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Analysis of Value Creation Disclosures in Logistics Industry: Evidence From Integrated Reports

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ABSTRACT

This study aimed to determine reporting compliance by measuring the extent to which Integrated Reporting Framework content element is linked to value creation. The sample of the logistics industry study was gathered from Integrated Reporting Examples Database. Sentence-by-sentence content analysis was conducted on 11 integrated reports of logistics companies using a multi-weighted scoring tool and an Integrated Reporting Value Creation Checklist (IRVC) based on the literature and the International Integrated Reporting Council (IIRC) Integrated Reporting (IR) framework. Additionally, descriptive statistics were performed for subtitles of IRVC, Value Creation Scores, and the Integrated Report Specific Feature Scores. In the end, IR content disclosures of logistics companies were presented. The scoring results of the Content Analysis were interpreted in terms of each content element and each company scores. Additionally, descriptive statistics were applied for IRVC scores. The findings indicated that content items were highly aligned with value creation links, with the highest scores being determined in "business model" and the lowest scores in "performance," "outlook," and "risks and opportunities." In addition, it has been observed that there are noticeable differences among the company value creation scores in the current practice.

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1. Introduction

Globalization, economic crises, increasing demand for information, and rapid technological developments have required businesses to be transparent and accountable in their relations with their stakeholders. These global challenges have stimulated organizations to publish non-financial reports on the (positive/negative) effects of an organization's operations. Traditional financial reporting presents historical information and therefore has a backward look (ACCA, 2017), while integrated reporting has been oriented toward the future that seeks to express the links between the financial and non-financial performance drivers (Higgins et al., 2014). In addition, financial reporting focuses heavily on financial capital, whereas many organizations today take into account other resources/capital, such as human, technical, intellectual, social, and environmental capital (ACCA, 2017; Pistoni et al., 2018). Integrated Reporting (IR) represents a natural evolution of corporate reporting that aims to connect financial and non-financial information in a single document (Beerbaum et al., 2019; Pistoni et al., 2018). It is expressed as part of an evolving corporate reporting system in the International IR Framework, and it concentrates on the value creation ability of an organization in the short, medium, and long term (IIRC, 2021). IR Framework explains information to be included in an integrated report to assess an organization's ability to create value. However, it does not list things that will boost the quality of an organization's strategy or performance level (IIRC, 2021).

The participants of the IR Business Network expressed the benefits of adopting integrated reporting as enhanced integrated thinking and management capability, greater clarity on business issues and performance, improved corporate reputation and stakeholder relationships, efficient reporting, and increased levels of employee engagement and gross margins (ACCA, 2017).

Since the emergence of the IR concept, a growing body of conceptual works has examined IR's role, determinants, and objectives, the fundamental issues related to IR framework, and implementation. On the other side, empirical studies have paid attention to the quality and compliance levels of disclosures and value creation.

This study aimed to determine reporting compliance by measuring the extent to which each content element of IR Framework is linked to value creation. Scoring and content analysis were conducted in integrated reports of 11 companies in the logistics industry for the year 2020. Due to the diverse and wide-ranging contributions of the logistics industry to the economy and the social and environmental dimensions, logistics companies were determined as the research domain in this study. Thus, interpreting the results obtained in terms of value creation would be more efficient and additive. Outstanding contribution of this study is supporting organizations to prepare integrated reports of better quality and guiding policymakers in generating appropriate policies to promote the utilities of the reports prepared. This paper is organized as follows: Section 2 presents IR compliance and value creation literature. Section 3 is concerned with the methods of the study. Section 4 provides the results of the research. Finally, Section 5 presents the discussion and the future direction.

2. Literature Review

2.1 IR Compliance and Value Creation

Integrated reporting (IR) combines financial and non-financial environment, social information, and governance information into a single document (De Villiers et al., 2017). An IR seeks to demonstrate how the firm rethinks and combines its tactics and strategies in addition to illustrating accounting data (Abeysekera, 2013). It attempts to strike the right balance between short-term business needs and long-term value generation (Churet & Eccles, 2014). Therefore, IR displays higher quality on accounting (Atkins & Maroun, 2015), represents a positive relationship with company value (Barth et al., 2017), impacts the investors in a positive way (Serafeim, 2015), and increases the earnings of the company (Baboukardos & Rimmel, 2016).

