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# Moving from Social and Sustainability Reporting to Integrated Reporting: Exploring the Potential of Italian Public-Funded Universities' Reports

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**Abstract:** Over recent years, the meaning of accountability has evolved and has reshaped what public sector institutions are expected to account for and how. Consequently, a large number of initiatives have emerged promoting non-financial reporting. In this context, public universities have started to experiment with sustainability reporting initiatives, but these efforts are still limited and challenged by the parallel development of multiple forms of reporting, which include integrated reporting (IR). IR has been interpreted as a further step in the reporting journey, suitable for representing the creation of public value and addressing accountability pressures. The current research aims at understanding if and how IR constitutes a feasible next step for improving the reporting practices of public universities. For this purpose, the research carries out a content analysis of social or sustainability reports written by a number of Italian public universities to find out which of the key elements of IR have already been included in such reports. Results show that some of those elements are already included, but often in a fragmented and non-homogeneous way. The findings pave the way for further considerations on how the potential adoption of IR may strengthen the value of social and sustainability reporting by integrating the information reported in different documents, fostering toward a bureaucracy that is more sustainable and providing more opportunities of innovation in reports on public sector organizations' accountability.

**Keywords:** integrated reporting; sustainability reporting; social report; public universities; content analysis; Italy

## 1. Introduction

Public sector organizations can be considered to be subject to higher accountability expectations than the private sector because they are legitimated through public contracts [1]. Indeed, public sector organizations are expected to be accountable to the general public and specifically to citizens as taxpayers because they use public resources to produce public value [2] for a wide and complex range of actors and interests. In particular, over the last few decades, economic, social and political changes have shaped the meaning of accountability in the public sector, revising and broadening what public sector institutions are expected to account for and how they have to account for it. The widespread development of New Public Management (NPM) with its focus on performance measurement has reinforced the pressures on public sector organizations to account for both financial and non-financial performance, and to be accountable for the results achieved [3]. Performance measurement and non-financial reporting are examples of changes that occurred to improve the accountability of public sector organizations [4]. Subsequently, public value management has emerged as a new approach

to government, going beyond the emphasis on efficiency and effectiveness brought about by NPM and focusing on the key mission of public sector organizations and ultimate goal of their activities, namely the creation of public value [2]. In this context, public sector organizations are expected to become able to account for the value they create.

According to the interpretation of accountability as “a relationship between an actor and a forum, in which the actor has an obligation to explain and to justify his or her conduct, the forum can pose questions and pass judgement, and the actor may face consequences” [5] (p. 450), the tools used by the actor to explain their conduct to the forum become pivotal. Therefore, the current research focuses on the reporting tools adopted by public sector organizations to understand their efforts to address accountability pressures [6].

In particular, the research focuses on a type of public sector organizations represented by public-funded universities. This interest is nurtured by the relevant changes that occurred in this sector over the last decades. The influence exercised by NPM reforms, the Bologna Process and the emergence of the so-called third mission, the reduction of government investments in the higher education field and the consequent introduction of performance based funding can be considered among the key drivers of a significant metamorphosis of universities [7,8]. Consequently, universities have undertaken several reforms driven by the growing pressures to strengthen their performance management systems and reporting tools and to improve the disclosure of value they created, thereby enhancing their accountability towards key stakeholders [9,10].

Therefore, multiple forms of non-financial reporting have emerged. Following the adoption of diverse reporting practices in the public sector, including sustainability and integrated reporting [6,11,12], the higher education field has started to embrace multiple reporting approaches, such as intellectual capital reporting [10,13,14], sustainability reporting [15,16], social reporting [17,18], and more recently integrated reporting [19,20].

Despite the growing attention paid to these practices, their implementation still appears to be limited [15,21], pointing out the need to further investigate prospects for improving current reporting approaches. The interest in this topic is made evident not only by the growing academic debate, but also by recent international initiatives, as the project launched by the British Universities Finance Directors Group (BUFDG) in 2016 aimed at understanding how universities could adopt Integrated Reporting (IR) and help them to tell their value creation “story” in a better way. Indeed, among the different reporting approaches, IR is gaining momentum as a tool suitable for building and communicating connections between all the factors that affect an organization’s ability to create value over time [22]. In particular, it has been considered as a possible step further in the reporting journey, representing an incremental next phase which enhances sustainability reporting [12,19,21,23,24]. The underlying assumption is that IR could incorporate social/sustainability reporting into financial reporting, thereby improving the social/sustainability reporting itself [23] and providing more opportunities to report on public sector organizations’ accountability [12]. Given the still limited research on the topic, the current research aims to contribute to this debate with a focus on universities [19,21,25,26] by investigating whether and to what extent IR may be adopted by universities moving from the currently more widespread forms of social/sustainability reporting in order to improve their reporting practices and reinforce accountability.

To fulfil the research purpose, the current research is built on a content analysis of the sustainability or social reports adopted by a number of state universities in Italy and investigates whether and how these reports are consistent with IR requirements, thus constituting a significant base for the shift toward an effective IR. Content analysis has been chosen as the research approach because it is suitable for investigating the disclosure of accounting and non-accounting information, making it empirically valid in corporate, social, ethical and environmental reporting [27,28].

The paper proceeds as follows. The next section reviews the literature on sustainability and IR in the public sector and specifically in the higher education field, setting the background of the research. The third section illustrates the research setting and method, and then the framework of analysis

is described. The findings are illustrated and discussed in the fifth section. The last section draws conclusions and implications of the research.

## 2. Literature Review: From Social and Sustainability Report to Integrated Reporting?

Since the end of the 1990s, a series of events has led to profound changes in the university sector.

