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**An investigation on the strategic use of online social networks to enhance
nonprofits' value chain thriving for a better world**

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Abstract

The aim of this investigation on the strategic use of online social networks to enhance nonprofits' value chain thriving for a better world, is to bring together two different fields of study, the third sector and online social networks. In order to perform this analysis the methodology starts by understanding the relevant topics, online social networks and the value chain. This understanding provides the background for answering the research question, *which nonprofits' value chain activities can be positively affected by online social network's use?* The model is built evaluating the third sector in Portugal followed by a comparison between the nonprofit and for profit sectors. As a result of this analysis a value chain for the nonprofit sector is built. Based on research and six interviews with nonprofits it is created a model of how online social networks impact each nonprofit's value chain activity. From this impact analysis nine hypotheses are drawn and tested through a survey made to 42 nonprofits and further evaluated by another survey made to 206 online social network users. From the survey analysis it is concluded that online social networks have a positive impact on every value chain primary activity. From the users' perspective, the publication of information about assistance programs and social awareness and engagement campaigns are the activities most benefiting from the use of online social networks. As final conclusions from the opinions shown during the interviews it is concluded that gathering management information, recruiting volunteers and staff and creating partnerships are online social network functionalities that nonprofits should explore. Nevertheless, from the survey analysis these same functionalities appear as not used by the majority of nonprofits.

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1. Introduction

1.1 What?

The world has changed drastically over the past decade (Molinsky, Davenport, Iyer, & Davidson, 2012). Companies are now operating in a global scale and hence cultural diversification is an imperative for companies to deal with (Molinsky, Davenport, Iyer, & Davidson, 2012). Furthermore, organizational structures are less hierarchical and more collaborative which makes the use of online networks crucial to success (Davenport & Iyer, 2012).

Social media tools are nowadays commonly used technologies, said Radha Subramanyam senior vice president for media and advertising insights and analytics at Nielsen in New York. According to a Nielsen study of the 3rd quarter of 2011, 4 out of 5 active Internet users visit social networks. This behavior is quite obvious when looking at the numbers, 483 million daily users of Facebook worldwide, and 750 million monthly active users (Facebook Newsroom, 2011). Furthermore, catastrophes such as the tragic earthquake in Haiti are instantaneously spread around the world; millions of people immediately responded in a huge variety of ways, this prompt reaction was only possible through the use of social media (Zuckerberg, 2010). This was impossible and unimaginable a few years ago (Zuckerberg, 2010). An online social network (from here on named OSN) has the power to increase awareness, attract and retain donors, change organization's reputation, increase money raised and mentions online (Trompeter, 2010). Moreover, according to the previously mentioned Nielsen's study, 53% of active adult social networkers follow a brand.

The aim of the present study is to provide an insight of what is being done regarding the usage of OSNs by non-profit organizations (from here on named NPOs) and how could organizations operating in this sector improve its value chain activities through the use of an OSN platform such as Facebook or Twitter, the two most used for NPOs (Common Knowledge, 2011). Throughout this dissertation the value chain framework from Michael E. Porter (1985) will be thoroughly analyzed so that OSN functionalities can be applied to it.

1.2 Why?

This study will focus on the third sector also known as nonprofit sector, in 2010 in the United States alone, private giving reached \$290.89 billion, up to 26% of US adults volunteered through an organization making a total of 15 billion hours during the year, which

is worth \$283.84 billion at average wages (Roeger, Pettijohn, & Blackwood, 2011). Moreover, it is predicted that in 2012 demand will rise and both philanthropic and governmental funding are likely to decrease during this year, affecting especially smaller organizations, likewise, organizations will be looking for more volunteers (Nonprofit Research Collaborative, 2011).

The question is why should it be relevant to provide a strategic framework for NPOs to use OSNs.

In what concerns to OSNs, according to Trompeter (2010) it is important to notice that it offers a considerably lower cost, it is growing faster and faster every day, it presents an opportunity for conversation, it is a very effective way of reaching certain audiences and works as a complement for the messages being shared in other channels. Moreover, the costs associated with online giving compared to offline methods are considerably lower, and there are no time constraints on receiving donations and message spreading (Harrison-Walker & Williamson, 2000). Likewise, by adding an extra channel the charity should be able to reach a larger range of donor market segments and also generate synergies among new and pre-existing giving opportunities (Rangan, Menezes, & Maier, 1992). It is also curious to notice that up to 50% of online donors are making their first donation to the organization (Gomes & Knowles, 2001) (Hall, 2000). Additionally, according to Carrie Lewis from US Human Rights, “If I am a believer in a certain cause I want everybody to know”.

An interesting possibility is that the implementation of an online fundraising system could motivate the charity’s employees responsible for other fundraising channels to innovate, work harder, and generally improve their efficiency and effectiveness (Howells, 2002). There are thus multiple reasons why non-profit organizations should aim at defining a clear strategy for managing the potential emerging from OSNs (Trompeter, 2010). That is exactly where this study can provide an additional value; to understand how can OSNs help NPOs improve its value chain while achieving their mission.

Besides, the heterogeneous and intangible character of the services provided by NPOs (i.e., ideas and information, attitudes and awareness) it makes the Internet more appealing to this kind of organizations than to for-profit firms (Saxton & Game, 2001).

Nonetheless, it is important to be cautious when using OSNs if careful planning, evaluation and coordinate strategy is not followed; it can result in an ineffective and inefficient use of resources (Paine, 2007). Furthermore, due to the lack of commitment into focused strategy for the use of OSNs, almost one fourth of nonprofits using them, is not allowing for user

commenting, which creates a barrier to fully extract the potential of online community engagement (Fine A. H., 2007).

Finally, through the correct use of OSNs, nonprofits engage people in sharing their work with the goal of raising awareness for social issues, organize communities, or even advocate for legislation (Kanter & Fine, 2010). This said, in the long run, online nonprofits are helping to shape a safer, fairer, healthier world (Kanter & Fine, 2010).

1.3 Research Question

As previously mentioned, the goal of this study is to connect the pieces of the puzzle between NPOs and OSNs. In order to achieve this objective, this paper will answer to the following research question:

RQ: Which nonprofits' value chain activities can be positively affected by online social network's use?

1.4 Methodology

Throughout this study, a specific approach to collect and analyze, evaluate, test and draw conclusions, from the data available, is followed.

Firstly, a literature review is conducted throughout Chapter 3 in order to understand what has already been studied in this field.

The structure of this dissertation starts by providing a state of the art on the strategic use of Internet by NPOs, then a critical understanding of OSNs and the value chain framework developed by Michael E. Porter in 1985.

Following this, in Chapter 4 the model is developed starting with an analysis of the nonprofit sector in Portugal and then the sector in general, highlighting the major differences in comparison with the for-profit sector so that a correct adaptation of the value chain framework to the nonprofit sector can be done. After proposing the value chain model, for each value chain activity OSN functionalities will be matched so it is possible to properly assess which value chain dimensions can OSNs have a positive impact in. In order to make the correspondence between nonprofit value chain and OSN functionalities research and six field interviews with nonprofit managers are conducted to refine the final model. From this analysis nine hypotheses are generated from each value chain activity.

Subsequently, in Chapter 5 the hypotheses are tested, with a series of questionnaires to NPOs to confirm the relevance of the impact. Moreover, this strategy is also tested through questionnaires to OSN users to assess the importance of part of the variables. *Figure 1* presented below summarizes the process for this dissertation work.

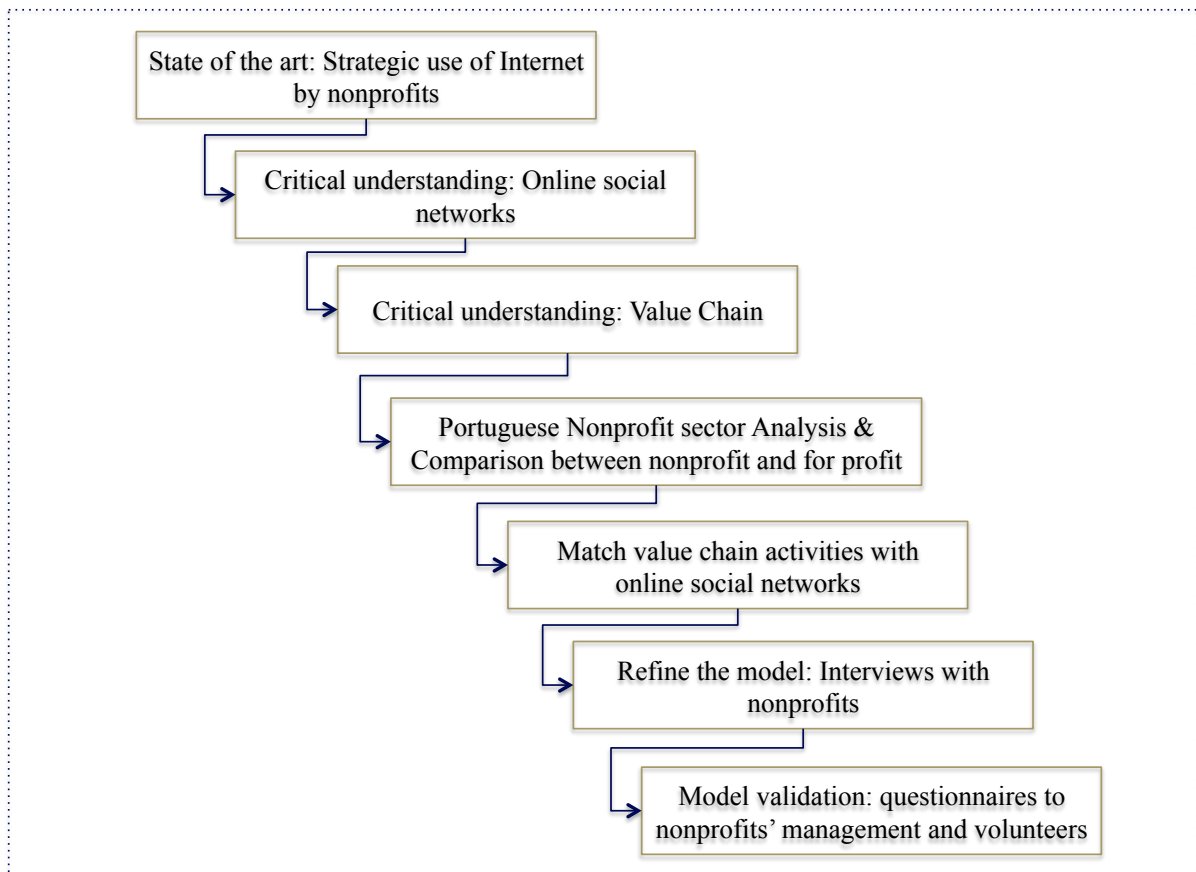


Figure 1: Dissertation methodology stages

Finally, in Chapter 6 the conclusions are drawn based on the research and data collected, and an answer is provided to the research question, as well as limitations and future research opportunities identified.

2. Literature Review

In this dissertation chapter a literature review is conducted. The literature review aims at understanding the state of the art considering the main topics explored in this dissertation.

Firstly, an evaluation on the current use of Internet by NPOs is done. Additionally, a critical understanding on social media and OSNs is performed not only to set the framework for the rest of the dissertation but also to understand what are the general and particular characteristics of the topic that were already studied. Secondly, a critical understanding on the value chain framework is done to define the terms associated with this concept so that it can be used throughout the model construction.

2.1 State of the art: Strategic use of Internet by nonprofit organizations

In the mid-1990s Web 1.0 started developing and nonprofits began creating websites with information about their organization like mission, goals, staff, board and annual reports, additionally they commenced using tools like email to communicate with donors to raise money and give news' updates (Grant & Fulton, 2010). This was a type of communication from one to many (Grant & Fulton, 2010). In the mid 2000s the social network boom started with technology companies supplying tools for users to generate content, this created the era of knowledge sharing called Web 2.0 (services like YouTube, Facebook, Twitter, etc) (Grant & Fulton, 2010). Considering adoption and use of this tools there is still a great deal of dispersion among NPOs (Grant & Fulton, 2010). On one hand one can find sites like Kiva, GlobalGiving, DonorChoose, VolunteerMatch, with strategies relying on Web 2.0, connecting funders with receivers and volunteers with opportunities (Grant & Fulton, 2010).

On the other hand, there are traditional nonprofits that rely almost exclusively on the offline world, although some use the Internet to raise funds or attract volunteers, technology did not change its operating model (Grant & Fulton, 2010).

Since 2001 there has been a clear shift in online participation of charitable organizations, before this year close to 50% of the organizations listed in the Philanthropy 400 (list published by the Chronicle of Philanthropy of the top four hundred charitable fundraising organizations in the United States) had the possibility to collect online donations.

By the end of 2001, the percentage was about 80% and in 2007 it was about 95% (Waters R. D., 2007). Internet is offering a set of opportunities by providing complete and transparent information, which makes it an appealing market to allocate resources in the nonprofit sector (Ozcelik, 2008). According to Pollach et al. (2005), charitable organizations are using the Internet for three basic purposes: information, interaction and fundraising. This use of the Internet made online giving rise at an exponential rate as shown in the accompanying figure from “The Online giving Study” by Network for Good and TrueSense Marketing (2009).

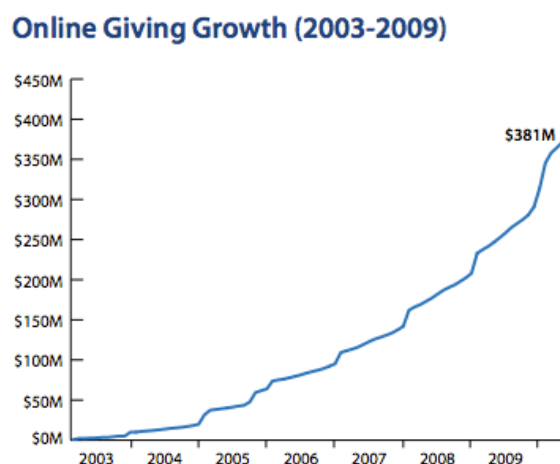


Figure 2: Online Giving Growth (2003-2009)

According to Hackler & Saxton, Kanter & Fine and Saxton & Guo, NPOs can use the web strategically in an innovative and creative way, to address four main goals (1) diminishing government funds (2) increase in demand for assistance programs (3) decline in civic participation and (4) increasing public demand for accountability (Hackler & Saxton, 2007) (Kanter & Fine, 2010) (Saxton & Guo, 2009). Consequently, to adapt to this challenges some authors argued that NPOs should implement a Web strategy aimed at aligning its activities and practices with its organizational mission and goals (Kanter & Fine, 2010) (Saxton & Guo, 2009). Advantages specifically brought from OSN presence are the possibility of listening to public opinion, tracking trends, identifying influencers and building relationships (Kanter & Fine, 2010). NPOs can benefit from several opportunities by using the Internet, to promote their social goals, increase visibility, spread their services and programs while attracting and diversifying sources of funding (Olsen, Keevers, Paul, & Covington, 2001) (Frenza & Hoffman, 1999) (Roufa, 1999) (Saxton & Game, 2001).

2.2 Critical understanding: Social Media and online social networks

As previously mentioned, people's lifestyles have been changing and global population is now living in a digital era (Wattanasupachoke, 2011). Also according to Wattanasupachoke, this forces organizations to adapt their strategy to boost competitive advantage, consequently making digital strategy especially social networking, to play a central role. Additionally, as also argued by Wattanasupachoke, internet users' behavior as changed considerably, from using e-mails and search engines, to the creation, upload and share of personal content over the internet as a means of social connection. Furthermore, one can see that this digital evolution as changed society's functioning, global and local communication and the way people connect and organize (Mernit, 2009).



Figure 3: Social Media

In this context, it is important to define social media according to Mernit, social media is the aggregation of web-based tools and services allowing users (common people), to create, share, rate and search content without having to log into a portal site. In order to provide an increased focus to this research more attention will be given to OSNs, which being part of Web 2.0 (Lai, 2008), can be defined as a group of actors and ties which represent some relationship (Brass, 1998). These actors can be people, organizations or other social entities, which connect through a set of relationships, such as friendship, affiliation, financial exchanges, trading relations or information exchange (Grabner-Krauter, 2009).

Several social networks have been launched with different objectives (Ellison, 2007), most of them with free membership, access is granted after a registration procedure, completing information such as age, location, interests, other personal data and a photo upload (Boyd D. M., 2007). According to Grabner-Krauter, social network sites can have different underlying objectives, emphasizing constant communication with friends or reconnecting with people, meaning friendship-oriented networks such as Facebook. These networks can also be work or business related such as LinkedIn, romantic relationship initiation like Match.com or can even be oriented to connect people with the same interests for example MySpace (Grabner-Krauter, 2009). Social networks tend to fulfill different needs, including guidance and informational support to help decision-making (Macaulay, 2007), or affiliation and

belonging, power and prestige or pure entertainment (Andrews, 2002). As a conclusion, according to Boyd and Ellison, social networks can be described as web-based services which: (1) permit individuals to create a public or semi-public profile within a defined system, (2) indicate a list of other users that they are connected to, (3) view the connections made by other users in the system.



Figure 4: Social media & online social networks

There is no consensus on the date for the beginning of online social networking, some argue that it started in 1997 with the launch of sixdegrees.com, but for Communities and Local Government this can be tracked to 1987 when several ecological networks emerged culminating with the creation of Associations of Progressive Communications in 1990. When web 2.0 became accessible to the mainstream it started being a common tool for thousands and now millions of people (Communities and Local Government, 2008). The small online communities were the main starting point for social networking and the creation of the sharing generation (Communities and Local Government, 2008).

According to Communities and Local Government there are two reasons for the rise of this new form of communication, the networking factor it provides to connect with people who share common features or interests. Additionally, the easiness it provides to create and share

content compared with websites, people have the wish to create this content and OSNs present a more efficient alternative to traditional websites (Communities and Local Government, 2008). Furthermore, this online communities although some argue that they tend to isolate people, others defend they actually encourage people to the real world by engaging them with others and the events of others' lives, especially for those who, for some reason are disengaged from family, friends or communities (Communities and Local Government, 2008).

OSNs can be grouped by their presence – Global or Local – and by their creation date – Existing or New – in the figure below is a selection of some OSNs divided according to this categories (Communities and Local Government, 2008).

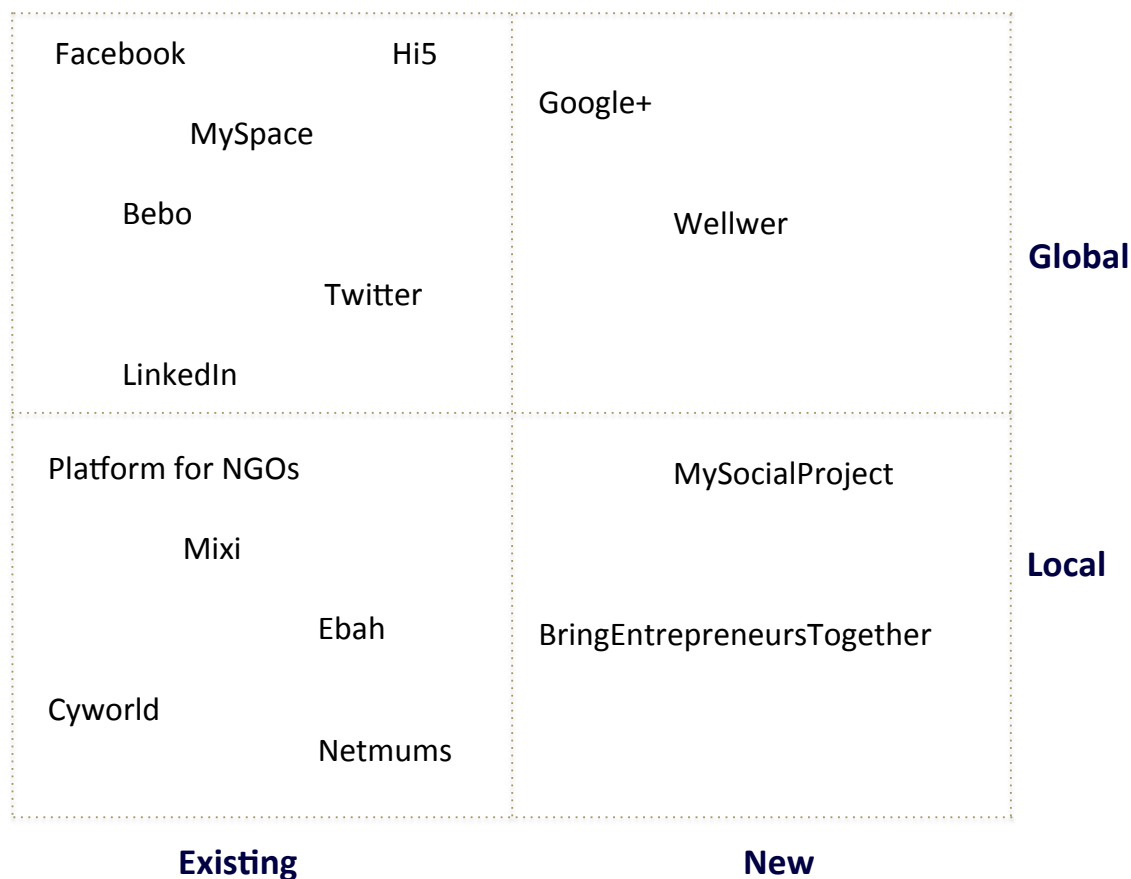


Figure 5: Online social networks by world presence and age (Communities and Local Government, 2008)

In 2012 the five most popular OSNs were Facebook with 750M monthly visitors, Twitter with 250M, LinkedIn with 110M, MySpace with 70,5M and Google+ with 65M (eBizMBA, 2012). In appendix 2 a more complete list with different types of OSNs, divided by creation dates, is presented.

Furthermore, it is worth mentioning that besides the specific benefits each type of OSNs provide, they present other opportunities by supporting vulnerable and minority groups, organizing political and social action, linking to public and third sector increasing collaboration and supporting special interest groups (Communities and Local Government, 2008).

2.3 Critical understanding: Value Chain

“Every firm is a collection of activities that are performed to design, produce, market, deliver and support its product or service, this can be represented in the value chain.” (Porter, 1985) The value chain is a framework, which disaggregates a firm amongst its strategically relevant activities so that causes of differentiation can be identified, when a firm is able to perform these activities better than its competitors, competitive advantage is achieved (Porter, 1985). As defined by Michael E. Porter, the value chain is “ a system of interdependent activities which are connected by linkages” and “is embedded in a larger stream of activities called the value system”. The value chain is represented by the figure below.

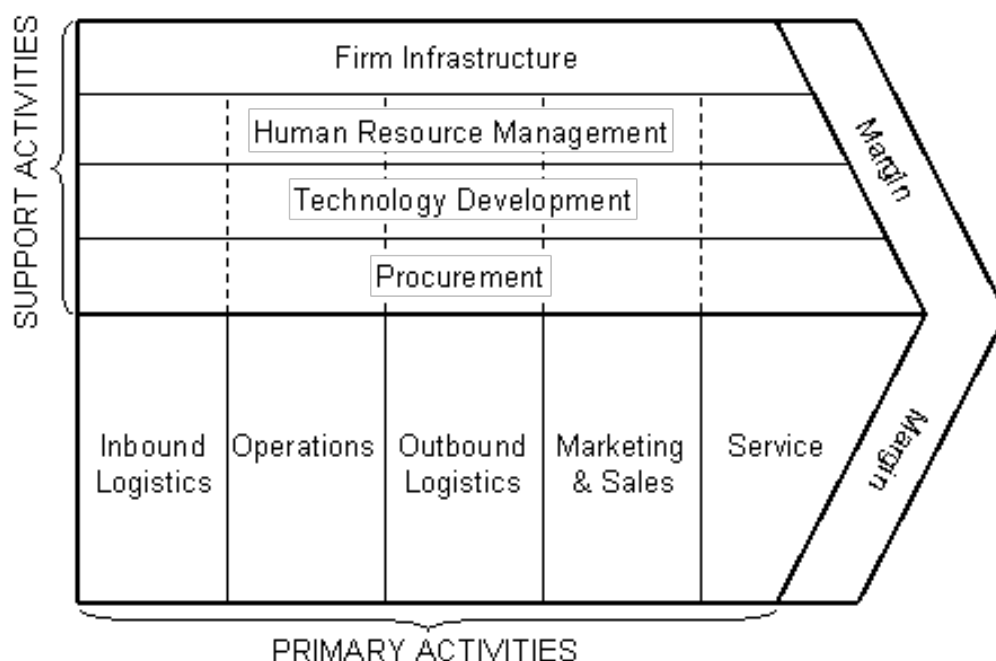


Figure 6: Value Chain (Michael, E. Porter, 1985)

According to Michael E. Porter, the value chain is divided in primary and support activities. Primary activities are those directly contributing to value creation in a firm by bringing materials, producing the product, distributing, promoting and providing after-sales support to the final client (Porter, 1985). Support activities do not directly contribute to value creation and include administrative tasks, human resource management, technological development and procurement activities (Porter, 1985). Furthermore, these activities support all the activities directly contributing to value creation (Porter, 1985). Within the same sector there are clear similarities amongst firm value chains (Porter, 1985).

Furthermore, Michael E. Porter identifies one important source of competitive advantage in the value chain analysis, which are linkages. Being able to identify linkages allows understanding how a specific activity affects or is affected by others, moreover through linkage optimization and coordination competitive advantage can be attained.

Although Porter's (1985) value chain has been one of the most largely used management frameworks since 1985 (Gillies, 1995), it has received some critics because of its over simplistic low cost and differentiation notions in the current corporate environment characterized by increased competition and huge technological change (Kotha, 1995).

Additionally, there has been some concern regarding data quantification, only two or three cost drivers suggested in the value chain are quantifiable whereas all the others are not (Partridge, 1994(b)). Besides most of value chain components being qualitative, non-economists have criticized it due to its overemphasizing of economic effect. (De Wit, 1998). As a consequence of this arguing some authors like Freeman and Liedtka (1997) propose an evolution of the value chain incorporating a different view traditional vs. emerging this is product-focused vs. capability-focused. Furthermore, authors like Partridge and Perren (1994(b)) although pointing the lack of precision revealed by the value chain, they still emphasize the benefits that strategists can draw from its analysis. Moreover, the value chain continuous application through a different set of industries from manufacturing to services, demonstrates its adaptability and transversal application (Choi, 2000). Though the initial value chain model is perhaps more appropriate to manufacturing than service industries (Tribe, 1997). However, many academics see services as not very different from manufactured products which allows the application of the value chain model also to service industries (Harvery, 1993).

Furthermore, there have been some studies connecting the value chain with business globalization, information technology development and Internet businesses by authors like Lovelock and Yip (1996), Applegate, McFarlan and McKenney, Ward and Griffiths (1996).

2.3.1 Value chain activities

In order to fully understand the value chain and be able to apply it to a specific sector it is important to analyze it in detail.

2.3.1.1 Primary activities

According to Michael E. Porter and as previously mentioned, primary activities are those directly contributing to value creation representing the process from raw material to after-sale service.

Inbound logistics – Consists of receiving, storing and disseminating inputs to the product/service. This stage comprises activities such as, material handling, warehousing or inventory control (Porter, 1985).

Operations – This phase consists in the transformation of inputs into the final product/service. Including activities like machining, packaging, assembly, testing or printing, (Porter, 1985).

Outbound logistics – This stage encompasses all the activities immediately after production as, collecting, storing and distribution to buyers (Porter, 1985).

Marketing and sales – In order to provide a means by which buyers can purchase the product and inducing them to do so this stage groups the tasks performed with that objective. Among the activities are advertising, promotions, sales force, channel selection and pricing (Porter, 1985).

Service – The last phase of this process consists on providing after-sale support. This support can include installation, training, and product adjustment (Porter, 1985).

2.3.1.2 Support activities

According to Michael E. Porter, support activities are those peripheral to the core tasks of a firm.

Procurement – Includes procedures for dealing with vendors, qualification rules and information systems, which deal with all purchases for every stage of the primary activities (Porter, 1985).

Technology development – Similar to an R&D department but more broad, because it deals with technological issues for all the value chain activities. It includes know-how, procedures and equipment (Porter, 1985).

Human resource management – Deals with human resources issues to support the value chain activities, including recruiting, hiring, training, development and compensation for all types of personnel (Porter, 1985).

Firm infrastructure – It incorporates a set of different activities from general management, planning, finance, accounting, legal, governmental affairs and quality management. It is transversal to the entire firm and not directed to a specific value chain activity (Porter, 1985).

The literature review allowed establishing the current understanding about OSNs as well as the value chain framework. From now on it is important to make the connection of both concepts with the nonprofit sector, which is the aim of this dissertation. In order to access the possibility of NPOs using OSNs within its value chain, a framework needs to be defined. The following section builds the model to enable it to be tested among nonprofits.

3. Analysis model discussion

Throughout this section of the dissertation, the model for evaluating the use of OSNs by NPOs is built. Firstly, an overview of the Portuguese third sector is presented and then a comparison between the nonprofit and for profit sector is conducted in order to establish the differences. These differences enable the creation of a nonprofit value chain framework that will be used as a basis for matching OSN's functionalities.

3.1 Portuguese non profit sector

Once that this study aims at providing an insight into the Portuguese nonprofit sector it is relevant to understand the sector in Portugal. The Portuguese nonprofit sector has its beginning in the XIX century more precisely, after the civil war in 1834, when some influent personalities started to think about a new direction for society (Franco, *Controvérsia em torno de uma definição para o Terceiro Sector*, 2004). In this same year, Silvestre Pinheiro Ferreira publishes his first project for a “Bank of help and Mutual Insurance”; six years later he presents a project for the improvement of social classes (Franco, *Controvérsia em torno de uma definição para o Terceiro Sector*, 2004). In 1844, Alexandre Herculano and António Alves Martins start defending a fairer society based on associations, mutuality associations and cooperatives where mutual help would enhance the more unprotected (Franco, *Controvérsia em torno de uma definição para o Terceiro Sector*, 2004). These actions were considered the more relevant and contributing for the emergence of the sector, although some activities that resemble the creation of this type of associations remote to the XIV century (Franco, *Controvérsia em torno de uma definição para o Terceiro Sector*, 2004).

This sector is formed of different types of organizations: associations, mutualistic associations, cooperatives, foundations, private institutions of social solidarity, charities, local development organizations, non governmental organizations for development and cooperation, federations, unions and confederations (Franco, Wojciech, Hairel, & Salamon, 2005).¹ Additionally, it is worth mentioning the different fields of action of NPOs in Portugal. The fields are: culture and leisure, education and investigation, health, social services, environment, development and housing, law, cause defense and politics, philanthropic intermediaries and

¹ Once that it is not the aim of this study to explore the details and differences of these organizations, for more detail please refer to the study “Economia do conhecimento - Organizações sem fins lucrativos” from António Manuel Andrade and Raquel Campos Franco

volunteer promoters, international, religious, professional associations and syndicates (Franco, Wojciech, Hairel, & Salamon, 2005).

One of the main reasons explaining the relative lack of development of this sector in Portugal comparing with other Occidental European countries is attributed to the presence of paternalistic institutions and the forty years of dictatorship the country experienced (Franco, Wojciech, Hairel, & Salamon, 2005). These facts make the sector more comparable to Spain and Italy rather than other European countries, which do not share the same religion and tradition (Franco, Wojciech, Hairel, & Salamon, 2005).

