

# The Foundation Review

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Volume 12 | Issue 1

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3-31-2020

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### Recommended Citation

Candela, F., Demarie, M., & Mulassano, P. (2020). Sustainable Development Goals: Exploring a Foundation's Contribution Through Text Analysis. *The Foundation Review*, 12(1). <https://doi.org/10.9707/1944-5660.1507>

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# Sustainable Development Goals: Exploring a Foundation's Contribution Through Text Analysis

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**Keywords:** *SDGs, foundation, Sustainable Development Goals, text analysis, philanthropy*

## Introduction

In 2000, the United Nations defined a set of Millennium Development Goals (MDGs) to be achieved by the end of 2015: to eradicate poverty and hunger; achieve universal primary education; promote gender equality and the empowerment of women; reduce child mortality; improve maternal health; combat HIV/AIDS, malaria, and other diseases; ensure environmental sustainability; and foster global partnership for development. In 2015, Ban Ki-moon, then the U.N. secretary-general, called the MDG program a remarkable effort: “Yet for all the remarkable gains,” he wrote in the forward to the program’s report, “I am keenly aware that inequality persists and that progress has been uneven” (U.N., 2015a, p. 3).

In that year, a set of 17 new goals was approved by all the members of the U.N. through the adoption of the 2030 Agenda for Sustainable Development (U.N., 2015b). These Sustainable Development Goals (SDGs), with 169 specific targets monitored by 232 indicators, followed the same methodological approach as the MDGs (Kumar, Kumar, & Vivekadhish, 2016; Sachs, 2012), albeit with different purposes and concepts (Sakiko, 2016).

Agenda 2030 takes into account five critical areas: people, planet, prosperity, peace, and partnership (U.N., 2015b), and the dimension of SDG framework is global. The goals are intended as the work of all — governments, public institutions, the private sector, organized civil society, and ordinary citizens — and they address a wide range of issues. (See Figure 1.)

## Key Points

- Compagnia di San Paolo, an Italian grantmaking foundation, conducted a text analysis using a set of keywords extracted from grantees’ project descriptions to measure how successfully its work aligned with the United Nations’ 17 Sustainable Development Goals, and to identify interrelationships among the goals themselves.
- This article describes the foundation’s research methods and shares the results of its analysis, which found significant contributions to the goals in a number of areas funded by Compagnia and less alignment in others. The analysis is particularly noteworthy in its identification of an unintentional pattern of convergence between the foundation’s activities and the Sustainable Development Goals, which were never explicitly adopted by the foundation as terms of reference in any aspect of the planning and development of its work.
- To understand how a foundation’s work aligns with the Sustainable Development Goals framework is useful to many philanthropic functions: communication; advocacy; offering a role in a common, worldwide effort; and evaluating the organization’s own choices (explicit or tacit) against the background set by the project. This article illustrates how other foundations can adapt Compagnia’s approach to evaluate their own contributions.

Each of the SDGs is further defined by several specific subtargets, yet those do not always make evident whether or to what degree key areas

**FIGURE 1** The United Nations' 17 Sustainable Development Goals

Note: United Nations. (2018). <https://sustainabledevelopment.un.org/sdgs>

of philanthropic work are specifically aligned, especially for entities that promote and support projects at a local level: universities, nonprofits, foundations, and municipalities. This poses an important policymaking question.

### *Compagnia di San Paolo*

One of the largest philanthropic institutions in Italy, Compagnia di San Paolo is an independent foundation with roots in the Renaissance that emerged in its modern form from the privatization of a class of state-run banks (Monge, 2016). It had assets of about 6.3 billion Euros in 2018, and was listed No. 7<sup>1</sup> among “Europe’s top 20 private charity donors” in a 2018 ranking by the World Charity Donor Index (Giving, 2018). The foundation operates primarily in Piemonte, Valle d’Aosta, and Liguria in northwest Italy, funding work by nonprofit organizations and administering its own projects, but its geographical scope is not exclusively regional.

From 2015 to the beginning of 2019, the foundation funded more than 4,000 projects for a total investment of almost 700 million Euros. Considering this significant role in the promotion of projects aimed at enhancing the

well-being of individuals, communities, and Italian society, Compagnia’s contribution to the U.N.’s Sustainable Development Goals program was a question that was inevitably raised within the foundation itself, beginning with the foundation’s board.

Compagnia operates through five institutional departments: Art, Cultural Activities, and Heritage; Philanthropy and Territory; Cultural Innovation; Social Policies; and Research and Health. But these represent little more than broad organizational labels, because each department concerns itself with a wide range of issues. (See Figure 2.) It is not immediately clear how these areas of work contribute to each of the SDGs, and there is also the issue of the interrelationships among the SDGs themselves, which several studies have addressed (Allen, Metternicht, & Wiedmann 2018; Pradhan, Costa, Rybski, Lucht, & Kropp, 2017; Waage et al., 2019). If the SDGs represent both a complex and multifaceted framework and individual, real-life projects — and, especially at the local level, rarely is it explicit whether those projects address one or more SDGs — the congruence of the two scopes can be difficult to gauge.

