

# Subsidiarity

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## Abstract

This paper explores the role of voluntary associations in modern society, focusing on the principles of Subsidiarity and Solidarity. The study analyzes two distinct voluntary organizations in Italy, Banchi di Solidarietà and Portofranco, which address issues related to food poverty, social exclusion, and educational support for children. The paper aims to measure the impact of these associations on society by examining how they share social capital and contribute to the well-being of individuals. The principles of Subsidiarity and Solidarity are fundamental for understanding the ethical foundation of a society. The research questions addressed in this study include the measurement of the social impact of voluntary organizations in Italy, the identification of key indicators to assess the effectiveness of Subsidiarity and voluntary organizations, and the examination of Portofranco's contribution to the educational landscape in Lombardy. The paper utilizes datasets stated before, categorizing information into personal, social, and interest-related domains. The analysis explores correlations between these domains, providing insights into the relationship between personal well-being, social interactions, and specific interests among beneficiaries and volunteers. Despite data limitations, the study attempts to measure the social impact by comparing the performance of beneficiaries in different geographic areas. The study proposes further developments, emphasizing the need for comprehensive and accurate data to assess the effectiveness of voluntary associations. It suggests integrating datasets with educational outcomes, such as Invalsi test results, to better understand the contribution of associations like Portofranco to the educational landscape.

**Key words:** Subsidiarity; Social Capital; Voluntary Associations

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## 1 INTRODUCTION

Subsidiarity and Solidarity are the two fundamental principles of an ethical society. These are the expression of how the power is shared in a country, what is the role of the government and which are the responsibilities of individuals. Helping one's neighbour, morally and materially is synonymous to brotherhood and love for others; all these are ideals preached by the Christian church, but which it is good to spread also among non-believers or those belonging to other societies and ethnicity, since it should be a constant presence in our character and way of doing things. These two principles are often seen as complementary rather than opposing principles. They can work together to create a more balanced and effective social system.

Subsidiarity is a principle that emphasizes decentralization and the idea that decision-making should occur at the most local and individual levels possible. It suggests that higher-level authorities, such as the government or larger institutions, should only intervene when it is necessary to address issues that cannot be effectively managed at lower levels. In essence, subsidiarity promotes the idea that individuals, families, and local communities should have a significant degree of autonomy and control over their own affairs.

On the other hand, Solidarity is a principle that stresses the interconnection and mutual responsibility of individuals and communities in society. It advocates for a sense of collective responsibility and cooperation to ensure the well-being of all members of society, particularly those who

are marginalized or in need. Solidarity encourages people to support one another, even when it may involve sacrifices on the part of the more fortunate. It's often associated with ideas of social justice and equity and implies that there is a shared responsibility to address social and economic inequalities.

As stated above, subsidiarity focuses on a decentralized level of the decision making, the aim is to empowering local entities by sharing the social capital. Here the Government has a limited power intervention, the emphasis are the local communities and the individuals. Solidarity however often implying a more significant role for government and institutions in addressing societal issues. The government has a central power in addressing social inequalities and promoting social welfare. The focus here is emphasize the collective responsibility and cooperation among all members of society to ensure the well-being of everyone. From the Constitution of the Italian Republic [1]:

Art. 2. La Repubblica riconosce e garantisce i diritti inviolabili dell'uomo, sia come singolo sia nelle formazioni sociali ove si svolge la sua personalità, e richiede l'adempimento dei doveri inderogabili di solidarietà politica, economica e sociale.

It considers the solidarity as a social duty in every sphere: each of us has to put himself at the service of social development. Subjects subsidiaries bring to bear those abilities to read emerging social needs... After Covid19 period, geopolitical uncertainty due to the Russian-Ukrainian conflict and energy crisis, the number of volunteers and beneficiaries is increased significantly.

Even a quintessential pessimist like Giacomo Leopardi, at the conclusion of his thought, shows a light of hope: the only way to be able to live in this world of suffering is the union of humans, and the goal is to unite to create a "social chain."

