

Aerts, Geoffrey; Jacobs, Sophie

Article

How do university spin-offs apply stakeholder management in practice?

Administrative Sciences

Provided in Cooperation with:

MDPI – Multidisciplinary Digital Publishing Institute, Basel

Suggested Citation: Aerts, Geoffrey; Jacobs, Sophie (2022) : How do university spin-offs apply stakeholder management in practice?, Administrative Sciences, ISSN 2076-3387, MDPI, Basel, Vol. 12, Iss. 4, pp. 1-26,
<https://doi.org/10.3390/admsci12040153>

This Version is available at:

<https://hdl.handle.net/10419/275423>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

Article

How Do University Spin-Offs Apply Stakeholder Management in Practice?

Geoffrey Aerts * and Sophie Jacobs

Business Technology & Operations, Vrije Universiteit Brussel, 1050 Brussels, Belgium

* Correspondence: geoffrey.aerts@vub.be

Abstract: This paper aims to better understand the application of stakeholder management within the university spin-offs (USOs) of the five Flemish universities (Belgium). Every organization, including USOs, must deal with different types of stakeholders. Even though a lot of research on USOs exists, as far as we know, no previous research has been performed on how USOs manage their stakeholders. For this qualitative research, 30 in-depth semi-structured interviews were conducted with executives from USOs to understand how they define, categorize, and manage their stakeholders. Moreover, the impact of COVID-19 on their stakeholder management is examined and an overview is conducted of the stakeholders in each development phase of the USOs. Based on these interviews, we found that stakeholder management is mostly performed in a more intuitive way. However, it is shown that stakeholder management becomes more important as the USO moves along the company life cycle.

Keywords: stakeholder management; technology transfer; university spin-offs



Citation: Aerts, Geoffrey, and Sophie Jacobs. 2022. How Do University Spin-Offs Apply Stakeholder Management in Practice? *Administrative Sciences* 12: 153. <https://doi.org/10.3390/admsci12040153>

Received: 5 September 2022

Accepted: 20 October 2022

Published: 1 November 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

This research is the result of a comparative study into how university spin-offs of the five Flemish universities (KUL, UAntwerpen, UGent, UHasselt and VUB) apply stakeholder management. We focus on three parts of stakeholder management (SM): defining stakeholders (1), the classification of stakeholders (2), and the necessary strategies for dealing with stakeholders (3). There are different forms of spin-offs depending on what organization they are spun off from and where the (co-)founder has gained its know-how (Perez and Sánchez 2003). A spin-off can result from a higher education institution called, a university spin-off (USO), or an academic spin-off. It can also arise from an industrial firm. This latter form is called a corporate spin-off (Gilsing et al. 2010). The goal of a USO is to transfer technology outside the university (Arcuri et al. 2020).

Researchers Bartkus and Glassman (2008) emphasize the importance of applying the theory of SM into the daily practices of an enterprise. In their research, they found that there is no relationship between what is written in the mission statement and the effective SM policy used in the enterprise (Bartkus and Glassman 2008). Research on the application of the stakeholder theory in practice is, therefore, scientifically relevant. As far as we know, a comparative study in SM between university spin-offs from different sectors has not yet been performed in the literature. Therefore, this paper aims to fill this gap by analyzing SM practices in spin-offs from Flemish universities.

USOs commercialize technological innovations created by research within the university. Without the creation of spin-offs, some technologies would never have been used in practice (Scaringella et al. 2017). Research has shown that USOs are more essential for creating new jobs in comparison to other entrants in an industry and they promote economic development (Dahl and Gjerløv-Juel 2011). Technology Transfer Offices (TTOs), as specific departments within universities, support potential founders (researchers within the university) to establish a spin-off through transforming research results, ideas and concepts into relevant technologies that can eventually lead to a practical market solution (Van Burg

et al. 2008). In addition, USOs are often a source for the development of clusters of new enterprises in a particular sector (Lowe 2002). USOs are frequently perceived by their founders and employees as better places to work compared with already well-established organizations in the same sector. This is because the latter may have less ambitious or interesting projects, plans or activities (Ruscio 1988). It is also for this reason that private investors are often more interested in cooperating with USOs. They prefer to team up with a university to commercialize a particular technology rather than working with an already existing enterprise in the same industry which sells their own created products or services (Ruscio 1988). All of these arguments contribute to the benefits of spin-offs and, thus, the social relevance of research on the topic of spin-offs.

2. Critical Literature Review

2.1. The Stakeholder Concept

The term “stakeholder” was first introduced and described in 1708 by Bisset as: “A person who holds the stake or stakes in a bet” (Schockaert 2019). Two centuries later (in 1963), the Stanford Research Institute modernized the definition of a stakeholder suitable for the domain of strategic management, especially strategic planning (Parmar et al. 2010).

Parmar et al. (2010) first posed the question on whether shareholders are the only stakeholders of an organization (Parmar et al. 2010).

In her research, Miles (2012) examines 593 different stakeholder and stakeholder theory definitions. As hundreds of different definitions of the term “stakeholder” were already published, it makes it difficult to find a consensus about the concept (Miles 2012). There is thus no single definition that is universally recognized. According to Freeman (1984, p. 46), the concept stakeholder or “claimants” can be described as: “Any group or individual who can affect or is affected by the achievement of the organization’s objectives” (Freeman 1984). Freeman is often seen as the founding father of SM. In his book, *Strategic Management: A Stakeholder Approach* (1984), he provides a detailed analysis of the stakeholder concept. Many researchers use his general definition because it applies to a wide audience of stakeholders (Mitchell et al. 1997). The definition made by Mitchell et al. (1997) sums up the different types of stakeholders being: “Persons groups, neighborhoods, organizations, institutions, society and also the entire environment” (Mitchell et al. 1997, p. 855). The environment is rather an abstract stakeholder since it has no voice. According to the researcher Jacobs (1997), the environment as stakeholder is often forgotten in applying SM (Jacobs 1997). Donaldson and Preston (1995) attached two conditions to the term stakeholder. For them, a stakeholder has a legitimate interest in the firm’s activities (1), and they are of functional importance to the firm (2) (Donaldson and Preston 1995). Clarkson (1994) makes his definition of a stakeholder less broad than the authors above. He describes stakeholders as: “Risk bearers who have invested directly in an organization and they can be endangered by the activities of the organization itself” (Clarkson 1994, p. 5).

2.2. Categories of Stakeholders

Mitchell et al. (1997) have developed a classification model based on three different attributes being power (1), legitimacy (2) and urgency (3) (Mitchell et al. 1997). The first attribute, power, is defined by Weber (1947) as: “The probability that one actor within a social relationship would be in a position to carry out his own will despite resistance” (Weber 1947; cited in Mitchell et al. 1997, p. 865). You can identify power when you have the ability to bring about the preferred results (Salancik and Pfeffer 1974). It is important to comprehend that the attribute power is transitory because it is something that can be acquired and lost as well. To conclude, a stakeholder who possesses the attribute power can influence the mission and vision of an organization (Mitchell et al. 1997).

Mitchell et al. (1997) accept the definition of Suchman (1995) for the second attribute being legitimacy. He defines this attribute as follows: “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” (Suchman 1995, p. 574).

A stakeholder who owns the third attribute, being urgency, is calling for immediate attention or is putting pressure on the management of the organization. The third attribute makes the classification model more dynamic and, thus, less static (Mitchell et al. 1997). By using these three attributes together, the authors arrive at seven different types of stakeholders that can be divided into three major categories (Mitchell et al. 1997). These types are visualized in Figure 1 below.

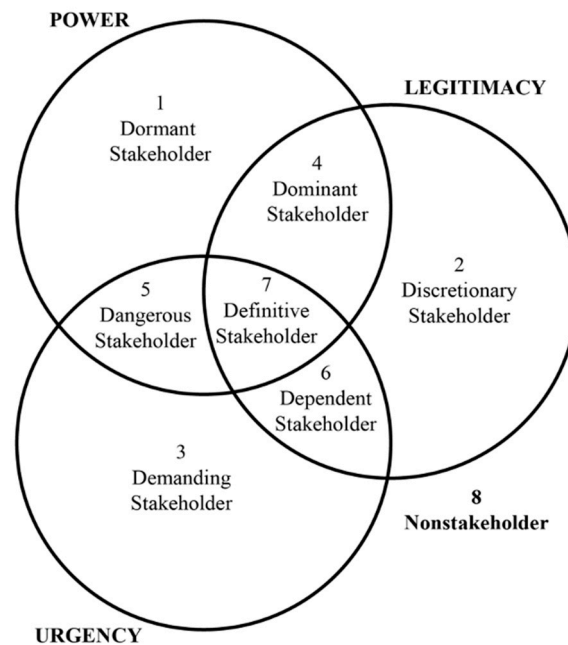


Figure 1. Stakeholder typology adapted from Mitchell et al. (1997).

The first category is the latent stakeholders, who only have one of the three characteristics. Within the latent stakeholders, a distinction is made between dormant, discretionary, and demanding stakeholders. The dormant stakeholders' relevant attribute is power. They have little or even no interaction with the organization (Mitchell et al. 1997). The discretionary stakeholders possess the attribute legitimacy. These stakeholders are the supporters of corporate social responsibility or corporate governance. The last stakeholder group in this category are the demanding stakeholders. They only have the attribute of urgent claims (Mitchell et al. 1997).

If one of these sub-categories had a second characteristic, they would become expectant stakeholders. According to makers of the model, managers will pay more attention to this group of stakeholders than the previous group. The reason behind this is that they are seen as active stakeholders. Again, they are classified in three sub-categories, being the dominant, dependent, and dangerous stakeholders. The dominant stakeholders have power and legitimacy. The dependent stakeholders have urgency and legitimacy. The dangerous stakeholders have power and urgency (Mitchell et al. 1997).

A stakeholder becomes a definitive stakeholder by acquiring the third attribute, being urgency. It is this stakeholder group to which the organization pays most attention. When one does not own any attribute, this entity is then seen as a non-stakeholder (Mitchell et al. 1997).

2.3. Stakeholder Management Approach

A. Reactive-Defensive-Accommodative-Proactive scale

In 1975, Wilson developed four stakeholder management strategies, namely the reactive, the defensive, the accommodative and the proactive strategy (Wilson 1975). The table below (Table 1) shows an overview of these four strategies and their moral barometer

(Aguilera et al. 2007). In the literature, they are often abbreviated by the term RDAP scale, and this term was first introduced by Clarkson (Clarkson 1995). The concept is mostly used in the context of Corporate Social Responsibility (Sobczak and Havard 2015).

Table 1. RDAP scale table adapted from Clarkson (1995) including the strategy of the organization and enriched with the moral barometer by Aguilera et al. (2007).

Scale	Strategy	Moral Barometer
Reactive	Deny responsibility	Amoral
Defensive	Acknowledge responsibility but fight against it	Morally neutral
Accommodative	Accept responsibility	Moral
Proactive	Anticipate responsibility	Strong moral

For Smudde and Courtright (2011), the stakeholder management strategy looks at past activities that have affected relationships with stakeholders. This approach is important in the sense that an organization does not want to repeat the mistakes it made in the past (Smudde and Courtright 2011). Consequently, an organization needs to proactively engage with its stakeholders and build trustworthy relationships with them to become a successful company (Olander and Landin 2008). According to Manowong and Ogunlana (2010), an organization needs different strategies for dealing with different stakeholder types. This means that organizations must have flexible stakeholder management strategies (Manowong and Ogunlana 2010).

B. Successful stakeholder management elements

Researchers Boynton and Zmud (1984) define Critical Success Factors (CSF's) as: "Those things that must go well to ensure success for the manager or an organization" (Boynton and Zmud 1984, p. 17). According to Cleland and Ireland (2002) the CSF's approach is necessary for an effective stakeholder management strategy (Cleland and Ireland 2002). Based on the existing literature, interviews, and a questionnaire, Yang et al. (2010) bundled and ranked 15 CFS's (Yang et al. 2010). The table below (Table 2) provides an overview of this ranking.

Table 2. Ranking of the CSF adapted from Yang et al. (2010).