<sup>1</sup> The ranking credited Compagnia di San Paolo with making grants in 2017 that totaled about 185,000 million Euros (\$200 million in U.S. dollars).

**FIGURE 2** Compagnia di San Paolo: A Thematic Organization of Programmatic Departments, 2018–2019

Art, Cultural Activities, and Heritage	Philanthropy and Territory	Cultural Innovation	Social Policies	Research and Health
<ul style="list-style-type: none"> <li>• Cultural attractors</li> <li>• Places of culture</li> <li>• Performing arts</li> <li>• Anthropized landscape</li> <li>• Early access to culture</li> </ul>	<ul style="list-style-type: none"> <li>• Social innovation</li> <li>• Circular society</li> <li>• Community philanthropy</li> <li>• Research on the territory</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural enterprise</li> <li>• Science and society</li> <li>• Culture and civic innovation</li> <li>• Contemporary languages</li> <li>• Access and participation</li> </ul>	<ul style="list-style-type: none"> <li>• Welfare</li> <li>• Active inclusion</li> <li>• Proximity networks</li> <li>• Well-being and education</li> <li>• Empowerment and integration</li> <li>• International cooperation</li> <li>• Employment policies</li> <li>• Agreement</li> </ul>	<ul style="list-style-type: none"> <li>• University system</li> <li>• International affairs</li> <li>• Health</li> <li>• Scientific research and technological innovation</li> <li>• Economic and social research</li> </ul>

### Why Measure Alignment With SDGs?

Is this relevant for philanthropic organizations? While adoption of the SDGs is not mandatory, we suggest that comprehending how an organization contributes to the SDG framework is useful for many philanthropic functions: communication; advocacy; taking part in a common, worldwide effort; and evaluating one's own choices (explicit or tacit) against the background set by the SDG scheme.

The need for metrics to evaluate the relationship between the SDGs and the policies and work of organizations at the national and local level has been recognized, and numerous studies have mapped the contributions of specific institutions to SDGs. Various organizations and professions have been analyzed, among them UNESCO (Bergman, Bergman, Fernandes, Grossrieder, & Schneider, 2018), libraries (Pinto & Ochoa, 2017), nursing (Benton & Shaffer, 2016), information and communications technology services (Ono, Lida, & Yamazaki, 2017), commercial companies (Vodafone, 2019), finance (International Finance Corporation, 2018), health (World Health Organization, 2018), and research (Körffgen et al., 2018). These studies have adopted various analytical methods, both qualitative and quantitative, to explore this relationship.

An interesting approach can be found among universities and research agencies that are evaluating their activities through a methodology based on keywords suggested by the Sustainable Development Solutions Network (SDSN), a network of science and technology experts whose mission is to devise strategies for the implementation of SDGs. Institutions all over the world are involved in this kind of philanthropy exercise, but, to our knowledge, only at a speculative or theoretical level. There is some recent literature on the response of philanthropy and nonprofits to SDGs: Rockefeller Philanthropy Advisors (2019) published a guide to practical tools for aligning philanthropic work to the goals, and the Council on Foundations (COF) has activated an SDG Funders platform<sup>2</sup> that allows stakeholders to monitor how foundations, most based in in the U.S., are supporting the program. COF also published *From Global Goals to Local Impact* (Edwards & Ross, 2016), a report examining “how U.S. funders can view their work in the global development framework and contribute to the success of the goals in the United States” (2016, para. 1). However, our literature overview found no studies attempting to verify such contributions empirically.

The consequences of this work are crucial for philanthropic organizations. Such in-depth