First, a number of initiatives have taken place in order to harmonize the different national university systems. The Bologna Declaration (1999), Prague Declaration (2001), Communiqué of the Conference of European Ministers responsible for Higher Education in Berlin (2003) and Bergen (2005), among others, were initiatives towards the convergence of higher education systems and the establishment of a European Higher Education Area by 2010 [29], recognizing the central role played by education in the development of modern societies and the importance of making universities comparable, transparent and competitive [30].

In this globalized context, universities have become more competitive and business-oriented as distinctly shown by the introduction of concepts like “entrepreneurial universities” [8,21,31], which reveal the emphasis put on new entrepreneurial competencies and goals universities are expected to fulfil. The co-occurrence of increased market competition, reduction of public funds and widespread calls for greater transparency have contributed to reshape the role and identity of universities [32,33]. Nowadays, universities compete for economic and human resources in a world where their reputation is established through indicators and numbers [34]. Therefore, considerable attention is paid to the positioning in the international rankings, used by universities as a promotion tool to potentially receive funding and employ high quality scholars [35]. To this purpose, universities are pressured to demonstrate and account for efficiency and effectiveness in their use of resources and public funds [36] and for the achievement of adequate results, through the growing use of performance measurement systems and reporting tools [13,37]. On the one hand, the financial sustainability of universities in Italy has been affected by the reduction in the resources allocated from the central government to the university system as a percentage of GDP. The public expenditure on tertiary education in Italy is lower than the OECD average [38] and this underpins the challenging context in which Italian universities operate and compete. On the other hand, the financial system for universities has been reshaped by relevant reforms introduced by central governments over the last decade. Universities have been required to modify their accounting systems, adopt a university-wide budget and publish performance plans and reports. The funding allocation system for universities has been changed over time and it is now partially results-driven, thus strengthening the need for disclosing financial and non-financial information and emphasizing the relevance of the results achieved by institutions. The concerns on financial sustainability have been increasingly integrated with concerns on different dimensions of performance. Universities have then initiated several forms of reporting in addition to those required by the law, including the production of standalone sustainability or social reports.

Reporting tools are used to communicate to stakeholders the different results achieved by universities. In this regard, one of key challenges is represented by the definition of the results that universities have to achieve. Universities have a multidimensional mission, being in charge of both educating students and carrying out relevant and useful research that has an impact on society. Universities can be considered to be creators of public value through the contribution they make to the economic, social and environmental well-being of society [39]. Public value management has emerged as a new approach to account for performance [40], providing a new perspective compared to previous public sector reforms and logics, as NPM. According to the model proposed by Moore [2], to create public value, public organizations need to provide high quality services in a cost efficient way (services), achieve desirable end results (outcomes) and support a high level of trust between citizens and governments (trust). This perspective allows us to not limit the public value produced by universities to their efficiency and effectiveness as inspired by NPM, but instead broadens the range of results to recognize the relevance and complexity of universities’ multidimensional mission [41]. The public value perspective is indeed particularly in line with the role of universities in the current society. The services

delivered by universities are relevant for the society, for instance, when considering that graduated students economic may produce economic benefits such as an increase in productivity and income [42]. The social outcomes of education are also numerous and range from stronger civic engagement (e.g., electoral participation; volunteering) and reduced crime to higher life satisfaction and better health [42]. Further, universities are expected to conduct innovative research that is broadly useful for the society and to be a model for other actors in terms of their behavior and values. In this context, the performance of universities is measured and reported from a multi-dimensional perspective, which also takes into account a relatively new purpose and mission of universities: their contribution to sustainable development. According to the Brundtland Report [43], universities play a central role in spreading sustainability concepts in the community due to their influence on future generations. They have a social responsibility intrinsic to their institutional purpose [44] and respond to a demanding duty to increase awareness, strengthen knowledge on the topic and develop new technologies and tools in order to create a sustainable future [16,45]. At the same time, they not only need to spread sustainability principles through education and research activities, they also need to set an example by managing and being accountable for their sustainability performance [15,44].

Many private companies have already adopted sustainability reporting tools in order to communicate and be accountable for their actions, but the growing sensitivity towards sustainable development makes society demand more information also from public organizations, including universities [11,16,46]. Several tools have been developed for supporting sustainability reporting also in higher education, such as the Graphical Assessment for Sustainability in Higher Education (GASU), the Sustainability Tracking, Assessing and Rating System (STARS), the Sustainability Assessment Tool (SAT) and the Global Reporting Initiative (GRI) guidelines.

Sustainability reports can be useful for universities because they can support the assessment of sustainable development-related goals and the communication of universities' sustainability efforts to their key stakeholders [46,47], with positive consequences on accountability and performance [15]. However, sustainability reporting in universities is still being developed. Results of international research carried out on the topic shows that sustainability reporting in higher education is still in its infancy in terms of its quantity and quality, and also can be considered to be in its early stages (both in numbers of institutions reporting and in level of reporting) when compared to sustainability reporting in corporations [48–50]. In regards to the Italian context, previous research highlights that the practice of sustainability reporting in university environments is not very widespread and the presence of social reports is still developing [17]. The publication of social reports in the wider context of social and environmental reporting was thought to help organizations in accounting for their performance to multiple stakeholders [18]. It has been examined in the context of higher educations to a limited extent at the international level and appears to be still in progress overall [17,18]. However, social reports have been considered as helpful in the implementation of knowledge and in building awareness of sustainability issues [51] and environmental reporting, social reporting and sustainability reporting have been considered as multiple practices/labels in the same context of (sustainability) reporting practices that are designed to enhance accountability and transparency [4].

