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## Article

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## Article

# Social Media for Engaging and Educating: From Universities' Sustainability Reporting to Dialogic Communication

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**Abstract:** Traditionally, universities are committed to the missions of conducting research and teaching. Recently, they were also called to contribute to supporting sustainable development in society. Many universities worldwide have experienced sustainability and social reporting practices to demonstrate their commitment to sustainability. However, while sustainability reporting represents the primary means to communicate this commitment externally, research has barely unveiled how universities use other communication technologies, such as social media. This study investigates how universities use social media to engage their stakeholders in their sustainability initiatives and how this is associated with their sustainability reporting practices. We examine some best practices from Italian public universities, which, in addition to their experience in sustainability reporting, use social media (i.e., Facebook, Twitter, Instagram) to create a dialogue with their stakeholders about sustainability. We find that sustainability reporting is often the seed to instil innovative means for stakeholder engagement through social media. The universities with long-standing and continuous sustainability reporting experience use social media to enhance their communication, engage stakeholders and thereby improve their sustainability reporting practices. More worthily, we find that social media is also used as an educational tool to make people aware and foster a culture of sustainability in society.

**Keywords:** sustainability; Italian universities; stakeholder engagement; education; social media; social network; sustainability reporting



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## 1. Introduction

Since the late 1980s, the concept of sustainable development has become a cornerstone in the debates about the future of society (Blasco et al. 2021; Paletta and Bonoli 2019; Vasilescu et al. 2010). According to Elkington's (1994) definition, environmental thinking involves every aspect of social, political, and economic activity. Universities (or Higher Education Institutions) are prominent public institutions called to support sustainable development and integrate sustainability principles into their organisations and activities (Paletta and Bonoli 2019; Del Sordo et al. 2016; Venturelli et al. 2019). For many years, sustainable development has been seen as a "radical innovative idea" (Lozano et al. 2013, p. 11), and only a few pioneering universities took on this new challenge (Ferrer-Balas et al. 2008). However, recent institutional and regulatory pressures fostered universities to come onboard toward the challenge of sustainability (Ali et al. 2021; Moggi 2019; Nicolò et al. 2021; Vasilescu et al. 2010).

Plenty of courses, seminars and workshops are organised to teach and disseminate sustainability concepts and train tomorrow's leaders (Adhikariparajuli et al. 2021; Ali et al. 2021; Moggi 2019; Venturelli et al. 2019). Similarly, research projects and partnerships with enterprises and other organisations are promoted to foster sustainability thinking and encourage them to act according to their principles (Ferrer-Balas et al. 2008; Moggi 2019). In turn, universities have started to change their campus operations by implementing

green campus systems, including actions for energy use and energy efficiency, transport, and mobility (Paletta and Bonoli 2019). Accordingly, universities also started to publish sustainability reports to demonstrate their efforts toward incorporating sustainability into their services and structures (Fonseca et al. 2011). However, previous research into universities' sustainability reporting reveals limited information on their progress in sustainability practices, while few are taking the whole-of-institution approach (Adams 2013; Paletta and Bonoli 2019). Through sustainability reports, universities "interact with society in a unidirectional manner without input from recipients" (Ali et al. 2021). Thus, while these arguments question the sustainability reports' capability to improve universities' relationships with their stakeholders, they allow us to reflect on more effective tools to set a more dialogical and viable communication.

Social networks spread rapidly over the last decade and became powerful tools to gain the attention of stakeholders and create relationships with them (Pisano et al. 2017; Ramírez and Tejada 2019). They allow dialogic communication by introducing reactivity and providing timely information (Bonsón and Flores 2011; Bonsón and Ratkai 2013). Social networks have changed companies' communication (Bonsón Ponte et al. 2015; Pisano et al. 2017), and universities went down the same path using these interactive tools. Furthermore, social media interactions "can help develop accounting and reporting models that are based on a multi-dimensional, participative approach" (Bellucci and Manetti 2017, p. 5). However, there is still little that is known about how universities use social media, and how this fits into their broad sustainability reporting and engages their stakeholders.

Several studies on sustainability practices in universities focus on some national contexts, such as Canada (Fonseca et al. 2011), the United Kingdom (Lozano et al. 2013), and Romania (Vasilescu et al. 2010), since cultural factors can influence the way universities approach sustainable development (Moggi 2019). This research focuses on Italian public universities, which is considered an interesting area of investigation because "the journey towards sustainable reporting practices is maturing rapidly, capturing academics' attention who are increasingly debating this topic" (Nicolò et al. 2021, p. 2). This study aims to contribute to the literature on sustainability reporting in universities by investigating how universities use social media in addition to sustainability reports to communicate their sustainability management. Specifically, it focuses on the universities' use of social media to engage their stakeholders in their sustainability initiatives. The originality of the study relies on three research contributions. First, the study unveils novel insights into the unexplored practice by universities of using social media to communicate their sustainability initiatives. Second, it enriches our knowledge of the rationales motivating the use of social media pages dedicated to sustainability. Last, it provides insights into the relationship between the use of social media and sustainability reporting adoption by universities.

This paper is structured as follows. Section 2 explains the context and the position of this paper in the literature. Section 3 describes our research method. We present our findings in Section 4 and discuss the results and conclusions in Section 5.

## 2. Literature

### 2.1. Universities' Missions and Sustainability Reporting

Universities are essential pillars of society. They are traditionally committed to the missions of conducting research and teaching. The Bologna Process establishes that universities should contribute to society by educating, developing, and sharing knowledge (Lapsley and Miller 2004; Vasilescu et al. 2010). Then, the introduction of their "third mission" led universities to interact more intensively with society and the local community through activities aimed at increasing social welfare (Manes Rossi et al. 2018). Nowadays, universities are called upon to go beyond their third mission and contribute to contemporary global challenges. Due to the rise of social and environmental concerns, universities must support sustainable development in society (Ferrer-Balas et al. 2008; Fonseca et al.