Regarding the weight of this sector in society, in 2006 the sector presented expenses of €5.9 billion from which 51% were to acquire goods and services from other institutional units of the economy and 46% were for employee compensation (Salamon, Sokolowski, Haddock, & Tice, 2012). In terms of full time workers it employed 185.000 people in 2006, which represented 4.3% of employment in Portugal (Salamon, Sokolowski, Haddock, & Tice, 2012). Comparing with other countries in 2006 nonprofits in Portugal paid less than other sectors with an average of €14.709 against an average of €29.013 for the others (Salamon, Sokolowski, Haddock, & Tice, 2012). This sector was constituted by 10.123 nonprofits in 2007 (Carvalho, 2007) and it generated in 2006 a gross value added of €2.7 billion adding 2% to the national economy (Salamon, Sokolowski, Haddock, & Tice, 2012). Regarding the origins of funds for this sector in 2006, 30% comes from government transfers, 23% from sales of goods & services, 10% from other private transfers, 8% from property income, 7% from subsidies, 3% from taxes received and 10% from other sources (Salamon, Sokolowski, Haddock, & Tice, 2012).

According to Franco, Sokolowski et al., some of the main challenges and opportunities faced by the Portuguese third sector are:

- Increasing public awareness and consciousness about the sector;
- Strengthening the legal framework;
- Improve the sector's capacity;
- Improve the relationships between government-nonprofits-for profits;

It can be said that this sector reflects past political, cultural and religious influences, which have been shaping the sector; nevertheless the democracy has given a great impulse to nonprofits by the trust given to private nonprofits by the state (Franco, Wojciech, Hairel, & Salamon, 2005). However, this development has been concentrated in the social services

(Franco, Wojciech, Hairel, & Salamon, 2005). The composition of employment in the third sector in Portugal is predominantly dominated by social services representing 52%, then membership organizations with 16%, education with 11%, health with a share of 7%, public administration with 5%, arts entertainment & recreation with 4%, research & development with 2% and others with 3% (Salamon, Sokolowski, Haddock, & Tice, 2012). The value added by each of the previous fields although represented by different percentages, they respect the same ranking order (Salamon, Sokolowski, Haddock, & Tice, 2012).

Some things to notice from this sector are the potential opportunities emerging from the low percentage of volunteer work, which could be capitalized with platforms for matching volunteers with organizations (Andrade & Franco, 2007). Additionally, the fact that this sector in Portugal and other countries, depends largely on own funds and government meaning that philanthropic donations still represent the smallest share and for that reason represents an opportunity (Andrade & Franco, 2007).

3.2 Non profit sector analysis and comparison with for profit

The naming to this sector is still largely controversial due to the diversity of terms and lack of clarity of its meanings (Andrade & Franco, 2007). The variety of terms for this sector goes from, third sector, non-profit sector, social economy, non-governmental organizations and civil society organizations (Andrade & Franco, 2007). Each of these terms has its pros and cons (Andrade & Franco, 2007); it is not the aim of this research to explore them. According to the Australian Department of Communications, Information Technology and Arts (DCITA) in 2005, the definition is “A non-profit organization is one formed to achieve a common goal or benefit, is member or public serving in nature, is based on voluntary membership and is prohibited from collecting or distributing profit”. The primary purpose of this type of organizations is to create value for society and not profit (Lettieri, 2004). According to Salamon (2007), the non-profit sector constitutes a sizable economic agent. Moreover, analysis conducted across eight countries reveals that NPOs contribute for an average of 5% of GDP (Sharyn Renshaw, 2009). Non-profit organizations face some challenges when compared with the for profit sector, namely extensive social responsibility and both strategic and financial restrictions (Lio, 2006). Furthermore, these types of organizations face a fundamental difference in terms of motivation (Rhoades-Catanach, 2000) (O’Connor, 2001). As an overall rule nonprofits are less concerned than for-profits with financial gain (O’Connor, 2001).

On one hand, for profit company's ultimate vision is to increase profits and maximize shareholder value, its mission reflects what managers consider important to achieve that goal. On the other hand, a charter usually defines nonprofits' vision and a public mission statement (Lio, 2006). Vision represents for nonprofits its ideals and goals as an expression of what it does. The vision of a nonprofit organization should be to generate the greatest achievable amount of societal change (Lio, 2006).

NPOs differ from traditional for profit companies in several ways, NPOs usually pursue several non-financial marketing targets and consequently they market for social change also known as 'societal orientation' (Liao, 2001). Furthermore, nonprofits tend to attract higher levels of positive and negative public attention than commercial businesses (Shapiro, 1973). For this reason, marketing strategies are based upon a wider scope of stakeholders, which play a crucial role in marketing strategy development (Gallagher, 1991).

Moreover, one of the most clear and distinctive characteristics of the third sector is the *non-distribution constraint* (Hansmann, 1980), this meaning that NPOs may not distribute profits among individuals with a stake in the organization in contrast with for profit organizations' proceedings (Courtney, 2002).

In order to be more specific, the mission of a NPO clearly addresses a service, which creates social value by 'doing good' (Kanter & Summers, 1987); this contrasts with for profit organizations, which have the ultimate goal of making money (Pinho & Macedo, 2006). Nevertheless, the differences separating for profit companies and nonprofits have been diminishing over time (Kanter & Summers, 1987). This is because for-profit companies are increasingly aware of having a social mission (Ouchi, 1981). On the other hand nonprofits are thriving to become more financially oriented as a consequence of the need to attract revenues (Leat, 1995).

One important aspect to notice is that NPOs, compete to secure scarce resources, connecting in a network of interactions with different stakeholders, such as, individuals, the state, for profit companies or other nonprofits (Courtney, 2002). Internet appears in this context providing an important role to increase visibility, diversify strategies (Frenza & Hoffman, 1999), share information, fulfill stakeholders' needs, attract contributors and augment public image (Pinho & Macedo, 2006).

Below, in *figure 3* a summary of the main differences between nonprofit and for profit companies is provided.

	Nonprofit	For-profit
Vision	Social change/impact (Lio, 2006)	Profit maximization (Lio, 2006)
Mission	'Doing good' (Kanter & Summers, 1987)	Providing a product/service to make money (Pinho & Macedo, 2006)
Performance expectations	Subjective evaluation (Lio, 2006) (Roberts, 1993)	More objectively defined (Roberts, 1993)
Strategic choices	Complex responsibility network (Lio, 2006)	Best interest of shareholders (Lio, 2006)
Ownership	Responsibility areas: Supporters, employees and clients (Lio, 2006)	Shareholders (Lio, 2006)
Markets	Intrinsic part of mission harder to change (Lio, 2006)	More freedom, criteria based upon profit potential (Lio, 2006)
Budget	Dependent on fundraising activities (Sansing, 2000)	Consequence of own performance (Lio, 2006)
Revenues	Entirely used to provide services (Rhoades-Catanach, 2000)	Seeks maximization (Lio, 2006)
Motivation/Incentives	Lower salaries (Roomkin & Weisbrod, 1999); Social change as a motivation (Mirvis, Sales, & Hackett, 1991)	Higher salaries; Career recognition, prestige; Money as a motivation (Lio, 2006)
Innovation adoption	Delayed when compared with for profit sector (Durlacher Research, 2000); more risk averse (Lio, 2006); slower learning capabilities (Lio, 2006)	Faster adaptation (Durlacher Research, 2000); less risk averse (Lio, 2006)

Figure 7: Characteristics - Nonprofit vs. For profit organizations

3.3 Non profit organizations' value chain

Applying the concepts described above, both from the value chain and NPOs this section constructs nonprofits' value chain.

NPOs as constituents of the third sector are usually service oriented and specialize in providing services not adequately provided by either businesses or governments (Kotler, 1979).

Inbound Logistics

Firstly, addressing Primary Activities we should consider Inbound Logistics, regardless of the sector where operating, nonprofits need inputs to create their action programs or to be consumed by these programs (Hatry, 1996), these include money, diverse materials or equipment (e.g. food, medical and school material, cloths), program staff or facilities (Hatry, 1996) (McNamara, 2010).

Assistance Programs

Considering Operations, NPOs operate directly on the field through assistance programs, which organize resources to reach its specific goal (McNamara, 2010), these programs constitute the activities that use the inputs in order to achieve its mission (Hatry, 1996). Programs can be as vast as school teaching, medical care, animal treatment, feed the hungry, shelter the homeless, provide job training among several others (Hatry, 1996), programs focused on creating social value and 'doing good' (Kanter & Summers, 1987).

Program Outputs

Additionally, Outbound Logistics are the direct products of program activities and can also be called outputs (Hatry, 1996) consist on the number of 'clients' served by the programs undertaken, for example number of classes taught, children cared, clients counseled, members of the associations, number of hours of service delivered, among others (McNamara, 2010) (Hatry, 1996).

Social Awareness & Engagement

In what concerns to Marketing and Sales, according to Andreasen and Kotler (2007) in the case of nonprofits the same practices of the for profit sector do not apply. The main reason for this poor fit is that nonprofits tend to have three completely different target markets the clients/customers, volunteers and the donors/funders (Helmig, Jergers, & Lapsley, 2004) (Padanyi & Gainer, 2004). Additionally, the benefits sought by these targets are often non monetary which makes it more difficult for nonprofits to communicate clear benefits (Padanyi & Gainer, 2004). Furthermore, many nonprofits have an educational mission to raise public

awareness, which is part of the marketing activities (Pope, Isely, & Asamo-Tutu, 2009). One specific trend regarding marketing activities is the use of Internet to improve relationships, increase advocacy efforts, and keep targets up-to-date with internal information (Hart, 2002). Nevertheless, most nonprofits focus on one-way online communications whilst disregarding the potential of developing customer and donor relationships (Waters R. , Nonprofit organizations' use of the internet: A content analysis of communication trends on the internet sites of the philanthropy , 2003).

Another thing worth mentioning is the importance of having a staff member exclusively dedicated to Internet activities (Pope, Isely, & Asamo-Tutu, 2009).

Outcome measurement

After providing the service to clients, nonprofits like for profits need to keep track of people helped and assess further needs, since the 90s nonprofits have been constantly pressured on accountability (Ebrahim & Weisband, 2007) (Gibelman & Gelman, 2001) (Kearns, 1996) (Panel on the Nonprofit Sector, 2005) (Young, Bania , & Bailey, 1996) and impact measurement is demanded by all stakeholders involved with NPOs from funders and taxpayers to citizens and clients, all claim that nonprofits should be more transparent with the resources they collect (Brest & Harvey, 2008) (Crutchfield & Grant, , 2008) (Monitor Institute, 2009) (Paton, 2003). This activity is commonly named after-sale support, which is intended to maintain the level of service provided (Porter, 1985). By using outcome measurement nonprofits are able to provide nonprofit staff a way of thinking in terms of broader impact and focus energy on important objectives (Torjman, 1999) (United Way of America, 1996).

Additionally, for measurement efforts to truly influence performance, appropriate staff skills and organizational competencies are required from research skills, quality management processes, benchmarking and adaptive learning (Blumenthal, 2003) (Epstein & Buhovac) (Letts , Ryan, & Grossman, 1999) (Light, 2004) (Saul, 2004). There is literature supporting the existence of two fields on performance measurement, Impact Evaluation and Monitoring and Evaluation (Ebrahim & Rangan , 2010). The first refers to the evaluation of end results or impacts whilst the second suggests tracking the program progress to enable in-time correction (Ebrahim & Rangan , 2010). The outcome measurement indicators such as the youth completion rate of high school, for an organization whose mission is to help teenagers keep in school allow organizations to access how well they are helping their clients (Morley, Vinson, & Hatry, 2001). The traditional indicators such as number of clients served, number of

programs, number of volunteers or amount of donations received although important, they do not help nonprofits to measure the impact on clients (Morley, Vinson, & Hatry, 2001).

Nevertheless, most organizations do not have the financial capacity to conduct this type of analysis (Morley, Vinson, & Hatry, 2001).

Firm Infrastructure

Complementary to primary activities, as previously mentioned support activities comprise tasks regarded as noncore and consequently encompass undertakings shared by the whole organization (Porter, 1985). Firm infrastructure for nonprofits is similar to for-profit companies but addressing different goals (McKinney, 1995). These activities include financial accountability and reporting, taxes, efficiency measurements for activities, creation of new fundraising methods and other practices for expanding revenue sources (Helmut, 2000). The practice of this financial management tasks have different underlying goals than businesses because it is not to maximize profit but a way of controlling and cutting costs (Helmut, 2000).

Furthermore, it is not a question of providing results to the owners but service to the public good, value and compassion (Helmut, 2000). Firm infrastructure emphasizes the importance of general management activities according to Michael E. Porter 1985. Applying this to the nonprofit world means to have executive officers focusing on managing operating procedures (Helmut, 2000) and to create the programs that enable the organization to operate (Hatry, 1996).

Additionally, the boards often tend to focus on the mission and values of the organization (Helmut, 2000). One important general management activity, undertaken by NPOs is budgets, which are the operating plan for a fiscal year (Blackbaud, 2011). The board and staff decide which programs to be assumed in each year and a budget for each of them, this budget allocates and maximizes the use of resources (Blackbaud, 2011). The creation of this budgets also allow for the identification of financial problems that could be arising (Blackbaud, 2011).

Human Resource Management

Another support activity is the human resource management according to Michael E. Porter; it incorporates recruitment, training, development and compensation of staff. From current research of the *Nonprofit HR Solutions* of 2011, the report “Nonprofit Employment Trends Survey”, finds that although the majority of the organizations find human resource functions as critical to their performance, few make it a priority. Additionally, most of the organizations have been losing staff during the year of 2010 (Nonprofit HR Solutions, 2011).

Furthermore, recruitment activities in NPOs is still mostly generated from personal networking, meaning that these type of organizations recruit “who they know” (Nonprofit HR Solutions, 2011).

Another interesting finding is that the most common reason for nonprofits laying off, is for the position to be occupied by a current staff member (Nonprofit HR Solutions, 2011). As a recruitment strategy NPOs still use internal staff to perform the new duties arising (Nonprofit HR Solutions, 2011).

Additionally, nonprofits considered that recruitment advertising in social networking sites has not increased (Nonprofit HR Solutions, 2011). In terms of compensation the major challenges nonprofits face are keeping staff salaries with decreasing budgets, attract and retain qualified staff with limited budgets (Nonprofit HR Solutions, 2011).

Finally, other important task of the HRM is to allocate staff to programs and internal activities, most of the organizations revealed that they do not have a specific person to perform this role (Nonprofit HR Solutions, 2011). Human resource management in both for profits and nonprofits should focus on employee participation and empowerment; team based activities, employee training, and performance based compensation systems, because it improves organizational performance (Pfeffer, 1994).

Shared Services

Additionally, procurement activities are another support activity to the core functions of an organization, this include procedures and information systems to support the purchases needed in an organization (Porter, 1985). Shared services arrangements allow organizations to bundle several support processes and non-strategic activities into one separate entity (Schulman, Harmer, & Dunleavy, 1999). Concerning NPOs purchases consist of office supplies, printing as well as other maintenance and repair operations (Georgia Center for Nonprofits, 2007). In nonprofit organization’s literature, these shared services are referred as management service organizations (Arsenault, 1998) the aims of these are to achieve efficiency and increase effectiveness within administrative functions as well as reducing unit costs of services (Walsh, McGregor-Lowndes , & Newton, 2008). In the nonprofit sector, most of this purchases are made with no strategic contract, small nonprofits lack purchasing volume to get discounts, there is a general lack of expertise about sourcing policies and lack of staff to deal with it (Georgia Center for Nonprofits, 2007). Furthermore, if nonprofits are able to consolidate supply orders by gathering with other nonprofits, a high level of savings could be achieved (Matan, 2008). This is especially important for smaller nonprofits, which do not

benefit from quantity discounts (Matan, 2008). Additionally, by working together nonprofits can save resources (human and physical) and reach service providers that could not be reached if operating individually (Matan, 2008). Nevertheless, as a consequence of the financial crisis nonprofits are using more consolidated approaches to purchasing activities (Ngo, 2009).

Technological Development

The last support activity every company should accomplish being it for profit or not for profit is technology development, which consists on the use of equipment technologies addressed both for core and support activities (Porter, 1985). One clear difference between for profits and nonprofits in this field is the fact that nonprofits have traditionally invested fewer resources than the business world (Sheh, 1993). Currently, the world is facing a rise in the use of new and low-cost communications to create a positive impact (Perlstein, 2011). Nonprofits are using technology not only to strengthen operation but especially they are trying to make it part of a strategic programmatic effort (Perlstein, 2011). Nevertheless, research in this field suggests that while the interest and need for technological advancements is high, investment still remains modest (Perlstein, 2011). According to The Gartner Group (2009) in most of the cases nonprofits dedicate about 1% of their budgets to technology purposes. Most of nonprofits seek low cost and efficient IT providers and they rely on a small number of vendors preferring to contract integrated rather than separate solutions (NPower, 2009).

Additionally, most nonprofits use internal resources to fulfill their technological needs such as website construction and tend to use free software tools (NPower, 2009). IT can be used in organizations as a business enabler and an investment in mission not only a support infrastructure for example Hilmi Qirashi is creating a mobile technology to prevent the spread of tuberculosis in India or ABZ in Austria using CRM to do career coaching and job training skill development for women (Microsoft, 2010).

As a consequence of all the value chain activities is the utmost mission of a nonprofit organization, the creation of social value (Lettieri, 2004).

The figure below shows a summary of the value chain for NPOs previously described.

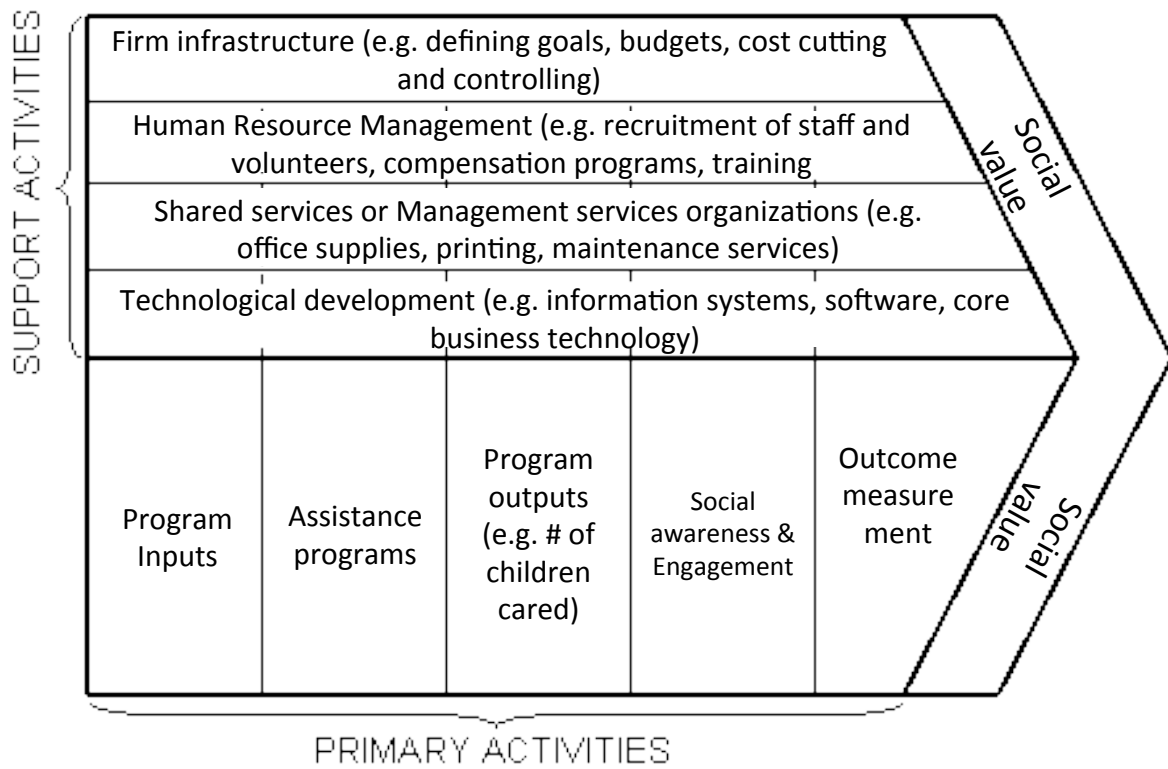


Figure 8: Nonprofits' Value Chain

3.4 Matching value chain activities with online social networks

This section of the model is built to understand how OSNs can impact each nonprofit's value chain activity so that it can be tested among a set of NPOs, volunteers and other nonprofit's stakeholders. In order to accomplish this, the following section is composed of both, current research on the topic and field interviews with distinct nonprofits operating in Portugal and abroad. For each value chain activity it will be discussed what can OSNs help improving and understand arguments that go forward and against its efficiency. From each of the value chain activities one hypothesis is drawn.

Program inputs

Considering the first primary activity program inputs, one commonly stated reason for nonprofits to use OSNs is to **raise funds**, according to a 2010 survey conducted by idealware almost 30% of nonprofits use OSNs for this objective. Nevertheless, the same study reveals that only about 41% of nonprofits using Facebook felt that this channel was effective to raise money (Idealware, 2010). Since 2008, online fundraising has gained a foothold on public awareness with the Obama campaign which, using the web solicited an unprecedented number of small value donations (Thompson, 2009).

Fundraising activity in OSNs such as Facebook has been rising although still a minor effort, according to Nonprofit Social Network Benchmark Report from 2011 46% of nonprofits present on Facebook have risen between 1\$ to \$10K, while only 0.4% rose more than \$100K (NTEN, Common Knowledge, The Port Network, 2011). Furthermore, from the organizations raising more than \$100K, 30% of them are small; these organizations are also the ones gathering more followers. For the organizations raising more money a necessary prerequisite is to have a large number of followers, sixteen times more than the average nonprofit (about 100K followers) (NTEN, Common Knowledge, The Port Network, 2011). Additionally, 30% of these successful fundraising organizations have two staff members dedicated to manage and fundraise on OSNs (NTEN, Common Knowledge, The Port Network, 2011). One important conclusion is that in order to be a successful fundraiser the organization does not need to be large but have a large number of followers and dedicated staff (NTEN, Common Knowledge, The Port Network, 2011).

Moreover, OSNs can offer access to **physical resources** such as educational materials through connections with other people in the network, or to digital materials, which can fulfill

needs such as information about a medical treatment (Bush & Patrick, 2009). In this context, the director of “Energia para o desenvolvimento” from EDP Foundation Luís Faria, enhanced the lack of resources as one of the critical problems of nonprofits organizations, both monetary, physical and human. He also pointed out the relevance of OSNs to help providing these resources such as information for the development of assistance programs (Faria, 2012). This can be done by revealing success cases or simply by sharing methods used by other organizations or even by other people, which can inspire further uses (Faria, 2012). OSNs also have the potential to increase monetary resources by the fundraising possibilities they offer (Faria, 2012).

Additionally, EDP Foundation receives spontaneous applications from nonprofits for financing its assistance programs, according to Guilherme Collares Pereira the organization will start using OSNs to research for interesting programs to finance.

Furthermore, according to Ricardo Madeira former president of Roteract Club Lisboa-Olivais, one key benefit of OSNs is the possibility to fundraise through the divulgation of initiatives or merchandising, which helps the organization increase its local funds for projects.

H1: Using online social networks for fundraising and resource raising activities has a positive impact on nonprofits' value chain program inputs' activity.

Assistance programs

In what concerns to the main activity of a nonprofit organization, assistance programs, OSNs can have an impact by providing services directly to the final “clients” such as medical or financial advice, psychological care or other types of service provided by NPOs (Bush & Patrick, 2009). OSNs can also provide expert advice to help the accomplishment of field missions (Bush & Patrick, 2009).

Moreover, OSNs provide a means for archiving assistance programs' **information online**, in an organized, easy and in time from almost every corner of the world (Hovey, 2010).

One other function of OSNs to support the assistance programs is to serve as a **communication tool** to enhance relationships with the existing nonprofit audience (Idealware, 2010). Actually, the great majority of nonprofits using OSNs state that it is an efficient channel to **support relationships** with the current audience, volunteers, donors, or other stakeholders (Idealware, 2010). As revealed by the Oxford Internet Institute, individuals primarily use the

Internet to communicate with their existing social networks (Dutton , Helsper , & Gerber, 2009).

As suggested by Guilherme Collares Pereira, director of “Inovação Social” from EDP Foundation, this communication tool can serve as a way to increase staff knowledge and volunteer human capital by providing the connection to specialized workforce.

For example EDP provides a unique social project by letting its staff dedicate 4 to 8 hours a month to a social action of their choice, this is intended to provide the skills and qualifications of EDP’s staff to NPOs lacking it (Pereira, 2012). One good way of putting this open to the general public/organizations would be to create a volunteer hour bank through OSNs to facilitate information for nonprofits (Pereira, 2012). Nevertheless, caution should be taken in the selection process to guarantee transparent and correct assignment of projects (Pereira, 2012).

Finally, OSNs by providing a means of **sharing the work**, namely assistance programs, in time can more easily engage generations which are present in that specific online community (Pierce & Wood, 2008) (Smith, 2009). In this context, OSNs allow instant sharing of information, happening all over the world in assistance programs developed by Roteract Club, this helps to build a more solid relationship with partners and increase the project credibility (Madeira, 2012). One activity mentioned by Ricardo Madeira, is video production and sharing, concerning programs the organization is involved. These videos help to share the emotion and reality of people being helped, which increases the impact within the general public audience (Madeira, 2012). Additionally, Ricardo Madeira mentioned the importance of OSNs to understand the projects’ development since it is impossible to always be physically present (Madeira, 2012). Moreover, OSNs can also provide insights into new projects that can be started; these projects can come from getting to know the problems, from ideas in other countries or other organizations (Madeira, 2012).

Moreover, OSNs also give nonprofits the opportunity to reach a community, which is outside national borders eliminating the physical restriction of distant giving (Jonet & Festas, 2012). In addition to this, OSNs allowed “Banco Alimentar” to create an online giving campaign, which by itself is a project, which creates a community of donors for a specific cause (Jonet & Festas, 2012).

Furthermore, for Maria Hermínia Cabral OSNs certainly have been contributing for the success of programs by helping share the cause and attract younger audiences, which has been partially responsible for a shift in Gulbenkian Foundation's clients.

H2: Using online social networks for information, communication, support and visibility as a positive impact on nonprofits' assistance programs' value chain activity.

Program Outputs

Concerning the quantitative results of assistance programs OSNs can also play a role by helping nonprofits sharing to a large community its work by **showing the results** and being open with organizational information (Waters, Burnett, Lamm , & Lucas, 2009) (Fine A. , 2006). By sharing this information, nonprofits foster a long lasting relationship with other organizations, "clients" and the community in general (Wattanasupachoke, 2011).

Furthermore, by sharing information organizations are allowing for user commenting and distribution, which not only increases interaction with different stakeholders, but also expands the program impact by **increasing the audience** (Wattanasupachoke, 2011). One consequence of this information sharing is the potential improvements and insights from feedback received from users (Wattanasupachoke, 2011).

Additionally, by spreading this information nonprofits can benefit from influent social networkers who tend to be influential not only online but also offline, contributing once again to spread the results of the programs (Nielsen, Q3 | 2011). One important rule to remember when deciding to share information is the 1:10:100 rule of user-generated content, meaning that for every person that creates some piece of information, ten share it and one hundred view it (Kanter & Fine, 2010).

Furthermore, there is something worth mentioning concerning information sharing about program outputs, OSNs provide the benefit of making it visual, organizations are no longer telling a story but showing it, which has a strong impact in **engagement** associated with the story (West, 2011).

According to Ricardo Madeira from Roteract Club, one important action taken by the club to engage the public and create awareness is by frequently sharing the results of programs to motivate and create buzz around the organization.

Finally, OSNs have been helping some nonprofits to show the community the numbers of projects performed (Jonet & Festas, 2012).

H3: Using online social networks for sharing immediate quantitative results of programs, affects public awareness and engagement having a positive impact on program outputs' nonprofit value chain activity.

Social Awareness & Engagement

One primary objective of OSNs is the possibility of raising awareness using marketing campaigns to promote the organization, programs, events or services (Common Knowledge, 2011). According to Michael A. Stelzner in *Social Media Marketing Industry Report* (2011), 88% of marketers consider the increased business exposure as the main benefit of OSNs.

Additionally, these marketing efforts focus on **engaging supporters** and **increase membership** (Common Knowledge, 2011). Also according to the Common Knowledge report of 2011, fundraising is ranked as the second most important activity for nonprofits using OSNs.

Nevertheless, according to Hovey (2002) this awareness and marketing efforts need to be well thought, organizations have to differentiate themselves in order to achieve better results. The reason for this is the increasing volume of nonprofits present online, this makes it more difficult for individual organizations to distinguish themselves (Hovey, 2010).

According to Guilherme Collares Pereira, OSNs are still largely unexplored in the context of Portuguese NPOs. EDP Foundation periodically launches its reactive program to support charities, which have to apply and be selected by an independent jury to win a financial grant (Pereira, 2012). According to the director for “Inovação Social” EDP still does not promote this program through OSNs, but using direct mail to their contact database (Pereira, 2012). Nevertheless, Pereira also enhanced the desire to start using OSNs as a communication tool for this activity. Only recently, has EDP Foundation started using these networks to promote their activity to the general public (Pereira, 2012).

Furthermore, OSNs can be an advantage for EDP Foundation to promote its active financing programs close to NPOs (Pereira, 2012).

For nonprofits, OSNs are a very important tool to collect money and increase awareness about its activity and projects (Madeira, 2012). For Rotaract Clubs this was a strategy created

since 2009, the organization was struggling to attract and retain high skilled and young collaborators. In this context, the organization decided to start using online tools to call for the attention of this target. It tried different OSNs but currently uses mainly Facebook, because it considers the most complete available in the market (Madeira, 2012). The club started showing to the mass public their projects to increase awareness for the brand and consequently increase curiosity from this young target (Madeira, 2012). Nevertheless, the club does not use this network for recruitment but as a means to communicate with the intended target (Madeira, 2012).

Furthermore, OSNs allow organizations to move people around a cause that is inherent to nonprofits' mission (Jonet & Festas, 2012). Additionally, by raising awareness for causes, OSNs are a great channel for advocacy helping to shape a more socially conscious society (Cabral, 2012). This in turn will have a positive impact on fundraising activities, which are still very rudimentary in Portugal, from my perspective (Cabral, 2012).

H4: Using online social networks for spreading advocacy campaigns has a positive impact on nonprofits' value chain activity social awareness and engagement.

Outcome Measurement Publication

The last primary activity is outcome measurement. In order to create a credible image in the market NPOs can use OSNs to share the final quantitative and qualitative outcomes of its projects (Madeira, 2012). Nevertheless, also according to Ricardo Madeira from Roteract, it is hard to balance the level of public exposure deciding how and what information to share. A correct equilibrium should be achieved in order to be effective increasing **credibility** and not having a negative impact on the organization's name (Madeira, 2012). OSNs are an additional communication channel, which can add considerable value not only to supporters but also to the organization itself (Convio - Move people, 2010). Also according to Convio-Move people, OSNs are a powerful tool to share with supporters an organization's achievements, which also makes it easier for potential supporters to find the organization (Convio - Move people, 2010).

