression that shocked the world. It has inflicted much suffering and threatened the security of a continent. Our first priority, as always, was the safety of our people. We employ around 1,500 staff and contractors in Ukraine. We have been doing everything we can to try to ensure their safety and well-being. We also took decisive action in support of global economic measures against Russia. We announced our intention to exit joint ventures with Gazprom, a majority Russian-government-owned business, and related entities. This included the Sakhalin-2 liquefied natural gas (LNG) facility, Salym Petroleum Development and the Gydan energy venture. (...)"

- EQUI: “We submit our annual report at a time when the situation in Europe, and the markets we operate in, have changed significantly. Our thoughts are with all those suffering the consequences from the invasion of Ukraine. The safety and security of our people and ensuring stable deliveries of energy to Europe under these circumstances are our top priorities. The conditions for civilians are devastating, and Equinor has committed to contributing to the humanitarian efforts in the region. The invasion and subsequent sanctions from the international community will affect the global economy and energy markets going forward. It is, however, too early to foresee the total effects.”
- **Subsequent events (notes)—the highest level of specificity is found in comparison to the other pieces of information, with more numerical data:**
  - GALP: “(…) On 2 March, Galp announced its intention to suspend all commercial relationships with Russia or Russian companies. Although Galp has no subsidiaries, joint ventures or joint operations, or any other financial interests in Russian entities, Galp is in the process of eliminating any direct or indirect exposure to energy commodities either sourced in Russia or from Russian companies. Although this measure will impact Sines refining operations and its likely financial contribution, Galp will continue to ensure the supply of gas and fuels to the Portuguese market. (..).”
  - RDS: “Russia’s recent invasion of Ukraine poses wide-ranging challenges. Given the evolving situation, there are many unknown factors and events that could materially impact our operations. These events have and continue to impact commodity prices, our supply chain, credit risks including those related to receivables, commodity trading, treasury and other factors. Any of these factors, individually or in aggregate, could have a material effect on our earnings, cash flows and financial condition. On February 28, 2022, following Russia’s invasion in Ukraine, Shell announced its intention to exit its ventures in Russia with Gazprom and related entities, and to end its involvement in the Nord Stream 2 pipeline project. At the end of 2021, Shell had around \$3 billion in non-current assets in these ventures in Russia. In 2021, net income from Sakhalin Energy and Salym was ‘Russia’s recent invasion of Ukraine poses wide-ranging challenges. Given the evolving situation, there are many unknown factors and events that could materially impact our operations. These events have and continue to impact commodity prices, our supply chain, credit risks including those related to receivables, commodity trading, treasury and other factors. Any of these factors, individually or in aggregate, could have a material effect on our earnings, cash flows and financial condition. On February 28, 2022, following Russia’s invasion in Ukraine, Shell announced its intention to exit its ventures in Russia with Gazprom and related entities, and to end its involvement in the Nord Stream 2 pipeline project. At the end of 2021, Shell had around \$3 billion in non-current assets in these ventures in Russia. In 2021, net income from Sakhalin Energy and Salym was \$0.7 billion. (..).’7 billion. (..).”
  - EQUI: “Equinor has certain investments in Russia. On 28 February 2022, Equinor announced it has decided to stop new investments into Russia and start the process of exiting Equinor’s joint arrangements in Russia following Russia’s invasion of Ukraine. At the end of 2021, Equinor had USD 1.2 billion in non-current assets in Russia within the E&P International segment. Equinor has reported net proved reserves of 88 million boe related to investments in Russia as at 31 December 2021 and an entitlement production in 2021 of 21.6 mboe/d. Equinor expects that the process of exiting the joint arrangements in Russia will result in impairments.”