2011). Thus, the mission of supporting sustainable development is influencing their three traditional missions more and more.

According to Adams (2013), the university's influence on future generations about spreading a sustainability culture is not only direct, i.e., through pursuing their three missions, but also indirect "through the example a university sets by managing and being accountable for its sustainability performance" (Adams 2013, p. 384). For a long time, few pioneering universities have adopted sustainability reporting and even the accounting literature on sustainability reporting has been given little attention from higher education institutions (Adams 2013; Adhikariparajuli et al. 2021; Fonseca et al. 2011). More recently, an increasing number of universities worldwide has begun to address sustainability concerns and report their activities to demonstrate their commitment to sustainable development while aiming to improve and maintain their legitimacy and image (Ceulemans et al. 2015; Fonseca et al. 2011; Moggi 2019). Meanwhile, a large amount of accounting research unveiled significant criticisms and weaknesses in companies' sustainability reporting practices and their ability to instill a sustainability culture in the organisations' operational activities (Ferrer-Balas et al. 2008; Paletta and Bonoli 2019; Del Sordo et al. 2016). Some of these shortfalls have been transposed into universities' sustainability reporting practices as well.

In the context of universities, research unveiled that sustainability reports focused more on managerial issues and overlooked the integration of sustainability into teaching and research activities and information on environmental aspects were not covered in depth (Adams 2013; Siboni et al. 2013; Del Sordo et al. 2016). The reports focus on trivial operational sustainability impacts rather than material sustainability challenges, issues, or risks (Adams 2013). Integrating sustainability into the three universities' missions requires a strong relationship with their key stakeholders and their engagement (Aversano et al. 2020; Blasco et al. 2021; Cesaroni and Piccaluga 2016). Meanwhile, it has been demonstrated that reporting may be only a means, but not the more effective tool, of engaging stakeholders; the new digital communication and social media have facilitated organisations' communication and engagement with their stakeholders (Bellucci and Manetti 2017).

## 2.2. Stakeholder Engagement and Dialogic Communication in Sustainability Reporting

Stakeholder engagement is defined as "corporate responsibility in action" (Greenwood 2007, p. 315), and it is a central element of sustainability reporting (Ceulemans et al. 2015; Manetti 2011). It is a "powerful tool of dialogic communication offering [an] interactive mutual learning process that is capable of promoting transformative action and social change" (Bellucci and Manetti 2017, p. 874). Accordingly, Muijen (2004) argue that corporate social responsibility should be supplemented by a transformation of the corporate culture level, and a dialogue with stakeholders can enact this change. Establishing a dialogue means "putting aside the current model of unidirectional communication from the corporation to the user and facilitating multidirectional flows between the stakeholders of any public or private entity" (Bonsón and Flores 2011, p. 35). According to Kent and Taylor (1998, p. 325), dialogic communication "denotes a communicative give and take". The communication flow allows organisations to understand the stakeholders' expectations from sustainability initiatives and, in turn, allows stakeholders to learn about the organisations' activities to support sustainable development (Abitbol and Lee 2017; Bellucci and Manetti 2017; Unerman and Bennett 2004); however, stakeholder engagement is "an important but sometimes forgotten element of the process of sustainable reporting" (Ceulemans et al. 2015, p. 135). Additionally, the literature on higher education for sustainable development rarely mentions the importance of stakeholder engagement within the sustainability reporting process (Ali et al. 2021; Ceulemans et al. 2015).

This two-way dialogue can consist of quick information sharing by organisations and stakeholders' in a real-time reaction to the information (Abitbol et al. 2018). Social networks are internet applications based on Web 2.0 technology that allows organisations to share information at a high rate, fostering interactivity in communication flows

(Pisano et al. 2017; Ramírez and Tejada 2019). Interactivity implies posting questions, calling for action, mentioning people in posts, and encouraging conversation with users (Abitbol and Lee 2017). Specifically, social networks are “driven by user-participation and user-generated content” (Waters et al. 2009, p. 103). Thus, they are a means to set up dialogic communication between a large group of stakeholders at low cost (Bellucci and Manetti 2017; Bonsón Ponte et al. 2015). They provide the organisations with the capability “to move away from traditional monological approach of information dissemination” (Kimmons et al. 2017, p. 108) and open new ways to connect with their stakeholders (Lovejoy et al. 2012). Furthermore, according to Ott et al. (2016), digital channels allow organisations to invite stakeholders to join the dialogue, talk and require information about sustainability topics. Therefore, those technologies can overcome the limits of sustainability reports in fostering dialogic communication and opening a new way to engage stakeholders to effectively support sustainability reporting.

Dialogic communication is considered “an especially ethical way of conducting public dialogue and public relations” (Kent and Taylor 1998, p. 325). However, according to Greenwood (2007, p. 319), “just because someone communicates or consults with another does not mean that they have any interest in fulfilling the other’s desires or wants”. Therefore, stakeholder engagement “may also be a morally negative (immoral) practice used as a deceptive control mechanism when masqueraded as corporate responsibility” (Greenwood 2007, p. 320). Organisations may approach stakeholder engagement opportunistically to legitimise their activities, so producing the illusion that users’ involvement can make a difference (Bellucci and Manetti 2017; Manetti 2011). Thus, according to Greenwood (2007), it is too simplistic to assume that stakeholder engagement is directly linked to responsible conduct and effective stakeholder listening.

