

Stakeholders' Engagement towards Local Development and Social Innovation through Open Schooling

A stakeholder analysis of the H2020 Open Science Hub Network:
the case of Figueira de Castelo Rodrigo, Portugal

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I thank all the stakeholders that positively affected this research.

I hope this research can positively affect some stakeholders.

For the past, I thank all the people I met in my path. In my entire path.

For the present, I thank you for reading this.

For the future, I thank in advance those who can make something from these pages.

All I did was to bring pieces together.

All I wanted was to find pieces that could make Schools a better place.

ABSTRACT

The education system has been changing in order to prepare the new generations for the upcoming social environment. Open Schooling (OS) is an approach to face new challenges in Education, through collaborative processes, engaging and empowering communities to tackle local challenges, towards school-led community development. Through Open Schooling, schools cooperate with families, professionals and wider society to address local challenges and opportunities.

The Open Science Hub Network (OSHub.Net) arose as a way to bring life to OS, aiming to empower citizens through STEAM Education with Open Schooling, towards local development and social innovation.

Bringing life to OS requires the involvement and management of different stakeholders, which led to the problem of investigating Stakeholders' Engagement towards Local Development and Social Innovation through Open Schooling. This dissertation, which has project managers and decision-makers who want to build OS communities as a target, brings strategic management tools existing in the literature into the school context, developing a methodology for stakeholder analysis, which was tested in the OSHub.Net and that can be conducted in other environments. The application of this methodology provided new insights concerning the motivations, attitudes and perceptions of schools' stakeholders and outside school agents, explaining how they can interact with each other, promoting Open Schooling.

The main results are the development of a methodology (including a survey that can be considered a deliverable) and a list of recommendations derived from the principal factors that account for stakeholders' engagement in Open Schooling, highlighting the attributes *interest*, *power*, *urgency*, *legitimacy* and *support*.

Keywords: education, local development, Open Schooling, social innovation, stakeholder analysis, stakeholders' engagement

RESUMO

O sistema educativo está em permanente mudança no sentido de preparar as novas gerações para o panorama social futuro. O conceito de Escola Aberta é uma abordagem para fazer face a estes novos desafios na Educação, através de processos colaborativos, envolvendo e capacitando as comunidades para abordar desafios locais, promovendo o desenvolvimento comunitário conduzido pela Escola. Através de um sistema de Escola Aberta, as escolas colaboram com famílias, com profissionais e com vários agentes sociais para abordarem desafios e oportunidades locais.

O projecto *Open Science Hub Network* (OSHub.Net) surgiu como uma forma de dar vida ao conceito de Escola Aberta, actuando para capacitar os cidadãos através de um modelo de Educação STEAM (do inglês Ciência, Tecnologia, Engenharia, Artes e Matemática) com princípios de Escola Aberta, promovendo o desenvolvimento local e a inovação social.

A implementação de um sistema de Escola Aberta requer o envolvimento e gestão de vários *stakeholders* e das suas relações, o que conduziu ao problema de investigar o envolvimento de *stakeholders* para o desenvolvimento local e inovação social através de um sistema de Escola Aberta. Esta dissertação, que tem como alvo gestores de projectos e decisores que querem criar comunidades de Escola Aberta, traz ferramentas de gestão estratégica existentes na literatura para o contexto escolar, desenvolvendo uma metodologia para análise de *stakeholders*, a qual foi testada na OSHub.Net e poderá ser conduzida noutros contextos. A aplicação desta metodologia trouxe novas perspectivas acerca das motivações, atitudes e percepções dos *stakeholders* pertencentes à Escola e ainda dos que a ela são externos - explicando como podem eles interagir entre si para implementar o conceito de Escola Aberta.

Os principais resultados são o desenvolvimento daquela metodologia (incluindo um questionário, o qual pode ser considerado como um primeiro produto deste trabalho) e uma lista de recomendações extraídas a partir dos principais factores que afectam o envolvimento de *stakeholders* em iniciativas de Escola Aberta, destacando os atributos *interesse*, *poder*, *urgência*, *legitimidade* e *apoio*.

Palavras-chave: Educação, desenvolvimento local, Escola Aberta, inovação social, análise de *stakeholders*, envolvimento de *stakeholders*

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LIST OF ACRONYMS

AT - Administrative Technicians
CA - Culture and Arts
CIP - Clubs, Initiatives or Projects
E – Entreprises
EF - Evidence(s) found
F – Families
H2020 - Horizon 2020
HW - Health and Well-being
ISH - Inside school stakeholder(s)
IST - Instituto Superior Técnico
LG - Local Governments
M – Media
MS - Museums and Science Centres
NCTL - National College for Teaching & Leadership
NE - Nature and Environment
OA - Operational Assistants
OECD – Organisation for Economic Cooperation and Development
OS – Open Schooling
OSH - Outside school stakeholder(s)
OSHub – Open Science Hub
OSHub.Net – Open Science Hub Network¹
OSOS – Open Schools for Open Societies
PS - Public Safety
R&I – Research and Innovation
RRI – Responsible Research and Innovation
S – Students
SDGs – Sustainable development goals
SH – Stakeholder(s)
SM - School Management
ST - Specialized Technicians
STEAM – Science, Technology, Engineering, Arts and Mathematics
SWAFS – Science with and for society
T – Teachers

¹ The acronym OSHub.Net refers to the general H2020 project; whereas OSHub is used for the local (sometimes physical) Open Science Hubs.

1. INTRODUCTION

1.1. PROBLEM CONTEXTUALISATION

“The ‘grand challenges’ of the 21st century require the ability to integrate the knowledge and expertise of different societal actors to solve problems using more innovative, efficient and open methodologies.” (OSHub.Net, 2018). This implies that citizens have a better understanding of Science and Technology in order to participate in science-informed decision-making. As pointed out in the report “Rethinking education. Towards a Common global goal?” (UNESCO, 2015), the current changes in the world are characterized by new levels of complexity and contradiction. These changes - especially the constant evolution of science, technology, knowledge and tools - also bring new opportunities, threats and challenges. Some of them will be addressed in this research.

Education is also changing in order to react to those transformations, preparing the new generations for the upcoming social environment. Open Schooling (OS) comes as an approach to accomplish these goals. OS can improve the quality of education, and through collaborative processes, OS can be a way to engage and to empower communities to tackle local challenges. It is thereby connecting science, schools and society actors towards school-led community development and well-being.

Since the beginning of Open Schooling as a concept, several authors highlighted the need for the active participation of different agents and to the need to investigate it. Abrioux and Ferreira (2009) stated that what remained missing was “extensive documented investigation and research about how to counter the inadequately or ill-informed prejudices of highly influential stakeholders who may consider OS to be a second-rate alternative to conventional schooling.”.

The Open Science Hub Network (OSHub.Net) arose as a way to bring life to the Open Schooling concept, *Empowering Citizens through STEAM Education with Open Schooling*. Particularly, the Portuguese Open Science Hub (Plataforma de Ciência Aberta - located in Figueira de Castelo Rodrigo, Portugal) aims to bring science, technology and innovation closer to local communities' daily life. This will be the case study addressed in this dissertation.

1.2. OBJECTIVES AND METHODOLOGY

This dissertation in Industrial Engineering and Management is focused on stakeholders' engagement towards local development and social innovation through Open Schooling. To address this topic, this dissertation starts with the contextualization and characterization of the problem among the Open Schooling concept. This part provides a description of the main concepts and presents the Open Science Hub Network, demonstrating the need for stakeholder analysis.

In order to accomplish this, a literature review was performed, characterizing the state of the art and finding procedures for stakeholder analysis. Based on the knowledge in the existing literature, a methodology was defined and conducted, data was collected, and results were generated, presented and discussed, leaving some topics for further research.

The main objectives of this dissertation are the development of a methodology for stakeholder analysis in Open Schooling contexts and providing some new insights to be used as recommendations for project managers, decision-makers and policymakers who aim to build Open Schooling communities.

1.3. STRUCTURE OF THE DISSERTATION

The work presented in this dissertation, developed to accomplish the previously announced objectives, is divided into six chapters:

1. Chapter 1: the problem contextualization and the main objectives.
2. Chapter 2: an introduction to Open Schooling and to the Open Science Hub Network, leading to the characterization and definition of the problem.
3. Chapter 3: a literature review is presented in this chapter, mainly focusing on stakeholder analysis for different purposes: identification of stakeholders; differentiation and categorization of stakeholders; methods to investigate stakeholders' relationships; this chapter also presents interviewing techniques and examples of stakeholder analysis in the educational contexts.
4. Chapter 4: in this chapter, the methodology that was conducted to solve the stated problem is presented, organized in four phases and seven steps.
5. Chapter 5: here the results from the conducting of the methodology are analysed and discussed, deriving conclusions about stakeholders' engagement towards local development and social innovation through Open Schooling;
6. Chapter 6: the main conclusions of this dissertation are summarized as well as recommendations for future research.

2. FROM THE OPEN SCHOOLING CONTEXT TO THE PROBLEM DEFINITION

In the previous chapter, the Open Schooling concept was briefly introduced and the Open Science Hub Network was presented. In this chapter, the Open Schooling principles are explained in detail as well as the Open Science Hub Network, motivating the need for stakeholder analysis, defining the problem and stating the research questions.

2.1. OPEN SCHOOLING: WHAT, WHY, WHO AND HOW

Open Schooling is a new (and underdevelopment) concept to tackle challenges on Education. Open Schools are those that implement Open Schooling. In Europe, the development of Open Schooling is mainly conducted by Open Schools for Open Societies (OSOS), a project whose principal goal is to implement, broadly in different countries, a transformation process of schools into innovative learning places through a multidisciplinary approach. To accomplish its goals, OSOS considers the school agents and local communities as relevant stakeholders for local development and responsible citizenship (Sotiriou & Cherouvis, 2017).

OSOS defines the Open School Culture as follows: “An Open School culture imports external ideas that challenge internal views and beliefs and, in turn, exports its students – and their assets – to the community it serves. Such an engaging environment makes a vital contribution to its community: students’ projects meet real needs in the community outside of school; they are presented publicly and draw upon local expertise and experience. The school environment fosters learner independence – and interdependence – through collaboration, mentoring, and through providing opportunities for learners to understand and interrogate their place in the world.” (Sotiriou & Cherouvis, 2017). This work developed by OSOS comes as an answer to the suggestions presented in the report “Science Education for responsible citizenship” (European Commission, 2015), where Open Schooling is recommended in order to ensure relevant and meaningful engagement of all societal actors with science. In this report, schools, collaborating with other stakeholders, are considered potential agents of community well-being. To achieve this, families should become partners in school activities, and broader society should be actively involved in bringing real-life projects into the classroom, establishing a collaboration between formal, non-formal and informal educational providers, enterprise and civil society. In its turn, in that report, Open Schooling is defined as “Institutions that promote partnerships with families and the local community with a view to engaging them in the teaching and learning processes but also to promote education as part of local community development” (Phillips, 2006).

OSOS estimates the involvement of 100 schools in Portugal, where students from different educational levels will be engaged to develop multidisciplinary projects focused on tackling local challenges, involving other stakeholders, such as families, universities, investigation centres, local partners, mu-

seums or science centres. Around the world, it is possible to find some real-life examples of Open Schooling with OSOS, conducted by a consortium composed of a total of 19 partners representing 10 European countries (Greece, Finland, Germany, Spain, The Netherlands, Bulgaria, Italy, France, Portugal, Ireland) and 3 non-European countries (Israel, Australia and United States of America). These partners that bring life to Open Schooling are school authorities, science centres and museums, policy-making organizations, universities, and European associations.

As it was mentioned, Open Schooling calls into question internal views and beliefs, which can be considered the main barrier to implement this concept that arises when numerous Education reform initiatives take place in Europe. These reforms are mainly focused on providing students with an education that prepares them for life in the 21st century. The accomplishment of this goal requires to transform schools into core social centres (Sotiriou & Cherouvis, 2017). Furthermore, Open Schooling comes as a needed holistic approach to innovation, “transforming schools to innovative ecosystems, becoming shared places where leaders, teachers, students, and the local community can share responsibility towards development” (Sotiriou & Cherouvis, 2017).

Bringing Open Schooling to the field also implies to renovate the classic concept of schools, rebuilding the traditional boundaries in order to allow that information and resources (including human resources) can be exchanged from inside out and inversely, so the students work can effectively match the needs from outside the school (Sotiriou & Cherouvis, 2017).

According to OSOS (Sotiriou & Cherouvis, 2017), Open Schools have some particular characteristics. An Open School is one that verifies the following principles:

- Promotes the collaboration with non-formal and informal education providers, enterprises and civil society enhanced;
- Supports school to become an agent of community well-being;
- Promotes partnerships that foster expertise, networking, sharing and applying science and technology research findings and that bringing real-life projects to the classroom.

The transformation of the traditional school into an Open School, not in terms of its physical facilities but according to the Open Schooling concepts, can be called re-schooling. In this process, schools are considered focused learning organizations and core social centres, towards which the external organizations should evolve their activities and inversely, transforming schools into the centre of an active, democratic and participative society. “The OECD re-schooling scenarios describe the substantial strengthening of schools with new dynamism, recognition, and purpose. These scenarios have formed the guiding ideas and principles for the development of the Open Schooling concept.” (Sotiriou & Cherouvis, 2017).

Open Schooling was also defined by the Commonwealth of Learning as “the physical separation of the school-level learner from the teacher, and the use of unconventional teaching methodologies, and

information and communications technologies to bridge the separation and provide the education and training” (Phillips, 2006). However, this is another concept that uses the same expression “Open Schooling” to refer to subjects such as long-distance learning, especially in underdeveloped regions or countries. It is important to remark that this is a different concept - not addressed in this dissertation.

2.2. OPEN SCIENCE HUB NETWORK

The Open Science Hub Network (OSHub.Net) arose as a way, among some others, but with some particularities, to bring life to the Open Schooling concept and its goals, aiming to empower citizens through STEAM Education with Open Schooling, towards local development and social innovation.

The accomplishment of OSHub.Net’s goals, especially bringing life to Open Schooling, require the involvement of several societal actors or, in other words, the stakeholders. In order to get their active participation, there is a need to identify and characterize the different stakeholders, to better understand the relevance of each other and its engagement towards local development and social innovation through Open Schooling.

Following the European Union principles and recommendations and the lessons learned from other projects (e.g. OSOS), the Open Science Hub Network aims to bring together science, technology, and innovation to the daily life of local communities, promoting the collaboration between several stakeholders. Open Schooling is the primary approach of the project, breaking the traditional school boundaries by involving the school community to tackle local challenges and promoting responsible citizenship. In this approach, schools are considered an active stakeholder that should encourage Open Schooling for community well-being, cooperating with other stakeholders to deal with challenges with local relevance and global impact (European Commission, 2015).

Bearing in mind the importance of having different societal stakeholders reunited in the same “hub” to tackle local challenges (not necessarily a physical hub) and how Open Schooling can be useful to accomplish that, it is essential to pay special attention to the following two objectives of OSHub.Net (OSHub.Net, 2018):

1. “Create STEAM-based [based on Science, Technology, Engineering, Arts and Mathematics] entrepreneurship and innovation programmes, grounded on partnerships, real-life projects and community-based participatory research, to increase the uptake of science-based careers and contribute to local development: OSHubs will implement, in close collaboration with the schools’ career counselling, municipalities, chambers of commerce, business incubators and universities, a STEAM-based entrepreneurship and innovation program based on community-based participatory research. Schools and communities will identify local relevant challenges, via participatory and co-creation events and workshops (school and community-based), which will then be transformed into research and innovation projects with impact on

local development, through collaborations with business incubators, universities, and decision-makers. [...]"

2. "Establish OSHubs in communities with low access to science, technology and innovation, near social and/or geographical borders, enhancing cooperation across cultures and communities and involve citizens as active participants in policymaking and governance: OSHubs will be created in communities that traditionally do not engage with STEAM due to various barriers – geographical location, socio-economic status, or ethnic minority group background. By being grounded on local relevant issues, with global impact and application that link to the Sustainable Development Goals (SDGs), and will focus on multi-stakeholder collaboration, OSHub.Net will allow the creation of a local-to-global network. This network will bring together the realities of local communities and the contemporary global world, through STEAM Education and social innovation, thus breaking social and geographical borders and barriers. The local OSHub teams and local management boards will work directly with policy-makers to demonstrate and advocate for the importance of education, and Open Schooling approaches for community development and well-being. [...]"

"Science with and for society" (SWAFS) will help citizens, organizations, and territories to open a new chapter of their development through joint research and innovation activities in five strategic orientations. It will contribute to the implementation of Responsible Research and Innovation (RRI) through institutional governance changes in Research Performing and Funding Organisations, focusing on developing new partnerships and involving researchers, policymakers, citizens, and industry. It will step up support for gender equality in Research & Innovation (R&I) policy by promoting institutional changes and focusing on key areas of research to advance gender equality. It will build on the territorial dimension of SWAFS partnerships by opening up R&I broadly to society according to specific territorial contexts, where territories are understood as geographical areas sharing common features (e.g. economic, social, cultural, environmental). It will explore and support citizen science in a broad sense, encouraging citizens and other stakeholders to participate in all stages of R&I.

OSHub.Net submitted a proposal, which has been funded, to the European call SwafS-01-2018-2019: Open Schooling and collaboration on science education. At the beginning of October 2019, the project started officially with the kick-off meeting where all the partners, presented below, were represented. Note that, in 2017, even before the European funding, the Municipality of Figueira de Castelo Rodrigo (Portugal) decided to support locally the implementation of the project, locally called *Plataforma de Ciência Aberta*, being the first Open Science Hub of the network, serving as a pilot project. In this location, Open Schooling initiatives are already being implemented, and several stakeholders are already engaged. However, it is still missing an investigation to identify more entities to be engaged and to understand better and characterize all the parties involved, improving the project's performance and, in the end, to contribute more efficiently for local development and social innovation.

From October 2019, OSHub.Net will be implemented in seven new locations. These locations (6 European Union member states and 1 associated country, Switzerland) are near social or geographical borders, to engage underserved groups, support dialogue across cultures and communities, and equip citizens with the tools, skills, and network to tackle locally relevant STEAM-related challenges. According to OSHub.Net (2018), the local OSHub partners, in collaboration with local stakeholders, have identified preliminary local challenges with community relevance to be the focus of their activities, which resolution intends to lead to social innovation and local development:

1. OSHub the Netherlands: Leiden/Den Haag and South-Holland. In the Netherlands, students with lower socioeconomic status and those with a migrant background are overrepresented among the group of low education achievers. There is low youth participation from underrepresented minorities and girls in the Netherlands in STEAM fields.
2. OSHub Ireland: South County Dublin. The high unemployment rate in identified “blackspots”; 40% of districts are considered ‘disadvantaged’ and more than 35% of the schools qualify for the Irish government’s plan for educational inclusion Delivering Equality of Opportunity in Schools.
3. OSHub Switzerland: Genève. Social and cultural inequality; 60% of the population of Genève canton holds a foreign passport, and educational inclusion policies are required to integrate less-educated immigrants. The importance of community development of this border has been identified by the EU program Interreg V-A – France-Switzerland.
4. OSHub Austria: Linz. Low access to STEAM opportunities; the big educational gap between wealthy and less wealthy communities. The importance of community development of this border has been identified by the EU program Interreg V-A – Austria-Germany-Bavaria (Bayern-Österreich) and Interreg V-A – Austria-Czech Republic.
5. OSHub France: Collège Lucie Aubrac (high-school, Grenoble) or Collège Jean Vilar (high school, Echirolles). Underserved area with people living primarily in social housing; high unemployment rate. Locations identified by the local municipality as prioritized areas for education.
6. OSHub Czech Republic: Prague Fair, Prague former industrial area. Transformed into an area where different ethnic and social groups have opportunities and thus can meet and engage.
7. OSHub Portugal: Figueira de Castelo Rodrigo. At the border with Spain (Province of Salamanca). Low-density population; low school performance and high-dropout rate; limited access to STEAM-related initiatives. The importance of community development of this border has been identified by the EU program Interreg V-A – Spain-Portugal (POCTEP).
8. OSHub Greece: Athens’ West Attica region. Underserved communities facing social exclusion and early school dropout; low socioeconomic status; limited access to STEAM-related initiatives.

In order to implement Open Schooling with local schools through innovative processes, OSHub.Net consortium includes 9 partners with complementary skills, expertise, and experience. The following partnerships are already established:

- 2 research universities: Universiteit Leiden, The Netherlands; College of the Holy and Undivided Trinity of Queen Elizabeth, Ireland;
- 1 municipality: Municipality of Figueira de Castelo Rodrigo, Portugal;
- 3 small and medium enterprises: The Hub Sicilia Società Cooperativa, Italy; Ars Electronica Linz GMBH, Austria; SCIENCE IN, Czech Republic;
- 1 Science centre: La Casemate Centre de Culture Scientifique, France;
- 2 civil society associations: Fab Lab Onl'Fait, Switzerland; EPISTIMI EPIKOINONIA / Science Communication, Greece.

All these partners will share the same general goals, with particularities depending on the respective realities of each location towards site-specific targets on social innovation and local development.

In this dissertation, Open Schooling is assumed to lead to local development and social innovation. These are broad concepts, difficult to define, and these definitions depend on the “local” being study. Anyway, Santos (2012) defined “social innovation” as follows: “When a solution is proven more effective and efficient than the established one, we have a social innovation”. Open Schooling is considered a solution of this kind.

2.3. PROBLEM DEFINITION

In the previous sections, the Open Schooling concept was explained in detail as well as how this novel schooling approach is a crucial topic for the Open Science Hub, motivating a problem to be solved. This is further explained below, highlighting the role of stakeholders in Open Schooling and how their management requires strategic management knowledge: new tools are missing to analyse stakeholders' engagement towards local development and social innovation through Open Schooling.

STAKEHOLDERS IN OPEN SCHOOLING

In its Working Package 2 (OSHub.Net, 2018), OSHub.Net defines an Open Schooling community as one where schools play a central role in the design and implementation of co-creation processes by involving teachers, school managers, governmental/educational agencies and advisory groups. This implies promoting relationships and collaborations between schools and local enterprises, research institutions, universities and civil society associations. In an Open Schooling community, families are encouraged to become partners in the schools' activities.

The management of the entities that can affect or be affected by Open Schooling is a crucial topic for strategy making in order to build an Open Schooling community. This implies new concepts and activities for the school communities and the establishment of new relationships between these communi-

ties and external parties. All these parties are called stakeholders. According to Freeman (1984), a stakeholder is “any group or individual who can affect, or is affected by, the achievement of a corporation’s purpose”.

BRINGING STRATEGIC MANAGEMENT

A conceptual framework to build an Open Schooling community is already created. Around the world, it is possible to find evidence of Open Schooling projects or initiatives. However, there is still missing an in-depth investigation to bring the strategic management expertise (traditionally applied to economics, industry or project management) to this Educational environment, finding existing analytical methodologies for stakeholder analysis or developing new ones.

STAKEHOLDER ANALYSIS FOR A CONCEPTUAL FRAMEWORK

An Open Schooling community can only be created if resources and information are shared not only inside schools but also across the traditional school boundaries, engaging different societal actors. This induces the need for a stakeholder analysis, which has not been performed yet by OSHub.Net nor by OSOS - at least in an exhaustive way as it is aimed in this research. This stakeholder analysis is needed to go further from the simple identification of key players, stepping into a complete characterization of them (their perceptions, motivations, and attitudes) and investigating the way they interact to each other, in a proper and science-based way. Besides this, there is also the need to assess the major difficulties and barriers that can be found when building an Open Schooling community. This way, a conceptual framework can be created to describe how an Open Schooling community could be with all the relevant stakeholders engaged, serving as guidance for managers and decision-makers in OS environments, providing strategic management insights and anticipating what they can encounter in the real field.

This research will be an “action research”, insofar it aims to bring contributions (knowledge) for the Open Schooling concept and also an “evaluation research”, taking *Plataforma de Ciência Aberta* as a case study. Having this system to investigate, as a starting point, the objective is to produce a conceptual framework from this real-life example, leading to conclusions that can be used as recommendations to apply in similar contexts - this is, in contexts where it is aimed to build an Open Schooling community, just like it happens in *Plataforma de Ciência Aberta* and will happen in all the OSHub.Net future locations.

PROVIDING NEW TOOLS

Besides the new insights to be generated, this investigation also aims to serve as a tool for future work, developing a stakeholder analysis methodology that connects the strategic management literature with the Open Schooling environment. This methodology to be created is supposed to be useful by itself, so that can be independently applied in different contexts by those who want to build Open Schooling communities. Also, since this methodology will be firstly used in this investigation, this will serve as a validation step to improve the tool and to leave recommendations.

According to the International Schooling for Tomorrow Forum (OECD, 2004), in the mentioned process of Re-Schooling, schools are considered as “core social centres”. Considering Open Schooling (in this investigation as for OSHub.Net) as a way for local development and social innovation, a spotlight will be put in schools and its agents as stakeholders.