A considerable amount of literature has been published on IR since the issuance of the IR framework in 2013. Preliminary work in this field focused primarily on the importance of IR concept with a transition to the main issues related to applying framework requirements (Abeysekera, 2013; Gary et al., 2011; Solomon & Maroun, 2012). Dumay et al. (2016) conducted a structured literature review regarding integrated reporting that aims to criticize the previously published research and identify the areas for further studies. They argued that the literature on integrated reporting mainly focuses on normative arguments for IR and highlights the need for more research examining IR practice. Similarly, Vitolla et al. (2019a) conducted a systematic literature review to consider the research from normative and descriptive perspectives. Their analysis indicated the need to investigate the concept of value creation, internal and qualitative determinants, and the content and quality of integrated reporting. In this regard, several attempts have been made to analyze the quality of reporting. For instance, Hindley (2012) evaluated the quality of integrated reports based on a checklist for measuring their compliance level and considering GRI guidelines for the South African mining companies in JSE. Vitolla et al. (2019b) considered the importance of stakeholders in the practice of IR and examined the relationship between stakeholders' pressure and IR quality. Their results suggested that pressures from employees, customers, shareholders, governments, and environmental protection organizations determine the integrated reporting quality. To contribute to the integrated reporting quality research, Vitolla et al. (2020) analyzed the relationship between board characteristics and integrated reporting quality according to an agency theory approach. Their findings confirmed a positive relationship between size, independence, diversity, and board activity with integrated reporting quality. Al Amosh and Mansor (2021) investigated Jordan's integrated disclosure level as a developing country case. While their results reported a high level of disclosure for the content elements of "risks" and "the basis of preparation and presentation," the disclosures of the other four content elements were presented at the medium level. Similarly, Kılıç and Kuzey (2018) examined the disclosure level of integrated reports in terms of IR framework content elements for the companies listed on Borsa Istanbul in Turkey. Additionally, they investigated the impact of corporate sustainability characteristics on the adherence level of integrated reports to the framework. Their analysis revealed that reports present generic rather than company risks; dismiss negative information, current financial, and non-financial initiatives separately; lack a strategic focus; and include backward-looking information. Moreover, they observed a significant and positive relationship between the disclosure scores and sustainability reporting, GRI adoption, sustainability index listing, and a sustainability committee's presence. Dragu and Tudor (2013) aimed to analyze financial performance's influence on social and environmental disclosure and measure the integration level of corporations that claim to publish integrated reports for 16 Asia-Pacific companies. The results suggested that financial ratios could be directly correlated, indirectly correlated, and non-correlated with non-financial information. At the same time, the integration process was attained at high, medium, or low levels, according to financial, social, and environmental information aggregation. Focusing on a business model and strategy, Sukhari and Villiers (2019) analyzed if companies relate their business model to their strategy in their integrated reports. They developed a disclosure quality analysis framework that exhibits the relationship between the company's business model and strategy. After analyzing the high-quality integrated reports of 20 JSE-listed companies for 2014, they observed strategic goals presented more transparently. However, they could not find links between these goals to business models, key performance indicators, risks, or opportunities. From an integrated reporting and stakeholder engagement view, García-Sánchez and Noguera-Gámez (2017) asked whether increased integrated information could mitigate information asymmetry since it provides additional information to market participants. They examined the relationship between integrated information disclosure and the degree of information asymmetry and found that integrated information mitigates agency problems. Obeng et al. (2021) examined integrated reporting from the agency theory perspective. Their analysis of a sample from 35 countries indicated several results. First, they found that more extensive reports are associated with lower agency costs and fewer year-to-year changes in agency costs. Second, a more negative relationship was found between the level of IR implementation and agency costs in stakeholder-oriented countries than shareholder-oriented countries. Finally, they found that the effectiveness of IR is greater in diversified firms confronting greater agency problems.

The concept of value creation expresses the most basic purpose of IR (IIRC, 2021). Value creation, preservation, or erosion is expressed as "*the process that results in increases, decreases or transformations of the capitals caused by the organization's business activities and outputs*" in IR Framework released in 2021. Aras et al. (2019) express integrated reporting as a tool to convey the value created by institutions to their stakeholders in the shortest, most transparent, and most precise way with a holistic and strategic perspective. The inputs of value creation represent the ability of the firm to adapt to the rapidly changing environment and its potential to reach or maintain a competitive level (Pavlopoulos et al., 2017). Additionally, value creation helps investors understand the company's power level by showing how the firm deals with environmental, economic, and social risks and seizes opportunities (Churet & Eccles, 2014; Khanaghah et al., 2019). Due to an increasing highlight regarding value creation, the scope of integrated reports is progressing considerably. For this reason, current literature has focused on value creation with detailed analyses. For instance, Pavlopoulos et al. (2019) examined the association between the quality of integrated reporting disclosure and a firm's market valuation and found a positive relationship between IR quality and value creation. Dilling and Harris (2018) used content analysis to examine the long-term value creation disclosures of publicly traded Canadian energy and mining companies' annual financial and sustainability reports. Their results indicated an increase in the quality and the number of the companies' disclosures. Beerbaum et al. (2019) applied content analysis to measure the value creation disclosures of integrated reports for the selected European companies. They found significant differences in content and quality between companies and the topics evaluated. Similarly, Lee and Yeo (2016) examined the association between cross-sectional variation in integrated reporting disclosures and firm valuation after adapting the implementation of Integrated Reporting. They confirmed the positive association between firm valuation and IR disclosures. A recent study by Aslanertik and Yardımcı (2022) proposed a holistic approach that involved two content analysis methods with different perspectives. Firstly, they constructed a multi-weighted scoring system using IR content elements and previously developed indexes in the literature. Then, they applied two different content analyses to understand the relationship between the level of compliance and value creation linkages.