Critical Success Factor (CSF)	Ranking
CSF 1: Managing stakeholders with social responsibilities	1
CSF 5: Exploring stakeholders' needs and constraints to projects	2
CSF 15: Communicating with and engaging stakeholders properly and frequently	2
CSF 4: Understanding the area of stakeholders' interests	4
CSF 3: Identifying stakeholders properly	5
CSF 11: Keeping and promoting a good relationship	6
CSF 9: Analyzing conflicts and coalitions among stakeholders	7
CSF 7: Predicting the influence of stakeholders accurately	8
CSF 12: Formulating appropriate strategies to manage stakeholders	9
CSF 8: Assessing attributes (power, urgency, and proximity) of stakeholders	10
CSF 10: Compromising conflicts among stakeholders effectively	11
CSF 2: Formulating a clear statement	12
CSF 13: Predicting stakeholders' reactions for implementing the strategies	13
CSF 14: Analyzing the change of stakeholders' influence and relationships	13
CSF 6: Assessing stakeholders' behavior	15

2.4. The Transfer of Technology and Spin-Offs

A. Technology transfer

To define the concept technology transfer, one must first understand the two separate terms being technology and transfer. The former can be defined as information being converted into something to perform a certain assignment (Eveland 1986). The latter is

the movement from one organization or individual to another through a communication channel (Rogers et al. 2014). By combining these two elements, Gibson and Rogers (1994) summarize technology transfer as: “The application of information (a technological innovation) into practical use” (Gibson and Rogers 1994; cited in Rogers et al. 2001, p. 254). They also made a broader definition of technology transfer being: “The application of a technological innovation into a use and the process involves moving a technological innovation from an R&D organization to a receptor organization” (Gibson and Rogers 1994; cited in Rogers et al. 2001, p. 254). Bremer (1999) describes the term technology transfer as: “The transfer of the results of research from universities to the commercial sector” (Bremer 1999, p. 1). For Zhao and Reisman (1992), the definition of technology transfer may differ depending on the context and the research purpose (Zhao and Reisman 1992).

B. Technology transfer in Flemish universities

Currently, there are five universities in Flanders (Belgium): the University of Antwerp (UAntwerpen), the University of Ghent (UGent), the Free University of Brussels (VUB), the University of Hasselt (UHasselt) and the Catholic University of Leuven (KU Leuven). Belgian universities, and more specifically Flemish universities, are known worldwide for having higher quality education. They offer education programs such as bachelors, masters, and postgraduates and they can award doctoral degrees (Rabossi et al. 2018). The table below (Table 3) provides an overview of the number of students per educational institution in Flanders in 2019–2020 (Vlaanderen 2020).

Table 3. Overview of students and spin-offs per Flemish university in the academic year of 2019–2020 (Vlaanderen 2020).

University	Number of Students	Number of Spin-Offs
Catholic University of Leuven	46.853	135
University of Ghent	39.398	112
University of Antwerp	17.047	37
Free University of Brussels	13.664	40
University of Hasselt	3.802	14

Based on the above table, we can conclude that the KUL had the largest number of students in the academic year of 2019–2020. Therefore, it can be seen as the largest university in Belgium. The smallest and youngest university is the University of Hasselt, which has had a partnership with the University of Maastricht since 2002, being the Transnational University of Limburg (UHasselt 2018).

For the dissemination of scientific research results, each Flemish university has a separate TTO that takes care of the creation of spin-offs. The table below provides an overview of the number of spin-offs that were created per university (up to and including the year 2019).

From this table, we can conclude that Flemish universities are working on technology transfer and have already created many spin-offs.

C. Spin-offs

To be classified as a spin-off, an organization must fulfil three conditions. The first one is that there is a parent organization involved. The second condition is that there are one or usually more people involved with a function within the parent organization. The last condition is that these people will leave the parent to create a new company, namely the spin-off (Pirnay et al. 2003). A university spin-off (USO) is a specific form of the general broader concept ‘spin-off’. As shown in the table below (Table 4), researchers Fryges and Wright (2014) made an interesting typology of spin-offs (Fryges and Wright 2014). In what follows, only the features of the spin-offs within quadrants 1, and 2 are discussed. The former takes place in an academic context, whereas the latter takes place in a more commercial context. The other quadrants are not relevant to this research and are, therefore, not discussed.

The organizations, in quadrant one, have two distinguishing characteristics, namely (1) the technology transfer from a university to the new organization and (2) the entrepreneurs who are members from the university (Fryges and Wright 2014). In most cases, the university supports and promotes this academic entrepreneurship by educating the (co-)founders with workshops or courses. A pure academic spin-off consists of members that left the university. They have academic knowledge. A hybrid academic spin-off consists of researchers from the incubator university and researchers or entrepreneurs outside the academic sector. These members have both academic and commercial knowledge (Fryges and Wright 2014). Both the hybrid and purely academic spin-offs rely on technology transfer. If not, they are not classified as academic spin-offs (Fryges and Wright 2014).

Table 4. A typology of spin-offs in different quadrants adapted from Fryges and Wright (2014).

		Environmental Context	
		University context	Commercial context
Firm level—spin-off mode	New firm	Quadrant 1 Alumni start-up Academic spin-off (pure or hybrid)	Quadrant 2 Corporate spin-off (use of intellectual property/assets) Employee spin-off (no direct use of intellectual property/assets)
	Existing activity	Quadrant 3 Privatization buyout/buy-in of university research agency/station	Quadrant 4 Management buyout of division Management buy-in of division

Quadrant two contains both corporate and employee spin-offs. Corporate spin-offs also receive knowledge, being production, technology, or marketing knowledge, from the parent firm, which can lead to a potential competitive advantage. This knowledge transfer can be informal, such as tacit knowledge or delivered in a more formal way, such as licenses, patents, or trademarks (Sapienza et al. 2004). This time, the parent firm is not a firm in the academic context. According to Parhankangas and Arenius (2003), a corporate spin-off is: “A new business formation based on the business ideas developed within the parent firm being taken into an independent firm” (Parhankangas and Arenius 2003, p. 463).

The main trigger to set up a corporate spin-off is developing new technologies that do not fit with the core activities of the parent organization (Van De Velde et al. 2007).

D. Two models used

Besides stakeholder management theory in spin-offs, it is also important to look at the other two models. The first model used is the life cycle of an organization. The second model used is the one that goes through the different phases in the development process of a university spin-off.

To comprehend the creation of USOs, people should look for “knowledge gaps” (Lockett et al. 2005). As already mentioned, this thesis addresses how SM is applied in university spin-offs. In principle, the university will support the spin-off in the whole development process (Lockett et al. 2005).

In most cases, the parent organization is the university where the (co-)founders work. The university can provide various forms of support, such as access to research laboratories, TTOs for the legal aspects, financial help, consulting services or courses in entrepreneurship, finance, and marketing (Clarysse et al. 2011). The entrepreneurs behind the spin-offs are usually professors, researchers, PhD, or graduate students (Nicolaou and Birley 2003). Many spin-off founders may not leave the university after the firm is established, so they have, in fact, a double business career (Borges and Filion 2013).

E. Organizational life cycle model

The concept of an organizational life cycle (OLC) is an adaptation of the biological concept of a life cycle. The model describes the specific stages of the life cycle of an

organization from the beginning until the end of their life (Lester et al. 2003). The activities and the structure of an organization are changing constantly because a company grows and develops itself, and it is important to understand how these changes are evolving over time (Van de Ven 1992). There are different OLC models ranging from three to ten stages. For this research, we will be using the five-stage OLC model that is visualized in Figure 2 below (Lester et al. 2003). This model is interesting because it is useful for organizations of all sizes (including small, medium-sized, and large organizations). Another reason for choosing the five-stage OLC model is because it recognizes *decline* as a separate phase (Lester et al. 2003).

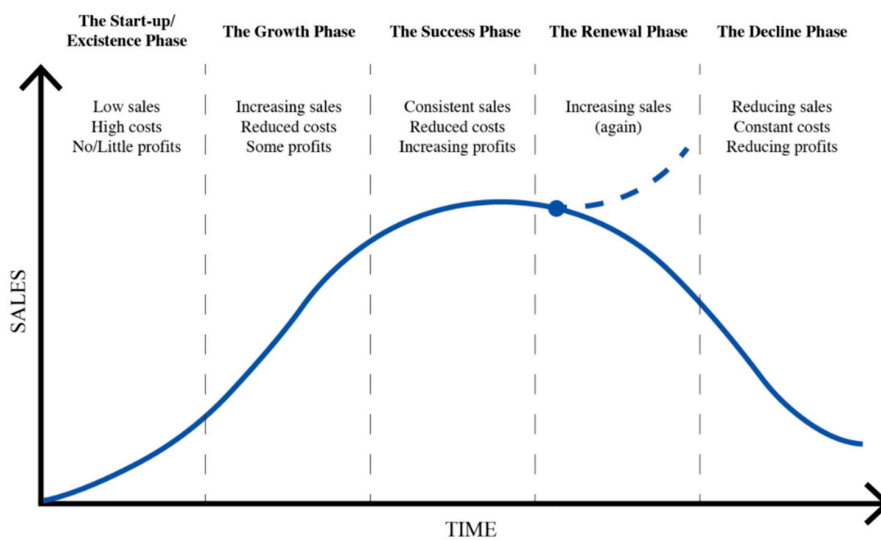


Figure 2. The five sequential stages of an organizational life cycle (Lester et al. 2003) adapted from (Wynn 2003).

The first stage of the OLC model is called the existence, birth, or start-up phase (Lippitt and Schmidt 1967). It is the stage that shows the beginning of the establishment of the organization. In this phase, the organization seeks to identify a large number of (potential) customers that will support its existence. The profit in this stage is low or can even be zero.

When we move upwards in the life cycle, we come to the second stage, called the survival or growth phase. The focus in this phase is to generate sufficient returns for the organization to continue its activities and to stay competitive (Lewis and Churchill 1983).

The third stage is called the success stage. Here, bureaucracy is very important, and the profits of the organization are exponentially increasing. On the graph, this phase is visualized as the highest point on the curve.

When a company pays more attention to collaboration and teamwork to enhance innovation and creativity by using a matrix structure and decentralizing their decision making, it has reached the renewal phase, which is stage four. Through new inventions, the organization can once again have increasing revenues. Without that innovation, the company would likely have gone out of business.

The decline stage is the fifth and last stage of the OLC model. The managers and employees of the organization act more in their own interest than in the interest of the organization. This problem is also called a conflict of interest and comes from the agency theory (Shapiro 2005).

The OLC theory is used in this thesis because in each stage of the life cycle the company naturally has to deal with stakeholders. According to the research of Jawahar and McLaughlin (2001), in each stage, certain stakeholders may be more important than others (Jawahar and McLaughlin 2001). Through this research, we will try to find out whether this statement is indeed correct. In addition, after conducting the interviews, the different spin-offs are put into the right phase of the OLC model.

a. Spin-off development process

Before the start-up phase of the OLC model, a university spin-off still goes through other stages (Ndonzuau et al. 2002). The Figure 3 below provides an overview of these four different stages.

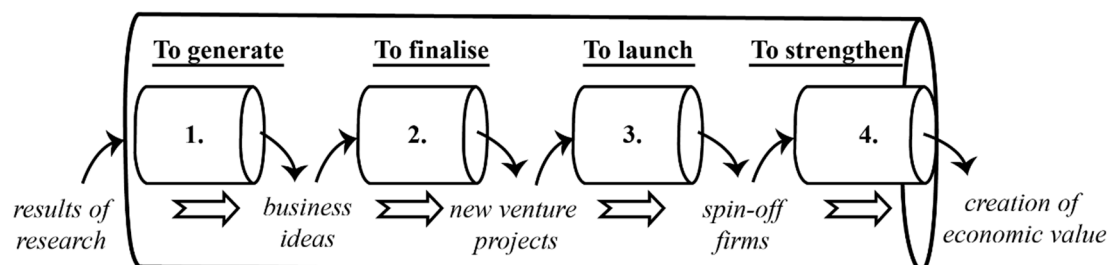


Figure 3. The global process of valorization by spin-off. Adapted from (Ndonzuau et al. 2002).