INDIRECT CONTRIBUTIONS

OSHub.Net is considered as a pioneer project for aiming to use social innovation to tackle local challenges in a science and technology-based way. Since this is becoming a very popular topic but still in development, there is only a few theoretical work done. Due to this fact, it is expected that this research brings knowledge useful for SWAFS and for social innovation.

PROBLEM DEFINITION

Taking into account what was previously mentioned, the problem to be solved can be summarized in two research questions. The conducting of stakeholder analysis can only be done starting by the identification of stakeholders, answering the first research question:

Who are the relevant stakeholders to implement Open Schooling?

Besides that, it is also needed to understand how the identified stakeholders are engaged (or can be engaged) in Open Schooling, and later how that engagement can be improved, finding an answer to the second research question:

How can local stakeholders contribute to the implementation of Open Schooling?

Finding an answer to these two research questions will not only contribute to stakeholders management but also help develop the Open Schooling concept.

2.4. CHAPTER CONCLUSIONS

Open Schooling, its related concepts and the goals of Open Science Hub Network require the engagement and cooperation of several stakeholders, motivating a stakeholder analysis. This research will provide OSHub.Net with a specific stakeholder characterization, helping its strategic management. Besides that, the methodology to be developed and tested in this case study is supposed to become a tool to be useful in similar contexts - where an Open Schooling community is aimed to be established. Also, this stakeholder analysis will provide new insights about the real-field application of the OS concepts, leaving recommendations for decision-makers and project managers in similar environments, where it is needed stakeholders' engagement towards local development and social innovation through Open Schooling. Once the problem of managing stakeholders is defined and contextualized among the Open Schooling environment, two research questions were pointed to be answered. In order to accomplish this, a methodology is missing and can only be developed after a literature review to support a stakeholder analysis, which will be done in the next chapter.

3. LITERATURE REVIEW

The problem previously defined induced the need for stakeholder analysis, motivating a literature review in order to find adequate methodologies for that.

In section 3.1., some techniques for stakeholder analysis are presented. Since the contact with stakeholders is most of the times needed for stakeholder analysis, interviewing techniques are presented in section 3.2.. Finally, two examples of stakeholder analysis related to schooling and Education are presented in section 3.3..

Note that this chapter only provides a literature review on the different techniques and some comparison between them. Only after that, in Chapter 4, these methodologies will be selected as well as presented the reasons for that.

3.1. STAKEHOLDER ANALYSIS TECHNIQUES

Although stakeholders exist, since the beginning, among every kind of organizations, this word was only suggested and defined by Freeman (1984), when a stakeholder approach for strategic management was developed by the author. As stated by Freeman (1984), a stakeholder is “any group or individual who can affect, or is affected by, the achievement of a corporation's purpose”. In some sense, it can be considered that anyone can be affected or affect the “achievement of a corporation's purpose”. However, managers cannot deal with all the stakeholders related to their organizations, so it raises the need not only to identify them but also to prioritize some over the others.

According to Brugha & Varvasovsky (2000), “stakeholder analysis aims to evaluate and understand stakeholders from the perspective of an organization, or to determine their relevance to a project or policy”. However, sometimes the organizations do not perform a proper stakeholder analysis, which can bring undesired effects, such as “the potential to marginalize important groups, bias results and jeopardize long-term viability and support for the process” (Reed et al., 2009). Consequently, the interest in developing methods to perform a stakeholder analysis has been growing.

Reed et al. (2009) defined stakeholder analysis as the process that:

1. Defines the topic or system affected by the processes conducted by the organization;
2. Identifies all the entities (individuals or collective, particular or organizational - the stakeholders) that can affect or be affected by those processes;
3. Prioritizes those entities according to the involvement in the decision-making processes.

It is possible to find in the literature different means to perform stakeholder analysis, based on different purposes that were divided by Reed et al. (2009) into three main types:

1. Identification of stakeholders (section 3.1.1.);
2. Differentiation and categorization of stakeholders (section 3.1.2.);
3. Investigation of relationships between stakeholders (section 3.1.3.).

3.1.1. STAKEHOLDER IDENTIFICATION METHODOLOGIES

The identification of stakeholders must be preceded by a clear definition of the system to be studied in order to define the boundaries of the analysis (Reed et al., 2009). Once it is done, it will be easier to identify the stakeholders, although the clear definition of the boundaries does not mean the impossibility of overlooking some relevant stakeholders, which can bring undesired results for the analysis (Clarkson, 1995). According to Reed et al. (2009), the identification of stakeholders is many times an “iterative process, during which additional stakeholders are added as the analysis continues”. Two methodologies for stakeholder identification are presented next.

LIST OF POTENTIAL STAKEHOLDERS

According to Bryson et al. (2011), this simple technique consists of asking the stakeholders already known to brainstorm who are the other potential stakeholders. This first step must happen taking into account that the brainstorm is not necessarily exhaustive and that some other stakeholders may appear later on. The following technique may be a good contribution to improve the identification.

NETWORK OR SNOWBALL SAMPLING

On its published work about sampling, Thompson (2012) identified the two most important network sampling methodologies (described initially as snowball sampling by its authors), based on different purposes. The first, suggested by Kalton & Anderson (1986), is to use this method when it is needed to build a sample of rare population: a few members of a population are asked to identify and to contact other members, and these new members are asked to identify more members, and so on. The second is when there is a need to perform a mathematical estimation of the number of social circles or mutual relationships within a population. In this case, the elements of the sample are asked to identify a previously fixed number of other individuals; then, these newly identified ones are asked to identify others; the iterative process is only repeated for a fixed number of stages (Goodman, 1961).

Reed et al. (2009) also applied this network methodology for stakeholder analysis, but in a more user-friendly version: the people initially known that belong to some category of stakeholders are interviewed and asked to identify other stakeholder categories, providing new contacts; the new stakeholders are contacted for the same purpose, and the process is repeated until no more stakeholders are identified.

3.1.2. STAKEHOLDER DIFFERENTIATION AND CATEGORIZATION METHODOLOGIES

Besides the need to identify stakeholders, there is also the requirement to differentiate and categorize them. According to Reed et al. (2009), this step can be accomplished using analytical categorization (top-down approach) or a reconstructive categorization (bottom-up approach).

If the classification of stakeholders is performed by those conducting the analysis, without the participation of the stakeholders being studied, through observations of the field with some theoretical basis, it is an analytical categorization (Hare and Pahl-Wostl, 2002).

If the stakeholders participate in the analysis, it is considered a reconstructive categorization. Contrarily to the analytical categorization, this approach, more bottom-up, ensures that the stakeholders' concerns will be more closely reflected on the analysis since they can define categorizations and parameters during the analysis (Hare & Pahl-Wostl, 2002).

Four methodologies to differentiate and categorize stakeholders are presented next.

RAINBOW DIAGRAM

This technique, presented by Chevalier and Buckles (2008) is kind of a Venn diagram, used to classify stakeholders not only as affected or affecting (or both) by a problem or action but also according to the degree in which it happens. Figure 1 shows an example of a rainbow diagram, where it is possible to understand how this classification is done, assigning each stakeholder in a region according to the two characteristics.

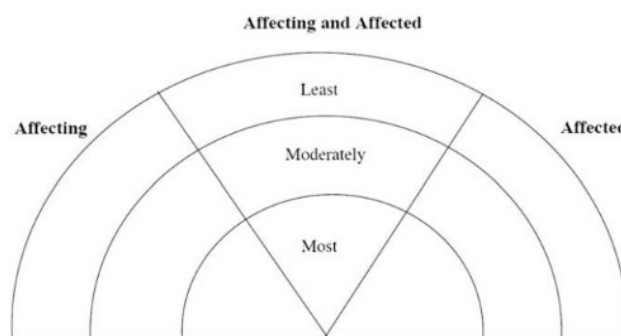


Figure 1: Rainbow diagram (Chevalier and Buckles, 2008, in Reed et al., 2009)

POWER-INTEREST MATRIX

Freeman (1984), among many stakeholder management researchers, identified 'power' and 'interest' as essential variables to describe stakeholders, suggesting the use of a 'Power-Interest Grid', as shown in Figure 2. The plot of two dimensions can provide a tool for managers to better understand their environment or to proactively manage their stakeholders (Ackermann & Eden, 2011).

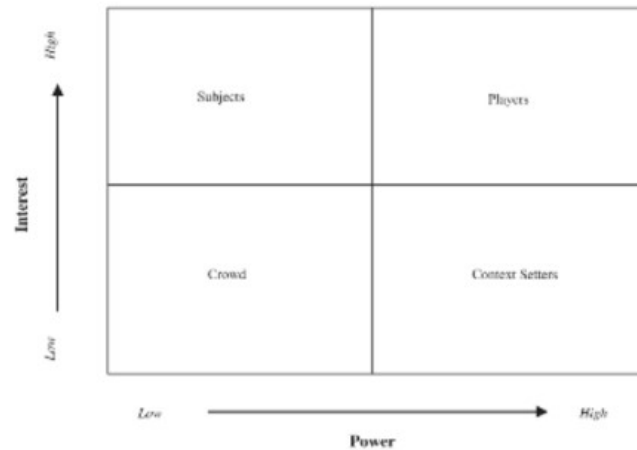


Figure 2: Power-interest matrix (Eden & Ackermann, 1998, in Bryson, 2004)

Stakeholder literature has failed in providing a precise and consistent definition to the concept of 'power' (Abreu, 2017). However, according to Weber (1947), power can be defined as "the probability that one actor within a social relationship would be in a position to carry out his own will despite resistance". Bryson et al. (2011) referred to 'interest' as the concern, the responsibility and the involvement feelings of the stakeholders. Since interest can have good or bad impacts on a project, this variable can assume positive or negative values. The categorization of the stakeholders using those two variables leads to the four-group differentiation, shown in Figure 2 (Bryson et al., 2011): players; subjects; context steers; crowd.

POWER, URGENCY AND LEGITIMACY DIAGRAM

Aiming to define who and what really counted, Michell et al. (1997) classified stakeholders depending on their 'power' (also used in the previous method), 'urgency' and 'legitimacy' to the topic under study. Mitchell et al. (1997) defined "urgency" as "the degree to which stakeholder claims for immediate call" and 'legitimacy' as the general perception that the stakeholder's actions are proper, or appropriate and congruent within the value system of the society in which it operates (Abreu, 2017). The application of this technique starts by drawing a Venn diagram, as shown in Figure 3.

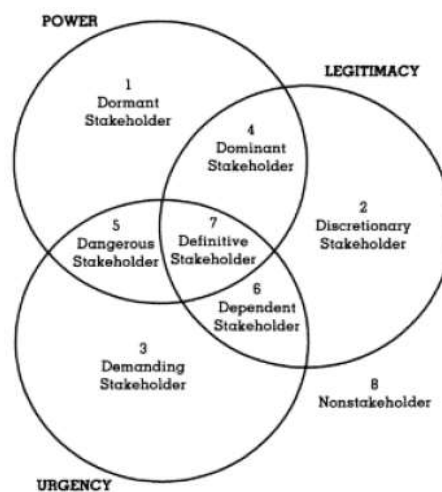


Figure 3: Power, urgency and legitimacy diagram (Mitchell et al., 1997)

Then the stakeholders are placed in the diagram, according to the attributes that define their behaviour. For example, if an agent does not have power, nor legitimacy, nor urgency, in what concerns to a problem in study, this agent should be placed out of the diagram not to be considered a stakeholder. But if a stakeholder, without power, has legitimacy and urgency, they should be considered a “dependent stakeholder” and placed in the sixth region. This way, stakeholders are divided into seven categories: dormant stakeholders; discretionary stakeholders; demanding stakeholders; dominant stakeholders; dangerous stakeholders; dependent stakeholders; definitive stakeholders. Note that this methodology is merely qualitative: inside one region, it is not possible to distinguish different levels of power, urgency or legitimacy - it is only possible to understand which attributes characterize each stakeholder placed in the diagram.

SUPPORT VS OPPOSITION GRID

Bryson et al. (2011) adapted this method from the previous work done by Nutt & Backoff (1987). This method allows the categorization of each stakeholder according to their support or opposition and their power (Bryson et al., 2011). That categorization is done by placing the stakeholders in a grid similar to Figure 4, classifying them as problematic, antagonistic, low priority or advocates (Nutt & Backoff, 1987) or, in other words, suggested by Bryson et al. (2011) as weak opponents, strong opponents, weak supporters, and strong supporters.



Figure 4: Support versus opposition grid (Bryson, 2004)

3.1.3. METHODOLOGIES FOR INVESTIGATING RELATIONSHIPS BETWEEN STAKEHOLDERS

Previously in this literature review, some methodologies to identify and to categorize (or differentiate) stakeholders were presented. According to Reed et al. (2009), stakeholder analysis can also be based on a methodology to investigate relationships between them. Five of these methodologies are presented below.

ACTOR-LINKAGE MATRIX

This is a low-cost and straightforward way of describing stakeholder's relationships with a keywords matrix, as explained by Reed et al. (2009). The matrix is constructed writing the names of the stake-

holders in the top row and in the left column, classifying each combination (relationship) as, for example, 'conflict', 'complementary' or 'cooperation' (Reed et al., 2009). This simple matrix can be easily constructed without sophisticated software. However, note that each relationship is characterized by keywords, not providing further insights to understand each relationship. This technique may be a good starting point for further analysis, complemented by other techniques.

PARTICIPATION PLANNING MATRIX

This matrix provides a visual representation of the participation of stakeholders, placing each one according to the combination of tasks (listed in the first column) and functions (listed in the first row) - these functions can be, for instance, "inform", "consult", "empower", "involve" or "collaborate". Basically, this matrix provides a representation of who plays each role in each task, making it easier to understand their involvement, although the more complex relationships can be hard to understand (Bryson et al., 2011).

This method highlights the degree of participation of each stakeholder in each task, providing information for planning stakeholder participation in strategic management processes (Bryson et al., 2011). The degree of participation varies from non-participants to empowering roles (Bryson et al., 2011). As it was pointed by Abreu (2017), this method is similar to the Responsibility Assignment Matrix (RACI Matrix). The main difference between RACI Matrix and Participation Planning Matrix is the position of stakeholders and their functions: in RACI Matrix, stakeholders are listed in the first row, and their roles are written in the matrix body - according to the tasks listed in the first column.

Note that this methodology concerns the execution of tasks, and so it is more dedicated to contexts where specific activities are being developed or in a project planning phase. Therefore, this kind of matrix does not fit an evaluation analysis where it is needed to investigate, for example, conflicting relationships.

SOCIAL NETWORK ANALYSIS

Proposed by Wasserman & Faust (1994) and adapted by Reed et al. (2009), Social Network Analysis is a tool useful not only to identify the network of stakeholders but also to measure the relationships between them - similarly to what is done with an actor-linkage matrix. This tool was developed considering that "social environment can be expressed as patterns or regularities in relationships among interacting units" (Wasserman & Faust, 1994). This can be done using questionnaires in the form of structured interviews, allowing to understand that network better, differentiating influential and peripheral stakeholders. Since this method is a bit complex to implement, due to the fact of quantifying the relationships, it can be time-consuming for the respondents of the questionnaire and implies the participation of specialists in the analysis, making it more expensive. With Social Network Analysis, relationship ties between stakeholders are expressed using numbers that represent the existence or absence of a relationship and the relative strength of that relationship. Contrarily to other methodologies pre-

viously presented, Social Network Analysis requires more than one matrix, one for each kind of relationship - communication, friendship, advice or trust, for example (Reed et al., 2009).

STAKEHOLDER INFLUENCE NETWORK

This method, presented by Ackermann & Eden (2011), can be considered an upgrade of the power-interest grid, adding the possibility of investigating relationships of influence between stakeholders, linking them with arrows to show the direction of their influence (Bryson et al., 2011). Although the influence can be reciprocal, the analysis should aim to indicate (with arrows) the main direction of that influence (Bryson, 2004). This method is implemented with an evaluation group that starts producing a power-interest grid and then discusses the possible influences among the identified stakeholders until an agreement is found (Bryson, 2004; Ackermann & Eden, 2011). The Stakeholder Influence Network adds the possibility of, for example, finding powerful and highly interested stakeholders who have lack connections, helping the strategic management (Ackermann & Eden, 2011). This methodology is developed calling on the evaluation group that built the power-interest grid to discuss influence connections between stakeholders, moderated by someone that is not a stakeholder. If an agreement is found, a network with all stakeholders should be achieved (Bryson, 2004; Ackermann & Eden, 2011), like the one shown in Figure 5.



Figure 5: Stakeholder influence network (Ackermann & Eden, 2011)

VALUE FLOW MAPPING

This technique was presented by Cameron et al. (2008) to represent complex relationships between stakeholders' categories, depending on their added value to solve the problem under study: the stakeholders' needs are connected to the outcomes required to generate value. The implementation of this method starts by classifying stakeholders according to categories. Then it is needed to identify the inputs and outputs each category requires to add value for the problem resolution, connecting stakeholders in the sense that an output from one stakeholder is an input for another one. The flows, represented by arrows, are classified according to the type of relationships (Cameron et al., 2008). Figure 6 presents a value flow map that shows relationships between stakeholders involved in a governmental process, to serve as an example. It is important to note that the more stakeholders' cate-

gories in the map, the more possible combinations between stakeholders, which can hamper the conclusion of the analysis or make it too complex to understand.

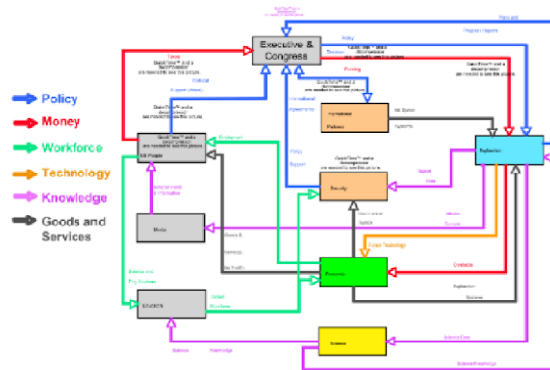


Figure 6: Value flow map (Cameron et al., 2008)

SUMMARY

The five previously presented methodologies to investigate stakeholders' relationships are summed up in Table 1, as it was done by Reed et al. (2009) - whose work is here adapted. In this table, the strengths and weaknesses of each methodology are highlighted, allowing for a comparison.

Table 1: Methodologies for investigating relationships between stakeholders (adapted from Reed et al., 2009)

Methodology	References	Description	Strengths	Weaknesses
Actor-linkage Matrix	Reed et al. (2009)	Stakeholders' relationships represented in a matrix with keywords.	Ease of use and low cost.	Lack of complexity, so the analysis can be too simple.
Participation Planning Matrix	Bryson (2004); Bryson et al. (2011)	Stakeholders represented in the columns and tasks in the rows of a matrix, specifying the level of participation of each stakeholder in each task.	Visual representation providing an easy understanding of stakeholders' involvement.	Complex relationships can be hard to understand.
Social Network Analysis	Wasserman & Faust (1994); Reed et al. (2009)	Used to identify the network of stakeholders and to measure the relationships between them.	Distinguishes influential from peripheral stakeholders.	Time-consuming; requires the participation of a specialist.
Stakeholder Influence Network	Bryson (2004); Bryson et al. (2011); Ackermann & Eden (2011)	Starts with a power-interest grid, adding information about influence connections between stakeholders.	Supports the strategic management of stakeholders' power and interest.	Time-consuming; the analysis can be influenced by the evaluation group.

Methodology	References	Description	Strengths	Weaknesses
Value Flow Mapping	Cameron et al. (2008)	Defines stakeholders' categories and represents complex relationships between each other, according to their added value to solve the problem.	Describes outputs corresponding to inputs required by each category in order to generate value (to solve a problem).	Can be time-consuming and challenging to complete.

3.2. INTERVIEWING TECHNIQUES

The previously referred methodologies imply somehow contact with stakeholders and their participation, in order to select participants for the analysis or to collect information about the stakeholders, for example. These contacts can happen through different types of interviews. In this section, three of the most popular interviewing techniques used for stakeholders' analysis will be explained.

FOCUS GROUPS

This is a qualitative research technique where five to twelve pre-selected participants (group interview or focus group) are guided by a facilitator in an interview in order to understand the several perspectives they have about the topic under study (Wilson, 2014; Lazar et al., 2017). The participants are selected according to the relevance of the contents they can bring to the discussion (Wilson, 2014). This quick and cost-effective method is especially useful when discussion and brainstorm are needed to gain knowledge to solve the problem (Reed et al., 2009).

SEMI-STRUCTURED INTERVIEWS

A semi-structured interview is a balance between predefined questions with open-ended and unstructured questions, allowing to collect systematic data with some margin for exploration of the topics (Wilson, 2014). The application of this method is based on an interview guide with an introduction, a list of topics to cover and final comments. The order and number of predefined questions can be changed depending on the answers (Wilson, 2014). A semi-structured interview can be used after a Focus Group in order to explore more the information previously collected - if the topic under study is complex or if there is the need to clarify previous interviews, getting deep insights on personal perspectives (Reed et al., 2009; Wilson, 2014).

STRUCTURED INTERVIEWS

A structured interview can be verbal or written, limited to a fixed set of questions. With this technique, the questions are the same for all the respondents, and closed answers can be used to standardize the responses, especially if there are a lot of elements in the sample and if it is needed to compare the answers. The collected data from a structured interview is more uniform than the data from the other interviewing techniques, which provides an easier data analysis (Wilson, 2014).

3.3. SCHOOL AND ITS STAKEHOLDERS

In this section, two examples of stakeholder analysis (or stakeholder management approach) in the educational contexts are presented. This allows finding evidence of the application of the methodologies previously presented in this kind of environment.

3.1.1. OPEN SCHOOLS FOR OPEN SOCIETIES

The project Open Schools for Open Societies has been the pioneer in developing the concept of Open Schooling, investigating this topic and designing an implementation model. Even though that project refers that “the engagement of different actors through inclusive, participatory procedures, becomes essential in the development of an open schooling culture” (Lucas et al., 2018), its assessment tools are focused on the global transformation of schools into Open Schools. Lucas et al. (2018) refer that “it’s vital to a project’s successful completion to accurately identify project stakeholders, set participation expectations and communicate accordingly.”. In the model, OSOS refers that “the introduction of RRI principles in the classroom can also benefit collaborative planning and learning in school activities, especially if it involves the engagement of multiple stakeholders (Sotiriou & Cherouvis, 2017). OSOS’ support mechanism (Lucas et al., 2018) defines a project stakeholder as “an individual, department or organization that may be influenced or benefited by the results of a project or have an effect on how the project is carried out”. Lucas et al. (2018) consider three categories of stakeholders: stakeholders actively involved in the project; individuals or organizations whose interests are influenced or benefited by the finished result; actors that exert a degree of influence over the project or project outputs. Despite the fact that OSOS (Sotiriou & Cherouvis, 2017) emphasizes the need of stakeholders’ engagement continuously, suggesting some techniques for the identification of stakeholders and some suggestions to promote their engagement, they do not provide means for complete stakeholder analysis. As it was explained in this literature review, the identification of stakeholders is only one type of stakeholder analysis.

In what concerns to that identification, Lucas et al. (2018) consider, for a student-centred learning model (part of the Open Schooling concept), the stakeholders presented in Figure 7. Depending on what the particular community needs, stakeholders can work together towards a mutual goal. A stronger connection between students and the community can be improved with the involvement of stakeholders, promoting a mutual learning process.

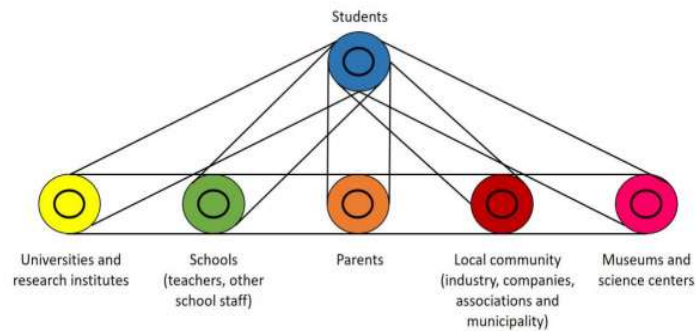


Figure 7: Stakeholders involved in student-centred learning (Lucas et al., 2018)

Lucas et al. (2018) consider that stakeholder identification is essential “not only for determining who makes sense to involve in a given project but also for determining the best way to manage their expectations”.

In what concerns to the Re-Schooling process, that evolves from the organizations towards schools (that become “core social centres” and “focused learning organizations”), Sotiriou & Cherouvis (2017) presented a graphical representation (Figure 8) with different stakeholders and their fundamental relationships. This type of representation is kind of a value flow mapping, a technique that was explored before in this literature review.