<sup>2</sup> See <https://sdgfunders.org/home/lang/en/>

**FIGURE 3** SDG Keywords Developed by the Sustainable Development Solutions Network: Examples

SDG No. 1 No Poverty	SDG No. 2 Zero Hunger	SDG No. 3 Good Health and Well-Being	SDG No. 4 Quality Education	SDG No. 5 Gender Equality
<ul style="list-style-type: none"> <li>• Africa</li> <li>• Class</li> <li>• Disadvantage</li> <li>• Equality</li> <li>• Income</li> <li>• Microfinance</li> <li>• Poor</li> <li>• Poverty</li> <li>• Quality of life</li> <li>• Resources</li> <li>• Social protection system</li> <li>• Sustainable</li> <li>• Third World</li> <li>• Vulnerable</li> <li>• Wealth distribution</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture</li> <li>• Consume</li> <li>• Environment</li> <li>• Food</li> <li>• Food gap</li> <li>• Food production</li> <li>• Hunger</li> <li>• Legumes</li> <li>• Maize</li> <li>• Malnutrition</li> <li>• Nutrition</li> <li>• Nutritional need</li> <li>• Productivity</li> <li>• Resilient agriculture</li> <li>• Rural infrastructure</li> <li>• Wasting</li> <li>• World's hungry</li> </ul>	<ul style="list-style-type: none"> <li>• Air pollution</li> <li>• Antiretroviral</li> <li>• Biomedical</li> <li>• Child deaths</li> <li>• Death rate</li> <li>• Dental</li> <li>• Disability and inclusion</li> <li>• Disease</li> <li>• Health</li> <li>• Increasing life expectancy</li> <li>• Malaria</li> <li>• Mental health</li> <li>• Mortality</li> <li>• Premature mortality</li> <li>• Sexual health</li> <li>• Soil pollution</li> <li>• Tobacco control</li> <li>• Vaccines</li> </ul>	<ul style="list-style-type: none"> <li>• Access to education</li> <li>• Basic literacy</li> <li>• Cultural diversity</li> <li>• Disability and education</li> <li>• Education</li> <li>• Equal access</li> <li>• Gender sensitive</li> <li>• Global citizenship</li> <li>• Inclusive</li> <li>• International cooperation</li> <li>• Learning opportunities</li> <li>• Lifelong learning</li> <li>• Literacy</li> <li>• Numeracy</li> <li>• Qualified teachers</li> <li>• School</li> <li>• Universal education</li> <li>• Vulnerable</li> </ul>	<ul style="list-style-type: none"> <li>• Basic living standards</li> <li>• Dignity</li> <li>• Disadvantaged</li> <li>• Discrimination</li> <li>• Employment</li> <li>• Empowerment of women</li> <li>• Equal opportunities</li> <li>• Feminism</li> <li>• Forced marriage</li> <li>• Gender discrimination</li> <li>• Governance and gender</li> <li>• Human rights</li> <li>• Parity</li> <li>• Sexual violence</li> <li>• Violence against women</li> <li>• Women's rights</li> <li>• Workplace equality</li> </ul>

research can inform internal reflection about their own missions, a deeper comprehension of the contribution of their current efforts to SDGs, and possible transitions to new activities that are more closely aligned to the goals. This is what we have attempted to do in the case of Compagnia di San Paolo, and we discuss that attempt in this article.

## Methods

To take a measure of the contribution of Compagnia di San Paolo's projects to SDGs, we adopted an approach suggested by the Australia/Pacific Network branch of the Sustainable Development Solutions Network (SDSN) and the Australasian Campuses Towards Sustainability (ACTS) that has been used by several universities to map research and teaching activity related to the SDGs. The SDSN and ACTS developed a set of keywords for each of the 17 goals, identifying a total of 847 words to facilitate comparison with other textual resources. The keywords are linked to the main topic of each SDG (i.e., "Africa" for goal No. 1, No Poverty; "improved nutrition" for goal No. 2, Zero Hunger; "illegal fishing" for goal No. 14, Life Below Water). (See Figure

3.) For our research, we first had to translate to Italian the entire keyword corpus; because the original list is composed of simple and nontechnical words, we did not encounter any particular problems. The keywords were reduced to word roots in order to detect word variations; words with too general a meaning were not considered for the final set. The final list of SDG keywords in Italian comprised 802 words.

Second, we developed an algorithm to calculate a score of similarity between the textual description of each funded project contained in Compagnia's database and each set of SDG keywords; the score was calculated as a percentage of the total number of keywords mentioned in the project description out of the total number of keywords available. The scores ranged from 0%, representing the absence of any keyword, to 100%, representing the presence of all keywords. A matrix was then created with the similarity scores for each project relating to each SDG. It is notable that since this algorithm is not related specifically to SDG keywords, the approach could be applied to different sets of keywords involving other objectives.

**TABLE 1** Descriptive Statistics of Similarity Score on SDGs

SDGs	Projects With at Least One Keyword	Mean	Standard Deviation	Maximum Value
1. No Poverty	83%	8.1%	6.3%	42.3%
2. Zero Hunger	79%	4.6%	4.2%	41.7%
3. Good Health and Well-Being	81%	2.9%	2.4%	16.9%
4. Quality Education	81%	5.7%	4.8%	29.3%
5. Gender Equality	83%	5.4%	4.2%	27.8%
6. Clean Water and Sanitation	53%	1.7%	2.1%	13%
7. Affordable and Clean Energy	67%	3.5%	3.5%	41.2%
8. Decent Work and Economic Growth	93%	6.8%	4.7%	28.1%
9. Industry, Innovation, And Infrastructure	89%	6.9%	5.2%	34.8%
10. Reduced Inequalities	92%	6%	4.1%	28%
11. Sustainable Cities and Communities	93%	6.3%	4.2%	33.3%
12. Responsible Consumption and Production	76%	3.5%	3.3%	26.4%
13. Climate Action	62%	2.7%	2.9%	35.9%
14. Life Below Water	27%	1.7%	3.4%	50%
15. Life on Land	62%	2%	2.2%	19.6%
16. Peace, Justice, and Strong Institutions	72%	2.6%	2.5%	15.9%
17. Partnership for the Goals	82%	5.1%	4.4%	27.8%