A key role about this two principles is owned by voluntary associations. This can be done by the volunteer with the sharing of the social capital. Social capital is a complex and multidimensional concept, which is not strictly defined. In the literature there are different context in which this word is used:

- Social capital in terms of networks of relationships maintained by individuals or within a specific community
- Social capital in terms of trust and cooperation norms prevalent within a given context
- Social capital understood as the relational skills of individuals

This project aims to measure the influence of social capital within society and assess the significance of volunteers' contributions in sharing this capital. As we will see, these are complex questions due to the multi-faced concept of social capital and the difficulty to measure subsidiarity, strictly dependent by the available data.

Our study is based on two different associations: Banchi di Solidarietà and Portofranco represent two distinct facets of the volunteering landscape in Italy, each serving unique objectives. The former is dedicated to addressing issues related to food poverty and the threat of social exclusion, while the latter focuses on nurturing children's personal engagement and motivation.

## 1.1 Banchi di solidarietà

This association takes action in combating food poverty and the risk of social exclusion. Banchi di solidarietà bring a package of food to families in need, and volunteers establish friendships and relationships with the family, while experiencing, however, a positive with friends of the association who together deepen the meaning of life through this gesture of gratuitousness. There are many types of volunteers at the counter, those who deliver who then have direct contact with the beneficiaries and those who remain in the warehouse preparing the packages.

The acquisition of food comes in the form of "donate groceries" donations from individuals, either from food collections in parishes or businesses or from the Banchi alimentari. But food need itself is simply the means to get there, an opportunity to meet people. For example, there are 360 needy families in Como with 7500 deliveries per year. Each volunteer provides a small part of his or her time and effort, but put together they result in enormous solidarity. The drive of volunteers starts from wanting to be useful, to have people who love you, to do good to others in order to

receive it as a result.

We want to quote the phrase of one of the volunteers in a YouTube video that extracts the essence of the association "There is no need to be superheroes".

## 1.2 Portofranco

Portofranco is a place where children are welcomed as people [2].

Their goal is to motivate them by sustaining that personal involvement that encourages them to study. Through one-on-one tutoring, students are helped in doing homework and recovering educational debts. Dispersed rhymes with unemployment, so learning to combat the former is important to create an improvement in the latter. Kids learn to experience school engagement as human growth. They don't just study but experience sharing. In fact, the real mission of the association is not only to contribute at the school level, but to create social value, reduce youth discomfort and foster social integration.

On April 18 in St. Peter's Square, the pope addressed young people and said, "One should not be ashamed to say, 'I am afraid of the dark!'" to not be ashamed of one's fears, that they should not be a reason for judgment, but that they should raise their expectations".

# 2 DATASET DESCRIPTION

In the project, four distinct datasets were utilized, and each dataset was classified into two main groups: "Banchi" and "Portofranco". Within these groups, two subcategories were present: "Beneficiari" (Beneficiaries) and "Volontari" (Volunteers). Both datasets share common demographic information, including age, gender, residential ZIP code, and temporal data. Additionally, both datasets feature a column indicating the starting year of individuals' involvement, referring to their engagement with the respective organizations, either as beneficiaries or volunteers.

## 2.1 Differences between Datasets

The distinctions between the two datasets highlight that the "Portofranco" dataset emphasizes factors associated with academic performance and study preferences ("Ho ottenuto voti più alti a scuola" and "Mi piace di più studiare"). In contrast, the "Banchi" dataset appears to revolve around an individual's societal role, whether as a beneficiary ("Sono più attivo per cercare di migliorare la mia situazione") or as a volunteer ("Ritengo di avere delle responsabilità verso le generazioni future"). Regarding variances between the Beneficiari and Volontari columns within each dataset, it can be inferred that specific metrics and experiences are linked to each group. For instance, the Beneficiari group's columns in both datasets reflect a focus on self-improvement and self-confidence ("Sono più soddisfatto/a di me stesso/a", etc.). Conversely, the Volontari group's columns concentrate on aspects related to community involvement and empathy towards others ("Ritengo che quello che faccio contribuisca efficacemente al benessere della mia comunità", etc.).

## 2.2 Division of Domains

We categorized the dataset information into three domains: "Personal-related", "Social-related" and "Interest-related".

