

Effectuation and Lean Startup in Swiss Start-ups: An Integrative Analysis

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Abstract: Founding a start-up entails numerous risks and uncertainties. To minimise these risks and to deal with uncertainties, the popular concepts of Effectuation and Lean Startup, among others, are discussed in entrepreneurship research. Although both concepts are not new, they have gained importance in recent years. Effectuation focuses on dealing with uncertainty and contrasts with causation, which focuses on planning. The starting point for Effectuation is the resources available to the founders, which leads to different business ideas. The core of Effectuation includes four key dimensions: available means, affordable losses, exploiting contingencies and building partnerships. Lean Startup can be understood as a framework for decision-making in which direct interaction takes priority over extensive planning. The approach is based on three fundamental principles: experimentation rather than planning, focus on customer feedback and iterative learning. The core elements include a clear entrepreneurial vision, close contact with the customer, the Build-Measure-Learn feedback loop and the Minimum Viable Product. The key dimensions of Effectuation and the core elements of Lean Startup also form the frame of reference for the empirical investigation. The article examines the extent to which these concepts are applied by Swiss entrepreneurs and whether a combination of the two takes place. The data comes from the business plans of 25 finalists of a Swiss innovation competition from 2022. The business plans are evaluated and analysed in a multi-stage process. The study provides insight into the behaviour of Swiss start-ups, whether they proceed according to Effectuation and apply the Lean Startup principles. Surprisingly, the study reveals that many start-ups proceed according to Effectuation, while relatively few start-ups apply the Lean Startup principles. We were able to show the extent to which the two approaches are used and how they relate to each other. We also found that the origin of the start-up (research-based or industry experience-based) plays a significant role.

Keywords: Effectuation, Lean Startup, relationships between entrepreneurial approaches, entrepreneurial behaviour, Swiss start-ups.

1. Introduction

Starting a new business, especially a start-up, involves considerable risks and uncertainties (Bortolini et al., 2021). The survival rate of young companies in Switzerland after five years is only around 50% (Baldegger et al., 2022; Swiss Federal Statistical Office, 2022; Kyora and Rockinger, 2023). This is not surprising, as start-ups often face significant obstacles as they operate in an environment of great uncertainty (Blank, 2013; Ries, 2011) and strive for a scalable business model (Blank, 2013). In this context, a pertinent question arises: How can risks be minimised and uncertainties managed more effectively?. Two potential approaches that address this question are Effectuation and Lean Startup (LS). Effectuation is a concept from entrepreneurship research that has been the subject of lively discussion for more than two decades and has attracted great attention (Alzamora-Ruiz et al., 2021; Reh, 2020). Similarly, the concept of the LS also continues to grow in popularity (Allen, 2022; Bocken and Snihur, 2020; Contigiani, 2023), both in research and in practical application in start-ups (Konietzko et al, 2020) and in the curriculum of entrepreneurship courses (Mansoori and Lackéus, 2020; Raneri et al., 2022; Sarasvathy, 2021).

This study aims to examine (1) the extent to which entrepreneurs in Switzerland apply the concepts of Effectuation and LS, and (2) whether they use a combination of the two. The data is based on the business concepts of the 25 top competitors in a Swiss innovation competition. The paper is structured as follows: In a first step, the relevant literature on Effectuation and LS is reviewed, and a link is established between these two concepts. Subsequently, the methodological approach is outlined, followed by a discussion of results and the research question's resolution. Finally, the study highlights the limitations of the chosen approach and potential directions for further research.

2. Theoretical framework

2.1 Effectuation

Based on empirical research in the field of entrepreneurship (Richter and Schildhauer, 2018), Effectuation explains how start-ups deal with uncertainty (Read et al., 2009; Sarasvathy, 2001; Solaimani et al., 2022). Effectuation, developed by Sarasvathy, defines Effectuation as “processes that take a set of means as given and focus on selecting between various possible effects that can be created with that set of means” (Sarasvathy, 2001, p. 245), as opposed to causation, which emphasises planning. Entrepreneurial behaviour is thus divided into two opposing logics (Raneri et al., 2022; Sarasvathy, 2008, 2001). Effectuation emphasises the importance of uncertainty, which limits the validity of prediction and planning (Ortega et al., 2017), and therefore relies on experimentation to develop the business model (Hinz, 2017; Xu et al., 2022). Instead of following a clearly defined plan, making assumptions about the future, and focusing on desired goals (Sarasvathy, 2001; Welter et al., 2021), entrepreneurs examine what resources they have at their disposal in order to use them flexibly (Hinz and Eisenbart, 2019; Sarasvathy, 2001). The core of Effectuation originally encompassed five key dimensions (Solaimani et al., 2022), which were reduced to four in later work (Alzamora-Ruiz et al., 2021; Ortega et al., 2017):