The challenges faced by institutions in developing these reporting practices may be explained by the fact that universities continue to be traditional and conservative in their reporting obligations and they are organized according to academic disciplines adhering to rigid norms about structure, adopting a siloed thinking and lacking a proper multidisciplinary approach that facilitates the advancement of reporting [15].

Despite the difficulties connected to sustainability and social reporting, the potential significant benefits of this tool continue to attract the attention of scholars and practitioners to the extent that the debate in the literature has started to investigate the next steps to further develop and improve sustainability reporting.

In this regard, IR aims at constituting a step further on the sustainability and social reporting journey, representing an incremental next phase which enhances sustainability reporting [12,19,21,23,24]

by communicating the connections and relationships between all the factors that affect an organization's ability to create value over time [22]. It results in a periodic report about an organization's strategy, governance, performance and prospects, that in the context of its external environment leads to the creation of value over the short, medium and long term [22].

While its application has been widely studied in the private sector, the public sector, and more specifically higher education, are under-investigated [9,20,52]. In fact, there are still only a few empirical studies concerning the adoption and implementation of IR in the public sector and more specifically in universities, pointing out the debatable and challenging application of IR principles [20,53]. The application of IR in the university sector is not widely diffused, but there are some universities that are forefront in the adoption of this framework for their annual reports. The University of Stellenbosch (South Africa), the Free State University (South Africa), the University of Abertay (UK), the University of Edinburgh (UK), the Newcastle University (UK) are some examples of universities that publicly adopt the IIRC framework of disclosure, while there are other universities producing integrated reports without referring to a specific framework.

However, producing an integrated report would not only help universities understand and better represent the value creation process, but it would also support a change in their typical departmental silos-thinking. The IR would help to underscore the importance of cross-disciplinary work and of joined-up thinking between academic and professional services teams [19]. According to the <IR> Framework, IR is considered as a mutually-reinforcing practice with "integrated thinking" that leads organizations toward the integration of different capitals (financial, human, social and relationship, manufactured, intellectual and natural) in the decision-making process of the organization, with the aim to overcome the silo-thinking approach of traditional organizations. "Integrated thinking" is proposed as a new form of strategic thought which, according to the <IR> Framework, involves "(... ) the active consideration by an organization of the relationships between its various operating and functional units and the capitals that the organization uses or affects" [22] (p. 2).

At the same time, an integrated report offers an opportunity for universities to tell their value creation story not only to regulators and governors but also to a wider range of stakeholders [54]. Compared to other forms of voluntary reporting, IR brings together the communication of sustainability issues as well as financial, intellectual and strategic aspects in a single report. Thus, IR could incorporate sustainability reporting into financial reporting, enhancing the connectivity of all factors that affect the organization's ability to create value [55] and improving sustainability reporting itself [23]. IR may thus provide more opportunities to report on public sector organizations' sustainability impacts [12]. Both sustainability and IR do not focus exclusively on the reporting entity but concern how the entity interacts with the environment. The main difference between these two approaches is that sustainability reporting delivers an overview of the economic, environmental and social performance of the organization, while IR is a wider approach designed to represent how public value is created by reporting financial and non-financial information [56].

The current research aims at contributing to the debate on social/sustainability and IR in universities [19,21,25,26] by investigating whether and to what extent moving from the contents reported in currently more widespread sustainability and social report could enable universities to more successfully develop IR. The investigation of an "integrated sustainability report" is indeed recent and hence under-developed [21,57]. Cases of universities committed to the adoption of this document, such as the German HNEE university which recently issued a "integrated sustainability report", show the existing attempts made to meet voluntary and compulsory requirements in one document and add corporate and strategic information into sustainability reporting [57]. However, in achieving this purpose, the difficulties may be significant since the disclosure of the needed information may be not supported by a proper integration between information, thus failing in producing a proper integrated report [21].

### 3. Research Setting and Method

The research analyzes sustainability and social reports elaborated and published by public universities in Italy. The higher education field in Italy has undertaken a process of change which has resulted in significant and manifold reforms, ranging from the introduction of accrual accounting to the systematic use of performance measurement and management systems, the implementation of performance funding mechanisms and the elaboration of multiple types of non-financial reports [10,13,18,58,59]. Furthermore, in the Italian context, challenged by the significant reduction in public spending in higher education and by growing national and international pressures towards the reinforcement of accountability, several non-financial reporting practices have been adopted to strengthen transparency and accountability towards stakeholders and to improve the ability to fulfil universities' objectives through the measurement and management of intellectual capital and sustainability issues [60,61]. In particular, the adoption of social and sustainability reports has been encouraged by institutional interventions, such as the directive on social reporting in the public sector issued by the Italian Minister of Public Affairs in 2006, and by academic inputs, such as the document on social reporting developed by the national study group on the topic [62]. This latter document encourages universities to adopt social reports and sets generic guidelines to guide institutions to focus more on the improvement of the communication of their activities and multiple results to stakeholders, in order to account for the achievement of their multidimensional goals. A further example of the interest paid to these issue in Italy is provided by the establishment in 2015 of a network of universities for sustainable development (*RUS—Rete delle Università per lo Sviluppo Sostenibile*), which is based on the collaboration and sharing of experiences among universities committed to strengthening social responsibility and environmental sustainability. On the official website of the network, it is possible to find the links to the universities that provide social/sustainability reports, which are both considered as relevant and similar forms of reporting and as the most widespread of the voluntary reporting tools adopted by Italian universities. Finally, the Italian legislative decree 250 adopted in 2009 has explicitly recalled the concept of intellectual capital and required universities to elaborate a strategy map, to link their objectives, indicators and targets, and to use intellectual capital indicators to facilitate their understanding of human capital [13].