### 2.3. Sustainability Reporting and Stakeholder Engagement in Universities

Culture and countries can influence how universities commit to sustainable development (Moggi 2019). Italian public sector organisations have been pushed to adopt social reports and disclose non-financial information (Nicolò et al. 2021; Del Sordo et al. 2016). A wave of reforms attempted to improve Italian universities’ efficiency, transparency, and accountability (Sangiorgi and Siboni 2017). Accordingly, some associations, such as the National Group for Social Reporting (GBS) and the Network of Universities for Sustainable Development (RUS), were born to promote sustainability practices in Italian universities (Nicolò et al. 2021; Del Sordo et al. 2016). Therefore, sustainability reporting in Italian universities gained increasing interest both in practice and research (Aversano et al. 2020; Manes Rossi et al. 2018; Moggi 2019; Nicolò et al. 2021).

Italian universities already had a well-established experience in sustainability reporting with the production of social reports. The term “social report” is a consolidated norm in the Italian social accounting tradition and is probably due to companies jointly using different reporting standards (Moggi 2019). Universities voluntarily published social reports using a top-down approach (Del Sordo et al. 2016). The working group producing the social report is usually internally coordinated by administrative staff and academics. However, the lack of reporting guidelines for universities and the difficulty in collecting data and information throughout the organisation posed some challenges in producing social reports in universities (Fonseca et al. 2011; Moggi 2019; Del Sordo et al. 2016). Therefore, involving scholars with expertise in social responsibility and reporting has a vital role in the sustainability reporting process (Del Sordo et al. 2016).

The literature provides different rationales to explain the adoption of social reporting by Italian universities. It is argued that, through social reports, Italian universities may want to demonstrate a more efficient administrative management of public funds or the quality of their services, to affirm their legitimacy or to improve their dialogue and engage internal and external stakeholders (Siboni et al. 2013; Del Sordo et al. 2016). However, Italian universities’ reports rarely present a high level of stakeholder engagement (Siboni et al. 2013).

Universities usually interact with stakeholders unidirectionally since sustainability reports do not allow them to receive reactions and feedback directly (Ali et al. 2021; Ceulemans et al. 2015). Recently, universities are increasingly using web-based and social media technology to encourage dialogue with stakeholders and increase transparency, immediacy, and the climate of trust in the university system (Amey et al. 2020; Kimmons et al. 2017; Nicolò et al. 2021; Ramírez and Tejada 2019). The most popular social media platforms, such as Facebook, Twitter, and Instagram, enable organisations to communicate with a broad category of stakeholders and establish real-time connections (Arora et al. 2019; Bonsón Ponte et al. 2015; Linvill et al. 2012). Through social media, stakeholders can receive real-time information and feedback, start conversations, and become co-creators of content and not just users (Bellucci and Manetti 2017). Furthermore, stakeholders can share photos, join contests, and answer online polls, which contributes to feelings of being part of the community (Pisano et al. 2017). According to Abitbol and Lee (2017), organisations should use sustainability-dedicated social media pages to involve stakeholders in their sustainability initiatives. However, the universities' efforts for engaging stakeholders in their sustainability initiatives through social media are little investigated (Ott et al. 2016).

Two-way communication, enabled by social media, can lead to stakeholder engagement in sustainability activities and allow the development of reporting models based on a participative approach (Abitbol and Lee 2017; Bellucci and Manetti 2017). As a result of this, universities recently flanked their sustainability reports with social media communication. Yet, we still know little about what and how universities communicate about sustainability through social media. Accordingly, this study investigates how Italian universities use social media to engage their stakeholders in their sustainability initiatives, and how this is associated with their sustainability reporting practices. Therefore, it aims to answer the following research question:

*RQ: Why do Italian public universities use sustainability-focused social media accounts, and how do they establish a dialogic communication with stakeholders in addition to sustainability reporting?*

### 3. Method

#### 3.1. Sample Selection

We selected our sample of cases from a list of 58 Italian public universities published by CENSIS—an Italian socio-economic research institute. We excluded private and telematics universities, as they have different regulatory backgrounds, management, fund-sourcing procedures, and accounting requirements. We collected the data from April 2021 to May 2021 by analysing the posts and stories published from 1 April 2019 to 30 April 2021. To select the universities to be examined, as a first step, we searched the following elements in each universities' website:

- the publication of social/sustainability reports, extending the search to the web when we do not find any social report on the official website; and
- the links to the official social media pages dedicated to sustainability, while extending our search into the main social networks (i.e., Facebook, Instagram, Twitter) when missing.

Thus, we selected the universities that jointly had sustainability reports and at least a social media account/ page dedicated to sustainability. We found that 15% of Italian public universities (8 of 56) have both sustainability reports and a social media account/page dedicated to sustainability. Therefore, our final sample consisted of eight Italian universities.

We also collected some characteristics about their sustainability reporting practices (e.g., number of years the reports were published, the reporting periods) and social media pages (e.g., the social network used, whether they are updated). These characteristics are listed in Table 1 of the next section.