In brief, these studies provide important insights into the value creation disclosures of integrated reports. However, there is still a gap in measuring the value creation linkages of content elements of the IR framework for different industry practices. For this purpose, this study aimed to determine the level of reporting compliance by measuring the extend each IR Framework content element is linked to value creation in the logistics industry.

2.2 Value Creation in Logistics Industry

Logistics represents the transport systems in a broader concept. It includes the transportation modes, transport terminals, urban transportation, and the management of those (Rodrigue et al., 2016). Transportation modes consist of water (shipping), land (rail, road, pipeline), and air, and support the mobility of goods and passenger traffic mobility. Transport terminals are the linkage facilities in logistics processes where goods and passengers are assembled or dispersed and act as interchange points of transport modes. The conventional aim of logistics is to create value for the customer. However, due to the changing macro-environmental conditions and microenvironmental expectations in the last few years, creating value in logistics has become a broader concept (Azadegan et al., 2020). Each logistics function requires enhancement in value creation because the multiplicity and complexity of structures are growing in the conventional use of logistics (Perret, 2013). Although logistics performance has traditionally been measured in terms of cost, time, and accuracy, governments and other stakeholders (such as customers) are now putting a lot of pressure on logistics companies to follow responsible practices (Shaw et al., 2010). In addition to the economic contribution of the logistics industry, it has a strong effect on the supply chain's social and environmental impacts because logistics activities tie companies, governments, and people in the network (Piecyk & Björklund, 2015). Environmental sustainability issue in logistics is essential because logistics activities rely mainly on fossil fuels and energy. In addition, the social sustainability issue is critically vital because logistics companies now have a responsibility not only to their company partners but also to their social partners. It is also a fact that in today's global information world, companies cannot be considered independent and separate from the society they are in. Responsible consumption and production, climate action, affordable and clean energy, life below water, life on land, sustainable cities and communities, reduced inequalities, industry, innovation and infrastructure, decent work and economic growth, clean water, good health, strong institutions and partnership goals of UN are all highly related to the fields of activity of logistics companies. Integrated reporting, therefore, is a crucial tool in demonstrating the value creation of logistics companies to all their stakeholders in those sustainability areas. However, although integrated reporting has not yet become widespread in the logistics sector, the focus on sustainability and value creation is 53 percent in corporate social sustainability reporting (Piecyk & Björklund, 2015).

3. Research Methodology

The study aimed to analyze the relation levels of the content elements to value creations in the integrated reports of companies in the logistics sector. The content analysis method was used to achieve this goal. Firstly, the Integrated Reporting Value Creation Checklist was created based on previous studies and the IR framework (Cooray et al., 2020; IIRC, 2021; Pistoni et al., 2018). Then a multi-weighted scoring tool was developed following corporate social reporting (Daub, 2007; Kolk, 2008; Skouloudis & Evangelinos, 2009;Wiseman, 1982) and integrated reporting literature (Altarawneh & Al-Halalmeh, 2020; Aslanertik & Yardımcı, 2022; Cooray et al., 2020; Pistoni et al., 2018). Secondly, sentence-by-sentence content analysis was applied to examine the relation levels of the content elements to value creation.

Due to the global functioning of the logistics sector and its global economic, social, and environmental effects, it was selected as the research area in this study. Thus, interpreting the results obtained in terms of value creation would be more efficient and additive. The study sample from the logistics sector was gathered from Integrated Reporting Examples Database. Eleven integrated reports of the companies were included for the content analysis and scoring (Table 1). Sample of the study was sufficient to represent the logistics industry because it included the transport modes (air, sea, and land) and transport terminals.

Table 1. Sample of the Study

Company	Logistics Field
New Zealand Post	Parcel delivery
MPA Singapore	Maritime
Airports Company South Africa	Airport
MITSUI O.S.K. LINES	Maritime
Air Traffic and Navigation Services Soc Ltd.	Air traffic and navigation
Deutsche Bahn Universe	Logistics/Railway domain
Pacific Basin	Maritime
Munich Airport	Airport
Tokio Marine Holdings	Maritime
Royal Schiphol Group	Airport
Transpaco Ltd.	Distributor

3.1 Research Model for Value Creation

Content analysis is used as a convenient approach to analyze the content of corporate reports (Altarawneh & Al-Halalmeh, 2020; Bell et al., 2018). Michelon and Parbonetti (2012) state that content analysis is a method for codifying the content of a piece of writing into categories based on the selected criteria. Examining the existence/absence of each item is the most commonly used method in the related literature (Altarawneh & Al-Halalmeh, 2020; García-Sánchez et al., 2013; Krippendorff, 2004). Several studies investigating corporate social and environmental disclosures have applied this method (Haniffa & Cooke, 2005; Kılıç & Kuzey, 2018; Michelon & Parbonetti, 2012; Roca & Searcy, 2012;). Since the content analysis can be quantitative or qualitative, the present study applied both quantitative and qualitative content analysis to comprehend and interpret each content element's value creation linkage levels. This research aimed to evaluate the extent to which each content element of the IR framework is linked to value creation. This study, therefore, used sentence-by-sentence content analysis to determine the relationship between the content elements and value creation.