### Sample

A total of 5,140 projects funded by Compagnia di San Paolo from January 2015 to February 2019 were collected from the foundation's database, which contains a variety of information about those projects: titles and descriptions, thematic sectors, grant approval dates, and funding levels. The project description was identified as the target variable because each contains rich textual information about the characteristics of the work. From the database of 5,140 projects, we eliminated projects for which a description was not available ( $n = 684$ ) and projects whose descriptions did not contain matching keywords for any SDG ( $n = 45$ ). The final sample comprised 4,411 projects distributed among the foundation's five departments:

- Social Policies: 37% ( $n = 1,632$ )
- Art, Cultural Activities, and Heritage: 34% ( $n = 1,502$ )
- Cultural Innovation: 12% ( $n = 512$ )
- Research and Health: 10% ( $n = 462$ )
- Philanthropy and Territory: 7% ( $n = 303$ )

The distribution corresponds to the current organization of the foundation, under which the number of projects and economic resources are not equally distributed among its departments (Compagnia di San Paolo, 2018).

### Data Analysis

Analysis was begun by using descriptive statistics on the similarity scores to map the alignment of the 4,411 projects with the SDGs. Then, for each SDG a subset of "highly significant" projects was computed, identifying only those projects beyond a significant cutoff threshold calculated as the mean of the total similarity scores plus two standard deviations. The identification of this cutoff allowed us to identify a specific group of projects highly related to the SDGs.

**TABLE 2** Descriptive Statistics of the SDGs Projects Subgroup

SDGs	Similarity Score Cutoff	Number of Projects	Mean Value
1. No Poverty	20.7%	146	25.6%
2. Zero Hunger	13.1%	216	16.8%
3. Good Health and Well-Being	7.7%	244	9%
4. Quality Education	15.4%	145	19.1%
5. Gender Equality	13.9%	105	18.3%
6. Clean Water and Sanitation	5.8%	260	7.2%
7. Affordable and Clean Energy	10.4%	176	13.2%
8. Decent Work and Economic Growth	16.1%	157	20%
9. Industry, Innovation, And Infrastructure	17.3%	256	19.6%
10. Reduced Inequalities	14.3%	138	18%
11. Sustainable Cities and Communities	14.8%	132	18%
12. Responsible Consumption and Production	10.1%	151	13.4%
13. Climate Action	8.5%	135	12.2%
14. Life Below Water	8.4%	186	12.7%
15. Life on Land	6.4%	130	9.2%
16. Peace, Justice, and Strong Institutions	7.5%	224	9.3%
17. Partnership for the Goals	13.9%	191	17.5%

Further analysis was carried out to include the distribution of projects with SDG-alignment potential among Compagnia's five departments. Then, each of the 4.411 projects was assigned to the SDG with the highest similarity score value to obtain a complete distribution of projects, both numeric and economic, among the SDGs.

Finally, a correlation analysis was performed to understand potential interrelationships among SDGs.

## Results

### Similarity Scores

The mean values of the similarity scores for each SDG ranged from 1.7% (for goal No. 6, Clean Water and Sanitation, and goal No. 14, Life Below Water) to 8.1% (for goal No. 1, No Poverty); the overall low values are related to the presence of several projects with a similarity score of 0. (See Table 1.) Considering for each SDG the combination of the number of

projects with at least one keyword and the mean and maximum value of the similarity score, there were six SDGs most related to the projects: No Poverty; Zero Hunger; Decent Work and Economic Growth; Industry, Innovation, and Infrastructure; Reduced Inequalities; and Sustainable Cities and Communities. The goals most underrepresented were Clean Water and Sanitation and Life Below Water.

There are some specific features to consider. The Affordable and Clean Energy goal is represented by a small, niche set of projects (mean score = 3.5%; maximum value = 42.1%), while Partnership for the Goals is covered partially, but from a great variety of projects (mean score = 5.1%; projects with at least one keyword = 82%).