The current research is designed to contribute to the debate on voluntary reporting practices in universities by exploring the Italian context, where the adoption of sustainability and social reports is still limited and under-investigated, but is strongly called for [18,60]. Furthermore, the choice of Italy has been dictated by an easy access to data and the absence of language barriers that facilitates the study and understanding of the content of the reports.

State and non-state universities in Italy are approved by the Italian Ministry of Education, Universities and Research (MIUR) and endowed with legal status and scientific, teaching, organizational, financial and accounting autonomy [18]. Nowadays, the Italian university system comprises 97 universities: 67 state and 30 non-state universities (Official website MIUR: <https://www.miur.gov.it/istituzioni-universitarie-accreditate>). After screening the official websites of all the Italian state universities, a total of 10 cases have been selected. These universities have been included in the dataset because they had published their sustainability/social reports on their websites as standalone and downloadable documents with reference to 2017 and the reports were available when the data collection was carried between November and December 2018 (Table 1). It is noteworthy to recognize that some other state universities publish their social and sustainability reports in Italy. In some cases, it is possible to record a renewed interest in this type of reporting, as for instance University of Salento published a social report covering a multi-year period (2016–2019) last year. In other cases, such as for the Politecnico of Turin, a green team dedicated to social and sustainability issues has been created and it works continuously to build a sustainability culture but the sustainability report is not published every year (e.g., the last edition published in 2019 includes key data and actions taken in 2017–2018 and 2018–2019). In some other cases, as in the case of the University of Urbino, there is a time lag between the report publication on the website and the reference period of the report. These and other

cases were thus excluded from the current research because social/sustainability reports with reference to 2017 were not available when the data collection was performed.

According to the relevance of the documents to include in the analysis [63], both social and sustainability reports are considered to be suitable for achieving research purposes because they represent the most widespread voluntary non-financial reporting tools used by universities in Italy to disclose missions, values, results and capitals' assessment [18,60] with the aim of strengthening accountability and transparency.

**Table 1.** List of universities and reports.

University	Type of Report (Year)
Alma Mater Studiorum Università di Bologna (UNIBO)	Social report (2017)
Università degli Studi di Roma "La Sapienza" (UNIROMA1)	Social report (2017)
Università degli Studi di Udine (UNIUD)	Social report (2017/2018)
Università degli Studi di Firenze (UNIFI)	Social report (2017)
Università degli Studi di Bari Aldo Moro (UNIBA)	Social report (2017)
Università Politecnica delle Marche (UNIVPM)	Social report (2017)
Università degli Studi di Perugia (UNIPG)	Social report (2017)
Università degli Studi di Torino (UNITO)	Sustainability report (2017/2018)
Università degli Studi di Roma "Tor Vergata" (UNIROMA2)	Sustainability report (2017)
Università IUAV Venezia (IUAV)	Sustainability report (2017/2018)

To fulfil the intended research purpose, the study has carried out a content analysis of the selected reports. The content analysis was defined as a research technique that makes replicable and valid inferences from texts to the contexts of their use [64]. Specifically, it is a suitable approach for investigating the disclosure of accounting and non-accounting information, being empirically valid in corporate, social, ethical and environmental reporting [27,28]. Written documents as reports are among the most obvious sources of data that are appropriate for content analysis. Indeed, this technique has been previously employed to analyze the disclosure of key information in written official documents, to explore intellectual capital disclosure [13,65] and to explore sustainability disclosure [50,60] in universities' reports.

A content analysis analyzes collected information systematically, objectively and reliably [65,66] and therefore, it should follow a transparent and rigorous process indicating the different steps of the process and the framework of analysis adopted [27,67].

Once the context of analysis has been set by defining what to know—the distance between social and sustainability reports and integrated reports—and which are the sources of data appropriate for achieving the desired purpose—the published reports—researchers collected the data to be analyzed and coded them according to the framework of analysis developed [64]. In this regard, to design and test a coding system, which is the key component of a reliable content analysis, several steps were required.

First, sentences and tables/graphs were identified as the units of analysis. On this basis, each sentence or table/graph in the reports was analyzed to determine if it provides the disclosure (or not) of a category of the framework and, if so, to which category it relates. Indeed, sentences have been considered as relevant units of analysis in previous prominent content analysis [27]. Further, tables and graphs corroborated the analysis since their use (or abuse) may provide key insights into the disclosure of information [27].

The second step was the identification of the categories of the framework of analysis. A well specified coding instrument enhances the reliability of content analysis and this coding instrument needs to be reliable in terms of well-specified categories and decision rules, to facilitate consistent

coding decisions across time and researchers [27]. In this research, the coding instrument developed is a disclosure checklist aimed at assessing the extent of disclosure in reports concerning the IR requirements. This checklist indicates the information to be searched and how to classify them into predefined categories with the aim of identifying patterns in the presentation and reporting of information [68]. The checklist was elaborated starting from a model developed and tested in previous research [69] and adapting it to the context of analysis.

The third step of the process concerned the coding of the reports and the subsequent interpretation of findings. One of the authors performed the content analysis while other authors provided an initial training involving the discussion of objectives, risks linked to content analysis, and its rules [67]. The content analysis was performed on all the reports selected and then discussed among the authors. The use of a single coder that has undergone sufficient training can sustain reliability in developing a content analysis methodology [70].

A satisfactory level of reliability can be achieved since the information obtained from this coding procedure may be considered suitable for achieving the stated objectives coping with the subjectivity involved in coding [66] and contributing to build the reliability of the analysis [70].

#### 4. Framework of Analysis and Coding of the Reports

The framework used to code the reports (Table 2) is a checklist based on IR framework requirements, which were thought to include and detail the items that can be measured in an objective way, considering that the IR framework is not “rules”—based but rather “principles”—based [69] and the fact that it takes into account the peculiarities of the higher education field.