**Table 1.** Summary of characteristics and content of sustainable reports and social media.

| University          | Size        | Area    | Website Section/Dedicated Website Where the Sustainability Report Is Published | Title of Report       | Number of Years the Reports Were Published | Reporting Periods (Years the Reports Refer to)             | Year When the Reports Were Published  | Report Manager/Working Group Coordinator              | Reporting Guidelines Adopted | Type of Social Media Dedicated to Sustainability | Update Social Media   |
|---------------------|-------------|---------|--|-----------------------|--|--|---|---|------------------------------|--|---|
| Rome "Tor Vergata"  | Large       | Central | Dedicated website—Section "Sustainability report"                              | Sustainability report | 3  | 2019; 2018; 2017   | 2020; 2019; 2018  | Professor Marco Meneguzzo                             | GRI                          | Facebook   | Yes   |
| Milano Bicocca      | Large       | North   | University website—Section "Sustainable Bicocca"—"Sustainability report"       | Sustainability report | 2  | 2019; 2017   | 2021; 2019  | Professor Matteo Colleoni<br>Professor Federica Doni  | GRI                          | Facebook;<br>Instagram;<br>Twitter               | Yes   |
| Venice "Ca Foscari" | Medium      | North   | University website—Section "Commitments"—"Sustainability report"               | Sustainability report | 10   | 2019; 2018; 2017; 2016; 2015; 2014; 2013; 2012; 2011; 2010 | 2020; October 2019; 2018; July 2017; September 2016; November 2015; June 2014; October 2013; July 2012; July 2011 |   | GRI                          | Facebook;<br>Instagram;<br>Twitter               | Yes (Facebook and Instagram) No (Twitter: last update march 2020)   |
| Brescia             | Medium      | North   | Dedicated website—Section "News"   | Sustainability report | 1  | 2017–2019  | October 2020  | Professor Carmine Trecroci                            | GRI                          | Facebook   | Yes   |
| Udine               | Medium      | North   | University website—Section "About us"—"Sustainable Uniud"                      | Social report         | 2  | A.Y. 2018–2019; 2017–2018                                  | 2020; October 2018  | Professor Andrea Garlatti                             |                              | Instagram  | Yes   |
| Turin               | Mega        | North   | University website—Section "Sustainability report"                             | Sustainability report | 6  | 2018; 2017; 2016; 2015; 2014; 2013                         | May 2020; February 2018; February 2017; November 2016; December 2015; November 2014                               | Professor Laura Corazza                               | GRI                          | Facebook,<br>Instagram,<br>Twitter               | Yes (Facebook and Instagram) No (Twitter: last update october 2020) |
| Florence            | Mega        | Central | University website—Section "Balance sheets"                                    | Social report         | 4  | 2019; 2018; 2017; 2016                                     | November 2020; July 2019; October 2018  | Professor Giacomo Manetti<br>Professor Marco Bellucci | GRI                          | Facebook   | Yes   |
| Turin               | Polytechnic | North   | Dedicated website—Section "Our reports"  | Sustainability report | 2  | 2017–2019; 2015–2016                                       | December 2019; 2016   | Professor Patrizia Lombardi                           |                              | Facebook,<br>Instagram,<br>Twitter               | Yes (Facebook and Instagram) No (Twitter: last update may 2020)     |

### 3.2. Content Analysis and Coding Process

We employed the content analysis method to examine the social media accounts of our sample to analyse how they are used to engage stakeholders about sustainability initiatives. While content analysis is widely used in accounting research to analyse corporate reports, it is acknowledged as a suitable method to explore and provide new understandings of unexplored phenomena (Dumay and Cai 2014).

We analysed the content and posts of the social media pages through open coding. Open coding is the act of discovering themes that require an observational technique and a manipulative technique (Ryan and Bernard 2003). We adopted “repetition” as an observational technique to identify themes and “cutting and sorting” to process data (i.e., texts and images). Repetition consists of identifying topics that recur regularly (Ryan and Bernard 2003). It relates to the ideas that text or speech revolve around. The investigator decides the number of repetitions needed to identify a theme until it is significant for the research. Once the themes have been identified, data are collected by “identifying quotes or expressions that seem somehow important and then arranging the quotes/expressions into piles of things that go together” (Ryan and Bernard 2003, p. 94). To avoid biased classification, two researchers sorted the data together and named the piles to define the themes.

The open coding resulted in a definition of eleven topics grouped in two main themes: “social media for engaging” and “social media for educating”. For each sustainability-related social media platform used, we counted the number of posts falling into each topic. The results are shown in the next section.

## 4. Findings

The eight universities we selected for this study are located in the north of Italy, and they are all medium or large universities. As shown in Table 1, the selected universities have common characteristics in their sustainability reporting. Their reports are available in a section of their websites and rarely on a standalone site. Most of them are entitled “sustainability report” instead of “social report” as they are produced following the GRI guidelines instead of GBS standards.

While we find differences in the years covered in the reports and the times at which they were published, there are also differences in the number of years the universities have adopted sustainability reporting. For example, the University of Venice “Ca’ Foscari” has published a sustainability report since 2010. On the other hand, the University of Turin and the University of Florence began in 2013 and 2016, respectively. Even the Polytechnic of Turin started to adopt sustainability reporting in 2016, however, it has since only published two biennial reports. Instead, other universities have only recently begun to publish their sustainability reports. The University of Brescia published only one report, while the University of Milano-Bicocca published its reports for 2021 and 2019 but not for 2020. Thereby, all the latest reports were published at the end of 2019 or in 2020. Therefore, we can argue that all selected universities are currently adopting sustainability reporting, and most of them have long-standing experience. In turn, none of them has abandoned this reporting practice while using other media, such as social media, to communicate sustainability information.

As for the use of social media, almost all the universities in the sample have a Facebook account. Half of the universities have accounts on all three major platforms, while three only have a Facebook account, and one has only an Instagram account. Instagram replicates the same content as Facebook but with fewer details and information. Notwithstanding, Instagram is a means to reach a broad audience as it is extensively used by younger people. Twitter, instead, is usually used to retweet the posts of the university’s official accounts or communicate events or posts about sustainability on other social networks. Since we noted Twitter accounts are not updated as much as the other social networks’ accounts, we focused mainly on the contents from Facebook and Instagram.