- Personal-related: This domain is present in both the "Banchi" and "Portofranco" datasets, focusing on individual well-being, personal growth, and emotions.
  - Columns in both datasets: These columns capture aspects such as age, gender, residential ZIP code, and starting year, providing information about individuals' personal characteristics and the duration of their involvement.
  - Specific columns in "Banchi" dataset: Columns like "Mi sento più sicuro di me stesso/a" (I feel more confident in myself) and "Mi sento di avere più energie" (I feel to have more energy) indicate the beneficiaries' self-improvement and positive changes resulting from their engagement with Banchi di Solidarietà.

- Specific columns in "Portofranco" dataset: Columns such as "Mi sento più soddisfatto/a di me stesso/a" (I feel more satisfied with myself) reflect individuals' personal sense of contentment and well-being in the context of their involvement with Portofranco.
- Social-related: This domain is common to both the "Banchi" and "Portofranco" datasets, highlighting social interactions, community involvement, and relationships.
  - These columns encompass various aspects, such as thinking about consequences of actions on others, feeling part of a community, having friends like family, and feeling responsible towards society and future generations. They provide insights into individuals' social awareness, responsibilities, and connections with others.
- Interest-related: This domain distinguishes between the datasets' specific focuses:
  - "Banchi" dataset – Solidarity-related: This domain reflects the beneficiaries' engagement with Banchi di Solidarietà and their experiences related to the organization's solidarity services. It includes columns like "Provo più gusto nel fare le cose" (I take more pleasure in doing things) and "Penso al futuro con più ottimismo" (I think about the future with more optimism).
  - "Portofranco" dataset – School-related: This domain reflects aspects related to academic performance and studying, such as "Ho ottenuto voti più alti a scuola" (I have obtained higher grades at school) and "Mi piace di più studiare" (I enjoy studying more than before). It indicates the dataset's specific interest in academic experiences and improvements in educational activities.

## 2.3 Datasets distribution

The "Banchi" and "Portofranco" datasets comprise information gathered from various questionnaires conducted throughout Italy. To provide a comprehensive overview of the geographic locations covered, separate charts were created for each dataset. Upon overall analysis, it became apparent that both datasets do not encompass the entire Italian map; instead, they focus on specific regions where questionnaires were administered.

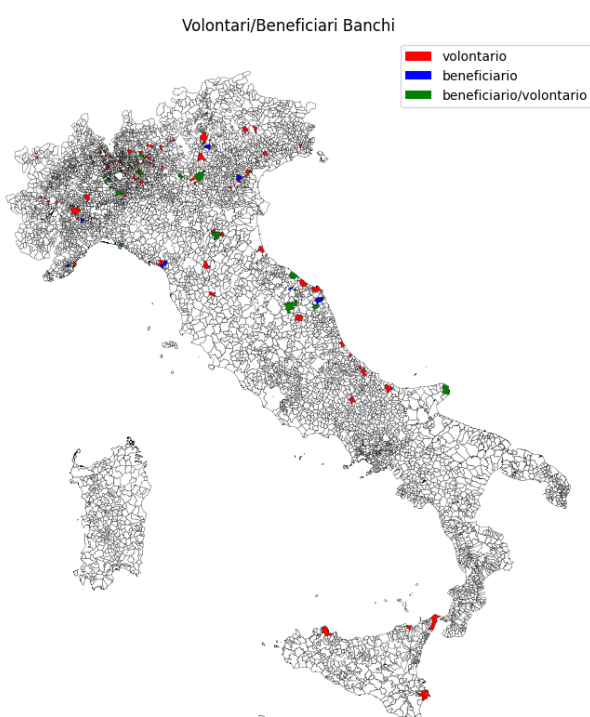


Figure 1. Volunteers and beneficiaries comparison for Banchi di Solidarietà

Figure 1 illustrates the data distribution in the "Banchi" dataset. Different colors represent areas with only volunteers (in red), only beneficiaries (in blue), and both categories (in green). The region with the highest concentration of data is Lombardy, followed by various areas in central-east Italy. Notably, there is an absence of data from the southern regions of Italy, with the exception of a few volunteers in Sicily.