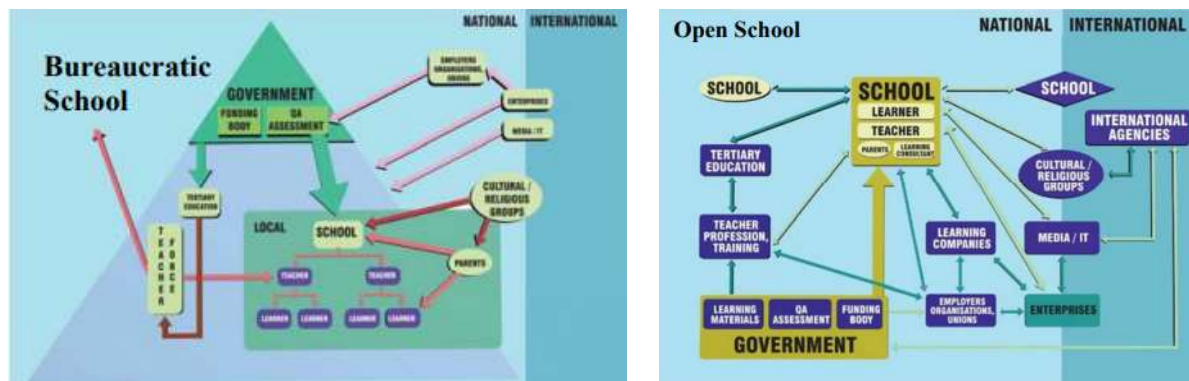


Figure 8: The re-schooling process - from bureaucratic to Open School (edited from Sotiriou & Cherouvis, 2017)

3.1.2. NATIONAL COLLEGE FOR TEACHING & LEADERSHIP

The NCTL - National College for Teaching & Leadership (currently replaced by the Department for Education and the Teaching Regulation Agency) presented some tools to analyse stakeholder engagement, not directly applied to the concept of Open Schooling but for schools generally (<https://www.nationalcollege.org.uk/transfer/open/dsbm-phase-2-module-3-stakeholder-engagement/working-with-stakeholders/dsbm-p2m3-s2-t2.html>). The NCTL referred that “The development of new forms of school organization [...] has added further complexity to the range and type of stakeholders with a direct interest in the strategic direction of schools.”. The NCTL defined stakeholders as “anyone who has a stake in the life and work of the school, whether they are leaders, employees, governors, pupils, community members, and so on” and classified them in different groups:

internal or external; central or peripheral; influential or marginal. According to NCTL, it is essential to have into account the school stakeholders: due to their power and the impact of their decisions, they need to work in partnerships to achieve goals.

The NCTL also developed some worked related to the analysis of stakeholder relationships or interactions, classifying each relation as transactional (related to the daily activities of the school), developmental (related to building partnerships over a sustained period of time) or accountable (ensuring that the school is seen to meet its various responsibilities).

The NCTL provided some simple tools for stakeholder analysis, called stakeholder mapping, divided into three steps. The first step serves to map stakeholder disposition towards the school, as shown in Figure 9. This tool allows characterizing each stakeholder as being “against” or “for” the school, also qualifying the level of “involvement”. The ideal position for a stakeholder would be at the top right-hand corner, actively involved and championing a project.



Figure 9: Stakeholder disposition towards the school (step 1 by the NCTL)

The second step adds information to the previous one and is used to analyse the stakeholder influence. In addition to the disposition of each stakeholder, another dimension is added: the degree to which each stakeholder can influence the change is reflected in the size of its circle, as shown in Figure 10.

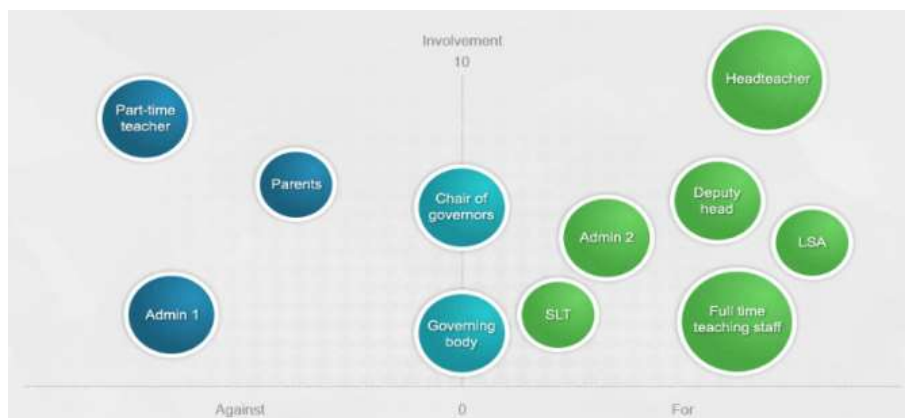


Figure 10: Stakeholder influence analysis (step 2 by the NCTL)

The last step aims to map the relationships between stakeholders, as shown in Figure 11. This is achieved by drawing lines that connect stakeholders in the previously constructed map. The thickness of a line indicates the relative strength of the respective relationship – the closer the relationship, the thicker the line. If it is needed, a negative relationship can be represented with a broken line.

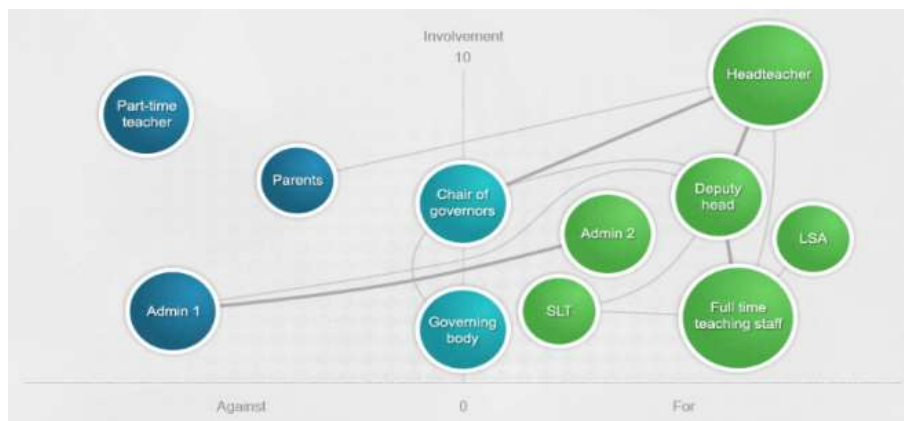


Figure 11: Mapping the relationships between stakeholders (step 3 by the NCTL)

3.4. CHAPTER CONCLUSIONS

In the first and second chapters, a problem was defined, motivating the research to be conducted: a stakeholder analysis.

To perform this analysis (and before developing an adequate methodology), a literature review allowed to find some methodologies and to show two examples of stakeholder management in educational contexts. These examples revealed the application of some methodologies for stakeholder analysis presented in the literature, even though in straightforward ways.

In the following chapter, a methodology is designed in order to achieve the announced objectives of this dissertation.

4. RESEARCH METHODOLOGY

In Chapter 3, a literature review was presented revealing that, on the one hand, some work has been done in what concerns to the study of the involvement of stakeholders in schools and educational contexts; and, on the other hand, this review showed that there are several tools for stakeholder analysis. Taking into account the problem to be solved and the research questions to be answered, a methodology is presented in this chapter in order to bring stakeholder analysis tools from the literature to the schooling context to which this research is dedicated. This methodology is presented in the following sections, explaining which techniques were chosen from the ones found in the literature.

The methodology developed is mainly based on the following:

1. Reed et al. (2009) described a stakeholder analysis in three main phases: defining the issue; identifying stakeholders; prioritizing the stakeholders for involvement in the decision-making process.
2. The different methodologies for stakeholder analysis usually have one of the following purposes: identifying stakeholders; differentiating and categorizing stakeholders; investigating relationships between stakeholders.
3. Mingers & Gill (1997) described the advantages of using more than one methodology in management sciences.
4. Abreu (2017) developed a multi methodology for stakeholder analysis based on what Reed et al. (2009) defined, but through a novel approach that integrated the different methodologies in a systematic way.

Inspired by this and by the techniques presented in the literature review, a specific methodology was developed in order to accomplish the particular goals of this dissertation. As shown in Figure 12, this methodology integrates different tools in order to sequentially identify stakeholders, characterize them and investigate relationships – through seven steps grouped into four phases.

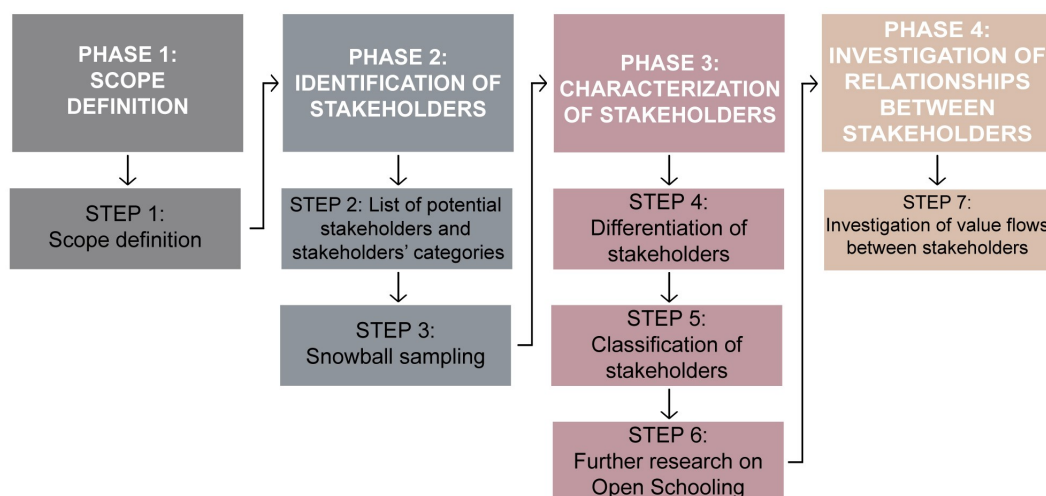


Figure 12: Multimethodology for stakeholder analysis

This research methodology is composed of four phases and seven steps explained in detail in the following sections, as well as the stakeholder analysis techniques (from the literature review) that were selected. Note that this analysis is a sequential process, and so each step is performed depending on the results from the previous ones.

4.1. PHASE 1: SCOPE DEFINITION

In this first phase, the boundaries and all the constraints of the research are clearly defined.

STEP 1: SCOPE DEFINITION

The conceptual space of the research is Education and Open Schooling. The objective, summarizing what has been presented before, is to investigate stakeholders' engagement towards local development and social innovation through Open Schooling, providing new tools and new insights for managers in similar environments (i.e., where an Open Schooling community is being developed or is wanted to be implemented). This implies to identify stakeholders, characterize them and understand the relationships between them.

There were five months available since the development of this methodology until the delivery of this dissertation and all the work had to be done in this period - data collection, data analysis, presentation of results and discussion. There was no budget available, but Instituto Superior Técnico, Leiden Universiteit and *Plataforma de Ciência Aberta* could allocate some resources to this investigation - such as software or working spaces.

Taking into account these goals and restrictions, it was decided to clearly define the boundaries of the system to be studied and perform an Open Schooling stakeholder analysis based on the case study of *Plataforma de Ciência Aberta* - the only OSHub already implemented in the field - restricting the geographical research space to the county of Figueira de Castelo Rodrigo.

ABOUT THE CONCEPTUAL PERSPECTIVE

Stakeholders' engagement towards local development and social innovation is a broad concept, so it is the Open Schooling concept, and many research questions and investigation topics could be derived from this.

In this research, Open Schooling initiatives are considered as the basis of Open Schooling. One of those initiatives happens when the School, in collaboration with other stakeholders, addresses local challenges or opportunities. Therefore, what is researched in this dissertation is the stakeholders' engagement to participate (directly or indirectly) in OS initiatives: it is expected that the results from this can be useful for future research and to build an Open Schooling community - which is much more than sporadic initiatives, activities or projects. An Open Schooling community is a structure that implies an organizational change in order to become part of the local community reality, promoting local development, social innovation and well-being.

Taking this into account, the following working definitions were established:

1. Open Schooling: system in which schools, in cooperation with other stakeholders, become an agent of local development, social innovation and community well-being. Families are encouraged to become real partners in school life. Professionals from enterprises, civil and wider society are actively involved in bringing real-life projects into the classroom, based on local challenges or opportunities.
2. Stakeholder: any intervening entity (person, group or organization) that may affect or be affected (positively or negatively) by Open Schooling initiatives.
3. Local challenges or opportunities: those that concern to the generality of the local community and whose approach benefits that community.
4. Local Development and Social Innovation: the process of identifying local challenges or opportunities, and of seeking and implementing more effective and efficient solutions than the established ones; addressing local challenges or opportunities through Open Schooling initiatives contributes to local development or social innovation.
5. Local: what (or who) lies (or happens) within the geographical border under analysis (County of Figueira de Castelo Rodrigo) - the location in which the school is located; or that lies (or happens) outside this boundary but produces effects within it.

About the given definition for stakeholders, it is important to notice the possibility of being positively or negatively affected, or affect in a positive or negative way. This is included in the research to better understand the possible impacts in OS initiatives and the possible impacts of OS initiatives. Many times “stakeholders” are confused with “partners” or defined as “interested parties” - however, all the partners are stakeholders but not necessarily all the stakeholders are partners; all the interested parties are stakeholders but not necessarily all the stakeholders are interested in the success of a project. In this research a broader definition is used, also to ensure that the analysis is not restricted to the relationships between the school and the “entities that bring real-life projects into the classroom” - there may be other agents to affect or be affected by Open Schooling initiatives. The third step of this methodology will also prevent this to happen.

4.2. PHASE 2: IDENTIFICATION OF STAKEHOLDERS

The second phase provides means to identify stakeholders, taking into account the previously defined scope, finding an answer to the first research question: *Who are the relevant stakeholders to implement Open Schooling?*. A database will be created based on the results from this phase, and it will be used as a sample for data collection (PHASE 3). As it will be demonstrated, the two methodologies previously mentioned in the literature review for identification of stakeholders will be sequentially used in this phase, since one is a good starting point and the other a good way to improve.

STEP 2: LIST OF POTENTIAL STAKEHOLDERS AND STAKEHOLDERS CATEGORIES

It is important to note that not all the stakeholders related to OSHub.Net will be considered in this research, due to the defined scope, focused on Open Schooling (only one of the intervention areas of the project). On the other hand, since Open Schooling aims to connect schools with the external society agents, it is important to distinguish the stakeholders that belong to the school from those who do not belong - the first group is called “inside school stakeholders” (ISH); the second group is the “outside school stakeholders” (OSH). This separated analysis will allow understanding if (and how) these two “systems” can be connected. Therefore, the research can be considered as being composed of two systems to study.

The potential stakeholders and categories of stakeholders will be identified in this step in three different ways:

1. Starting by the existing list of stakeholders already working (and engaged) in Open Schooling initiatives.
2. The PCA team will brainstorm on potential stakeholders that could be engaged in Open Schooling initiatives, improving that list.
3. Based on a literature review, the traditional categories of stakeholders will be identified and then, through online searching or asking the local community, specific stakeholders (individuals, groups or organizations) will be identified. This will allow improving the diversity of categories in the sample. Note that not necessarily all the categories will be found in the geographical borders of the system to be studied.

This step will end with a list of stakeholders that will integrate the sample. However, this list will dynamically improve with the application of the following step.

References for the design of this step: list of potential stakeholders, section 3.1.1. - Bryson et al. (2011).

STEP 3: SNOWBALL SAMPLING

In order to try to identify in an exhaustive way all the stakeholders that could affect or be affected by Open Schooling activities, a snowball sampling method will be applied. Each stakeholder identified in STEP 2 will be invited to participate in this research, answering a survey (presented in Appendix 1 and explained in detail in PHASE 3). In one of the questions of this survey, the respondents will be asked to identify other stakeholders they consider that could affect or be affected by Open Schooling initiatives. All the new stakeholders identified will become part of the list from STEP 2, and they will be invited to participate in the research as well, and so on.

References for the design of this step: network or snowball sampling, section 3.1.1. - Thompson (2012); Kalton & Anderson (1986); Goodman (1961); Reed et al. (2009).

4.3. PHASE 3: CHARACTERIZATION OF STAKEHOLDERS

The objective to conduct this phase is to characterize the stakeholders (grouped into categories of stakeholders), the way they are engaged in Open Schooling initiatives and to understand their motivations, perceptions and attitudes in what concerns to this subject. More than measuring the level of engagement, it is essential to understand how that engagement could be improved.

This phase will allow to classify each category of stakeholders according to the recommendations from the literature and to assess the main barriers for the engagement of stakeholders in Open Schooling activities. This phase will lead to answering the second research question: *How can local stakeholders contribute to the implementation of Open Schooling?*.

In order to conduct this phase, all the stakeholders identified in PHASE 2 will be invited to participate in the previously mentioned survey, providing data for the analysis - i.e. data for differentiation and classification of stakeholders (this is a stakeholder-led evaluation). Since the survey is one of the most important tools used in this dissertation, allowing collecting data needed for many steps of the methodology, the following section is dedicated to present the survey in detail - before explaining the three steps of this third phase.

SURVEY

The application of a survey allows collecting data from a large sample in a standardized and cost-effective way. Wilson (2014) referred that surveys are an excellent tool especially when it is needed to collect information and compare results from different respondents or groups of respondents. The application of a survey was chosen because it could allow anonymous responses and increase the number of participants – which could not be reached through in-person interviews.

The implementation of a survey must always be preceded by a theoretical basis, proper design and testing. Only after this, the data collection (survey distribution) can start leading to end with the data analysis (Cardoso, 2012).

The theoretical basis was done after concluding that five attributes are particularly relevant to characterize stakeholders: interest, power, urgency, legitimacy, support. These attributes can be found in the literature in the following techniques for stakeholder analysis: power-interest matrix (Bryson, 2004; Ackermann & Eden, 2011; Bryson et al., 2011); power, urgency and legitimacy diagram (Mitchell et al., 1997; Magness, 2008); support vs opposition grid (Nutt & Backoff, 1987; Bryson, 2004).

Characterizing the stakeholders (and the categories of stakeholders) according to these attributes was the main goal of the survey, despite the fact that it included questions to accomplish other steps' goals.

The survey was designed once the information to be researched was defined, taking into account that it would have to be valid for both ISH and OSH respondents. The design process aimed to develop a survey with a flow from the general to the specific topics and from the easy to the difficult questions. The complete survey is provided in Appendix 1 - note that the original survey was distributed in Portuguese. The questions of the survey composed a structured interview (section 3.2.), meeting the requirement of collecting uniform data from a large sample. All the questions were mandatory.

The survey, composed of five sections, was implemented electronically in the Qualtrics software, with a license provided by Leiden Universiteit. The references or justifications that support the content of the survey's questions and the way it was formulated are summarized in Table 2. This table also shows the correspondence between the questions and the steps of the methodology. Note that the questions' numbers (first column) were not shown to the respondents - but here each question is numbered, so it is possible to refer unambiguously to each one of them. Also, note that there are many conditional display questions - as it is possible to see in Appendix 1.

Table 2: Survey: types of questions, objectives and references

Question	Type of question	Objectives	References	Step
PART 1: STAKEHOLDER IDENTIFICATION				
This part is mainly dedicated to characterize the sample and keep tracking the submitted responses, checking the list of the groups or organizations invited to participate.				
1	Yes/No	Distinguish ISH from OSH	Wilson (2014)	4
2	Multiple-choice	Distinguish the different ISH categories	Wilson (2014)	4
{3; 4}	Short open answer	Identify specific groups among particular ISH categories	Wilson (2014)	4
5	Short open answer	Identify the respondent's group or organization	Wilson (2014)	4
6	Open answer	Identify the mission/objective of the respondent's group or organization	Russo et al. (2018); Wilson (2014)	4
7	Multiple-choice	Characterize the group or organization in terms of number of members	Wilson (2014)	4
8	Multiple-choice	Respondent's role within the group or organization	Wilson (2014)	4
PART 2: STAKEHOLDER EXPERIENCE IN OPEN SCHOOLING INITIATIVES				
This part aims to understand the "historical data", what happened in the past.				
9	Yes/No	Identify groups or organizations with experience in Open Schooling initiatives	Russo et al. (2018); Wilson (2014)	4
10	Multiple-choice, short open answer	Evaluate previous experience in Open Schooling initiatives	Wilson (2014)	4

Question	Type of question	Objectives	References	Step
11	Multiple-choice, short open answer	Evaluate the likelihood to participate in Open Schooling initiatives	Wilson (2014)	4
PART 3: STAKEHOLDER CHARACTERIZATION IN OPEN SCHOOLING INITIATIVES				
This third section was designed to characterize the groups or organizations in the present.				
[12; 17]	Likert scale; open answer	Evaluate and justify the group or organization's interest	Ackermann & Eden (2011); Bryson (2004); Bryson et al. (2011)	{4;5}
[18; 23]	Likert scale; open answer	Evaluate and justify the group or organization's power	Ackermann & Eden (2011); Bryson (2004); Bryson et al. (2011); Mitchell et al. (1997); Magness (2008)	{4;5}
[24; 29]	Likert scale; open answer	Evaluate and justify the group or organization's urgency	Magness (2008); Mitchell et al. (1997)	{4;5}
[30; 35]	Likert scale; open answer	Evaluate and justify the group or organization's legitimacy	Magness (2008); Mitchell et al. (1997)	{4;5}
[36; 41]	Likert scale; open answer	Evaluate and justify the group or organization's support	Bryson (2004); Bryson et al. (2011); Nutt & Backoff (1987)	{4;5}
PART 4: STAKEHOLDER PARTICIPATION IN OPEN SCHOOLING INITIATIVES				
In this part, it was supposed to gather information about how OS initiatives could happen in the future.				
42	Multiple-choice	Understand how stakeholders can affect or be affected by OS initiatives	Freeman (1984)	6
43	Short open answer matrix	Identify local challenges or opportunities that can be addressed in OS initiatives	Russo et al. (2018)	6
44	Open answer	Identify solutions to address the previous local challenges or opportunities through OS	Russo et al. (2018); Sotiriou et al. (2017)	6
45	Multiple-choice	Evaluate the stakeholders' level of engagement	Sotiriou et al. (2017)	6
46	Open answer	Identify alternative ways to participate actively in OS activities	Sotiriou et al. (2017)	6

Question	Type of question	Objectives	References	Step
47	Open answer	Identify ways to affect OS initiatives	Freeman (1984)	6
{48; 49}	Open answer	Identify ways to be affected by OS initiatives	Freeman (1984)	6
PART 5: IDENTIFICATION OF OTHER STAKEHOLDERS (SNOWBALL SAMPLING)				
This part is especially dedicated to STEP 3.				
50	Yes/No	(intermediate question for optional question)		3
51	Short open answer matrix	Identify other potential stakeholders by the application of the snowball sampling method	Kalton & Anderson (1986); Reed et al. (2009); Thompson (2012)	3

Note that STEP 1 and STEP 2 are not supported by the survey since they are concluded before the survey distribution; STEP 7 does not depend directly on the survey.

The survey was tested by three respondents from different categories and by the *Plataforma de Ciência Aberta*'s team, through in-person interviews, and then validated by Dr Maria Vicente (*Plataforma de Ciência Aberta*). After this validation, the data collection started. Most of the respondents were invited by call and e-mail to submit the survey online; others, without internet access, responded in a paper form that was then transcribed into the electronic format. All the qualitative data will be organized and analysed with the software MAXQDA.

STEP 4: DIFFERENTIATION OF STAKEHOLDERS

This step will be conducted with the third part of the survey, where each respondent will be asked to evaluate their group or organization regarding the five mentioned attributes: interest, power, urgency, legitimacy and support.

Since different definitions and perceptions can be found for these attributes, the following working definitions, summarized by Abreu (2017) were taken into account to compose the sentences in the survey:

- Interest: the feeling that a subject concerns, draws the attention, the responsibility, the involvement or the curiosity of a person, group or organization (Bryson, 2004; Ackermann & Eden, 2011);
- Power: the probability that an actor within a social relationship would be in a position to carry out his own will despite resistance. It is the ability of those who possess power to bring about the outcomes they desire (Mitchell et al., 1997; Bryson, 2004; Ackermann & Eden, 2011);
- Urgency: the degree to which a stakeholder claims for immediate attention to a given problem and is time-sensitive to the actions he classifies as critical or highly important (Mitchell et al., 1997; Magness, 2008);

- Legitimacy: a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Mitchell et al., 1997);
- Support: to be actively interested in and concerned for the success of the project, as opposed to providing resistance or dissent, expressed in action or argument (Nutt & Backoff, 1987).

In order to characterize each group or organization in each one of these attributes, a Likert scale was used in the survey. According to Laurie & Jensen (2016), this kind of scale is particularly useful when the variables have multiple levels and when it is supposed to capture attitudes, beliefs or perceptions. These authors also added that it is impossible to know why a respondent selects a certain level of agreement without follow-up questions - another motivation to ask for justifications in the survey.

For each attribute, the respondents will have to express their level of agreement with a quote, which will be later converted into a numerical scale (from 1 to 5 points), in order to rate the level of interest, power, urgency, legitimacy and support of each respondent. This conversion is shown in Table 3.