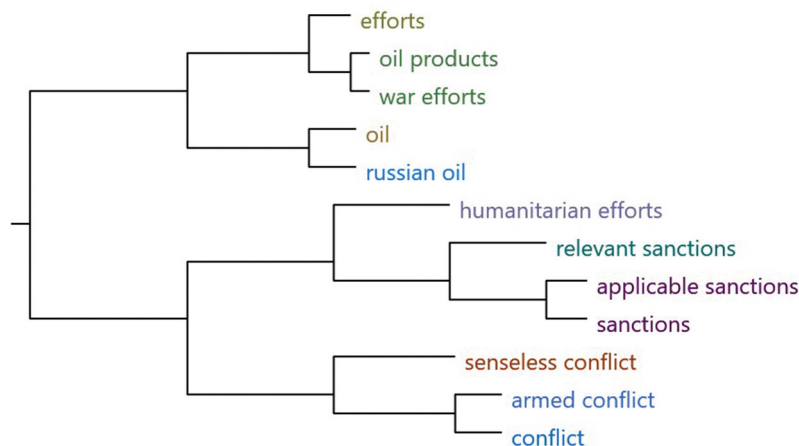
Following, the most relevant topics and cluster analysis by each piece of information are shown in Figures 3 to 5 (SQ4.2).

Based on the Chair’s disclosures, Figure 3 shows the analysis of the main topics found. It can be seen further but still generic references to the potential impacts of the applicable sanctions, as well as the entities’ exposure to oil products from Russia together with the entities’ criticisms of Russia’s invasion.

Then, Figure 4 presents a similar analysis based on the disclosures in the CEO’s messages, from which the set of topics is augmented. Additionally, these new topics include references to specific measures taken by entities to overcome constraints resulting from this conflict, namely their priorities and agreements with other entities, as well as their implications for energy markets, in addition to those found in the previous source.

Finally, Figure 5 summarizes the topics mentioned in the notes to the financial statements regarding the subsequent events, stressing the entities’ financial exposures and likely impacts.

**Figure 3. Cluster analysis on disclosures of Russia's invasion of Ukraine within Chair's messages.**



A wide range of entity-specific topics is covered in this context, including investments, reserves, production, and operations of entities, as well as commodities trading.

Based on the Flesch reading ease score, Figure 6 illustrates the readability level of the different pieces of information assessed (SQ4.3).

Although some entities lack information, Figure 6 shows that the readability of disclosures decreases from the Chair's to the CEO's message, and also from the latter to the notes. Readability levels, on average terms, are particularly indicative of this finding. In part, this is possibly explained by the increasing levels of (numerical) financial information added, which require specific financial knowledge from users.