According to Isabel Jonet and Leonor Festas from Banco Alimentar and Entrajuda, the publication of campaign results has been one key aspects that promotes the constant increase in the donations to the organizations' campaigns.

Maria Hermínia Cabral defended that the evaluation process itself has to be held offline but the publication of results could in fact be of great value for nonprofits to increase the level of **positive opinions**. Nevertheless, she noticed that this publication needs to be carefully planned so that the published facts are easily comprehensible by the general public and do not create any misinterpretations which might lead to negative comments (Cabral, 2012).

H5: Using online social networks to publish final quantitative and qualitative project results has a positive impact on outcome measurement activity increasing credibility and positive opinions.

Firm infrastructure

Considering general management activities according to Isabel Jonet and Leonor Festas, OSNs provide a good opportunity for organizations to look, share ideas and good practice examples.

For João Martins an experienced volunteer and promoter of nonprofit campaigns through Facebook, one of the crucial problems of these organizations is their lack of **management policies** and structured project study through business planning and viability assessments. Using OSNs, which provide a good platform to obtain ideas and funds, could mitigate this problem (Martins, 2010). This same problem was also mentioned by Guilherme Collares Pereira who considered the lack of governance policies as one of the major factors influencing nonprofits' results and short living timeframes. Furthermore, Luis Faria from also reinforced this idea by highlighting the importance of getting information from other organizations through the use of OSNs.

Additionally, there is the possibility of using OSNs to serve as internal communication channels; according to João Martins networks can be used in a narrow sense by creating internal social networks (within the organization). These networks can then be used to share information and feedback quickly across departments (Martins, 2010). Also for Ricardo Madeira one of the main key benefits of OSNs is the communication flow it enables, by quickly putting in contact people from different departments and different geographical areas instantly. From this communication several positive outcomes arise, including partnerships, which can result in the creation of increased social value (Madeira, 2012).

OSNs allow organizations to engage in a communicative and collaborative cycle by sharing, co-working, collaborating and listening (Vela, 2010). In this context Pedro Bártolo, Executive Director of MySocialProject, highlights that OSNs help organizations to know the market to see what others are doing and draw their own path building upon examples. There is one important consequence resulting from the presence in OSNs, which is the space that an organization gains in the market, this is a strategic move connected to the organization's management activities (Bártolo, 2012). Additionally, OSNs provide a good input for general management activities if partnerships with for profit organizations arise (Cabral, 2012). For Maria Hermínia Cabral one of the greatest opportunities concerning OSNs is the possibility of providing nonprofits with inputs for management for objectives, impact measurement or cost cutting procedures, areas on which nonprofits still have a lot to gain from for profits' know-how.

H6: Using online social networks to search for management models has a positive impact on nonprofits' value chain activity firm infrastructure.

Human resource management

One of the most cited activities nonprofits are seeking with OSNs is the possibility to **recruit volunteers and workers** (Bártolo, 2012) (Jonet & Festas, 2012) (Martins, 2010) (Madeira, 2012) (Faria, 2012) (Pereira, 2012).

We are experiencing a cultural shift and nowadays there is an almost entire generation surfing through digital technologies entering the workforce (Donnelly, 2010). In order to extract the potential of this opportunity, nonprofits need to follow new and flexible attitudes towards work in order to keep thriving (Donnelly, 2010). Currently, this generation is governments' main concern, due to the financial crisis and the high levels of unemployment especially among young graduates (Bártolo, 2012). The Portuguese government is highly interested in giving an occupation to this generation, not only to capitalize on their qualifications and potential but also to avoid their inactivity which could lead to social unrest (Bártolo, 2012). In this context nonprofits and volunteer work emerge as a useful alternative for this qualified professionals (Bártolo, 2012).

Furthermore, some organizations like Roteract are trying to attract younger, active and qualified individuals to become a member and in this context started using OSNs to get in

touch with this target (Madeira, 2012). The use of OSNs was a strategic move to recruit volunteers (Madeira, 2012).

Additionally, according to João Martins, one of the key strategic moves nonprofits need to tackle is the attraction and retention of qualified professionals and the first step is to be where they are, meaning in OSNs. Also to Isabel Jonet and Leonor Festas, the attraction of qualified volunteers is one of the main benefits of OSNs, which allow nonprofits to promote themselves, show their activity and results, which ends up attracting more volunteers and supporters.

Concerning **training** activities the interviewees agreed that it could work as a complement and as a good way to source for inspiration and ideas because training is usually given in the field or using in presence methods (Bártolo, 2012) (Madeira, 2012) (Pereira, 2012) (Faria, 2012) (Cabral, 2012). Nevertheless, OSNs can be used to share some primary knowledge (Madeira, 2012) (Cabral, 2012).

Finally, as defended by Beth Kanter and Allison Fine in their book “The Networked Nonprofit”, nonprofits should aim at creating social cultures within the organization one of the key elements, using OSNs to **reward** collaborators by engaging them to participate actively and be responsible for their content creation.

H7: Using online social networks for recruiting, training and rewarding volunteers and paid staff has a positive influence on nonprofits value chain activity human resource management.

Shared services

One activity that is still largely unexplored by NPOs is the creation of partnerships and communities to perform shared services activities (Pereira, 2012). Organizations are extremely focused on their own programs and activities, they are afraid of sharing and communicating with other nonprofits (Pereira, 2012). EDP Foundation has been fighting against this individualism inherent to Portuguese nonprofits, but organizations have the feeling that if they share or talk with other nonprofits, they are risking the other steals its idea or its partners (Pereira, 2012). Although this cannot directly be solved through OSNs, it can help change mentalities by increasing public exposure and public requirements for additional action (Pereira, 2012) (Bártolo, 2012).

According to Guilherme Collares Pereira and João Martins, nonprofits in Portugal still use a lot of resources inefficiently because they lack the proactivity of reaching deals and **partnerships with other nonprofits and even for-profit companies**. The use of OSNs can help organizations capitalize on this opportunity (Pereira, 2012). Additionally, one of the main goals with the launch of MySocialProject is to enable different intervenients to have a closer connection and from this generate opportunities for the three groups, nonprofits, companies and volunteers (Bártolo, 2012). Through the use of this platform every stakeholder in the process has something to gain, while nonprofits gain visibility, financing and partnerships, companies have an easier and transparent way of putting their corporate social responsibility strategies into practice and volunteers have a solid and aggregated platform to search for opportunities to contribute, this ends up working as a shared services platform (Bártolo, 2012).

According to Maria Hermínia Cabral from Calouste Gulbenkian Foundation the lack of communities and shared services activities are one of the main weaknesses of NPOs, which translates into an individual attitude. This creates a sector that works with few resources and little cooperation to obtain them (Cabral, 2012).

H8: Using online social networks to perform partnerships with nonprofits and companies has a positive impact on nonprofits value chain activity shared services.

Technology development

Considering the use of technology by NPOs it is still lagging behind for profit companies (Yao-Jen & Yao-Sheng, 2011). This was also the general opinion of the interviewees who noticed for example that there are still very few nonprofits in Portugal seeking to use technological solutions for both **core activities/projects and support systems** solutions (Bártolo, 2012). In terms of technological development little or no enthusiasm was shown during the interviews about the possibility of using OSNs to increase organizations capabilities in this area. Ricardo Madeira mentioned that OSNs serve to encounter innovative projects that are being done around the world, which in the limit could lead to some technological development for nonprofits. This meaning that technological development could be reached by using success cases' examples (Madeira, 2012).

Furthermore, it was generally said during the interviews that even OSNs are still not widely used by nonprofits and even those who use them still lack the ability to explore their

full potential (Madeira, 2012) (Pereira, 2012) (Cabral, 2012) (Bártolo, 2012) (Faria, 2012) (Martins, 2010) (Jonet & Festas, 2012). The main reason for this is the amount of time and resources it requires, which is out of reach for the great majority of NPOs (Jonet & Festas, 2012).

Moreover, due to the lack of funding nonprofits prefer to chose **technological partners** that can provide integrated solutions for their technological needs, one less costly way of looking for these solutions is through OSNs (NPower, 2009).

H9: Using online social networks for searching core and support technological solutions and technological partners has positive influence on nonprofits' value chain activity technological development.

3.5 Intermediary conclusions

Throughout this chapter the model was developed, by starting to understand the non-profit sector in Portugal, after which a comparison between the non-profit and for-profit sector was done in order to build the nonprofit value chain. With this value chain it was possible to conduct interviews and research to build a match between each value chain dimension and OSNs functionalities. This process allowed the establishment of nine hypotheses corresponding to each value chain activity, which will be tested in the next chapter by the surveys conducted to nonprofits and OSN users. From the interviews one general conclusion is that Portuguese nonprofits are generally following international trends of adopting OSNs, although still not to their full potential.

From the hypothesis created it is possible to answer the research question and conclude that each value chain activity can be positively affected by OSNs, although some revealing more enthusiasm from the interviewees than others. Regarding primary activities more enthusiasm was shown than regarding support activities. Nevertheless, these hypotheses still need to be tested in order to provide a more accurate answer to the research question. The summary of hypothesis is the following:

H1: Using online social networks for fundraising and resource raising activities has a positive impact on nonprofits' value chain program inputs' activity.

H2: Using online social networks for information, communication, support and visibility as a positive impact on nonprofits' assistance programs' value chain activity.

H3: Using online social networks for sharing immediate quantitative results of programs, affects public awareness and engagement having a positive impact on program outputs' nonprofit value chain activity.

H4: Using online social networks for spreading advocacy campaigns has a positive impact on nonprofits' value chain activity social awareness and engagement.

H5: Using online social networks to publish final quantitative and qualitative project results has a positive impact on outcome measurement activity increasing credibility and positive opinions.

H6: Using online social networks to search for management models has a positive impact on nonprofits' value chain activity firm infrastructure.

H7: Using online social networks for recruiting, training and rewarding volunteers and paid staff has a positive influence on nonprofits value chain activity human resource management.

H9: Using online social networks for searching core and support technological solutions and technological partners has positive influence on nonprofits' value chain activity technological development.

4. Surveys to validate the model

The aim of this section is to explore the surveys done to support this dissertation. When finishing the model discussion two surveys were built in order to evaluate the validity and relevance of the variables being study.

One of the surveys was conducted to NPOs; the goal was to make an assessment of their use of OSNs in relation to each value chain activity. The questionnaire was built so that Portuguese nonprofits operating in Portugal or abroad could answer it.

The other survey was addressed to the general public with focus on OSN users to understand their vision on the use of OSNs by NPOs, with this results it is possible to find what are the most important variables in which nonprofits should bet for achieving more success translated into more social value. The first two subsections of this section focus on addressing each questionnaire to understand what type of information is drawn from each set of questions.

4.1 Explanation of survey questions – Nonprofit organizations

The first survey is created to address the impact OSNs can have on nonprofits value chain. People who work for a NPO are the target of the questionnaire; they can be volunteers, paid staff or managers as long as they have sufficient knowledge about the organization's use of OSNs.

The survey is enclosed in Appendix 3; it starts by accessing if the organization uses OSNs. In case it doesn't the questions are adapted so that an opinion could be collected regarding the exact same topics. For the cases where the answer is No, for example, the organization does not fundraise through OSNs, the questions presented are more qualitative but always regarding the same topics and using the same type of statements. If the organization uses OSNs the next question asks to identify the ones used in order to understand what are the main OSNs used in Portugal within this sector. For nonprofits not using OSNs the opinion is not collected because their knowledge on the activities would be poor.

Throughout the survey there are Yes or No questions, one open question and several questions designed for respondents' to rate according to a specified Likert scale. The scale uses an even number of options to avoid neutral/indifferent answers, which could jeopardize the impact evaluation of the factors presented. In this questionnaire there are two types of scale, one ranging from totally disagree to totally agree and another from irrelevant to fundamental,

in order to adapt to the type of statement presented, but always from 1 to 6. Additionally there is also a question to rank nine statements to give a priority to the dimension being evaluated. At the end there are some multiple-choice questions to make the sample characterization.

Hypothesis 1 evaluation

The next section of the survey has the goal of evaluating the relevance of *Hypothesis 1: Using OSNs for fundraising and resource raising activities has a positive impact on nonprofits' value chain program inputs activity*. These questions include understanding if the NPO does fundraising activities for projects through OSNs, the amount of funds raised and the weight it has on total funds raised in order to have a quantitative perception about the relevance of this funds. Following this, some statements are presented for organizations to evaluate its importance. The statements intend to assess if the money and resources raised online has a significant impact on projects, if the return on the investment made to raise the funds and resources is positive. Within the same section a question to understand if nonprofits receive goods donations through OSNs and if so, how frequently it happens, so that it can be understood if this activity has a significant impact on the NPO activities.

Hypothesis 2 evaluation

Additionally, a section is presented to evaluate the relevance of *Hypothesis 2: Using OSNs for information, communication, support and visibility has a positive impact on nonprofits' assistance programs value chain activity*. A question is posed to understand if organizations have ever used OSNs to find and use ideas and/or success or failure cases from other organizations to improve their projects. Afterwards it is asked for the organizations to rate how importantly they evaluate this activity to understand the impact OSNs can have on the development and improvement of projects performed by the organizations. Furthermore, it is asked that the organization rates until which point do organizations using OSNs use them to communicate with the project stakeholders (volunteers, partners, donors) and to rate the importance given to this behavior. Moreover, it is assessed if organizations use OSNs to keep followers informed about project's development and the respective frequency.

Hypothesis 3 evaluation

Following this, there is a section of questions to evaluate the relevance of *Hypothesis 3: Using OSNs for sharing immediate quantitative results of programs, impacts public awareness and engagement having a positive impact on program outputs' nonprofit value chain activity*.

The first question of this set is to understand if nonprofits publish the quantitative and immediate results of the projects and how frequently. Additionally some statements are given for the organization to evaluate until which point they agree that, sharing immediate quantitative results has a positive impact on public's engagement and on the number of followers the organization has.

Hypothesis 4 evaluation

The next section groups questions to evaluate the relevance of *Hypothesis 4: Using OSNs for spreading advocacy campaigns has a positive impact on nonprofits' value chain activity social awareness and engagement.*

Firstly, it is asked if the organization launches campaigns through OSNs in order to raise awareness and how frequently. Afterwards some statements to be evaluated according to nonprofits' level of agreement are given. These have the objective of measuring the impact on the number of followers and if the return on investment is positive.

Hypothesis 5 evaluation

In addition, there is a set of questions to address the relevance of *Hypothesis 5: Using OSNs to publish final quantitative and qualitative project results has a positive impact on outcome measurement activity increasing credibility and positive opinions.* Firstly, it is asked if the organization publishes in OSNs the quantitative and qualitative global results of the projects and how frequently. Then, two statements are presented for organizations to evaluate their level of agreement regarding the increase of credibility and the positivity of followers' opinions' this publication provides.

Hypothesis 6 evaluation

From this point on, the questions are intended to evaluate support activities from the value chain. Firstly, a group of questions is asked to evaluate *Hypothesis 6: Using OSNs to search for management models has a positive impact on nonprofits' value chain activity firm infrastructure.* A question is asked to understand if nonprofits are using OSNs to share and find information about management practices in the sector and it is asked for them to rate the importance given to this activity. In this section there is an open question to allow for organizations to share what type of information they consider important to find online, the main reason for this open question was that, from the interviews it could be seen that it was a very undeveloped area, which could benefit from some input.

Hypothesis 7 evaluation

The next section focuses on evaluating the relevance of *Hypothesis 7: Using OSNs for recruiting, training and rewarding volunteers and paid staff has a positive impact on nonprofits value chain activity human resource management*. As with the other activities it is asked if the organization uses OSNs to recruit paid staff and volunteers and the importance attached to each of these behaviors. Furthermore, it is asked if nonprofits use OSNs to recognize and reward the work of both paid staff and volunteers and the level of importance the organization perceives in this behavior. Moreover, regarding this hypothesis it is asked if nonprofits use OSNs to provide training to paid staff and volunteers, it is also asked for the organization to rate how important they consider this behavior.

Hypothesis 8 evaluation

In order to evaluate the relevance of *Hypothesis 8: Using OSNs to perform partnerships with nonprofits and companies has a positive impact on nonprofits value chain activity shared services*, a different set of questions is presented. Following the same logic of previous sections, it is asked if the organizations use OSNs to perform purchasing partnerships with similar organizations, suppliers and for-profit companies, and how frequently it occurs. Furthermore, it is asked for organizations to rate how important they perceive this behavior for their social value creation.

Hypothesis 9 evaluation

In what concerns to evaluating the relevance of *Hypothesis 9: Using OSNs for searching core and support technological solutions and technological partners has a positive impact on nonprofits' value chain activity technological development*, another set of questions is asked. Firstly, it is asked if nonprofits use OSNs to share or find ideas for new technologies both core to the activity and as a support to it. Then, it is asked how important organizations rate this behavior. Additionally, another question is asked for this hypothesis, to understand if nonprofits use OSNs to find technological partners and how important they perceive this behavior.

Ranking

As a way to understand the level of importance of each different use of OSNs in nonprofits' value chain a final question is asked for organizations to rank the variables

according to the level of importance attached. The aim of this ranking is to understand the underlying comparative value the organizations perceive of each dimension.

Sample characterization

Finally, a set of questions is presented to characterize the organizations and the profile of respondents. If the activity of the organization is mainly in Portugal or abroad if the job/position of respondent is management, paid staff or volunteer, not only because the perspective can change but also to ask, only managers the annual budget of the organization.

4.2 Explanation of survey questions – General Public

The main goal of the survey addressed to the general public is to understand their perception of nonprofits using OSNs, by validating as much as possible the variables asked to the organizations. The general public cannot evaluate all the variables only primary activities.

The first question of this survey intends to access if the respondent uses OSNs, if No, the questionnaire ends. The reason for this is that these people cannot have sufficient insight into nonprofits using OSNs because they do not have any contact with the tools. If the answer is Yes, then the respondent is asked which social networks he/she uses.

Hypothesis 1 additional evaluation

Following this, in order to understand the validity of *Hypothesis 1: Using OSNs for fundraising and resource raising activities has a positive impact on nonprofits' value chain program inputs' activity*, it is asked if the respondent has already made any donation to a nonprofit organization (money or goods) and why did he/she never made any donation. Additionally it is asked if fundraising activities launched in OSNs are credible.

Hypothesis 2 additional evaluation

After this, to evaluate *Hypothesis 2: Using OSNs for information, communication, support and visibility as a positive impact on nonprofits' assistance programs value chain activity*, it is asked respondents to what extent do they agree with statements regarding project publication and the credibility it generates for the organizations.

Additionally, if this publication increases public recognition and the influence it has in users' likelihood to contribute.

Hypothesis 3 additional evaluation

Moreover, to evaluate *Hypothesis 3: Using OSNs for sharing immediate quantitative results of programs, impacts public awareness and engagement having a positive impact on program outputs' nonprofit value chain activity*, it is asked if people feel more influenced to contribute to an organization that publishes the results of the project through OSNs.

Hypothesis 4 additional evaluation

In order to evaluate *Hypothesis 4: Using OSNs for spreading advocacy campaigns has a positive impact on nonprofits' value chain activity awareness and engagement*, it is asked if the awareness campaigns launched by nonprofits in OSNs have a positive impact on people's global perception of the organization.

Hypothesis 5 additional evaluation

Furthermore, in order to evaluate *Hypothesis 5: Using OSNs to publish final quantitative and qualitative project results has a positive impact on outcome measurement activity increasing credibility and positive opinions*, it is asked if the publication of global quantitative and qualitative results of projects increases the credibility of an organization, in order to test the impact of this publication.

Additional data collection

For evaluating recruitment through OSNs, it is asked if respondents have already used OSNs to search for volunteer projects if Yes, how efficiently is the process rated, if No why have he/she not used this tool. Additionally, the survey asked if the respondent has already been recruited or contacted to work for a nonprofit organization and if he/she would be willing to be recruited for a nonprofit.

Finally, in order to understand which NPOs are creating more awareness through OSNs it was asked which is the first nonprofit present in OSNs that comes to respondents' mind.

Sample characterization

The last questions are purely to characterize the respondents, in terms of gender and age.

4.3 Survey results' analysis

The aim of this part is to explore the results of the questionnaires done to NPOs and OSN users.

4.3.1 Nonprofit organizations - Sample Analysis

This survey was sent to more than 200 NPOs operating in Portugal or abroad through Facebook and/or email, part of these organizations were contacted directly, part were reached through other contacts. The surveys were answered through Qualtrics online software. The group of nonprofits was constituted of organizations from all types and areas of impact, as enumerated in the analysis to the Portuguese nonprofit sector.

Considering the sample it consists of 42 Portuguese organizations operating in Portugal or abroad. In what concerns to the main location for its activities, 79% of nonprofits answering this survey operate in Portugal while 29% have their activities outside Portugal. Additionally, the profile of the respondents was assessed to understand their position in the nonprofit organization, whether they occupy a management/direction, employee or volunteer position, which can be seen in *figure 11*. The fact that more than 50% of the respondents have a management/direction position and only 10% are volunteers gives more confidence to the results due to the level of experience the respondents have.

Position of respondent

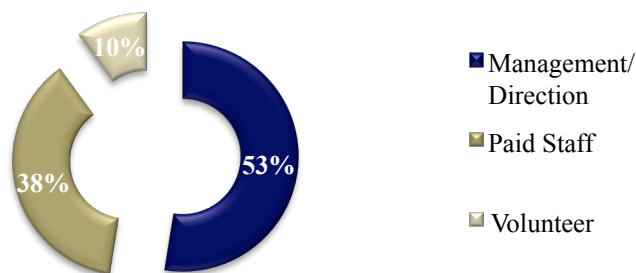


Figure 9: Position of respondent

Furthermore, it was important to assess the dimension of the activity of nonprofits answering the survey, although it is not the only indicator, the criteria chosen was the annual

budget, which gives some insight into the capability presented by the NPO. From *figure 12*, one can see that there is a good distribution of NPOs in terms of their size from the smaller ones to the largest meaning that this sample has representatives from all types of budget.

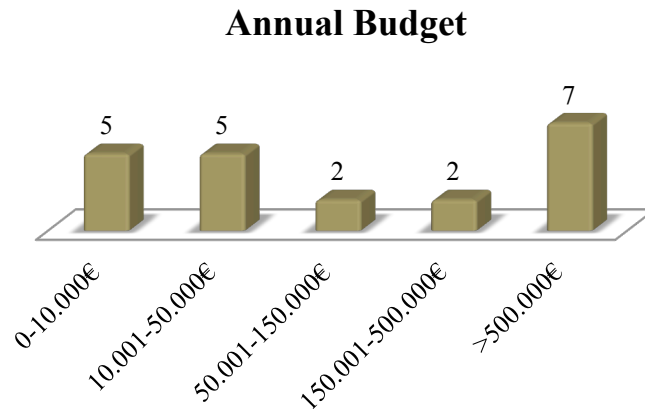


Figure 10: Annual Budget

4.3.2 Nonprofit organizations – General Analysis

From the sample, only two organizations did not use OSNs at all, as shown by *figure 9*. This implies that 95,2% of NPOs answering the survey use any type of OSNs. This reveals that, at least in principle, nonprofits are following the general market tendencies of incorporating OSNs on its activities.

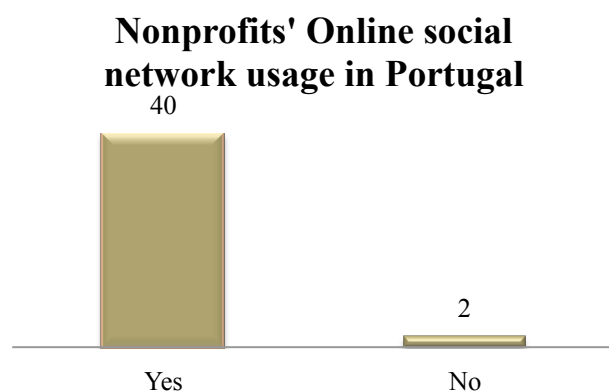


Figure 11: Nonprofits' online social network usage in Portugal

The different types of OSNs used are shown in *figure 10*. It is easily comprehensible that Facebook is by far the most used one with almost 93% of the 40 organizations.

Most used online social networks in Portugal

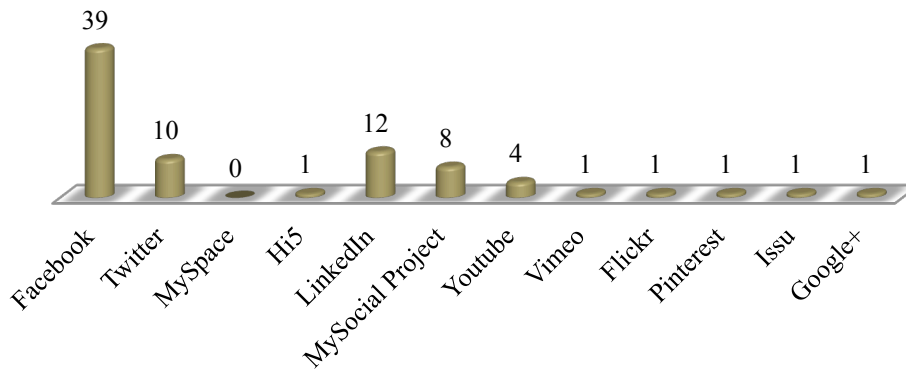


Figure 12: Most used online social networks in Portugal

4.3.3 Nonprofit organizations – Ranking of impact of online social networks on value chain activities

Although this was the last question of the survey, it is important to analyze it before exploring each value chain activity. This question asked respondents to create a ranking according to the importance in terms of the impact OSNs have on each of the nonprofits’ value chain activity. Nonprofits had to attribute a position to each sentence presented, from 1 the value chain activity they considered OSNs to have the heaviest impact to 9 the one they considered OSNs to have the lightest impact.

In order to analyze these numbers, first it was necessary to invert the scale so it could be comparable with the rest of the questions in the survey, by making 9 the most important and 1 the least important. Then, the values were converted from a scale of 1 to 9 into a scale of 1 to 6. Afterwards, the sample mean and standard deviation were computed for each activity. The values are summarized in *figure 13*.

	Fundraising & Resource raising	Assistance Programs	Program Outputs	Social Awareness & Engagement	Outcome Measurement Publication	Firm Infrastructure	Human Resource Management	Shared Services	Technological development
Standard deviation	1.598	1.501	1.516	1.667	1.341	1.316	1.647	1.893	1.944
Average (in scale 1 to 6)	3.65	3.73	3.93	4.28	3.63	2.67	2.85	2.47	2.93

Figure 13: Ranking of the impact of online social networks on each value chain activity

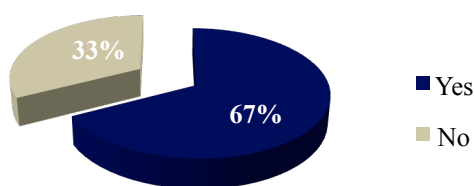
The average values presented will be used in each activity’s analysis in order to give a more weighted value for the comparative importance on the impact of OSNs on value chain activities. From these values it is understandable that nonprofits consider Social Awareness & Engagement as the value chain dimension that could benefit the most from the use of OSNs.

Nevertheless, positive evaluations are also given to all other primary activities. Support activities are evaluated as OSNs not having a relevant impact on them. Additionally, the greater values for the standard deviation are also on support activities, showing that nonprofits have a huge dispersion of opinions regarding these activities.

4.3.4 Nonprofit organizations – Program inputs

In order to evaluate the use of OSNs in program inputs firstly it was asked if NPOs used OSNs to fundraise and to resource raise. In what concerns to fundraising activities 27 NPOs use OSNs to seek funding from OSN users, while 13 do not use OSNs to perform this type of activity, as shown in *figure 14*. Considering resource raising, the numbers are similar, 24 nonprofits receive resources through OSN while 16 claim that they do not receive any materials other than money through OSNs, as shown in *figure 15*. This means that 67% of nonprofits collect funds online and 60% collect resources online.

Fundraising using online social networks



Resource raising through online social networks

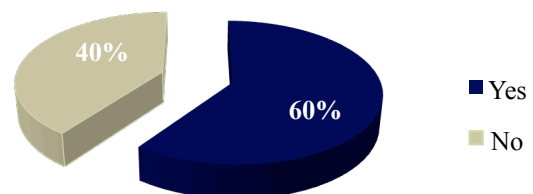


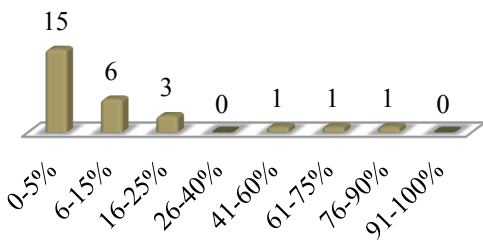
Figure 14: Fundraising using online social networks

Figure 15: Resource raising using online social networks

Additionally, to have a more precise picture of fundraising activities done by nonprofits in OSNs, the survey assessed the percentage and amount of money raised online, so from the 27 nonprofits which performed this activity the raised values are shown in *figures 16 & 17*. As

it can be seen by the figures below, the majority of nonprofits do not collect more than 25% of their total funds online, and not more than 5.000€ a year.

Weight of online social networks' fundraising activity on total funds



Amount of online social network fundraising

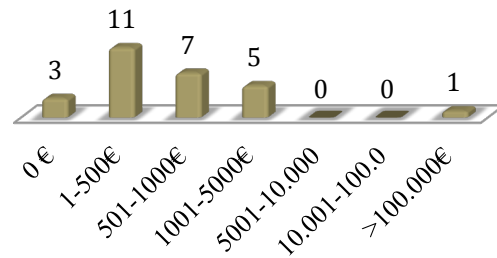


Figure 16 & 17: Weight & amount of fundraising through OSNs

Moreover, in order to have a clearer picture of resource raising, the frequency of donations was asked and the conclusion to take is that most of these donations only happen as a sporadic event and do not have defined periodicity, *figure 17* shows the data collected.

Resource donations' frequency

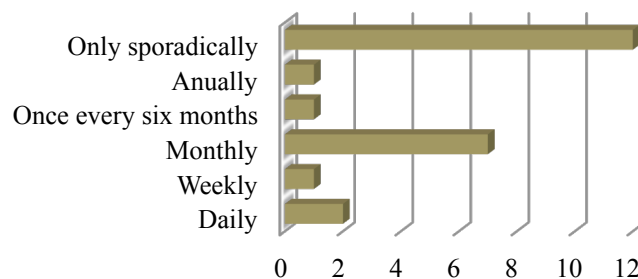


Figure 18: Resource donations' frequency

In order to test hypothesis 1 *Using OSNs for fundraising and resource raising activities has a positive impact on nonprofits' value chain program inputs' activity*, the survey evaluated two factors, **factor 1**: How significant is the impact of funds and resources raised online for the projects done by the nonprofit

To evaluate this, the respondents had a scale from 1 to 6, which allowed for the quantification of the impact. From this resulted:

How significant is the impact of funds and resources raised online for projects done by the nonprofits?