Table 3: Likert scale conversion

Level of agreement	Score
Strongly agree	5
Agree	4
Neither agree nor disagree	3
Disagree	2
Strongly disagree	1
I don't know (I have no opinion about that)	
I don't respond	

For example, if a respondent selects “Agree” with “My group or organization would be very interested in participating in Open Schooling initiatives.” this will correspond to a 4-score in the attribute “interest”. The responses “I don’t know (I have no opinion about that)” and “I don’t respond” will not be converted into a numerical scale and will not account for statistics. The option “I don’t know (I have no opinion about that)” was included by recommendation of Laurie & Jensen (2016), in order to distinguish the respondents who did not have an opinion from those who had an opinion that was in the middle of agreeing and disagreeing.

The individual characterization of each stakeholder/respondent will allow for a characterization of the respective category in each attribute, getting a score for each pair category-attribute - leading to five pairs for each category. Once all the qualitative data is converted into this scoring system, three statistics values will be measured:

1. Mean value, μ : the mean value of each category, in each attribute, leading to five scores to characterize each category.
2. Standard deviation, σ : to measure the level of dispersion around the mean value of the values used to calculate the respective mean value.

3. Coefficient of variation, c_v : to measure the extent of the variation between the data and the mean value, calculated as the ratio between the standard deviation and the mean value.

Note that this step is based on characterizing stakeholders regarding the five most popular attributes, usually found together in the literature. In this step, these attributes are addressed individually, so that different categories can be compared concerning the same attribute. Next step will combine attributes.

STEP 5: CLASSIFICATION OF STAKEHOLDERS

Once STEP 4 is concluded and each category of stakeholders is characterized in each of the five attributes, the scores will be normalized with a linear expansion of those values on the full scale, allowing for greater dispersion and to analyse those scores and the relative differences between them easily (for comparison). Through this application, for which Equation 1 will be used, the highest score in each attribute will be converted to 5 (the highest value in the scale), and the lowest score in each attribute will be converted to 1 (the lowest value in the scale). In the subsequent analysis, only these normalised values will be used.

$$x_f = 4 \frac{(x_i - \min_i)}{(\max_i - \min_i)} + 1 \quad (1)$$

Where x_f is the normalised value, x_i is the original value, $\min_i$ is the original minimum value (from the interval where x_i is placed), and $\max_i$ is the original maximum value (from the interval where x_i is placed).

In order to provide a visual representation of all the categories and all the scores in each attribute, a radar chart will be designed.

In order to conduct this step and to classify each category, these normalised values will be used to place the categories in a power-interest matrix - section 3.1.2. - Freeman (1984), Ackermann & Eden (2011), Bryson et al. (2011). This technique was chosen since “power” and “interest” are widely mentioned as the most important attributes to describe (and so to classify) stakeholders. In other words, “interest” is about “stakeholder wants” and power is about “stakeholder can”.

The rainbow diagram (section 3.1.2) was not used since the goals of this technique (distinguishing stakeholders that affect and/or are affected) are achieved in a similar way in STEP 6. The power, urgency and legitimacy diagram (section 3.1.2) was not selected because STEP 4 will allow going further and this technique would not add value for the analysis, which is more concerned with understanding the reasons that account for stakeholders’ legitimacy, urgency and power than merely categorizing them in a diagram. The support vs opposition grid (section 3.1.2) was not used for being out of the scope, not being compatible with STEP 4: where what is evaluated is the way each stakeholder supports Open Schooling initiatives and a “low level” of support would not necessarily mean opposition.

STEP 6: FURTHER RESEARCH ON OPEN SCHOOLING

The conduction of the previous five steps will allow understanding the stakeholders' perceptions, motivations and attitudes in what concerns to their engagement to participate in Open Schooling initiatives. However, this characterization alone would not be enough to understand how their interest, power, urgency, legitimacy or support could effectively correspond to an "in-field engagement" or role in Open Schooling initiatives. Therefore, STEP 6 aims to go further, analysing how the stakeholders' engagement can be converted into practice.

This way, the survey was designed to collect more information than needed for stakeholder analysis. The characterization of stakeholders will also be supported by the fourth part of the survey, providing information to investigate topics such as:

- What are the possible roles for a stakeholder in an Open School initiative?
- What kind of local challenges or opportunities can be addressed by Open Schooling?
- What are the possible solutions to bring life to Open Schooling initiatives?
- How can a stakeholder affect, influence or support an Open Schooling initiative?
- How can a stakeholder be positively or negatively affected by Open School initiatives?

It is important to highlight the design of question 42, which is based on the working definition for stakeholders and in the combination of different possibilities for a stakeholder to be engaged in OS initiatives: to deal or not with local challenges and opportunities; to want or not participate; to participate actively or indirectly. The question was "How would you place your group or organization in Open School initiatives?". The respondents could tick all the valid sentences from the following ones:

- My group or organization DEALS with local challenges or opportunities and WANTS to participate ACTIVELY in Open Schooling initiatives, addressing those challenges or opportunities.
- My group or organization DOES NOT DEAL with local challenges or opportunities but WANTS to participate ACTIVELY in Open Schooling initiatives, addressing challenges or opportunities from other stakeholders.
- My group or organization WANTS to participate INDIRECTLY in Open Schooling initiatives, affecting, influencing or supporting those initiatives that address local challenges or opportunities.
- My group or organization DEALS with local challenges or opportunities but DOES NOT WANT to participate in any way in Open Schooling initiatives.
- My group or organization DOES NOT DEAL with local challenges or opportunities and DOES NOT WANT to participate in any way in Open Schooling initiatives.
- My group or organization can be positively affected by Open Schooling initiatives.
- My group or organization can be negatively affected by Open Schooling initiatives.

4.4. PHASE 4: INVESTIGATION OF RELATIONSHIPS BETWEEN STAKEHOLDERS

STEP 7: INVESTIGATION OF VALUE FLOWS BETWEEN STAKEHOLDERS

This last step of the methodology will allow understanding how the categories of stakeholders interact with each other to make an Open Schooling initiative happen and furthermore to create an Open Schooling community.

To give an answer to the research question “How can local stakeholders contribute to the implementation of Open Schooling?”, a Value Flow Mapping will be designed, according to the methodology presented by Cameron et al. (2008) - section 3.1.3. The application of this technique will be proceeded by the design of a matrix inspired by the actor-linkage (Reed et al. (2009) - section 3.1.3.). This way, this step is a mixed method of two techniques found in the literature: the actor-linkage matrix will be used to organize the information and look for all the possible combinations; the value flow mapping will illustrate the flows. The inputs required by each category to contribute to building an Open Schooling community (i.e. the inputs required to “solve the problem”), as well as the outputs that each category can provide, are found in the Open Schooling literature and, in a more realistic perspective, in all the information gathered in the previous steps - especially what concerns to barriers and facilitators. Designing a Value Flow Map implies that each input for a category of stakeholders is output from another category - so that all the categories can be connected in the chart. This will provide a visual conceptualization of the stakeholders’ engagement towards local development and social innovation through Open Schooling.

The participation planning matrix (section 3.1.3.) was not selected, due to the fact that it is more dedicated to advanced phases of project management (would be useful, for example, to plan a specific OS initiative). The social network analysis and the stakeholder influence network techniques were not chosen because it would imply the participation of specialists in the analysis or a group discussion - which would be interesting but out of the limited scope of this research.

4.5. CHAPTER CONCLUSIONS

Based on the literature review presented in Chapter 3, the methodology to be followed in this dissertation was described entirely in this one.

It is important to note that the development of this methodology, inspired by previous work from different authors, is *per se* the achievement of one of this dissertation objectives: to be a scientific contribution for stakeholder management in environments similar to Open Schooling. This contribution is particularly provided by the designed survey.

The results and discussion are presented in the following chapter.

5. RESULTS AND DISCUSSION

The results obtained through the application of the methodology presented in Chapter 4, including the analysis of the data collected with the survey, are presented in this chapter, as well as the discussion.

The data collected is clearly separated into two main groups, so will be the results and discussion until STEP 6: one is the school and its internal stakeholders - inside school stakeholders, ISH (section 5.1.); the other is the outside school stakeholders, OSH (section 5.2.). Note that “STEP 1: scope definition” was completed in Chapter 4.

Taking into account that the numeric results are site-specific, a spotlight will be put into the qualitative data analysis instead. The numeric results are useful to understand the application of the methodology that can be applied in different contexts; the qualitative data analysis provide some findings that can be useful for Open Schooling project managers, which are left as recommendations.

5.1 STAKEHOLDER ANALYSIS: INSIDE SCHOOL

5.1.1. PHASE 2: IDENTIFICATION OF STAKEHOLDERS

STEP 2: LIST OF POTENTIAL STAKEHOLDERS AND STAKEHOLDERS' CATEGORIES

Even though the Open Schooling concept presents students and teachers as the core groups, this investigation went further, analysing all the school's groups. A member of the school board was interviewed in order to ensure that all those groups (or categories) were clearly identified. Twelve groups were identified and then merged into seven categories, according to their roles, as follows (in no particular order):

1. Operational Assistants (OA);
2. Clubs, Initiatives or Projects - e.g. Sports, Music, Science, Theater, Dance, School Library (CIP);
3. School Management - Administrative Council, Direction, General Council², Pedagogical Council (SM);
4. Students (S);
5. Teachers - curricular and extracurricular activities (T);
6. Administrative Technicians (AT);
7. Specialized Technicians - e.g. Psychology, Formation, Special Education (ST).

The definition of these categories was an important step to answer the research question *Who are the relevant stakeholders to implement Open Schooling?*. The identification of these categories supported defining the sample to characterize each category in PHASE 3.

² According to the Portuguese law, the General Council (*Conselho Geral*) have to be composed of representatives from the Teachers group and school staff, parents, students, municipality and the local community.

STEP 3: SNOWBALL SAMPLING

Since the categories of stakeholders (school groups) were identified in an exhaustive way in STEP 2, the application of the snowball sampling did not lead to identifying new ISH.

SURVEY: SAMPLE CHARACTERIZATION

Members from each one of the referred categories were invited to participate in this research, according to what is explained in this section. From inside school, 65 answers were received, but only 60 were considered for data analysis: one Teacher and four Operational Assistants did not complete the survey (printed version) and so those responses could not be considered. Anyway, all the gathered information in those surveys was analyzed, but no relevant contributions were found. Figure 13 reveals the composition of the ISH sample in terms of the number of respondents.

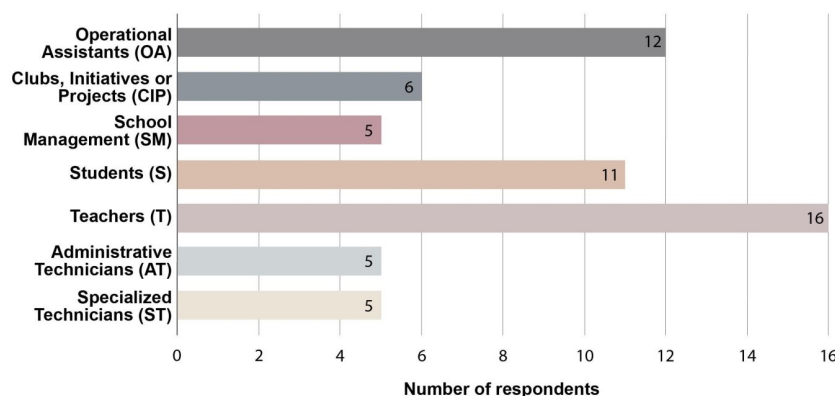


Figure 13: Sample characterization (ISH)

It is not possible to refer to a general response rate due to the fact that different strategies were applied to collect data from each group. Concerning the composition of the ISH sample, it's important to take into account some information about the participation of each ISH category in this research:

1. Operational Assistants (OA): all the members of this group (38 employees) were invited to participate, which corresponds to a 32% of effective response rate (not considering the four excluded surveys).
2. Clubs, Initiatives or Projects (CIP): this category includes activities such as Sports, Music, Science, Theater, Dance or School Library; one coordinator from each of the nine identified CIP was invited to participate. Six responses from different CIP were received, accounting for a 67% response rate.
3. School Management (SM): this category includes all the school entities with responsibilities in school management and decision-making (Administrative Council, Direction, General Council, Pedagogical Council). At least one member from each entity was invited to participate (the president or the coordinator of each one). No response was collected from the Administrative Council. From all the other entities, at least one response was received.
4. Students (S): to characterize this group, composed of almost 500 students, the representatives from each of the 11 classes (from the 7th to 12th grade) were invited to participate. 11 responses were collected, which corresponds to a 100% response rate. The students from the other grades were not invited to participate due to the maturity level and cognitive skills to participate in the survey – following the advice from the Psychology department.

5. Teachers (T): this group includes teachers from both the curricular and extracurricular activities. All the members (at least 70) were invited to participate, and 16 responses were collected, accounting for a maximum response rate of 23% (not considering one excluded survey).
6. Administrative Technicians (AT): all the members (6 people) were invited to participate. Five responses were collected, accounting for a response rate of 83%. However, this group was excluded from the quantitative analysis since no representative data was collected: one respondent “strongly agreed” with all the questions regarding the attributes, without providing coherent justifications; four respondents selected options like “I don’t know” or “I don’t respond” in all the questions; three of them (60% of this group sample) did not show their group could be affected by Open Schooling initiatives and selected the option “My group or organization does not deal with local challenges or opportunities and does not want to participate in any way in Open Schooling initiatives.”. This induces that this group cannot be considered as a stakeholder.
7. Specialized Technicians (ST): this group includes professionals who work in Psychology, Special Education or Formation. Each department coordinator was contacted in order to send at least one response. Five responses were collected, and all the three departments were represented.

Considering the composition of the ISH sample, the data collected through the application of the survey are analysed in the following section.

5.1.2 PHASE 3: CHARACTERIZATION OF STAKEHOLDERS

Regarding the previous experience in Open Schooling initiatives, 40 ISH respondents evaluated the respective group participation in those activities. In the scale from 1 to 5, 1 means very negative, and 5 means very positive. As shown in Figure 14, more than three-quarters of the respondents (31 respondents, accounting for 77,5%) considered the experience as positive or very positive. Regarding the evaluations lower than 3, only 2 respondents (5%) considered the experience was negative.

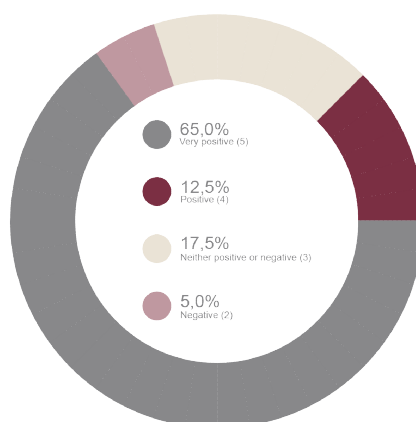


Figure 14: Participation in Open Schooling activities: evaluation (ISH)

Only 10 out of 40 respondents justified their evaluation. Curiously, all these justifications came from respondents who rated their participation as 5. The reasons for this rating are related with participating in innovative initiatives (2 evidences found, EF), being part of the school community and its activities (2 EF), providing good initiatives for the local community (3 EF), providing the students with new activities and opportunities for personal development (3 EF), sharing of experiences between students from different schools (1 EF), engagement of different OSH (1 EF), more efficient achievement of similar objectives - between the group's objective and the initiative's objective (1 EF).

STEP 4: DIFFERENTIATION OF STAKEHOLDERS

The characterization (and differentiation) of the ISH groups was performed through the evaluation from the third part of the survey, which was based on the five attributes: interest, power, urgency, legitimacy and support.

The following five parts, one for each attribute, show the characterization of the ISH categories, including the results and the discussion. Each part includes the evaluation of each category in the respective attribute and also a table, based on the qualitative data analysis, where the reasons for those evaluations are revealed. Note that when it is mentioned that, for example, a “stakeholder rated their interest as 4” this means that “the stakeholder strongly agreed”.

INTEREST

An overview of the ISH characterization concerning the attribute interest is shown in Figure 15.

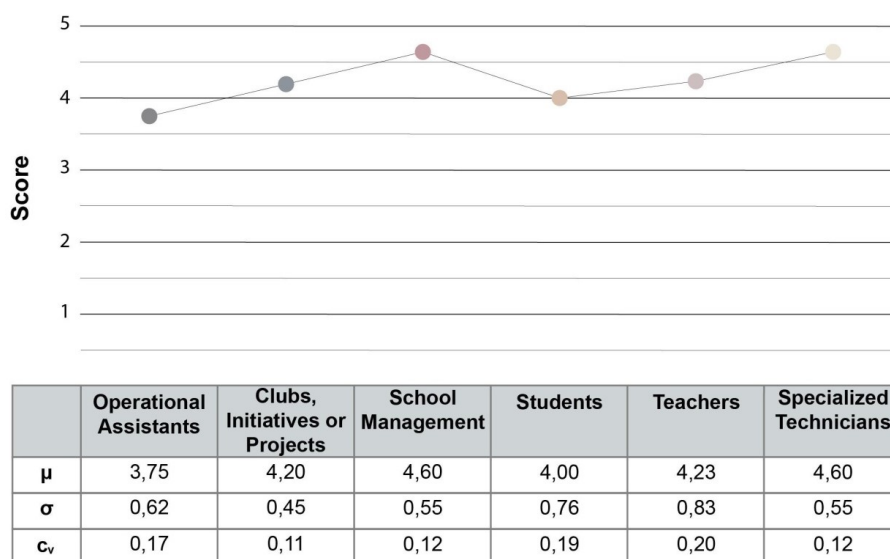


Figure 15: Interest characterization (ISH)

Taking into account this ISH's interest characterization, it is curious to observe that all the categories have scores higher than 3, which means that, generally, all of them have interest in participating in Open Schooling activities. The highest coefficient of variation is 20%, which represents that, among each category, the respondents agree in the same respective level of interest. On the other hand, it is essential to note that this level of interest does not vary much, only between 3,75 and 4,60, in a range

of only 0,85. The factors that most affect ISH's interest are described in Table 4. This table structure will be used for all the attributes, both for the ISH and the OSH analysis. The first column shows the qualitative data found, grouped into categories; the last column shows the total number of evidences found for each respective topic in the first column; the columns in the middle allow understanding the distribution of evidences found through the categories.

Table 4: Factors that most affect interest (ISH)

	OA	CIP	SM	S	T	AT	ST	Total EF
INTEREST RELATED TO THE INITIATIVES THEMSELVES								
Contribute to the success	1	0	0	1	0	0	2	4
INTEREST RELATED TO THE STUDENTS								
Foster curiosity and improve skills	0	0	0	2	3	0	1	6
Added value for the students	0	0	1	1	2	0	1	5
INTEREST RELATED TO RESPONDENT'S SCHOOL GROUP								
Alignment of objectives (OS and group)	1	0	1	0	1	0	0	3
INTEREST RELATED TO THE SCHOOL								
Feeling of personal commitment to school life	0	0	2	0	1	0	0	3
Added value for the school community	0	0	1	1	0	0	2	4
Innovation	0	1	1	1	4	0	1	8
INTEREST RELATED TO THE LOCAL COMMUNITY								
Collaborate and learn with OSH or other ISH	0	3	0	1	1	0	1	6
Added value for the local community	0	0	2	0	2	1	1	6
Getting a broader perspective of reality, people and places	0	1	0	1	4	0	1	7
Feeling of personal commitment to the local community	3	0	0	0	0	0	0	3

Notice that not only all the ISH represented in the sample have interest, but also some reasons for that are shared across different categories: for instance, the need for innovation was referred by almost all the categories, and it's the most mentioned justification for interest.

It is also important to highlight the justification "Getting a broader perspective of reality, people and places", for which seven evidences were found. This interest is clearly related to the Open Schooling concept, that aims to bring real-life projects from the local community into the school.

From the qualitative data analysis performed, it was not possible to find reasons for lack of interest. Anyway, only seven respondents rated interest as equal to or lower than three: six respondents rated interest with level three, referring that opinions diverge inside the respective group, not providing more insights. However, the qualitative data analysis allowed to find that interest can be negatively affected by the feeling of being forced to participate (1 EF, student respondent) and by the person who accompanies the students in an activity or the activity coordinator (1 EF, student respondent).

One respondent (a teacher) rated as two, justifying that “there are strict rules issued by the government referring that participation is exclusive for teachers and students”. This topic was investigated. Those strict rules were not found. Contrarily to this, the Portuguese law does not mention the Open Schooling concept directly but in *Decreto-Lei n.º 75/2008* it is mentioned the following objective, (concerning the need to integrate schools in the respective communities, linking education and economic, social, cultural and scientific activities): to ensure the participation of all actors in the educational process, namely teachers, students, families, municipalities and entities representing economic, social, cultural and scientific activities. This leads to conclude that maybe the respondent did not understand the question and could be referring to something else. Since it was impossible to identify this stakeholder, a follow up could not be done.

All the previously mentioned factors are left as recommendations to foster stakeholder’s interest and should be taken into account for stakeholder engagement in Open Schooling initiatives.

POWER

An overview of the ISH characterization concerning the attribute power is shown in Figure 16.

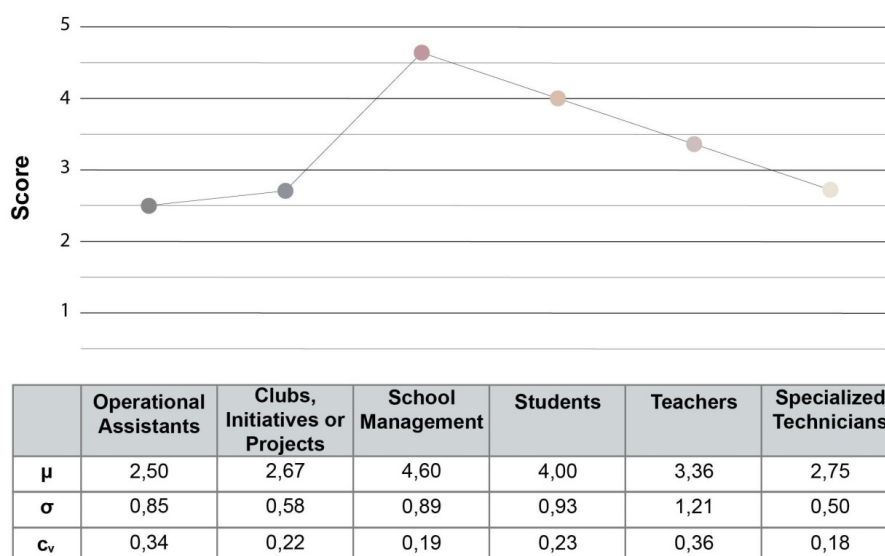


Figure 16: Power characterization (ISH)

In opposite to the distribution regarding the attribute interest, a higher dispersion can be found in what concerns to the power each ISH category has to participate in Open Schooling activities.

As it could be *a priori* expected, the School Management group holds the higher power, with a coefficient of variation of only 19%, since they have the decision-making power not only for Open Schooling strategies but for almost all the school's activities. Recall that this ISH group also holds a significant interest; this, combined with its high power, makes School Management a key player - this will be furthermore analyzed in the power-interest matrix.

Also in the top three are the Students and the Teachers, which foresees the opportunity to build an Open Schooling community: according to OS principles, students are the main focus and teachers are the ones who spend more time with and have a closer relationship with students. Making a “reduction to absurdity”, if students and teachers could not (did not have power to) participate in Open Schooling activities (i.e. if they faced many external difficulties or resistances) Open Schooling would never take place. Anyway, it is important to observe the high coefficient of variation for Teachers, which shows more disagreement within this group of respondents concerning the power they have to participate in Open Schooling activities.

Below, in Table 5, the factors on which the ISH's power depends are presented. The “facilitator” section includes reasons for holding a high power or means to increase power. The “barriers” section shows factors that limitate power.

Table 5: Factors that most affect power (ISH)

	OA	CIP	SM	S	T	AT	ST	Total EF
FACILITATORS								
Engaging all the ISH and OSH	0	0	1	2	1	0	0	4
Engaging ISH with internal power	0	0	0	2	0	0	0	2
Having hierarchical decision power	0	0	3	0	0	0	0	3
BARRIERS								
Curricular schedule, goals and evaluation	0	0	0	2	1	0	0	3
Lack of decision power	5	0	0	0	0	0	1	6
Feeling of devaluation for their participation	0	0	0	0	0	0	2	2
Parents' pressure and dependency	0	1	0	0	0	0	0	1

Notice that “Engaging all de ISH and OSH” is not only a means for getting power (according to four respondents) but also the way Open Schooling should happen, engaging different school groups and broader society agents.

It is also important to highlight the importance of the “Curricular schedule, goals and evaluation”, which is a significant barrier identified in the analysis of different attributes. Actually, the way Open Schooling activities should be connected (or not) to the curricular activities is a topic still under discussion, left for future research.

Despite the fact that only one evidence was found concerning “Parents' pressure and dependency”, this needs to be underlined, since - according to the Open Schooling principles - families should be engaged in school activities.

URGENCY

An overview of the ISH characterization concerning the attribute urgency is shown in Figure 17.