Previous studies used variant scoring methodologies to evaluate non-financial reports as a benchmark tool (Clarkson et al., 2008; Kolk, 2008; Morhardt, 2010; Skouloudis et al., 2009). Such scoring systems allow businesses to compare their reporting practices with their peers regarding the information that needs to be disclosed in the reports. In addition, the companies assist themselves as they get feedback on the reporting procedures they perform, and consequently, they ameliorate the relationship with their stakeholders (Skouloudis et al., 2009). More recently, similar scoring systems have been used in studies analyzing the integrated reporting quality of the companies (Pistoni et al., 2018) and research analyzing the value creation connections of integrated disclosures (Beerbaum et al., 2019).

Within the scope of content analysis, the scoring tools have been developed to evaluate the relation levels of the content elements to value creations in the reports. Table 2 and Tables 3 present the Integrated Reporting Value Creation Checklist (IRVC) and multi-weighted scoring tools, respectively.

The process of analyzing and scoring the value creation links of each content item in integrated reports includes the following steps:

1. Read and inspect the 11 examples of integrated reports for 2020 to have information about the general view of the prepared contents.
2. Determine whether the content item is presented under a separate heading or in the form of illustrative models, charts, tables, sentences, and paragraphs.
3. Document the example expressions of value creation connections of each content element.
4. Score the value creation links of each content item according to the documentation.
5. Benchmark the companies in the scope of the sample.

The content analysis in the study depends on the researcher, which may impact the quality of generalizable results. For this reason, the integrated reports were interpreted and scored by both authors to achieve value creation connections and increase the findings' verification and validity.

Table 2. Items of Integrated Reporting Value Creation Checklist (IRVC)

Integrated report specific features	Abbreviations	Areas of integrated reporting checklist
Report type	RNAME	Assurance and reliability area
Third party verification	VERF	
Existence of GRI Index in IR	GRIEX	
Existence of financial report in IR	FREX	
Number of pages of IR	IRNUM	Conciseness
Number of pages on sustainability issues	SUSNUM	
Content elements		
Organizational overview and external environment		
Governance		
Business model		
Risks and opportunities		
Strategy and resource allocation		
Performance		
Outlook		
Basis of preparation and presentation		

Table 3. Scoring Tools for the Items of the Integrated Reporting Value Creation Checklist (IRVC)

Score	Explanation
Relation levels of content elements to value creation	
Score	**Explanation**
0	Not accomplished (No value creation linkage related to a specific indicator or content element is provided)
1	To some extent (Low level of value creation linkage related to a content element is provided)
2	Accomplished (High level of value creation linkage is identified)
3	Exemplary (Excellent level of value creation linkage is defined with illustrative diagrams, tables, etc.)
Number of the pages of an integrated report	
Score	**Explanation**
1	From 0 to 100 pages
2	From 101 to 200 pages
3	From 201 to 300 pages
Sustainability-related information of an integrated report	
Score	**Explanation**
1	From 0 to 50 pages
2	From 51 to 100 pages
3	More than 100 pages
Type (name) of the report	
Score	**Explanation**
1	If the report type (name) includes "Integrated Report"
0	If the report type (name) does not include "Integrated Report"
Third party verification	
Score	**Explanation**
1	If the third party verification exists
0	If the third party verification does not exist
Existence of GRI Index in the report	
Score	**Explanation**
1	If GRI Index exists
0	If GRI Index does not exist
Existence of financial report within the report	
Score	**Explanation**
1	If financial report exists
0	If financial report does not exist

3.2 Content Elements of the Integrated Reporting Framework

The IR Framework defines its objective as establishing guiding principles and content elements that govern the overall content of an integrated report and explaining the fundamental concepts that underpin them (IIRC, 2021, p. 6). Seven guiding principles underpin the preparation and presentation of an integrated report, namely Strategic focus and future orientation, Connectivity of information, Stakeholder relationships, Materiality, Conciseness, Reliability and Completeness, and Consistency and comparability (IIRC, 2021, p. 7). An integrated report includes eight content elements fundamentally linked to each other and is not mutually exclusive, including Organizational overview and external environment, Governance, Business model, Risks and opportunities, Strategy and resource allocation, Performance, Outlook, and Basis of presentation (IIRC, 2021, p. 8). Table 4 presents brief explanations of the content elements of IIRC Framework.