As a result of our content analysis of social media pages, we found that universities use social media in their sustainability initiatives to achieve two primary purposes: engaging and educating stakeholders about sustainability topics. Tables 2 and 3 show the count of posts published on the social media pages and the topics they were classified into, i.e., the themes of “social media for engaging” and “social media for educating” themes, respectively.

**Table 2.** Number of posts per topic belonging to the “social media for engaging” theme.

| University            | Social Media Platform | Sustainability Report and Sustainability Newsletters | Ranking and Awards | Sustainability Services | Surveys, Questionnaires, and Contests on Sustainability | Total Number of Posts |
|-----------------------|-----------------------|--|--------------------|-------------------------|---|-----------------------|
| Rome “Tor Vergata”    | Facebook              | 5  | 5                  | 5                       | 35  | 50                    |
| Milano Bicocca        | Facebook              | 2  | 0                  | 1                       | 8   | 11                    |
|                       | Instagram             | 3  | 0                  | 2                       | 4   | 9                     |
|                       | Twitter               | 0  | 0                  | 0                       | 2   | 2                     |
| Venice “Ca Foscari”   | Facebook              | 14   | 3                  | 23                      | 79  | 119                   |
|                       | Instagram             | 0  | 0                  | 9                       | 8   | 17                    |
|                       | Twitter               | 2  | 1                  | 9                       | 6   | 18                    |
| Brescia               | Facebook              | 1  | 3                  | 6                       | 14  | 24                    |
| Udine                 | Instagram             | 0  | 0                  | 2                       | 0   | 2                     |
| Turin                 | Facebook              | 1  | 14                 | 21                      | 109   | 145                   |
|                       | Instagram             | 0  | 2                  | 9                       | 93  | 104                   |
|                       | Twitter               | 0  | 0                  | 0                       | 6   | 6                     |
| Florence              | Facebook              | 4  | 3                  | 12                      | 9   | 28                    |
| Turin Polytechnic     | Facebook              | 1  | 3                  | 11                      | 24  | 39                    |
|                       | Instagram             | 7  | 1                  | 33                      | 113   | 154                   |
|                       | Twitter               | 0  | 0                  | 0                       | 2   | 2                     |
| Total number of posts |                       | 40   | 35                 | 143                     | 512   | 730                   |

**Table 3.** Number of posts per topic belonging to “social media for educating” theme.

| University            | Social Media Platform | Courses, Seminars, and Events on Sustainability Themes | Sustainability Projects | Research and News about Sustainability | Events and Anniversaries Relating to Sustainability | Sustainability Pills | Quick Polls on Sustainability Themes | Total Number of Posts |
|-----------------------|-----------------------|--|-------------------------|--|---|----------------------|--------------------------------------|-----------------------|
| Rome “Tor Vergata”    | Facebook              | 118  | 10                      | 12                                     | 20  | 39                   | 0                                    | 199                   |
| Milano Bicocca        | Facebook              | 25   | 6                       | 3                                      | 1   | 1                    | 0                                    | 36                    |
|                       | Instagram             | 22   | 2                       | 4                                      | 1   | 10                   | 10                                   | 49                    |
|                       | Twitter               | 5  | 0                       | 1                                      | 1   | 0                    | 0                                    | 7                     |
| Venice “Ca Foscari”   | Facebook              | 126  | 8                       | 10                                     | 45  | 69                   | 0                                    | 258                   |
|                       | Instagram             | 10   | 2                       | 0                                      | 3   | 12                   | 2                                    | 29                    |
|                       | Twitter               | 12   | 3                       | 2                                      | 4   | 1                    | 0                                    | 22                    |
| Brescia               | Facebook              | 28   | 2                       | 20                                     | 1   | 2                    | 0                                    | 53                    |
| Udine                 | Instagram             | 6  | 0                       | 1                                      | 0   | 2                    | 0                                    | 9                     |
| Turin                 | Facebook              | 349  | 20                      | 301                                    | 101   | 36                   | 1                                    | 808                   |
|                       | Instagram             | 50   | 1                       | 1                                      | 9   | 29                   | 0                                    | 90                    |
|                       | Twitter               | 11   | 0                       | 0                                      | 0   | 3                    | 0                                    | 14                    |
| Florence              | Facebook              | 45   | 14                      | 30                                     | 10  | 1                    | 0                                    | 100                   |
| Turin Polytechnic     | Facebook              | 69   | 8                       | 33                                     | 19  | 1                    | 0                                    | 130                   |
|                       | Instagram             | 15   | 10                      | 1                                      | 2   | 8                    | 0                                    | 36                    |
|                       | Twitter               | 6  | 0                       | 0                                      | 1   | 2                    | 0                                    | 9                     |
| Total number of posts |                       | 897  | 86                      | 419                                    | 218   | 216                  | 13                                   | 1849                  |

The following subsections present our findings and evidence about the two themes and purposes revealed by our analysis.

#### 4.1. Social Media for Engaging

We find that universities use social media pages to spread the word about their sustainability report's publication and invite stakeholders to the report's presentation event. The posts about this topic usually contain the cover page of the report, the link to the document, event details, and hashtags:

*The 2019 Sustainability Report of Ca' Foscari University Venice is out! A document that accounts for the activities carried out in the field of environmental protection, for the well-being of the Ca' Foscari community and the #sustainable development of the territory. In the report, it is highlighted how the activities of the University contribute to achieving the 17 goals of the #Agenda2030 for sustainable development.* (Facebook post of Ca' Foscari Sustainable from 17 December 2020).