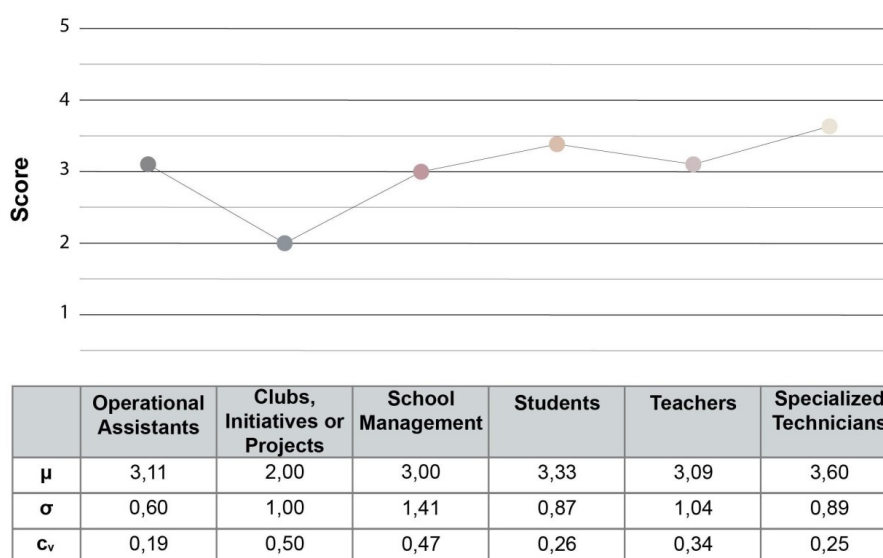


Figure 17: Urgency characterization (ISH)

With the exception of the category CIP, all the ISH categories hold similar levels of urgency. However, those five scores range between 3,00 and 3,60, which is not a high level when compared to the scores from the attribute interest. This might mean that those categories want to participate in Open Schooling initiatives (they have interest) but they do not have time for that (it's not urgent, it's not a priority).

Curiously, the lowest urgency level is held by the CIP. Actually, the groups that compose this category are already dedicated to specific projects and initiatives, having specific scopes that might not be compatible with Open Schooling. However, the coefficient of variation for this ISH category is the highest, which means a high level of disagreement among these respondents.

The reasons that accounted for the ISH's level of urgency are presented below in Table 6. Note that, once more, the barrier concerning the curricular activities is mentioned. The “alternative solutions” concern the possibility of having other alternatives that lead to satisfying the interests of the respective ISH.

Table 6: Factors that most affect urgency (ISH)

	OA	CIP	SM	S	T	AT	ST	Total EF
LOW URGENCY								
Existing alternative solutions	0	1	0	1	0	0	1	3
Priority for curricular activities	0	0	0	0	4	0	0	4
Too late planning	0	0	2	1	0	0	0	3
HIGH URGENCY								
Positive impact on local community	0	0	1	0	0	1	0	2
Contribute for the success of school's activities	1	0	1	0	0	0	0	2
Generate added value for students	0	0	1	0	1	0	0	2
Generate added value for other ISH	0	0	0	0	0	0	2	2
Alignment of objectives (OS and group)	0	0	1	0	0	0	2	3

LEGITIMACY

An overview of the ISH characterization concerning the attribute legitimacy is shown in Figure 18.

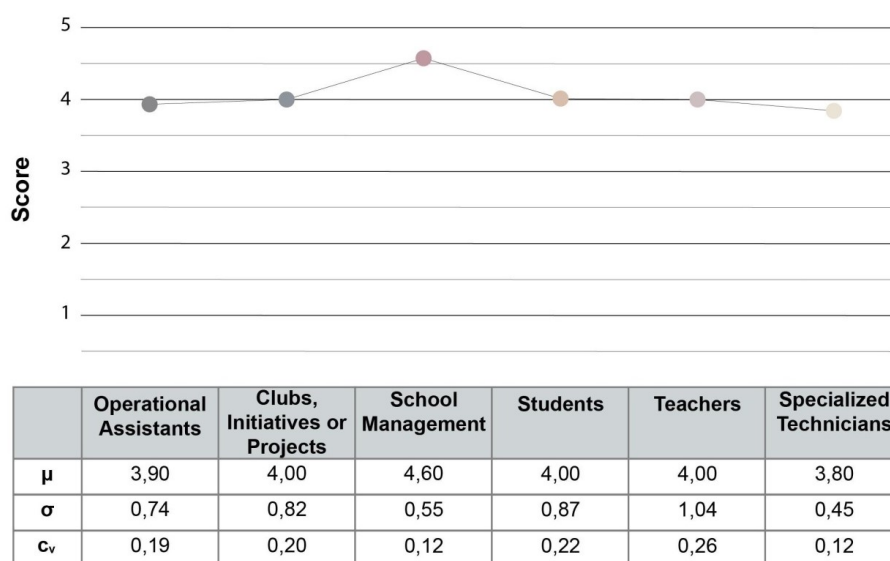


Figure 18: Legitimacy characterization (ISH)

In general, all the ISH categories feel that they have the legitimacy to participate in Open Schooling activities, with moderately high levels of agreement assessed by the coefficient of variation. This result could be expected from the beginning: since they belong to the school, they should feel legitimacy to participate in school activities, such as Open Schooling initiatives. Also, if these ISH groups that compose the school's structure are needed for the school to work, they will also be needed for Open Schooling. On the other hand, it makes sense that the participation of these ISH categories in OS initiatives will be socially well accepted, since the school is supposed to become a "social core centre" through Open Schooling, contributing to local development.

In Table 7, the reasons for the feeling of high or low legitimacy are presented. It can be observed that the most referred justification is “cooperating and providing support for success” as a means for legitimacy to participate in Open Schooling activities. This is in accordance with what was mentioned above about the school structure and the need for the involvement of all ISH.

Table 7: Factors that most affect legitimacy (ISH)

	OA	CIP	SM	S	T	AT	ST	Total EF
LOW LEGITIMACY								
Feeling of devaluation for their participation	2	0	0	0	0	0	0	2
Information misunderstanding	0	0	0	0	0	0	1	1
Unknown by the local community	0	0	0	0	0	0	1	1
Use of different methods	0	0	0	0	0	0	1	1
HIGH LEGITIMACY								
Being part of the school community	0	0	1	1	0	0	0	2
Cooperating and providing support for success	1	0	2	2	0	1	0	6
Having distinct techniques or skills	0	1	0	0	0	0	0	1
Disclosure of previous results and assessments	0	0	0	0	0	0	2	2
Previous partnership experience with key SH	0	0	1	1	0	0	0	2
Closer relationship with students	1	0	0	0	0	0	0	1
Credibility and good reputation	0	0	1	0	0	0	0	1

Observe that different techniques (and skills) provided by one stakeholder can be considered positively or negatively accepted by other stakeholders (i.e. can be or not legitimate).

SUPPORT

An overview of the ISH characterization concerning the attribute support is shown in Figure 19.

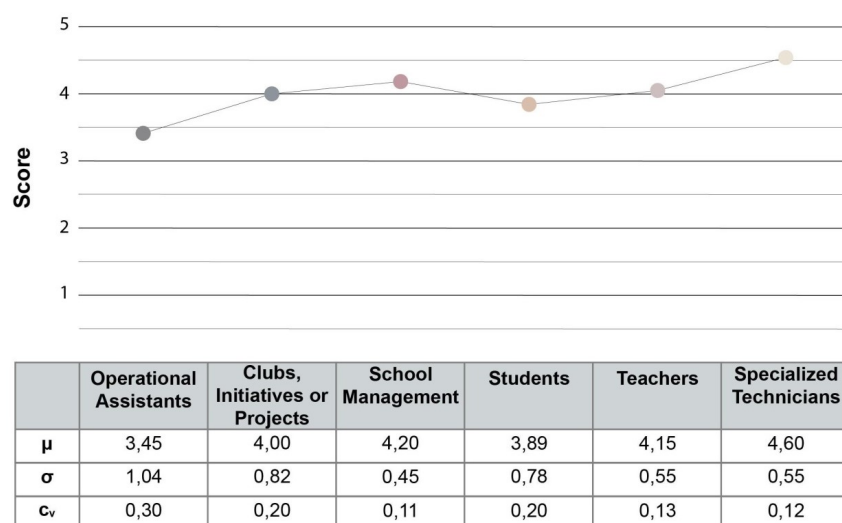


Figure 19: Support characterization (ISH)

Concerning this attribute, the first result to observe is that the ISH groups CIP, SM, S and T provide approximately the same level of support. The maximum level is provided by the Specialized Technicians, due to this group's beliefs and will to change - as revealed in Table 8. The minimum level corresponds to the Operational Assistants, maybe owing to the lack of available time to cooperate - recall this group do hold interest in participating in Open Schooling activities (3,75 score).

Since the Students are a core focus of the Open Schooling concept, maybe they would be expected to be in the top of the support scale, which does not happen. With a coefficient of variation of 20%, showing a moderate level of agreement among these respondents, this group holds a 3,89 score for the support they provide, which means that they show some kind of resistance. According to the qualitative data analysis presented in Table 8, this level of support might be related to the divergence of opinions and motivations.

Table 8: Factors that most affect support (ISH)

	OA	CIP	SM	S	T	AT	ST	Total EF
LOW SUPPORT								
Lack of time for curricular activities	0	0	1	0	0	0	0	1
Lack of planning and SH roles definition in advance	0	0	1	0	0	0	1	2
Lack of available/extra time	1	0	0	0	1	0	1	3
Lack of alignment (OS vs group's objectives)	0	1	0	1	1	0	0	3
Lack of skills to collaborate	0	0	0	0	0	0	1	1
Divergence of opinions and motivations	0	0	0	3	2	0	0	5
HIGH SUPPORT								
Group's interest	1	0	1	0	0	0	2	4
Families as facilitators	0	1	0	0	0	0	0	1
Group's beliefs and will to change	0	0	0	1	0	0	4	5
Group's will to cooperate	0	0	1	4	0	0	1	6
Promote community well-being	0	0	1	0	0	1	1	3
School managers to provide coordination and authorizations	0	0	2	1	0	0	0	3
Respect for the hierarchies and rules	1	0	0	0	0	0	0	1

It is also important to highlight, taking into account the "group's interest" row, that the level of support may depend on this factor. This seems to be evident for situations in general. However, having a high level of interest does not imply a high level of support: for instance, a stakeholder might be interested in participating in Open Schooling initiatives but might show some resistance due to lack of skills to participate or due to lack of available time to join the projects' teams. The literature would not provide these two different attributes if they were the same.

This possible correlation between interest and support led to the need for further investigation, bearing in mind the following hypothesis to test: the higher the interest, the higher the support.

Not grouping by ISH categories, all the ISH respondents' scores for interest and support were placed into a table - this means the exclusion of responses where "I don't know" or "I don't respond" were selected for at least one of these two attributes. Consider i for interest and s for support. Figure 20 shows the graphic with the 44 responses considered: 44 pairs (i ; s).

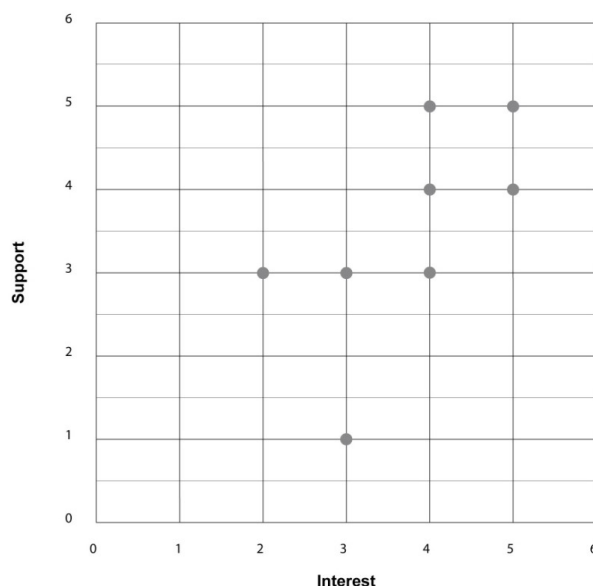


Figure 20: Interest-support matrix (ISH)

Notice that 25 combinations would be possible, but the 44 pairs are placed in only eight points in the graphic - there are overlapping points. For 29 respondents (66%), the scores for both interest and power are the same. For 14 respondents (32%), these scores have a difference of one (absolute value). The highest absolute value for the difference between interest and power is two, and it's found only once (2%) - this happens in the point (i ; s) = (3;1). Excluding this point, observe that if interest increases, the support also increases or remains the same.

STEP 5: CLASSIFICATION OF STAKEHOLDERS

The score characterization of each ISH category is summarized in the columns of Table 9, allowing a global comparison through the description of each one of those groups in each analyzed attribute.

Table 9: Score characterization (ISH)

	OA	CIP	SM	S	T	ST
Interest	3,75	4,20	4,60	4,00	4,23	4,60
Power	2,50	2,67	4,60	4,00	3,36	2,75
Urgency	3,11	2,00	3,00	3,33	3,09	3,60
Legitimacy	3,90	4,00	4,60	4,00	4,00	3,80
Support	3,45	4,00	4,20	3,89	4,15	4,60

According to what was explained previously in Chapter 4, the scores that characterize each ISH category were normalized since the original values are very close to each other. This way, Table 9 is transformed into Table 10, whose values will be used in the subsequent analysis.

Table 10: Score characterization (ISH) – normalized

	OA	CIP	SM	S	T	ST
Interest	1,00	3,12	5,00	2,18	3,26	5,00
Power	1,00	1,32	5,00	3,86	2,64	1,48
Urgency	3,78	1,00	3,50	4,33	3,73	5,00
Legitimacy	1,50	2,00	5,00	2,00	2,00	1,00
Support	1,00	2,91	3,61	2,53	3,43	5,00

Having a first look into this table, two facts can be noticed: the Operational Assistants hold the lowest scores in three attributes and the School Management holds the highest scores in three attributes. Also, the Specialized Technicians hold the highest value in three attributes.

In order to have an easier understanding of these normalised values, the values from Table 10 are now represented graphically in the radar chart of Figure 21. Notice that, from now on, the scores are relative values and only enable comparative analysis, useful for prioritization of strategic management decisions.

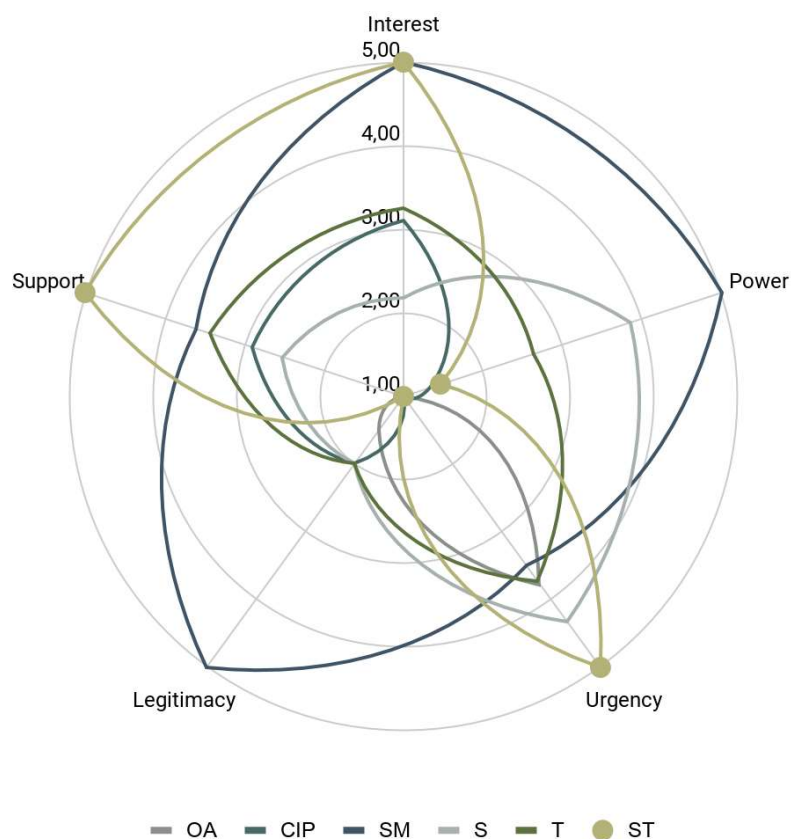


Figure 21: Radar chart with score characterization (ISH) – normalized

To finish the conducting of STEP 5, classifying the ISH, each category was placed in a power-interest matrix, as shown in Figure 22, using the normalized pairs power-interest.

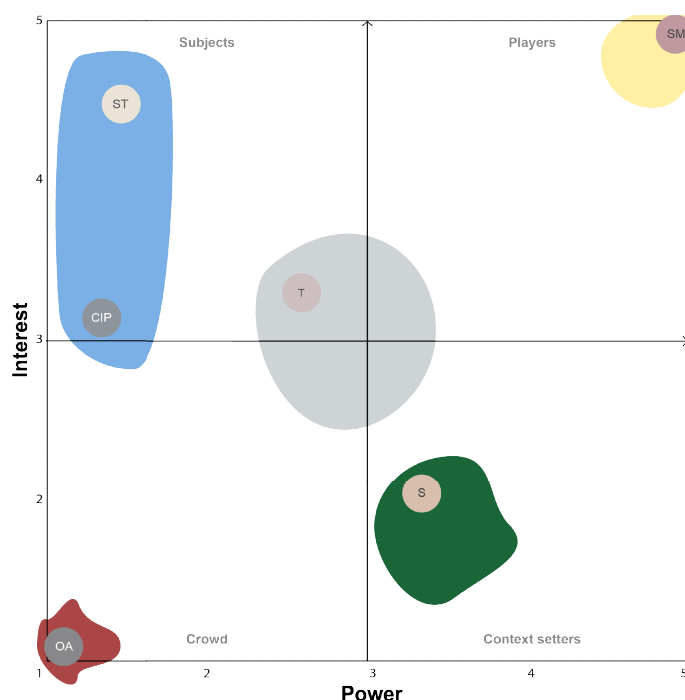


Figure 22: Power-interest matrix (ISH)

Taking into account the position of each ISH in the power-interest matrix, it is possible to perform a comparative analysis about what concerns to these two attributes. Let us consider five regions in the matrix, marked with different colours:

1. The yellow region, 1st quadrant: here the “key players” are found, with high power and high interest to participate in OS initiatives. The School Management (SM) group is placed here, and so it is considered the most relevant category. The SM includes groups that are the decision-makers in the school and they are concerned with participating in OS initiatives (they have interest). Management strategies should take their power and interest into account. The literature recommends engaging and consulting these key players.
2. The blue region, 2nd quadrant: here two “subjects” are found - CIP and ST. These ISH categories have high interest but low power and should be kept informed. If they are provided power to participate in Open Schooling activities (this is, if they overcome the resistances or external difficulties - mentioned in the previous qualitative data analysis), they become “key players”. Highlighting the position of Specialized Technicians (ST), observe that this group, with specialised skills in psychology, formation and special education, could be an essential player to build an Open Schooling community, bringing new insights and techniques.
3. The red region, 3rd quadrant: here is placed the “crowd”, the Operational Assistants. Recall that this position is relative and only means this group is the one with the lowest power and lowest interest, meaning that they are still not engaged towards local development and social innovation through Open Schooling (compared to other ISH categories). Increasing this

level of engagement would imply fostering their interest and empowering them. Before this movement, strategic management should just keep monitoring this group.

4. The green region, 4th quadrant: through this analysis, the Students were considered “context setters”, with high power and low interest and so with strong influence in OS’s outcomes. Actually, the Students play a central role in Schools and thus also in Open Schooling initiatives, but they are not enough engaged and the strategic management decisions should try to reverse this. This kind of stakeholders should be “kept satisfied”.
5. The grey region, around the middle of the matrix: Teachers are here classified as “undecided” and can easily move from the 2nd quadrant to another – i.e. their engagement can easily change and should evolve in order to make them “key players”, as they are needed according to the OS concept. This “undecided region” was suggested by Abreu (2017).

The final goal of some stakeholder analysis is selecting the most relevant categories, in order to dedicate strategic management attention to some of them, excluding the others. This kind of approach is useful for strategic management when it is not possible to deal with all the stakeholders, prioritizing actions. However, for the ISH categories, it would not make sense since the internal school organization is structured to work in a defined way and cannot work excluding internal stakeholders, so Open Schooling strategies need to deal with all that existing environment. Besides that, the Open Schooling concept aims to integrate all the agents in the same “community”. Therefore, this analysis was focused on finding ways to improve the engagement of all the different ISH categories in OS initiatives instead of finding statistics to prioritize some over the other. The next step will provide more useful insights.

STEP 6: FURTHER RESEARCH ON OPEN SCHOOLING

This step aims to go further, analysing how the stakeholders’ engagement can be converted into practice. Note that the results from the question “My group or organization WANTS to participate INDIRECTLY in Open Schooling initiatives, affecting, influencing or supporting those initiatives that address local challenges or opportunities.” are left for STEP 7.

Among the local challenges or opportunities your group or organization deals with, which would you like to address by actively participating in Open Schooling initiatives?

This question was more dedicated to identifying local challenges and opportunities from OSH, since the Open Schooling definition refers that OSH stakeholders are involved in bringing projects into the schools. However, the ISH respondents also answered this question.

It is interesting to notice that some ISH consider that school’s internal challenges can be addressed through Open Schooling. This means a reverse flow when compared to the original aim of Open Schooling - in this perspective, projects from classroom and schools should be brought outside to the wider society, to generate awareness, to get new skills or to ask for help in the problem-solving. This will be left for future research.

The identified local challenges and opportunities inside school were related to cleaning and recycling issues (6 EF), sustainable economy and money management (1 EF), learning how to deal with students behaviour (2 EF), lack of motivation to participate in school activities (1 EF), citizenship education (1 EF), students participation in contests, projects or conferences related to their job interests (1 EF), encourage students for investigation and experimenting on local challenges (2 EF), lack of resources and skills for first aid (1 EF), sexuality education (1 EF), and utilization of technology in learning activities (1 EF).

Animal well-being (1 EF) and local historical/cultural heritage (1 EF) were the only purely outside school local challenges or opportunities identified.

Given the identified local challenges or opportunities, what solutions do you propose to develop through Open Schooling initiatives?

Despite the fact that ISH mainly referred school's internal challenges, the most identified solution proposed to be developed through Open Schooling initiatives was the OSH engagement, bringing their expertise and resources to address the internal challenges – as shown in Figure 23. This might mean that some school's internal challenges cannot be addressed only internally by the school community.

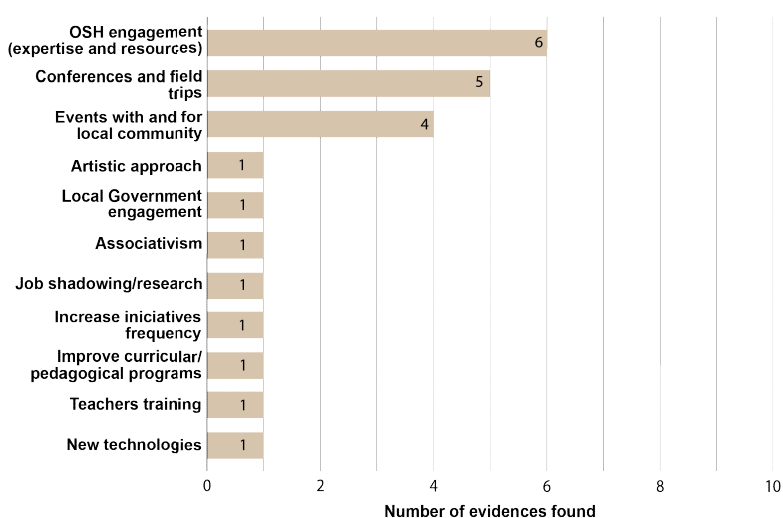


Figure 23: Solutions to address local challenges (ISH)

How can your group or organization be positively affected by Open School initiatives?

The ways ISH stakeholders can be positively affected by OS initiatives are shown in Table 11. Note that 21 out of 60 ISH respondents considered their group or organization could be positively affected by OS initiatives.

Table 11: How can ISH be positively affected by OS initiatives?

	OA	CIP	SM	S	T	AT	ST	Total EF
Local community's success	0	0	0	1	0	0	0	1
Interests alignment	0	0	2	0	0	0	0	2
Support from school community	0	1	0	0	0	0	0	1
Student's success	0	1	1	0	2	0	1	5
Increase partnerships	0	1	0	0	1	1	0	3
Foster new projects/initiatives	0	2	1	1	0	0	0	4
Increase motivation, well-being, teambuilding	2	0	0	1	0	0	1	4
Learning	1	1	0	1	2	1	0	6

It is interesting to observe that many categories considered that they could be positively affected by the student's success (5 EF). Through the data analysis performed, it was possible to understand that some respondents only could consider their group's mission achieved if they could contribute to student's success.

In other perspective, it is important to note that Open Schooling initiatives could contribute not only for local development, social innovation and community well-being but also to bring good added value for some ISH groups themselves, such as increasing motivation, promoting personal well-being, fostering team building and providing new opportunities to learn and to increase professional skills.

How can your group or organization be negatively affected by Open School initiatives?

Only one ISH respondent (a teacher of curricular activities) referred that their group or organization could be negatively affected, due to lack of time to work on the curricular program. Recall that this barrier was previously identified in more than one response, but only this respondent considered that as negatively affecting their group.