Table 4. Content Element of IR Framework

Content elements	The questions that each content element answers
Organizational overview and external environment	What does the organization do, and what are the circumstances under which it operates?
Governance	How does the organization's governance structure support its ability to create value in the short, medium, and long term?
Business model	What is the organization's business model?
Risks and opportunities	What specific risks and opportunities affect the organization's ability to create value over the short, medium, and long term, and how is the organization dealing with them?
Strategy and resource allocation	Where does the organization want to go and how does it intend to get there?
Performance	To what extent has the organization achieved its strategic objectives for the period? What are the outcomes in terms of effects on the capital?
Outlook	What challenges and uncertainties are the organization likely to encounter in pursuing its strategy, and what are the potential implications for its business model and future performance?
Basis of preparation and presentation	How does the organization determine what matters to include in the integrated report? How are such matters quantified or evaluated?

Source: Adapted from IIRC, 2021 Framework

4. Results

This section presents the sample companies' value creation scores and each content element's scores. Table 5 provides the results from the descriptive analysis of each content element, value creation total scores, and the specific features' scores of the integrated reports.

Table 5. Descriptive Statistics Results in Terms of Compliance Level Scores and Value Creation Scores of Sample Companies

Descriptive statistics	Content elements' scores	Value creation total scores	Integrated report specific features scores
Mean	20,875	15,181	5,6363
Std Dev.	1,8077	1,6992	0,5094
Kurtosis	-0,54479	-1,2150	-1,1855
Skewness	0,438314	-1,2150	0,0929
Range	5	16	5
Max.	24	24	8
Min.	19	8	3
Number	8	11	11

4.1 Content Element Scores

Table 6 illustrates each content element's scores linked to value creation and percentages. These results indicate that the "Business Model" disclosure has the highest disclosure score of 24 over the maximum score of 24. This result is consistent with the study of Aslanertik and Yardımcı (2022) but not with the work of Beerbaum et al. (2019). Aslanertik and Yardımcı (2022), in their study reveal that companies are concentrated more on "business model," "strategy and resource allocation," and "organizational overview and external environment" elements. On the other hand, previous studies analyzing the disclosure levels of integrating report content elements have found both high disclosure levels (Albetairi et al., 2018; Sofian & Dumitru, 2017) and low disclosure levels (Pistoni et al., 2018) for business models. The content elements of "governance" and "Strategy and resource allocation" have scores of 22;

“Organizational overview and external environment” and “Basis of preparation and presentation” and “Basis of preparation and presentation” have scores of 21; and “Performance,” “Outlook,” and “Risks and opportunities” have scores of 19, respectively. Similar to the result of this study, Cooray et al. (2020) and Beerbaum et al. (2019) observed good performance at value creation disclosure of “Governance.” In general, therefore, it seems that logistics companies mainly focus on “business model,” “governance,” and “Strategy and resource allocation.” Comparatively lower scores were obtained in “Organizational overview and external environment” and “Basis of preparation and presentation.” The lowest scores were recorded from “Performance,” “Outlook,” and “Risks and opportunities.” “Performance” and “Risks and opportunities” have relatively lower coverage in line with the findings of Cooray et al. (2020). However, the score of the “Outlook” element differs. Compared to this study, Cooray et al. (2020) observed a high level of coverage in the content element of “Outlook.” Differences in scores may be due to differences in the sectors under examination. The current study examines logistics sector companies in different countries, while Cooray et al. (2020) investigates the companies from various sectors in a specific country. IR is an advanced corporate reporting that includes financial and non-financial information and has the philosophy of integrated thinking (Altarawneh & Al-Halalmeh, 2020). Therefore, the findings of previous studies are noteworthy to reach an overall view of the evolution of high-quality integrated reports and their ability to create value. Illustrative business models and detailed explanations with linkages to value creation in most companies were observed through the content analysis process. Since the analysis reveals maximum score of 24 and a minimum of 19 out of 33, all scores exhibit similarity, indicating that the companies tend to disclose their value creation linkages for all content elements. However, considering a maximum of 33 points, these results suggest that the value creation links of content items still need improvement.

Table 6. Content Element Scores Linked to Value Creation

Content elements	Content element score	Percentage (Max. of 33 points)
Organizational overview and external environment	21	%64
Governance	22	%67
Business model	24	%73
Risks and opportunities	19	%58
Strategy and resource allocation	22	%67
Performance	19	%58
Outlook	19	%58
Basis of preparation and presentation	21	%64

4.2 Value Creation Scores of Sample Companies

Table 7 indicates the value creation scores of sample firms. Airports Company South Africa receives the highest score of 24 over 24 points. This company’s score can reflect a more substantial commitment to IR by associating all content elements of its report with value creation. Conversely, Deutsche Bahn Universe demonstrates the lowest commitment to IR.

Table 7. Value Creation Scores per Each Sample Firm

Company	Company value creation scores
New Zealand Post	16
MPA Singapore	11
Airports Company South Africa	24
MITSUI O.S.K. LINES	22
Air Traffic and Navigation Services Soc Ltd.	23
Deutsche Bahn Universe	8
Pacific Basin	11
Munich Airport	11
Tokio Marine Holdings	15
Royal Schiphol Group	16
Transpaco Ltd.	10

The authors expected that the logistics sub-sectors characteristics could explain the scores' differences. However, the results show that the score differences are between companies rather than sub-sectors. For example, while a company in the airline industry got the highest score, another company from the same industry got the second-lowest score.