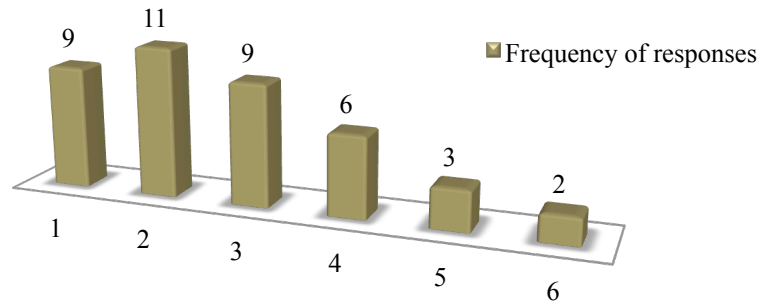


Figure 19: Impact of funds and resources rose online for nonprofits' projects

To evaluate this impact, the mean of the answers of each question was computed through the formula:

$$\bar{X} = \frac{\sum_{n=1}^{40} \text{Scale points} \times \text{Frequency of responses}}{\text{Sample size (40)}}$$

The same formula was used in every hypothesis.

Additionally standard deviations were calculated according to the formula:

$$s = \sqrt{\frac{(X - \bar{X})^2}{(n - 1)}}$$

The same formula was used in every hypothesis.

The sample mean and standard deviation values achieved for **factor 1** are:

$$\bar{X} = 2,8 \quad s = 1,471$$

Furthermore, **factor 2** evaluated if funds and resources rose online compensate the investment made.

Do funds and resources rose online compensate the investment made?

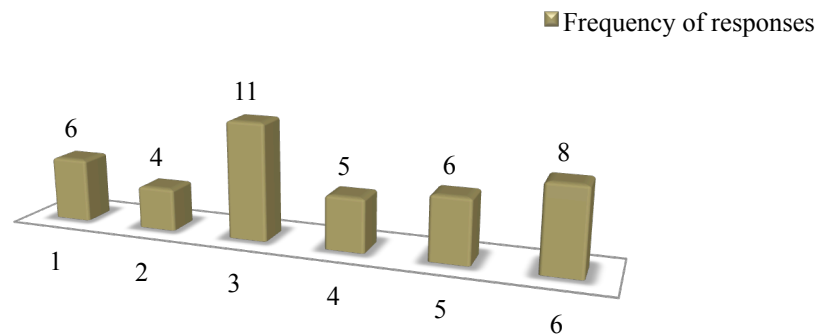


Figure 20: Efficiency of funds and resources rose online

The sample mean and standard deviation value achieved for **factor 2** were:

$$\bar{X} = 3,675 \quad s = 1,70$$

It is assumed that both factors allow evaluating the impact of OSNs on program inputs the same way. For this reason the mean value of both is calculated:

$$\bar{X} = \frac{2,8 + 3,675}{2} = 3,24$$

Additionally, the average value for the standard deviation was calculated

$$s = \frac{1,471 + 1,70}{2} = 1,585$$

Finally, to encounter the final importance value attributed to the impact of OSNs on this activity it is computed the average between the value from the **factors** and the value from the **ranking** presented before:

$$\bar{X} = \frac{3,24 + 3,65}{2} = 3,443$$

The **average of standard deviations from factors and from ranking** is also computed to allow for the next step, which is the hypothesis test.

$$s = \frac{1,585 + 1,597}{2} = 1,592$$

These final values of the mean and standard deviation are used to test the hypothesis using a statistical test with an approximation to the normal distribution (because the sample size is greater than 30). For this hypothesis test a significance value of 95% will be used. The hypothesis test consists of checking whether the results achieved through the surveys are relevant and can be inferred to the population or not, by testing the null hypothesis against each of the nine hypothesis. To test the relevance the value achieved for each variable should be greater than 3, which is the value distinguishing positive from irrelevant impact. The same logic applies throughout the nine hypotheses.

H0: The impact of online social networks on program inputs is not relevant which means that $\mu \leq 3$

H1: The impact of online social networks on program inputs is relevant which means that $\mu > 3$

$$\eta = 40 \quad s = 1,592$$

$$\mu_0 = 3 \quad \bar{X} = 3,443$$

$$Z_{obs} = \frac{\bar{X} - \mu_0}{s/\sqrt{n}} \cap N(0,1) \quad Z_{obs} = \frac{3,443 - 3}{1,592/\sqrt{40}}$$

$$= 1,759$$

$$p\text{-value} = p(Z \geq Z_{obs})$$

$$p\text{-value} = 1 - p(Z \leq Z_{obs}) = 1 - p(Z < 1,759) = 1 - 0,9608 = 0,0392 \rightarrow p\text{-value} < \alpha = 0,05$$

Once that p-value is lower than $\alpha = 0,05$ the null hypothesis is **rejected** and it is possible to infer for the population that OSNs have a **relevant impact** on program inputs value chain activity hence **confirming Hypothesis 1**.

4.3.5 Nonprofit organizations – Assistance programs

Concerning the value chain activity assistance programs, **five factors** are used to measure the impact of OSNs on assistance programs. Firstly it is asked whether nonprofits use OSNs to search for project ideas, this is **factor 1**. The answers are shown in *figure 21*.

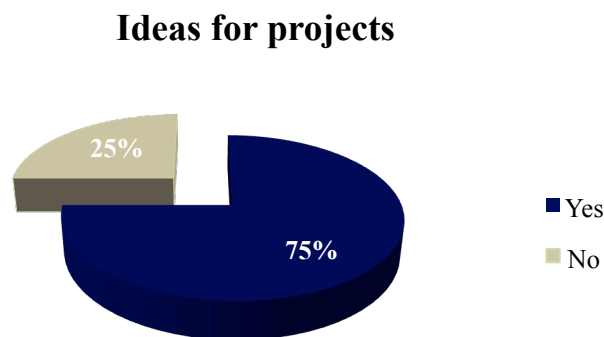


Figure 21: Nonprofits using OSNs to search for project ideas

In this context it is relevant to note that the great majority of nonprofits surveyed use OSNs to search for ideas to complement and/or improve their own project or to find new projects. Only 25% of nonprofits do not use it.

In order to evaluate the importance of **factor 1** both nonprofits, the ones who used OSN to search for project ideas and the ones that did not, were asked to rate the importance of doing this. The results are shown in *figure 22*, revealing that the great majority of nonprofits find this activity relevant.

Importance of using online social networks for project ideas results' frequency

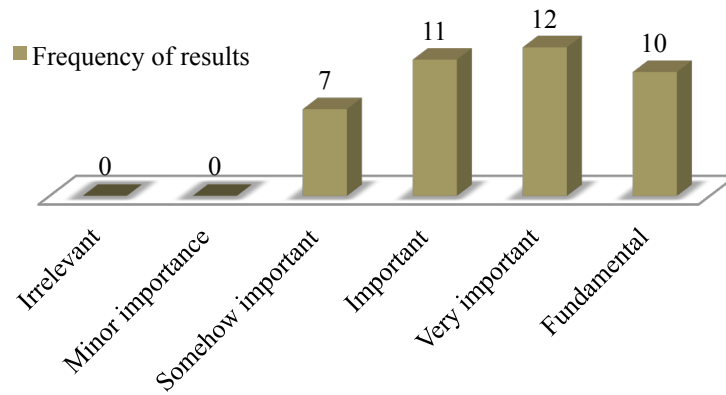


Figure 22: Importance of using OSNs for project ideas

Using the same formula presented in program inputs' activity the average and standard deviation for these answers were calculated. The values achieved for **factor 1** are:

$$\bar{X} = 4,625 \quad s = 1,054$$

Moreover within this activity it is assessed if nonprofits use OSNs to communicate with volunteers, the results were recorded on a 1 to 6 scale, from totally disagree to totally agree, presented in *figure 23*. It can be seen that most nonprofits frequently use OSNs to communicate with project volunteers, because the majority of responses are concentrated from 4 to 6. Nevertheless, there are still some nonprofits not using at all, the values of the first point in the scale (1). Furthermore, there are some nonprofits using OSNs to communicate with volunteers very rarely, the answers of 2 and 3.

Do nonprofit organizations use online social networks to communicate with project volunteers?

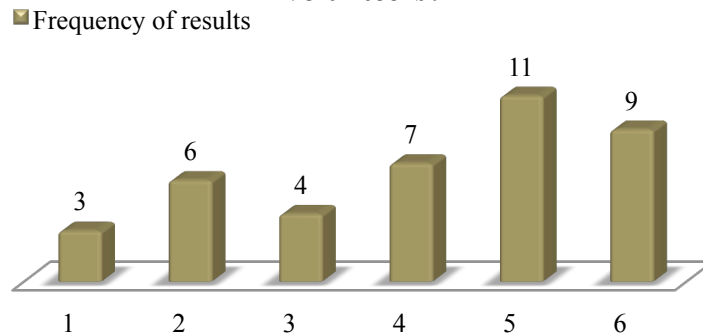


Figure 23: Usage of OSNs for communicating with project volunteers

The importance attributed to this activity was also collected and is presented in *figure 24*. It is possible to understand that the majority of nonprofits considers this important, even though there some NPOs evaluating it as having few, minor or irrelevant importance.

Importance of using OSNs to communicate with project volunteers

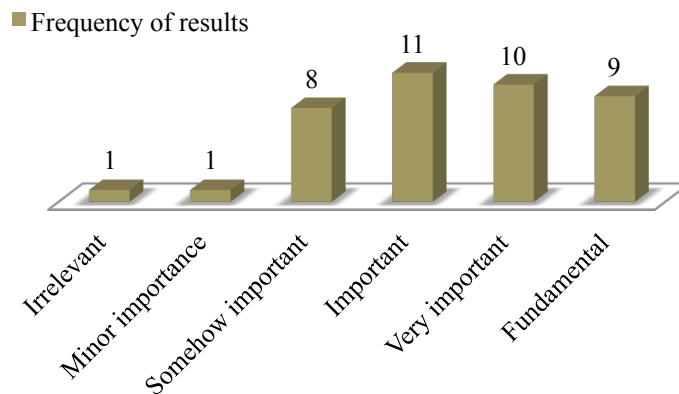


Figure 24: Frequency of results for the importance of using OSN to communicate with project partners

Also for **factor 2** the sample mean and standard deviation for the importance results, are calculated:

$$\bar{X} = 4,375 \quad s = 1,254$$

Additionally it is assessed whether nonprofits use OSNs to communicate with project partners, the results are presented in *figure 25* on a scale of 1 to 6, from totally disagree to totally agree. From these results the most immediate conclusion is the high dispersion of answers across all levels. This means that, although most nonprofits use OSNs to communicate with partners, there are some doing it frequently and others more sporadically

Do nonprofit organizations use online social networks to communicate with partners?

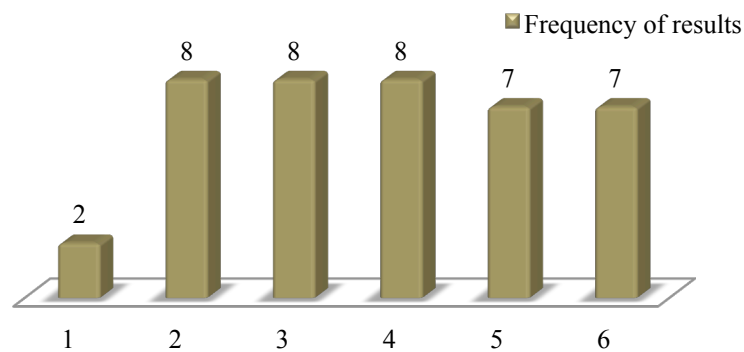


Figure 25: Usage of online social networks to communicate with project partners

Additionally nonprofits are asked regarding the importance this activity plays in an organization’s operations, the responses collected are presented in *figure 26*. From these answers it is perceptible that nonprofits value this possibility positively, since the majority of answers are from 4 to 6.

Importance of using OSNs to communicate with partners

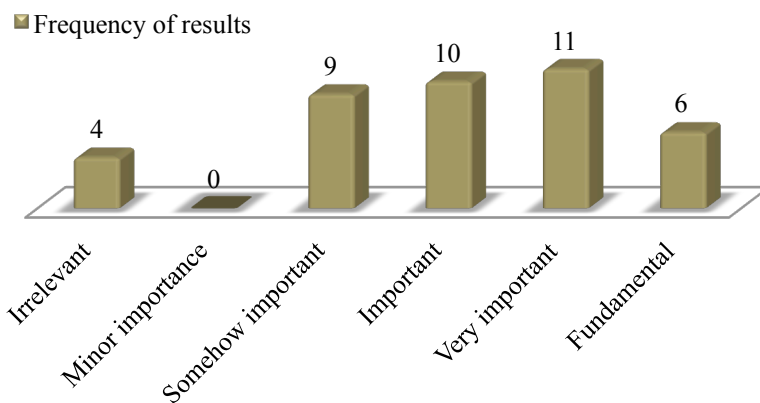


Figure 26: Importance of using OSNs to communicate with project partners

For these results of **factor 3** the sample mean and standard deviation are calculated similarly to what was shown in previous factors.

$$\bar{X} = 4,05 \quad s = 1,431$$

The next factor, **factor 4** is the usage of OSNs for communicating with project funders; the answers are presented in *figure 27* on a scale of 1 to 6, from totally disagree to totally agree. It can be seen that most of nonprofits use this form of communication with project funders, since the majority of results are from 2 to 6, but the great majority uses this tool with little frequency, because most answers are 2 and 3.

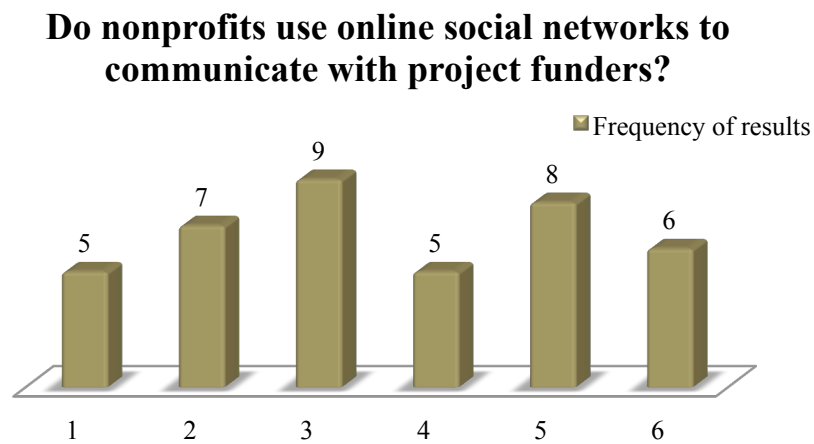


Figure 27: usage of OSNs to communicate with project funders

Additionally to evaluate **factor 4** nonprofits are asked regarding the importance this activity plays in the organization's operations, the responses collected are presented in *figure 28*. The conclusion is that most nonprofits consider it as a relevant activity.

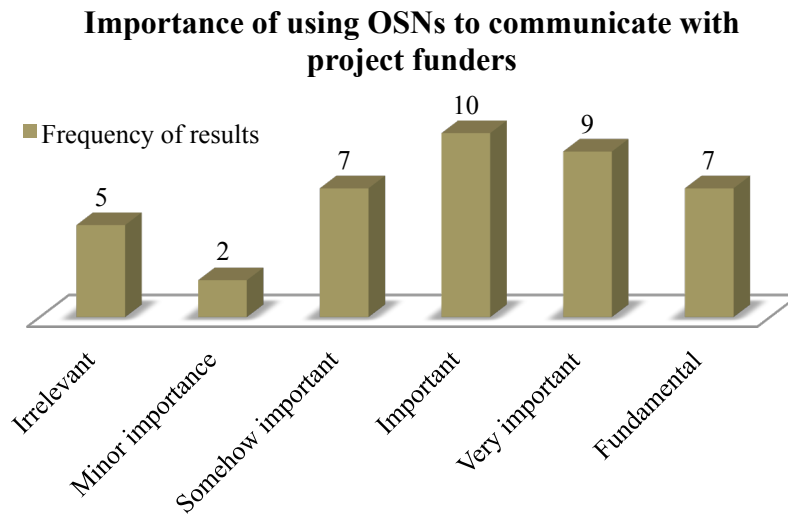


Figure 28: Importance of using OSNs to communicate with project funders

For these results of **factor 4** the sample mean and standard deviation are calculated similarly to what was shown in previous factors.

$$\bar{X} = 3,925 \quad s = 1,575$$

In order to evaluate **factor 5** it was asked whether nonprofits are using OSNs to inform followers during program progression. The results are presented in *figure 29*, showing that most nonprofits use OSNs to inform followers regarding project progression.

Usage of OSNs to inform followers during program progression

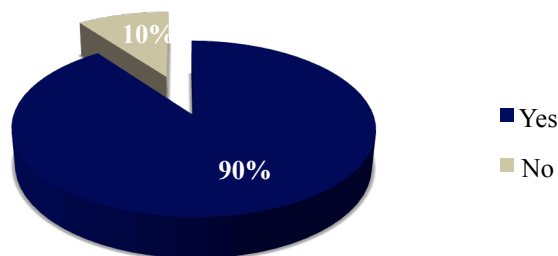


Figure 29: Nonprofits using OSNs to inform followers during program progression

Moreover, in order to understand how frequently do nonprofits use OSNs to inform followers during programs, the frequency was assessed and is presented in *figure 30*.

Using OSNs to inform followers

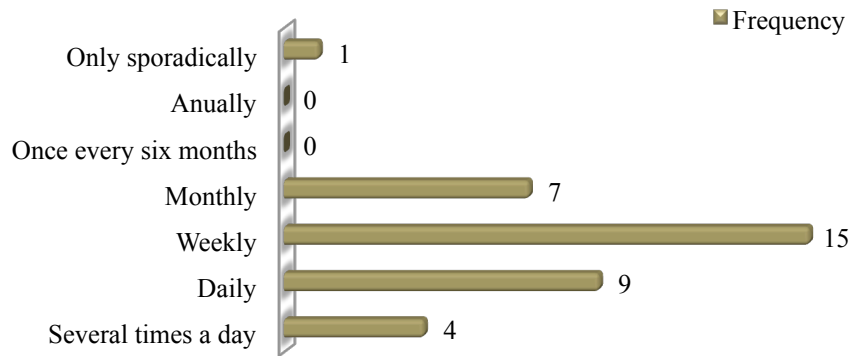


Figure 30: Frequency of using OSNs to inform followers during program progression

Additionally, to evaluate the importance of **factor 5** nonprofits rated it and the results are presented in *figure 31*.

Importance of informing followers during program progression

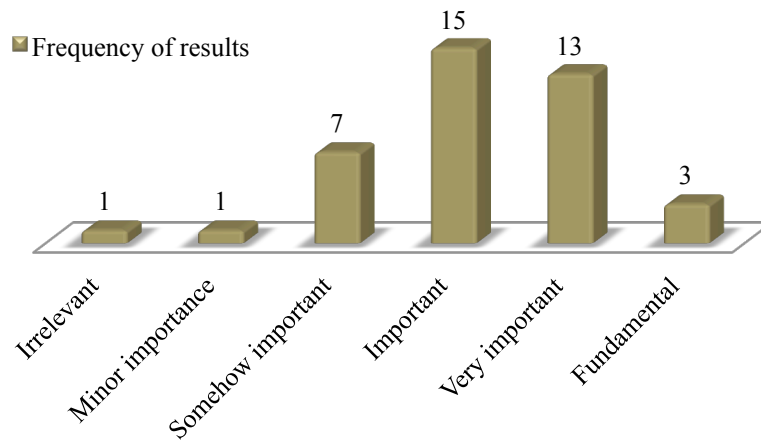


Figure 31: Importance of using OSNs to inform followers during program progression

For **factor 5** the sample mean and standard deviation are calculated similarly to what was shown in previous factors.

$$\bar{X} = 4,175 \quad s = 1,059$$

The mean value of all five factors is calculated:

$$\bar{X} = \frac{4,625 + 4,375 + 4,05 + 3,925 + 4,175}{5} = \mathbf{4,23}$$

Additionally, the average value for standard deviations is calculated:

$$s = \frac{1,054 + 1,254 + 1,431 + 1,575 + 1,059}{5} = \mathbf{1,275}$$

Finally, to encounter the final importance value attributed to the impact of OSNs on this activity it is computed the average between the value from the **factors** and the value from the **ranking**:

$$\bar{X} = \frac{4,23 + 3,733}{2} = \mathbf{3,98}$$

The **average of standard deviations from factors and from ranking** is also computed to allow for the next step, which is the hypothesis test.

$$s = \frac{1,275 + 1,501}{2} = \mathbf{1,388}$$

H0: The impact of online social networks on assistance programs is not relevant which means that $\mu \leq 3$

H2: The impact of online social networks on assistance programs is relevant which means that $\mu > 3$

$\eta = 40$	$s = 1,388$
$\mu_0 = 3$	$\bar{X} = 3,98$

$$Z_{obs} = \frac{\bar{X} - \mu_0}{s/\sqrt{n}} \cap N(0,1) \qquad Z_{obs} = \frac{3,98 - 3}{1,388/\sqrt{40}}$$

$$= 4,473$$

$$p\text{-value} = p(Z \geq Z_{obs})$$

$$p\text{-value} = 1 - p(Z \leq Z_{obs}) = 1 - p(Z < 4,473) = 1 - 1 = 0 \rightarrow p\text{-value} < \alpha = 0,05$$

Once that p-value is lower than $\alpha = 0,05$ the null hypothesis is **rejected** and it is possible to infer for the population that OSNs have a **relevant impact** on assistance programs value chain activity hence **confirming Hypothesis 2**.

4.3.6 Nonprofit organizations – Program Outputs

Concerning the value chain activity program outputs, **two factors** are used to measure the impact of OSNs on this activity.

Firstly, it is asked whether nonprofits use OSNs to publish immediate quantitative results of projects; the answers are shown in *figure 32*. The results show that the majority of nonprofits use OSNs to publish immediate quantitative results of programs.

Do nonprofits use OSNs to publish immediate quantitative results of programs?

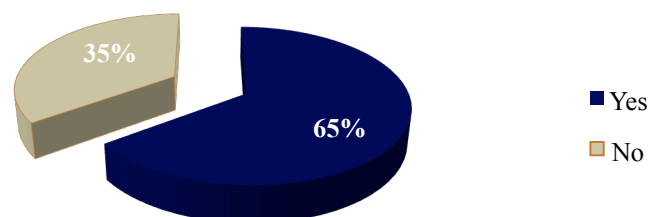


Figure 32: Usage of OSNs to publish immediate quantitative results of programs

The frequency with which this publication is done is shown in *figure 33*, from nonprofits making this publication, most of them do it monthly or even less frequently.

Publication of immediate quantitative program results on OSN

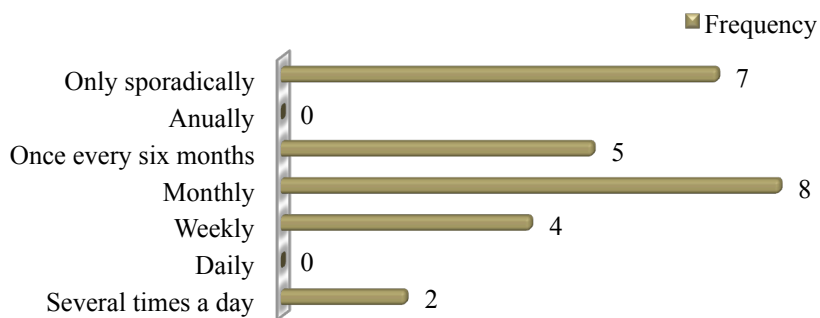


Figure 33: Frequency of publication of immediate quantitative program results on OSN

Furthermore, to measure the impact of this publication on program outputs' activity it is asked for nonprofits to rate the importance of this publication on public engagement, consisting of **factor 1**, these results are presented in *figure 34*.

Does the publication of immediate quantitative program results have a positive impact on public engagement?

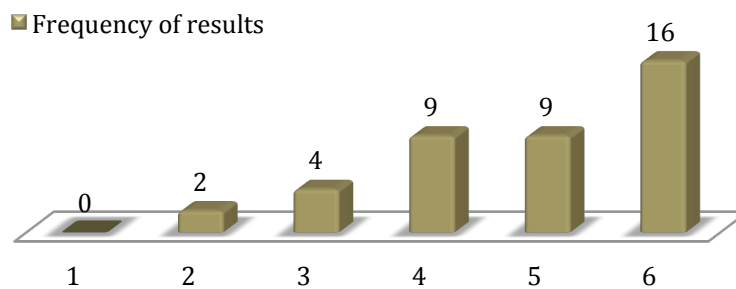


Figure 34: Positivity of impact on public engagement of immediate quantitative program results' publication using OSN

For **factor 1** the sample mean and standard deviation values are:

$$\bar{X} = 4,825 \quad s = 1,217$$

Moreover, **factor 2** consists on the impact of publishing immediate quantitative results of programs using OSNs on the attraction of new followers to the NPO. *Figure 35* summarizes the results achieved.



Figure 35: Positivity of publication of immediate quantitative program results on new followers using OSNs

For **factor 2** the sample mean and standard deviation values are:

$$\bar{X} = 4,6 \quad s = 1,277$$

The mean value of these two factors is calculated:

$$\bar{X} = \frac{4,825 + 4,6}{2} = 4,71$$

Additionally, the average value for the standard deviations is calculated

$$s = \frac{1,217 + 1,277}{2} = 1,247$$

Finally, to encounter the final importance value attributed to the impact of OSNs on this activity it is computed the average between the value from the **factors** and the value from the **ranking**:

$$\bar{X} = \frac{4,71 + 3,933}{2} = 4,32$$

The **average of standard deviations from factors and from ranking** is also computed to allow for the next step, which is the hypothesis test.

$$s = \frac{1,247 + 1,515}{2} = \mathbf{1,381}$$

H0: The impact of online social networks on program outputs is not relevant which means that $\mu \leq 3$

H3: The impact of online social networks on program outputs is relevant which means that $\mu > 3$

$\eta = 40$	$s = 1,381$
$\mu_0 = 3$	$\bar{X} = 4,32$

$$Z_{obs} = \frac{\bar{X} - \mu_0}{s/\sqrt{n}} \cap N(0,1) \qquad Z_{obs} = \frac{4,32 - 3}{1,381/\sqrt{40}}$$

$$= 6,056$$

$$p\text{-value} = p(Z \geq Z_{obs})$$

$$p\text{-value} = 1 - p(Z \leq Z_{obs}) = 1 - p(Z < 6,056) = 1 - 1 = \mathbf{0} \rightarrow p\text{-value} < \alpha = \mathbf{0,05}$$

Once that p-value is lower than $\alpha = 0,05$ the null hypothesis is **rejected** and it is possible to infer for the population that OSNs have a **relevant impact** on program outputs' value chain activity hence **confirming Hypothesis 3**.

4.3.7 Nonprofit organizations – Social Awareness & Engagement

Concerning the value chain activity Social Awareness & Engagement; **two factors** are used to measure the impact of OSNs on this activity.

Firstly, it is asked whether nonprofits use OSNs to launch awareness campaigns; the answers are shown in *figure 36*. The results show that 87% of nonprofits use OSNs to launch awareness campaigns, being the activity that most nonprofits perform through OSNs.

Does your nonprofit organization use OSNs to launch awareness campaigns?

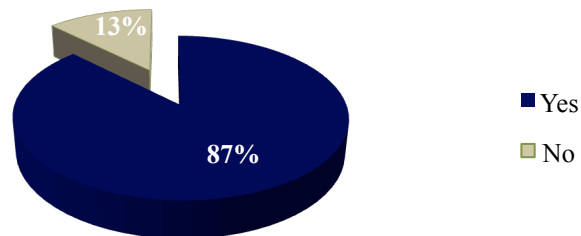


Figure 36: Usage of OSNs for launching social awareness & engagement campaigns

The frequency with which this publication is done is shown in *figure 37*. Most nonprofits make this publication monthly or more frequently than that.

Awareness campaigns' launched through OSNs

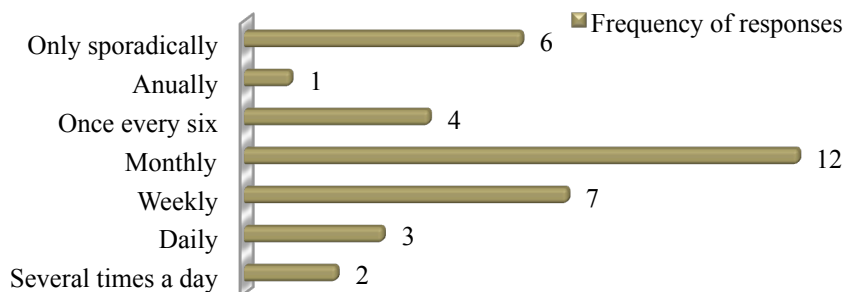


Figure 37: Frequency of awareness campaigns' launched through OSNs

Furthermore, to measure the impact of these campaigns on value chain activity Social Awareness & Engagement it is asked for nonprofits to rate the importance considering the number of followers the organization is able to get, consisting of **factor 1**, these results are presented in *figure 38*. Most nonprofits consider this publication has having a positive impact on the organizations' capacity to attract new followers.

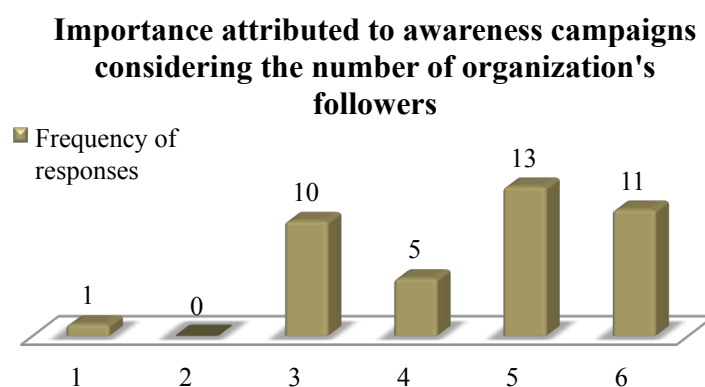


Figure 38: Importance attributed to awareness campaigns considering the number of nonprofits followers

For **factor 1** the sample mean and standard deviation values are:

$$\bar{X} = 4,55 \quad s = 1,28$$

Additionally it is assessed whether nonprofits considered these initiatives has having a positive return on the investment made, this is **factor 2**, which is presented in *figure 39*.

Do nonprofits have a positive return on the investment made in awareness campaigns?