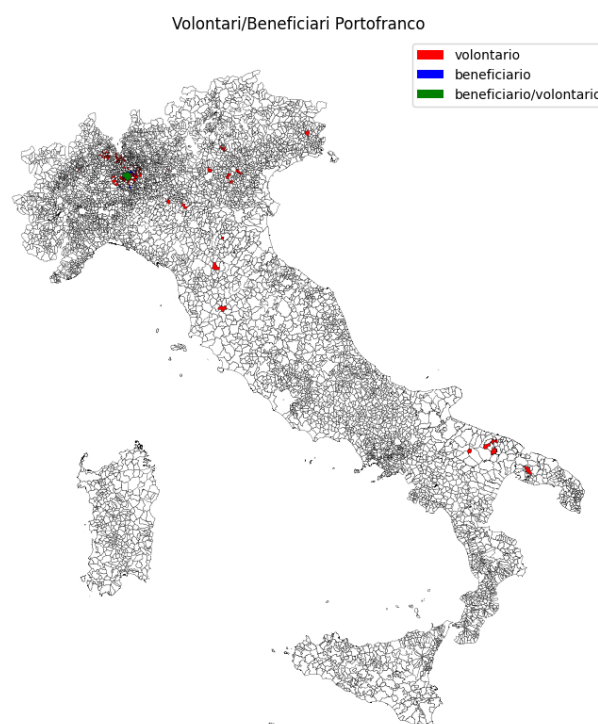


Figure 2. Volunteers and beneficiaries comparison for Portofranco

Figure 2 displays the map of Portofranco, revealing a different pattern compared to the "Banchi" dataset. Here, the data distribution across the Italian territory is lower, with a higher concentration of both beneficiaries and volunteers in the Lombardy region. In contrast to the "Banchi" dataset, there are some volunteers in southern Italy in the Portofranco dataset, but no data is available for the islands or central Italy. In both the "Banchi" and "Portofranco" datasets, it's important to note that the data collection extends beyond the level of entire Italian municipalities; it also encompasses specific neighborhoods within cities. This nuanced approach is particularly evident when examining the data distribution in the Milan area.

## 3 RESEARCH QUESTIONS

This project is focused on the Subsidiarity developed in Italy, in particular how the local entities share their social capital.

Social capital refers to the networks, relationships, and social connections within a community or society that facilitate cooperation, trust, and collective action. In Italy, social capital plays a crucial role in shaping community bonds, fostering cooperation, and influencing civic engagement. However, measuring social capital is complex due to its diverse landscape, with variations across regions. Informal networks, such as family and close-knit communities, represent a substantial part of social capital but are challenging to quantify accurately. Cultural factors, including traditional values, regional disparities, and historical context further complicate measurement efforts.

General datasets may offer snapshots of social capital, particularly through the lens of voluntary associations. Yet, understanding the long-term dynamics and sustainability of social capital requires comprehensive, longitudinal studies.

### 3.1 Is it possible to measure the social impact of the activities carried out by voluntary organizations in Italy?

Our initial aim was to study the benefit that poor people receive from non-profit organizations. However, this is today not so easy for different reasons. For sure, data are needed, but these data has to follow minimum principles and content common to evaluation systems, such as their transparency and communication by the association and comparability over time.

Moreover, they has to be traced to quantitative parameters appropriately used. To this end, Entities should provide an evaluation system that identifies both the value dimensions that the activities pursue and the indices and indicators consistent with the activities being evaluated.

The other important point is that an activity proposed by an association can generate more than an effect and can take on different relevance depending on the "external context". In our study for example is quite useless to compare Portofranco to Banchi di Solidarietà due to the dimension of the organizations and the economic value behind them.

Speaking about the data in our research, the data coming from Portofranco are few and moreover we couldn't study if and how much the students gained from the work of their volunteers because we don't have temporal data, for example we can collect an average grade of each student at the beginning of the experience in Portofranco and the one in the moment of the collection of the data in order to understand practically the impact of the association.

A good study could be carried out with data coming from a set of students that are only in the association in two different timestamps, for example a range of 4 months. Moreover, to be sure that analysis is not biased, we have to know if the students don't have other scholastic supports from school or other associations. An option can be to add a boolean column that defines if the students have as helpers only the volunteers from Portofranco or also other types of assistance such us a private teacher. Whether the latter is verified, we can see if their school condition has improved.

Another problem turns out at this point: the number of observations. In this sense, the fact of having a very small number of units, for example only 89 beneficiaries of Portofranco, turns out to be a problem in the analysis and probably not representative of the group they should symbolize.