The conclusion of this third phase of the methodology, which consisted of characterizing the stakeholders, provided very detailed contributions to understand *How can local stakeholders contribute to the implementation of Open Schooling?*, which was the second research question.

5.2. STAKEHOLDER ANALYSIS: OUTSIDE SCHOOL

5.2.1. PHASE 2: IDENTIFICATION OF STAKEHOLDERS

STEP 2: LIST OF POTENTIAL STAKEHOLDERS AND STAKEHOLDERS' CATEGORIES

From the several categories of stakeholders presented in the literature (which is not clearly defined, since the concept of “category” differs among the authors, according to different categorization criteria) 11 categories were selected. This selection was mainly based on the categories mentioned in the Open Schooling literature. According to their missions or purposes, these 11 categories can be described as follows (in no particular order):

1. Media (M): channels specially dedicated to local affairs with local distribution or broadcast, such as press, radio or television.
2. Culture and Arts (CA): groups or organizations whose mission is to contribute to local development through the promotion or creation of cultural or artistic projects and initiatives.
3. Museums and Science Centres (MS): institutions dedicated to the promotion of scientific culture and that may use Science related tools and technology as a means for local development.
4. Families (F): student's families or groups of families (such as parents associations) from the local community that may work on the engagement of parents in the school life and help the school bridging those connections.
5. Entreprises (E): for-profit organizations, dedicated to industry, production, sales of goods or services.
6. Public Safety (PS): governmental organizations dedicated to public safety and assistance, such as firefighters or police.
7. Local Governments (LG): public institutions (and respective departments) with local decision-making and governmental power, such as parishes and municipalities.
8. Nature and Environment (NE): groups or organizations dedicated to natural and environmental affairs and sustainability, such as fauna and flora conservation, ecology, reforestation, public awareness, animal well-being or waste management.
9. Health and Well-being (HW): organizations whose core mission is public health and well-being, such as elderly people assistance, youth assistance or hospitals.
10. Universities and Research Institutions.
11. Associations for Development or Cooperation.

From these 11 categories, 59 groups or organizations were listed in this step. Note that all the identified potential stakeholders should be “local”, i.e. located within the geographical border under analysis or located outside but producing effects within it.

STEP 3: SNOWBALL SAMPLING

Additionally, 58 groups or organizations were identified through the application of the snowball sampling technique - both by ISH and OSH respondents, but only nine were new to the sample, always fitting the existing categories. In total, through steps 2 and 3, a total of 68 groups or organizations were identified and invited to participate in the survey. Note that all the potential stakeholders identified through snowball sampling were contacted and that the application of this technique could be finished - the latest stakeholders did not identify others to be contacted.

Note that, for ease of writing, these entities are being called stakeholders even before the analysis. Actually, they should be called potential stakeholders since the analysis can demonstrate that one potential stakeholder is not a stakeholder - if it does not affect nor is affected by Open Schooling initiatives.

SURVEY: SAMPLE CHARACTERIZATION

From outside school, 48 answers were received. One group or organization submitted four responses; another submitted two responses. For these two cases, the responses were aggregated in order to create a sample for analysis in which each group or organization was represented only once. This aggregation was made merging qualitative responses and finding a mean value for quantitative responses. This new sample, considered for data analysis, is composed of 44 responses from different entities. Since 68 entities were invited to participate, this accounts for a 65% response rate. Figure 24 reveals the composition of the OSH sample in terms of the number of respondents in each OSH category. The categories “Universities and Research Institutions” and “Associations for Development or Cooperation” were not represented in the sample - some potential stakeholders were identified, but no response was collected from this kind of institutions.

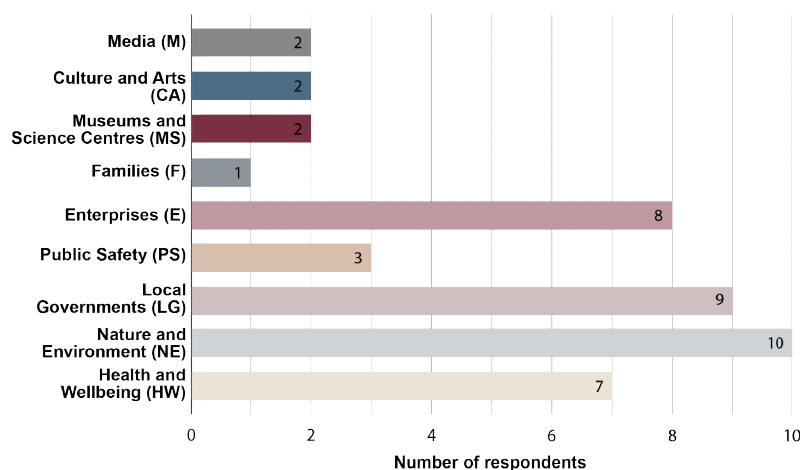


Figure 24: Sample characterization (OSH)

At the moment of the invitation to participate in the survey, the category in which each stakeholder would be placed was known. In addition, the question about the mission or purpose of the respondents' group or organization helped assure each match. Also, note that no individual stakeholder was identified.

The categories M, CA, MS, F and PS had less than 3 respondents each, which affected the analysis. However, besides the quantitative analysis, they could provide useful contributions through the open-ended questions.

Also important for the sample characterization were the dimensions of the groups or organizations - as shown in Figure 25.

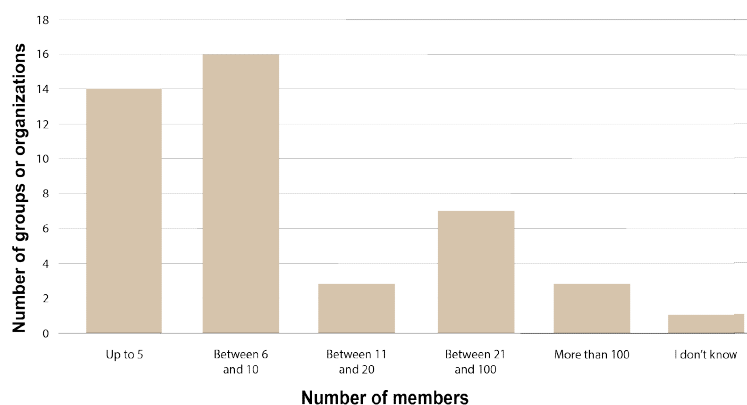


Figure 25: Dimensions of the groups or organizations (OSH)

This graphic reveals that 68% of the groups or organizations presented in the sample have at most 10 members. Also, through Figure 25 and the description of each category, it is possible to understand that different kinds of groups organizations participated in this research. Therefore, it is possible to conclude the small dimension of the groups or organizations that are presented in this territory.

Figure 26 shows the role of each respondent within its group or organization. Note the distribution approximately balanced between the respondents with management and decision making power (directors, presidents and managers) and staff/employee, which means that the information collected includes both perspectives: from the ones who work in the field and the ones who hold the organizational power - both with different and relevant contributions to building an Open Schooling community.

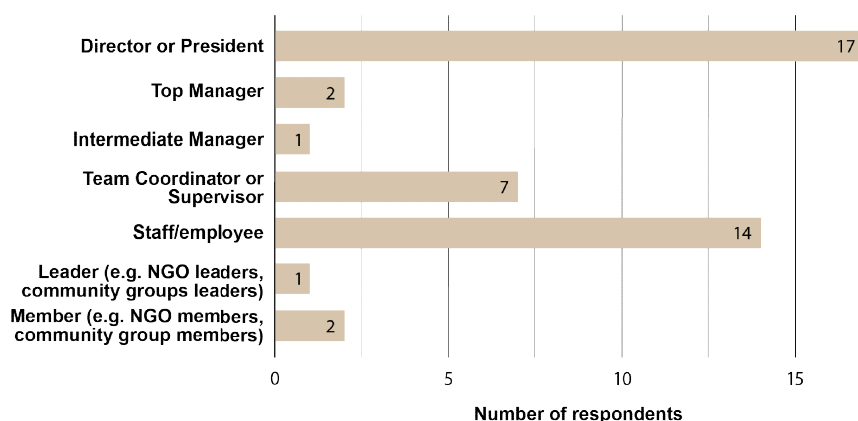


Figure 26: Respondents' roles within their groups or organizations (OSH)

5.2.3 PHASE 3: CHARACTERIZATION OF STAKEHOLDERS

Regarding the previous experience in Open Schooling initiatives, 29 OSH respondents evaluated the respective group or organization participation in those activities - the remaining 15 respondents never participated in OS initiatives. This means that the OSH sample allows bringing diversity to this research, providing information not only about the already engaged stakeholders (66%) but also about those who are not engaged yet (34%).

In the scale from 1 to 5, 1 means very negative and 5 means very positive. As shown in Figure 27, 100% of the respondents who have participated in Open Schooling initiatives evaluate their participation as positive or very positive.

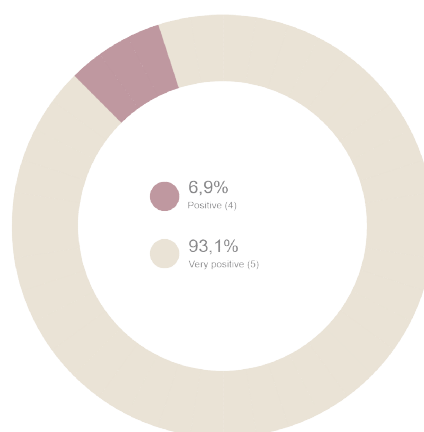


Figure 27: Participation in Open Schooling activities: evaluation (OSH)

Only 15 out of 29 OSH respondents who have participated in Open Schooling initiatives justified their answers. All those 15 respondents evaluated as “very positive”, with justifications such as: contribution for students’ development or knowledge improvement (3 EF), collaboration with school community (5 EF), interest demonstrated by the students (1 EF), achievement of the initiative’s goal (2 EF), contribute for community development (1 EF), getting visibility for the group or organization (3 EF), increasing public outreach and participation (3 EF), contribute for learning within the group or organization itself (2 EF), increase or improve partnerships (4 EF). It is interesting to observe that those reasons are related not only to the achievement of some of the Open Schooling concept goals but also to some organization’s internal objectives, demonstrating that the engagement of outside school stakeholders in school life can be fruitful for both ISH and OSH.

STEP 4: DIFFERENTIATION OF STAKEHOLDERS

The characterization (and differentiation) of the OSH categories was performed through the evaluation performed on the third part of the survey, which was based on the five attributes. The following five parts, one for each attribute, show the characterization of the OSH categories, including the results and the discussion.

INTEREST

An overview of the OSH characterization concerning the attribute interest is shown in Figure 28.

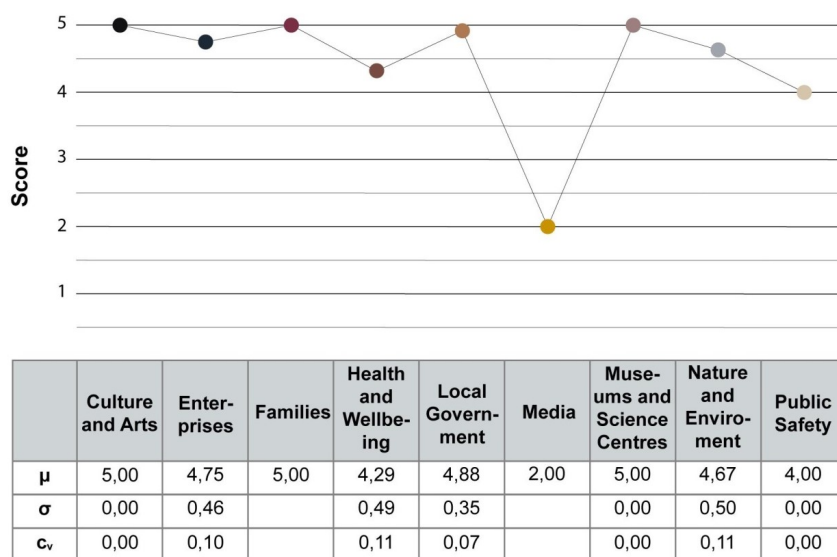


Figure 28: Interest characterization (OSH)

From the observation of Figure 28, it is possible to note that all the OSH categories but the Media have an interest scored as equal or higher than 4, ranging up to 5, with low coefficient of variation - which reveals a high level of agreement among the respondents within each OSH category. Note that, in the ISH analysis, the coefficient of variation corresponding to one category expressed the level of agreement among the elements of that category when evaluating the same category - for example, the Operational Assistants, individually, contributed to characterize their own group. In the OSH analysis, since each category includes different groups or organizations, when it is mentioned "level of agreement" corresponding to a category, in fact, this represents the dispersion level of opinions within that category - which is characterized by different groups or organizations; for example, different enterprises, characterized by their respondents, contribute to characterize a category composed of different enterprises. The categories Families and Media have blank cells due to the fact that only one response was collected for each one of them concerning the attribute interest – and so the standard deviation could not be calculated, nor the coefficient of variation.

The factors that most affect OSH's interest are described in Table 12. The rows marked with ✓ represent motivations for interest that were also found in the ISH analysis (Table 4).

Table 12: Factors that most affect interest (OSH)

	CA	E	F	HW	LG	M	MS	NE	PS	Total EF
INTEREST RELATED TO THE STUDENTS										
✓ Foster curiosity and improve skills	0	1	0	0	0	0	0	1	0	2
✓ Added value for the students	0	0	1	1	1	0	0	1	0	4
Engage youth actively in social problems solving	0	1	0	0	0	0	0	1	0	2

	CA	E	F	HW	LG	M	MS	NE	PS	Total EF
INTEREST RELATED TO THE SCHOOL										
✓ Feeling of personal commitment to school life	0	0	0	0	1	0	0	0	0	1
✓ Added value for the school community	0	0	0	0	0	0	0	1	0	1
✓ Innovation	0	1	0	0	1	0	0	0	0	2
INTEREST RELATED TO RESPONDENT'S GROUP OR ORGANIZATIONS										
✓ Alignment of objectives (OS and group)	0	1	0	2	1	0	2	6	1	13
Learning new subjects	0	0	0	0	2	0	0	0	1	3
Trusting in the Open Schooling outcomes	0	2	0	0	0	0	0	2	0	4
Getting more visibility	0	4	0	2	0	0	2	1	0	9
INTEREST RELATED TO THE LOCAL COMMUNITY										
✓ Collaborate and learn with OSH or ISH	1	0	0	2	2	0	1	3	3	12
✓ Added value for the local community	1	2	0	0	3	0	0	1	0	7
✓ Feeling of personal commitment to the local community	0	1	0	1	0	0	0	0	0	2
Improve local community's skills	0	1	0	0	1	0	0	0	0	2

It is important to highlight that the benefits for the OSH themselves account for their interest: note that nine respondents affirmed that they have interest because they can get more visibility and that the interest depends on the alignment of objectives (when participating in Open Schooling initiatives helps OSH achieve their own mission - for example, when students are a target group for the organizations). On the other hand, the will to cooperate and learn from different agents also accounts for OSH's interest (12 EF).

From the qualitative data analysis performed, it was not possible to find reasons for lack of interest. Actually, with the exception of the 2-score from one media respondent, all the respondents rated their interest as four or five. That media respondent justified the answer due to lack of time to collaborate, which not enables to understand if they have interest (i.e. if they want to participate, but they do not have time) or if they do not have interest.

All the previously mentioned factors are left as recommendations to foster stakeholder's interest and should be taken into account for stakeholders' engagement in Open Schooling initiatives.

POWER

An overview of the OSH characterization concerning the attribute power is shown in Figure 29.

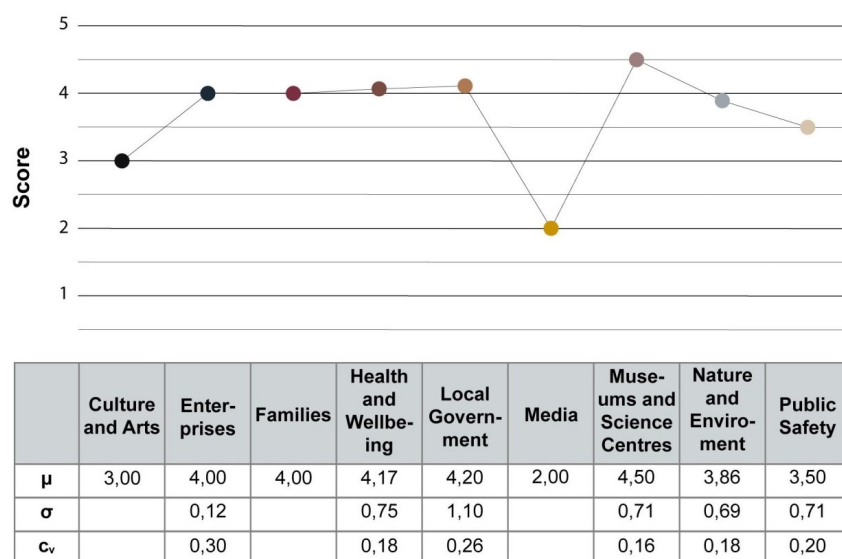


Figure 29: Power characterization (OSH)

With the exception of the categories “Culture and Arts” and “Media”, all the OSH categories hold power to participate in Open Schooling initiatives. Also, the coefficients of variation are higher than the ones from the interest analysis, particularly the 30% in the category “Enterprises”, which shows a high level of disagreement that may depend on the fact that some of these organizations are familiar or small scale business and others are bigger and so not so vulnerable to resistances or external difficulties.

Bellow, in Table 13, the factors on which the ISH’s power depends are presented. The “facilitator” section includes reasons for holding a high power or means to increase power. The “barriers” section shows factors that limitate power. The rows marked with ✓ represent facilitator factors or barriers that were also found in the ISH analysis (Table 5).

Table 13: Factors that most affect power (OSH)

	CA	E	F	HW	LG	M	MS	NE	PS	Total EF
FACILITATORS										
✓ Engaging all the ISH and OSH	0	0	0	0	1	0	1	1	0	3
✓ Having hierarchical decision power	0	0	0	0	1	0	0	0	0	1
Getting funds from public applications	0	0	0	0	0	0	0	1	0	1
Being financially independent	0	0	0	0	0	0	1	0	0	1
Having previous experience in OS	0	0	0	0	1	0	1	1	0	3
Improve communication channels	0	0	0	1	0	0	0	0	0	1
Being a facilitator or intermediate organization	0	0	1	0	1	0	1	0	0	3
Having good reputation among the local community	0	1	0	0	1	0	0	0	0	2
Having high qualification	0	1	0	1	0	0	0	1	0	3
Autonomy or independence	0	3	0	0	0	0	0	2	0	5

	CA	E	F	HW	LG	M	MS	NE	PS	Total EF
BARRIERS										
Bad perception of the organization among the local community	0	0	0	0	0	0	1	0	0	1
Lack of openness from the local community	0	0	0	0	0	0	1	0	0	1
Lack of resources	0	0	0	0	1	0	0	1	0	2
Lack of available time	0	0	0	1	1	1	0	2	0	5
Lack of monetary resources	0	1	0	0	0	0	0	2	0	3
Depending on the opportunities given by OS projects managers	1	0	0	0	1	0	0	1	0	3

Previously it was found that many motivations for interest account for both ISH and OSH. Contrarily, the similarities between the factors in which the stakeholders' power depend vary much from ISH to OSH. It was also found that the power each group or organization holds to participate in OS initiatives may depend on the fact of being public or private institutions – with advantages and disadvantages in both situations.

URGENCY

An overview of the OSH characterization concerning the attribute urgency is shown in Figure 30.

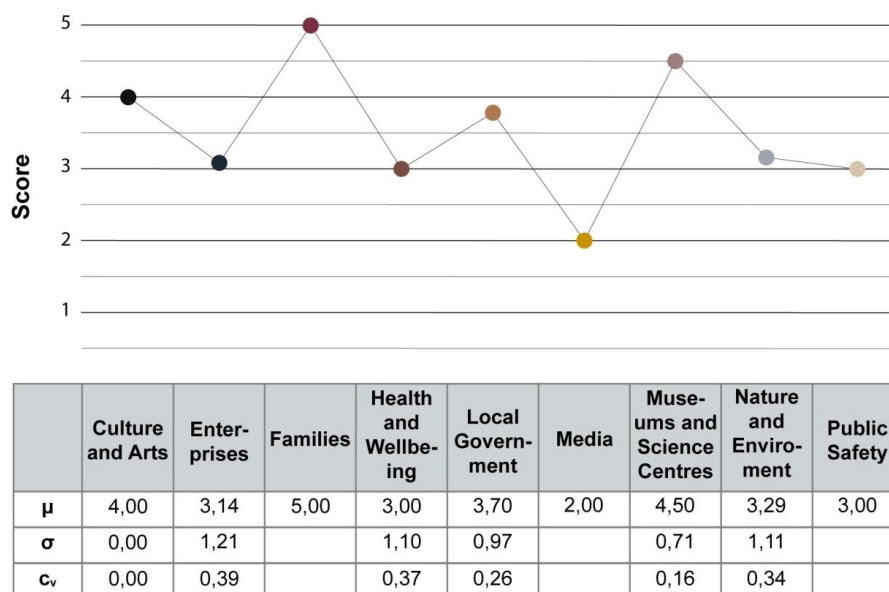


Figure 30: Urgency characterization (OSH)

A huge dispersion is found in the OSH characterization in what concerns to the urgency to participate in Open Schooling initiatives. Also, the coefficients of variation are too high, revealing that the categorization done is not adequate concerning this attribute, disabling further conclusions. The reasons that accounted for the ISH's level of urgency are presented below in Table 14. The rows marked with ✓ represent factors that were also found in the ISH analysis (Table 6).

Table 14: Factors that most affect urgency (OSH)

	CA	E	F	HW	LG	M	MS	NE	PS	Total EF
LOW URGENCY										
✓ Existing alternative solutions	0	1	0	1	1	0	0	0	0	3
Priority for business	0	1	0	0	0	0	0	1	0	2
Lack of available human resources	0	1	0	0	0	2	0	0	0	3
HIGH URGENCY										
✓ Alignment of objectives (OS and group)	0	1	0	2	1	0	2	3	0	9
Felling of commitment to the local community	0	1	0	0	0	0	0	1	0	2
Establish strategic partnerships that contribute for the success of the group or organization itself	2	0	0	0	0	0	0	0	0	2
Increase public outreach	1	0	0	0	0	0	1	0	0	2

There is another factor in common that accounts for both ISH and OSH's interest: lack of urgency to participate in Open Schooling activities due to priority for the principal activities - business (for some OSH, especially the Entreprises) and curricular activities (for some ISH, especially the Teachers). This leads to a new question: how can Open Schooling initiatives integrate business activities and curricular activities in a positive way? This will be left for future research.

LEGITIMACY

An overview of the OSH characterization concerning the attribute legitimacy is shown in Figure 31.

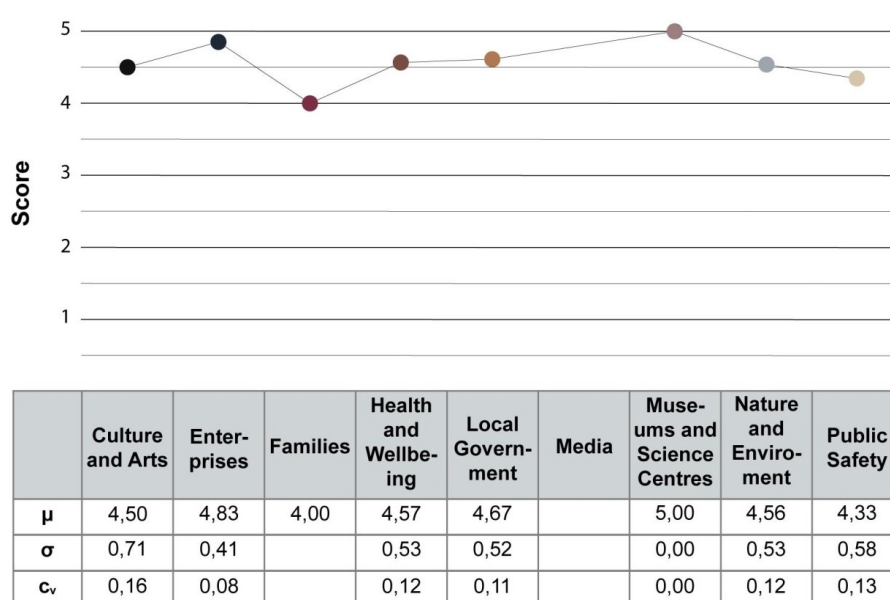


Figure 31: Legitimacy characterization (OSH)

In general, all the OSH categories feel that they have legitimacy to participate in Open Schooling activities, with moderately high levels of agreement assessed by the coefficient of variation. No data could

be collected to evaluate the Media's legitimacy - no respondent in this category answered this question.

Considering the OSH respondents as a whole, excluding the eight "I don't know" or "I don't respond" answers, the scores for this attribute are only four and five, with a mean value of 4,6 and a coefficient of variation of only 10%. There is no correlation between the fact that a stakeholder has already participated in OS initiatives and the legitimacy felt. This is a good indicator that an Open Schooling community can be built since the participation of outside school stakeholders in school life seems to be "socially accepted."