### Highly Significant Subgroups

Identifying a cutoff threshold allowed us to identify a specific subgroup of "highly significant" SDG projects. (See Table 2.) These data confirmed the previous identification of six goals



**TABLE 3** Distribution of Each SDG Project Subgroup Among the Compagnia di San Paolo Departments

SDGs	Art, Cultural Activities, and Heritage	Social Policies	Research and Health	Cultural Innovation	Philanthropy and Territory
1. No Poverty	10% (n = 15)	<b>64% (n = 93)</b>	6% (n = 9)	3% (n = 4)	17% (n = 25)
2. Zero Hunger	<b>35% (n = 75)</b>	34% (n = 73)	6% (n = 13)	14% (n = 30)	12% (n = 25)
3. Good Health and Well-Being	10% (n = 24)	<b>67% (n = 163)</b>	14% (n = 33)	7% (n = 17)	3% (n = 7)
4. Quality Education	14% (n = 21)	<b>60% (n = 87)</b>	9% (n = 13)	5% (n = 7)	12% (n = 17)
5. Gender Equality	8% (n = 8)	<b>81% (n = 85)</b>	2% (n = 2)	6% (n = 6)	4% (n = 4)
6. Clean Water and Sanitation	29% (n = 76)	<b>40% (n = 105)</b>	9% (n = 23)	7% (n = 18)	15% (n = 38)
7. Affordable and Clean Energy	<b>33% (n = 58)</b>	18% (n = 32)	20% (n = 35)	19% (n = 34)	10% (n = 17)
8. Decent Work and Economic Growth	21% (n = 33)	<b>34% (n = 54)</b>	18% (n = 28)	8% (n = 12)	19% (n = 30)
9. Industry, Innovation, And Infrastructure	<b>26% (n = 67)</b>	15% (n = 39)	21% (n = 53)	23% (n = 60)	14% (n = 37)
10. Reduced Inequalities	17% (n = 24)	<b>51% (n = 70)</b>	14% (n = 19)	5% (n = 7)	13% (n = 18)
11. Sustainable Cities and Communities	<b>38% (n = 50)</b>	35% (n = 46)	2% (n = 3)	3% (n = 4)	22% (n = 29)
12. Responsible Consumption and Production	28% (n = 42)	<b>30% (n = 45)</b>	15% (n = 23)	11% (n = 17)	16% (n = 24)
13. Climate Action	23% (n = 31)	<b>28% (n = 38)</b>	20% (n = 27)	12% (n = 16)	17% (n = 23)
14. Life Below Water	22% (n = 41)	<b>40% (n = 75)</b>	14% (n = 26)	12% (n = 22)	12% (n = 22)
15. Life on Land	<b>47% (n = 61)</b>	18% (n = 24)	6% (n = 8)	5% (n = 7)	23% (n = 30)
16. Peace, Justice, and Strong Institutions	12% (n = 26)	<b>61% (n = 136)</b>	15% (n = 33)	6% (n = 13)	7% (n = 16)
17. Partnership for the Goals	21% (n = 40)	<b>28% (n = 54)</b>	16% (n = 30)	14% (n = 27)	21% (n = 40)

as the most closely related to the foundation’s work. The focus on the most significant groups of projects also found strong contributions to the goals of Quality Education, Gender Equality, and Partnership for the Goals. On average, the medium similarity score was 19%; that is, “SDG projects” contained one keyword for every five possible keywords. The average score decreased significantly for SDGs related to climate change, nature, and water.

When looking at the distribution of the SDG projects among the five departments of Compagnia di San Paolo, the majority — 12 — were found in the Social Policies department. (See Table 3.) Social Policies was mainly relevant to work related to poverty, well-being, education, gender equality, water, and institutions. The projects of the Art, Cultural Activities, and Heritage department were mainly involved with work on hunger, environment, and sustainability. Research and Health projects

made contributions to the areas of climate, energy, and technology and innovation; Cultural Innovation projects contributed to industry and innovation, and energy; and the Philanthropy and Territory projects were mainly relevant in the areas of the environment, sustainability in cities, and work.

*Distribution and Correlation*

The data substantially confirmed the results regarding the distribution of the projects among the 17 SDGs. (See Table 4.) Four of them — No Poverty; Quality Education; Industry, Innovation, and Infrastructure; and Sustainable Cities and Communities — accounted for about 60% of the foundation’s 4,411 projects and almost 70% of the economic resources. The highest share of foundation projects, almost 25%, was aligned with the No Poverty goal, along with 30% of the total amount of economic resources.