This type of communication represents a means to spread a message and invite people to access and read the sustainability report. While this action represents a means to demonstrate the universities' commitment to sustainability, it also resembles the close linkage between social media use and sustainability reporting practice and their attempts to engage stakeholders. [Topic "Sustainability report and sustainability newsletters"].

The commitment to sustainability usually results in being listed in national and international rankings regarding the sustainability of universities, such as Green Metric World University Rankings, University Impact Rankings, or Times Higher Education. Universities usually share these recognitions with their community to make them proud of their organisation and strengthen their reputation.

*The University of Florence is among the best in Italy for its commitment to sustainable development actions. This is what emerges from the ranking of the Times Higher Education—THE that has compiled the ranking of performance against the objectives of sustainable development indicated in the Agenda 2030 of the United Nations. #Unifi is third among Italian universities and ranks among the top 200 in the world.* (Facebook post of Unifi: Sustainable University from 23 April 2020).

These recognitions certify the university's commitment to sustainability by promoting actions, activities, and services toward sustainable development. [Topic "Ranking and awards"].

Universities highlight their sustainability-friendly services on social media to induce their usage and involve users in their efforts towards sustainability. By contributing to these efforts, the users of these services can reduce their environmental impact in their daily life at the university. Some widespread initiatives are about sustainable mobility, which offers alternative means for getting to campus or discounts for public transport, and the distribution of reusable water bottles to reduce plastic consumption.

*Since the start of the project, 11 indoor and outdoor water points have been installed in different places of the @politecnico torino, and more are planned. There are no more excuses for not being #plasticfree #PoliTO #everydaysustainable #2030whatareyoudoing.* (Instagram post of Polito Sustainable from 10 December 2019).

Investments in the green campuses system are a part of the universities' sustainability approach to their operations. They are promoted through social media to inspire and engage stakeholders in sustainable behaviours and reported in the sustainability reports to highlight the universities' adoption of sustainability principles. [Topic "Sustainability services"].

Over 2020, the COVID-19 pandemic has had a significant impact on the activities of the universities and students' lives. It was expected that a significant number of social media posts would be about the COVID-19 outbreak. However, universities kept their communication about the sustainability topics alive by combining the pandemic emergency with sustainable development. They published online surveys and Instagram stories, such as the example below, to discover and share information about stakeholders' eating habits and lifestyles during the lockdown.

*Sustainability and quarantine: a possible combination? Can you follow a sustainable lifestyle during this particular period? Tell us how you are living it! The aim is to collect and share good practices of sustainability for daily life #quarantine.* (Instagram stories of PoliTo Sustainable).

Through this type of communication, universities aim to engage stakeholders through social media. Users can interact with universities' posts with likes and comments and participate in sponsored events and initiatives.

This dialogic communication is enhanced by using tools that allow users to express their opinions for improving the universities' services and their social and environmental impacts.

*The survey "Tor Vergata community". For the Symposium 2020 organised by Global Governance BA, a survey dedicated to the university community of "Tor Vergata" was launched to assess the perception of inclusion and sustainability of the University. Click on the link to participate. #torvergatasustainable #symposium2020 #globalgovernance.* (Facebook Uitorvergata Sustainable from 20 June 2020).

*What's your idea for a sustainable campus? Join the workshop organised by EcoPOLI in collaboration with the Green Team on Wednesday, October 30 from 17:30 to look for innovative ideas and solutions for our university! Don't miss it!* (Facebook post of PoliTo Sustainable from 25 October 2019).

Collecting stakeholders' opinions and ideas can help universities improve their services and approaches to sustainability by meeting stakeholders' needs and expectations. These initiatives strengthen the relationship with stakeholders, making them feel considered and involved in the decision-making process. Stakeholders can also become leading actors in sustainability events and initiatives by sharing their photos with hashtags, participating in flash mobs, events, or competitions.

*In order to raise awareness of the theme of up-cycling, reuse and creative recycling of objects @unito\_go, @unitorino, @politosust, @politecnicoditorino, @uniupo, @custorinoofficial, @officialcuspo launch the competition "MADE IN CASA 2020" aimed at students enrolled in the universities of Piedmont and athletes of the University Sports Centers of Turin and Eastern Piedmont. [ . . . ] To participate, you must post a photo or a story on your Instagram profile showing how one or more objects have been reused in a creative way. [ . . . ] Sports experiences and other prizes offered by the university sports centers of Turin and Eastern Piedmont will be up for grabs.* (Instagram post of UniToGo from 12 May 2020).

*Do you have the Office of Sustainable Development keychain made by SPlastica? Do you know that it has chamomile, alyssum or achillea seeds inside? Have you planted your keychain in a pot of soil yet? Share the planting of your keychain and send a photo to us with a private message. The most beautiful ones will be published on our channels. #torvergatasustainable.* (Facebook post of Uitorvergata Sustainable from 12 October 2020).

By answering surveys and questionnaires, users can also contribute to providing data and information for scientific research.

*Participate by tomorrow in the survey "Food Habits of the Cafoscarina Community" !! Just 3 min to tell us what your #lunch breaks were like at the University Ca' Foscari Venice before the lockdown and what kind of food you preferred to consume. Fill out the questionnaire at this link!* (Facebook post of Ca' Foscari Sustainable from 24 May 2020).