In Table 15, the reasons for the feeling of high or low legitimacy are presented. The rows marked with ✓ represent factors that were also found in the ISH analysis (Table 7). This will allow finding similarities between the ISH and the OSH so that, further, can be connected in the same Open Schooling community.

Table 15: Factors that most affect legitimacy (OSH)

	CA	E	F	HW	LG	M	MS	NE	PS	Total EF
LOW LEGITIMACY										
✓ Feeling of devaluation for their participation	0	0	0	1	0	0	0	0	0	1
General assumption that school is only for ISH	0	0	1	0	0	0	0	0	0	1
Competitors' pressure	0	1	0	1	0	0	0	0	0	2
HIGH LEGITIMACY										
✓ Being part of the local community	0	0	0	0	0	0	0	1	0	1
✓ Cooperating and providing support for success	0	0	0	0	0	0	2	0	1	3
✓ Having distinct techniques or skills	0	1	0	3	0	0	1	2	0	7
✓ Previous partnership experience with schools	0	0	0	0	0	0	1	3	1	5
✓ Closer relationship with local community	0	0	0	0	0	0	1	1	0	2
✓ Credibility and good reputation	0	3	0	2	3	0	1	0	1	10
Demand from the school to participate	0	0	0	0	0	0	0	3	2	5
Intrinsic legal legitimacy	0	0	0	0	1	0	0	0	0	1
Being invited to participate	0	0	1	0	0	0	0	0	0	1
Intrinsic commitment	0	0	1	0	0	0	0	1	0	2
Contribution to local development	1	1	0	0	2	0	1	1	0	6

Observe that the most referred justification is "Credibility and good reputation." This means that some respondents consider that the general social good perception about their groups or organizations in their usual activities provides them legitimacy to participate in OS activities.

Only one respondent commented the “general assumption that school is only for ISH” which is, in some sense, one of the main goals of Open Schooling and also one of the main barriers: make the school an open place connected to outside school stakeholders. Creating these bridges is building an Open Schooling community. Aligned with this is the fact that five OSH respondents referred to a demand from the school to participate in school activities, which is an indicator that Open Schooling is not a whole new subject.

Another point relevant to highlight is that the feeling of legitimacy to participate in OS initiatives depends on being invited for that, which means that the engagement of stakeholders will depend (besides their characterization through the attributes of this analysis) on the entity in charge of establishing bridges between the school and outside school stakeholders; the entity that starts implementing Open Schooling or promoting OS initiatives. Despite being obvious, this should be taken into consideration by the “Open Schooling managers”. This also leads to another question: who should start implementing and coordinating Open Schooling, inviting stakeholders? This topic will be addressed in STEP 7: INVESTIGATION OF VALUE FLOWS BETWEEN STAKEHOLDERS.

SUPPORT

An overview of the OSH characterization concerning the attribute support is shown in Figure 32.

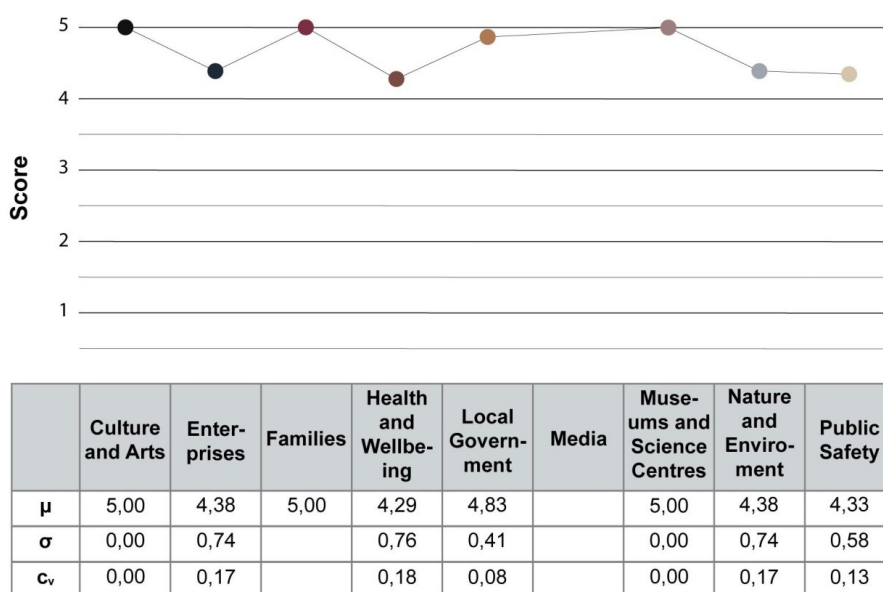


Figure 32: Support characterization (OSH)

The first thing to note about the OSH concerning this attribute is that all the categories (but the Media, for which no data could be collected) would provide significant support to OS initiatives. The reasons that justify these impressive results and that encourage an Open Schooling community are presented in Table 16. The rows marked with ✓ represent factors that were also found in the ISH analysis (Table 8).

Table 16: Factors that most affect support (OSH)

	CA	E	F	HW	LG	M	MS	NE	PS	Total EF
LOW SUPPORT										
✓ Lack of planning and SH roles definition in advance	0	0	0	0	0	0	0	0	1	1
✓ Lack of available/extra time	0	0	0	0	0	0	0	3	2	5
Lack of coordination between different events	0	0	0	0	0	0	0	0	1	1
Lack of funding	0	0	0	0	0	0	0	1	0	1
Building not available for students/visitors	0	0	0	0	0	0	0	1	0	1
HIGH SUPPORT										
✓ Group's interest (or organization's interest)	1	2	0	3	0	0	1	1	1	9
✓ Group's beliefs and will to change	0	2	0	0	1	0	0	2	0	5
✓ Group's will to cooperate	1	2	1	2	0	0	0	1	1	8
✓ Promote community well-being	2	2	1	0	0	0	1	0	0	6
External support for supporters (e.g. applications)	0	0	0	0	0	0	0	1	0	1
Having group's members working in high supporters organizations	0	0	0	0	0	0	0	1	0	1
Supporting this kind of initiatives is the organization's core activity	0	0	0	0	0	0	2	0	0	2
Existence of facilitators/supporters	0	0	0	0	1	0	1	0	0	2

Notice that only one respondent referred to funding as a restriction for support. Actually, according to historical data about OS initiatives, many times this kind of activities does not imply more allocation of resources, since the involved stakeholders can use the existing resources and the same resources they would use for alternative activities.

One respondent referred to the unavailability of their facilities to receive visitors. This might not be a priority topic, but it is important to highlight because the Open Schooling definition refers to “bringing real-life projects into the classroom” and never before in this dissertation the venue for OS activities was discussed. It is important to know that past OS initiatives have taken place in the OSH's facilities. But this might depend on the particularities of each project, and this level of detail is out of the scope of this investigation.

Also important to highlight is that many respondents stated that their support is motivated by altruistic reasons, such as the will to cooperate or promoting community well-being.

Note that “group’s interest” is not necessarily about selfish organization’s interests. Those respondents referred that they would support OS initiatives because they had an interest in that - in some cases, the reasons for the interest were altruistic, concerning to create value for external parties.

As it happened in the ISH analysis, the group or organization’s interest was found as accounting for the OSH’s level of support. Therefore, the same support-interest analysis was performed for the OSH. The results are presented in Figure 33, which shows the graphic with the 37 responses considered: 37 pairs (i; s). Note that the level of interest is never less than four and that the level of support is never less than three. The maximum difference, within the same pair, between interest and support, is two - there are two pairs (i; s) = (5;3). The level of support is the same as the level of interest for 26 respondents (70%), and the difference between these two levels differs from one value in nine responses (absolute value).

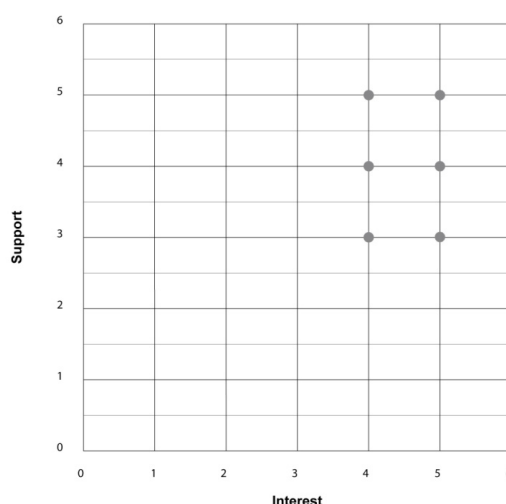


Figure 33: Interest-support matrix (OSH)

Observe that 25 combinations would be possible, but the 37 pairs are placed in only 6 points of the graphic - there are overlapping points. Excluding this point, observe that if interest increases, the support also increases or remains the same.

STEP 5: CLASSIFICATION OF STAKEHOLDERS

The score characterization of each OSH category is presented in the columns of Table 17, allowing a global comparison through the description of each one of those groups in each analysed attribute.

Table 17: Score characterization (OSH)

	CA	E	F	HW	LG	M	MS	NE	PS
Interest	5	4,75	5	4,29	4,88	2	5	4,67	4
Power	3	4	4	4,17	4,2	2	4,5	3,86	3,5
Urgency	4	3,14	5	3	3,7	2	4,5	3,29	3
Legitimacy	4,5	4,83	4	4,57	4,67		5	4,56	4,33
Support	5	4,38	5	4,29	4,83		5	4,38	4,33

As it was performed in the ISH analysis, the scores that characterize each OSH category (summarized in Table 17) were normalized. The linear expansion of those values on the full scale, presented in Table 18, allows for dispersion and to quickly analyse those scores and the relative differences between them. In the subsequent analysis, only these normalised values were used. Notice that, from now on, the scores are relative values and only enable comparative analysis.

Table 18: Score characterization (OSH) – normalized

	CA	E	F	HW	LG	M	MS	NE	PS
Interest	5,00	4,67	5,00	4,05	4,84	1,00	5,00	4,56	3,67
Power	2,60	4,20	4,20	4,47	4,52	1,00	5,00	3,98	3,40
Urgency	3,67	2,52	5,00	2,33	3,27	1,00	4,33	2,72	2,33
Legitimacy	3,00	4,32	1,00	3,28	3,68		5,00	3,24	2,32
Support	5,00	1,51	5,00	1,00	4,04		5,00	1,51	1,23

Having a first look into this table, some facts are important to highlight: the Media got the minimum value in all the attributes that could be analysed in this category (with only two respondents; one of them answered “I don’t know” or “I don’t respond” in all the questions related to attributes); the maximum values for all the attributes are held by categories with at most two respondents only (Culture and Arts, Families, Museums and Science Centres); the minimum values are held by the categories Media, Families and Health and Well-being.

In order to have an easier understanding of this normalised values, the values from Table 18 are now represented graphically in the radar chart of Figure 34. Notice that, from now on, the scores are relative values and only enable comparative analysis.

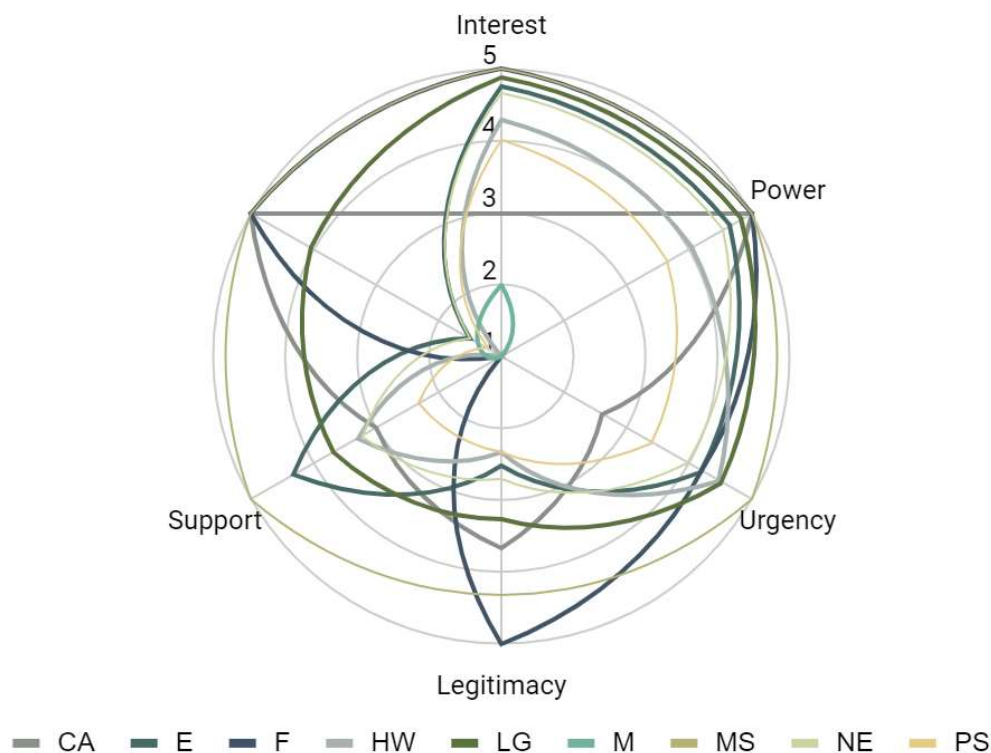


Figure 34: Radar chart with score characterization (OSH) – normalized

To finish the conducting of STEP 5, classifying the OSH, each category was placed in a power-interest matrix, as shown in Figure 35, using the normalized pairs power-interest.

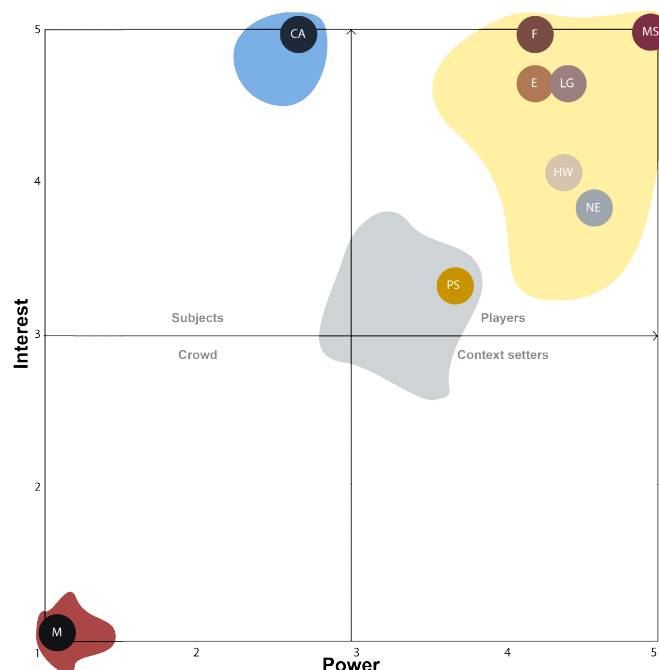


Figure 35: Power-interest matrix (OSH)

Contrarily to the power-interest matrix for the ISH, this one shows a concentration of the OSH categories in the first quadrant. Only the categories “Culture and Arts” and “Media” are not placed in the “key players” quadrant. The first one (with a 2,60 score for power) is close to the first quadrant; the second is not relevant for analysis, taking into account what was explained before. This overview invalidates the comparative analysis through this power-interest matrix.

In a different perspective from what has been done in this stakeholder analysis, it can be considered that first there is the school and its ISH with very different characteristics; then, there is the “rest of the world” - the outside school stakeholders, all the same, that will be engaged in school life bringing real-life projects into the classroom. However, despite the fact that these stakeholders can be considered all the same, according to this perspective and their placement in the power-interest matrix (they all have power, they all have interest), they might have different roles in an Open Schooling community - in other words, all these so-called “key players” might have different ways to play. This will be analysed in the following section and furthermore in STEP 7.

STEP 6: FURTHER RESEARCH ON OPEN SCHOOLING

Table 19 enables an understanding of how the outside school stakeholders place themselves in Open Schooling initiatives. This information is especially relevant after the inconclusive power-interest matrix for OSH, previously presented.

For example, in order to explain how to analyse this table, it is possible to observe that eight groups or organizations belonging to the category “Nature and Environment” (accounting for 80% of the respon-

dents grouped into this category) affirmed that they deal with local challenges or opportunities and that they want to participate actively in OS initiatives, addressing those challenges or opportunities.

Recall the acronyms: Media (M), Culture and Arts (CA), Museums and Science Centres (MS), Families (F), Entreprises (E), Public Safety (PS), Local Governments (LG), Nature and Environment (NE), Health and Well-being (HW).

Table 19: OSH placement in OS initiatives

My group or organization DEALS with local challenges or opportunities and WANTS to participate ACTIVELY in OS initiatives, addressing those challenges or opportunities.																		
CA		E		F		HW		LG		M		MS		NE		PS		
2	100%	5	63%	1	100%	6	86%	6	67%			2	100%	8	80%	2	67%	
My group or organization DOES NOT DEAL with local challenges or opportunities but WANTS to participate ACTIVELY in OS initiatives, addressing local challenges or opportunities from other stakeholders.																		
CA		E		F		HW		LG		M		MS		NE		PS		
														1	10%			
My group or organization WANTS to participate INDIRECTLY in OS initiatives, affecting, influencing or supporting those initiatives that address local challenges or opportunities.																		
CA		E		F		HW		LG		M		MS		NE		PS		
		2	25%			1	14%	1	11%	1	50%	1	50%			2	67%	
My group or organization DEALS with local challenges or opportunities but DOES NOT WANT to participate in any way in OS initiatives.																		
CA		E		F		HW		LG		M		MS		NE		PS		
My group or organization DOES NOT DEAL with local challenges or opportunities and DOES NOT WANT to participate in any way in OS initiatives.																		
CA		E		F		HW		LG		M		MS		NE		PS		
										1	50%							
My group or organization can be positively affected by OS initiatives.																		
CA		E		F		HW		LG		M		MS		NE		PS		
		2	25%	1	100%	1	14%	3	33%	1	50%	1	50%	2	20%	1	33%	
My group or organization can be negatively affected by OS initiatives.																		
CA		E		F		HW		LG		M		MS		NE		PS		

Analyzing Table 19, it is possible to conclude about each category:

- Culture and Arts (CA): all these groups and organizations deal with local challenges and opportunities and would play as “project makers” in OS initiatives.
- Enterprises (E): they also would play as “project makers”; two of these enterprises could participate indirectly, revealing that this kind of stakeholders can possibly work as “supporter” for OS initiatives.
- Health and Well-being (HW) and Nature and Environment (NE): actually, the core activity of these organizations is to deal with local challenges, as confirmed by 86% (HW) and 80% (NE) of these respondents, which makes them also “project makers”.
- Local Government (LG): this category would also play as a “project maker”; despite the fact that only one respondent from LG expressed the will to participate indirectly in OS activities, the local government is crucial to support Open Schooling - also, this category got a 4,52 score in the attribute support.
- Media (M): one respondent expressed they could participate indirectly, reporting Open Schooling initiatives in its communication channels, providing the connection between these initiatives and the local community (the final target of local development and social innovation through Open Schooling).
- Museums and Science Centres (MS): these stakeholders would play not only as “project makers” but also as “intermediates” to promote OS initiatives.
- Public Safety (PS): since this category also deals with local challenges and opportunities, these groups or organizations would also be “project makers”, as well as “supporters”.

Among the local challenges or opportunities your group or organization deals with, which would you like to address by actively participating in Open Schooling initiatives?

The respondents who selected the option “My group or organization deals with local challenges or opportunities and wants to participate actively in OS initiatives, addressing those challenges or opportunities” were asked to specify what challenges or opportunities were those. Although these are site-specific topics, this can provide (for the first time in this dissertation) a more precise idea of the kind of challenges or opportunities that could be addressed through Open Schooling towards local development. In Table 20, this information is summarized by categories.

Table 20: OSH's local challenges or opportunities

Subjects	Local challenges or opportunities
Environment	River pollution (1EF) Waste management (3 EF) Forest fires (3 EF) Natural patrimony conservation (2 EF) Biodiversity conservation (3 EF) Animal well-being (1EF)

Subjects	Local challenges or opportunities
Science	Science-based health education (1EF) Scientific research (locally developed) to be shared at schools (1EF) Promote local community scientific literacy (1EF) Citizen Science, engaging the local community to “produce” Science (1EF) Lack of access to Science and scientists (1EF) Local flora and fauna research (1EF) Invasive flora species (1EF)
Communication	Communication with citizens and their engagement (1EF) Improve the communication channels between students, teachers, school, parents, local government and entrepreneurs (1EF)
Culture	Engage parents to participate with children in local and cultural events (1EF) Know the importance of the local patrimony and understand its global importance (1EF) Lack of knowledge about the local culture and patrimony among the local community (2 EF)
Demography	Migration and rural exodus (2 EF)
Economy	Regional production and products (1EF) Circular economy (2 EF)
Education	Improve families' engagement in school life (1EF) Bring school activities to the local community (1EF) Low students' school performance, lack of interest in Science related topics and the high dropout rate (1EF)
Geography	Geographical and social isolation (both challenge and opportunity) (1EF)
Health and Medicine	Self-medication (1EF) Update statistical data about local health (1EF) Relationships between health and environment, urban green spaces and sustainable mobility (1EF) Distance from specialized health care services (1EF)
Society	Prevent child maltreatment (1EF) Increase local community participation in scientific and cultural events (1EF)
Technology	Lack of access to technology for educational purposes (2 EF)

Note that the OSH respondents identified challenges and opportunities that they deal with within their groups or organizations' core activities. Also, these challenges and opportunities are related to the general local community. Therefore, addressing these topics through Open Schooling initiatives could be fruitful for different stakeholders - for those who can affect and for those who can be affected by these initiatives. According to the Open Schooling definition, OSH should be engaged to bring this kind of projects into the schools.

Given the identified local challenges or opportunities, what solutions do you propose to develop through Open Schooling initiatives?

The OSH respondents suggested some solutions to address local challenges and opportunities with Open Schooling initiatives. This information is summed up in Figure 36. Some of these solutions are related to specific types of initiatives, such as “conferences” or “field trips”. Other solutions are wider, referring intermediate steps to accomplish before implementing Open Schooling initiatives, such as “teachers training” or the need for “driven by the local community's needs”.

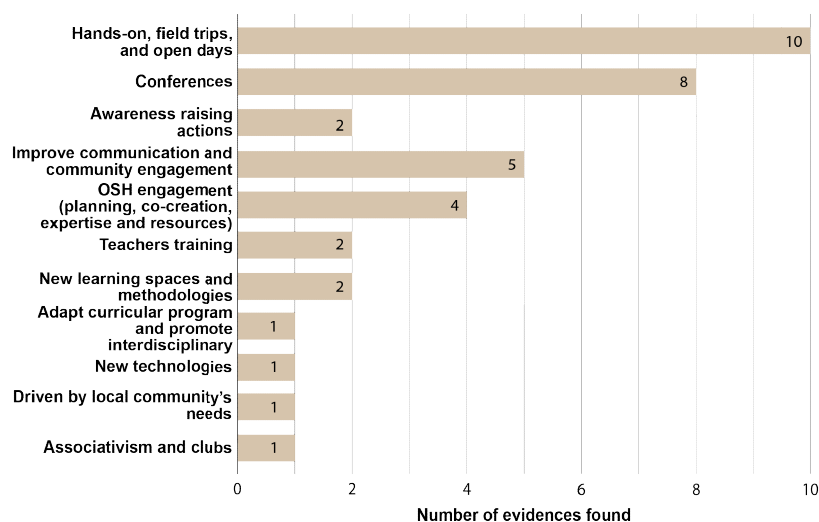


Figure 36: Solutions to address local challenges (OSH)

It is also important to note that those solutions imply different levels of stakeholders' engagement. The way OSH respondents consider their level of engagement was also analyzed, and the results are presented in the following question.

What would be the level of involvement of your group or organization be in Open School initiatives?

As shown in Figure 37, most of the OSH respondents (63,3%) expressed they would have the highest level of engagement (Level 3) - a two-way interaction with high student involvement, such as annual projects promoting regular interaction and co-creation with partners. This represents an essential step further from the "traditional Open Schooling initiative", which consists in sporadic interaction between students and OSH, which often happens in schools - such as field trips or conferences; this corresponds to a Level 1, for which only 10% of the OSH respondents account.

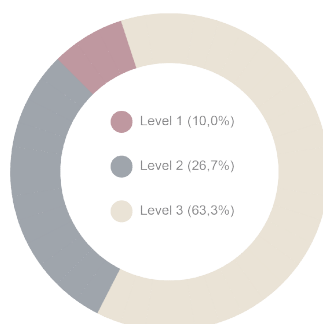


Figure 37: Level of engagement (OSH)

Note that all kinds of interactions between schools and outside school stakeholders could be considered Open Schooling. However, this investigation was more dedicated to the more in-depth collaboration between ISH and OSH, transforming schools into an agent of community well-being, encouraging enterprises to bring real-life projects into the classroom and, as a final goal, contributing to local development and social innovation. This kind of results allows believing that an Open Schooling community can be built and OS initiatives can take place - of course, after overcoming the barriers that have been identified.