Our datasets exhibit limitations in specificity, providing insufficient granularity to convey concrete, knowledge-based insights. Furthermore, they suffer from geographical imbalances, hindering the generation of robust assumptions. The lack of detailed information about beneficiaries and the trajectory of their life improvements presents a challenge. Ambiguities in the definition of volunteers' residences and occupations further complicate the clarity of the context.

In a perfect knowledge situation we can propose these two ways to measure the social impact of voluntary associations:

- Find some indicators to measure how effective is the association actions in term of shared Social Capital
- In the context of Associazione Portofranco, how it contributes to the educational landscape in Italy?

Consequently the lack of information, we present a conceptualized implementation of our goals, envisioning an environment with comprehensive and precise information to more effectively meet the project's objectives. This comparison sheds light on the potential impact of improved data quality on the project's outcomes.



### 3.2 What are the main indicators used to assess the effectiveness of subsidiarity and voluntary organizations in Italy?

When analysing data to assess the effectiveness of subsidiarity and voluntary organizations in Italy, a systematic approach was undertaken to construct a baseline to compare the individual values obtained in individual geographic area. This approach allowed a more in-depth analysis of the impact of voluntary activities and the identification of potential trends. This analysis aims to make it clear which aspects could have been analysed if I had complete data, as explained in the paragraph above.

To begin, the four available datasets were subdivided in turn into 3 sub-groups according to the scope of the questions to which the individuals were previously subjected: 'Personal-related' (Personal-related), 'Social-related' (Social-related) and 'Interest-related' of the specific dataset (Subsidiary-related or School-related). Details concerning the subdivision can be found in "Division of Domains" paragraph.

Through the calculation of subject performances (using the median) in the three analyzed areas, we aimed to discern potential relationships between their outcomes. This type of analysis thus makes it possible to assess whether the median performance in a specific domain influences the median performance in the other domains, and if so, how. In order to assess this type of analysis, pearson correlation was used in all four datasets; below is the result of the dataset concerning the beneficiaries of Banchi di Solidarietà.

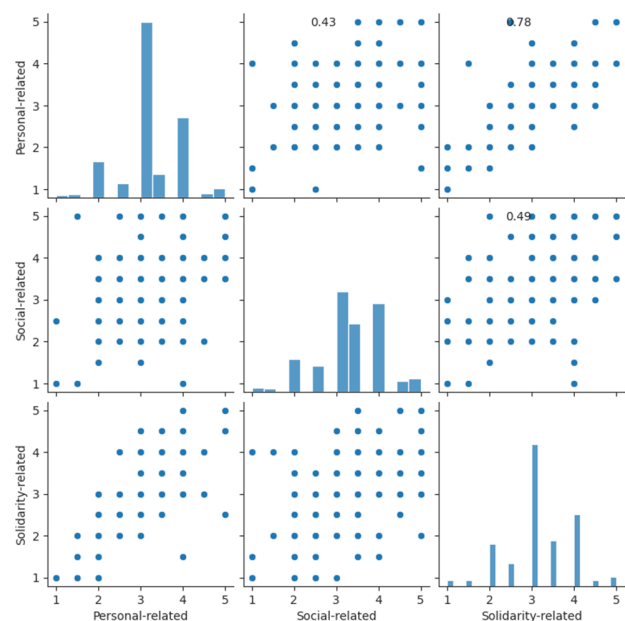


Figure 3. Pearson correlation among subgroups of Banchi di Solidarietà

The above graph shows that all the variables exhibit a very similar behavior among each other: growing the value of one variable increases the other.

In particular, the highest value is the correlation among "Personal-related" and "Solidarity-related" which is 0.78, which means that there is a strong positive correlation between the two variables under consideration. The variations of one variable are strongly associated in a directly proportional manner with the variations of the other variable. While the other two correlation: "Personal-related" vs "Social-related" and "Social-related" vs "Solidarity-related" have a similar behavior with correlation values of 0.43 and 0.49 respectively. These last two values still indicate a positive correlation between the variables but less strong compared to the first case.

After observing the specific case, the correlation behavior in all four datasets can now be examined. As previously mentioned, there are Beneficiaries and Volunteers datasets for Banchi di Solidarietà and Portofranco. This is illustrated in the following table.