In the first stage, the researchers brainstorm about potential commercialization possibilities. There is a need for the right methods and criteria in order to select the most promising ideas of products and/or services. Furthermore, the founders of the potential spin-off need to consider all the possible risks and threats given the fact that the idea comes from basic scientific knowledge or technological research (Ndonzuau et al. 2002). The second stage will transform the brainstorm ideas into realistic entrepreneurial concepts or project. It is the phase where the organization and its activities are designed, and the feasibility of the business model is tested from a financial, technical, and commercial perspective. In the third stage, the best concepts are realized by launching a new spin-off. This stage involves finding the right and sufficient financial resources from private or public investors. In the fourth stage, the spin-off focusses on strengthening the economic value. There is also an improvement of the entrepreneurial culture of the new company.

When a spin-off switches from one stage to another, it can face different barriers that prevent it from progressing, such as rivalry, limited financial resources or external problems (Vohora et al. 2004). The current COVID-19 situation is also an example of such a barrier.

3. Methodology

3.1. Research Method

Research on stakeholder management applied to Flemish university spin-offs has not been performed yet. This paper is, therefore, an *exploratory study* about this topic. The purpose of exploratory research is to discover the subject, to formulate problems, define relevant concepts and create hypotheses rather than test them. The purpose of this research method is to create new insights that can later be tested in confirmatory research (Jaeger and Halliday 1998). This research method can be seen as quite risky because you do not know in advance if some interesting results will come out (Elman et al. 2020). This paper maps how stakeholder management is applied in these USOs. The research method for this investigation is a *qualitative method*, namely a *semi-structured in-depth interview*. A qualitative method is applicable for this research because we want to check the experiences, opinions, and perspectives of the USOs executives on applying stakeholder management. When using semi-structured interviews to explore people's attitudes and opinions from the respondent's point of view, qualitative research is the most appropriate research method (Malterud 2001).

3.2. Sampling Method/Case Description

We interview 30 executives of spin-offs from different sectors and companies in different stages of development to ensure diversity. We employed a targeted *convenience sample* because we assume that founders or CEOs will give us the most relevant information (Sousa et al. 2004). The people interviewed were the USO founders themselves or USO employees

with a management function. The active spin-offs created by the Flemish universities were ranked according to the NACE-BEL 2008 code assigned to the USO by the European Commission¹. Out of 215 spin-offs identified and contacted, 30 CEOs or founders reacted to our request to be interviewed for this research effort.

The population of this study are all the active USOs that resulted from one, and sometimes several, Flemish universities established before the year 2020. There is a limitation in the dataset for spin-offs created after 2020, which makes it impossible to classify these spin-offs in the NACE-BEL 2008 code. Sectors in which fewer than four spin-offs are present are excluded from this study to get a sufficiently large population per sector to find enough respondents to interview. This is in favor of the representativeness for this study. Therefore, we focus on sectors where there are many spin-offs active. There are six such sectors.

The aim of this research is to interview founders or employees with a management function from both small, medium, and large spin-offs per sector. The table below (Table 5) shows the number of USOs by sector². We can therefore conclude from this that there are more small spin-offs than large ones. Whether the spin-offs activities are classified in the correct NACE-BEL 2008 code is verified during the interviews. All respondents agreed with this classification. However, the comment was sometimes made that this classification is broad and their activities are often more specific than what is described in the NACE-BEL 2008 classification.

Table 5. Overview of spin-offs by sector and company size.

	Sector	Small	Medium-Sized	Large	Very Large
1.	Manufacturing	17	6	1	1
2.	Wholesale and retail trade	9	2	0	0
3.	Information and communication	38	17	1	0
4.	Professional, scientific and technological activities	60	39	6	1
5.	Administrative and support service activities	9	1	0	0
6.	Human health and social work activities	3	2	2	0
	TOTAL	136	67	10	2

3.3. Interview Guide

As indicated before, we chose a *semi-structured in-depth interview* because a significant advantage of this method is that we could establish an interview guide that allowed us to ask the same questions to each respondent. The semi-structured interview is divided into four major parts.

The first part contains identification questions. Here, the purpose is to obtain more information about the respondents and their position in the USO. We were careful not to ask too personal or sensitive questions at the beginning of the interview as this could create a deterrent effect (Czaja 1987).

The second part of the interview contains questions for the conceptualization of the term stakeholder. The aim here is to get more clarity on the concept or definition of a stakeholder, specifically applied in the context of a USO. It is in this part of the interview that the two intertwined conceptual frameworks are discussed.

This is followed by a section of questions relating to the categorization of the USO's stakeholders. Here, the objective is to find out whether the USOs have policies to classify their stakeholders in a particular way or not. If such a classification system is used, we seek to discover the motivation behind the use of it.

The last part of the interview focuses on the stakeholder management strategy or approach that a USO applies towards its stakeholders and the rate of satisfaction thereof.

Furthermore, the impact of the COVID-19 pandemic on the way the USO currently deals with its stakeholders is examined. In addition, a pilot study is performed to test and develop a suitable research instrument, namely the semi-structured interview protocol. The pilot study also provided insight into how long the interview will take. Respondents were contacted via both the social media tool LinkedIn and e-mail. The response rate, against all odds, was the highest via the social media tool LinkedIn. This can be considered for future studies.

4. Research Results

The purpose of the analysis is to arrive at an overview of stakeholder management as applied in the USOs examined. For some questions in the analysis, a comparison is also made between the sectors and between the different OLC stages of development. Since this study is qualitative in nature, it is not intended to provide a quantitative analysis. However, graphs and figures are sometimes used to clearly present the results from the analysis.

4.1. Results from the Questions Related to Defining the Stakeholders

A. Does the USO have its own general definition of a stakeholder (Q5)?

In general, we see that the majority of the USO respondents do not have a general definition of a USO stakeholder. This is also in line with the study by [Mainardes et al. \(2011\)](#). They find that even though the term stakeholder is widely used in every organization, the concept is almost never defined nor explained ([Mainardes et al. 2011](#)).

Comparisons are also made between the sectors and between the different OLC phases. In the sector *information and communication* and the sector *administrative and support service activities*, there are more respondents who do have a definition for the term stakeholder than respondents who do not. In all the other sectors, it is the other way around (see [Figure 4](#)). For the sector *human health and social work activities*, the answers for this question are evenly divided. However, this sector contains only two respondents.

Eight respondents cited that they do not have an explicit definition for the term stakeholder but are implicitly aware of who their stakeholders are. Respondents who answered that they have an explicit definition were then asked to articulate this definition. Most respondents answered this question by listing the general stakeholders of the spin-off, such as the customers, the suppliers, the employees, the shareholders, and the board of directors. So, this is an enumeration of the different stakeholders rather than a clear definition of the term.

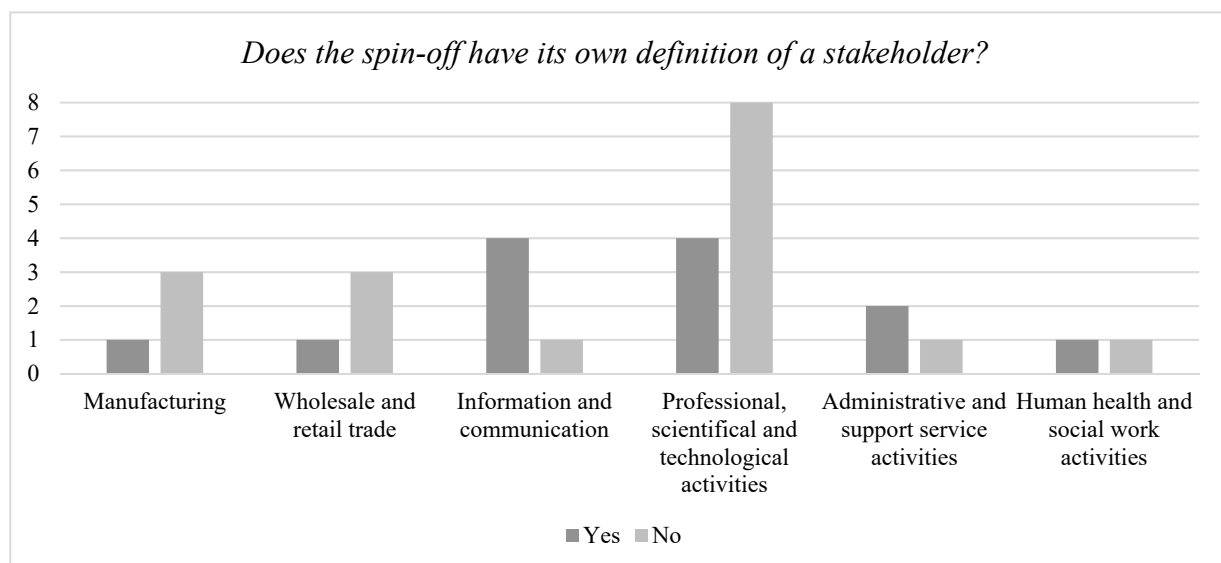


Figure 4. Chart showing whether the spin-off has its own definition about the term stakeholder per sector.

Stakeholders for respondent no. 4 are: “All the people who are important for the success of the organization” (Respondent no. 4, on 16 February). This definition is in line with the description of a stakeholder by respondent no. 14. He states that: “Stakeholders are the main reason for existence” (Respondent 14, on 1 March). Respondent no. 7 defines the stakeholders from the USO as: “Those people who can potentially be influenced by your decisions” (Respondent no. 7, on 18 February). Currently, respondent no. 6 does not find stakeholder management useful for his USO. The respondent cited that: “Stakeholders’ management, and thus defining stakeholders, is not yet a priority in the first five years after the spin-off is established” (Respondent no. 6, on 17 February). For this respondent, the application of stakeholder management is only interesting when the spin-off has acquired a certain size and structure. The spin-off must be further along in its life cycle to explicitly engage in stakeholder management. In the first few years after the spin-off was created, it is mainly the product–market fit that is very important. When the product–market fit is successful, the management has time for additional things, such as stakeholder management (Respondent no. 6, on 17 February). This is not consistent with the research from [Matuleviciene and Stravinskiene \(2015\)](#). They conclude that applying stakeholder management is important in every life cycle stage of the business ([Matuleviciene and Stravinskiene 2015](#)). This is because stakeholders have power and can put pressure on the spin-off. An organization must take the potential influence of the stakeholders on the spin-off into account through stakeholder management ([Post et al. 2002a, 2002b](#)). Furthermore, a comparison is made between the USO respondents from the different OLC stages (see Figure 5). In the *start-up phase*, more USOs have made a definition for the term stakeholders than not. In the *growth phase* and the *success phase*, it is just the opposite. This is a result we would not expect in the first place. It would seem logical that the more developed a USO is, and thus moved further along its life cycle, the more it thinks about having an explicit definition for its stakeholders. This is not the case. We should note that the number of respondents is not evenly distributed across the different OLC phases. We have no respondents in the decline OLC phase.

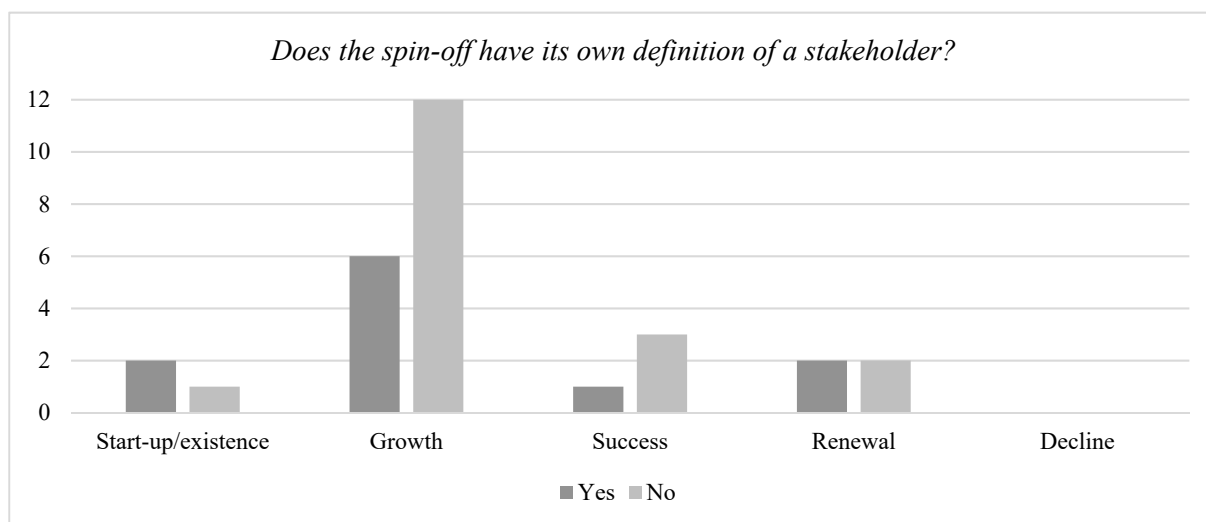


Figure 5. Chart showing whether the spin-off has its own definition about the term stakeholder per OLC stage.