**TABLE 4** Distribution of Projects and Economic Resources per SDG

SDGs	Number of Projects	Percentage	Total Economic Resources (in Euros)	Percentage	Project's Average Value
1. No Poverty	1,077	24.4%	86,910,415	28.6%	80.697 €
2. Zero Hunger	184	4.2%	15,735,855	5.2%	85.520 €
3. Good Health and Well-Being	20	0.5%	807,000	0.3%	40.350 €
4. Quality Education	514	11.7%	27,370,450	9.1%	53.350 €
5. Gender Equality	303	6.9%	20,128,398	6.7%	66.430 €
6. Clean Water and Sanitation	15	0.3%	331,502	0.1%	22.100 €
7. Affordable and Clean Energy	213	4.8%	6,910,619	2.3%	32.444 €
8. Decent Work and Economic Growth	329	7.5%	17,857,890	5.9%	54.279 €
9. Industry, Innovation, And Infrastructure	525	11.9%	54,232,131	17.9%	103.299 €
10. Reduced Inequalities	301	6.8%	15,325,538	5.1%	50.915 €
11. Sustainable Cities and Communities	520	11.8%	37,973,446	12.6%	73.025 €
12. Responsible Consumption and Production	83	1.9%	3,546,325	1.2%	42.726 €
13. Climate Action	56	1.3%	2,157,000	0.7%	38.517 €
14. Life Below Water	77	1.7%	2,751,974	0.9%	35.740 €
15. Life on Land	37	0.8%	1,184,674	0.4%	32.018 €
16. Peace, Justice, and Strong Institutions	14	0.3%	407,000	0.1%	29.071 €
17. Partnership for the Goals	143	3.2%	8,691,082	2.9%	60.777 €

Considering the comparison between distribution of projects and economic value, the hierarchies were maintained with limited fluctuations (i.e., Industry, Innovation, and Infrastructure had 12% of the projects and 18% of the economic resources; Affordable and Clean Energy had 4.8% of the projects and 2.3% of the resources). A high variance in the average value per projects was found, based on a median value of 68,000 Euros. Projects aligned with the goals of No Poverty; Zero Hunger; Industry, Innovation, and Infrastructure; and Sustainable Cities and Communities had an average value significantly higher than the projects related to the other SDGs.

The correlation analysis among the similarity scores of each SDG was conducted on the full set of 4,411 projects. (See Table 5.) Thanks to the large amount of data, all the correlations were statistically significant ( $p < 0.001$ ). Considering the effective size of the associations, the analysis

showed three that could be considered highly significant ( $r$  coefficient  $\geq 0.70$ ): Decent Work and Economic Growth was highly correlated to Industry, Innovation, and Infrastructure ( $r = .70$ ) and Reduced Inequalities ( $r = .71$ ). Also, Industry, Innovation, and Infrastructure was correlated to Partnership for the Goals ( $r = 0.72$ ). Considering the large size of our sample, moderate correlations ( $r \geq 0.50$ ) also can be interpreted as statistically significant (Taylor, 1990); in this case, several other correlations among the SDGs were highlighted.

### Detecting Connections

Determining whether an organization is contributing to the SDGs, and in what manner, is not an easy task. Coverage of topics inside the SDG framework appears to be incomplete because it does not include some areas, such as culture, that characterize the daily work of many organizations and that are certainly relevant. Several studies have raised the issue that some areas,

**TABLE 5** Correlation Analysis Among SDGs Similarity Scores

	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16	SDG 17
1. No Poverty	-	.51	.53	.41	.60	.40	.23	.67	.59	.64	.50	.39	.29	.38	.31	.38	.51
2. Zero Hunger		-	.29	.29	.36	.37	.32	.60	.52	.48	.46	.55	.28	.21	.33	.25	.45
3. Good Health and Well-Being			-	.41	.47	.42	.26	.50	.44	.50	.45	.30	.23	.31	.25	.39	.45
4. Quality Education				-	.41	.24	.22	.47	.43	.55	.41	.23	.26	.16	.21	.52	.48
5. Gender Equality					-	.30	.12	.54	.38	.59	.32	.21	.20	.18	.21	.48	.34
6. Clean Water and Sanitation						-	.32	.37	.35	.34	.46	.33	.22	.19	.29	.24	.29
7. Affordable and Clean Energy							-	.36	.51	.23	.35	.39	.34	.17	.26	.19	.40
8. Decent Work and Economic Growth								-	.70	.71	.58	.54	.36	.33	.33	.44	.59
9. Industry, Innovation, And Infrastructure									-	.58	.53	.55	.37	.34	.31	.36	.72
10. Reduced Inequalities										-	.47	.36	.33	.20	.23	.53	.54
11. Sustainable Cities and Communities											-	.49	.41	.30	.47	.35	.51
12. Responsible Consumption and Production												-	.38	.33	.31	.23	.51
13. Climate Action													-	.24	.32	.28	.41
14. Life Below Water														-	.18	.16	.22
15. Life on Land															-	.16	.31
16. Peace, Justice, and Strong Institutions																-	.34
17. Partnership for the Goals																	-

such as mental health (Izutsu et al., 2015), human rights (Pogge & Sengupta, 2016), and culture and arts (European Alliance for Culture and the Arts, 2016), have been somewhat ignored by the SDGs. These limitations help explain how difficult it can be for organizations to detect a connection between their mission and the good of humankind and the planet.