The volume of disclosure of IR requirements was assessed according to a scoring system that is mainly binary, with some exceptions indicated below. The binary scores indicate the presence (n. 1 point) or absence (n. 0 point) of a category (or its sub-dimensions) of the framework [28]. The total score was determined by the sum of the scores given to the several sub-dimensions of each category. The modifications have been introduced in order to provide an initial evaluation of the significance of coverage of IR requirements, by analyzing the presence of the different components of a category as a proxy for the quality of disclosure.

**Table 2.** Framework of analysis.

Checklist	Max Score
<b>Organizational overview and external environment</b>	<b>Tot. 11</b>
Mission and vision statements (0 = no statement; 1 = mission OR vision statement; 2 = mission and vision statements)	2
Values and culture (0 = no mention; 1 = general comments on the institution’s culture and ethical values; 2 = code of conduct, list of values, etc.)	2
Legal, social, environmental, political context (1 point per each context)	4
Key risks and opportunities (1 point for risks; 1 point for opportunities)	2
Market positioning (0 = not present; 1 = present)	1
<b>Governance</b>	<b>Tot. 4</b>
Governance structure’s representation (0 = no mention; 1 = mention)	1
Competences and diversity (0 = no mention; 1 = mention; 2 = specific illustration of skills and diversity of those charged with governance)	2
Processes to make and monitor strategic decisions (0 = no mention; 1 = mention)	1
<b>Business model and stakeholders</b>	<b>Tot. 12</b>
Business model (0 = no mention of the business model, nor of input, activities, outputs, impacts; 1 point each for inputs, activities, output, impacts)	4
Capitals (0 = no mention; 1 point for each type of capital)	6



Table 2. Cont.

Checklist	Max Score
Stakeholders (0 = no mention; 1 = list of stakeholders; 2 = list of stakeholders with characteristics)	2
<b>Strategy, outlook and resource allocation</b>	<b>Tot. 8</b>
Short, medium and long-term objectives (0 = no mention; 1 = strategic objectives stated without time frame; 2 = strategic objectives stated with time frame)	2
Implementation plans (0 = no mention; 1 = description of specific actions taken/planned)	1
Influence from operating context, risks and opportunities (0 = no mention; 1 = reference to the operating context)	1
Distinctive competitive institutional factors (e.g., innovation; patents; spinoffs) (0 = no mention; 1 = mention of the factors; 2 = mention of the factors and explicit link to strategy)	2
Resource allocation plan (0 = no mention; 1 = illustration of the plan)	1
Presence of links to the Strategic Plan (0 = no mention; 1 = present)	1
<b>Performance</b>	<b>Tot. 5</b>
Performance indicators (0 = no mention; 1 = KPIs or equivalent)	1
Effects on capitals (0 = no mention; 1 = performance connected with capitals)	1
Comparison with past performance (0 = no mention; 1 = present)	1
Comparison against benchmarks (0 = no mention; 1 = present)	1
State of key stakeholder relationship (0 = no mention; 1 = present)	1
<b>Basis of preparation and presentation</b>	<b>Tot. 6</b>
Methodology section (0 = not present; 1 = present)	1
Assurance (0 = no assurance; 1 = external assurance)	1
Conciseness (0 = more than 200 pages; 1 = between 200 and 100; 2 = less than 100)	2
Materiality (0 = no mention; 1 = mention of materiality issues; 2 = materiality matrix)	2
<b>Total</b>	<b>46</b>

*Organizational overview and external environment.* This category includes information about what the institution does and the context in which it operates. Mission and vision statements as well as information about values and culture are important to understand the institution as a whole (organizational overview). Explicit indications of these dimensions are particularly interesting in these times of change and redefinition of values in the higher education field. Particularly, an illustration of the political, legal, environmental and social aspects of the context can help to position the university in the environment in which it operates. Political and legal issues concern, for instance, the impact of government's policies on universities' funding and on the offer and organization of universities, while environmental and social issues may influence value created by universities shaping the type and content of the educational offer and the activities arranged by universities. In addition, the analysis of risks and opportunities is included in this dimension of the framework rather than being a standalone category because it is considered to be complementary to the analysis of environmental, social, legal and political issues in the illustration of the external context together with the market positioning that refers to the position of the university in national and international rankings.

*Governance.* The framework of IR requires the disclosure of an organization's governance structure and how it supports the institution's strategic objectives and the process of value creation. To this purpose, the framework of analysis takes into account whether universities explicitly disclose their governance structure, whether they report information on the specific skills and diversity (gender, experience, competence, etc.) of those in charge with key roles and the processes whereby strategic decisions are taken and monitored.

*Business model and stakeholders.* The business model refers to the process whereby a set of inputs is transformed through various activities in outputs producing impacts on the external environment. In the case of universities, it is not expected to find the description of a proper business model or its graphic illustration, but a quantitative and qualitative illustration of the key inputs (e.g., academic and administrative staff, infrastructure, information systems, etc.), activities (e.g., courses organized, business relationships and partnerships, etc.), outputs (e.g., graduated students, academic results, etc.) and impacts (e.g., university reputation, students' satisfaction, students' ability to find a job, third mission impacts, etc.) is expected. In addition to the discussion of these elements in order to describe the process whereby universities organize their activities to fulfil their goals, specific attention was paid to the disclosure of the forms of capital. In this case, 1 point has been given for each capital mentioned with a maximum of 6 [66]. The identification and discussion of the different types of intellectual capital is a particularly challenging issue. However, to the purpose of this research, the identification of different forms of capital has been considered without deepening the analysis on how extensive and accurate their illustration is. Finally, the last issue was represented by the identification of key stakeholders, both internal and external, who may be interested in the different activities and expected outputs of universities.