- *Available means*: Entrepreneurs start with the means available (Fueglistaller et al., 2019). Which goals can be realised with the available competences and skills, resources, networks and specific experiences (Grichnik et al., 2018; Sarasvathy, 2001). When it comes to concrete implementation, the goals that best match your own preferences are considered. (Grichnik et al., 2018).
- *Affordable loss*: Entrepreneurs determine what the worst possible consequences of their actions could be and clarify how much loss they are willing to accept (Fueglistaller et al., 2019; Kalinic et al., 2014). This affordable loss can be described as opportunity cost, loss of time, attention, commitment or of capital (Grichnik et al., 2018). Founders therefore try not to invest more resources than they can afford (Brenk et al., 2019).
- *Exploiting contingencies*: Entrepreneurs take chances (Faschingbauer, 2017) and are open to contingencies, using them as opportunities (Hinz, 2017; Yang et al., 2019). This includes chance encounters (Faschingbauer, 2017) and interaction with other people (Kalinic et al., 2014). Interaction with others facilitates co-creation, which in turn leads to creativity (Brenk et al., 2019; Sarasvathy, 2001). Interaction is therefore a key aspect of contingency generation.
- *Form partnerships*: Entrepreneurs enter into agreements and form partnerships rather than pursuing individual paths (Grichnik et al., 2018; Hinz, 2017). Collaborations result in the broadening of resources (partners contribute their resources), clarity of goals (partners contribute their goals, leading to trade-offs) and shared entrepreneurial risks (Chandler et al., 2011; Eberz, 2018). When entrepreneurs act according to Effectuation, they tend to proactively seek partners (Yang et al., 2019), which may include suppliers, (potential) customers (Eberz, 2018; Yang et al., 2019) or by involving other organisations in their own venture (Chandler et al., 2011).

2.2 Lean Startup

LS is a decision-making framework that prioritises immediate customer engagement and rapid prototyping over accurate preparation (Blank and Eckhardt, 2023; Hinz and Eisenbart, 2019). Its origins lie in the manufacturing world (Ghezzi and Cavallo, 2020). Blank (Blank, 2005, 2013), with the ‘customer development’ approach, and Ries (2011), with the ‘lean startup’, applied these concepts to the development of a start-up (Ghezzi, 2019; Ghezzi and Cavallo, 2020). Blank combined the concepts of the business model canvas, customer development methods and agile methods (Blank, 2005, 2013, 2013; Blank and Dorf, 2012) and Ries (2011) extended the concept by the minimal viable product (MVP) (Chengbin et al., 2022; Ghezzi, 2019) and the pivot (Ghezzi, 2019). The approach presented by Ries is widely used in the start-up scene (Bortolini et al., 2021) and can almost be considered a standard procedure when founding (Bortolini et al., 2021). LS is considered one of the most pragmatic ways to develop a start-up (Chengbin et al., 2022; Frederiksen and Brem, 2017). Especially in situations of high uncertainty and complexity, combined with a fast pace of change, success is often determined by how quickly an organisation can test, experiment and learn (Bortolini et al., 2021; Osterwalder and Pigneur, 2011), thereby minimising the risk of failure (Eckert, 2017). With “LS”, Ries tries to make the creation of a start-up a systematic and reproducible process to minimise the time and resources needed to validate a business model. Failing quickly and learning from it prevents persisting with a wrong idea, which would waste valuable resources (Eisenmann et al., 2013; Silva et al., 2020). The approach presented by Ries (2011) is based on three key principles: 1) experimenting rather than sophisticated planning, 2) focusing on customer feedback and 3)

incremental development (Nörr, 2016). The focus is on validated learning using the so-called Build-Measure-Learn (BML) feedback loop (Bortolini et al., 2021; Silva et al., 2020).