B. Which definitions apply for the USO stakeholders (Q6)?

The respondents were given four definitions to read. They were then asked which definitions aligned with the stakeholders of their spin-off. Both respondent no. 3 and 4 from *the manufacturing* sector believe that each of the four definitions contained some truth but that none was perfectly describing the stakeholders of a USO (Respondents no. 3 and 4, on 12 and 16 February).

From the respondent's point of view, the first definition (Freeman 1984) was most identified as the most accurate definition for a USO stakeholder whereas the definition from Donaldson and Preston (1995) was indicated as the least correct. It is often said in the literature that Freeman's (1984) definition is the broadest one describing the term stakeholder (McGrath and Whitty 2017). This is confirmed by only one respondent, being respondent no. 21. Three respondents think that the third definition from Mitchell et al. (1997) is formulated too general and too broadly.

According to nine respondents, the last definition from Clarkson (1994) is too narrow because it focusses only on investors or shareholders. Four respondents have the opinion that this definition, from Clarkson (1994), was phrased too negatively. For example, respondent no. 21 said: "Stakeholders can not only be put at risk by the organization, but they can also be positively affected by it" (Respondent no. 21, on 9 March).

When we look at the differences between the sectors (see Figure 6), we see a difference especially in the sector of *human health and social work activities* and *administrative and support service activities*. In the sector of *human health and social work activities*, most respondents voted for the stakeholder definition from Donaldson and Preston (1995) and Mitchell et al. (1997). In the sector of *administrative and support service activities* most respondents voted for the definition of Clarkson (1994) and the definition of Mitchell et al. (1997). We should note, however, that both these sectors contained the fewest respondents. In the *manufacturing* and *professional, scientific and technological activities* sectors, also the sectors with the most respondents, many respondents voted for Freeman's (1984) definition. Only one respondent did not. For the other sectors, the answers are almost equally distributed.

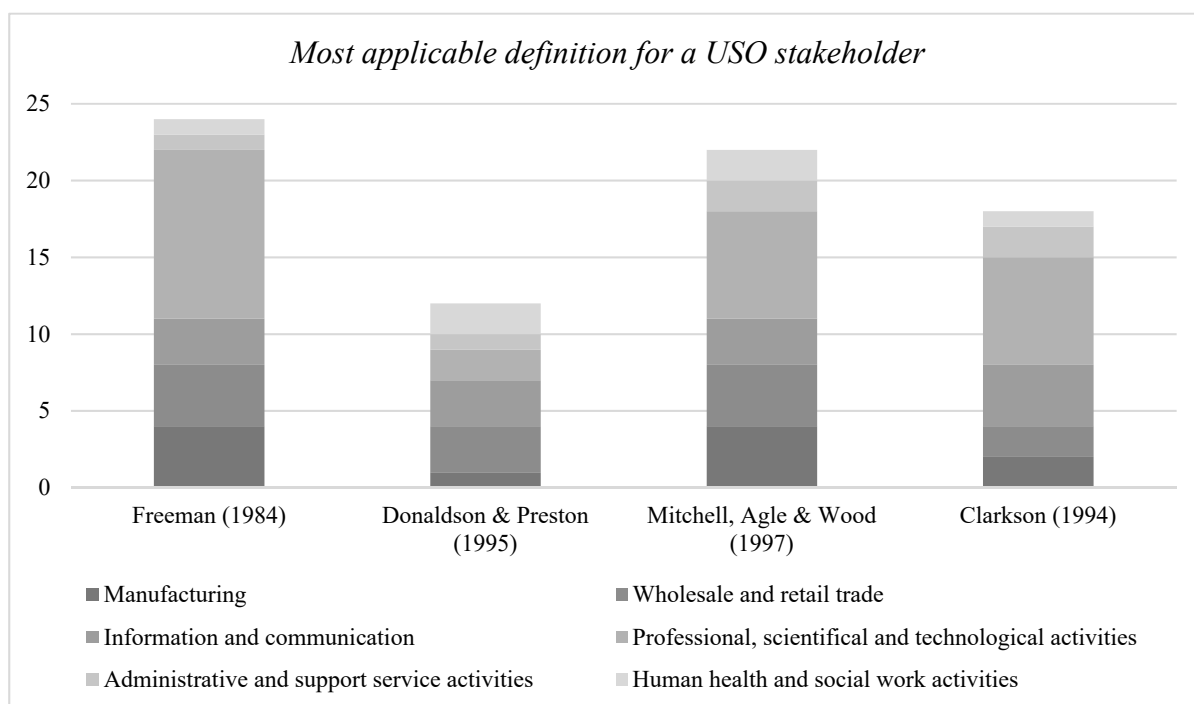


Figure 6. Most applying definition for a USO stakeholder (Freeman 1984; Donaldson and Preston 1995; Mitchell et al. 1997; Clarkson 1994).

C. Which stage of the OLC model best describes the USO at this moment (Q7)?

We also asked the respondents at which stage they think their USO is currently. The table below (Table 6) provides an overview of the number of spin-offs surveyed in each phase. None of the respondents mentioned the fifth stage, i.e., the decline stage. The reason behind this could be that the respondents wanted to show a positive image of their spin-off whereas *the decline phase* is seen as something negative as the company is then close to bankruptcy.

Most respondents believed that their USO was in *the growth phase*, still having a lot of growth potential before reaching their success phase. This could be influenced by the fact that the sample of this study contains more small than large USOs. This is in line with the research from Lotti et al. (2003). They find that new small companies in the early stages of their organizational life cycle grow faster than their large counterparts (Lotti et al. 2003).

Table 6. An overview of the number of USOs investigated in each development phase.

Existence/Start-Up	Growth	Success	Renewal	Decline
3	19	4	4	0

All the respondents who identified the *start-up phase* as best suited for their USO came from small USOs. The medium-sized USOs were spread across *the growth, success, and renewal phases*. There was only one large, even very large, spin-off that participated in this research and it was placed in *the renewal phase* by its founder.

D. Stakeholders within each phase of the spin-off development model (Q8)

The first phase in developing a spin-off is brainstorming ideas and results of research (see Figure 7). Here, most respondents mentioned the stakeholders: the university, the researchers, and the founders. In some cases, also the potential customers were mentioned.

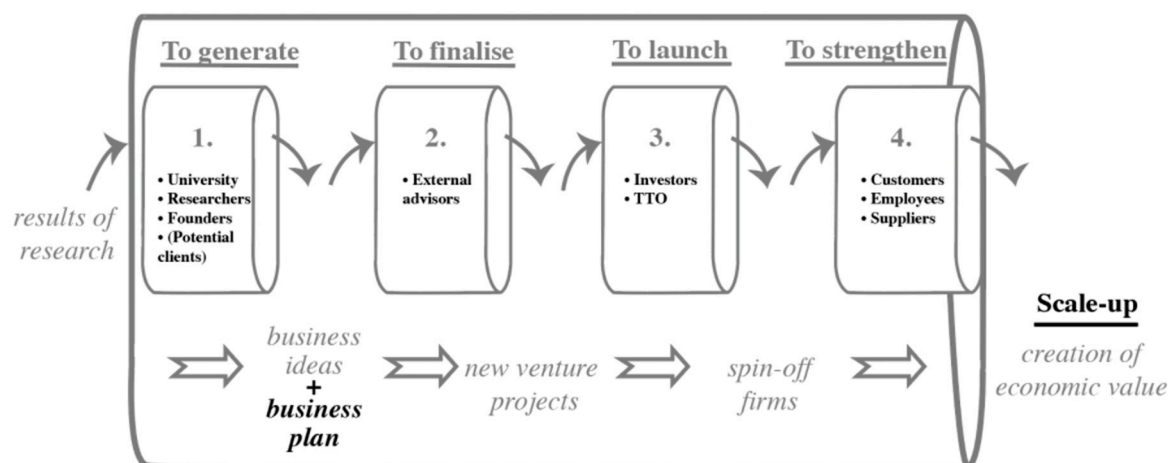


Figure 7. Global process of valorization by spin-off, adapted from Ndonzuau et al. (2002) and enriched with the answers of the USO respondents.

In the second phase, the ideas are converted into a specific project. In this phase, the respondents consider the external advisors an important stakeholder group. These are people who already have practical experience from the industry itself with founding a company or with the activity of the spin-off. The external advisors give their opinion on the potential of the concept. This finding corresponds with how this phase is characterized in the literature. In this phase, the financial, technical, and commercial feasibility of the business model is tested (Ndonzuau et al. 2002). The external advisors help with this. According to some respondents, the business plan is also prepared in the second phase.

In the third phase, the USO is officially established. For the respondents, the most important stakeholders here are the investors and the TTO within the university. This finding also corresponds to what is stated in the literature. Indeed, according to Ndonzuau et al. (2002), this stage involves gathering sufficient and appropriate financial resources (Ndonzuau et al. 2002).

In the last phase, when entrepreneurship becomes more important, the stakeholders, customers, employees, and suppliers, are added. With “employees” we refer to people who do not come from the academic sector, but who specialize in areas such as marketing, finance, and accounting. In the literature, this phase is described as the phase in which more

attention is paid to the entrepreneurial culture of the spin-off (Ndonzuau et al. 2002). This is also confirmed by the respondents. The majority of the respondents indicated that, in this phase, more attention is paid to an increase in scale and the creation of more structure.

The image above is a visualization of this analysis. The black font indicates the added stakeholders and comments made by the USO respondents during the interview.

E. Do you agree with the conceptual framework (Q9)?

A substantial part of the respondents agreed with the conceptual framework and, thus, with the representation of the development stages of a USO. Six respondents believe that the conceptual framework for the creation of a spin-off should be represented more as a circle (Respondents no. 3, 4, 7, 8, 13 and 22). According to them, it is often an iterative process where after each stage there is a feedback moment and adjustment where necessary. Respondent no. 13 articulates this as follows: *“It is not a linear process, it is circular. We have already changed ideas and concepts. The path that the spin-off takes is created by the stakeholders”* (Respondent no. 13, on 26 February).

Five respondents find the conceptual framework a correct representation for the spin-off development but add that the phases of the model are not of equal length in practice (Respondents no. 23, 24, 28, 29 and 30). For example, respondent no. 24 believes that the research part is the longest phase (Respondent no. 24, on 15 March). This phase can take decades for some spin-offs. The shortest phase, according to respondent no. 23 and no. 29, is the third phase, i.e., the official creation of a USO (Respondents no. 23 and 29, on 11 and 23 March). This is the phase where the TTOs within the university do most of the work.

The final phase, according to respondents no. 23, 27 and 30, is the one that continues even after the spin-off is firmly established (Respondents no. 23, 27 and 30, on 11, 16 and 24 March). Both respondent no. 4 and 17 agree that, in this phase, the spin-off searches for people with management qualities. According to respondent no. 4 and 17, this is the phase where more structure and focus is given to the USO (Respondents no. 4 and 17, on 16 February and 3 March). The last phase, where more attention is paid to the entrepreneurial culture, is called by the respondents as the *“scale-up”* phase as more attention is paid in this phase to recruiting more employees and increasing its customer base.

The Figure 8 below provides a visualization of the adapted conceptual framework as described by the respondents. It is represented as a circle with a feedback moment for each phase.