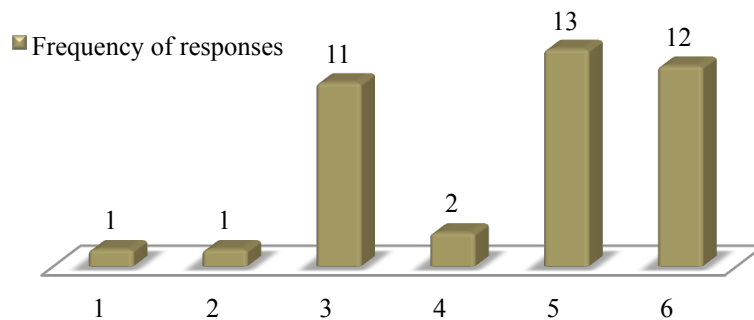


Figure 39: Positivity of return of investment for awareness campaigns

For **factor 2** the sample mean and standard deviation values are:

$$\bar{X} = 4,525 \quad s = 1,377$$

The mean value of these two factors is calculated:

$$\bar{X} = \frac{4,55 + 4,525}{2} = 4,54$$

Additionally, the average value for the standard deviations is calculated

$$s = \frac{1,28 + 1,377}{2} = 1,328$$

Finally, to encounter the final importance value attributed to the impact of OSNs on this activity it is computed the average between the value from the **factors** and the value from the **ranking**:

$$\bar{X} = \frac{4,54 + 4,283}{2} = 4,41$$

The **average of standard deviations from factors and from ranking** is also computed to allow for the next step, which is the hypothesis test.

$$s = \frac{1,328 + 1,515}{2} = 1,498$$

H0: The impact of online social networks on social awareness & engagement activities is not relevant which means that $\mu \leq 3$

H4: The impact of online social networks on social awareness & engagement activities is relevant which means that $\mu > 3$

$\eta = 40$	$s = 1,498$
$\mu_0 = 3$	$\bar{X} = 4,41$

$$Z_{obs} = \frac{\bar{X} - \mu_0}{s/\sqrt{n}} \cap N(0,1) \qquad Z_{obs} = \frac{4,41 - 3}{1,498/\sqrt{40}}$$

$$= 5,956$$

$$p\text{-value} = p(Z \geq Z_{obs})$$

$$p\text{-value} = 1 - p(Z \leq Z_{obs}) = 1 - p(Z < 5,956) = 1 - 1 = 0 \rightarrow p\text{-value} < \alpha = 0,05$$

Once that p-value is lower than $\alpha = 0,05$ the null hypothesis is **rejected** and it is possible to infer for the population that OSNs have a **relevant impact** on social awareness and engagement activities' hence **confirming Hypothesis 4**.

4.3.8 Nonprofit organizations – Outcome measurement publication

Concerning the value chain activity outcome measurement, **two factors** are used to measure the impact of OSNs on this activity.

Firstly, it is asked whether nonprofits use OSNs to publish final quantitative and qualitative program results, the answers are shown in *figure 40* and its frequency shown in *figure 41*. More than half of the surveyed nonprofits use OSNs to publish final quantitative and qualitative program results, but most of them make this publication monthly or less frequently.

Do nonprofits use OSNs to publish final quantitative and qualitative program results?

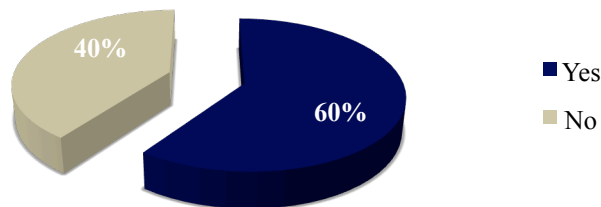


Figure 40: Usage of OSNs to publish final quantitative and qualitative program results

Publishing final qualitative and quantitative final results

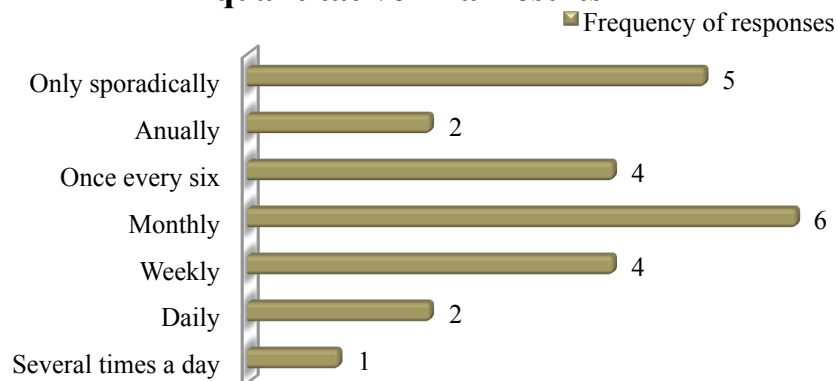


Figure 41: Frequency of publishing quantitative and qualitative final program results

Additionally, in order to assess the relevance of this activity it is asked how nonprofits rate the impact of this publication on the organization’s credibility. These results are **factor 1**

and are summarized in *figure 42*. It shows that nonprofits consider this publication to have a positive impact on the organization's credibility.

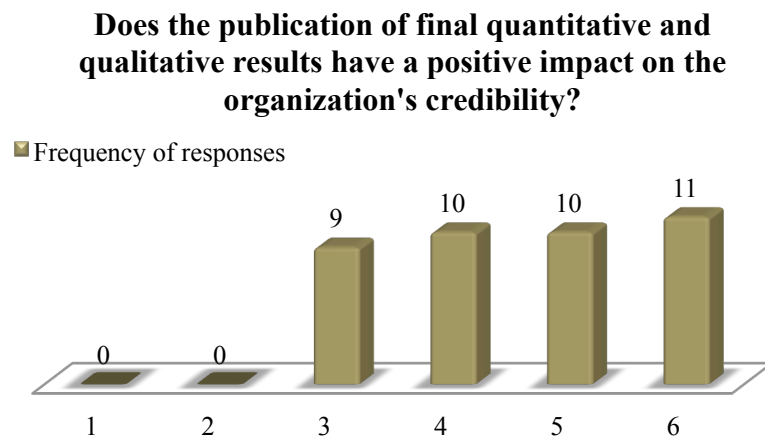


Figure 42: Impact of final quantitative and qualitative final results' publication on nonprofits' credibility

For **factor 1** the sample mean and standard deviation values are:

$$\bar{X} = 4,575 \quad s = 1,129$$

Moreover, **factor 2** consists of whether followers' opinion regarding final quantitative and qualitative results' publication is positive or not. The results are displayed in figure 43, it can be seen that nonprofits evaluate followers' opinion regarding this publication as positive since the majority of respondents valued it with 4 or more.

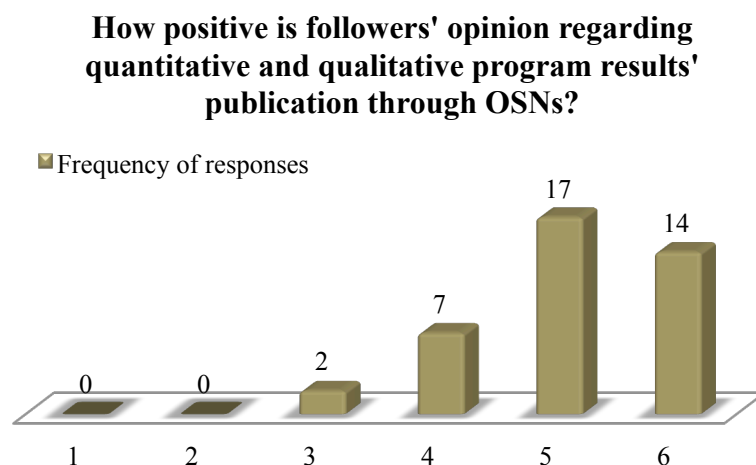


Figure 43: Followers' opinion about the publication of quantitative and qualitative final program results through OSNs

For **factor 2** the sample mean and standard deviation values are:

$$\bar{X} = 5,075 \quad s = 0,858$$

The mean value of these two factors is calculated:

$$\bar{X} = \frac{4,575 + 5,075}{2} = \mathbf{4,83}$$

Additionally, the average value for the standard deviations is calculated:

$$s = \frac{1,129 + 0,858}{2} = 0,994$$

Finally, to encounter the final importance value attributed to the impact of OSNs on this activity it is computed the average between the value from the **factors** and the value from the **ranking**:

$$\bar{X} = \frac{4,83 + 3,633}{2} = \mathbf{4,23}$$

The **average of standard deviations from factors and from ranking** is also computed to allow for the next step, which is the hypothesis test.

$$s = \frac{0,994 + 1,341}{2} = \mathbf{1,168}$$

H0: The impact of online social networks on outcome measurement is not relevant which means it is less or equal that $\mu \leq 3$

H5: The impact of online social networks on outcome measurement activities is relevant which means it is greater that $\mu > 3$

$\eta = 40$	$s = 1,168$
$\mu_0 = 3$	$\bar{X} = 4,23$

$$Z_{obs} = \frac{\bar{X} - \mu_0}{s/\sqrt{n}} \cap N(0,1) \qquad Z_{obs} = \frac{4,23 - 3}{1,168/\sqrt{40}}$$

$$= 6,656$$

$$p\text{-value} = p(Z \geq Z_{obs})$$

$$p\text{-value} = 1 - p(Z \leq Z_{obs}) = 1 - p(Z < 6,656) = 1 - 1 = \mathbf{0} \rightarrow p\text{-value} < \alpha = \mathbf{0,05}$$

Once that p-value is lower than $\alpha = 0,05$ the null hypothesis is **rejected** and it is possible to infer for the population that OSNs have a **relevant impact** on outcome measurement publication value chain activity hence **confirming Hypothesis 5**.

4.3.9 Nonprofit organizations – Firm infrastructure

Concerning the value chain activity firm infrastructure, **one factor** is used to measure the impact of OSNs on this activity.

Firstly, it is asked whether nonprofits use OSNs to search or share management models (such as management with objectives, strategy, budgets, audit and law practices, among others) the answers are shown in *figure 44*. This show that 73% of nonprofits do not use OSNs to search or share management models.

Do nonprofits use OSNs to search/ share management models?

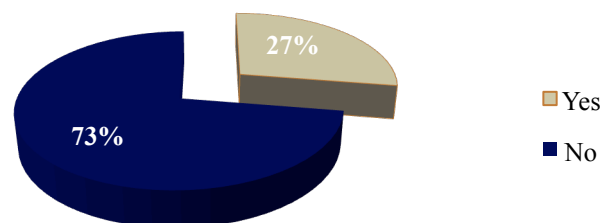


Figure 44: Usage of OSNs to search/share nonprofits management models

Additionally in this activity it is asked for nonprofits to state what type of management models would they consider relevant to find in OSNs. This question is asked because it is possible to understand by the interviews conducted that nonprofits in Portugal are still lacking governance and management policies which raised the need to understand what type of information would it be useful for these organizations. By analyzing the answers it is possible to create a list with the five most stated needs of information.

1. Quality policies;
2. Volunteer management policies;
3. Project sustainability policies;
4. Metrics for measuring social impact;
5. Diagnose policies for projects (to avoid abuse and incorrect money spending)

Moreover, it is assessed how important do nonprofits consider this activity. The answers are shown in *figure 45*. This evaluation shows that nonprofits do not consider this activity very relevant.

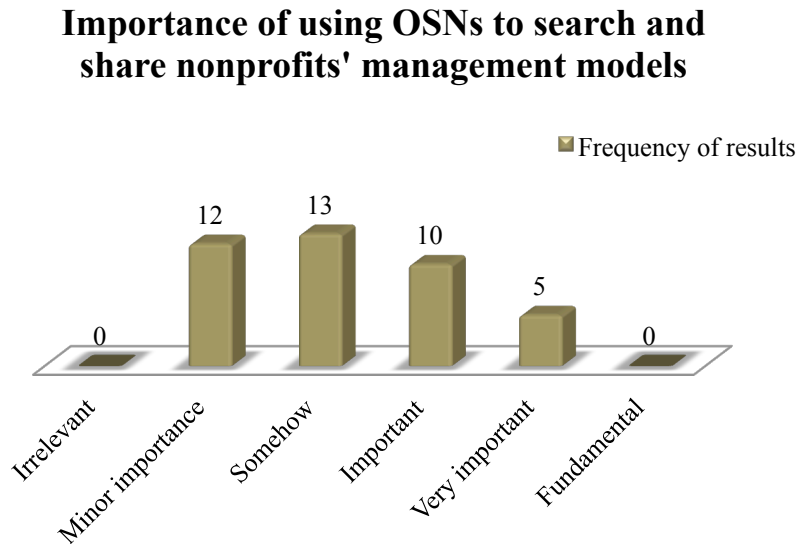


Figure 45: Importance of using OSNs to search and share nonprofits' management models

For **factor 1**, the values for the sample mean and standard deviation are:

$$\bar{X} = 3,2 \quad s = 1,017$$

Additionally, to encounter the final importance value attributed to the impact of OSNs on this activity it is computed the average between the value from the **factor** and the value from the **ranking**:

$$\bar{X} = \frac{3,2 + 2,666}{2} = \mathbf{2,93}$$

The **average of standard deviations from factor and from ranking** is also computed to allow for the next step, which is the hypothesis test.

$$s = \frac{1,017 + 1,316}{2} = \mathbf{1,167}$$

**H0: The impact of online social networks on firm infrastructure activities is not relevant
which means it is less or equal that $\mu \leq 3$**

**H6: The impact of online social networks on firm infrastructure activities is relevant
which means it is greater that $\mu > 3$**

$$\begin{aligned} \eta &= 40 & s &= 1,167 \\ \mu_0 &= 3 & \bar{X} &= 2,93 \end{aligned}$$

$$Z_{obs} = \frac{\bar{X} - \mu_0}{s/\sqrt{n}} \cap N(0,1) \qquad Z_{obs} = \frac{2,93 - 3}{1,167/\sqrt{40}}$$

$$= -0,361$$

$$p\text{-value} = p(Z \geq Z_{obs})$$

$$p\text{-value} = 1 - p(Z \leq Z_{obs}) = 1 - p(Z \leq -0,361) = 1 - p(Z \geq 0,361) = 1 - (1 - p(Z \leq 0,361)) = p(Z \leq 0,361) = \mathbf{0,64058} \rightarrow p\text{-value} > \alpha = \mathbf{0,05}$$

Once that p-value is higher than $\alpha = 0,05$ the null hypothesis is **not rejected and it is not possible make any conclusions for Hypothesis 6.**

4.3.10 Nonprofit organizations – Human resource measurement

Concerning the value chain activity human resource management, **six factors** are used to measure the impact of OSNs on this activity.

Firstly, it is asked whether nonprofits use OSNs to recruit paid staff the answers are shown in *figure 46*. The results show that most nonprofits do not recruit paid staff via OSNs; only 15% of them actually use these tools.

Recruitment of paid staff through OSNs

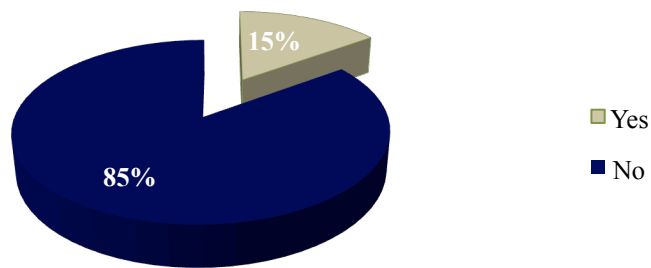


Figure 46: Usage of OSNs to recruit paid staff

Additionally, the importance of performing this activity is assessed and consists of **factor 1** the results are shown in *figure 47*. This activity is generally considered not very relevant for nonprofits surveyed.

Importance of using OSNs to recruit paid staff

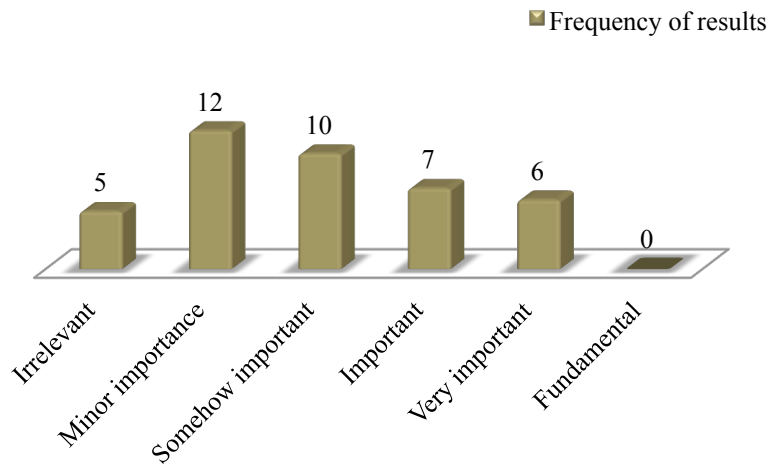


Figure 47: Importance of using OSNs to recruit paid staff

Considering **factor 1** the sample mean and standard deviation are calculated, the results are the following:

$$\bar{X} = 2,925 \quad s = 1,268$$

Furthermore, the survey assessed if nonprofits use OSNs to recruit volunteers, this is **factor 2** and the results are shown in *figure 48*. In the context of volunteers there are more organizations performing recruitment through OSNs.

Recruitment of volunteers through OSNs

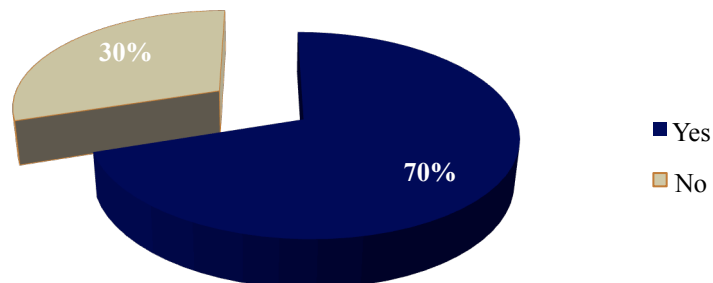


Figure 48: Usage of OSNs to recruit volunteers

Additionally, also for this **factor 2**, the importance of performing this activity is assessed; the results are shown in *figure 49*. The opinion relatively to the importance of recruiting volunteer through OSNs is more positive when compared with recruiting employees. In this case nonprofits consider OSNs recruitment of volunteers as a positive activity.

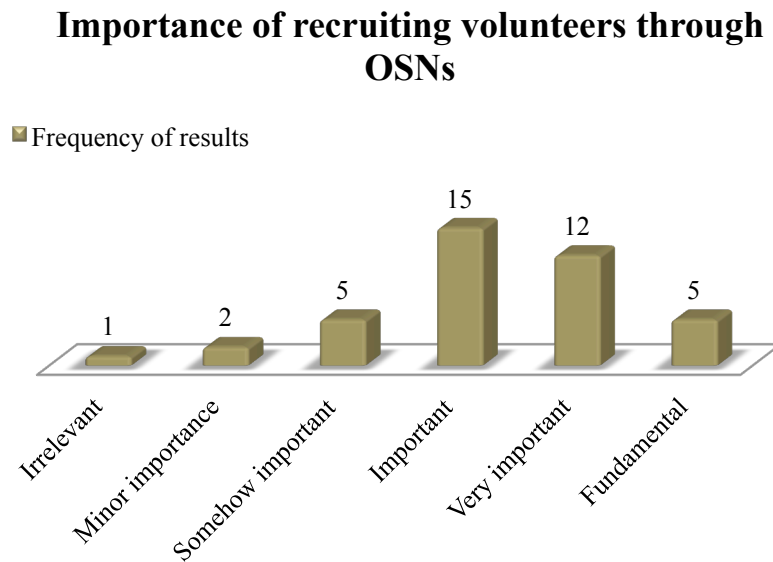


Figure 49: Importance of recruiting volunteers through OSNs

The sample mean and standard deviation for **factor 2** are calculated:

$$\bar{X} = 4,25 \quad s = 1,149$$

Factor 3 concerns the use of OSNs to reward paid staff, it is asked whether nonprofits are using OSNs to perform this activity, the results are shown in *figure 50*. It can be seen that the great majority of nonprofits do not reward paid staff through OSNs, only 15% of them do it.

Reward paid staff through OSNs

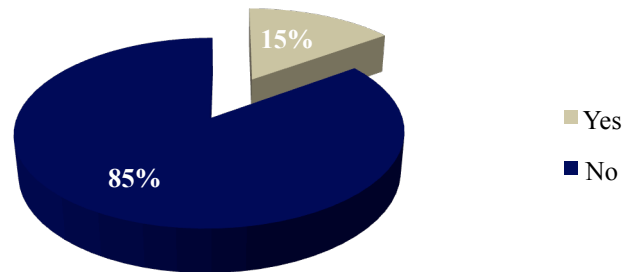


Figure 50: Usage of OSNs to reward paid staff

Additionally, to assess the importance of this behavior a question is asked and the results are presented in *figure 51*. The majority of nonprofits do not consider this behavior important; only 12 nonprofits consider it to be important, very important or fundamental.

Importance of using OSNs to reward paid staff

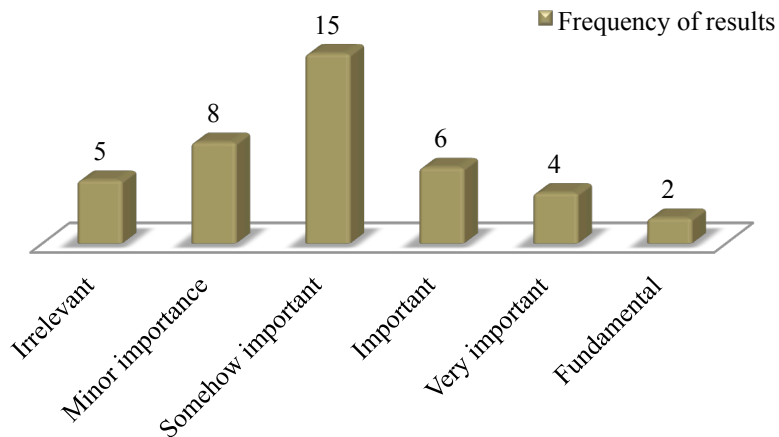


Figure 51: Importance of using OSNs to reward paid staff

For **factor 3** the values of the sample mean and standard deviation are calculated:

$$\bar{X} = 3,05 \quad s = 1,319$$

Moreover, the questionnaire assesses if nonprofits use OSNs to reward volunteers, this is **factor 4**, and the results are shown in *figure 52*. These results reveal that most nonprofits do

not reward volunteers through OSNs but there are more nonprofits rewarding volunteers through OSNs than paid staff.

Reward volunteers through OSNs

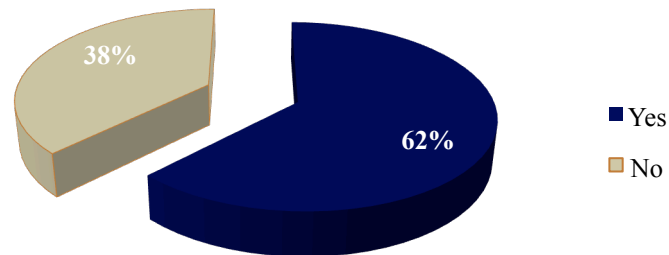


Figure 52: Usage of OSNs for rewarding volunteers

Additionally to understand the importance of **factor 4**, it is asked respondents to rate; the answers are given in *figure 53*. Also regarding the evaluation of this activities, the results are very well distributed but with a tendency to positivity.

Importance of rewarding volunteers through OSNs

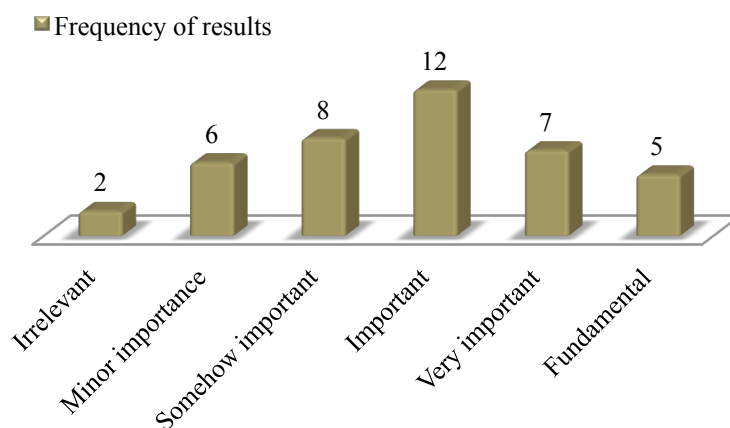


Figure 53: Importance of rewarding volunteers through OSNs

The values for the sample mean and standard deviation are calculated:

$$\bar{X} = 3,775 \quad s = 1,386$$

Additionally within this value chain activity it is also asked whether nonprofits use OSNs to train paid staff, the results of **factor 5** are shown in *figure 54*. Analyzing the results, very few organizations use OSNs to give training to paid staff, only 12%.

Training paid staff using OSNs

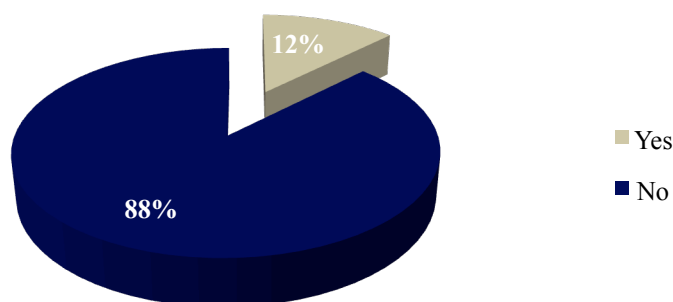


Figure 54: Usage of OSNs to train paid employees

Moreover, to assess the importance of **factor 5**, it is asked for respondents to rate it, the results are shown in *figure 55*. The majority of nonprofits do not consider this activity has having a positive impact on the organization’s activity.

Importance of using OSNs to train paid staff

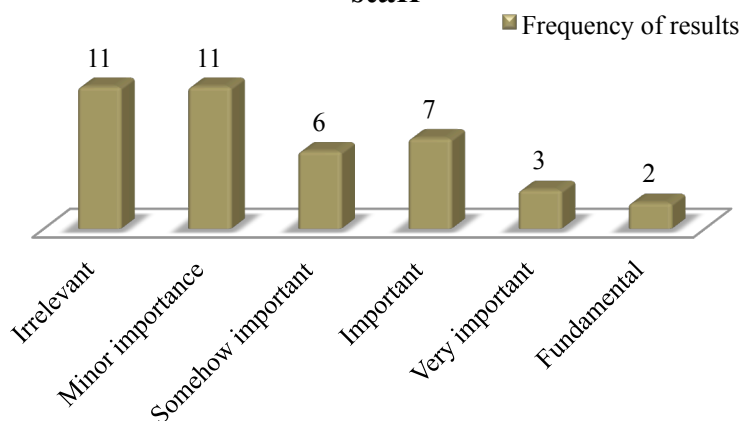


Figure 55: Importance of using OSNs to train paid staff

The values for the sample mean and standard deviation of **factor 5** are calculated:

$$\bar{X} = 2,65 \quad s = 1,494$$

Finally, **factor 6** consists on the usage of OSNs to train volunteers, *figure 56* shows whether nonprofits are using OSNs for this purpose. The results show that nonprofits use OSNs more to train volunteers than paid staff, even though, only 25% use this tool.

Training volunteers using OSNs

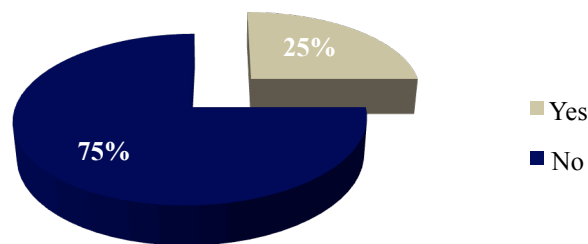


Figure 56: Usage of OSNs to train volunteers

In this context it is also assessed the importance of **factor 6** the results are given by *figure 57*. Generally, nonprofits do not consider using OSNs to train volunteer very relevant.

Importance of using OSNs to train volunteers

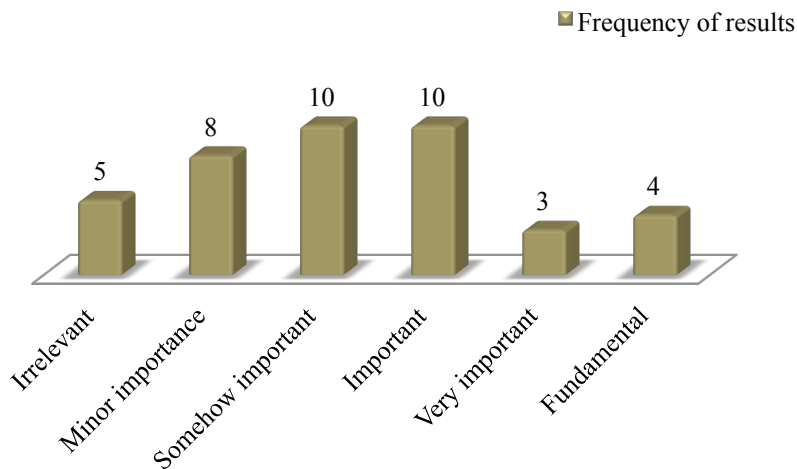


Figure 57: Importance of using OSNs to train volunteers

The values for the sample mean and standard deviation are calculated for **factor 6**:

$$\bar{X} = 3,25 \quad s = 1,463$$

The mean value of these six factors is calculated:

$$\bar{X} = \frac{2,925 + 4,25 + 3,05 + 3,775 + 2,65 + 3,25}{6} = 3,32$$

Additionally, the average value for the standard deviations is calculated

$$s = \frac{1,268 + 1,149 + 1,319 + 1,386 + 1,494 + 1,463}{6} = 1,346$$

Finally, to encounter the final importance value attributed to the impact of OSNs on this activity it is computed the average between the value from the **factors** and the value from the **ranking**:

$$\bar{X} = \frac{3,32 + 2,85}{2} = 3,08$$

The **average of standard deviations from factors and from ranking** is also computed to allow for the next step, which is the hypothesis test.

$$s = \frac{1,346 + 1,646}{2} = 1,496$$

H0: The impact of online social networks on human resource management activities is not relevant which means that $\mu \leq 3$

H7: The impact of online social networks on human resource management activities is relevant which means that $\mu > 3$

$$\eta = 40 \quad s = 1,496$$

$$\mu_0 = 3 \quad \bar{X} = 3,08$$

$$Z_{obs} = \frac{\bar{X} - \mu_0}{s/\sqrt{n}} \cap N(0,1) \qquad Z_{obs} = \frac{3,08 - 3}{1,496/\sqrt{40}}$$

$$= 0,352$$

$$p\text{-value} = p(Z \geq Z_{obs})$$

$$p\text{-value} = 1 - p(Z \leq Z_{obs}) = 1 - p(Z < 0,352) = 1 - 0,63683 = 0,36317 \rightarrow p\text{-value} > \alpha = 0,05$$

Once that p-value is higher than $\alpha = 0,05$ the null hypothesis is **not rejected** and it is **not possible to make any conclusion regarding Hypothesis 7**.

4.3.11 Nonprofit organizations – Shared services

Concerning the value chain activity shared services; **three factors** are used to measure the impact of OSNs on this activity.

Firstly, it is asked whether nonprofits use OSNs to perform partnerships with other organizations this is **factor 1** and the answers are shown in *figure 58*. There are only 17% of nonprofits using OSNs to perform partnerships with other nonprofits.

Do nonprofits use OSNs to perform partnerships with other nonprofits?

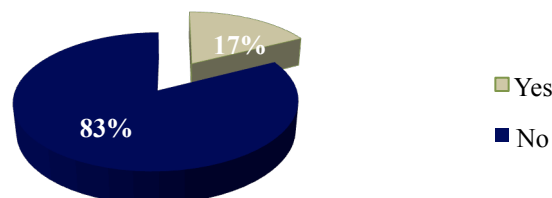


Figure 58: Nonprofits' usage of OSNs to perform partnerships with other organizations

Additionally, it is assessed the importance of **factor 1**, the results are shown in *figure 59*. Only eight organizations in a sample of forty, consider this tool relevant for their activity.