*Strategy, outlook and resource allocation.* Strategy is unfolded in the objectives that the university wants to achieve, distinguishing them into short, medium and long term strategic objectives and in the illustration of the implementation plans whereby strategies are implemented. From a strategic perspective, universities may have to disclose the investments made in innovations and the results obtained in creating competitive advantages in terms, for instance, of spinoffs, patents or startups. The strategic objectives, the related plans and the competitive advantages achieved need to be contextualized. Accordingly, this dimension of analysis takes into account whether the report explicitly considers the influence of the operating context and its risks and opportunities. In particular, since the universities produce a standalone document called "Piano Strategico" (*Strategic Plan*) where they disclose the strategy they are pursuing, it is explicitly valued whether this document is recalled in the main report. Another important component of this category concerns the link between strategy and resources in order to demonstrate the feasibility of objectives and plans and build accountability for the use of public resources in light of their limited availability and increasing concerns.

*Performance.* Qualitative and quantitative information about performance should be reported to assess the achievement of strategic objectives and the consequent effects on capitals. This category assesses the presence of KPIs or equivalent measures, the discussion of the effects on the capitals and the state of key stakeholder relationships, implying the capacity of addressing stakeholders' needs. In addition, the presence of comparisons between current results and past results and the analysis of current results against benchmarks of the sector were assessed in order to take into account the general reporting matters and guiding principles, as part of the principle of consistency and comparability.

*Basis of preparation and presentation.* The IIRC requires that an IR discloses information on materiality issues along with the materiality determination process. How the report is prepared should be disclosed in a proper "methodology" section in order to take into account the call for completeness and reliability. Here the framework investigated whether the report discloses information about the materiality of the issues reported by checking if there is mention of the materiality process followed for the inclusion of certain matters, giving an extra point if there is also a clear materiality matrix. Further, the analysis took into account whether the reports have been made only by universities' internal groups or if they received a review from an external assurance group (audit company or else) [69,71]. Finally, the conciseness of reports was assessed on the basis of the number of pages [72].

## 5. Results

Overall, the analysis of findings shows that the Italian universities under analysis have a level of disclosure of the content elements of the IR framework equal to 59%. The standard deviation is very high, meaning that there is a large difference between the highest and lowest scores. The highest

score is equal to 38, with a disclosure level of 83%, and the lowest is 15, with a disclosure level of 33%. These results are reported in the following table, which provides an overview of the total score obtained by each university and the intermediate scores for each category of the checklist (Table 3). The score obtained in each category and in total are shown in absolute terms as well as using a percentage in relation to the maximum obtainable score. The universities in Table 3 are listed in a different order compared to Table 1 for the sake of anonymity.

Table 3 also highlights, per each category of the framework of analysis, the overall mean of disclosure in yellow, and then in red the underperforming cases with respect to the average of the category and in green the outperformers. It can be stated that the “Performance” content element has the highest level of disclosure compared to the other elements, with an average of 80%. The lowest level of disclosure is for “Basis or preparation and presentation”, with an average of 43%, followed by “Governance”, with an average of 45%.

The highest total scores have been obtained by UNIV 4, which seems the one that most discloses the IR content elements in its sustainability report with a disclosure level of 83%, and by the social report of UNIV 5, with a disclosure level of 76%. The analysis of these findings shows that the overall extent of disclosure of IR content elements is not strictly dependent on the specific type/format of reporting tool. The first of these two “outperforming” universities received the maximum points for “Performance” and “Basis of preparation and presentation” content elements, and, for the remaining elements, the highest number of points in “Organizational overview and external environment”, with a score of 10 out of 11. The second university received the highest score in “Performance” and “Governance”. The lowest level of disclosure is 33% and has been obtained by the social report of the UNIV 9. It received the lowest score compared to the other universities in “Business model and stakeholders” and “Performance”.

More detailed considerations are now provided with reference to the most relevant results for the research purposes.

With reference to the organizational overview and external environment, universities performed in line with the overall average, with a 59% rate of disclosure. Almost all universities in the sample disclose a mission and vision and most universities’ reports provide information about their key values, with half of the universities referencing a code of conduct or/and an ethical code. On the other hand, universities in the sample do not disclose information about key risks and opportunities of the context, with a few exceptions. For instance, investments in research projects (e.g., European Program Horizon 2020) and the chances of building a connection with the local territory are some examples of opportunities reported in the documents. The reduction of funds distributed to universities by the Italian state, the lack of widespread national public and private investments in research and innovation or the general unfavorable Italian economic situation are examples of perceived risks for Italian universities. This is coherent to what the literature indicates as challenges for universities and a reason why these institutions should adopt different and innovative reporting tools in order to communicate their value. Only a few cases clearly illustrate risks and opportunities through the use of tables, while the other social and sustainability reports under analysis report only a limited and unsystematic discussion of risks and opportunities as well as of the different elements of the context where universities operate. Concerning the organizational overview and external environment dimension, it is more difficult to find systematic and comprehensive pieces of information about the context intended by IIRC covering multiple legal, social, environmental and political aspects. For the type of the reports under analysis, environmental and social issues are easier to detect, while the influence of legal and political issues on universities is still underdeveloped.

Table 3. Overview of disclosure levels.