Foundations have a special stake in the approaches to implementing the SDGs: They play a major role in civil society and a wide spectrum of work, from the arts and social policy to the environment and scientific research. An understanding of their role in the SDG project can be relevant in calibrating their alignment with those goals, appreciating their contributions to the U.N.'s mission, and fostering possible transitions to work more closely linked to SDGs. These shifts are in their very early stages of development within Compagnia di San Paolo, as the nature of the SDGs and of the foundation's projects are highly complex and do not always share the same realms of language and conceptualization.

And, as noted in a Charities Aid Foundation America (2016) blog post, philanthropy could encounter real barriers to impact on those SDGs (i.e., Industry, Innovation, and Infrastructure) that require partnership with the private sector and government intervention. Moreover, some experts (e.g., Watkins, 2015) have affirmed that the philanthropic sector was conspicuously absent from the SDG debate. In sum, there is consensus that foundations should play a role in the 2030 Agenda for Sustainable Development, but the scope of that role is not clear.

How, then, does a philanthropic organization create a road map to alignment with the SDG project? We assume that these institutions must first understand clearly their own current efforts and how they are connected to the SDG framework. While some organizations, including companies (Vodafone Group, 2019) and international agencies (Bergman et al., 2018), have already attempted to reach this objective, to our knowledge no grantmaking philanthropic foundations have attempted to verify empirically

## *Our study analyzed how the entire activity of Compagnia di San Paolo from January 2015 to February 2019 aligned with the Agenda 2030's 17 Sustainable Development Goals.*

their contribution to the SDGs. And this is what we attempted to do with our foundation, Compagnia di San Paolo.

### **Alignment: Compagnia di San Paolo and the SDGs**

Our study analyzed how the entire activity of Compagnia di San Paolo from January 2015 to February 2019 aligned with the Agenda 2030's 17 Sustainable Development Goals. The textual description of each of the 4,411 board-approved projects was compared to a wide set of specific keywords associated with the 17 SDGs in order to detect those goals most closely aligned with the foundation's activity and the possible interrelations among the goals themselves.

### *Overall Contribution*

First, we found that Compagnia's contributions were particularly notable in work involving eight SDGs: No Poverty; Zero Hunger; Quality Education; Gender Equality; Decent Work and Economic Growth; Industry, Innovation, and Infrastructure; Reduced Inequalities; and Sustainable Cities and Communities. Less substantial was the alignment of the foundation's work with the SDG areas of climate, water, and energy. These results are consistent with Compagnia's mission; issues such as poverty, education, work, innovation, and sustainability are expressly included in its programming documents. Its lesser contributions in environmental areas reflect current foundation programming, in which the environment is treated as an issue interrelated to a number of activities as opposed to a distinct goal.

Some of these results are similar to those evidenced in the COF's SDG Funders platform, which summarizes the level of funding for SDG-aligned projects from foundations around the world — although the bulk of them are U.S.-based funders. Quality Education is the goal most closely related to the foundations' grantmaking, and this stands true in the case of Compagnia di San Paolo; in contrast, alignment with the Life Below Water and Climate Action goals is limited among both Compagnia and the foundations on COF's platform. In the middle ground, however, significant variations are evident and probably due to differences in missions and other characteristics. In general, foundations are contributing significantly to SDG No. 3, Good Health and Well-Being, while Compagnia's alignment is limited. It should be noted, however, that the SDG Funders sample is weighted toward U.S. foundations, and the distribution of Compagnia's funding to SDG-aligned work is similar to other foundations based in southern Europe.

#### *Contributions Distributed by Department*

Our analysis also considered the distribution among Compagnia's five departments of those projects most related to the SDGs. As expected, the Social Policies department funded and administered most of the foundation's projects aligned with the SDGs, especially those involving the areas (e.g., poverty, education, gender equality) we found most represented by the projects. We also found several notable features and some anomalies: the Zero Hunger and Life on Land goals had a high incidence of aligned projects within the Art, Cultural Activities, and Heritage department.

There are two explanations for this. First, each department oversees a range of issues and funds a variety of projects that deal with those issues. And, second, the foundation explicitly promotes transdisciplinary work. For example, over the past few years Compagnia has funded Turin and the Alps, a program whose main aim was to support projects that reinvented the relationship between the city's residents and the mountains. This program was located within the Art, Cultural Activities, and Heritage department — which also deals with projects framing the

landscape as both a natural and cultural legacy. And the Cultural Innovation department funds work aligned with the Industry, Innovation, and Infrastructure SDG that promotes the transition of nonprofits involved in such fields as contemporary art and audience development to full-fledged social-enterprise models, as well as innovative and often technologically innovative projects.