4.2. Results from the Questions Related to the Classification of the Stakeholders

A. Is there a well-defined stakeholder classification within the USO (Q10a)?

Most respondents, 20 out of 30, do not have an explicitly written down classification for their stakeholders. According to ten respondents, they do use a well-defined classification for their stakeholders. The majority of these make a basic classification by distinguishing between the categories of customers, suppliers, shareholders, board of directors, employees, and government. The table below (Table 7) provides an overview of other classification methods used by the USO respondents.

Table 7. Classification method used in 6 USO's.

Respondent	Classification Method
Respondent 8	Primary and secondary stakeholders
Respondent 10	National and international stakeholders
Respondent 16	Academic stakeholders, government, and individual companies Stakeholders who need to be informed (1), convinced (2) and stakeholders who are positive towards the concept (3)
Respondent 19 and 24	Internal and external stakeholders
Respondent 28	Based on PESTEL analysis

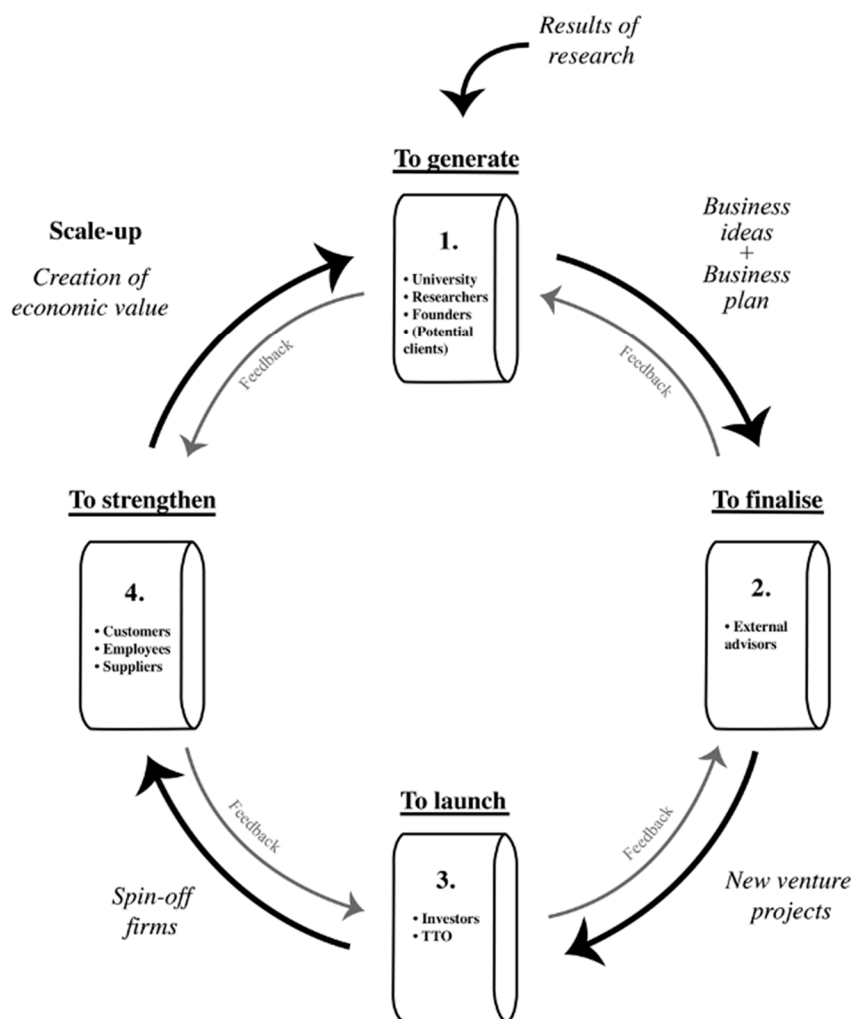


Figure 8. Conceptual framework made by Ndonzuau et al. (2002) adapted in the shape of a circle.

Another question polled whether the respondents who do not use a classification would find it useful to do so in the future. Sixteen respondents answered this question. The majority of these would find it useful to think about having a classification method for their stakeholders in the future. Ten respondents make an implicit classification that is more intuitive. The table in appendix 11.9 provides an overview of the quotes that these respondents gave in this regard. The quote of respondent no. 5 sums this up briefly as: "A stakeholder classification happens implicitly. The stakeholders need to be kept informed. That is organic, it is not fixed in a certain protocol which does not mean that it is not important" (Respondent no. 5, on 17 February).

Four respondents do not think that a classification of stakeholders is necessary (Respondents no. 9, 14, 22 and 27). According to them, each stakeholder is equally important. They see classification, thus, as something where you give more attention to the stakeholders who are more important to the organization. Respondent no. 9 makes this clear with: "For me, there is no such thing as 'primary stakeholders' who are the most important. They all are" (Respondent no. 9, on 19 February).

Eight respondents responded that they do not use a classification for their stakeholders but would find it useful should the company grow larger in the future (Respondent 7, 13, 15, 17, 20, 21, 23 and 30). For them, stakeholder management classification becomes more important when the spin-off is further along its lifecycle. It is then necessary to introduce more structure and see that everyone is pulling in the same direction.

For respondent no. 12, a classification is useful for data security reasons. You need to be aware of what information you are sharing with whom (Respondent no. 12, on 24

February). According to respondent no. 18, a subdivision may be interesting because: “*Not every stakeholder has the same interests and questions*” (Respondent no. 18, on 4 March).

In the sectors wholesale and retail trade, and professional, scientific and technological activities, most respondents do not use a classification method. In sectors administrative and support service activities, and human health and social work activities, it is the other way around. For the sector information and communication, the responses for this question are equally divided.

For each phase, except the *renewal phase*, we note that most spin-offs do not have a classification. Thus, for this question, there are no major differences between spin-offs active in different stages of development.

B. Classification model from Mitchell et al. (1997) (Q11)

The ranking of the stakeholder types in the literature made by Mitchell et al. (1997) does not match the ranking made by the respondents except for the last two stakeholder types (see Table 8). It is remarkable that the first stakeholder type, the definitive stakeholders who have all three attributes, is ranked fourth by the respondents and, thus, does not receive the highest ranking. A high ranking means that the USO respondents pay a lot of attention to this type of stakeholder.

Table 8. Comparison between the ranking in the literature and the ranking from the respondents for question 11.

Number	Ranking in the Literature	Ranking for USO Stakeholders
1	Definitive stakeholders	Dependent stakeholders
2	Dependent stakeholders	Demanding stakeholders
3	Dangerous stakeholders	Dominant stakeholders
4	Dominant stakeholders	Definitive stakeholders
5	Demanding stakeholders	Dangerous stakeholders
6	<i>Discretionary stakeholders</i>	<i>Discretionary stakeholders</i>
7	<i>Dormant stakeholders</i>	<i>Dormant stakeholders</i>

Many respondents found this question abstract, so they often gave a practical example for each stakeholder type. Some respondents consider the third stakeholder type (the dangerous stakeholder) a competitor. According to some respondent customers, investors and shareholders are an example of stakeholder type five (the demanding stakeholder).

If we look at the differences between the sectors, we see that the first stakeholder type (definitive stakeholders) receives the highest score, as in the literature, by respondents from the sectors of *manufacturing*, and *administrative and support service activities*. The fourth stakeholder type received the highest ranking in the sectors of *wholesale and retail trade*, *information, and communication*, and *professional, scientific and technological activities*.

C. USO priority stakeholders (Q12)

When asked which stakeholders are a priority for their USO, most respondents answered the stakeholder group *customers*. *Employees* and *shareholders* are the second most frequently mentioned stakeholder groups (see Table 9). There are two respondents who emphasized that stakeholders are all the people who contribute to the success of the USO.

Table 9 provides an overview of the stakeholders that are a priority for the USO respondents. There are no differences between the sectors for this question. There are some remarks for the different OLC stages. In the *start-up phase*, according to the respondents, only the stakeholders that contribute to the success of the company and TTO are important stakeholders (Respondents no. 2 and 9, on 11 February and 19 February). The priority stakeholders for spin-offs that are in the *growth phase* are mainly the customers followed by the employees. The shareholders are also mentioned in this OLC stage. In a few cases the investors, university and government are summed up.

Table 9. Priority stakeholders according to the USO respondents.

Priority Stakeholders	No. of Times Mentioned
Customers	19
Employees	11
Shareholders	10
Investors	4
Government	2
People who contribute to the success	2
University	1
Partner	1
TTO	1
Suppliers	1
Family	1

4.3. Results from the Questions Related to Stakeholder Management Strategy

A. Does the USO have a well-defined stakeholder management strategy (Q13)?

In contrast to defining and classifying the stakeholders, the majority responded to this question by indicating that they do have a strategy for dealing with stakeholders. Eight respondents indicated that the strategy depends on the stakeholder type (Respondents no. 1, 4, 7, 9, 12, 14, 16 and 21). Respondent no. 12 articulates this as follows: *“We do have a different strategy to communicate with all the stakeholders”* (Respondent no. 12, on 24 February). As in the question about stakeholder classification, according to six respondents, the stakeholder management strategy is performed in an implicit way (Respondents no. 11, 12, 15, 22, 23 and 28). Respondent no. 11 makes this clear with: *“Again, that does not happen explicitly, that is more of a gut feeling. In the beginning, the product–market fit is the most important aspect of the spin-off’s activities. When the company becomes more mature, for example when it is in the renewal phase, you have time for additional things.”* (Respondent no. 11, on 22 February). The table below (Table 10) provides an overview of the stakeholder management strategies used by the respondents.

Table 10. Stakeholder management strategies used by USO respondents.

Respondent	Strategy
Respondents 1, 26 and 27	Strategy laid out in the legal bylaws for the shareholders and board of directors.
Respondents 6 and 18	Obtaining <i>ISO 9001</i> certification forces the spin-off to formulate stakeholder management strategies. The management of the spin-off should define stakeholders and perform a risk assessment per stakeholder type.
Stakeholder 19	A different strategy per business line.
Stakeholders 14, 16 and 22	Different communication strategies by stakeholder type.

Respondents who do not currently have a stakeholder management strategy were asked whether this would seem useful to consider in the future. For respondent no. 28 and 30, a strategy can be useful because it allows one to tailor the communication strategy to the different stakeholder types (Respondents no. 28 and 30, 18 and 24 March). For several respondents, a strategy may be useful but only for large organizations that need more structure (Respondents no. 20, 23, 27 and 30). Respondent no. 20 says: *“Once your organization gets a certain size, you can’t expect everyone to know and remember all the agreed-upon agreements”* (Respondent no. 20, on 8 March). Respondent no. 23 does not consider this as a priority at the beginning of a spin-off’s establishment. At that time, the product–market fit is more important (Respondent no. 23, on 11 March).

From the eight respondents who do not have a stakeholder management strategy, only one respondent does not think that this can be useful. Respondent no. 13 says: *“Honestly, I do not think so. Most people who work in a small business do so because they prefer to work in a small structure without too many rules”* (Respondent no. 13, on 26 February).

In each phase of development, most spin-offs have formulated a strategy to deal with their stakeholders. Except in *the success and renewal phase*, there it is equally divided.

B. Which of the four SMSs of Wilson (1975) best fits with the USO (Q14)?

Some respondents cite that the stakeholder management strategy (SMS) applied varies between both accommodative and proactive strategies. According to them, the strategy depends on the given *situation* (Respondents no. 4, 18 and 20, on 16 February, 4 and 8 March), on *the attitude of the employees* (Respondent no. 28, on 18 March) and on *the stakeholder type* (Respondents no. 6, 12, 18, 23, 25 and 27). For respondents no. 6, 12, 23 and 25, the strategy towards the customers is proactive while towards the investors and shareholders it is rather accommodative (Respondents no. 6, 12, 13 and 25). For respondents no. 7, 6 and 9, both cooperative and proactive strategies are used but the cooperative strategy is used more commonly since one does not always have the time and resources to be proactive and, thus, anticipate stakeholders' needs and expectations.

For this question, there are no major differences between the sectors. We note that, within each sector, the proactive strategy is mentioned more than the cooperative strategy. This result is consistent with the research performed by Olander and Landin (2008). They suggest that a company, including USOs, must manage its stakeholders in a proactive way to become a successful and financially wealthy company (Olander and Landin 2008).