The following core elements should be highlighted:

- *Vision – Strategy – Product*: The starting point is a clear entrepreneurial vision (Bortolini et al., 2021; Ries, 2011; York, 2021), from which the strategy and the product are derived. The vision itself is rarely touched, while the product is adjusted more often in the fine-tuning process (iterative learning). The strategy is adjusted when a product adjustment no longer leads to the desired goal (Ries, 2011). The pivot is a possible path based on the results of validated learning (BML) (York, 2021).
- *Close customer contact*: Customers should be involved in the development process as early as possible. Customer feedback plays an important role (Bortolini et al., 2021) as it helps to improve the existing solution (Hinz and Eisenbart, 2019; Ries, 2011). Constantly formulating new hypotheses, which are then tested in direct interaction with customers, increases knowledge about customers (Mansoori and Lackeus, 2020) and their needs.
- *Build-Measure-Learn feedback loop*: LS focuses on rapidly subjecting the entrepreneurial concept to rigorous validation of certain product characteristics. (Hinz and Eisenbart, 2019; Rasmussen and Tanev, 2015). Validated learning is based on hypotheses (Eisenmann et al., 2013), which are validated as part of the BML feedback loop. A lean approach ensures that the start-up delivers value and achieves growth (Allen, 2022; Ries, 2011), as it minimises the chance of developing a product that customers are not interested in (Hinz and Eisenbart, 2019).
- *Minimum viable product (MVP)*: An MVP is a product with the smallest possible feature set (Ripsas et al., 2018), which enables the completion of one pass in the BML cycle with minimal effort and development time (Ries, 2011; Shepherd and Patzelt, 2021). The MVP allows the product to be quickly adapted based on feedback from real users, making it a cost-effective way to test hypotheses (Balocco et al., 2019). The aim is to find out what customers want as quickly as possible. (Hinz and Eisenbart, 2019).

2.3 Effectuation and the Lean Startup

The roots of LS lie, among others, in Effectuation theory (Frederiksen and Brem, 2017; Ghezzi, 2019; York, 2021). It is therefore not surprising that there are parallels between the two approaches. LS, together with Effectuation, is seen as the antithesis of causation with the creation of business plans (Bortolini et al., 2021; Ripsas et al., 2018). Parallels also exist in the iterative process, which plays a role in both Effectuation and LS (Mansoori et al., 2019; York, 2021). While Effectuation is about iterative cycles (Mansoori et al., 2019; Sarasvathy and Dew, 2005), LS postulates a BML feedback loop (Hinz and Eisenbart, 2019; Ries, 2011). Another parallel is stakeholder involvement. According to Effectuation, stakeholders are actively sought, and partnerships and alliances are formed with them (Mansoori and Lackeus, 2020; Sarasvathy and Dew, 2005). LS is also about actively interacting with stakeholders by trying to interact with as many people as possible and getting their feedback (Eisenmann et al., 2013; Mansoori and Lackeus, 2020). Although parallels between the two approaches are evident (Frederiksen and Brem, 2017), it is not clear whether Effectuation supports the application of LS (Welter et al., 2021). However, the application of LS practices seems to indicate working with Effectuation (Ghezzi, 2019; Solaimani et al., 2022), and LS is sometimes even seen as a way to put Effectuation into practice (Raneri et al., 2022).

But there are also differences between the two approaches. If we look at the starting point, Effectuation starts with the available resources and the possibilities for action arise from them (Blank and Eckhardt, 2023). LS, on the other hand, tries to gain as much knowledge as possible about customers in a first step by formulating a hypothesis and then testing it (Mansoori and Lackeus, 2020). In building knowledge, Effectuation starts with what the founders already know, who they are and who they know (Sarasvathy and Dew, 2005; York, 2021). In contrast, LS is about learning more about customers through hypothesis testing (Eisenmann et al., 2013; Ries, 2011). The use of resources also differs between the two approaches. Effectuation refers to the expansion of the resource pool through the creative use of scope through interaction with stakeholders (Sarasvathy, 2008), whereas LS focuses on conserving resources by adopting an iterative process (Blank, 2013).

3. Methodological approach

The study is based on the analysis of 25 business plans from Swiss start-ups that participated in the Swiss Innovation Challenge (SIC) 2022. The SIC is an annual innovation competition with an accelerator component.

As part of the programme, 25 out of an initial 100 participants reach the final round through a three-stage selection process. All participants are required to submit a business plan, a unique database for this study. It is acknowledged that the business plan may not necessarily follow the logic of Effectuation or LS (Blank and Eckhardt, 2023; Welter et al., 2021). However, as the submission of such a document is mandatory for participation in the SIC, start-ups are forced by external pressure to produce a business plan, regardless of their internal business logic. In this study, a multiple case study approach will be used to increase the credibility of the results and to provide a more comprehensive understanding of how Swiss start-ups deal with Effectuation and use LS. To improve the quality of the analysis, the data sets were analysed independently by the three researchers and then consolidated. This reduced individual interpretations and increased overall objectivity. First, the sample was checked for indications of the four key dimensions of Effectuation (available means, affordable loss, interaction and forming partnerships). Second, the data was then evaluated for evidence of the use of the four core elements of LS (strategy-product-vision, close customer contact, use of a MVP and use of the BML cycle). Additionally, other parameters were also collected (see empirical results). The final step was to clarify whether both approaches are combined with each other.