How does your group or organization want to be indirectly involved in Open School initiatives and can affect, influence or support those initiatives?

So that one Open Schooling initiative (and, further, an Open Schooling community) can take place, more than the participation of students, teachers and “project makers” is required. In project management, it is important to take into account the stakeholders that may indirectly affect the achievement of the purposes. In what concerns to indirect participation in OS initiatives, the OSH could affect, influence or support those initiatives in different ways, such as: providing spaces for events (2 EF), joining the organization team (1 EF), supporting the advertising/outreaching (3 EF), playing as facilitator or intermediate between stakeholders (1 EF) or allocating human resources (1 EF).

How can your group or organization be positively affected by Open School initiatives?

Twelve OSH respondents considered that their group or organization could be positively affected by OS initiatives, meaning that one stakeholder can not only contribute for the success but also be rewarded back - which makes an Open Schooling community appealing for new stakeholders to be engaged. The justifications for this, obtained from the qualitative data analysis, are the following: showing the work done by the organization and their professionals (3 EF), increasing the number of projects developed (3 EF), motivating the engagement of more people in the groups’ activities (2 EF), increasing the value for the organization’s beneficiaries (2 EF), improving the social responsibility mission (1 EF), achieving the corporation’s mission (1 EF), improve networking (1 EF), learning and improving opportunities (1 EF).

How can your group or organization be negatively affected by Open School initiatives?

Among 44 OSH respondents, no one expressed their group or organization could be negatively affected by Open Schooling initiatives. Note that, if the respondents were only from the preliminary lists (the ones that were already engaged), it would be expected that they did not express the possibility to be negatively affected. But a snowball sampling method was applied, and yet no stakeholder that could be negatively affected was found.

Despite the fact that the Open Schooling concept seems to bring only good things for the involved parties (and that these parties only bring good things), the projects, in general, include stakeholders that can negatively affect the achievement of the goals and others who can be negatively affected. Sometimes, the managers forget to take into account those stakeholders, focusing the strategic management only in the entities who can positively affect the goals (the so-called “partners”). Therefore, it is left as a recommendation to always take into account the possibility of finding different kinds of stakeholders (especially those who can negatively affect or be negatively affected) in Open Schooling communities.

5.3. PHASE 4: INVESTIGATION OF RELATIONSHIPS BETWEEN STAKEHOLDERS

STEP 7: INVESTIGATION OF VALUE FLOWS BETWEEN STAKEHOLDERS

This last step of the methodology would allow understanding how the categories of stakeholders (ISH and OSH) interact to each other (as well within each group itself) to make an Open Schooling initiative happen and furthermore to create an Open Schooling community.

The application of this technique would be preceded by the design of a matrix inspired by the actor-linkage, where the information gathered in previous steps (concerning relationships) would be summarized. This way, this step would be a mixed method of two techniques found in the literature: the actor-linkage matrix, to organize the information and look for all the possible combinations; and the value flow mapping, to illustrate the flows. These flows would be related to policy, monetary resources, human resources, technology, knowledge, goods, services, spaces.

The development of a value flow map would require the definition of stakeholders' categories according to the way they could contribute to solving the problem of building an OS community. However, despite the fact that, in the previous sections, the concepts of "project makers", "supporters", "influencers", "intermediaries" and "target/affected stakeholders" were introduced, the previous steps were not enough to exhaustively understand stakeholders' roles in an Open Schooling community. On the other hand, two relevant categories, presented in the Open Schooling literature - Universities and Research Centres; Associations for Development or Cooperation - were not represented in the sample. These categories would provide inputs required by other categories and receive outputs from them.

Additionally, it was not possible to contact a group of experts to brainstorm, and it was preferred not to conduct this step based on personal beliefs - because it would imply later reformulation. However, the previous steps provided useful insights so this value flow map can be developed in future research. Therefore, it was decided to stop the stakeholder analysis in STEP 6 in order to be finished in a proper way soon.

5.4. CHAPTER CONCLUSIONS

Through the step by step application of the methodology developed in Chapter 4, this chapter provided a characterization of the stakeholders' engagement in Open Schooling initiatives, highlight the reasons that account for different levels of interest, power, urgency, legitimacy and support. The diversity of categories presented in the ISH and OSH samples allowed a diversity of points of view that are left as recommendations for project managers in similar environments, where it is aimed to develop OS initiatives or an Open Schooling community. Phase 4 could not be conducted, but the methodology was explained, and some useful contributions were presented in the previous phases, leaving STEP 7 for future research.

6. CONCLUSIONS AND FUTURE WORK

Stakeholders' engagement is a key strategic topic in project management. In this dissertation, this was demonstrated as being especially crucial to bring life to the Open Schooling concept. Concerning the first research question (*Who are the relevant stakeholders to implement Open Schooling?*), this research brought, from the existing literature, strategic management tools in order to develop a methodology for stakeholder analysis (to identify and to characterize stakeholders). This methodology was tested in the OSHub.Net as a first validation step. A stakeholder-led evaluation was performed, starting with a survey that can be considered a deliverable and a scientific contribution.

Concerning the second research question (*How can local stakeholders contribute to the implementation of Open Schooling?*), this dissertation brought useful insights about the motivations, attitudes and perceptions of schools' stakeholders and outside school agents. These are important contributions not only for the OSHub.Net but also for decision-makers and policy-makers in similar contexts – i.e. when it is needed to engage stakeholders in order to step further from single Open Schooling initiatives to build an Open Schooling community (which implies organizational change, both from the school side and the outside school stakeholders). A list of recommendations was derived from the principal factors that influence stakeholders' interest, power, urgency, legitimacy and support and their engagement in Open Schooling - found through the qualitative data analysis on the reasons, barriers and facilitators that most account to influence those attributes' characterization. It is still missing to understand the correlation between stakeholders' interest and support better.

The discovered similarities between the characterizations of the ISH and the OSH showed that Open Schooling can be positive for both and that bridges could be built to help the school become an agent of community well-being, promoting local development and social innovation. This analysis also showed that the local challenges and opportunities might come from inside the school and can require the engagement of OSH to be addressed. This is a reverse flow (compared to the concept of OS) and is also left for future research. However, it is still missing to understand how the curricular activities can be adapted to give place to Open Schooling initiatives and how these initiatives can integrate in a positive way the OSH's activities.

This dissertation went further from a traditional stakeholder analysis, investigating how the stakeholders' engagement could be converted into practice, in the field, providing some techniques and examples. The conducting of the last phase of the methodology could not happen, but the previous steps provided useful information that can be used by researchers to develop a value flow mapping.

Also left for future research is the possibility of implementing hetero-evaluation in the stakeholder-led evaluation of the attributes and the possibility of using other statistics (besides the mean value) to deal with the data collected by the application of the Likert scale. In a deeper point of view, concerning a long-term objective, it is also missing to understand how Open Schooling can effectively contribute to local development and social innovation, in particular to Education improvement.

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APPENDIX 1: SURVEY

OPEN SCHOOLING: stakeholder analysis ▾

ProjectsContactsLibraryHelp

SurveyActionsDistributionsData & AnalysisReports

You are currently making edits to this survey. Changes won't be live until you publish.

OPEN SCHOOLING: stakeholder analysis

iQ Score: Fair

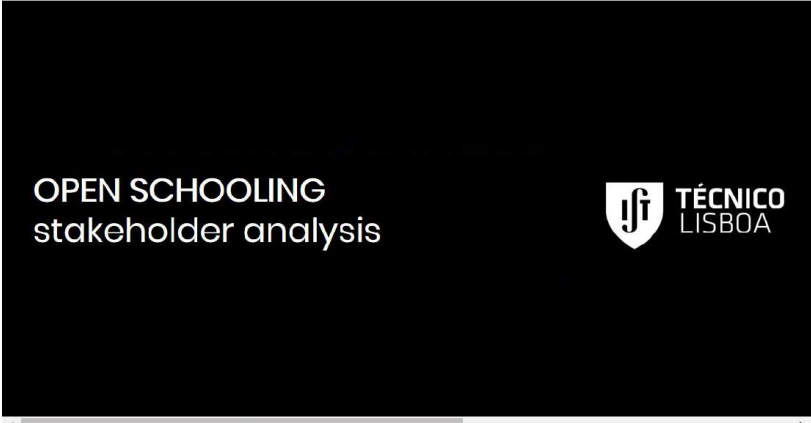
Draft Version

INÍCIO

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Q67







Thank you for taking the time to answer this survey. Your participation will contribute to local development and social innovation.

Consider the following concepts and work definitions:

- Open Schooling:** system in which schools, in cooperation with other stakeholders, become an agent of local development, social innovation and community well-being. Families are encouraged to become real partners in school life. Professionals from enterprises, civil and wider society are actively involved in bringing real-life projects into the classroom, based on local challenges or opportunities.
- Stakeholder:** any intervening entity (person, group or organization) that may affect or be affected (positively or negatively) by Open Schooling initiatives.
- Local challenges or opportunities:** those that concern to the generality of the local community and whose approach benefits that community.
- Local Development and Social Innovation:** the process of identifying local challenges or opportunities, and of seeking and implementing more effective and efficient solutions than the ones established; addressing local challenges or opportunities through Open Schooling initiatives contributes to local development or social innovation.
- Local:** what or who lies or happens within the geographical border under analysis (County of Figueira de Castelo Rodrigo) - the location in which the school is inserted; or that lies or happens outside this boundary but produces effects within it.

Page Break



Your honest answers will support a research about **stakeholders' engagement towards local development and social innovation through Open Schooling** - from the case study of the Open Science Hub Network.

Open Science Hub is a European project that aims to contribute to the development, innovation and well-being of communities by addressing local challenges through collaboration between various social agents. This stakeholder analysis is intended to be applied in all countries where the Open Science Hub Network is being established.

This research is conducted at the Instituto Superior Técnico (Portugal), in partnership with the University of Leiden (Netherlands).

1. Stakeholder identification;
2. Stakeholder experience in Open Schooling initiatives;
3. Stakeholder characterization in Open Schooling initiatives;
4. Stakeholder participation in Open Schooling initiatives;
5. Identification of other stakeholders.



To address any questions, please contact:
Bernardo Peixoto
bernardo.isidoro.peixoto@tecnico.ulisboa.pt
00351 91 562 93 31

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PART 1: STAKEHOLDER IDENTIFICATION

1



- Operational Assistants,
- School library,
- Clubs, Initiatives or Projects (e.g. Sports, Music, Science, Theatre, Dance, Youth Parliament).
- Administrative Council,
- General Council,
- Pedagogical Council,
- Direction,
- Students,
- Teachers of curricular activities,
- Teachers of extracurricular activities (ECA),
- Administrative Technicians
- Specialized Technicians (e.g. Psychology, Formation).
-

☐ Yes

☐ No



Display This Question:

If Has your group or organization participated in Open Schooling initiatives before? Yes Is Selected



11



Taking into account your rating in the previous question, how likely will you participate in Open Schools initiatives in the future?

Use the field in front of the selected option to justify your answer.



☐ Very unlikely

☐ Unlikely

☐ Neither likely nor unlikely

☐ Likely

☐ Very likely

☐ I don't know (I have no opinion about that)

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Add Block

PARTE 3: CARACTERIZAÇÃO DO STAKEHOLDER EM INICIATIVAS DE ESCOLA ABERTA

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PART 3: STAKEHOLDER CHARACTERIZATION IN OPEN SCHOOLING INITIATIVES



An Open Schooling initiative happens when the School, in collaboration with other stakeholders, addresses local challenges or opportunities.

Note that an Open Schooling initiative involves not only, **stakeholders that actively participate** in addressing local challenges or opportunities, but it also involves the **indirect participation of other stakeholders**, which may positively or negatively affect those initiatives.

Page Break



You will now be asked to rate your group or organization based on 5 attributes.

For each sentence, please select the hypothesis that best reflects your opinion.



Page Break

12 ⚙️ iQ *	INTEREST My group or organization would be very interested in participating in Open Schooling initiatives. ☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ I don't know (I have no opinion about that) ☐ I don't respond	
↳	Display This Question: If INTEREST My group or organization would be very interested in participating in Open Schooling ini... Strongly agree Is Selected	✓
13 ⚙️ iQ *	You strongly agreed that your group or organization would be very interested in participating in Open Schooling initiatives. Why?	
↳	Display This Question: If INTEREST My group or organization would be very interested in participating in Open Schooling ini... Agree Is Selected	✓
14 ⚙️ iQ *	You agreed that your group or organization would be very interested in participating in Open Schooling initiatives. Why?	
↳	Display This Question: If INTEREST My group or organization would be very interested in participating in Open Schooling ini... Neither agree nor disagree Is Selected	✓
15 ⚙️ iQ *	You neither agreed nor disagreed that your group or organization would be very interested in participating in Open Schooling initiatives. Why?	
↳	Display This Question: If INTEREST My group or organization would be very interested in participating in Open Schooling ini... Disagree Is Selected	✓
16 ⚙️ iQ *	You disagreed that your group or organization would be very interested in participating in Open Schooling initiatives. Why?	

	Display This Question: If INTEREST My group or organization would be very interested in participating in Open Schooling ini... Strongly disagree Is Selected	
17 	You strongly disagreed that your group or organization would be very interested in participating in Open Schooling initiatives. Why? 	
Page Break		
18 	POWER My group or organization would have a lot of power to participate in Open Schooling initiatives, regardless of any resistance or external difficulties. ☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ I don't know (I have no opinion about that) ☐ I don't respond	
	Display This Question: If POWER My group or organization would have a lot of power to participate in Open Schooling initiat... Strongly agree Is Selected	
19 	You strongly agreed that your group or organization would have a lot of power to participate in Open Schooling initiatives. Why? 	
	Display This Question: If POWER My group or organization would have a lot of power to participate in Open Schooling initiat... Agree Is Selected	
20 	You agreed that your group or organization would have a lot of power to participate in Open Schooling initiatives. Why? Identify the barriers you foresee, in terms of external resistance or difficulties, how they could be surpassed and who could act as a facilitator. 	
	Display This Question: If POWER My group or organization would have a lot of power to participate in Open Schooling initiat... Neither agree nor disagree Is Selected	
21 	You neither agreed nor disagreed that your group or organization would have a lot of power to participate in Open Schooling initiatives. Why? 	

	Display This Question: If POWER My group or organization would have a lot of power to participate in Open Schooling initiat... Disagree Is Selected	
22   	You disagreed that your group or organization would have a lot of power to participate in Open Schooling initiatives. Why? Identify the barriers you foresee, in terms of external resistance or difficulties, how they could be surpassed and who could act as a facilitator.	
	Display This Question: If POWER My group or organization would have a lot of power to participate in Open Schooling initiat... Strongly disagree Is Selected	
23   	You strongly disagreed that your group or organization would have a lot of power to participate in Open Schooling initiatives. Why? Identify the barriers you foresee, in terms of external resistance or difficulties, how they could be surpassed and who could act as a facilitator.	
Page Break		
24   	URGENCY My group or organization would consider very urgent to participate in Open Schooling initiatives, i.e. it would be a high priority. ☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ I don't know (I have no opinion about that) ☐ I don't respond	
	Display This Question: If URGENCY My group or organization would consider very urgent to participate in Open Schooling init... Strongly agree Is Selected	
25   	You strongly agreed that your group or organization would consider very urgent to participate in Open Schooling initiatives. Why?	
	Display This Question: If URGENCY My group or organization would consider very urgent to participate in Open Schooling init... Agree Is Selected	
26   	You agreed that your group or organization would consider very urgent to participate in Open Schooling initiatives. Why?	

	Display This Question: If URGENCY My group or organization would consider very urgent to participate in Open Schooling init... Neither agree nor disagree Is Selected	
27	You neither agreed nor disagreed that your group or organization would consider very urgent to participate in Open Schooling initiatives. Why?	
	Display This Question: If URGENCY My group or organization would consider very urgent to participate in Open Schooling init... Disagree Is Selected	
28	You disagreed that your group or organization would consider very urgent to participate in Open Schooling initiatives. Why?	
	Display This Question: If URGENCY My group or organization would consider very urgent to participate in Open Schooling init... Strongly disagree Is Selected	
29	You strongly disagreed that your group or organization would consider very urgent to participate in Open Schooling initiatives. Why?	
Page Break		
30	LEGITIMACY My group or organization would have a lot of legitimacy to participate in Open Schooling initiatives, i.e. their participation would be socially very well accepted. ☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ I don't know (I have no opinion about that) ☐ I don't respond	
	Display This Question: If LEGITIMACY My group or organization would have a lot of legitimacy to participate in Open Schooli... Strongly agree Is Selected	
31	You strongly agreed that your group or organization would have a lot of legitimacy to participate in Open Schooling initiatives. Why?	

	Display This Question: If LEGITIMACY My group or organization would have a lot of legitimacy to participate in Open Schooli... Agree Is Selected	
■ 32   	You agreed that your group or organization would have a lot of legitimacy to participate in Open Schooling initiatives. Why? Identify the barriers you foresee that would prevent your participation to be more socially accepted, how they could be surpassed and who could act as a facilitator.	
	Display This Question: If LEGITIMACY My group or organization would have a lot of legitimacy to participate in Open Schooli... Neither agree nor disagree Is Selected	
■ 33   	You neither agreed nor disagreed that your group or organization would have a lot of legitimacy to participate in Open Schooling initiatives. Why?	
	Display This Question: If LEGITIMACY My group or organization would have a lot of legitimacy to participate in Open Schooli... Disagree Is Selected	
■ 34   	You disagreed that your group or organization would have a lot of legitimacy to participate in Open Schooling initiatives. Why? Identify the barriers you foresee that would prevent your participation to be more socially accepted, how they could be surpassed and who could act as a facilitator.	
	Display This Question: If LEGITIMACY My group or organization would have a lot of legitimacy to participate in Open Schooli... Strongly disagree Is Selected	
■ 35   	You strongly disagreed that your group or organization would have a lot of legitimacy to participate in Open Schooling initiatives. Why? Identify the barriers you foresee that would prevent your participation to be more socially accepted, how they could be surpassed and who could act as a facilitator.	
Page Break		

36	SUPPORT My group or organization would provide strong support to Open Schooling initiatives, i.e. it would be in favour of those initiatives and it would show no resistance.	
 	☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree ☐ I don't know (I have no opinion about that) ☐ I don't respond	
↳	Display This Question: If SUPPORT My group or organization would provide strong support to Open Schooling initiatives, i.e.... Strongly agree Is Selected	▼
37	You strongly agreed that your group or organization would provide strong support to Open Schooling initiatives. Why?	
↳	Display This Question: If SUPPORT My group or organization would provide strong support to Open Schooling initiatives, i.e.... Agree Is Selected	▼
38	You agreed that your group or organization would provide strong support to Open Schooling initiatives. Why? Identify the barriers you foresee that would prevent stronger support, how they could be surpassed and who could act as a facilitator.	
↳	Display This Question: If SUPPORT My group or organization would provide strong support to Open Schooling initiatives, i.e.... Neither agree nor disagree Is Selected	▼
39	You neither agreed nor disagreed that your group or organization would provide strong support to Open Schooling initiatives. Why?	
↳	Display This Question: If SUPPORT My group or organization would provide strong support to Open Schooling initiatives, i.e.... Disagree Is Selected	▼
40	You disagreed that your group or organization would provide strong support to Open Schooling initiatives. Why? Identify the barriers you foresee that would prevent stronger support, how they could be surpassed and who could act as a facilitator.	



Display This Question:

If SUPPORT My group or organization would provide strong support to Open Schooling initiatives, i.e....
Strongly disagree Is Selected



41



You strongly disagreed that your group or organization would provide strong support to Open Schooling initiatives.

Why? Identify the barriers you foresee that would prevent stronger support, how they could be surpassed and who could act as a facilitator.

Page Break

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PARTE 4: PARTICIPAÇÃO DO STAKEHOLDER EM INICIATIVAS DE ESCOLA ABERTA

Block Options



PART 4: STAKEHOLDER PARTICIPATION IN OPEN SCHOOLING INITIATIVES

42



How would you place your group or organization in Open School initiatives?

Select the valid quotes for your group or organization.

- ☐ My group or organization DEALS with local challenges or opportunities and WANTS to participate ACTIVELY in Open Schooling initiatives, addressing those challenges or opportunities.
- ☐ My group or organization DOES NOT DEAL with local challenges or opportunities but WANTS to participate ACTIVELY in Open Schooling initiatives, addressing challenges or opportunities from other stakeholders.
- ☐ My group or organization WANTS to participate INDIRECTLY in Open Schooling initiatives, affecting, influencing or supporting those initiatives that address local challenges or opportunities.
- ☐ My group or organization DEALS with local challenges or opportunities but DOES NOT WANT to participate in any way in Open Schooling initiatives.
- ☐ My group or organization DOES NOT DEAL with local challenges or opportunities and DOES NOT WANT to participate in any way in Open Schooling initiatives.
- ☐ My group or organization can be positively affected by Open Schooling initiatives.
- ☐ My group or organization can be negatively affected by Open Schooling initiatives.

Page Break

Display This Question:

If How would you place your group or organization in Open School initiatives? Select the valid quote...
My group or organization DEALS with local challenges or opportunities and WANTS to participate ACTIVELY in Open Schooling initiatives, addressing those challenges or opportunities. Is Selected

43



Among the local challenges or opportunities your group or organization deals with, which would you like to address by actively participating in Open Schooling initiatives?

Use the field in front of the selected option to justify your answer.

Note that the answers to this survey do not imply any compromise.

- ☐ Environment
- ☐ Architecture
- ☐ Science
- ☐ Communication
- ☐ Culture
- ☐ Demography
- ☐ Economy
- ☐ Education
- ☐ Geography
- ☐ Health and Medicine
- ☐ Society
- ☐ Technology
- ☐ Other local challenges or opportunities

Display This Question:

If How would you place your group or organization in Open School initiatives? Select the valid quote...
My group or organization DEALS with local challenges or opportunities and WANTS to participate ACTIVELY in Open Schooling initiatives, addressing those challenges or opportunities. Is Selected

44



Given the identified local challenges or opportunities, what solutions do you propose to develop through Open Schooling initiatives?

Display This Question:

If How would you place your group or organization in Open School initiatives? Select the valid quote...
My group or organization DEALS with local challenges or opportunities and WANTS to participate ACTIVELY in Open Schooling initiatives, addressing those challenges or opportunities. Is Selected

45



What would be the level of involvement of your group or organization be in Open School initiatives?

- ☐ Level 1: One-way interaction with low student involvement - e.g. presentations
- ☐ Level 2: Two-way interaction, with some student involvement - e.g. career talks or project work
- ☐ Level 3: Two-way interaction with high student involvement - e.g. annual projects promoting regular interaction and co-creation with partners
- ☐ I don't know (I have no opinion about that) / I have no preference

Display This Question:

If How would you place your group or organization in Open School initiatives? Select the valid quote...
My group or organization DOES NOT DEAL with local challenges or opportunities but WANTS to participate ACTIVELY in Open Schooling initiatives, addressing challenges or opportunities from other stakeholders. Is Selected

46

How does your group or organization want to actively participate in Open School initiatives, addressing local challenges or opportunities from other stakeholders?



Display This Question:

If How would you place your group or organization in Open School initiatives? Select the valid quote...
My group or organization WANTS to participate INDIRECTLY in Open Schooling initiatives, affecting, influencing or supporting those initiatives that address local challenges or opportunities. Is Selected

47

How does your group or organization want to be indirectly involved in Open School initiatives and can affect, influence or support those initiatives?



Display This Question:

If How would you place your group or organization in Open School initiatives? Select the valid quote...
My group or organization can be positively affected by Open Schooling initiatives. Is Selected

48

How can your group or organization be positively affected by Open School initiatives?



Display This Question:

If How would you place your group or organization in Open School initiatives? Select the valid quote...
My group or organization can be negatively affected by Open Schooling initiatives. Is Selected

49

How can your group or organization be negatively affected by Open School initiatives?



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▼ PARTE 5: IDENTIFICAÇÃO DE OUTROS STAKEHOLDERS

Block Options ▼

Q6.1



PART 5: IDENTIFICATION OF OTHER STAKEHOLDERS (SNOWBALL SAMPLING)

50



Note that a stakeholder is any intervening entity (person, group or organization) that may affect or be affected (positively or negatively) by Open Schooling initiatives.

Would you like to identify some stakeholders who may, actively or indirectly, participate in Open School initiatives - i.e., stakeholders who could collaborate directly in addressing local challenges or opportunities, or who could positively or negatively affect those initiatives?

The stakeholders that you identify will be invited to answer this survey.

☐ Yes

☐ No



Display This Question:

If Note that a stakeholder is any intervening entity (person, group or organization) that may affect... Yes Is Selected ▼

51



Please identify at least one stakeholder.

- ☐ Stakeholder1
- ☐ Stakeholder2
- ☐ Stakeholder3
- ☐ Stakeholder4
- ☐ Stakeholder5
- ☐ Stakeholder6
- ☐ Stakeholder7
- ☐ Stakeholder8
- ☐ Stakeholder9
- ☐ Stakeholder10

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End of Survey

[Survey Termination Options...](#)



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