	Personal-related vs Social-related	Personal-related vs Interest-related	Social-related vs Interest-related
Beneficiaries Banchi	0.435	0.782	0.489
Volunteers Banchi	0.489	0.298	0.394
Beneficiaries PortoFranco	0.602	0.653	0.495
Volunteers PortoFranco	0.765	0.477	0.803

Figure 4. Pearson correlation among subgroups for all the datasets

The obtained results indicate positive correlations among the aspects analyzed, with variations in the strength of these relationships across the different datasets: The analysis reveals that among the datasets, the Volunteers PortoFranco dataset exhibits the highest correlation in the aspect of Social vs Solidarity/School ("interest-related"), with a robust positive correlation of 0.80. On the contrary, the Volunteers of Banchi di Solidarietà dataset shows the lowest correlation, specifically in the aspect of Personal vs Solidarity/School ("interest-related"), where the correlation is weak at 0.30. In summary, the Volunteers of PortoFranco dataset stands out with the highest correlation values, while the Volunteers of Banchi di Solidarietà dataset has relatively lower correlation values. To effectively address the research question, it is crucial to have complete and accurate data, as mentioned in the preceding paragraph. Additionally, the dataset should exclusively include geographic area and not sub-areas classified as geographic area, as seen in the current dataset. Responding to the research question with incomplete or inaccurate data could lead to misleading conclusions. Therefore, the following outlines a cautious approach, even with flawed data, to attempt to answer the research question. This underscores the importance of data quality and accuracy in ensuring the reliability of research outcomes. To compute the research question, the previously calculated median values (for each subgroup) have been grouped by geographic area, with the values for each municipality being summed, resulting in an indicative value for each municipality in each area. This has been done both for all Banchi di Solidarietà and the PortoFranco datasets. Subsequently, the difference between the values obtained for the volunteers and the beneficiaries was computed for each subgroup. This process yielded a value for each municipality within each domain, indicating how volunteers impact beneficiaries:

- if the difference is positive, indicate that the volunteers have a positive impact on the beneficiaries in that specific municipality and in the area of interest.
- If the difference is negative, indicate that volunteers have a negative impact on beneficiaries in that specific municipality and in the area of interest.

It must be emphasised that the results obtained are an end in themselves as it is possible that the result of the subject's improvement in the 3 areas is not only due to the impact of the volunteers but also to other factors for which further analysis should be done in order to assess their actual impact net of the other aspects, but net of the availability of data, the results are as following:

- Banchi di Solidarietà

The table in Figure 5 shows the impact of the volunteers on the beneficiaries in all the geographic area in a decreasing order referred to Banchi di Solidarietà. The highest value can be found at Bizzozero in the province of Varese (Lombardy) in the "Solidarity-related" subgroup with a value of 24.5, while the lowest value has been obtained in the same subgroup at Campagnola in the province of Bergamo (Lombardy) with a value of -3.0. These results tell us that, at the median, the volunteers' score against the beneficiaries one is the highest/lowest among all the other geographic area and their effect has a very significant impact/doesn't impact the result of beneficiaries.

- PortoFranco

The table in Figure 6 shows the impact of the volunteers on the beneficiaries in all the geographic area in a decreasing order referred to PortoFranco. The highest value has been found at Chiaravalle Milanese in the province of Milan (Lombardy) in the "Social-related" subgroup with a value of 6.0, while the lowest value has been obtained in the same subgroup at Musocco in the province of Milan (Lombardy) with a value of -3.0. These results tell us that, at the median, the volun-

teers' score against the beneficiaries one is the highest/lowest among all the other geographic area and their effect has a very significant impact/doesn't impact the result of beneficiaries.

	Personal-related
('LOMBARDIA', 'VA', 'BIZZOZERO')	19.0
('LIGURIA', 'SV', 'ALASSIO')	10.0
('LOMBARDIA', 'CO', 'PONTE LAMBRO')	7.5
('LOMBARDIA', 'MI', 'ABBIATEGRASSO')	6.5
('EMILIA ROMAGNA', 'BO', 'SAN DONNINO')	5.5
...	...
('LOMBARDIA', 'PV', 'SAN MARTINO SICCOMARIO')	-1.0
('LOMBARDIA', 'VA', 'BESANO')	-1.0
('LOMBARDIA', 'MI', 'MOTTA VISCONTI')	-1.0
('LOMBARDIA', 'MI', 'NIGUARDA')	-1.5
('LOMBARDIA', 'BG', 'CAMPAGNOLA')	-2.0