Importance of using OSNs to perform partnerships with other organizations

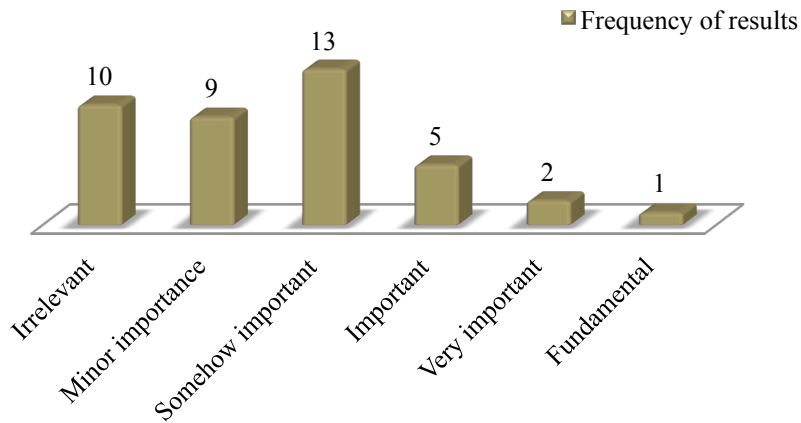


Figure 59: Importance of using OSNs to perform partnerships with other organizations

The value for the sample mean and standard deviation are calculated for **factor 1**:

$$\bar{X} = 2,575 \quad s = 1,278$$

Furthermore, the survey assesses whether nonprofits use OSNs to perform partnerships with suppliers, this is **factor 2** and the results are shown in *figure 60*. Similarly to the last factor only 15% of nonprofits perform partnerships with suppliers using OSNs.

Do nonprofits use OSNs to perform partnerships with suppliers?

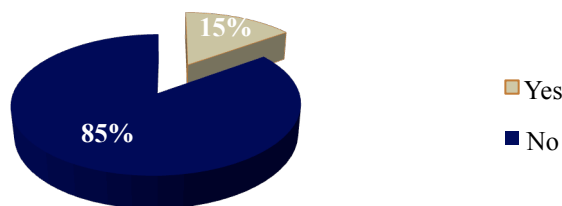


Figure 60: Usage of OSNs to perform partnerships with suppliers

So that the importance of **factor 2** is assessed, respondents are asked to rate this behavior; the results are shown in *figure 61*. It is clear that the majority of nonprofits do not consider this activity has having a relevant impact for them.

Importance of using OSNs to perform partnerships with suppliers

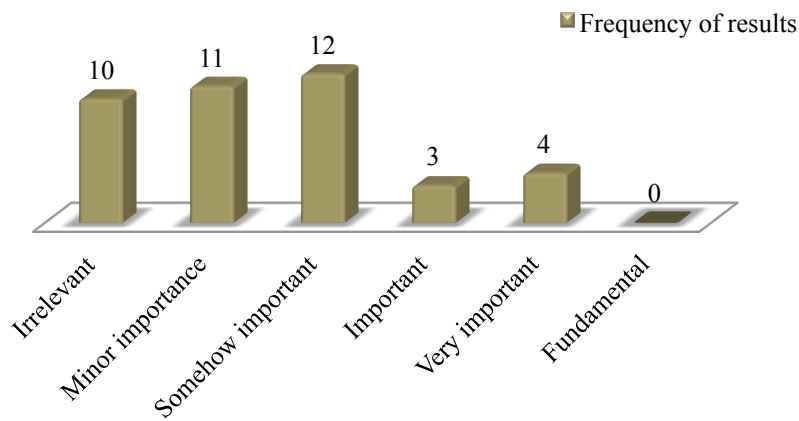


Figure 61: Importance of using OSNs to perform partnerships with suppliers

Also, for **factor 2** the values for the sample mean and standard deviation were calculated:

$$\bar{X} = 2,5 \quad s = 1,24$$

Moreover, one last factor is evaluated. **Factor 3** assesses whether nonprofits are using OSNs to perform partnerships with for profit companies. The results are shown in *figure 62*. Also concerning partnerships with for profit companies, 85% of nonprofits do not use OSNs to create this type of partnerships.

Do nonprofits use OSNs to perform partnerships with for profit companies?

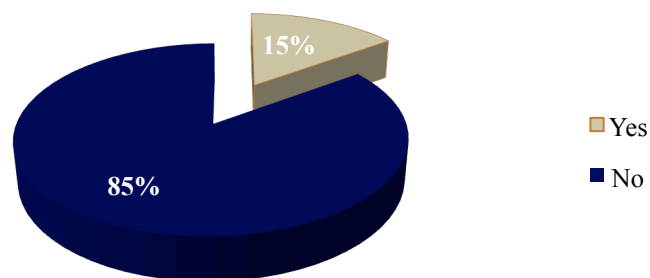


Figure 62: Usage of OSNs to perform partnerships with for profit companies

The results for the importance of **factor 3** are shown in *figure 63*. Concerning importance, 32 nonprofits in a sample of 40, consider this activity has not relevant.

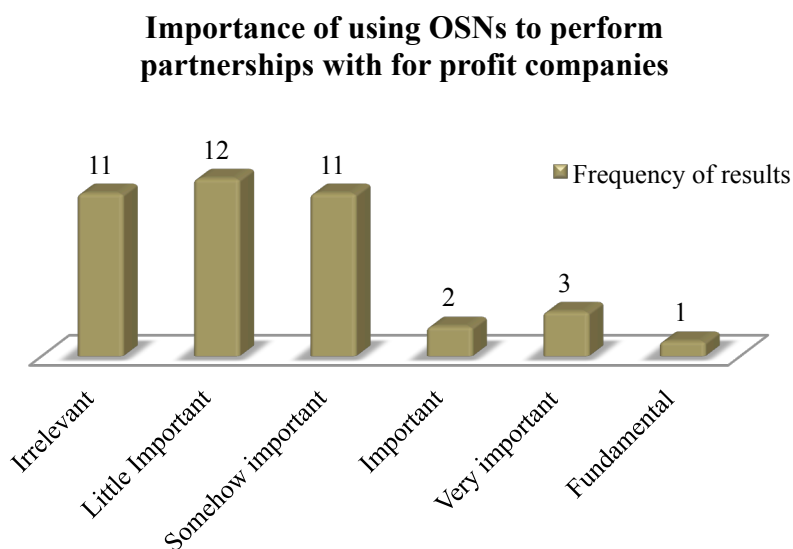


Figure 63: Importance of using OSNs to perform partnerships with for profit companies

The values for the sample mean and standard deviation were calculated for **factor 3**:

$$\bar{X} = 2,542 \quad s = 1,298$$

The mean value of these three factors is calculated:

$$\bar{X} = \frac{2,575 + 2,5 + 2,425}{3} = 2,5$$

Additionally, the average value for the standard deviations is calculated

$$s = \frac{1,278 + 1,24 + 1,298}{3} = 1,272$$

Finally, to encounter the final importance value attributed to the impact of OSNs on this activity it is computed the average between the value from the **factors** and the value from the **ranking**:

$$\bar{X} = \frac{2,5 + 2,467}{2} = 2,48$$

The average of standard deviations from factors and from ranking is also computed to allow for the next step, which is the hypothesis test.

$$s = \frac{1,272 + 1,892}{2} = 1,582$$

H0: The impact of online social networks on shared services is not relevant which means that $\mu \leq 3$

H8: The impact of online social networks on shared services is relevant which means that $\mu > 3$

$\eta = 40$ $s = 1,582$ $\mu_0 = 3$ $\bar{X} = 2,48$

$$Z_{obs} = \frac{\bar{X} - \mu_0}{s/\sqrt{n}} \cap N(0,1) \qquad Z_{obs} = \frac{2,48 - 3}{1,582/\sqrt{40}}$$

$$= -2,064$$

$$p\text{-value} = p(Z \geq Z_{obs})$$

$$p\text{-value} = 1 - p(Z \leq Z_{obs}) = 1 - p(Z \leq -2,064) = 1 - p(Z \geq 2,064) = 1 - (1 - p(Z \leq 2,064)) = p(Z \leq 2,064) = 0,9803 \rightarrow p\text{-value} > \alpha = 0,05$$

Once that p-value is higher than $\alpha = 0,05$ the null hypothesis is **not rejected and it is not possible to make any conclusions regarding Hypothesis 8.**

4.3.12 Nonprofit organizations – Technological development

Concerning the value chain activity technology developments; **three factors** are used to measure the impact of OSNs on this activity.

Firstly, it is asked whether nonprofits use OSNs to search for core technologies this is **factor 1** and the answers are shown in *figure 64*. In this activity it is curious to notice that exactly half of the respondents use OSNs to search for core technologies for their activity.

Do nonprofits use OSNs to search for core technologies?

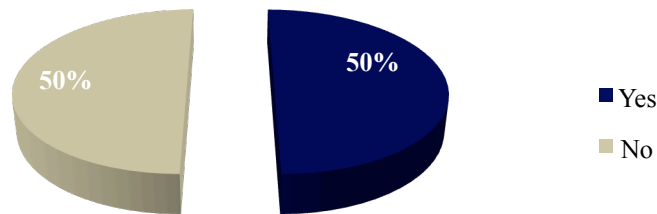


Figure 64: Usage of OSNs to search for core technologies

Additionally, it is assessed how nonprofits rate the importance of **factor 1**, the results are shown in *figure 65*. Although half of the nonprofits perform this activity, more than half consider it has not having a relevant impact.

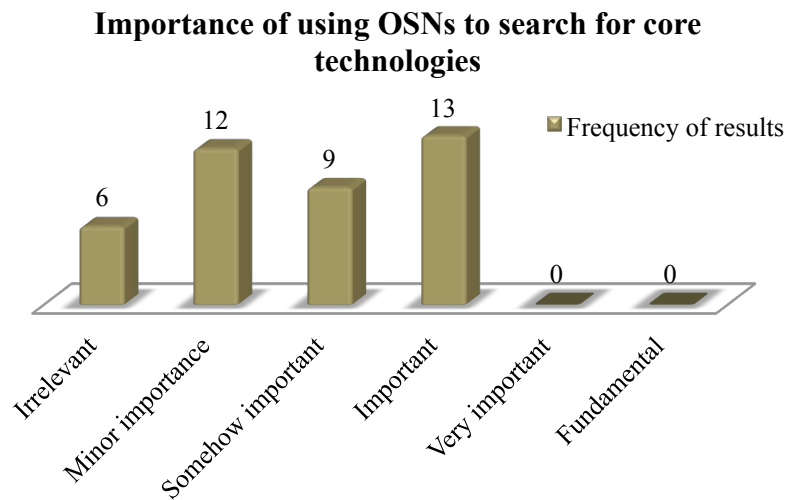


Figure 64: Importance of using OSNs to search for core technologies

The values for the sample mean and standard deviation are calculated for **factor 1**:

$$\bar{X} = 2,725 \quad s = 1,085$$

Furthermore, within this value chain activity it is assessed if nonprofits use OSNs to search for support technologies, this is **factor 2**. The results are presented in *figure 65*. In the case of searching for support technologies, only 33% of nonprofits do not use this tool.

Do nonprofits use OSN to search for support technologies?

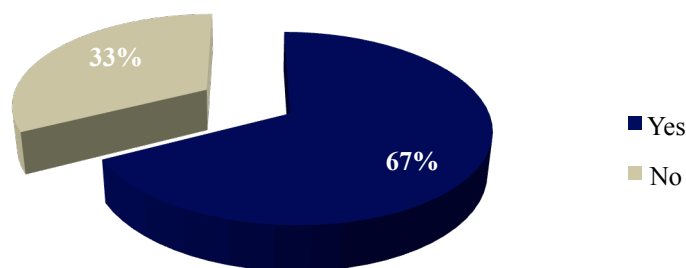


Figure 65: Usage of OSNs to search for support technologies

The importance of **factor 2** is evaluated and the results are shown in *figure 66*. Regarding support technologies there is a higher tendency for nonprofits rating this activity has positive although the great majority evaluates it has not having a relevant impact.

Importance of using OSNs to search for support technologies

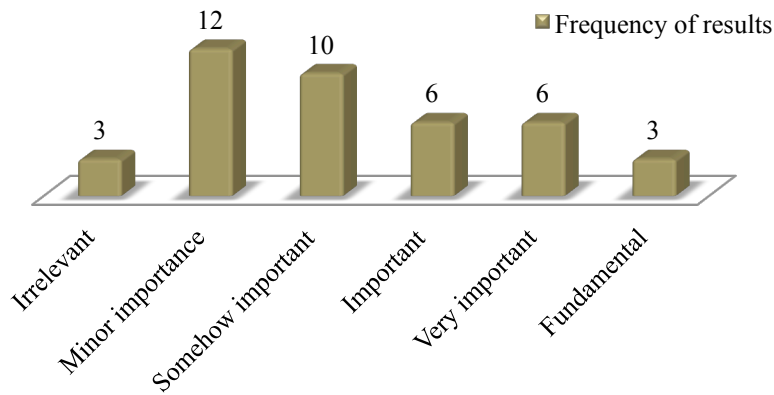


Figure 66: Importance of using OSNs to search for support technologies

The values for the sample mean and standard deviation for **factor 2** are:

$$\bar{X} = 3,225 \quad s = 1,423$$

Moreover, one last factor is evaluated, **factor 3** assessed if nonprofits are using OSNs to search for technological partners. The results are shown in *figure 67*, it shows that most nonprofits, 83% do not use OSNs to search for technological partners.

Do nonprofits use OSNs to search for technological partners?

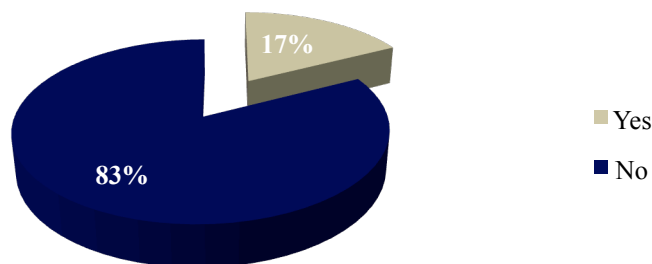


Figure 67: Usage of OSNs to search for technological partners

The importance of factor 3 is evaluated by nonprofits; the results are shown in *figure 68*. Regarding the importance, most nonprofits do not consider searching technological partners using OSNs has having a relevant impact on their activity.

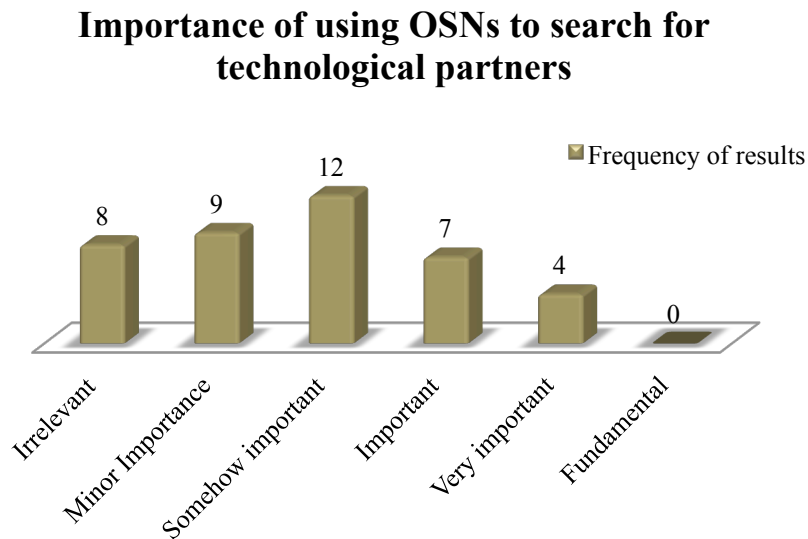


Figure 68: Importance of using OSNs to search for technological partners

The values for the sample mean and standard deviation of factor 3 are:

$$\bar{X} = 2,75 \quad s = 1,255$$

The mean value of these three factors is calculated:

$$\bar{X} = \frac{2,725 + 3,225 + 2,75}{3} = 2,9$$

Additionally, the average value for the standard deviations is calculated

$$s = \frac{1,085 + 1,423 + 1,255}{3} = 1,254$$

Finally, to encounter the final importance value attributed to the impact of OSNs on this activity is computed the average between the value from the **factors** and the value from the **ranking**:

$$\bar{X} = \frac{2,9 + 2,933}{2} = 2,92$$

The average of standard deviations from factors and from ranking is also computed to allow for the next step, which is the hypothesis test.

$$s = \frac{1,254 + 1,943}{2} = 1,599$$

H0: The impact of online social networks on technological development is not relevant which means that $\mu \leq 3$

H9: The impact of online social networks on technological development is relevant which means that $\mu > 3$

$\eta = 40$	$s = 1,599$
$\mu_0 = 3$	$\bar{X} = 2,92$

$$Z_{obs} = \frac{\bar{X} - \mu_0}{s/\sqrt{n}} \cap N(0,1) \quad Z_{obs} = \frac{2,92 - 3}{1,599/\sqrt{40}}$$

$$= -0,329$$

$$p\text{-value} = p(Z \geq Z_{obs})$$

$$p\text{-value} = 1 - p(Z \leq Z_{obs}) = 1 - p(Z \leq -0,329) = 1 - p(Z \geq 0,329) = 1 - (1 - p(Z \leq 0,329)) = p(Z \leq 0,329) = 0,6293 \rightarrow p\text{-value} > \alpha = 0,05$$

Once that p-value is higher than $\alpha = 0,05$ the null hypothesis is **not rejected and it is not possible to make any conclusions regarding Hypothesis 9.**

From this survey analysis it is possible to make some conclusions. Firstly, that from the sample almost all nonprofits use OSNs and the most used from all the technologies available is Facebook. Nevertheless, regarding specific OSN functionalities there is still possibility for improvement. More precisely, concerning activities of **publication of final quantitative and**

qualitative results which 40% of nonprofits are still not making this publication nevertheless it is the activity showing more positive results concerning its impact on nonprofits value chain.

Moreover, regarding the possibility offered by OSNs to **share/find ideas for management models** the majority of nonprofits are not using OSNs to search for these types of examples. Additionally, regarding the possibility of **recruitment of paid staff** there is still a good margin for improvement since 85% of nonprofits do not use this functionality provided by OSNs. Furthermore, OSNs are still not used largely for **performing partnerships** with other stakeholders, such as other nonprofits, for-profit companies or suppliers, more than 80% of nonprofits do not perform partnerships through OSNs.

Concerning the analysis of hypothesis reveals that **all nonprofit value chain primary activities are confirmed** but regarding **support activities it is not possible to make any conclusions with this sample**.

4.3.13 General Public – Sample Analysis

This part consists on analyzing the results from the survey conducted to OSNs' users regarding their perceptions of NPOs using OSNs.

This survey was sent by email, Facebook and Twitter to both male and female from every age group to collect their opinion regarding OSNs. It was answered through Qualtrics online software.

The first part characterizes the sample to understand differences in terms of age and gender. The sample consists of 206 people chosen randomly. This sample is characterized according to *figure 69* and *figure 70*.

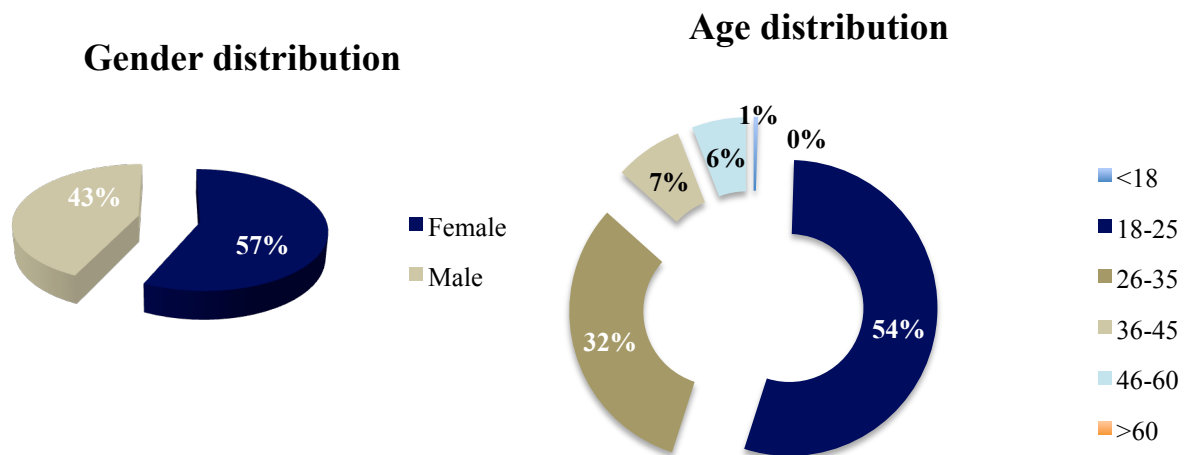


Figure 69 & 70: Age and Gender distribution of respondents

4.3.14 General Public – General Analysis

Firstly, considering the question of whether or not they used OSNs, the results are summarized in *figure 71*. It is evident that the majority of people who answered the survey use OSNs, only 2% do not use it at all.

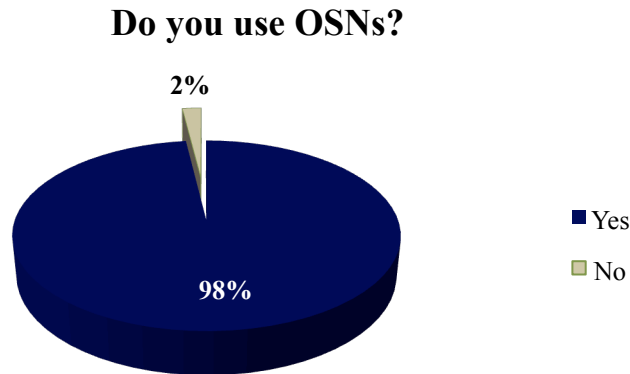


Figure 71: Usage of OSNs in Portugal

Considering the type of OSN used, it can be concluded that there is a wider range of OSNs used by this group when compared with nonprofit organizations. Furthermore, it is clear that almost all respondents who use OSNs also use Facebook. Moreover, LinkedIn emerges as the second most used option, followed, with a significant difference by Twitter. All the other OSNs show little usage in this sample.

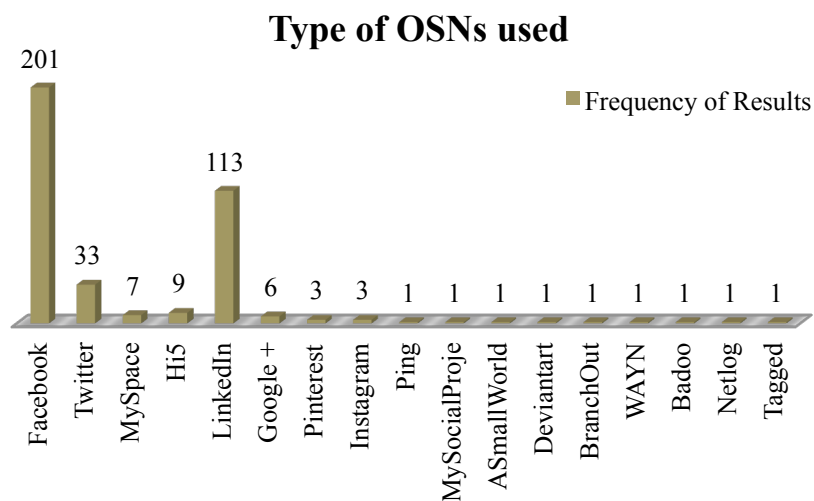


Figure 72: Type of OSN used

Additionally, in order to understand the state of the art regarding people's perceptions about nonprofits using OSNs, a set of questions are asked. Firstly, it is asked if OSN users surveyed have already made any donation to a nonprofit organization using OSNs. The results are summarized in *figure 73*. From these results it is clear that the majority of people has never made any donation to a nonprofit organization using OSNs. Only 7% of respondents have already made a donation. Moreover, it is assessed if respondents had already made any goods donation to a nonprofit organization through OSNs. The results are shown in *figure 74*, it can be concluded that there is not a big difference on the number of people making money versus resource donations.

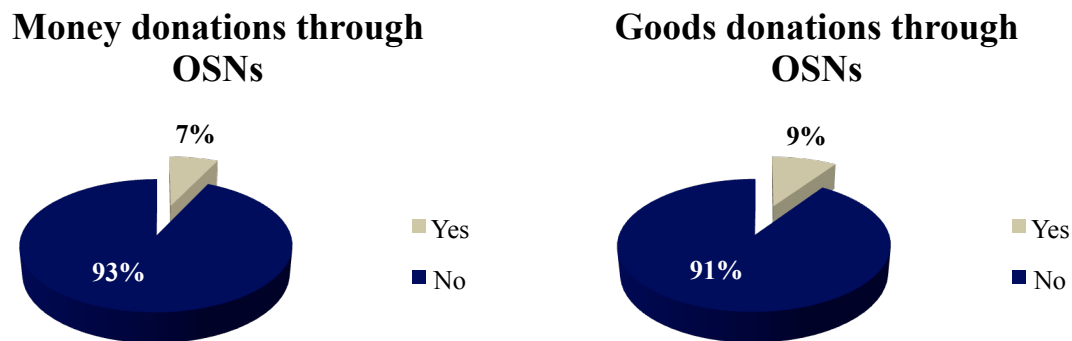


Figure 73 & 74: Money and resource donations to nonprofits through OSNs

From the respondents answering they never did any donation, the most cited reasons were:

1. Lack of trust in the organization or cause;
2. Lack of financial capacity;
3. Lack of causes with which they identify;
4. Announcements for money/resource raising campaigns never appear;
5. The causes are uninspiring;
6. Preference for other donation means (personally, website, or other more direct form);

By far, the most cited reason for not donating through OSNs is the lack of trust in the organization or cause, users are unable to identify if they are being presented with a true and useful campaign but especially if the money will reach the real needs.

Additionally, it is assessed respondents' use of OSNs to search for volunteer projects to participate. The results are shown in *figure 73*, the results show that although the majority of OSN users has not searched for volunteer projects through this tool, there are 32% of respondents who already did which represents 64 users in a total of 201.

Use of OSNs to search for volunteer projects

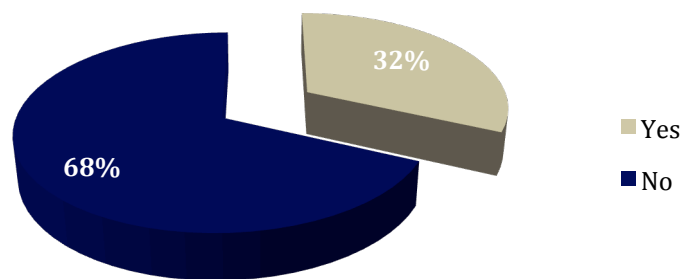


Figure 75: Usage of OSNs to search for volunteer projects

Moreover, for the respondents that had already searched for volunteer project through OSNs they are asked to evaluate this process in terms of efficiency, in a scale of 1 to 6. The results are shown in *figure 76*, it is seen that the overall evaluation is positive since that 38 answers are from efficient to totally efficient.

Efficiency of OSNs to search for volunteer projects

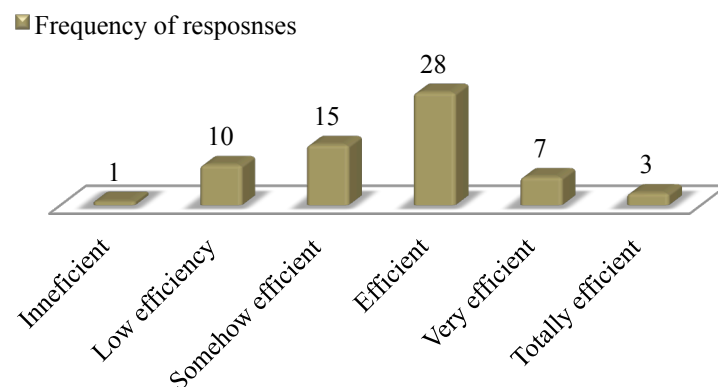


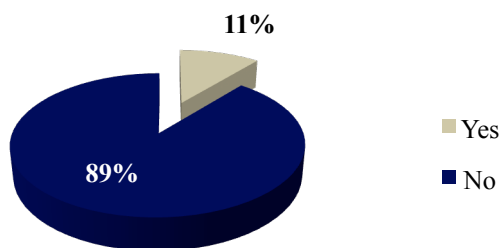
Figure 76: Efficiency of OSNs to search for volunteer projects

Additionally, from the respondents answering that they never searched for volunteer projects through OSNs they were asked the motives. The most cited reasons were:

1. "I am not interested"
2. "I do not find opportunities"
3. "The opportunities do not fit what I am looking for"
4. "It is hard to find because there is a lot of information"
5. "I prefer to search through other more direct means"

Additionally it is asked if respondents had already been contacted by nonprofits to be recruited to work as a paid staff for a NPO. The results are shown in *figure 77*, it is clear that the majority of respondents have never received such contact. Additionally, it is asked if respondents are willing to be contacted through OSNs to work as a paid employee for a nonprofit organization. The results are shown in *figure 78*, these demonstrate that the majority of respondents are willing to work for a nonprofit as a paid employee, which means that nonprofits have here an opportunity to recruit.

Have you ever been contacted through OSNs to work as a paid employee to a NPO?



Are you willing to work as a paid employee to a nonprofit organization?

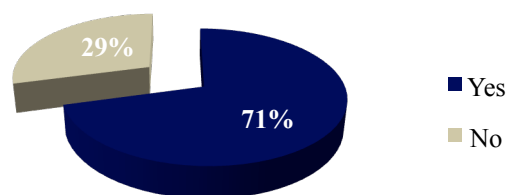


Figure 77 & 78: Contacts through OSNs to work as a paid employee for a nonprofits & willingness to works as a paid employee for a nonprofit

Lastly, it is asked OSN users to say which nonprofit first comes to mind when thinking about OSNs. The five most popular nonprofits on OSNs are:

1. Banco Alimentar
2. Um Pequeno Gesto Uma Grande Ajuda
3. MOVE
4. Unicef
5. AMI

These results reveal which nonprofits are creating the most visibility through OSNs, Banco Alimentar comes first which goes in line with its offline popularity, followed by two non-governmental organizations working for development in less developed countries Um Pequeno Gesto, Uma Grande Ajuda and MOVE. Additionally, international organizations like Unicef or AMI also show up in the group of the most popular nonprofits in OSNs.

4.3.15 General Public – Program Inputs

One of the questions asked is intended to assess the relevance OSN users attribute to fundraising and resource raising through OSNs. Respondents are asked to rate if they consider this activity credible. This allows having an understanding about the impact that online fundraising/resource raising campaigns can have. The results are presented in *figure 79*, from this evaluation it is clear that OSN users do not consider fundraising/resource raising through OSNs a credible activity.