Additionally, this study employs other report-related evaluation points such as report type, third-party verification (Pistoni et al., 2018), the existence of the GRI Index, the existence of the financial report, number of pages of the whole report (Cooray et al., 2020; Pistoni et al., 2018), and number of pages on a sustainability topic. The report-specific scores of the integrated reports included in the IRVC and measured according to the assessment methodology described in Tables 3 can be seen in Table 8.

Table 8 exhibits the total score calculated as the sum of Report Specific Feature Scores and Value Creation Scores. As mentioned in the IR framework, an integrated report presents the strategy, governance, performance, and prospects of an organization in the context of its external environment, leading to the creation, preservation, or erosion of value over the short, medium, and long term. Therefore, the total scores of each company report can be examined to understand the general IR disclosure performance levels. It is apparent from Table 8 that there is a variation among the total scores. For instance, Air Traffic and Navigation Services Soc Ltd received the highest score of 30, whereas Transpaco Ltd. got the lowest score of 14.

Table 8. Total Combined Scores

Company	Report specific feature scores	Value creation scores	Total scores
New Zealand Post	4	16	20
MPA Singapore	8	11	19
Airports Company South Africa	5	24	29
MITSUI O.S.K. LINES	3	22	25
Air Traffic and Navigation Services Soc Ltd.	7	23	30
Deutsche Bahn Universe	8	8	16
Pacific Basin	5	11	16
Munich Airport	6	11	17
Tokio Marine Holdings	5	15	20
Royal Schiphol Group	7	16	23
Transpaco Ltd.	4	10	14

4.3 Presenting the Logistics Industry Specific Integrated Reporting Content Disclosures

This section discusses findings and interpretations regarding the reports' contents in the framework of a logistics viewpoint.

Organizational overview and external environment: Part of the logistics companies includes the structure of the organization, board of directors, senior managers, and messages from chairs and chief executives. This part is similar to other sectors; it is not specific to the logistics industry. However, in addition to similarities with other sectors in external environmental factors, there are differences in the subjects emphasized. Therefore, the external environment is examined under three titles, from general to specific:

General economic conditions: Logistics companies' external environment contents generally focus on eight critical global issues that impact the firms' operating environment. These are global economy, US-China trade, coronavirus pandemic, digitalization and innovation, geopolitical tensions, social unrest, oil price, decarbonizationm, and sustainability.

Regional or country level economic conditions: these include economic growth, demand, unemployment, consumption, credit rating, investments, and debt burden.

Logistics subsector overview: this includes aviation market, shipping market, cargo growth, passenger growth, economic performance of the logistics industry, fuel costs, operating costs, energy demand, oversupply of ships, and gas revolution.

Governance: The governing body's direction in exerting ethical and effective leadership is called governance (IIRC, 2017). An organization's governance plays a key role in the company's value creation process. Therefore, linking governance and value creation in integrated reports is vital. For example, it has been observed that the integrated reports of logistics companies contain identical governance sections that relate the appropriate governance controls, standards, and oversight with different aspects of their value creation (i.e., material information on the company's performance).

Business model: In the business model section of logistics companies, capitals (financial, intellectual, human, societal, manufactured, and natural) are taken as key inputs and transformed through business activities (management and operations) and in the end, the outputs (what is delivered) and outcomes (what is impacted) are displayed with a visual diagram.