Only in the *human health and social work activities* sector there is a difference. There, the same number of respondents indicated both strategies. However, this sector contains only two respondents.

Next, we look at the differences between the OLC phases. In both *the start-up phase* and *the growth phase*, many respondents chose the proactive strategy as the appropriate stakeholder management strategy. In *the success phase*, the accommodative strategy was mentioned most. There is an equal distribution of the responses between the accommodative and proactive strategy for *the renewal phase*.

C. What are the key factors that form the basis for successful SM within the USO (Q15)?

Respondents were asked which factor(s) come to their mind as elements for successful stakeholder management. The chart below (Figure 9) provides an overview of the factors and how often they were mentioned. The most frequently mentioned factor is without a doubt *communication* with stakeholders. The second most frequently answered factor is ensuring stakeholder *trust* and being *transparent* with them, as this factor is linked to communication. The *expectations management* factor is also mentioned. Respondents who cited this factor said that you need to meet the expectations that stakeholders have regarding the spin-off and its staff. This, in turn, is carried out through communication. For this question, there are no differences between the sectors. If we look at the responses for the different OLC stages, we see that communication is a key success factor in each phase.

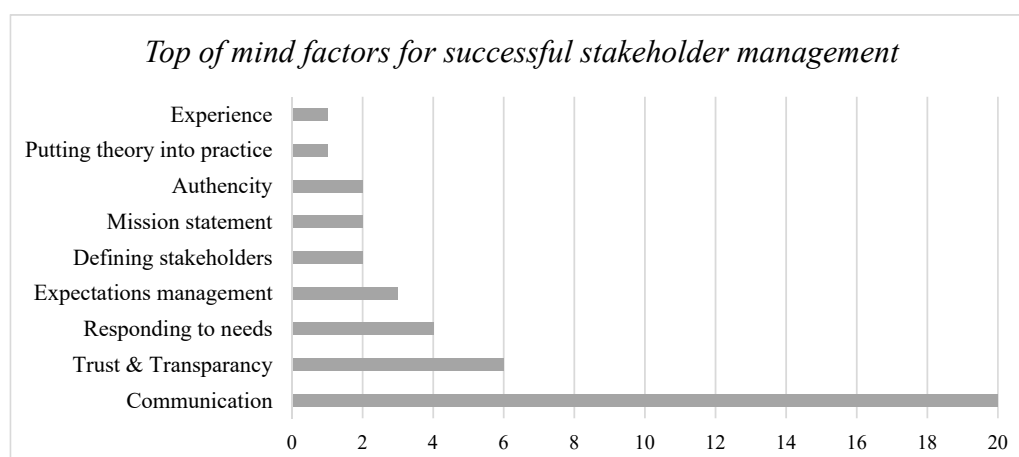


Figure 9. Top of mind success factors for stakeholder management according to USO respondents.

D. Critical success factors from Yang et al. (2010) for SM (Q16).

The table below (Table 11) provides an overview of the 15 critical success factors for stakeholder management. A comparison is made between the ranking from the literature and the ranking of the USO respondents. The fourth, fifth, and thirteenth factors are the only three factors where the ranking of the literature matches the ranking of the USO respondents. What is also peculiar is that communication as a top of mind success factor was, in the previous question, mentioned the most by the respondents, while in this question, it only comes fifth. For most factors (8 out of 15), the USO respondents gave higher scores than those in the literature. This means that they consider these factors less important.

Table 11. Comparing the critical success factors adapted from Yang et al. (2010) with the responses retrieved in the research.

Critical Success Factor (CSF)	Ranking Literature	Ranking Respondents	Factor Importance Empirics vs. Theory
CSF 1: Managing stakeholders with social responsibilities	1	8	Less important
CSF 5: Exploring stakeholders' needs and constraints to projects	2	2	Equally
CSF 15: Communicating with and engaging stakeholders properly and frequently	2	5	Less important
CSF 4: Understanding the area of stakeholders' interests	4	4	Equally
CSF 3: Identifying stakeholders properly	5	6	Less important
CSF 11: Keeping and promoting a good relationship	6	10	Less important
CSF 9: Analyzing conflicts and coalitions among stakeholders	7	11	Less important
CSF 7: Predicting the influence of stakeholders accurately	8	12	Less important
CSF 12: Formulating appropriate strategies to manage stakeholders	9	14	Less important
CSF 8: Assessing attributes (power, urgency, and proximity) of stakeholders	10	9	More important
CSF 10: Compromising conflicts among stakeholders effectively	11	1	More important
CSF 2: Formulating a clear statement	12	7	More important
CSF 13: Predicting stakeholders' reactions for implementing the strategies	13	13	Equally
CSF 14: Analyzing the change of stakeholders' influence and relationships	13	15	Less important
CSF 6: Assessing stakeholders' behavior	15	3	More important

E. How satisfied is the founder or manager with the way their USO deals with SM (Q17)?

It is possible that the respondents are trying to give more socially desirable and, thus, give more positive answers to present their own stakeholder management and strategies within their spin-off in a rosier light than it really is. *Social desirability bias* is a phenomenon whereby people tend to adjust their behavior when they are aware that someone is observing them (Chung and Monroe 2003). For this reason, it may well be that the satisfaction scores are too high because the respondents do not want to portray their own spin-off in a negative light. Respondent no. 28 says this with: "I do find it difficult to score myself because I make the stakeholder management policy" (Respondent no. 28, on 18 March).

The chart below (Figure 10) shows the average satisfaction scores by sector. The red line indicates the middle score (score 3). The *human health and social work activities* sector gave the lowest score. Both *the wholesale and retail trade* and *administrative and support service*

activities sector score the highest on this question, namely score 4. None of the sectors achieves score 5.

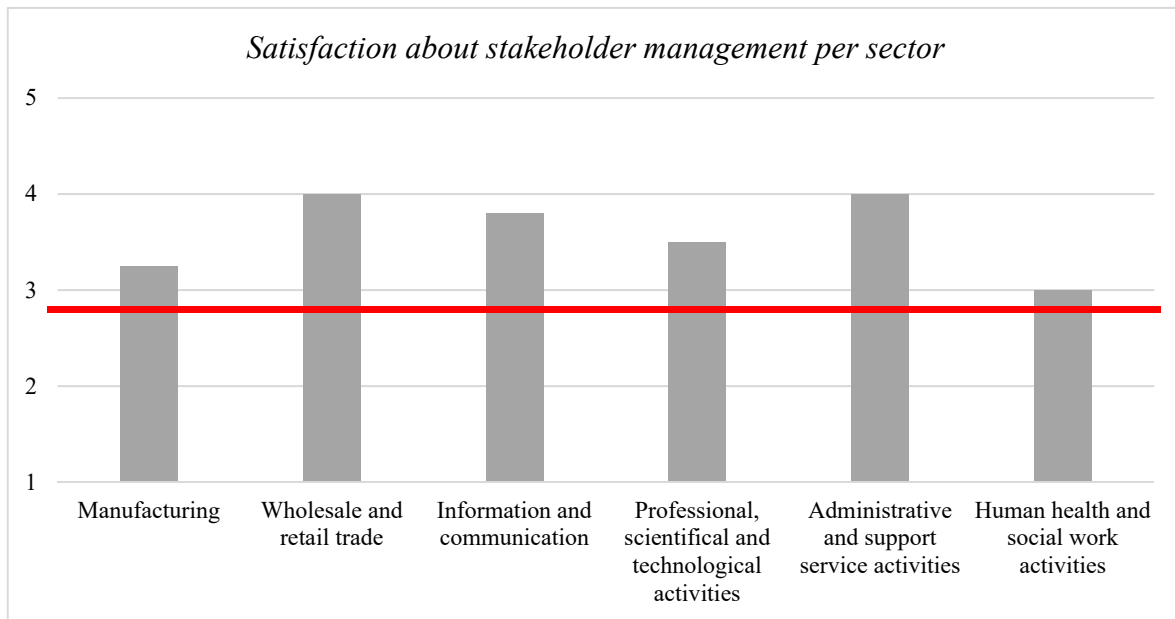


Figure 10. Stakeholder management satisfaction scores from the USO’s respondents per sector.

Respondents explain this by pointing out that policies can always be improved, and perfection does not exist. The view of respondent no. 12 here is: “Stakeholders determine the success of the company. I do think we are doing a good job implicitly, but it could be even better by doing it explicitly” (Respondent no. 12, on 24 February).

As indicated in Figure 11, there are no respondents for the decline phase. All other phases have a satisfaction score above the average of three. The start-up phase has the highest satisfaction score and is followed by the success phase. The growth and renewal phase have equal scores.

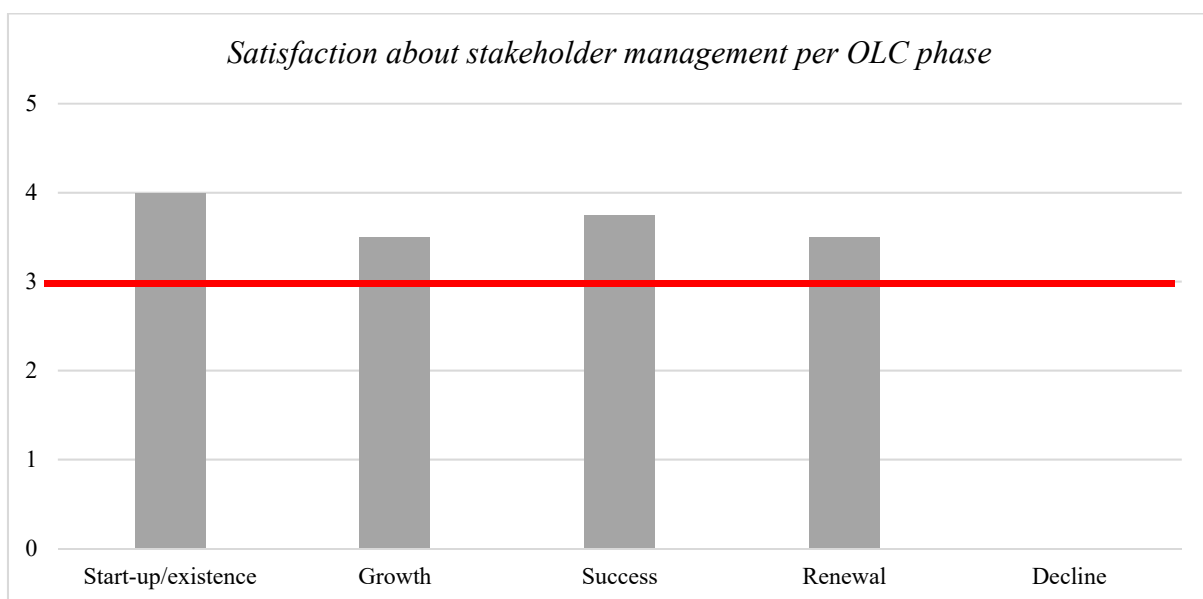


Figure 11. Stakeholder management satisfaction scores from the USO’s respondents per OLC stage.

F. Has the coronavirus had an impact on how the USO deals with its stakeholders (Q18)?

Two respondents did not answer this question. Most of the remaining respondents indicated that the COVID-19 pandemic had an impact on how the spin-off and its staff should interact with its stakeholders. Only five respondents said there was no impact.

Most respondents indicated that COVID-19 had a negative impact on the way they interact with their stakeholders. Some of these negative aspects are that everything needs to be performed in a virtual environment (Respondents no. 1, 3, 4, 7, 8, 11, 14, 22, 23, 24, 25 and 30), there are no more social activities, events and business trips (Respondents no. 5, 13, 14, 15 and 21), stakeholders had become more risk averse (Respondent no. 9, on 19 February), there is a slower response rate and communication was less fluid (Respondents no. 4 and 9, on 16 and 19 February). On the other hand, according to respondent no. 15, disruptive phenomena such as the present pandemic can also lead to innovations and provide opportunities. Other positive aspects experienced were time savings because everything was completed online (Respondents no. 10, 15 and 25, on 22 February, 2 and 15 March), the USO could invest more time in online communication with their stakeholders through social media channels (Respondents no. 19, 27 and 28, on 5, 16 and 18 March), and they focused on broadening the geographical market (Respondent no. 20, on 8 March).