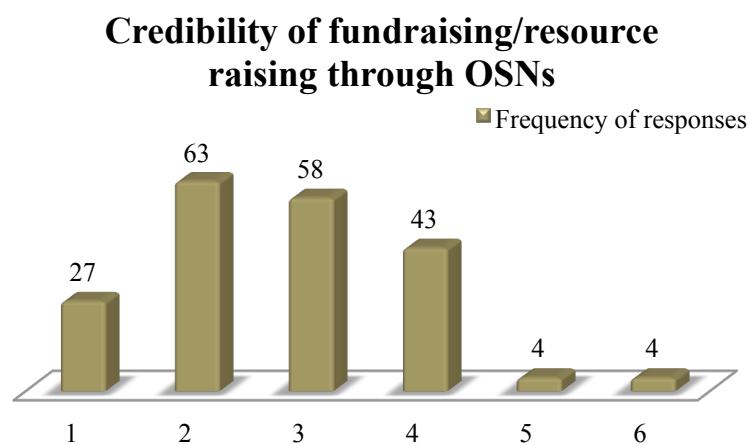


Figure 79: Evaluation of fundraising credibility by OSN users

For this evaluation the sample mean value is:

$$\bar{X} = 2,728$$

This value shows the negative perception OSN users have towards fundraising and resource raising activities launched through OSNs.

4.3.16 General Public – Assistance programs

Furthermore, it is also asked OSN users to evaluate assistance programs by rating two factors, if they think the publication of projects in OSN increases public recognition and if they feel more influenced to contribute due to this publication. The results of both factors are presented in *figure 80* and *figure 90*, respectively.

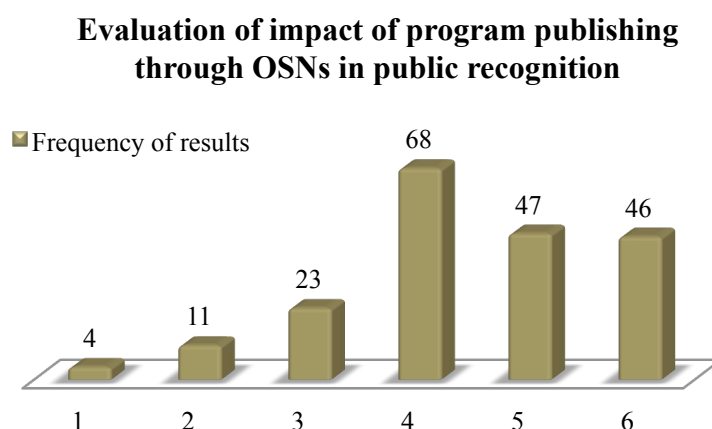


Figure 80: Evaluation of impact of program publishing through OSNs in public recognition

This results show that respondents attribute a positive evaluation to results' publication, which is proven by the sample mean of:

$$\bar{X} = 4,41$$

Impact of program publishing on public willingness to contribute

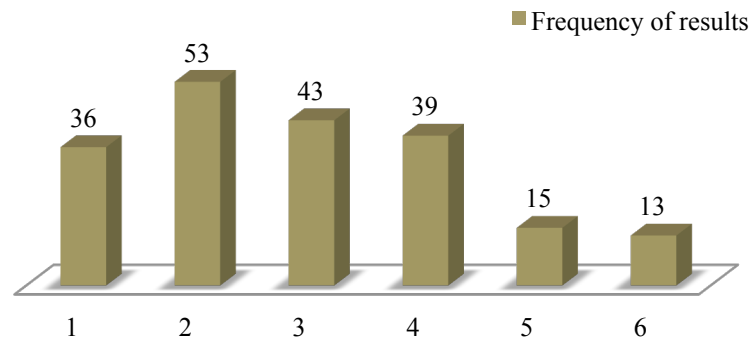


Figure 81: Impact of program publishing on public willingness to contribute

This results show that although the impact of publication on public recognition is positive, the impact on their willingness to contribute is not positive.

$$\bar{X} = 2,914$$

This results on a final average of:

$$\bar{X} = \frac{4,41 + 2,914}{2} = 3,662$$

4.3.17 General Public – Program Outputs

Considering program outputs, it is also asked for OSN users to evaluate the influence of immediate quantitative program results publication on their willingness to contribute to a nonprofit organization. The results are shown in *figure 82*, these show that the answers are well distributed.

Impact of immediate program results' publishing on willingness to contribute

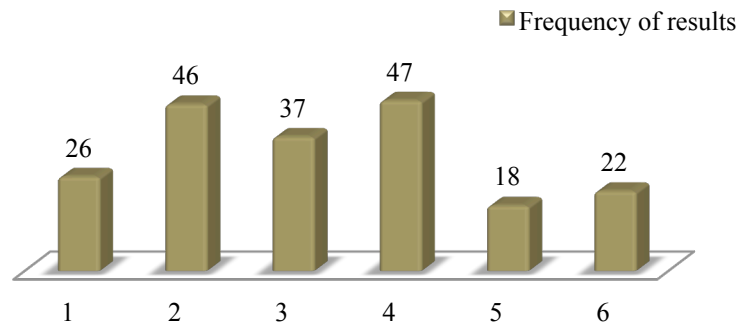


Figure 82: Impact of publishing immediate quantitative project results on willingness to contribute

The sample mean value for these results is:

$$\bar{X} = 3,26$$

This mean value shows a slightly positive value for the impact of immediate quantitative results' publication through OSNs.

4.3.18 General Public – Social awareness and engagement campaigns

Considering social awareness & engagement campaigns OSN users are asked to evaluate the impact of this campaigns on their global perception of nonprofits, the results are shown in *figure 83*.

Impact of awareness campaigns on global nonprofits' perceptions

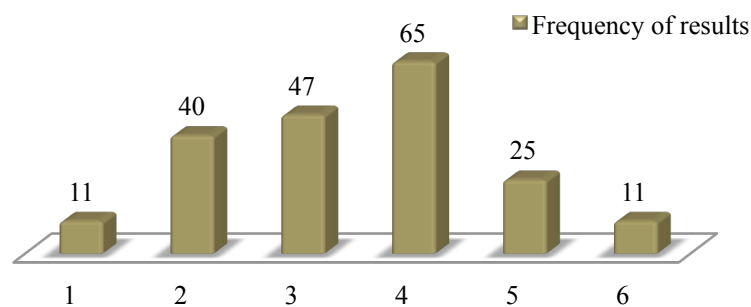


Figure 83: Impact of awareness campaigns on general public global nonprofit perception

These results are also quite evenly distributed but the value for the sample mean shows a positive impact of these campaigns:

$$\bar{X} = 3,43$$

4.3.19 General Public – Outcome measurement

Considering the impact for the publication of final quantitative and qualitative program results on willingness to contribute is presented in *figure 84*.

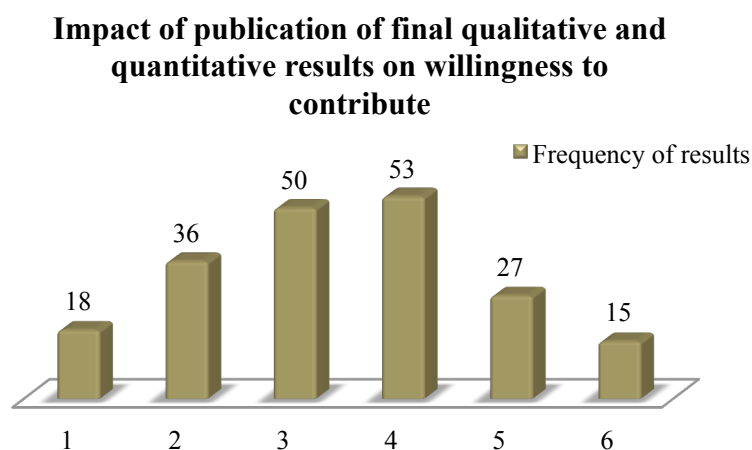


Figure 84: Impact of publishing final qualitative and quantitative program results on willingness to contribute

These results are also evenly distributed but with a positive tendency shown by a sample mean of:

$$\bar{X} = 3,4$$

From the survey conducted to the general public one conclusion is that the majority of respondents use some kind of OSN, being Facebook the one most used. Additionally, these results show that most OSN users have never done any donation to a NPO through OSNs essentially for lacking trust in the tool, cause or even in organization.

Moreover, the majority of respondents have never used OSNs to search for volunteer project mainly for lacking interest in that activity.

Furthermore, most OSN users have never been contacted to work for a nonprofit through OSNs but the majority is willing to work for a NPO, which creates a good opportunity for nonprofits.

It was also possible to understand that Banco Alimentar is the organization revealing the greater social awareness through OSNs, which is a possible consequence of its huge offline impact.

Regarding the evaluation of the five primary value chain activities the ones showing the higher impact on public awareness is publishing projects and social awareness & engagement activities. While the one revealing the less impact on the general public is fundraising because it does not have a positive impact on users credibility on the organization/cause.

5. Conclusion

5.1 Conclusion

Throughout this dissertation, a series of steps were taken to better understand the connection between the world of OSNs and the third sector. Although, during the research information was used from what is happening all over the world with these two dimensions, the study was conducted to evaluate the Portuguese reality. By conducting research related to online social networks and the value chain framework, the model was built. The model started by understanding the nonprofit sector in Portugal and contrasted this sector with the for profit to create the nonprofit value chain. Having the value chain, interviews were conducted to understand the impact of OSNs on it. Although this is not exhaustive, this information is drawn from research and field interviews with NPOs. This dissertation intended to answer to one **RQ: Which nonprofits' value chain activities can be positively affected by online social network's use?** In order to answer to this question nine hypotheses were generated, which would then be tested through a survey conducted to nonprofits. *Figure 85* shows for each nonprofits value chain dimension how can OSNs be used.

It is concluded that the Portuguese third sector is generally following international trends of progressive use of OSNs has can be concluded from the intermediary conclusions presented in chapter 3 and from the massive use of OSNs shown in the survey analysis of chapter 4. Nevertheless, there are still major opportunities on which nonprofits can capitalize their use of OSNs has seen from both the interviews and survey analysis showing several OSN functionalities which are not used by NPOs.

Each hypothesis addresses one value chain activity and the conclusion from the questionnaire is that **OSNs have a positive impact on each of the five primary activities: Program inputs, Assistance programs, Program outputs, Social awareness & engagement and Outcome measurement.** Regarding support activities it is not possible to draw any conclusions regarding the impact of OSNs due to the reduced sample size. *Figure 85* below shows the summary of this impact; the blue balloons represent the positive impact (highlighted with a “+” sign) while the others represent the dimensions on which it was not possible to draw conclusions from the sample surveyed (description presented: “Not possible to infer for the population”).

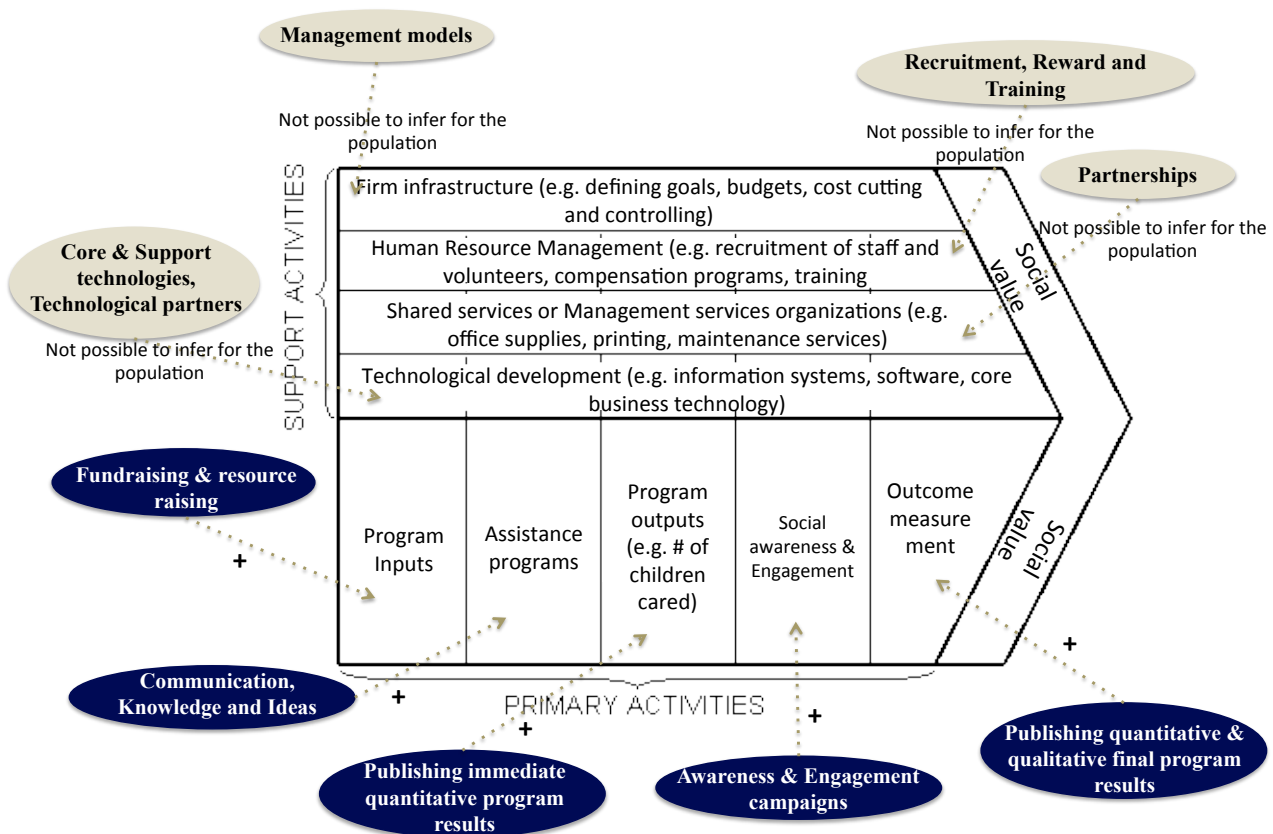


Figure 85: Summary of impact of OSNs on nonprofits value chain activities

Furthermore, *figure 86* summarizes all the results for each value chain activity, the sample mean shows the evaluation attributed to each of the hypothesis during the survey and standard deviation reveals the dispersion of results within each hypotheses. Moreover, the statistical test value indicates how strongly was the hypothesis validated. Additionally, the activity on which the impact is evaluated as more positive is on outcome measurement although it is not the one presenting the higher average; it has a lower standard deviation, which results in a higher statistical test value. From the activities benefiting from positive impact of OSNs, Program inputs is the one revealing the lower statistical test value. This means that the activity where the **impact of OSNs is stronger is on Outcome measurement and weaker is Program inputs**. For hypothesis 6 to 9 consisting of support activities the statistical test does not confirm the positive impact of OSNs.

Hypothesis	Sample mean	Standard deviation	Statistical test value
H1	3,44	1,59	1,75
H2	3,98	1,38	4,47
H3	4,32	1,38	6,05
H4	4,41	1,49	5,95
H5	4,23	1,16	6,65
H6	2,93	1,16	-0,36
H7	3,08	1,49	0,35
H8	2,48	1,58	-2,06
H9	2,92	1,59	-0,32

Figure 86: Summary of hypothesis test results

Moreover, using the information collected from surveys to OSN users, it is relevant to highlight that the **publication of information about assistance programs and the creation of social awareness & engagement campaigns are the activities revealing the higher feedback from OSN users**. Except from program inputs every other primary activity is evaluated as being positively affected by OSNs, from the users perspective.

Furthermore, it is worth mentioning that nonprofits need to explore the potential offered by OSNs in three different areas: **1.The possibility of using these platforms as a source of management information; 2.The possibility of using OSNs to recruit both volunteers and employees (who are willing to be recruited for nonprofits) 3.The possibility of using this technology to create partnerships with other nonprofits and for-profits (suppliers or others).**

To conclude, as Franco and Andrade said, it is believed that technology allows nonprofits to reach a higher social impact (Andrade & Franco, 2007), from this dissertation it is concluded that although not measuring social impact, **the use of OSNs has a positive effect on nonprofits value chain primary activities, evaluated from the perspective of NPOs and OSNs users.**

5.2 Limitations

Considering the limitations of this dissertation, firstly it is important to mention that the application of OSNs functionalities/capabilities to the nonprofits' value chain is based on research and interviews conducted within the sector, but is not exhaustive. There can be other factors affecting each value chain dimension but they are not the aim of this study. Moreover, the sample for the nonprofits' survey although larger than thirty allowing to use a normal distribution, could be larger in order to allow for a classification of nonprofits and evaluate its differences regarding the answers provided.


Finally, also considering the nonprofits' survey it was not possible to evaluate the difference in opinions among different sizes and types of nonprofits because of the reduced sample size.

5.3 Future Research

In terms of future research it would be interesting to understand the impact of each nonprofit's value chain dimensions, impacted by OSNs, on the amount of social value the organization creates. This would imply studying a method for calculating social value, which is dependent on countless variables.

Additionally, it would be interesting to study deeply each value chain dimension in order to make an exhaustive assessment of functionalities OSNs can provide to each dimension, once that this study provides possibilities drawn from research and field interviews.

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7. Appendix 1 – Timeline for Online Social Networks

Year	OSN
1997	Sixdegrees.com
1998	OpenDiary; Care2; Xanga
1999	LiveJournal; AsianAvenue; BlackPlanet
2000	LunarStorm; MiGente; (Sixdegrees closes); Netmums
2001	Cyworld; Ryze;
2002	Fotolog; Friendster; Skyblog
2003	CouchSurfing; LenkedIn; MySpace; Tribe.net; Open BC/Xing; Last.FM; Hi5
2004	Orkut; Multiply; aSmallWorld; Dogster; Flickr; Piczo; Mixi; Facebook (Harvard only); Dodgeball; Care2; Catster; Hyves.
2005	Yahoo!360; Youtube; Xanga; Cyworld (China); Bebo; Facebook (Highschool networks); Ning; AsianAvenue and BlackPlanet (relaunch)
2006	QQ; Facebook corporate networks); Windows Live Spaces; Cyworld(U.S.); Twitter; MyChurch; Facebook (everyone); Ebah
2007	Tumblr; Friendfeed; Songkick
2008	GetGlue; Yammer
2009	Vevo; Foursquare
2010	Diaspora; Pinterest
2011	Google+; Betcatolica.com; Wellwer
2012	Getlaunched.com; MySocialProject.org

Timeline for the launch of OSN (Boyd & Ellison, 2007) (Dugan, 2012)

8. Appendix 2 – Interviews

This chapter contains the transcripts of interviews done to several people in the nonprofit sector in Portugal. These interviewees have enough knowledge and experience to give a solid opinion on the impact of social networks in a nonprofit value chain.

8.1 EDP Foundation

Interviewees: Guilherme Collares Pereira, Director of “Inovação Social” at EDP Foundation
Luís Faria, Director of “Energia para o Desenvolvimento” at EDP Foundation

Date: 11th of April 2012

Joana Mensurado:

What are the goals and what are EDP Foundation’s activities?

Guilherme Collares Pereira:

The department of social innovation at EDP Foundation has three types of practice. The first is the reactive one, where the Foundation launches a program for nonprofit organizations to apply with a specific project. This application is then evaluated by an independent jury which decides the winning project(s) that will receive the funds EDP Foundation makes available. The program occurs every year and EDP Foundation informs nonprofits about the application process by using e-mail addresses from its database. The publicity about this program is made not only through direct contact but also through social communication means. We would like to start using online social networks to make the program more widely known.

The second type of practice is the active one, here the department searches for interesting and innovative projects in Portugal and around the world to implement in Portugal in a larger scale or simply introduce it for the first time. Brazil, India, Australia, UK, Canada and The Netherlands are the most proactive and innovative countries in terms of social assistance programs with a large impact. For example since 2010, EDP Foundation brought to Portugal “Projecto Sorriso” from Brazil, which is a large partnership with major dentists who agree to take total care of some children with oral problems. These doctors do not charge anything to these less favored children and take their time and resources to help them.

The last type of practice is the emergency fund which is used in case of catastrophe or extreme need, for example one of the last utilizations of these funds were to the catastrophe at Madeira island.

Joana Mensurado:

What is your perception about online social networks in the nonprofit environment in Portugal?

Guilherme Collares Pereira:

In Portugal the use of online social networks is very little in the nonprofit environment, nonprofits have an individualist approach to its activity, they are only interested in looking at their own problems and needs forgetting about the possibilities that arise from communication with peers. They are so immersed in their own pride that are afraid to share information fearing that its peers can “steal it” from them. This is a huge battle to fight with nonprofits and that we have been trying to overcome for a long time, because nonprofits don’t even know what their neighbor is doing, it is quite obvious that a lot of opportunities are missed here.

Even EDP Foundation, only recently is our website totally independent from EDP, remodeled and working fully. Furthermore, only since a few months did EDP Foundation started using Facebook to connect with the general public, we now have someone, part of the communications department, who is responsible for managing our Facebook page.

Joana Mensurado:

What are the main problems nonprofits have to deal with?

Guilherme Collares Pereira:

One of the main problems nonprofits face is the lack of adequate governance policies, nonprofits are “managed” not as companies, they are usually familiar and that also creates a barrier to implement strict policies. Additionally, there is a huge lack of specialized knowledge in the sector, which combined with the lack of governance policies create a difficult situation for nonprofits. It is in this context that EDP created an almost unique volunteer program in the whole company. The employees can contribute from 4 to 8 hours a month for a nonprofit project. Nevertheless, this program is not intended to use the volunteer hours to carry bags, but it is the main objective to use the knowledge of these workers to help nonprofits deal with specific problems they have. For example, a nonprofit needing a marketer, a journalist, an electrician, an engineer, or other specialized staff. For this project, online social networks can offers a good help by providing information for both volunteers and nonprofits about availability and projects. Nonetheless, this help could only be used in this first stage, because EDP has a strict policy for choosing and approving the projects, to ensure that the cause is worth it and that it is the organization that needs it the most.

Another thing that was fundamental to create for nonprofits, was a centralized purchasing center, this would help the organizations to save money in their current purchases of office supplies or other materials needed for the activity, it would provide access to suppliers and more importantly allow for economies of scale.

Joana Mensurado:

What about “Energia para o desenvolvimento”?

Luís Faria:

The main goal of this department is to provide energy for poor communities, which do not have the access for it. One of the major projects was done in Kenya for a refugee camp, where we installed solar panels, which allowed for people there to have light after sunset.

Another important project was renting, for a very low price, light bulbs to students in several countries in Africa. The goal of this project is to allow students to study at home when daylight is not available anymore. By renting the light bulbs, students feel committed to the project and not only study harder but also protect better the lamp. Additionally, it also ensure the viability of the projects and more continuous help. The consequence of this project was an actual increase in students’ school performance and currently we are trying to extend it to other locations.

Joana Mensurado:

What are the main problems nonprofits have to deal with?

Luís faria:

One of the biggest problems nonprofits face is the lack of knowledge and working methods, there is the urgent need for nonprofits to search for information about other nonprofits or even companies. This information can allow them to perform better, not only on the field but also in their management policies. Sometimes is just one simple idea that was missing to help the organization accomplish something with high impact and a lot of social value. Nevertheless, for this to happen nonprofits have to look for examples, success and failure cases to get inspiration that is where I think social networks can have a good impact in this process.

Furthermore, nonprofits also have a huge lack of human, physical and financial resources, which is common to all organizations, and also here social networks can provide a good impulse to obtain more and more specialized resources. Additionally, there is a huge logistical problem nonprofits face to transport materials into their final destinations, one of the solutions for this, which is what EDP Foundation has been doing is to contact construction companies.

Construction companies, use a lot of sea transport to African countries, for example, and most of the times they have free space in their shipment boxes. EDP Foundation and other organizations use their contacts in these companies to ask for some space to transport materials. Again, another good way of helping to solve this problem is to use online social networks to communicate with companies and other nonprofits to ask for advice, for help and even for transporting materials, because these are essentially communication platforms.

8.2 Rotaract – Lisboa Olivais

Interviewee: Ricardo Madeira – former President and current member of the directive council of Rotaract Club – Lisboa Olivais

Date: 16th of April 2012

Joana Mensurado:

Can you explain what is Rotaract's activity?

Ricardo Madeira:

Rotaract is part of Rotary International a nonprofit organization that has been working in three main areas: end Polio, water resources and literacy. Rotaract are the clubs, there are 34.000 clubs working with about 2M people around the world. The program to end polio has 67 years and we have been able to almost eradicate the disease in several countries.

In Portugal Rotaract does partnerships with “IPSS”, we create events to collect funds such as thematic dinners, conferences, workshops, etc. These funds provide the necessary means to help the institutions with which we make partnerships to help. Moreover, we also receive some funds from Rotary Foundation, which complete the needs we have locally.

Rotary works on the basis of four different pillars: internal services, professional services, community services and international services. In what concerns to internal services they consist of activities to enhance volunteers' fellowship. Professional service allows Rotarians to put their vocational skills into use by putting them into use in service projects. Community service, which consists of the projects the clubs, undertakes to help the community. Additionally, international services include projects like partnerships with universities to provide students with projects like Erasmus. Exchange programs where students can chose an university to study and will be provided with housing facilities to decrease as much as possible the living costs. This exchange program can be of short, medium or long

duration. Also at an international level clubs perform projects with other clubs around the world for which Facebook has been having a very good impact, by facilitating communication and visibility of local projects.

Joana Mensurado:

When and why did you start using Facebook for Rotaract Clubs in Portugal?

Ricardo Madeira:

We have probably started using Facebook three or four years ago, it was not a long time and we started by creating a profile for each Club (instead of a page). We are now trying to move from a profile to a page because we have seen it is more intuitive and easier for everyone, the general public and for Rotaract as the content generators.

We basically started using Facebook for one specific reason, which was to attract young talented professional who would want to join our club. We were experiencing some problems with current volunteers because the medium age was very high and members who left the club were not being replaced appropriately. As a consequence we were facing a problem of lack of evolution. So we decided to start using online social networks to show a bit of what we do as organization and try to attract youngsters.

Joana Mensurado:

What other additional benefits did online social networks brought to Rotaract clubs?

Ricardo Madeira:

Facebook has also been extremely important to communicate between clubs, within Portugal or at an international level. It has allowed clubs to post news, videos, photos instantaneously which not only increased communication but also project public exposure, fundraising activities, proximity with other clubs and the general public. Additionally it has allowed one important thing that is the publication of immediate results from projects, which motivates and engages everyone involved.

Joana Mensurado:

Do you think Facebook allows building credibility among the general public?

Ricardo Madeira:

I think it does, but I also think that the use of these networks is something that requires investment. For example, for someone to like your page, your posts it requires a constant activity and a very good knowledge of how to catch people's attention. This obviously requires someone to be fully dedicated to managing our Facebook page. Additionally, there is the problem of managing the quantity and quality of information released. Facebook makes it very easy for everyone to share, comment, like, post and this is as good as threatening. We have to know how much information to share so we do not make users lost in the amount of communication released but most importantly we have to be very careful with what we share and how. Knowing to choose the words to use, not share simply every photo we take, because sometimes it can show a different message from what we intended. We can see the recent example of EDP with Facebook. They released information about the dam project in Portugal and received some bad comments, they did not know how to manage and respond to them and end up erasing the comment. This created a very bad online impression of EDP, which of course extended to offline image. These types of problems can happen easily and it is very important to be aware and try to avoid them by being careful with information released.

Joana Mensurado:

There is anything else you consider relevant regarding the use of online social networks by nonprofits?

Ricardo Madeira:

There is also something worth mentioning, which is that some clubs recently only work online through the use of web tools, the website, Facebook, Blogs, Skype. I think this shows how important these tools are for the development of organizations, which lack in funds.

Also that Facebook is having a very good impact in fundraising by helping clubs to sell services through the channel and target a good audience with a smaller budget.

8.3 My social project

Interviewee: Pedro Bártolo – Executive Director of MySocialProject

Date: 16th of April 2012

Joana Mensurado:

Can you explain how and why did MySocialProject emerge?

Pedro Bártolo:

MySocialProject started more or less one year ago when a friend and me had the idea of creating a social network for nonprofits. We seek the advisory of some consultants and experienced people in the field to help us draft the problem and what could be our solution for it.

It was our understanding that this market was broken into several little pieces, and there are probably few major players with a very good image and presence in the market. For example if you ask someone randomly on the street what nonprofit organization comes to mind and the name of someone I bet that 80% of respondents would say Banco Alimentar and Isabel Jonet. The reason is only one, that she knew how to “sell” the organization to the public and did an excellent job at promoting it and making it stay in people’s minds.

In this context, we thought it was necessary to join organizations/causes, volunteers and companies the main reason was to close the circle and make it stronger.

It was very important to let people know what is happening in this sector, to increase visibility of causes and to allow volunteers to have a platform to search for alternatives. Additionally it is very important to mention that the government is having a huge concern with younger generations, mainly the recent graduates which almost 40% are unemployed currently. This raises several problems, firstly it is important to keep this people occupied, secondly this occupation is crucial to avoid social instability.

Joana Mensurado:

What about companies, what s their role in the platform?

Pedro Bártolo:

One of the reasons we thought it would be useful to include for profit organizations was that they currently lack an organized and coherent corporate social responsibility strategy and this online space can help to guide this strategy by showing projects and causes.

Additionally, we think it is very important in terms of credibility both for companies and nonprofits, although credibility is an intangible asset it is of great value for both.

Nevertheless, we know that this platform does not work for itself; a lot of work has to be done in order to change mentalities and help people realize the important of working as a community.

8.4 “Redes Mosquiteiras 2010” and “Embalados de Vontade 2011”

Interviewee: João Flores Martins – Volunteer and promoter of two nonprofit campaigns using social media “Redes Mosquiteiras 2010” and “Embalados de Vontade 2011”

Date: 18th of April 2012

Joana Mensurado:

What is your experience and background volunteering for nonprofits and using social media?

João Martins:

Firstly, considering “Redes Mosquiteiras 2010” it started when I went to Mozambique with some friends with AIESEC. The problem was the lack of organization and structure of the project. So we decided to do something in order to maximize the investment made with the flight to Mozambique and to feel useful. We started by trying to analyze the main problems of the neighbor where we were working and we had an idea. We thought about launching a social media marketing action to collect money to buy nets for protecting people from mosquitos at night. We started the campaign and took photos of the children being helped with the name of people who had contributed, promoting/showing to people who had contributed. This created buzz, and increased people’s desire to contribute, the result was that we raised 1.000€ in less than 4 days which allowed not only to buy the nets, but also water purifiers and some essential goods. We distributed everything together with some workshops about Malaria and potable water consumption.

After this, in 2011 together with some friends we created “Embalados de Vontade 2011”, the goal of this movement was to access the educational context in Guinea Bissau, build a school lab and introduce the practical component in classes. For this we gathered some partners, we were able to collect a lot of material and we created a Facebook group to collect donations. In 3 day we collected 500€ which we used to pay for custom fee for transporting the material.

Joana Mensurado:

What was the main goal of the campaigns raised?

João Martins:

Crowdfunding

Joana Mensurado

What is your perception on nonprofits using online social networks?

João Martins:

Nowadays the communication paradigm goes undoubtedly through online social networks. We are experiencing a period where helping is cool and a lot of young individuals want to volunteer. In my opinion its time for organizations to capitalize on that and start getting resources that match the current needs.