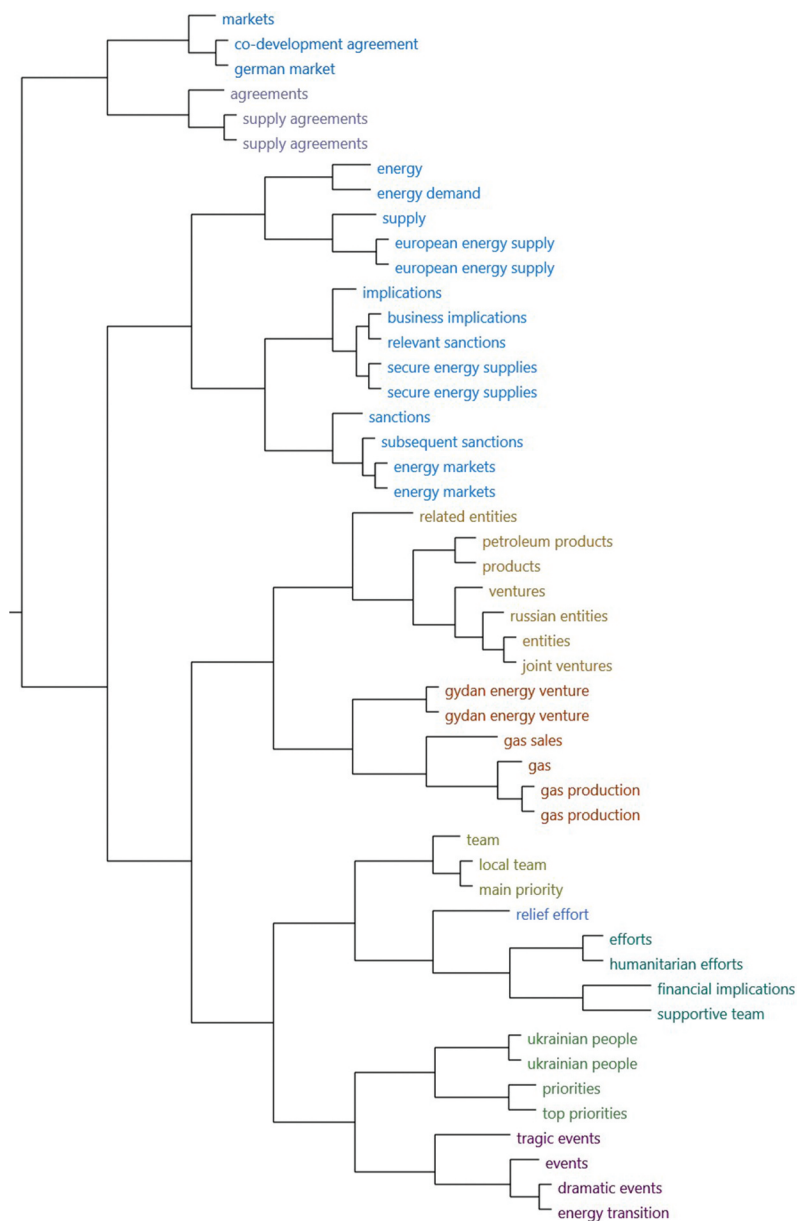
Following, Table 3 provides two different approaches for the messages' tone for entities' disclosures regarding the event under assessment: subjectivity and sentiment analysis (SQ4.4).

As shown in Table 3, the disclosures in the chair's messages were mostly unknown in terms of their subjectivity analysis, while those in the CEO's messages showed mixed results. Disclosures within the notes on the subsequent events, in turn, were mostly subjective. Conversely, and in comparison to the sentiment analysis of voluntary disclosures (chair's and CEO's messages), the feelings in the notes to the financial statements are mostly neutral or formal (sometimes also sceptical). Since neutrality is a qualitative characteristic of financial information under IFRS, this latter evidence is more aligned with what would be expected. Therefore, the subjective nature of the disclosures in the subsequent events notes may be possibly explained by the uncertainty surrounding the entities' exposition of the event under assessment and its likely future financial impacts, as provided in the findings for SQ3.

In addition to providing a measure of the sentiments expressed in those disclosures (SQ4.4), Figure 7 shows their magnitude. As the magnitudes vary across the entities or items assessed, the data indicate that the different levels represent each entity's discourse tone, with some likely outliers (RDS, for example). However, the CEO's message and the notes seem to indicate higher magnitudes on average.

Lastly, Figure 8 presents the positivity/neutrality/negativity indices of entities' disclosures regarding Russia's invasion of Ukraine (SQ4.4). Compared to the previous analysis, there is a more obvious pattern regarding this characteristic in the entities' disclosures. Specifically, the disclosures within the subsequent events tend to be negative, while those within the CEO's messages are