	Social-related
('LOMBARDIA', 'VA', 'BIZZOZERO')	19.0
('LIGURIA', 'SV', 'ALASSIO')	8.5
('LOMBARDIA', 'CO', 'PONTE LAMBRO')	7.5
('LOMBARDIA', 'MI', 'ABBIATEGRASSO')	7.5
('LOMBARDIA', 'CO', 'ALBATE')	6.5
...	...
('LOMBARDIA', 'MI', 'MOTTA VISCONTI')	-1.0
('LOMBARDIA', 'MI', 'ASSAGO')	-1.5
('LOMBARDIA', 'MI', 'MAGENTA')	-1.5
('LOMBARDIA', 'BG', 'ZOGNO')	-2.0
('LOMBARDIA', 'BG', 'CAMPAGNOLA')	-2.0

	Solidarity-related
('LOMBARDIA', 'VA', 'BIZZOZERO')	24.5
('LIGURIA', 'SV', 'ALASSIO')	15.5
('LOMBARDIA', 'MI', 'ABBIATEGRASSO')	7.0
('LOMBARDIA', 'BG', 'ALMENNO SAN BARTOLOMEO')	5.5
('LIGURIA', 'SV', 'CASANOVA LERRONE')	5.0
...	...
('VENETO', 'VR', 'VERONA')	-1.0
('LOMBARDIA', 'BG', 'ZOGNO')	-1.5
('LOMBARDIA', 'CO', 'CERMENTE')	-2.0
('LOMBARDIA', 'VA', 'GORLA MINORE')	-2.5
('LOMBARDIA', 'BG', 'CAMPAGNOLA')	-3.0

Figure 5. Impact of volunteers on beneficiaries of Banchi di Solidarietà

	Personal-related
('LOMBARDIA', 'MI', 'BAGGIO')	3.0
('LOMBARDIA', 'MI', 'QUINTO DE STAMPI')	3.0
('LOMBARDIA', 'MI', 'NIGUARDA')	3.0
('LOMBARDIA', 'MI', 'LOCATE TRIULZI')	2.5
('LOMBARDIA', 'PV', 'VIDIGULFO')	2.0
...	...
('LOMBARDIA', 'MI', 'COLOGNO MONZESE')	0.0
('LOMBARDIA', 'MI', 'BARONA')	0.0
('LOMBARDIA', 'MI', 'GRATOSOGGIO')	-0.5
('LOMBARDIA', 'MI', 'LINATE PAESE')	-0.5
('LOMBARDIA', 'MI', 'ROGOREDO')	-2.5

	Social-related
('LOMBARDIA', 'MI', 'CHIARAVALLE MILANESE')	6.0
('LOMBARDIA', 'MI', 'GORGONZOLA')	4.0
('LOMBARDIA', 'MI', 'QUINTO DE STAMPI')	4.0
('LOMBARDIA', 'MI', 'BAGGIO')	3.0
('LOMBARDIA', 'MI', 'LOCATE TRIULZI')	3.0
...	...
('LOMBARDIA', 'MI', 'AFFORI')	-1.0
('LOMBARDIA', 'MI', 'BARONA')	-1.0
('LOMBARDIA', 'MI', 'LINATE PAESE')	-1.0
('LOMBARDIA', 'MI', 'ROGOREDO')	-1.5
('LOMBARDIA', 'MI', 'MUSOCCO')	-3.0

	School-related
('LOMBARDIA', 'MI', 'AFFORI')	2.0
('LOMBARDIA', 'MI', 'LOCATE TRIULZI')	2.0
('LOMBARDIA', 'MI', 'CHIARAVALLE MILANESE')	2.0
('LOMBARDIA', 'MI', 'PIOTTELLO')	2.0
('LOMBARDIA', 'MI', 'NIGUARDA')	2.0
...	...
('LOMBARDIA', 'MI', 'LINATE PAESE')	-0.5
('LOMBARDIA', 'MI', 'CARUGATE')	-1.0
('LOMBARDIA', 'MI', 'MILANO')	-1.5
('LOMBARDIA', 'MI', 'GRATOSOGGIO')	-1.5
('LOMBARDIA', 'MI', 'ROGOREDO')	-1.5