To sum up, the coronavirus restrictions and limitations have had both positive and negative impacts and, in exceptional cases, even no impact at all according to some of the respondents interviewed. The positive aspects are mainly time savings, and the negative ones are the loss of direct contact with the stakeholders.

4.4. Discussion

It is important to be transparent about the limitations of the study. According to [Price and Murnan \(2004\)](#), a limitation is: “*The systematic bias that the researcher did not control, and which could affect the results*” ([Price and Murnan 2004](#), p. 66).

The first limitation of this research is that the scope had to be narrowed down to the currently active Belgian spin-offs up to 2019. This was necessary because there is no NACE-BEL code available for spin-offs founded after 2019.

Additionally, the people interviewed were those who responded to my invitation e-mail or LinkedIn message, so we need to consider that *self-selection bias* could be present here ([James 2006](#)). They were willing to participate in this study and might have provided different information compared to others who did not want to cooperate. It could be that these people themselves are more interested in the topic and are more used in doing stakeholder management ([James 2006](#)).

At the beginning of each interview, the respondents were asked if they had any objection to the interview being recorded as it would make coding easier and more valid. The research of [Rudi and Drake \(2014\)](#) has shown that respondents may respond differently in a context where they know they are being watched by someone ([Rudi and Drake 2014](#)).

Because the COVID-19 virus is still active in the country and causes homeworking to become the norm, all interviews took place through virtual tools such as ZOOM or Microsoft Teams. This did not affect the results of the study, except that it is more difficult to include *non-verbal behavior* in the analyses ([Ekman 1964](#)).

Another important shortcoming of this study to mention is that there is no equal distribution of the number of spin-offs by sector. To this we can add that more small spin-offs participated in the study than medium, large, or very large ones. On the other hand, the number of large and very large spin-offs in the population is rather limited, so it is more logical that the sample also contains fewer large spin-offs. Furthermore, the sample does not include female respondents. This may be since women are less likely to establish a spin-off or to hold a management position within a spin-off. This finding is also confirmed in the results of the study by the researchers [Cañizares and García \(2010\)](#). Their research confirms that women are often prevented from starting their own business due to fear that they would fail ([Cañizares and García 2010](#)). Of course, this may also be due to coincidence

because of the sampling method used. Future research on this topic is recommended to know the reason for this.

To increase the validity and reliability of this research, source triangulation is used. In this method, we refer to multiple sources covering the same topic ([Triangulation Data Source 2014](#)). The second method that contributes to the reliability and validity of this study is to discuss the methodology in detail and then display and report the analysis in a systematic way. This allows other researchers to conduct this research in the same way ([Thiel et al. 2012](#)).

5. Conclusions

The majority of the USO respondents do not have a clear definition of their stakeholders. Some respondents mentioned that they have not yet thought of an explicit definition but, implicitly, they have one. Respondents who answered affirmative on the question whether they had an explicit definition, gave a list of general stakeholders such as “customers”, “suppliers”, “the employees” and so on. Thus, a well-defined description of “a USO stakeholder” was never given. Instead, respondents listed their stakeholders. [Freeman’s \(1984\)](#) definition for the term stakeholder, which is the most cited in the literature, was perceived by many of the respondents as the most correct and broadest definition for the term stakeholder in the context of USOs. Based on the interviews conducted, the conceptual framework of the study was supplemented with key stakeholders for each phase within the USO development. It can be observed that in the first phase, *academic staff* is particularly important and in the second phase, *external consultants* with practical experience are frequently mentioned. In the third phase, that is the official establishment of a spin-off, the *TTO* plays an important role because it deals with all the legal aspects related to the USO. In the final phase, it is important to *recruit staff with specific knowledge* related to domains as marketing, finance, etc. Most respondents agreed with the different stages of USO development presented in the conceptual framework. For some respondents, the development of a USO is usually not a linear process. It can rather be represented as a circle with feedback loops.

Like defining the stakeholders, most spin-offs do not yet have an explicit classification method for their stakeholders. For some this is performed implicitly. Others find a classification unnecessary because each stakeholder is equally important for them. There are a few respondents, however, who use a classification method. For example, a distinction is made between internal and external stakeholders. The ranking of the stakeholder types in the literature made by [Mitchell et al. \(1997\)](#) does not match the ranking by the respondents. Consequently, it could be that the USO respondents find different stakeholder types more important than the ones mentioned in the literature. The majority of the USO respondents believe that the *customers* are the priority stakeholder group.

A substantial proportion of the USO respondents are not concerned with defining and classifying stakeholders. However, in practice, most respondents pay attention to formulating and implementing an appropriate stakeholder management strategy for each stakeholder type. Out of the four stakeholder management strategies, only the accommodative and proactive strategies were mentioned and mostly together. According to the respondents, the stakeholder management strategy depends on a given situation, the attitude of the staff, the stakeholder type, and the available time and resources. Before showing the 15 success factors to the respondents, we asked what factor is top of mind for them in successful stakeholder management. The most frequently mentioned success factor is *communication*. Remarkably, this factor does not achieve the highest ranking in the question regarding the 15 success factors. Even though stakeholders are mostly managed in an implicit way, the satisfaction score among the respondents concerning their own stakeholder management is generally very high. However, they might try to present their stakeholder policy in a more positive way than it really is. According to most respondents, the COVID-19 pandemic has had both positive and negative impacts on how they interact with their stakeholders. In exceptional cases, there has been no impact at all. The main

positive aspect is time saving whereas the main negative aspect is the loss of the direct contact with the stakeholders.

Summarized, stakeholder management in USOs is mostly performed in a more intuitive way. However, it is shown that it becomes more important as the USO moves along the company life cycle. This section is followed by recommendations for the management of spin-offs on how to manage stakeholders in a more systematic and structured way. As such, our findings match with research conducted on stakeholder management for non-USOs (cf. start-ups). For non-USOs there is no formal way of doing stakeholder management, by which it is meant that start-ups do not make a formal definition, classification, and strategy for their stakeholders. Dealing with stakeholders, however, according to Radinal (2016), becomes important only when it would bring benefits to the organization (Radinal 2016). Like our findings, start-ups recognize the importance of stakeholder management. However, formal stakeholder management will only be undertaken when it brings direct business value to the start-up. As in our findings, stakeholder management seems to become more important as the start-up matures and reaches certain milestones (Ter Halle and Ruel 2016).

6. Further Research

This was an exploratory, qualitative study in the field of stakeholder management applied in the USOs of the five Flemish universities. Further research may want to focus on the practical implications and/or address these items from an international perspective. Applying the knowledge acquired here in further conclusive, quantitative research in the future also seems a relevant addition to our qualitative approach.

Similar research could be repeated for the Francophone universities from Belgium. In this way, one would end up with a picture of stakeholder management applied in the USOs of all Belgian universities. Alternatively, one could perform a comparative study between spin-offs sprung from Flemish and Walloon universities.

Another possible avenue for future research is to find out from the founders of the USOs, through qualitative research and more specifically in-depth interviews, what their motivation was for setting up the USO. In the literature, previous research on this topic has been conducted by Vega-Gomez et al. (2018), but no research on this subject has been conducted yet involving Belgian USOs (Vega-Gomez et al. 2018). Another option for new research is to ask for feedback from the respondents to check the accuracy of the research results. In the literature, this is known as *participant* or *respondent validation* (Birt et al. 2016). The respondents would be asked to explain certain topics to obtain even more detailed information and, thus, completing the research. Such additional interpretations and nuances will enrich and supplement the research on this topic.

For this study, not all sectors or stages of development were included. Another study could examine spin-offs from all sectors or stages of development and look at differences between them. A focus group could also be organized with spin-offs by sector or stage of development to discuss the optimal stakeholder management strategy.

A key finding of this work is that of the 30 spin-offs studied, none of the respondents were women. This could be because women show less interest in establishing spin-offs. It could also be that the sample happens to contain no female founders of spin-offs by coincidence. Further research may shed light on this.

Author Contributions: Conceptualization, G.A.; formal analysis, S.J.; investigation, S.J.; methodology, G.A.; project administration, G.A.; supervision, G.A.; validation, G.A.; visualization, S.J.; writing—original draft, S.J.; writing—review & editing, G.A. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Detailed data from the study can be retrieved from the authors by written and motivated request.

Conflicts of Interest: The authors declare no conflict of interest.

Notes

- ¹ The NACE code stands for “statistical classification of economic activities in the European Community” (Eurostat: European Commission 2008).
- ² The population consists of 217 Belgian active spin-offs through 2019 (see Figure 11). Of these, 136 are small, 67 medium, 10 large and only 2 very large.

References

- Aguilera, Ruth V., Deborah E. Rupp, Cynthia A. Williams, and Jyoti Ganapathi. 2007. Putting the S back in corporate social responsibility: A multilevel theory of social change in organizations. *Academy of Management Review* 32: 836–63. [CrossRef]
- Arcuri, Maria Cristina, Elisa Bocchialini, and Gino Gandolfi. 2020. From Local Academic Spin-Off to International Firm: The Case of VisLab. *International Business Research* 13: 100. [CrossRef]
- Bartkus, Barbara R., and Myron Glassman. 2008. Do firms practice what they preach? The relationship between mission statements and stakeholder management. *Journal of Business Ethics* 83: 207–16.
- Birt, Linda, Suzanne Scott, Debbie Cavers, Christine Campbell, and Fiona Walter. 2016. Member checking: A tool to enhance trustworthiness or merely a nod to validation? *Qualitative Health Research* 26: 1802–11. [CrossRef] [PubMed]
- Borges, Cândido, and Louis Jacques Filion. 2013. Spin-off process and the development of academic entrepreneur’s social capital. *Journal of Technology Management & Innovation* 8: 21–34.
- Boynton, Andrew C., and Robert W. Zmud. 1984. An assessment of critical success factors. *Sloan Management Review* 25: 17–27.
- Bremer, H. W. 1999. *University Technology Transfer Evolution and Revolution*. Washington, DC: Council on Governmental Relations.
- Cañizares, Sandra Ma Sánchez, and Fernando J. Fuentes García. 2010. Gender differences in entrepreneurial attitudes. *Equality, Diversity and Inclusion: An International Journal* 29: 766–86. [CrossRef]
- Chung, Janne, and Gary S. Monroe. 2003. Exploring social desirability bias. *Journal of Business Ethics* 44: 291–302. [CrossRef]
- Clarkson, Max E. 1995. A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review* 20: 92–117. [CrossRef]
- Clarkson, Max. 1994. A risk based model of stakeholder theory. In *Proceedings of the Second Toronto Conference on Stakeholder Theory*. Toronto: Faculty of Management, University of Toronto.
- Clarysse, Bart, Mike Wright, and Els Van de Velde. 2011. Entrepreneurial origin, technological knowledge, and the growth of spin-off companies. *Journal of Management Studies* 48: 1420–42. [CrossRef]
- Cleland, David I., and Lewis R. Ireland. 2002. *Project Management: Strategic Design and Implementation*. New York: McGraw-Hill Pub.
- Czaja, Ronald. 1987. Asking sensitive behavioral questions in telephone interviews. *International Quarterly of Community Health Education* 8: 23–32. [CrossRef] [PubMed]
- Dahl, Michael S., and Pernille Gjerløv-Juel. 2011. The growth and job creation of spin-offs: Empirical evidence from Denmark. In *Evolution, Organization and Economic Behavior*. Edited by Guido Buenstorf. Cheltenham: Edward Elgar.
- Donaldson, Thomas, and Lee E. Preston. 1995. The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review* 20: 65–91. [CrossRef]
- Ekman, Paul. 1964. Body position, facial expression, and verbal behavior during interviews. *The Journal of Abnormal and Social Psychology* 68: 295. [CrossRef] [PubMed]
- Elman, Colin, John Gerring, and James Mahoney, eds. 2020. *The Production of Knowledge: Enhancing Progress in Social Science*. Cambridge: Cambridge University Press.
- Eurostat: European Commission. 2008. *NACE Rev. 2: Statistical Classification of Economic Activities in the European Community*. Luxembourg: Office for Official Publications of the European Communities.
- Eveland, J. D. 1986. Diffusion, technology transfer, and implementation: Thinking and talking about change. *Knowledge* 8: 303–22. [CrossRef]
- Freeman, R. E. 1984. *Strategic Management: A Stakeholder Approach*. Boston: Pitman Publishing, pp. 1, 4.
- Fryges, Helmut, and Mike Wright. 2014. The origin of spin-offs: A typology of corporate and academic spin-offs. *Small Business Economics* 43: 245–59. [CrossRef]
- Gibson, David V., and Everett M. Rogers. 1994. *R & D Collaboration on Trial: The Microelectronics and Computer Technology Corporation*. Boston: Harvard Business Press.
- Gilsing, Victor A., Elco Van Burg, and A. Georges L. Romme. 2010. Policy principles for the creation and success of corporate and academic spin-offs. *Technovation* 30: 12–23. [CrossRef]
- Jacobs, Michael. 1997. The environment as stakeholder. *Business Strategy Review* 8: 25–28. [CrossRef]
- Jaeger, Robert G., and Tim R. Halliday. 1998. On confirmatory versus exploratory research. *Herpetologica* 54: S64–S66.
- James, Harvey S. 2006. Self-selection bias in business ethics research. *Business Ethics Quarterly* 16: 559–77. [CrossRef]