4. Empirical results

Based on the key elements mentioned above, the research sample was examined to assess the extent to which there was evidence that a start-up followed the Effectuation logic. Evidence was present if three of the four key dimensions mentioned were met. First, if there was evidence of working with the available means (skills, resources, networks and specific experience). Second, if there is evidence that an affordable loss has been incurred. Third, if there was evidence of an open approach to contingencies, for example through deliberate interaction with the ecosystem (e.g. co-working space, competitions, coaching, external support). Fourth, whether there was evidence of a cooperative strategy for forming partnerships with stakeholders (such as clients, suppliers and other businesses in the entrepreneur's network).

The expectation was that some companies would operate according to Effectuation, consciously or unconsciously. However, the data showed that 96% of all the start-ups studied operated according to Effectuation. In other words, they started with available means, interacted with other people or start-ups and made commitments through partnerships and alliances. The application of Effectuation is therefore evident. As can be seen in Figure 1, there was remarkable consistency across the four dimensions examined, except for the dimension of 'affordable loss'. Too little evidence was found for this key element. Nevertheless, 20% of the business plans examined contained evidence that an affordable loss had been defined. However, due to the low level of evidence, this dimension is not considered in the following.

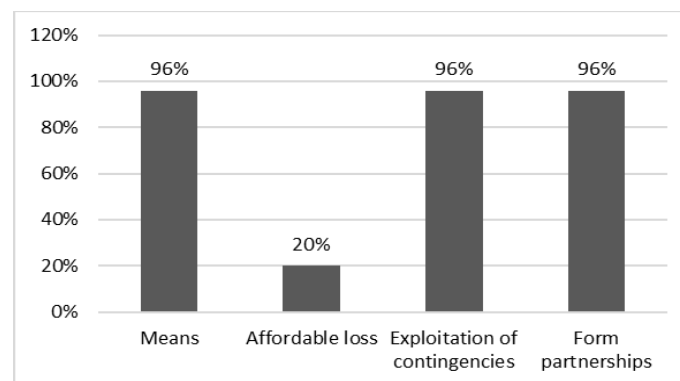


Figure 1: Key dimensions of Effectuation and their use in the sample studied (own representation).

At first glance, this observation may seem surprising, but on closer inspection it is less so. As shown in Figure 2, 84% of the start-ups are based either on research (56%) or on several years of experience of the founders (28%), which was the basis for the development of the start-up. Since the SIC is aimed at innovative companies, it is understandable that through the selection process it is mainly highly innovative start-ups that reach the final round. Highly innovative start-ups often have their origins in university research and are often founded as spin-offs from a university. More than half (56%) of the start-ups in this study that operate according to Effectuation have their starting point in research. It was also noticeable that a smaller proportion were developed because of experience gained within a sector. For the remaining 16%, we could not identify either of these two options, but concluded that they started with existing resources, such as a specific network, or pre-existing skills.

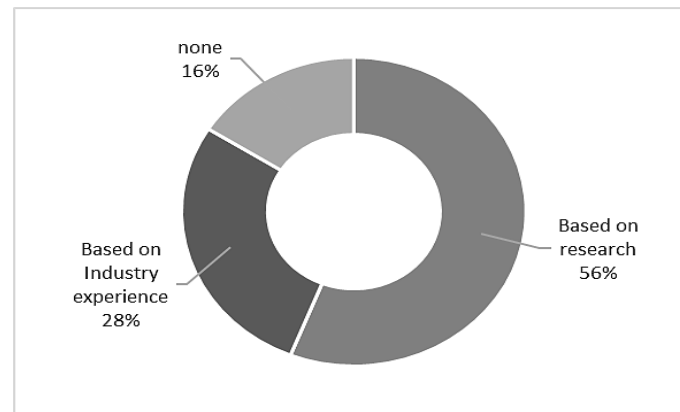


Figure 2: Starting point of the start-up (research, industry experience), (own presentation).