Figure 6. Impact of volunteers on beneficiaries of PortoFranco

By examining the two preceding graphs, it becomes evident that the impact of volunteers on beneficiaries has been greater in Banchi di Solidarietà compared to PortoFranco. This conclusion is drawn from the observation that the variability of differences is much higher in Banchi di

Solidarietà compared to Portofranco. Additionally, it is worth highlighting that the values for Portofranco are primarily relative to the Lombardy region, whereas in Banchi di Solidarietà, the variability is observed across different geographical areas. It is important to note, as we already said, that these conclusions are based on the available data and may require further examination to consider other potential factors that could influence the observed differences.

### 3.3 To what extent does Associazione Portofranco contributes to the educational landscape in Lombardy?

Examining the context, it becomes logical to question whether volunteer associations yield tangible outcomes in the Italian setting. The intricate challenge of comprehending social capital sharing can be effectively addressed through Data Integration. In this segment, we delve into an analysis of the influence that Portofranco association exerts on the academic performance of its beneficiaries.

Suppose we have a complete and balanced dataset about the beneficiaries of Portofranco, we can analyze and compare these results with the data about the annual report on Invalsi tests. We can decide to focus on the educational context of the beneficiaries per municipality for the year 2022 and the differences between the results of the Invalsi tests in 2021-2022 and 2020-2021.

The dataset on Invalsi tests contains results divided by municipality, school level, and subject. Each row has five different score levels, and the percentages of students who achieved those score levels are associated with them.

By join together in a unique value these information we can show the school level (for example in Lombardy) along the various geographic areas:

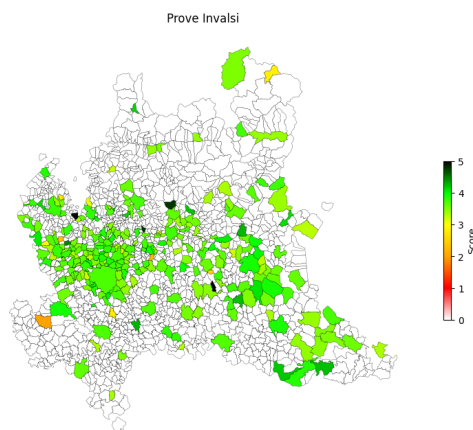


Figure 7. Invalsi tests score differences for the available geographic areas

We can enhance our study with more specific information about the invalsi results for each student.

Coming back to our context we can highlight some lacks:

- The beneficiaries of the educational support provided by the Portofranco association are mainly concentrated in northern Italy, specifically in Lombardy.
- Also at the regional level we have just a few geographic area.
- We don't have data on specific individuals benefit from Portofranco such as which school they attend and the academic level they have achieved following the association's support.
- Beneficiaries have no information about which school year they're attending. Compute it from the age can be biased.
- The results of Invalsi tests specific for each student are not available.

Suppose we have all the data described above, so our Portofranco dataset can be integrated with individual Invalsi results. This is an important metric for understanding how the Portofranco association share the social capital along the Italian population.

By focus on the school related domain (reference to the previous paragraph) we can depict the Beneficiaries relation with the association. This is the measure of how the volunteer actions are perceived by the people. In concrete we will compute two different scoring values:

- The last two year differences in terms of school domain scoring.
- The growth or decrease of the Invalsi result in the last two years.

These are the outcome of our study, which can be compared and used to assess how well Portofranco contributes to the educational landscape in Italy.

## 4 CONCLUSIONS AND FURTHER DEVELOPMENTS

The importance of subsidiarity in Italy and in general in the world is clearer after this analysis. For sure it is also clear the fact that is not easy to measure it. As a consequence, for anyone wishing to resume and continue our analysis we suggest to push for changing the way in which associations' datasets are constructed. For this reason, in our analysis it's specified which points should be introduced in a dataset such us temporal data. Moreover, it would be essential to have information about other associations apart of Portofranco and Banchi di Solidarietà. In the last part of the analysis, we underlined the possible analysis that future researchers can perform, for example taking into account data from Prove Invalsi to compare the improvements of associations' students.

## References

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