- Jawahar, I. M., and Gary L. McLaughlin. 2001. Toward a descriptive stakeholder theory: An organizational life cycle approach. *Academy of Management Review* 26: 397–414. [\[CrossRef\]](#)
- Lowe, Robert Alan. 2002. *Invention, Innovation, and Entrepreneurship: The Commercialization of University Research by Inventor-Founded Firms*. Berkeley: University of California.
- Lester, Donald L., John A. Parnell, and Shawn Carraher. 2003. Organizational life cycle: A five-stage empirical scale. *The International Journal of Organizational Analysis* 11: 339–54. [\[CrossRef\]](#)
- Lewis, Virginia L., and Neil C. Churchill. 1983. *The Five Stages of Small Business Growth*. Champaign: University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship.
- Lippitt, Gordon L., and Warren H. Schmidt. 1967. Crises in a developing organization. *Harvard Business Review*, November.
- Lockett, Andy, Donald Siegel, Mike Wright, and Michael D. Ensley. 2005. The creation of spin-off firms at public research institutions: Managerial and policy implications. *Research Policy* 34: 981–93. [\[CrossRef\]](#)
- Lotti, Francesca, Enrico Santarelli, and Marco Vivarelli. 2003. Does Gibrat's Law hold among young, small firms? *Journal of Evolutionary Economics* 13: 213–35. [\[CrossRef\]](#)
- Mainardes, Emerson Wagner, Helena Alves, and Mario Raposo. 2011. Stakeholder theory: Issues to resolve. *Management Decision* 49: 226–52. [\[CrossRef\]](#)
- Malterud, Kirsti. 2001. Qualitative research: Standards, challenges, and guidelines. *The Lancet* 358: 483–88. [\[CrossRef\]](#)
- Manowong, Ektewan, and Stephen Ogunlana. 2010. Strategies and tactics for managing construction stakeholders. In *Construction Stakeholder Management*. New York: John Wiley & Sons, pp. 121–37.
- Matuleviciene, Migle, and Jurgita Stravinskiene. 2015. The importance of stakeholders for corporate reputation. *Engineering Economics* 26: 75–83. [\[CrossRef\]](#)
- McGrath, Stephen Keith, and Stephen Jonathan Whitty. 2017. Stakeholder defined. *International Journal of Managing Projects in Business* 10: 721–48. [\[CrossRef\]](#)
- Miles, Samantha. 2012. Stakeholder: Essentially contested or just confused? *Journal of Business Ethics* 108: 285–98. [\[CrossRef\]](#)
- Mitchell, Ronald K., Bradley R. Agle, and Donna J. Wood. 1997. Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review* 22: 853–86. [\[CrossRef\]](#)
- Ndonzuau, Frédéric Nlemvo, Fabrice Pirnay, and Bernard Surlemont. 2002. A stage model of academic spin-off creation. *Technovation* 22: 281–89. [\[CrossRef\]](#)
- Nicolaou, Nicos, and Sue Birley. 2003. Academic networks in a trichotomous categorisation of university spinouts. *Journal of Business Venturing* 18: 333–59. [\[CrossRef\]](#)
- Olander, Stefan, and Anne Landin. 2008. A comparative study of factors affecting the external stakeholder management process. *Construction Management and Economics* 26: 553–61. [\[CrossRef\]](#)
- Pirnay, Fabrice, Bernard Surlemont, and Fr Nlemvo. 2003. Toward a typology of university spin-offs. *Small Business Economics* 21: 355–69. [\[CrossRef\]](#)
- Parhankangas, Annaleena, and Pia Arenius. 2003. From a corporate venture to an independent company: A base for a taxonomy for corporate spin-off firms. *Research Policy* 32: 463–81. [\[CrossRef\]](#)
- Parmar, Bidhan L., R. Edward Freeman, Jeffrey S. Harrison, Andrew C. Wicks, Lauren Purnell, and Simone De Colle. 2010. Stakeholder theory: The state of the art. *Academy of Management Annals* 4: 403–45. [\[CrossRef\]](#)
- Perez, Manuela Perez, and Angel Martínez Sánchez. 2003. The development of university spin-offs: Early dynamics of technology transfer and networking. *Technovation* 23: 823–31. [\[CrossRef\]](#)
- Post, James E., Lee E. Preston, and Sybille Sachs. 2002a. Managing the extended enterprise: The new stakeholder view. *California Management Review* 45: 6–28. [\[CrossRef\]](#)
- Post, James E., Lee E. Preston, and Sybille Sauter-Sachs. 2002b. *Redefining the Corporation: Stakeholder Management and Organizational Wealth*. Redwood City: Stanford University Press.
- Price, James H., and Judy Murnan. 2004. Research limitations and the necessity of reporting them. *American Journal of Health Education* 35: 66. [\[CrossRef\]](#)
- Rabossi, Marcelo, K. M. Joshi, and Saeed Paivandi, eds. 2018. *In Pursuit of World-class Universities: A Global Experience*. Delhi: Studera Press.
- Radinal, Reshwara Argya. 2016. Stakeholder Engagement in Indonesian Start-Ups. Bachelor's thesis, University of Twente, Enschede, The Netherlands.
- Rogers, Everett M., Arvind Singhal, and Margaret M. Quinlan. 2014. Diffusion of innovations. In *An Integrated Approach to Communication Theory and Research*. London: Routledge, pp. 432–48.
- Rogers, Everett M., Shiro Takegami, and Jing Yin. 2001. Lessons learned about technology transfer. *Technovation* 21: 253–61. [\[CrossRef\]](#)
- Rudi, Nils, and David Drake. 2014. Observation bias: The impact of demand censoring on newsvendor level and adjustment behavior. *Management Science* 60: 1334–45. [\[CrossRef\]](#)
- Ruscio, Kenneth P. 1988. *Biotechnology: The University-Industrial Complex*. New Haven: Yale University Press, pp. 584–87.
- Salancik, Gerald R., and Jeffrey Pfeffer. 1974. The bases and use of power in organizational decision making: The case of a university. *Administrative Science Quarterly* 19: 453–73. [\[CrossRef\]](#)
- Sapienza, Harry J., Annaleena Parhankangas, and Erkko Autio. 2004. Knowledge relatedness and post-spin-off growth. *Journal of Business Venturing* 19: 809–29. [\[CrossRef\]](#)

- Scaringella, Laurent, Raymond E. Miles, and Yann Truong. 2017. Customers involvement and firm absorptive capacity in radical innovation: The case of technological spin-offs. *Technological Forecasting and Social Change* 120: 144–62. [CrossRef]
- Schockaert, Dries Cecil. 2019. *International Standards on Auditing: An Institutional Driver for Audit Quality*. Bruges: Die Keure.
- Shapiro, Susan P. 2005. Agency theory. *Annual Review of Sociology* 31: 263–84. [CrossRef]
- Smudde, Peter M., and Jeffrey L. Courtright. 2011. A holistic approach to stakeholder management: A rhetorical foundation. *Public Relations Review* 37: 137–44. [CrossRef]
- Sobczak, André, and Christelle Havard. 2015. Stakeholders' influence on French Unions' CSR strategies. *Journal of Business Ethics* 129: 311–24. [CrossRef]
- Sousa, Valmi D., Jaclene A. Zauszniewski, and Carol M. Musil. 2004. How to determine whether a convenience sample represents the population. *Applied Nursing Research* 17: 130–33.
- Suchman, Mark C. 1995. Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review* 20: 571–610. [CrossRef]
- Ter Halle, Igor, and H. Ruel. 2016. How Do Start-Ups Engage with Stakeholders. Retrieved August 7: 2018, Retrieved from Academia.edu. Available online: https://www.researchgate.net/publication/309770780_How_do_start-ups_engage_with_stakeholders (accessed on 19 October 2022).
- Thiel, Sandra Van, Koen Verhoest, Geert Bouckaert, and Per Løgreid. 2012. Lessons and recommendations for the practice of agencification. In *Government Agencies*. London: Palgrave Macmillan, pp. 413–39.
- Triangulation Data Source. 2014. The use of triangulation in qualitative research. *Oncology Nursing Forum* 41: 545.
- UHasselt. 2018. Geschiedenis. Available online: <https://www.uhasselt.be/nl/faculiteiten/faculteit-bedrijfseconomische-wetenschappen/geschiedenis-faculteit-bedrijfseconomische-wetenschappen> (accessed on 18 February 2021).
- Van Burg, Elco, A. Georges L. Romme, Victor A. Gilsing, and Isabelle M. M. J. Reymen. 2008. Creating university spin-offs: A science-based design perspective. *Journal of Product Innovation Management* 25: 114–28. [CrossRef]
- Van De Velde, Els, Bart Clarysse, Mike Wright, G. Rayp, and J. Bruneel. 2007. *Exploring the Boundary between Entrepreneurship and Corporate Venturing: From Assisted Spin-Outs to Entrepreneurial Spin-Offs*. No. 07/472. Ghent: Ghent University, Faculty of Economics and Business Administration.
- Van de Ven, Andrew H. 1992. Suggestions for studying strategy process: A research note. *Strategic Management Journal* 13: 169–88. [CrossRef]
- Vega-Gomez, Francisco-Isidoro, F. Javier Miranda, Antonio Chamorro Mera, and Jesús Pérez Mayo. 2018. The spin-off as an instrument of sustainable development: Incentives for creating an academic USO. *Sustainability* 10: 4266. [CrossRef]
- Vlaanderen. 2020. HOGER ONDERWIJS IN CIJFERS: Academiejaar 2019–2020. Available online: <https://www.vlaanderen.be/publicaties/hoger-onderwijs-in-cijfers> (accessed on 18 January 2021).
- Vohora, Ajay, Mike Wright, and Andy Lockett. 2004. Critical junctures in the development of university high-tech spinout companies. *Research Policy* 33: 147–75. [CrossRef]
- Weber, Max. 1947. *The Theory of Social and Economic Organization*. New York: Free Press.
- Wilson, Ian H. 1975. *What One Company Is Doing About Today's Demands on Business*. Los Angeles: Graduate School of Management, UCLA.
- Wynn, Donald E. 2003. Organizational structure of open source projects: A life cycle approach. In Abstract for 7th Annual Conference of the Southern Association for Information Systems, Georgia. Available online: <https://www.semanticscholar.org/paper/Organizational-Structure-of-Open-Source-Projects%3A-A-Wynn/9619cc16b5d5954e31ed615f6b8c5c7230dac5cb> (accessed on 19 October 2022).
- Yang, Jing, Geoffrey Qiping Shen, Derek S. Drew, and Manfong Ho. 2010. Critical success factors for stakeholder management: Construction practitioners' perspectives. *Journal of Construction Engineering and Management* 136: 778–86. [CrossRef]
- Zhao, Liming, and Arnold Reisman. 1992. Toward meta research on technology transfer. *IEEE Transactions on Engineering Management* 39: 13–21. [CrossRef]