Stakeholders can react to these posts by commenting, joining activities, or creating posts for the universities' social media pages. Therefore, such engagement through social media creates a continuous dialogue with their stakeholders. In turn, it aims to gather information and data about improving activities, services, research, and the overall commitment to sustainability. [Topic "Surveys, questionnaires, and contests about sustainability"].

Although our evidence lacks data about the users' reactions, the communication in the example above and the numerousness of posts related to "Surveys, questionnaires and contests on sustainability" clearly mirrors the universities' purpose of establishing a dialogue with their stakeholders and enacting their engagement.

#### 4.2. Social Media for Educating

We also found that universities use social media to introduce people to sustainability themes. The aim is to increase their knowledge and build their skills to manage sustainability. Several initiatives and events about sustainability are organised or promoted by two organisations operating to spread the culture of sustainability in Italy. The Network of Universities for Sustainable Development coordinates the Italian universities in their commitment to environmental sustainability and social responsibility, spreading the culture, and good practices for sustainability, both inside and outside the universities. The Italian alliance for sustainable development (ASviS) aims to spread the importance of the 2030 Agenda for Sustainable Development and mobilise people, firms, and institutions towards achieving the SDGs (Sustainable Development Goals).

*UniSustainathon: The event is part of the Festival of Sustainable Development 2020 and is organised by the RUS—Network of Universities for Sustainable Development (RUS) and ASviS—Italian Alliance for Sustainable Development, in collaboration with the Section General Commissioner for the Italian participation in Expo 2020 Dubai. This is a competition among universities worldwide, aiming to encourage the contribution of universities to the achievement of the 2030 Agenda. (Facebook post of Bicocca Environment Society Economy from 17 September 2020).*

Other initiatives aim to introduce users and students to the sustainability themes. Some examples are the inclusion of subjects providing knowledge and skills surrounding sustainability into the academic curriculum, doctoral courses focusing on sustainability subjects, or the promotion of free courses about social responsibility or environmental protection. [Topic "Courses, seminars, and events on sustainability themes"].

*The future is sustainable. "Sustainable food target: comparing generations". How has the perception of food changed in different generations? And how has the relationship between food and people evolved over the years? If you want to take part in the third meeting "Sustainable agriculture" connect on Thursday at 18:30 on Microsoft Teams #uniudsustainable #universityofudine. (Instagram post of Uniud Sustainable from 15 March 2021).*

Similarly, universities share information on projects that contribute to sustainable development in the local communities. These projects focus on preserving and growing green areas and improving air quality, such as the following one. [Topic "Sustainability projects"].

*The new action of Sustainable UniBs. In such a difficult time, we are giving the planet and all of us hope and confidence in the future. UniBosco is the project to plant trees that our University is launching to offset our CO<sub>2</sub> emissions (which we will continue to reduce) and absorb the pollutants in the city air. An example of concrete commitment and sharing for sustainable development. (Facebook post of UniBs Sustainable from 21 March 2020).*

Moreover, universities keep users informed about scientific research progress about sustainability and the most updated scientific findings by sharing academic and non-academic articles. They also provide information about the events to do with sustainability issues and call for papers which students are invited to join. [Topic "Research and news about sustainability"]

*Call for papers. It is possible to participate in the call for the workshop "Africa in the sustainability transition: behavioural change and political economy perspectives" on 24–25 May promoted by SEEDS. Deadline 15 April #torvergatasustainable #CallForPapers. (Facebook post of Uitorvergata Sustainable from 22 March 2021).*

Some posts remember the anniversaries and events relating to sustainability, such as Earth Day, and provide advice to carry out daily activities in a sustainable way or reduce individual environmental impact. This type of post aims to spread awareness among people and attract their interest in changing their daily habits. [Topic “Events and anniversaries relating to sustainability”].

*Today is world #recycling day. Correctly sorting waste reduces the waste of resources, gives it a new life and is a fundamental action to safeguard the planet. Goal 12 of the #2030Agenda aims to substantially reduce waste generation by 2030 through prevention, reduction, recycling, and reuse. #GlobalRecyclingDay #zerowaste #circulareconomy.* (Facebook post of Ca’ Foscari Sustainable from 18 March 2021).

Beyond seminars and lectures, which are the traditional way of teaching, universities spread knowledge of sustainability concepts by disseminating “sustainability pills” through their social accounts. [Topic “Sustainability pills”].

*#Sustainability (noun)—1. The ability to be maintained at a certain rate or level 2. Avoidance of the depletion of natural resources in order to maintain an ecological balance. “Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs” Brundtland Commission #cfsustainable #wastematters.* (Facebook post of Ca’ Foscari Sustainable from 6 August 2020).

However, in these education-oriented posts, such as that one above, stakeholders’ participation is more silent and less active than in posts where users are invited to respond, comment, or create content. Therefore, to invite interaction, universities create quick polls to activate learning through games and verify the success of the learning process. [Topic “Quick polls on sustainability themes”].

*How much plastic is dumped into the oceans each year?*

*a. 1 million tons b. 5 million tons c. 8 million tons d. 20 million tons.* (Instagram quiz of Bicocca Environment Society Economy).

To conclude, universities juxtapose traditional and modern educational tools to transfer knowledge about sustainability to students and other stakeholders, fulfilling one of the universities’ missions by helping to instil sustainability principles and concepts in society. In addition to sustainability reporting, social media is used to improve stakeholder engagement in universities’ mission towards sustainability. Yet, we found that the universities’ education mission also influences their approach to engaging stakeholders about sustainability. In turn, the need for sustainable development significantly influenced the universities’ activities for teaching and research. Educating people about sustainability and pursuing sustainable development stands up as a pivotal purpose in conducting dialogic communication with universities’ stakeholders.