Checklist	Max Score	UNIV 1	UNIV 2	UNIV 3	UNIV 4	UNIV 5	UNIV 6	UNIV 7	UNIV 8	UNIV 9	UNIV 10	Mean	Stdv	Deviation Coefficient
Organizational overview and external environment	11	6	8	6	10	9	2	6	5	4	9	6,50	2,38	37%
%		55%	73%	55%	91%	82%	18%	55%	45%	36%	82%	59%		
Business model and stakeholders	12	9	9	8	10	10	10	5	8	3	9	8,10	2,21	27%
%		75%	75%	67%	83%	83%	83%	42%	67%	25%	75%	68%		
Strategy, outlook and resource allocation	8	4	4	2	5	4	6	1	4	4	6	4,00	1,48	37%
%		50%	50%	25%	63%	50%	75%	13%	50%	50%	75%	50%		
Governance	4	2	2	2	2	4	2	0	2	0	2	1,80	1,08	60%
%		50%	50%	50%	50%	100%	50%	0%	50%	0%	50%	45%		
Performance	5	4	4	4	5	5	4	4	4	2	4	4,00	0,77	19%
%		80%	80%	80%	100%	100%	80%	80%	80%	40%	80%	80%		
Basis of preparation and presentation	6	3	2	3	6	3	2	2	2	2	1	2,60	1,28	49%
%		50%	33%	50%	100%	50%	33%	33%	33%	33%	17%	43%		
<b>Total</b>	<b>46</b>	<b>28</b>	<b>29</b>	<b>25</b>	<b>38</b>	<b>35</b>	<b>26</b>	<b>18</b>	<b>25</b>	<b>15</b>	<b>31</b>	<b>27,00</b>	<b>6,63</b>	<b>25%</b>
<b>% of maximum</b>	<b>100%</b>	<b>61%</b>	<b>63%</b>	<b>54%</b>	<b>83%</b>	<b>76%</b>	<b>57%</b>	<b>39%</b>	<b>54%</b>	<b>33%</b>	<b>67%</b>	<b>59%</b>		

With reference to business models and stakeholders, universities seem to disclose most of the information required by the IIRC in this category, with an average of 8.10 out of 12 points, corresponding to a 68% disclosure rate. Almost all the universities in the sample disclose at least 3 out of 4 elements of the business model according to the IR framework, namely input (e.g., available resources), activities (e.g., teaching activities, research projects) and outputs, although they are not always detected in a systematic manner. This implies that their discussion can be fragmented in the reports. Impacts, meanwhile, are rarely disclosed. They are explained in terms of environmental impacts and impacts on society, due to the peculiar nature of the documents analyzed. It is important to underline that, even if the sample mentioned the elements that constitute a business model according to IIRC [21], they do not provide a clear visualization of the business model itself nor of the value creation process.

Concerning the disclosure of capitals, most universities refer to and discuss financial, intellectual, human, social and relationship capitals, although they often do not treat them explicitly as capitals. Due to the specific type of report under analysis, in a few cases, the natural capital is also discussed, mainly through the measurement of the impact of universities' activities on it. However, it is rare to find a focused and explicit discussion of the different types of intellectual capitals. In this regard, one example is provided by UNIV 1 whose report explicitly discusses different types of capital, namely financial, human, intellectual, social and natural capital. In contrast, two universities underperform in this specific regard, disclosing only a couple of capitals.

Regarding stakeholders, almost all universities disclose at least a list of their stakeholders, including students and their families, teaching and administrative staff, the scientific community, citizens and the MIUR (Ministry of Universities and Research). Stakeholder consideration is not only fundamental to IR but also to sustainability and social reporting. This is due to a growing awareness that the identification of stakeholders is a pivotal tool to improve the creation of public value by taking multiple actors into explicit consideration. In a couple of cases, universities also give a description of the stakeholders and a list of their needs.

With reference to strategy and future outlook, it can be stated that in this category universities reached an average disclosure rate of 50%. The standard deviation is lower than in other categories but still there is quite a major difference between the universities that performed well and the ones that instead received a lower score. None of the universities received the maximum number of points. This, as already mentioned in the methodology part, might be attributed to the fact that the universities provided a standalone report on the strategic plan that usually covers a three-year period. Therefore, this may explain why they disclose little information on their strategies in the reports considered in the current analysis. In addition to what was already stated, the majority of the universities do not describe their strategy implementation plans and the actions needed to reach future objectives, while they do report their strategic objectives. Only in three cases do universities describe the activities promoted to reach the main objectives. As part of strategy analysis, it is important to evaluate if universities identify their competitive factors coherently with what required by IIRC [22]. In this regard, it can be stated that more than half of the universities indicate and disclose the innovations they are working on, for instance in terms of start-ups or innovative patents and spinoffs. Some, however, seem to not consider innovation as a competitive advantage or as part of their strategy.

With reference to governance, the results show an overall low level of disclosure, suggesting that in this regard there is significant room for improvement. Only one report received the maximum score. In the majority of the cases, the reports have a section dedicated to governance but this section does not include enough information on the actors involved, emphasizing their diversity, different background and competences. Only in half the sample is the governance structure connected with strategy and decision-making processes. With reference to performance, disclosure appears to be high and standard deviation is low, which means there is a relatively small gap between the highest and lowest scores obtained by universities. Every university uses some types of performance indicators, providing information on the performance of the current year and comparing it with previous years, usually with a one- or two-year period of reference. Performance is compared to past years, but rarely

against benchmarks. A total of 70% of the reviewed universities disclose information about the quality of the relationships with their stakeholders, in particular in terms of students and academic staff satisfaction. However, in the reports analyzed given their main aim, there is a prevalence of information on the impact of activities on the environment, providing information such as on emissions, the consumption of energy and natural resources. Universities also disclose separate “Performance Plans” where they outline their expected performance for the next three years. Therefore, the analysis of this dimension of the framework can be considered to be partial, as that information is fragmented across multiple documents.