**Figure 4. Cluster analysis on disclosures of Russia's invasion of Ukraine within CEO's messages.**

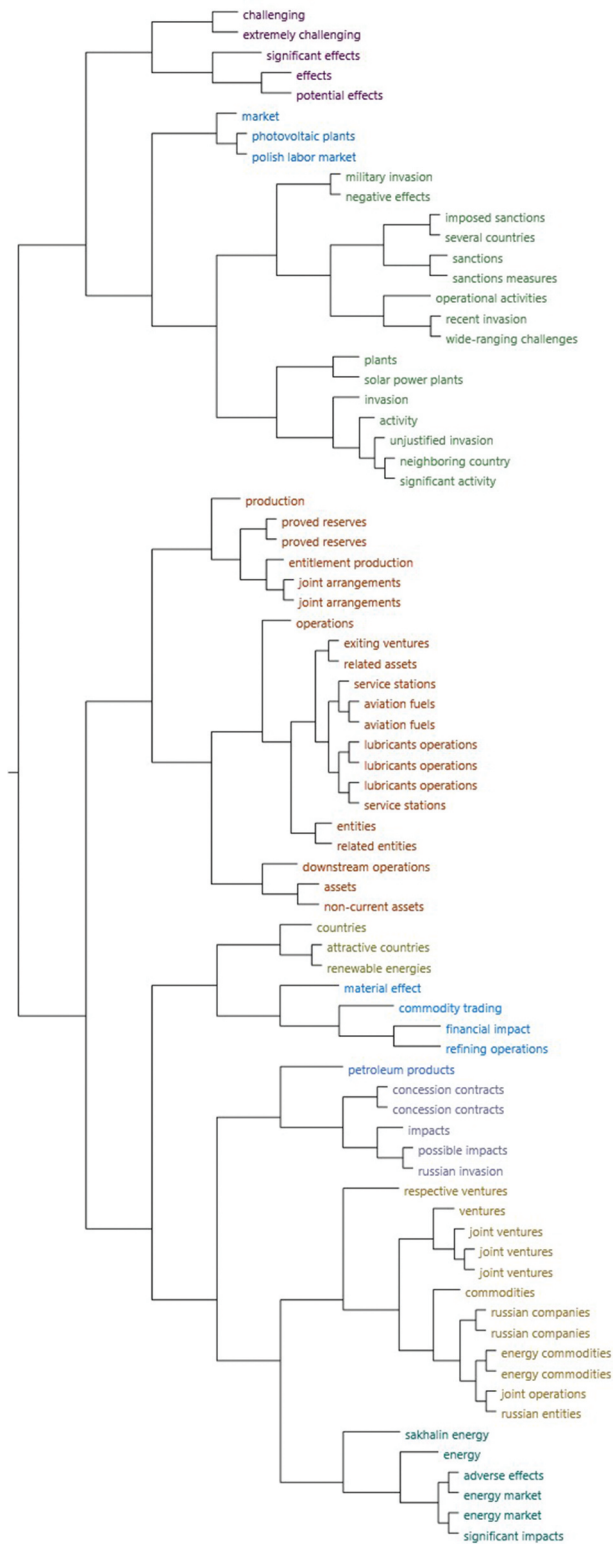


predominantly positive. Conversely, there is a wider variety of characteristics in the chair's messages. These findings highlight a relevant difference between these two pieces of information (the CEO's message and the notes on the subsequent events) that include more specific data on the effects of this event, which are classified as voluntary and mandatory disclosures, respectively, with the second being mostly negative.

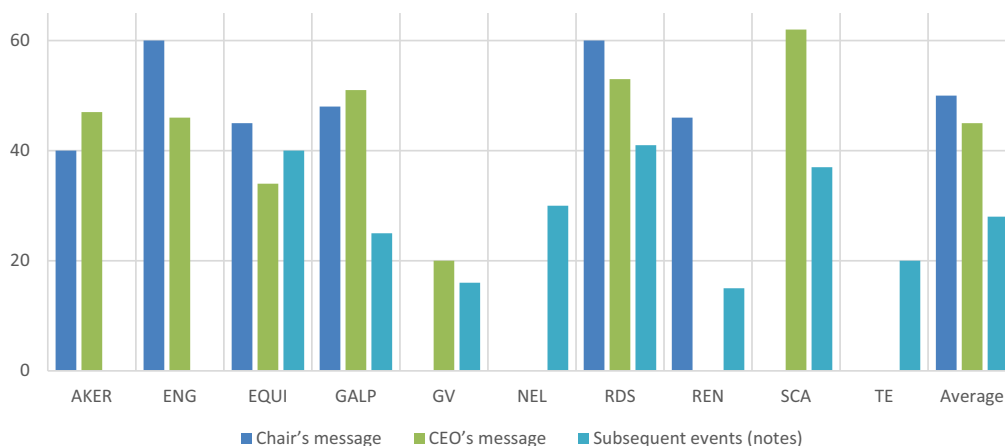
The shreds of the evidence above do not indicate any additional patterns by country or sector than those described in the previous subsection.