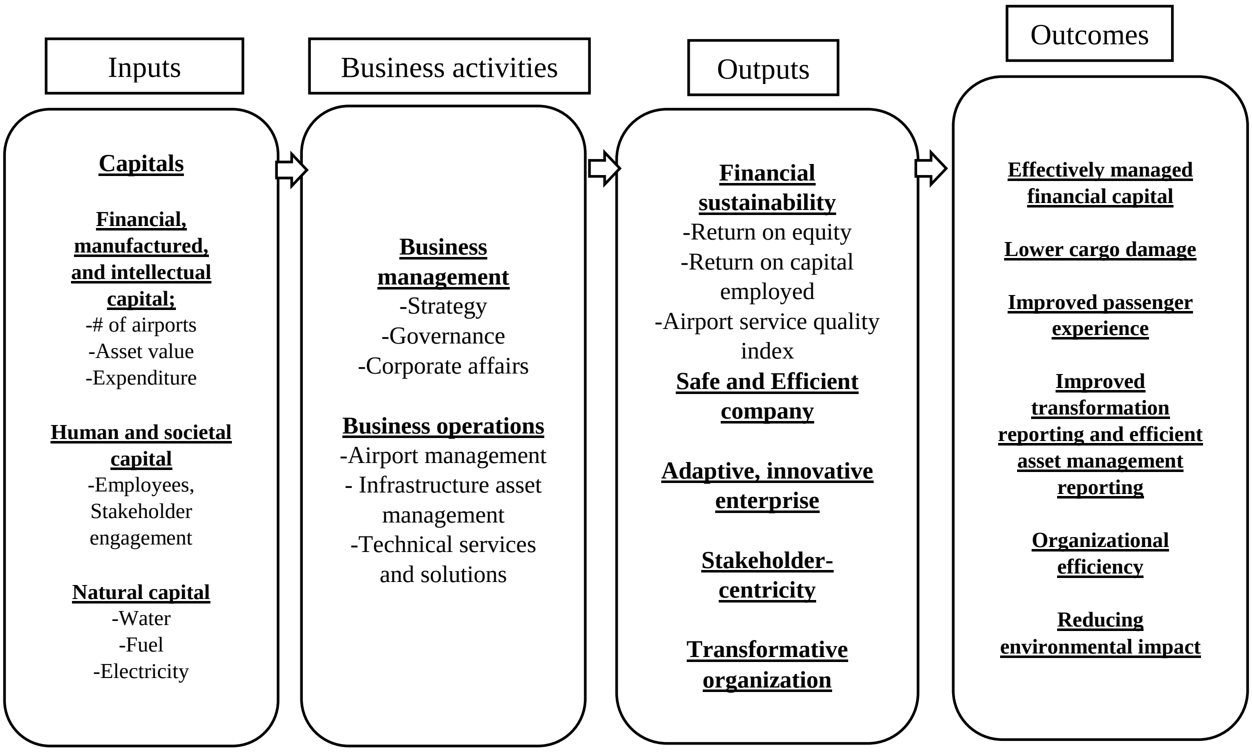

Figure 1. An Example of a Part of the Business Model in a Logistics Company
Source: Created by the authors

Risks and opportunities: Integrated reporting is a communication tool for logistics companies by revealing how they mitigate risks and leverage opportunities. They develop risk and opportunity management approaches or systems by communicating and consulting with internal and external stakeholders. The major risks the companies are indicating in their reports are economic risks such as risks arising from interest and exchange rates fluctuations, corona pandemic, attack on cargo or passenger traffic, terror, compliance risks, corruption, accidents, natural disasters, fire, failure to pass a safety inspection, water damage, loss or impairment hub, discontinuation or reduction in traffic, cyber threats, geopolitical tensions, social unrest, bunker price, insufficient growth opportunities, unfavorable operating conditions in target markets, unlawful acts, inability to reduce environmental impacts, transition to a low-carbon society, oil pollution, piracy, inability to attract, and development and retainment of key skills. They are also developing and applying mitigation strategies through intelligence monitoring, ethics management, consultancy and advisory services, engagement plans, accreditations, value-based leadership culture, crisis management plans, and optimized operating models.

Strategy and resource allocation: This content answers the question of "where does the organization want to go and how does it intend to get there?" The logistics companies preferred to answer this question with the mission, vision, and value statements and used illustrations, graphs, and figures to indicate strategy objectives. As a sustainable organization, they presented their constantly updated long-term and short-term strategies to create value and proactively respond to the macro environment.

Performance: The content includes KPIs and progress metrics transparently and clearly. Logistics companies highlighted the alignment of strategic objectives with the KPIs. Generally, performance under separate titles indicates the revenue, profit, concession, assets, expenditures, ROE, EBITDA, and gearing ratio. They also showed with icons whether they achieved, missed, or were on track to meet the objectives and targets.

Outlook: Logistics companies highlighted the key themes influencing and shaping the logistics industry, including sustainability, disruptions in supply chains, digitalization, epidemics/pandemics, interconnectivity, competition, liquidity requirements, crew supplying, and changing customer demands by providing an outlook on future market trends.

Basis of preparation and presentation: Logistics companies generally provided their reporting scope, boundary, and frameworks under separate titles such as "about this report," "reporting approach," and "materiality related headings." They summarized the organization's materiality determination process and described the reporting boundary and the methods to evaluate material issues and disclose their linkages to value creation.

5. Conclusion and Discussion

This study aimed to measure the disclosure level of integrated reports of logistics firms by analyzing content elements' value creation linkages. The two researchers conducted a sentence-by-sentence content analysis for 11 integrated reports for the year 2020. Sample reports from the logistics sector were obtained from Integrated Reporting Examples Database. For analysis, an Integrated Reporting Value Creation Checklist (IRVC) and a multi-weighted scoring tool were constructed by following the checklist presented by the framework of Pistoni et al. (2018), IRQ Index of Cooray et al. (2020), Beerbaum et al. (2019) and Altarawneh and Al-Halalmeh (2020).