Not surprisingly, there is also a high score for the ‘opportunity as possibility’ dimension. Interaction is an essential element in creating opportunities. By interacting with others, new ideas are generated, the field is broadened, and this opens the door to new opportunities. 79% of the companies surveyed are either affiliated with various start-up support programmes (e.g. incubators), work in a co-working space – of which there are over 185 different offerings in Switzerland (Hediger, 2019) – or are supported by various support agencies. As Figure 3 shows, many of them work with coaches or mentors or participate in start-up competitions (except SIC), most even use both options (54%).

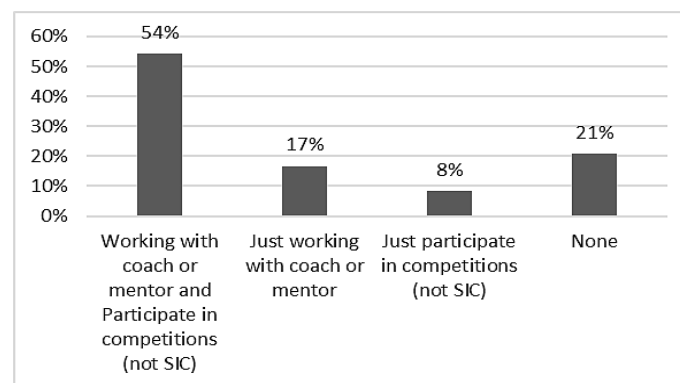


Figure 3: Interaction through support and competitions (own presentation).

Concerning “form partnerships”, it was noticeable that the start-ups actively sought to establish partnerships and alliances, be it with producers, distribution partners, other start-ups or with (future) customers. Notably, the analysed start-ups usually already had existing partnerships in place. Future customers support product development and often offer the possibility to test the initial MVP. Manufacturers, among others, are involved in the development process and thus make an important contribution to the realisation of a product vision.

In relation to LS, the available data sources were reviewed to see if there was evidence that a start-up was working with LS. Again, we considered this to be evident if three of the four core elements were being used. Firstly, if there was evidence of close contact and involvement in the development process. Second, if there was evidence that a BML feedback loop was used. Third, if there is evidence that an MVP is used to get customer feedback. Fourth, if an overarching strategy could be found that allowed pivoting while still pursuing the strategy.

While most start-ups studied followed Effectuation, LS presents a different picture. As can be seen in Figure 4, 60% of the companies implemented at least three of the four core elements mentioned, indicating partial adoption of LS. In contrast, 40% did not apply LS at all. This result can be explained by the fact that LS is a process that needs to be worked through and is rarely applied intuitively (unlike Effectuation). Although most of the surveyed start-ups have taken part in one or another entrepreneurship training course, it can be assumed that LS is not universally included in the curriculum. For example, in the programmes offered by Innosuisse, the Swiss state funding agency, do not explicitly refer to LS as part of their offerings (Innosuisse, 2023).

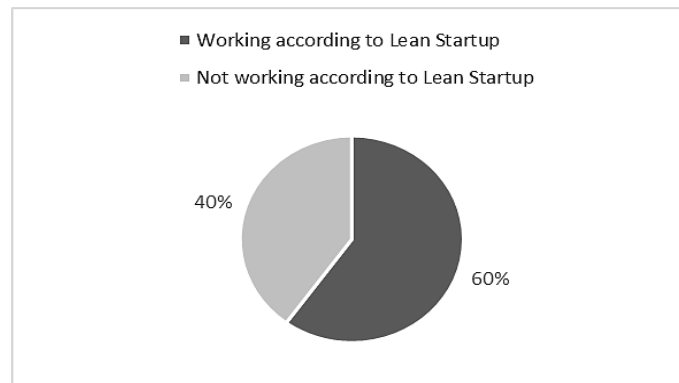


Figure 4: Using of LS (own presentation)

Looking at the four core elements (see Figure 5), it was observed that 80% of the surveyed start-ups implemented close customer contact. The “vision-strategy-product” dimension is somewhat less prevalent at 68%. In the analysis, particular attention was paid to presenting a clear overarching vision in the business plan. The MVP was also used relatively frequently (60%). The least commonly used element was a clear build-measure-learn feedback loop. This is certainly one of the clearest indications of whether LS is being applied. The MVP is clearly defined according to Ries (2011), but it cannot be ruled out here that the now very well-known term was simply used instead of the prototype.