Finally, while the foundation does concentrate its funding in the northwestern part of Italy, it has implemented several projects in Africa; it is that work that further explains Compagnia's significant contributions to the SDGs for eradicating poverty and hunger.

While this blending of domains is clearly evident and reflective of the foundation's transdisciplinary approach, we cannot exclude that the identification of the contribution of each project to SDGs could depend in part on the keywords used and the description of the projects. Among the Zero Hunger keywords, for instance, are some that are very general and that could be used in a range of forms (e.g., "productivity," "product"). This anomaly can explain, for instance, the high frequency of aligned projects located within the Art, Cultural Activities, and Heritage department (e.g., "artistic product").

#### *Interrelationships Among the SDGs*

Third, we explored the associations among the SDGs themselves, and the data confirmed our preliminary expectations. Poverty, work, and economic growth; innovation, infrastructure, and inequality reduction are firmly aligned with the work funded by the foundation, and our analysis found considerable interrelationships among these areas. One example of cross-fertilization can be found in the concept of social innovation (Mulgan, 2006), currently an area of work in which Compagnia di San Paolo is more engaged.

Many other significant associations were found, even if of limited magnitude. Once again, the areas of the environment, climate, energy, and water appeared to be relatively isolated and with weak associations: conversely, there were many associations among all SDGs related to the

citizen, civic awareness, social rights, and related aspects (e.g., cities, work, gender, education).

Evidence suggests that two distinct macro areas can be identified within the activity of the foundation: The first is related to people and citizens. Compagnia di San Paolo's current primary focus, and thus its major contribution to the SDGs, involve projects that align with almost all those SDGs for which citizens are the main beneficiaries, and the work of the foundation's five departments extends to issues that are not directly connected to their main missions. Moreover, data empirically confirmed that the same Compagnia project can contribute to more than one SDG. Projects involving labor markets, for instance, directly align with the goal of Decent Work and Economic Growth, but some of those projects also impact Quality Education; Industry, Innovation, and Infrastructure; and Sustainable Cities and Communities. These cross-relationships are not a new finding; several studies have shown that such links among SDGs are inevitable and that there is a high degree of interdependence (Pradhan et al., 2017; Nilsson, Griggs, & Visbeck, 2016; Le Blanc, 2015).

The second macro area of Compagnia's work involves climate, water, land, and energy: While the health of the environment and the future of the planet are the specific beneficiaries, these are inextricably linked to the long-term quality of human life. Compagnia di San Paolo has just begun to work explicitly on these ecological goals, and they are not mentioned as such in its charter.

Despite its substantial merit, our study has some limits that must be acknowledged.

- **Keywords:** The use of keywords for the computation of the similarity score has potential to generate some bias. As was recognized, keywords for some SDGs were general enough to be assigned to projects unrelated to a specific goal, and for further study a more complex strategy of text analysis based on natural language processing is recommended. In our case, the large amount of available data allowed

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us to be confident that overall, the data analyzed were reliable and interpretable. Furthermore, the identification of those projects highly related to the SDGs was an additional strategy for obtaining reliable evidence.

- **Single-source data:** Another limitation is the consequence of the fact that the research involved only one foundation; the data refer specifically to Compagnia di San Paolo and as such are not generalizable. Still, other foundations could adopt our research approach using their own data. Moreover, a merging of data from many foundations with banking origins, similar to Compagnia, could provide an overview of the work undertaken by all those foundations in Italy.
- **Intent versus implementation:** The evidence for our study was based on project descriptions created by grantees. Subsequent changes in the actual implementation of those projects were a possibility even if there were no substantial thematic shifts.

## Conclusion

From a methodological perspective, our research represents, to our knowledge, the first attempt to map empirically the contribution of a large private philanthropic foundation to the Sustainable

Development Goals in the early period of the U.N.'s implementation of the project. The work of today's foundations encompasses many areas; the SDGs are an interest framework that can inform that work.

As for Compagnia di San Paolo, the in-depth evidence uncovered by this study could deepen the foundation's understanding of its own work and purpose and its relationship to other national and international institutions, particularly in encouraging other foundations to replicate this research. With adequate analytical solutions, philanthropic institutions could map their contribution to SDGs using strategic documents, grantmaking records, historical data, and similar sources, and then determine which role to assume in relation to the SDGs: grantmaker, connector, facilitator, watchdog.

A comprehensive overview of the contribution of the world of philanthropy to Agenda 2030 could be effectively reached and data-sharing among international institutions (e.g., Council on Foundations, the Rockefeller Foundation) should be systematically applied. Considering the experience of Compagnia di San Paolo, the analysis was conducted in order to support the transformation that brought the foundation to be better aligned to SDGs from a thematic and organizational point of view. The analysis responded to the foundation's internal debate and demonstrated that the current spectrum of its activities was already related to Agenda 2030 and that this alignment to SDGs was a reality.

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