The results of this study are discussed in the following section.

**Figure 5. Cluster analysis on disclosures of Russia's invasion of Ukraine within subsequent events (note).**



**Figure 6. Flesch reading ease score of entities' disclosures on Russia's invasion of Ukraine.**



#### 4 Discussion and conclusions

Using content analysis, this exploratory paper assessed the quantitative and qualitative aspects of the disclosure of Russia's invasion of Ukraine from listed European energy companies' financial or integrated reports in 2022.

When assessing the existence of information across sectors, the findings for SQ1 mostly indicate a reduced level of information on this event, with a higher level within the mandatory source selected (the note on subsequent events). This is particularly evident in the electricity sector. Furthermore, despite entities from the oil and gas sectors providing those disclosures within the components assessed in this study, the disclosure levels are not significantly different across this research sample. As for SQ2, figures are typically missing, despite being more commonly included in the mandatory source (the note on subsequent events). Regarding SQ3, the note on subsequent events usually provides unclear and vague information about the entities' exposure level (SQ3.2) and their likely future impacts (SQ3.3) of this non-adjustable event (SQ3.1). Those findings are consistent, for instance, with those by Honko et al. (2020). Those authors found, regarding the COVID-19 pandemic, that information within the notes on subsequent events is usually not fully disclosed or even scarce. This makes it difficult for users of financial statements to evaluate the risks associated with that event. In assessing how Australian non-governmental organizations communicate the impacts of the recent global financial crisis, Khanna and Irvine (2018) also found a lack of transparency. Finally, in their analysis of Portuguese companies on the information provided within the notes on subsequent events in general, Soares and Carvalho (2019) reached a similar conclusion.

To answer SQ4, a more specific qualitative analysis (discourse analysis) was conducted on the contents disclosed by entities within the different pieces of information proposed in this study. Despite the reduced research sample, some global conclusions and patterns can be seen, but none are related to the entities' industries or countries. Otherwise, they appear to be related to the nature of the entity or the nature of the information (voluntary or mandatory).

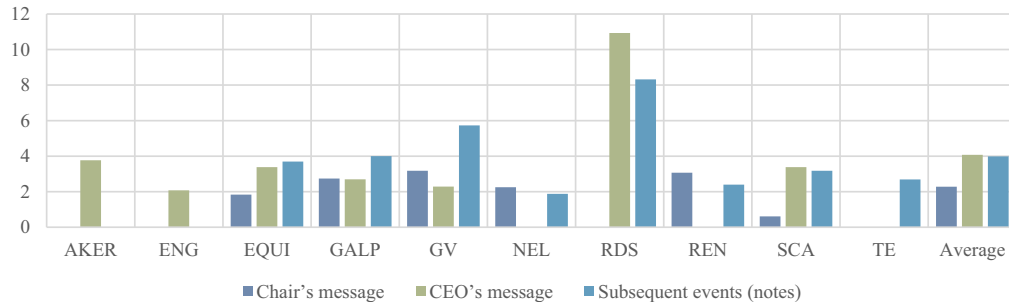
Accordingly, some entities' disclosure levels (SQ4.1) arose as outliers, despite the notes often indicating higher levels. Regarding the main topics or themes covered (SQ4.2), the information appeared to provide increasingly detailed and specific information from the Chair's message to the notes, with the message from the CEO as an intermediate area in this regard.