## 5. Discussion and Conclusions

This paper analyses the sustainability reporting practices and social media usage of universities used to create an interactive two-way communication between Italian universities and their stakeholders. We find that sustainability reporting remains the primary and seminal practice for communicating the universities’ commitment to sustainability. As already argued in previous studies (Sangiorgi and Siboni 2017), our sample of Italian universities has experienced sustainability reporting practices to demonstrate their commitment to sustainable development and face competition with other national and international universities. However, the adoption of sustainability reporting practices is influenced by the size of universities and some organisational factors. The sponsorship of the university Chancellor and the involvement of internal members, such as scholars in the field of social responsibility or people with a grounded sustainability culture, are essential to define a sustainability strategy and support the sustainability reporting adoption. We find that the professors who teach and research subjects about sustainability and sustainability accounting and reporting often coordinate the working groups for sustainability

reporting. The lack of sustainability reporting tools and guidelines for universities was a barrier to implementing sustainability reporting and understanding how to prepare reports (Aversano et al. 2020; Fonseca et al. 2011; Del Sordo et al. 2016). However, involving scholars with expertise in the sustainability and reporting fields allowed universities to overcome this barrier and support a long-standing adoption of sustainability reporting practices (Adams 2013; Siboni et al. 2013; Del Sordo et al. 2016; Venturelli et al. 2019).

Concerning the size-related factor, previous studies demonstrated that the universities' size has a positive relationship with the extent of sustainability and web-based disclosure, as the larger a university is, the more they are exposed to social pressure and the more funding and resources they have (Amey et al. 2020; Manes Rossi et al. 2018; Nicolò et al. 2021). Our results confirm that only medium and large universities have the wherewithal to organise initiatives, invest in the green campuses systems, implement a long-standing sustainability reporting practices, and engage stakeholders through social media.

The main contributions of this paper are twofold. We unveil that social media has not replaced sustainability reporting in universities but was adopted to enhance their stakeholder engagement. Social media has become popular in the last decade and is used to overcome the limits of the reporting practice in establishing a direct and immediate relationship with stakeholders (Bonsón Ponte et al. 2015; Ceulemans et al. 2015; Kimmons et al. 2017; Pisano et al. 2017). Universities use various social media platforms to reach as many stakeholders as possible and keep them updated to ensure an interactive and ongoing dialogue about sustainability. Therefore, sustainability reporting practice stands as the seed for instilling innovative means of stakeholder engagement through social media. It triggered the development of internal practices and sustainability culture in organisations, resulting in novel means for improving and innovating stakeholder engagement.

Our findings also demonstrate that universities use social media as both an engagement device and an educational tool to foster a culture of sustainability in society. According to Muijen (2004, p. 244), the cultural change that has passed through student education and "dialogue facilitates social dynamics in such a way that our organisational and cultural interpretation of social responsibility reflects the needs, wants, motives and values of all participants in the dialogue". Universities involve students in lectures and courses about sustainability, allowing them to include more courses in their curricula and develop their education through doctoral courses about sustainable development. Meanwhile, they invite their community to join surveys to collect research data, share articles about the latest scientific developments, and involve other organisations in events focused on sustainability. Within this educational purpose, universities contribute to explaining the meaning of terms and concepts (e.g., sustainability, waste) by introducing users to new subjects and ensuring their understanding of key sustainability-related topics. They assess whether users are informed about specific sustainability issues through quizzes or quick polls and provide pills to make users aware of human activities' environmental impacts (e.g., the amount of plastic dumped into the oceans). Thereby, universities encourage people to rethink their habits by proposing surveys on users' daily behaviours and suggesting correct ones (e.g., advice on separating waste). Therefore, social media is not used as a mere showcase but as a means to strengthen the relationship with stakeholders while improving the universities' three core missions.

As argued in the literature, social media can be a means to manipulate stakeholders, giving the appearance of stakeholder engagement (Bellucci and Manetti 2017; Greenwood 2007; Manetti 2011). According to our results, universities try to establish dialogic communication with stakeholders with virtuous intentions. However, stakeholders' answers and opinions are expected to influence the universities' actions. Therefore, universities should show what actions and initiatives they have taken to respond to stakeholder requests in social networks' posts. The connection between social media usage and sustainability reporting may be a mutually enhancing relationship because the stakeholders' interactions can produce material information for reporting. In turn, stakeholders can perceive that

they have influenced the university's sustainability strategy, encouraging stakeholders' further participation.

Universities use interactive language encouraging action in their posts. It is a language that calls for action by encouraging stakeholders to comment or post questions (Abitbol and Lee 2017). According to previous research, asking users to do something generates more positive engagement, so users will be more likely to respond positively to a message (Abitbol et al. 2018). Therefore, future research can assess stakeholder engagement by measuring stakeholders' reactivity and mood through specific metrics (see, for example, Bonsón and Ratkai (2013)). Accordingly, further research may provide insights into how stakeholders react to the feeling of being heard and involved in defining the sustainability initiatives. This research is limited to a content analysis of social media dedicated to the sustainability of eight Italian universities. Additionally, this study considers only the Italian context. Thus, future research may extend the findings by examining other universities and international contexts with different regulations and cultures.

Despite these limitations, this study provides early evidence unveiling dialogic communication around sustainability in Italian universities. Our findings provide a picture of sustainability reporting and communication through the social media of sustainability commitment by universities. Universities should use more posts that call users to action, such as quick polls or surveys and questionnaires, by using interactive language for both their purposes (i.e., to educate and engage). Furthermore, this study helps universities understand the importance of sustainability reports in instilling a sustainability culture in their organisations.

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