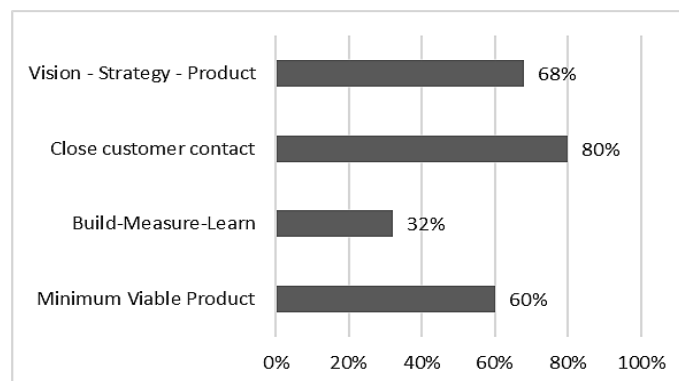


Figure 5: Frequency of use of the four core elements (own presentation)

Since almost all the start-ups surveyed follow Effectuation, it is not surprising that some of them also embrace LS principles. Of the 96% that use Effectuation, 42% work according to the LS methodology (see Figure 7). The only start-up that could not be assigned to Effectuation had no evidence of following LS.

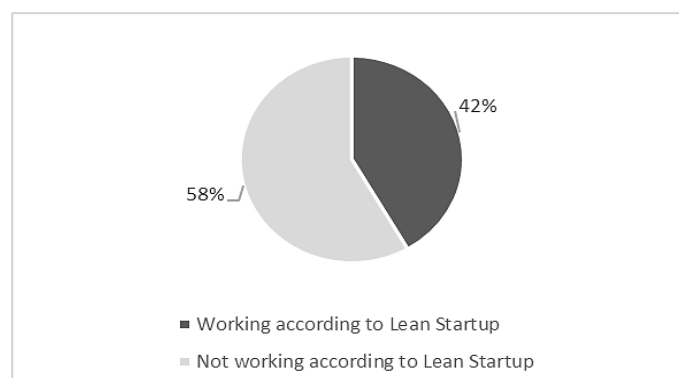


Figure 6: Number of core elements implemented (own representation).

Finally, we looked at whether there were differences in application depending on whether a start-up had its roots in research or was founded based on industrial experience. Figure 8 clearly shows that it is mainly research-

based start-ups that use LS. This is not surprising as Ries (2011) strongly emphasises that LS is a scientific approach, making it a natural fit for research-oriented ventures.



Figure 7: Connection between LS and the starting point of the company's creation (own representation).

5. Discussion and conclusion

The aim of the study was to find out to what extent Swiss entrepreneurs apply the concepts of Effectuation and LS. Several main conclusions can be drawn. Regarding the application of Effectuation, it was found that it is applied in 96% of the Swiss start-ups studied, that entrepreneurs act with the resources available to them, interact with their environment and work together to build partnerships and alliances. Limited resources and the ability to manage them efficiently were the reasons for its application (Reymen et al., 2017). 56% of start-ups using Effectuation had their starting point in research, while 28% were founded based on extensive industry experience; in addition, 79% of start-ups actively sought exchange with others (e.g. mentors or coaches). LS, on the other hand, was used much less, with 60% of start-ups adopting it as a decision-making framework (Blank and Eckhardt, 2023). Most start-ups (80%) practice close customer contact and involve the customer in the development process at an early stage, as postulated by Ries (2011). Through this interaction they increase their knowledge about their customers and their needs (Mansoori and Lackéus, 2020). The least used loop was BML-Feedback (32%), suggesting that many start-ups refrained from validating hypotheses in an iterative process (Hinz and Eisenbart, 2019; Rasmussen and Tanev, 2015). Furthermore, we found that 42% of the start-ups that could be assigned to Effectuation also considered adopting LS. This is certainly also because there are clear parallels between the two approaches (Ghezzi, 2019; Mansoori and Lackéus, 2020; York, 2021).

The present study was able to clarify the extent to which Effectuation and LS are used by Swiss start-ups. It should be noted, however, that on the one hand, only the business plans of 25 finalists of the SIC were analysed, a competition that is specifically aimed at innovative start-ups, thereby representing only a limited range of young companies. Secondly, a small subset of start-ups is not sufficient to make reliable statements about the application of Effectuation and LS in the Swiss start-up scene. Further research is therefore needed to confirm the results with a larger sample. The data from the annual SIC, which is already available and will be updated in the future, offers the opportunity to shed more light on this field using quantitative, content-analytical, and qualitative approaches. Qualitative approaches can be helpful in clarifying the extent to which Effectuation plays a role in actions taken by start-ups and how exactly LS is dealt with. In particular, the level of action, which is only inadequately covered in the business plan, should be considered in future research projects.

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