For example, you can see the clear example of Kony 2012 suddenly it was everywhere. It started as a viral campaign in Facebook and in a few days it was in the television everywhere in the world.

In my opinion currently there is no clear bet on online social network from nonprofits, which I think it is a mistake. The reason is that volunteering does not work in the long run because you need the best people to create a better world; the problem is that those persons have an opportunity cost in doing volunteer work. That is why it is important to pay in order to retain them. Another problem is that today a great deal of help being offered is not effective, it does not promote growth not even human development. I believe in social enterprises, which are companies that use their profits to reinvest in social projects. These enterprises have the advantage of creating sustainable business plans capable of producing money to support the resources and the effort to promote development. That is why I believe it is important to bet on social media marketing: to obtain funds, resources, ideas and involve communities in a larger scale.

Joana Mensurado:

In what critical points to nonprofits' activities do you think online social networks can have an impact in?

João Martins:

To post needs and obtain resources

Crowdfunding

Engagement

Joana Mensurado:

Do you think nonprofits in Portugal are poorly exploring the potential of online social networks?

João Martins:

Yes, that is a general behavior of nonprofits. On the other hand, there are a lot of movements that start and appear by a very good use of Facebook, for example. But these are very punctual and spontaneous causes which explore the short-term benefits of this channel to gather people and promote a cause.

Joana Mensurado:

In terms of management policies, do you think online social networks can contribute to improve management activities of nonprofit organizations? How?

João Martins:

If it is from a limited online social network (for a specific organization), it can work as a fast and secure method to share information or receive feedback from all departments.

Joana Mensurado:

Considering the publication and evaluation of results for the projects do online social networks have a strong impact?

João Martins:

For the campaigns I launched they were fundamental to raise funds.

8.5 Calouste Gulbenkian Foundation

Interviewee: Maria Hermínia Cabral, Director of Program for Helping Development (Health) at Calouste Gulbenkian Foundation

Date: 26th of April 2012

Joana Mensurado:

In your experience and knowledge how do you think online social networks can help with project divulgation, evaluation and impact measurement?

Maria Hermínia Cabral:

In what concerns to projects in my opinion there is no doubt that online social networks can have a strong impact. For example at Gulbenkian Foundation we have two of giving our help, we have grants, which we publicize by e-mail, social communication and online social networks and we have projects, which nowadays are spread specially using online social networks. What I can say is that the general public adherence to these projects has been growing and especially the type of public has changed. This was mainly due to a change in the projects' content to attract a younger audience and due to the use of online social networks, which undoubtedly contributed to attract youngsters. Online social networks create the network effect and that works really well among young people.

In what concerns to project evaluation, in Portugal there is some fear of performing evaluations, we stay very happy if we achieve good results and publicize them a lot but on the contrary if the results are bad we pretend they did not happen and we don't make them public. Which I think it's a mistake, because we learn from both of them and results are good to make us change courses of action. In Portugal there is little long-term perspective we only think in the precise moment and do not plan for the future which goes straight in line we the fact that we do not like evaluations. Furthermore, when there are evaluations they tend to be not as independent as they should, sometimes the same organizations financing a project is performing the evaluation of this project.

At Gulbenkian Foundation, although we do not use online social networks in the evaluation process, I think it is a good idea but I had never thought about this possibility. But in order to use this means to make evaluations public and understandable we need to transform the language in which the evaluation documents are written, This meaning, when consultancy firms perform the evaluations they are written in a complex manner which some times can lead to misinterpretations from people who are not used to that terminology. That is why there has to be work done before the evaluations can be made public through online social networks, to avoid problems of misinterpretation.

Joana Mensurado:

What do you think about Portuguese nonprofits' use of social networks?

Maria Hermínia Cabral:

I think we have seen a clear attempt to use online social networks and take benefits from it. Nevertheless, this use is still not to a full potential, I think, especially in terms of fundraising nonprofits in Portugal are afraid to ask and they still lack strategies to create strong fundraising campaigns through online social networks. From my perception AMI is a good example of a good use of online social networks.

Joana Mensurado:

What do you think about using online social networks to provide training for projects, volunteers, etc?

Maria Hermínia Cabral:

I think training always needs to have an in person component on training sessions at some point. There is no such thing as distance training it can help in fact but is not enough per se. Furthermore, I think there is an important technological barrier, imagine you are helping from Portugal a doctor in Guinea to treat a patient, when you provide him the instructions that you in your best knowledge and facilities have, in the other side is someone who does not have access to a lot of drugs, instruments or facilities you are recommending. It must be very hard for the doctor in Guinea to hear that there is a possible solution but he cannot do anything else with the available means. This obviously is not easy to deal with and can create frustration. Or even in these countries where access to electricity, phone lines, Internet is very remote there is another technological barrier to overcome in order to provide appropriate training. Technologies are fundamental to reinforce and capacitate people but without the basics it can develop stigma.

Joana Mensurado:

What do you think about using online social networks to perform partnerships with other institutions, nonprofits and for profits?

Maria Hermínia Cabral:

I think it is probably one of the most important possibilities raised with the use of social media. We have a weak society in terms of mobilization and fundraising, for that reason I think online social networks can bring added value to open for partnership opportunities, which can somehow relieve the impact of these deficiencies in our society. But what I think could really help is a platform to join nonprofits to start closing the market and increase its power and

visibility, if organizations are close together they are stronger. I think in Portugal there is a general attitude towards nonprofits, people tend to respect and contribute more for those organizations which they can see that one day they may be in that situation. For example organizations that defend some kinds of diseases like cancer or leukemia, people are afraid of seeing themselves in that situation one day and for that reason they feel more pressured to contribute. This reveals that there is a lack of development in social consciousness.

In terms of partnerships with companies it should have a huge impact, in order to receive support for the creation of management by objectives, impact measurement, cost rationalization.

Joana Mensurado:

In general terms what do you think are the main problems of nonprofit organizations?

Maria Hermínia Cabral:

I think firstly it's the high financial dependence from the state, secondly the incapacity of associating and the high levels of individualism and thirdly not having the capacity of creating international networks. I think technical skills are not a problem but attracting highly qualified workers can be, because of the financial weakness, the low levels of public recognition and not giving the possibility of creating a career. Although I think this last one should become less of a problem due to current job market flexibility, people are starting to get used to changing jobs frequently.

Joana Mensurado:

What are, in your opinion, the main areas of impact of online social networks on nonprofits activities?

Maria Hermínia Cabral:

I think firstly on advocacy in order to increase people's awareness for the social causes and after fundraising opportunities that result from an increase in society's response to the advocacy efforts.

8.6 “Banco Alimentar contra a fome” and “Entrajuda”

Interviewees: Isabel Jonet – President and Founder of “Banco Alimentar contra a fome” in Portugal and Leonor Festas Supply Director at “Entrajuda”

Date: 24th of April 2012

Joana Mensurado:

Entrajuda and Banco Alimentar are using online social networks, what are the main goals that you intend to achieve?

Isabel Jonet and Leonor Festas:

Entrajuda and Banco Alimentar to mobilize people to ideas and give visibility to the projects use online social networks. For example, volunteerbook or the online campaign are platforms that allow to disseminate volunteer projects and gather a community of food givers.

Joana Mensurado:

What is your perception about the use of online social networks by nonprofits?

Isabel Jonet and Leonor Festas:

They are used very little by the third sector the reason is that it is very demanding in terms of time and attention.

Joana Mensurado:

In which critical points to nonprofits’ activities can online social networks have a substantial impact?

Isabel Jonet and Leonor Festas:

Mainly to mobilize and show other people, without activity costs, good practices and experiences.

Joana Mensurado:

Considering the problems faced daily by Entrajuda and Banco Alimentar what can online social networks do to help?

Isabel Jonet and Leonor Festas:

It can move people to causes that are inherent to nonprofits mission.

Joana Mensurado:

Do you think Entrajuda and Banco Alimentar still explore too little the potential of online social networks?

Isabel Jonet and Leonor Festas:

In our case for now the current use of online social networks is enough for both.

Joana Mensurado:

In terms of management activities/policies do you think online social networks can contribute to improve nonprofit organizations' management? How?

Isabel Jonet and Leonor Festas:

I think so, by sharing ideas, good practices and mobilizing qualified volunteers.

Joana Mensurado:

Considering projects, how have online social networks contributed for them? (for example in terms of fundraising or gift raising)

Isabel Jonet and Leonor Festas:

In a very positive way, it has allowed reaching communities and people outside national borders.

Joana Mensurado:

Considering the publication and evaluation of project results in online social networks, does this have any influence for Entrajuda and Banco Alimentar?

Isabel Jonet and Leonor Festas:

It has contributed in a very positive way, as it can be seen by the constant increase in our campaigns.

9. Appendix 3 – Surveys

9.1 Nonprofit organizations

Q1. Does your organization use online social networks (considering every technology that allows the creation of a public or semi-public profile, sharing information and the multilateral interaction of several users, for example: Facebook, Twitter, MySpace, Hi5, LinkedIn, etc.)

1. Yes
2. No

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q2. Which online social networks does your organization use?

1. Facebook
2. Twitter
3. MySpace
4. Hi5
5. Specific online social network for nonprofits. Which? _____
6. Other(s) Which? _____

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q3. Considering fundraising activities for projects, does your organization launch campaigns through online social networks?

1. Yes
2. No

Answer If Considering fundraising activities for projects, does your organization launch campaigns through online social networks? Yes Is Selected

Q4 What is the percentage of funds raised through online social networks, in relation to total funds?

1. 0-5 %
2. 6-15 %
3. 16-25 %
4. 26-40%
5. 41-60 %
6. 61-75 %
7. 76-90 %
8. 91-100 %

Answer If Considering fundraising activities for projects, does your organization launch campaigns through online social networks? Yes Is Selected

Q5. What is the total amount of money raised through online social networks?

1. 0€
2. 1€-500€
3. 501€-1.000€
4. 1.001€-5.000€
5. 5.001€-10.000€
6. 10.001€-100.000€
7. >100.000€

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q6. Please rate, until which point do you agree with the following statements (being 1 totally disagree and 6 totally agree)

	1	2	3	4	5	6
The funds and resources raised through online social networks have a significant impact on projects developed by the organization.						
The funds and resources raised through online social networks compensate the investment made.						

Answer If Does your organization use online social networks (considering every technology...
No Is Selected

Q7. Please rate, until which point do you agree with the following statements (being 1 totally disagree and 6 totally agree)

	1	2	3	4	5	6
Fundraising and resource raising through online social networks can have a significant impact in projects developed by the organization.						
Funds and resources rose online would compensate the investment made.						

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q8. Does your organization receive goods donations through contacts from online social networks?

1. Yes
2. No

Answer If Does your organization receive goods donations through contacts from online social networks? Yes Is Selected

Q9. How frequently?

1. Daily
2. Weekly
3. Monthly
4. Once every semester
5. Annually
6. Only sporadically

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q10. As your organization used ideas retrieved from online social networks to apply to projects or internal improvements?

1. Yes
2. No

Answer If As your organization used ideas retrieved from online social networks to apply to projects or internal improvements? Yes Is Selected

Q11. Considering the last question, please rate the following statement

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Do you consider an important consequence of being present in online social networks						

Answer If Does your organization use online social networks (considering every technology...
 Yes Is Selected

Q12. Please rate, until which point do you agree with the following statements (being 1 totally disagree and 6 totally agree)

	1	2	3	4	5	6
We use online social networks as a means of communication with volunteers in the projects.						
We use online social networks as a means of communication with partners involved in the projects.						
We use online social networks as a means of communication with project funders.						

Q13. What is the importance that you attribute to the following statements?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Using online social networks to communicate with volunteers in the projects.						
Using online social networks to communicate with partners involved in the project.						
Using online social networks to communicate with project funders.						

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q14. Does your organization use online social networks to inform followers about project progress?

1. Yes
2. No

Answer If Does your organization use online social networks to inform followers about project progress? Yes Is Selected

Q15. How frequently?

1. Several times a day
2. Daily
3. Weekly
4. Monthly
5. One every 6 months
6. Annually
7. Only sporadically

Q16. Please rate according to the importance the following statement

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Informing followers about project progression through online social networks.						

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q17. Does your organization make quantitative results from projects, public through online social networks? (These results have the objective of measuring quantitatively project performance e.g. number of children supported educationally)

1. Yes
2. No

Answer If Does your organization make quantitative results from projects, public through... Yes
Is Selected

Q18. How frequently?

1. Several times a day
2. Daily
3. Weekly
4. Monthly
5. Once every 6 months
6. Annually
7. Only sporadically

Answer If Does your organization use online social networks (considering every technology...
 Yes Is Selected

Q19. Please rate, until which point do you agree with the following statements (being 1 totally disagree and 6 totally agree)

	1	2	3	4	5	6
Sharing project results has a positive impact in public's engagement.						
By sharing project results new followers are brought to the organization.						

Answer If Does your organization use online social networks (considering every technology...
No Is Selected

Q20. Please rate, until which point do you agree with the following statements (being 1 totally disagree and 6 totally agree)

	1	2	3	4	5
Sharing project's results can have a positive influence on public's engagement					
By sharing project's results, new followers can be gained for the organization					

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q21. Does your organization launch awareness campaigns through online social networks?

1. Yes
2. No

Answer If Does yours organization launch awareness campaigns through online social networks? Yes Is Selected

Q22. How frequently?

1. Several times a day
2. Daily
3. Weekly
4. Monthly
5. Once every 6 months
6. Annually
7. Only sporadically

Answer If Does yours organization launch awareness campaigns through online social networks? Yes Is Selected

Q23. Please rate, until which point do you agree with the following statements (being 1 totally disagree and 6 totally agree)

	1	2	3	4	5	6
This campaigns have a positive effect in the number of followers of the organization						
This campaigns have a positive efficiency given the resources consumed						

Answer If Does your organization use online social networks (considering every technology... No Is Selected Or Does yours organization launch awareness campaigns through online social networks? No Is Selected

Q24. Please rate, until which do you agree with the following statements (being 1 totally disagree and 6 totally agree)

	1	2	3	4	5	6
Awareness campaigns launched in online social networks can have a positive impact in the number of followers of an organization						
Awareness campaigns launched in online social networks can have a positive efficiency given the necessary resources						

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q25. Does your organization publish in online social networks the quantitative and qualitative global results of projects? These results allow evaluating the efficiency of the projects (e.g. number of children with positive school performance)

1. Yes
2. No

Answer If Does your organization publish in online social networks the quantitative and qualitative... Yes Is Selected

Q26. How frequently?

1. Several times a day
2. Daily
3. Weekly
4. Monthly
5. Once every 6 months
6. Annually
7. Only sporadically

Answer If Does your organization publish in online social networks the quantitative and qualitative... Yes Is Selected

Q27. Please rate, until which point do you agree with the following statements (being 1 totally disagree and 6 totally agree)

	1	2	3	4	5	6
This publication generates an increase in the credibility of the organization						
Organizations followers opinion towards these publications is positive						

Answer If Does your organization use online social networks (considering every technology...
 NO Is Selected Or Does your organization publish in online social networks the quantitative and
 qualitative... No Is Selected

Q28. Please rate, until which do you agree with the following statements (being 1 totally disagree and 6 totally agree)

	1	2	3	4	5	6
Until which point publishing the global results can increase an organization's credibility						
Followers' opinion regarding this publications would be positive						

Answer If Does your organization use online social networks (considering every technology...
 Yes Is Selected

Q29. Does your organization use online social networks to share/look for management models (goals, budgeting, governance policies, legal advisory, audit, among others)?

1. Yes
2. No

Answer If Does your organization use online social networks to share/look for management models...? Yes Is Selected

Q30. Considering the last question, what is the importance attached to the mentioned behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Impact of sharing/looking for management models in online social networks						

Answer If Does your organization use online social networks (considering every technology... No Is Selected And Does your organization use online social networks to share/look for management models...? No Is Selected

Q31. How important do you consider the following behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Sharing/looking for management models in online social networks						

Answer If Does your organization use online social networks to share/look for management models...? Yes Is Selected

Q32. Which information do you think it is relevant to share/find in online social networks concerning this management models? (Please refer examples that you consider relevant, maximum three)

Answer If Does your organization use online social networks (considering every technology... No Is Selected Or Does your organization use online social networks to share/look for management models...? No Is Selected

Q33. Which information would you consider important to share/find in online social networks concerning management models? (Please refer examples that you consider relevant a maximum of three)

Answer If Does your organization use online social networks (considering every technology... Yes Is Selected

Q34. Does your organization use online social networks for recruitment activities?

	Yes	No
For paid staff		
For volunteers		

Answer If Does your organization use online social networks for recruitment activities? For paid staff - Yes Is Selected

Q35. Concerning the last question, what is the importance that you attribute to the mentioned behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Recruitment of paid staff through online social networks						

Answer If Does your organization use online social networks (considering every technology... No Is Selected Or Does your organization use online social networks for recruitment activities? - No Is Equal to 2

Q36. What is the importance that you attribute to the following statements

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Recruitment of paid staff through online social networks						
Recruitment of volunteers through online social networks						

Answer If Does your organization use online social networks for recruitment activities? For volunteers - Yes Is Selected

Q37. Concerning the last question, what is the importance that you attribute to the mentioned behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Recruitment of volunteers through online social networks						

Answer If Does your organization use online social networks (considering every technology...
No Is Selected

Q38. Does your organization use online social networks to recognize and reward the work of:

	Yes	No
paid staff		
volunteers		

Answer If Does your organization use online social networks to recognize and reward the work
of Paid staff - Yes Is Selected

Q39. Concerning the last question, what is the importance that you attribute to the mentioned
behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Recognizing and rewarding paid staff through online social networks						

Answer If Does your organization use online social networks (considering every technology... No Is Selected Or Does your organization use online social networks to recognize and reward the work of Paid staff? No Is Equal to 2

Q40. How important do you rate the following statements?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Recognizing and rewarding paid staff through online social networks						
Recognizing and rewarding volunteers through online social networks						

Answer If Does your organization use online social networks to recognize and reward the work of Volunteers - Yes Is Selected

Q41. Concerning the last question, what is the importance that you attribute to the mentioned behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Recognizing and rewarding volunteers through online social networks						

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q42. Does your organization use online social networks to provide training to:

	Yes	No
Paid staff		
Volunteers		

Answer If Does your organization use online social networks to provide training to... Paid staff -
Yes Is Selected

Q43. Concerning the last question, what is the importance that you attribute to the mentioned behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Provide training to paid staff through online social networks						

Answer If Does your organization use online social networks to provide training to... Volunteers
- Yes Is Selected

Q44. Concerning the last question, what is the importance that you attribute to the mentioned behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Provide training to volunteers through online social networks						

Answer If Does your organization use online social networks (considering every technology...
No Is Selected Or Does your organization use online social networks to provide training to... - No
Is Equal to 2

Q45. How important do you rate the following statements?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Provide training to paid staff through online social networks						
Provide training to volunteers through online social networks						

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q46. Does your organization use online social networks to perform purchasing partnerships?

	Yes	No
With similar organizations, with similar needs		
With suppliers		
With for profit companies		

Answer If Does your organization use online social networks to perform purchasing partnerships? With similar organizations... - Yes Is Selected

Q47. Concerning the last question, what is the importance that you attribute to the mentioned behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Using online social networks to perform partnerships with similar organizations						

Answer If Does your organization use online social networks to perform purchasing partnerships?... With suppliers- Yes Is Selected

Q48. Concerning the last question, what is the importance that you attribute to the mentioned behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Using online social networks to perform partnerships with suppliers						

Answer If Does your organization use online social networks to perform purchasing partnerships?... With for profit companies - Yes Is Selected

Q49. Concerning the last question, what is the importance that you attribute to the mentioned behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Using online social networks to perform partnerships with for profit companies						

Answer If Does your organization use online social networks (considering every technology... No Is Selected Or Does your organization use online social networks to perform purchasing partnerships? - No Is Equal to 3

Q50. How important do you rate the following statements?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Using online social networks to perform partnerships with similar organizations						
Using online social networks to perform partnerships with suppliers						
Using online social networks to perform partnerships with for profit companies						

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q51. Does your organization use online social networks to share/look for ideas on new technologies?

	Yes	No
Core to the activity		
To support the activity		

Answer If Does your organization use online social networks to share/look for ideas on new technologies? – Core technologies - Yes Is Equal to 1

Q52. Concerning the last question, what is the importance that you attribute to the mentioned behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Share/find ideas of new core technologies through online social networks						

Answer If Does your organization use online social networks to share/look for ideas on new technologies? - Support technologies - Yes Is Equal to 1

Q53. Concerning the last question, what is the importance that you attribute to the mentioned behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Share/find ideas of new support technologies through online social networks						

Answer If Does your organization use online social networks (considering every technology...No Is Selected Or Does your organization use online social networks to share/look for ideas on new technologies? No Is Equal to 2

Q54. How important do you rate the following statement?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Share/find ideas of new core technologies through online social networks						
Share/find ideas of new support technologies through online social networks						

Answer If Does your organization use online social networks (considering every technology...
Yes Is Selected

Q55. Does your organization use online social networks to find technological partners?

1. Yes
2. No

Answer If Does your organization use online social networks to find technological partners? Yes
Is Selected

Q56. Concerning the last question, what is the importance that you attribute to the mentioned behavior?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Finding technological partners through online social networks						

Answer If Does your organization use online social networks (considering every technology...No
Is Selected Or Does your organization use online social networks to find technological partners?
No Is Selected

Q57. How important do you rate the following statement?

	Irrelevant (1)	Minor importance (2)	Somehow important (3)	Important (4)	Very important (5)	Fundamental (6)
Finding technological partners through online social networks						

Q58. Please create a ranking for the options presented below. Considering 1 the most important and 9 the least important.

Online social networks have a strategic impact in nonprofit organizations...

_____ for fundraising and goods for projects to develop

_____ for managing and tracking activities of ongoing projects

_____ for the publication of immediate quantitative results of projects realized

_____ in activities to increase visibility and fundraising for projects and the organization

_____ for sharing qualitative long-term results of projects

_____ for management activities such as goal setting, budgeting, audit, fiscal advisory, or others

_____ for human resource management, such as recruitment, rewards and training

_____ for purchasing activities

_____ in the development of technological core or supporting systems

Q59. Your organization acts mainly...

1. In Portugal
2. Outside Portugal

Q60. What is your job/position in the organization for which you work or volunteer?

1. Management/Direction
2. Paid staff
3. Volunteer with no management/direction functions

Answer If What is your job/position in the organization for which you work or volunteer?...
Management/Direction Is Selected

Q61. What is the total annual budget of your organization?

1. 0-10.000€
2. 10.000€-50.000€
3. 50.001€-150.000€
4. 150.001€-500.000€
5. >500.000€

9.2 General public – online social networks users

Q1. Do you use social networks (Such as Facebook, Twitter, MySpace, Hi5, or other)

1. Yes
2. No

Q2. What are the online social networks that you use?

1. Facebook
2. Twitter
3. MySpace
4. Hi5
5. Other(s) Which? _____

Q3. Have you ever done any donation for a nonprofit organization through an online social network?

	Yes	No
Money donation		
Goods donation		

Answer If Have you ever done any donation for a nonprofit organization through an online social network? No Is Equal to 2

Q4. Why haven't you done?

1. I don't trust the organizations
2. There are no causes with which I relate to
3. I don't believe in the causes
4. The causes are not inspiring
5. I have no financial possibility
6. Other. Which? _____

Q5. Until which point do you agree with the following statements

	I don't agree (1)	Little I agree (2)	At certain point I agree (3)	I agree (4)	I agree a lot (5)	I totally agree (6)
Fundraising activities through online social networks are credible						
The publication, in online social networks, of projects done by nonprofits, increases their public awareness.						
I feel more influenced to contribute for organizations that make their projects public in online social networks.						

Q6. Until which point do you agree with the following statements

	I don't agree (1)	Little I agree (2)	At certain point I agree (3)	I agree (4)	I agree a lot (5)	I totally agree (6)
It is more likely that I contribute for organizations that make public their immediate quantitative project results						
Campaigns launched by nonprofits on online social networks have a positive impact in my global perception of the organization.						
The publication of global quantitative and qualitative results, in online social networks, of						

projects done by nonprofits, increases their credibility.						
---	--	--	--	--	--	--

Q7. Have you ever used online social networks as a means to find volunteer projects to participate?

1. Yes
2. No

Answer If Have you ever used online social networks as a means to find volunteer projects to participate? Yes Is Selected

Q8. Do you consider it as an efficient method to do it?

	Inefficient (1)	Low efficiency (2)	In some way efficient (3)	Efficient (4)	Very efficient (5)	Totally efficient (6)
Finding volunteer projects to participate, using online social networks.						

Answer If Have you ever used online social networks as a means to find volunteer projects to participate? No Is Selected

Q9. Why?

1. I don't have any interest
2. I don't find opportunities
3. The opportunities are not adequate to what I look for
4. It is hard to find because there is a lot of information
5. Other. Which? _____

Q10. Have you ever been recruited/contacted to work (as a paid employee) for a nonprofit organization, through online social networks?

1. Yes
2. No

Answer If Have you ever been recruited/contacted to work (as a paid employee) for a nonprofit organization, through online social networks? No Is Selected

Q11. Would you be willing to be recruited through online social networks, to works (as a paid employee) for a nonprofit organization?

1. Yes
2. No

Q12. Which is the first nonprofit organization present in online social networks that comes to your mind?

Q13. What is your gender?

1. Feminine
2. Masculine

Q14. What is your age?

1. <18
2. 18-25
3. 26-35
4. 36-45
5. >45

10. Appendix 4 – Statistical table - normal distribution

$$\Phi(x) = P[N(0,1) \leq x]$$

x	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.50000	0.50399	0.50798	0.51197	0.51595	0.51994	0.52392	0.52790	0.53188	0.53586
0.1	0.53983	0.54380	0.54776	0.55172	0.55567	0.55962	0.56356	0.56749	0.57142	0.57535
0.2	0.57926	0.58317	0.58706	0.59095	0.59483	0.59871	0.60257	0.60642	0.61026	0.61409
0.3	0.61791	0.62172	0.62552	0.62930	0.63307	0.63683	0.64058	0.64431	0.64803	0.65173
0.4	0.65542	0.65910	0.66276	0.66640	0.67003	0.67364	0.67724	0.68082	0.68439	0.68793
0.5	0.69146	0.69497	0.69847	0.70194	0.70540	0.70884	0.71226	0.71566	0.71904	0.72240
0.6	0.72575	0.72907	0.73237	0.73565	0.73891	0.74215	0.74537	0.74857	0.75175	0.75490
0.7	0.75804	0.76115	0.76424	0.76730	0.77035	0.77337	0.77637	0.77935	0.78230	0.78524
0.8	0.78814	0.79103	0.79389	0.79673	0.79955	0.80234	0.80511	0.80785	0.81057	0.81327
0.9	0.81594	0.81859	0.82121	0.82381	0.82639	0.82894	0.83147	0.83398	0.83646	0.83891
1.0	0.84134	0.84375	0.84614	0.84849	0.85083	0.85314	0.85543	0.85769	0.85993	0.86214
1.1	0.86433	0.86650	0.86864	0.87076	0.87286	0.87493	0.87698	0.87900	0.88100	0.88298
1.2	0.88493	0.88686	0.88877	0.89065	0.89251	0.89435	0.89617	0.89796	0.89973	0.90147
1.3	0.90320	0.90490	0.90658	0.90824	0.90988	0.91149	0.91309	0.91466	0.91621	0.91774
1.4	0.91924	0.92073	0.92220	0.92364	0.92507	0.92647	0.92785	0.92922	0.93056	0.93189
1.5	0.93319	0.93448	0.93574	0.93699	0.93822	0.93943	0.94062	0.94179	0.94295	0.94408
1.6	0.94520	0.94630	0.94738	0.94845	0.94950	0.95053	0.95154	0.95254	0.95352	0.95449
1.7	0.95543	0.95637	0.95728	0.95818	0.95907	0.95994	0.96080	0.96164	0.96246	0.96327
1.8	0.96407	0.96485	0.96562	0.96638	0.96712	0.96784	0.96856	0.96926	0.96995	0.97062
1.9	0.97128	0.97193	0.97257	0.97320	0.97381	0.97441	0.97500	0.97558	0.97615	0.97670
2.0	0.97725	0.97778	0.97831	0.97882	0.97932	0.97982	0.98030	0.98077	0.98124	0.98169
2.1	0.98214	0.98257	0.98300	0.98341	0.98382	0.98422	0.98461	0.98500	0.98537	0.98574
2.2	0.98610	0.98645	0.98679	0.98713	0.98745	0.98778	0.98809	0.98840	0.98870	0.98899
2.3	0.98928	0.98956	0.98983	0.99010	0.99036	0.99061	0.99086	0.99111	0.99134	0.99158
2.4	0.99180	0.99202	0.99224	0.99245	0.99266	0.99286	0.99305	0.99324	0.99343	0.99361
2.5	0.99379	0.99396	0.99413	0.99430	0.99446	0.99461	0.99477	0.99492	0.99506	0.99520
2.6	0.99534	0.99547	0.99560	0.99573	0.99585	0.99598	0.99609	0.99621	0.99632	0.99643
2.7	0.99653	0.99664	0.99674	0.99683	0.99693	0.99702	0.99711	0.99720	0.99728	0.99736
2.8	0.99744	0.99752	0.99760	0.99767	0.99774	0.99781	0.99788	0.99795	0.99801	0.99807
2.9	0.99813	0.99819	0.99825	0.99831	0.99836	0.99841	0.99846	0.99851	0.99856	0.99861
3.0	0.99865	0.99869	0.99874	0.99878	0.99882	0.99886	0.99889	0.99893	0.99896	0.99900
3.1	0.99903	0.99906	0.99910	0.99913	0.99916	0.99918	0.99921	0.99924	0.99926	0.99929
3.2	0.99931	0.99934	0.99936	0.99938	0.99940	0.99942	0.99944	0.99946	0.99948	0.99950
3.3	0.99952	0.99953	0.99955	0.99957	0.99958	0.99960	0.99961	0.99962	0.99964	0.99965
3.4	0.99966	0.99968	0.99969	0.99970	0.99971	0.99972	0.99973	0.99974	0.99975	0.99976
3.5	0.99977	0.99978	0.99978	0.99979	0.99980	0.99981	0.99981	0.99982	0.99983	0.99983
3.6	0.99984	0.99985	0.99985	0.99986	0.99986	0.99987	0.99987	0.99988	0.99988	0.99989
3.7	0.99989	0.99990	0.99990	0.99990	0.99991	0.99991	0.99992	0.99992	0.99992	0.99992
3.8	0.99993	0.99993	0.99993	0.99994	0.99994	0.99994	0.99994	0.99995	0.99995	0.99995
3.9	0.99995	0.99995	0.99996	0.99996	0.99996	0.99996	0.99996	0.99996	0.99997	0.99997
x	1.282	1.645	1.960	2.326	2.576	3.090	3.291	3.891	4.417	
$\Phi(x)$	0.90	0.95	0.98	0.99	0.995	0.999	0.9995	0.99995	0.999995	
$2 [1 - \Phi(x)]$	0.20	0.10	0.05	0.02	0.01	0.002	0.001	0.0001	0.00001	