Following, and based on the theories of IM strategies resourced by entities in their reporting, this research also assessed the readability level (SQ4.3) and the different aspects of the messages' tone (SQ4.4) in the pieces of information where disclosures on Russia's invasion of Ukraine emerge. The readability level declines as the information content appears more specific and quantitative

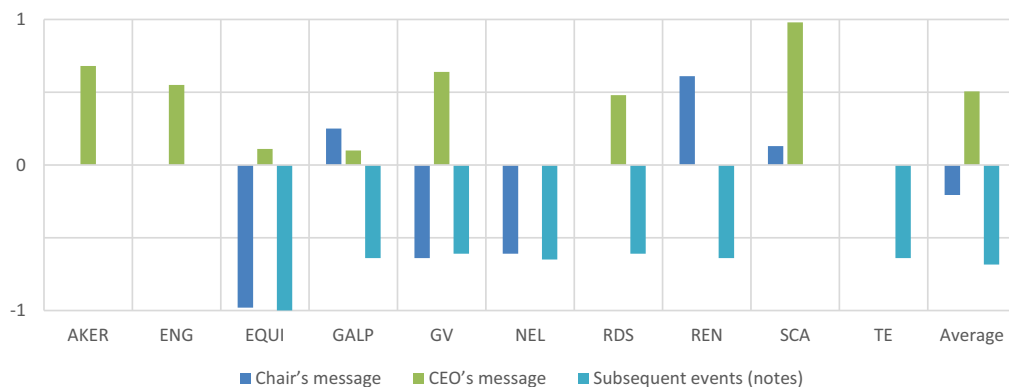
**Table 3. Analysis of the messages' tone for entities' disclosures on Russia's invasion of Ukraine**

Entities' Code	Chair's message	CEO's message	Subsequent events (notes)	Chair's message	CEO's message	Subsequent events (notes)
	Subjectivity			Sentiment		
TE						
ENG	Unknown	Subjective		Cooperative, joyful, assertive	Formal, joyful, inspirational	Formal
GALP	Unknown	Objective	Subjective	Joyful, formal, inspirational	Inspirational, confident	Formal
REN	Objective		Subjective	Joyful		Neutral
GV		Subjective	Subjective		Formal, cooperative	Formal
RDS	Unknown	Objective	Subjective	Admiring	Sceptical	Formal, sceptical
SCA		Objective	Subjective		Appreciative	Sceptical, formal
AKER	Unknown	Subjective		Sceptical	Joyful	
EQUI	Objective	Unknown	Objective	Cooperative	Sceptical	Neutral

**Figure 7. Sentiment magnitude of entities' disclosures on Russia's invasion of Ukraine.**



**Figure 8. Positivity/Neutrality/Negativity indices of entities' disclosures on Russia's invasion of Ukraine.**



(financial information as the focus). It appears that the CEO's message is often more subjective than the Chair's. It is, however, the most common characteristic found in notes on subsequent events. This can be a consequence of the previous findings (for SQ4.2) but can similarly be explained by a deliberate intention to conceal the message on the notes to hide the inherent risks and uncertainties since simpler (more readable) messages may improve users' judgment about the entities' outlooks (El-Sayed et al., 2021). The concealment strategy can also explain this assumption by proposing that managers can deliberately use language strategies to obfuscate communication (Aerts & Yan, 2017, Demaline, 2020; El-Sayed et al., 2021; Fisher et al., 2020; Riley & Luippold, 2015; Sydserff & Weetman, 2002). Those findings are strengthened by the high level of subjectivity and magnitude of the feelings particularly found within the messages on the notes of the subsequent events, despite also being, on the other hand, mostly neutral or formal in its tone as expected, considering it makes part of mandatory financial information which should have this qualitative characteristic.

Finally, there was a different pattern observed regarding the positivity/neutral/negativity indices of entities' disclosures on Russia's invasion of Ukraine across the pieces of information assessed. More specifically, there were more evident positive messages within the CEO's messages, compared to those found in the notes on subsequent events. These notes, being mandatory disclosure by nature, were mostly negative. In the first case, the positive and, at the same time, less neutral or formal messages found can evidence strategies of thematic manipulation to hide their risks and uncertainties (Brennan et al., 2010; Cho et al., 2010; Clatworthy & Jones, 2003; Melloni et al., 2017; Merkl-Davies & Brennan, 2007). Literature also indicates that when entities face riskier business or forecast analysis, they usually provide a more optimistic and optimistic tone (Schleicher & Walker, 2010).