Finally, with reference to the last category, the scores are often low due to the fact that it is rare to have an external audit of these reports. Further, only three universities disclose the materiality of the information contained in the reports, with only two providing a materiality matrix as well. In this regard, it is noteworthy to recognize that the meaning of materiality is still ambiguous and its definition can therefore vary among guidelines and reporting indications, influencing the consequent interpretation by universities. Another important failure is represented by the lack of conciseness. While “an integrated report is a concise communication about how an organization’s strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short, medium and long term” [22] (p. 7), most of the reports are long, with more than 100 pages. In some cases, the reports are extremely long (more than 200 pages) and the shortest reports lack key information. The trade-off between conciseness and comprehensiveness still represents a challenge for the majority of universities, just as for other private and public sector organizations. On the other side, the majority of the reports analyzed provides an illustration of the methodology and refers to some guidelines, such as GRI standards or the guidelines developed by the Italian study group on social reports.

## 6. Discussion and Conclusions

The current research contributes to the debate on social/sustainability reporting and IR with a focus on universities (e.g., [17,19,25,26,50]) by investigating whether and to what extent IR contents are reported in the currently more widespread social and sustainability reports. This can constitute a significant basis for the development of effective IR to improve universities’ reporting practices and reinforce their accountability. The underlying assumption is that IR could incorporate social and sustainability reporting into financial reporting, thereby improving the sustainability reporting itself [21] and providing more opportunities to strengthen public sector organizations’ accountability [20].

For this purpose, the research has reviewed and analyzed the content of social and sustainability reports adopted by publicly-funded universities in Italy. A first overall consideration is that significant heterogeneity exists among the reports reviewed [60]. The findings of the research show that the current reports published by the universities include part of the content elements of IR to an extent that, according with the metric adopted by the content analysis, is nearly 60% overall. Among the different categories of analysis, the organizational overview, external environment and business models and stakeholders, are interestingly equally to or more commonly discussed than the overall average of disclosure. This may be interpreted as a signal of growing awareness of the need to focus and report key issues as the analysis of the context, the identification of stakeholders and of different capitals and the indication of key values that can influence the way in which universities can create and account for public value. However, the accuracy of these analyses and their comprehensiveness are still not widely spread as demonstrated, for instance, by the fact that not all the universities specifically analyze stakeholders’ needs or deepen the analysis of risks and opportunities. Further, the discussion of the types of capital is often not explicitly provided and results are fragmented, while a discussion of capital types integrated with strategic objectives and performance indicators would be more relevant. Moreover, other dimensions should be strengthened, such as the governance and methodology sections. Finally, the analysis shows additional convergence with the IR framework if it also takes into account

other reports and documents that are prepared and published by universities, such as the strategy and performance plans which are usually recalled in the reports under investigation.

The findings show that in two cases out of ten, the strong majority of the requirements of IR are included in the analyzed reports and in other cases, more than half of the content elements are included, thus supporting the thesis that universities may take into account the possibility of formally adopting an IR by combining and integrating different documents into a comprehensive one. Combining reporting tools such as social/sustainability reporting and integrated reporting and creating one unitary accountability tool can be feasible in light of the several commonalities among these tools [4]. In this context, both policy-makers and managers should play a key role to avoid the risk of creating a new trend or introducing new burdens without improving accountability [4].

IR has been proposed as a potential response to the shortcomings of traditional financial reporting by addressing the growing length and complexity of standalone social, environmental or sustainability reports [73,74]. Indeed, according to the IIRC mission, IR should create a globally accepted integrated reporting framework which brings together financial, environmental, social and governance information in a clear, concise, consistent and comparable format [22]. However, although IR has been considered as a possible step further in the reporting journey according to extant literature, representing an incremental next phase which enhances sustainability reporting [12,19,21,23,24], the empirical findings show universities can still struggle in making this forward step.

A circumstance to be mentioned in this respect is that IR is not compulsory, while there are normative pressures towards social and environmental reporting [13,60,61], social reporting has been supported by the Italian ministry and both performance plans and reports were made compulsory a decade ago. Further, IR is not well-developed in the Italian public sector or specifically in universities and there is no significant evidence on its formal adoption in public funded universities. The growing adoption of IR in the public sector and in universities in foreign countries may work as a stimulus for the adoption of IR in public-funded universities in Italy. This process requires time and calls for specific interventions in the forms of ad hoc guidelines or frameworks to guide and facilitate the adoption of IR by universities. Furthermore, there can be technical and conceptual difficulties to deal with, which are due to the heterogeneity in the development of social and sustainability reporting and to the challenges linked to IR. The latter should not be considered as a panacea: the process of integration of different information and groups of actors is a challenging process. Nevertheless, producing an integrated report may help universities in representing the value created and overcoming their traditional departmental silos-thinking, which is still present in their current reporting practices because of their specific nature focused on sustainability matters.

The study has its limitations, especially regarding the sample size and time period. The current research relies on the analysis of the reports of ten universities, which represents around the 15% of publicly-funded universities in Italy. Although the number can be considered limited, it is an indication of the adoption, on a voluntary basis, of non-financial reporting by universities in Italy. However, this is influenced by several issues: the national scenario is variegated, while the period of time covered by a single report can change as well as the publication period of the reports. Therefore, these issues may challenge any attempts to provide an updated picture of the national scenario in a given point in time. Further, during the search for the reports, a lack of temporal continuity in the production and publication of the reports emerged. On the one hand, this motivated the focus of the research on the last year of publication. On the other hand, the fact that several state universities have not provided their reports recently or constantly can be interpreted as a limited commitment by universities to this type of reporting due to technical difficulties or to a constrained appreciation of its value/potential benefit. Finally, the research is based on one country, Italy, and the findings are context-driven. Nevertheless, the research has provided evidence to help speculate on the practical and research implications of reporting practices in universities, paving the way for further research on the topic.

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