The research results are presented for Value Creation Scores and Report Specific Feature Scores. Additionally, the presented descriptive statistics for both different scorings can be seen in Table 5. Table 8 summarizes the total scores as a combination of value creation scores and report-specific feature scores to review the overall performances of the logistics sector industry reports. The findings of the value creation analysis revealed the focus of companies on "business model" (%73), "governance" (%67), "Strategy and resource allocation" (%67), "Organizational overview and external environment" (%64), "Basis of preparation and presentation" (%64), "Performance" (%58), "Outlook" (%58), and "Risks and opportunities" (%58), respectively. Some content elements received identical scores; however, as observed, the integrated reports' value creation scores differed. The authors expected that the differences in the scores could be explained by the characteristics of the logistics sub-sectors. However, the results showed that the score differences were between companies rather than sub-sectors. For example, while a company in the airline industry got the highest score, another company from the same industry got the second-lowest score. Therefore, it would be appropriate to evaluate the results on a company-specific basis, not a sectoral one. If a company aims to create value, the mission of any firm must be defined in terms of its main value activities. There are a variety of ways for businesses to produce value. Each has its value propositions, client roles, and value appropriation processes. In other words, they reflect various business models.

Value creation disclosures in integrated reports of logistics companies generally focus on increasing value for customers, partners, people, networks, the environment, and their ability to deliver a strong commercial outcome. Stakeholder engagement is a crucial emphasis of logistics companies in value creation because they operate in a multi-actor industry and these activities directly or indirectly affect many stakeholders. Board members, governments, intergovernmental organizations, education entities, transportation service providers, adopted charities, employees, media, contractors and suppliers, public, partners, ministries and statutory boards, customers (i.e., shippers, forwarders, agents, brokers, seafarers, ship/vehicle owners, etc.), and unions are some examples of mentioned stakeholders. In addition, in the reports logistics firms mention the areas of decarbonization, protecting ecosystems, health of staff and people, climate change, attractive returns (more profits), community engagement, high quality workforce, investing in employee, amenable and positive working conditions, inclusive culture, attraction and retainment of superior talent in a skills-scarce environment, skills development, enhancement of competencies of employees, cargo growth, economic value, social value, environmental value, excellent service, digitalization, transport value chains, and efficient, resilient, and green shipping where they create value.

The findings of this study lead to some functional (theoretical) and practical implications.

Concerning the theoretical contribution, this paper emphasizes that IR can enhance the understanding of the value contribution of companies. For the purpose of analysis, this research presents an Integrated Reporting Value Creation Checklist and a newly constructed scoring tool for IR reporters. Previous work has primarily focused on the importance of the IR concept (Abeysekera, I., 2013; Gary et al., 2011; Solomon & Maroun, 2012) and the main issues related to applying framework requirements (Albetairi et al., 2018; Al Amosh & Mansor, 2021; Herath & Gunarathne, 2016; Kılıç & Kuzey, 2018). Despite this, very few studies have investigated reporting compliance by measuring the extent to which each content element of IR Framework is linked to value creation. Therefore, the findings of this study are important as they reveal the overall performance that emerges through integrated information and the value creation links of this information. In addition, this study advances the current literature by focusing on one specific industry. At the end of the study, the value creation content created specifically for the logistics industry is like creating resources for the managers and comparing with different sectors in an academic sense. As stated in the IIRC framework, the integrated report focuses specifically on an organization's ability to create value in the short, medium, and long term. Thus, it puts a holistic emphasis on strategic focus and future orientation, the connectivity of information, and the capitals and their interdependencies, and emphasizes the importance of integrated thinking within the organization (IIRC, 2021, p. 3). The present study primarily aims to support policymakers and regulators by emphasizing the importance of measuring and reporting value and assist companies to prepare value-creating reports for stakeholders. The study's topic and content offer managers a novel and contemporary perspective to understand the importance of each content category of IR, which should be viewed as investment decision variables. In addition, with the help of the apparent linkage between compliance to the IR and value creation, managers and investors should be aware of the economic impact of the non-financial data, such as social and environmental expenditures. This study is also interesting for investors. The importance of looking at output and outcome variables and input variables in investment decisions has been emphasized. Furthermore, it can be deduced from policymakers and regulators from this paper that there is a need for intensive initiatives to promote integrated reporting. Integrated reporting aims to draw the firm's activity field's limits and provide accurate data about the service and the products. However, the statement that the accountants mostly confirm is the idea that integrated reporting increases trust in the firm because of the increased transparency and high-quality reporting. In this regard, it can be concluded that declarations that are open to the general public and transparency in financial records can lead to positive outcomes for companies.

A few limitations must be considered when evaluating the study's findings. However, these limitations may provide fertile ground for future research. First, the results might not apply equally to other sectors with different value creation outcomes, such as consumer markets or governmental organizations. New studies could employ value creation and IR scoring for other industries to compare industrial differences and similarities. Second, the results are based on eleven logistics companies from the IR database, with integrated reports coming from a single year. Accordingly, in terms of value creation analysis, the study does not represent the actual status of created values of logistics companies. Additional analysis of environmental, annual, and CSR reports may extend the results of this study to broader value outcomes. Finally, the methodology of this study is based on self-reported company disclosures. Given the possibility of corporate greenwashing, future studies can use new models and analyze broader media to obtain more reliable results.

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