Therefore, the entities' messages on their humanitarian efforts, for supporting their employees in the neighbourhood countries or even their willingness for applying sanctions against Russia

can indicate the rhetorical use of an emphatic acclaiming stance as well as an engagement language, which were prominent strategies found in the shareholders' letters, for instance, by Aerts and Yan (2017) and Brennan et al. (2010), respectively. It is worth stressing that entities can use this theme opportunistically when applying those strategies. This is highlighted, for instance, by Yang and Liu (2017). Regardless of their distinct object of analysis, those findings are consistent with Nik Ahmad's and Hossain's (2019) suggestion of the predominant rhetorical use of the entities' discourse. Overall, the findings from this paper are also aligned with those by Melloni et al. (2017), Fisher et al. (2020) and Pittrakkos and Maroun (2020), who indicated that disclosure genre, nature and location are the most relevant determinants of messages' tone. Therefore, they can be different across narrative types through distinct patterns that comprise their specific stylistic conventions. Those authors also found a shred of stronger evidence for the relationship between messages' tone and readability.

This paper has some limitations that need to be stressed. The relative absence of research on IAS 10 content, the limited research sample and the tools used for the analysis should be highlighted in this context.

Regarding the research on IAS 10, the findings from this research shed light on two possible reasons that may explain that. The first is possibly explained by the mostly qualitative-descriptive nature of the information provided under IAS 10, which is a resource used by most entities to the extent that this standard provides for the impossibility of not reliably measuring the financial impacts of such events. This restriction eliminates the possibility of quantitative analysis using this information, other than the possible disclosure levels. The second relates to the fact that such events are often presented as specific to each reporting entity, resulting in non-disclosure. This constraint does not allow researchers to validate, for instance, the compliance level with IAS 10 requirements, to only mention a single traditional line of investigation in the accounting area. Due to the limited sample size, the findings from this study can't be generalized to a different population, also limiting the use and analysis of the information collected. Finally, the proposed tools can also be seen as a limitation since the outputs provided by them are based on assumptions and underlying aspects that are usually not controlled by researchers.

Despite its limitations, this paper may contribute to the literature on this topic since it provides insights into the different patterns found by entities concerning a current topic that has relevant social and economic impacts worldwide.

Accounting literature using theories that explain entities' mandatory or voluntary disclosure levels was not the focus of this paper. To mention a few of the most traditional theories are agency, signalling, stakeholder theory, and positive accounting theory. The exploratory purpose of this research, which is mostly derived from its limited sample, does not lead to the identification of likely determinants (explanatory factors) behind the findings. Consequently, it is recommended that a greater sample and a wider variety of theories be used to observe the factors influencing entity disclosures on this topic in the future.

Those studies may employ either quantitative or qualitative approaches. Regardless of the research methods that will be used, the level of economic and political dependency between those entities concerning countries that are most economically or politically affected by this conflict represents an important research field. Research projects that could enlarge the sample to cover different sectors and countries (from Europe and outside this continent) could also be useful to achieve this purpose. Finally, distinct assessment tools and other pieces of financial information can also be included in future research. These tools can be specifically related to entities' risks and outlooks, as well as sustainability matters.

### Acknowledgments

Thanks to the Instituto Politécnico de Lisboa for supporting this project, so that this research can be completed and published.

### Funding

The Instituto Politécnico de Lisboa (project IPL/2022/REPUKRAINE\_ISCAL) provided the funding for this research.

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### Disclosure statement

No potential conflict of interest was reported by the author(s).

### Data availability statement

The data that support the findings of this study are available from the corresponding author, [F.A.], upon reasonable request.

### Correction

This article has been corrected with minor changes. These changes do not impact the academic content of the article.

### Citation information

Cite this article as: A discourse analysis of Russia's invasion of Ukraine by listed European entities from the energy-related sectors, Fábio Albuquerque & Paula Gomes dos Santos, *Cogent Social Sciences* (2023), 9: 2233790.

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