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**Analysing Accelerators using the CIMO Framework**  
Evidence from the Madeira Startup Retreat Acceleration Program  
6th Edition

MASTER DISSERTATION

**José Bruno de Castro Pereira**  
MASTER IN MANAGEMENT



UNIVERSIDADE da MADEIRA

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## **ABSTRACT**

This study employs the CIMO (Context-Intervention-Mechanism-Outcome) framework to analyse the Madeira Startup Retreat (MSR) - 6th Edition focusing on the role of accelerators as distinct innovation intermediaries. The MSR program aims to support startups in the tourism, travel, and leisure sectors by providing tailored interventions within a conducive ecosystem. This research seeks to understand how the MSR program facilitates startup growth through context-specific interventions that activate key mechanisms leading to significant outcomes. A case study approach was utilised, combining qualitative data from semi-structured interviews with participants, observations, and secondary data from the reports of the previous five editions. The analysis reveals that the MSR program effectively fosters learning through knowledge exchange, validation, innovation, networking and facilitator for business expansion, which are critical for startup development. Participants highlighted the program's role in refining business strategies through marketing positioning and value proposition, enhancing market understanding, and readiness to expand networks. The unique context of Madeira, with its vibrant tourism industry, was crucial in shaping these outcomes. The MSR program's design, which integrates local ecosystem support with targeted interventions, successfully activates mechanisms that drive startup growth and innovation. This study underscores the importance of accelerator programs in enhancing startup success, particularly in niche sectors like tourism, travel and leisure.

**Keywords:** Accelerator Programs, CIMO Framework, Madeira Startup Retreat, Tourism Innovation and Entrepreneurial Ecosystem Integration.

## RESUMO

Este estudo utiliza a estrutura CIMO (Context – Intervention – Mechanism - Outcome) para analisar a 6.<sup>a</sup> edição do Madeira Startup Retreat (MSR), focando o papel das aceleradoras como intermediários de inovação. O programa MSR visa apoiar as startups nos setores do turismo, viagens e lazer, fornecendo intervenções personalizadas dentro de um ecossistema propício.

Esta investigação procura compreender como é que o programa de MSR facilita o crescimento das startups através de intervenções específicas, que ativam mecanismos e que conduzem a resultados significativos. Foi utilizada uma abordagem de estudo de caso, combinando a utilização de dados qualitativos, com entrevistas abertas semiestruturadas aos participantes, com observações e como dados secundários os relatórios das cinco edições anteriores. A análise revela que o programa MSR promove eficazmente a aprendizagem através da troca de conhecimento, validação, inovação, network e facilitadores para a expansão do negócio, que são essenciais para o desenvolvimento das startups. Os participantes destacaram o papel do programa na melhoria das estratégias de negócio através do posicionamento, do marketing e da proposta de valor, da melhoria da compreensão do mercado e da prontidão para a expansão das redes de contacto. O contexto único da Madeira, com a sua indústria turística vibrante, foi crucial na obtenção destes resultados. O design do programa MSR, que integra o apoio do ecossistema local com intervenções direcionadas, ativa com sucesso os mecanismos que impulsionam o crescimento e a inovação das startups. Este estudo evidência a importância dos programas de aceleração no aumento do sucesso das startups, particularmente, em sectores nicho como o turismo, as viagens e o lazer.

**Palavras-chave:** Programas de Aceleração, Estrutura CIMO, Madeira Startup Retreat, Inovação no Turismo, Integração de Ecossistemas Empreendedores.

## **1. INTRODUCTION**

Today's business world faces intense competitive pressures, and organisations must continuously respond to changes related to economic, cultural, social, environmental, technological, political, and legislative forces in a rapidly evolving global economy. As a result, entrepreneurship has become a crucial driver of innovation, growth, and competitiveness. Several startups have embraced various forms of innovation intermediaries, from incubators to new types of accelerators, in their efforts to develop successful ventures and to address numerous challenges that require specialised support to succeed and scale effectively (Pauwels et al., 2016). Innovation intermediaries are seen as vital actors in establishing and sustaining both formal and informal connections (Feser, 2023). By providing specialised services in certain regions, these intermediaries play a key role in their development (Villani et al., 2017). Indeed, one of the best examples is Sam Altman, former president of the first known accelerator, Y Combinator, recognised as one of the most significant entrepreneurs in Silicon Valley and best known as the current CEO of OpenAI, the company that developed ChatGPT.

It is estimated that there are over 2000 accelerator programs on six continents, giving rise to well-known global companies today such as Airbnb, Dropbox, Reddit, Stripe, and Twitch (Cohen & Hochberg, 2014).

This dissertation analyzes the complex dynamics of accelerator programs, predominantly focusing on how they function to assist startups in their development journey.

Regardless of the rapid proliferation of accelerators worldwide, there remains a significant gap in understanding their real value, particularly in different geographical and economic contexts. Even though extensive research has been conducted in various regions such as North America and Central Europe, the impact of accelerators in ultraperipheral economies, where the local entrepreneurial ecosystems might present unique challenges, is less understood.

### **1.1 Research Background**

Incubators, accelerators, and angel investors are three key innovation intermediary mechanisms to support entrepreneurs in the early years of business development (Gliedt et al., 2018). Indeed, thousands of incubators have been established in the last few years based on a variety of incubation formats (Edison et al., 2018). According to Grimaldi and Grandi (2005), the changing needs of stakeholders have led to the appearance of a generational sequence of incubation models. Every new generation of incubation models adjusts its value proposition to

meet the changing necessities of participating ventures and as a result has evolved into a new generation of incubation models, known as the accelerators (Pauwels et al., 2016).

While some research considers accelerators as a special form of incubators (Gliedt et al., 2018) others recognize them as a different organizational form characterised by a distinct set of features depending on the service they provide to start-up users (Pauwels et al., 2016). Moreover, in contrast to incubators, accelerators are characterized by a much shorter time of their support programs (Cohen, 2013). Accelerators are not designed to provide startups with physical resources or office space over a long period and are less focused on venture capitalists as a next step of finance to their participants startups. Their objective is to encourage business development, providing intensive time-limited support (Miller & Bound, 2011; Pauwels et al., 2016).

## **1.2 Research Question**

While accelerators appear to be proliferating quickly, little is known regarding the value of these programs, the differences between accelerators, incubators, and angel investors and the importance of the various aspects of these programs to the ultimate success of their graduates, the local entrepreneurial ecosystem, and the broader economy (Cohen & Hochberg, 2014).

Drori and Wright (2018) emphasise that there is an increasing recognition that we need more systematic research to understand what accelerators are, how they operate, what role they play in supporting the development and growth of their participating startups, as well as shaping the broader innovation and entrepreneurial landscape. Much of the research has been concentrated in North America, Central Europe, and the United Kingdom (Hallen et al., 2020; Kohler, 2016; Hochberg, 2016), however, there has been a notable absence of research in peripheral economies (Mian et al., 2016) even though the spatial context may influence the entrepreneurial ecosystem and accelerators' performance (Levie et al., 2014). Furthermore, while acceleration programs have rapidly emerged as prominent players in the entrepreneurial ecosystem, entrepreneurs, policymakers and academics have continued to raise questions about their efficacy when replicated in other geographical areas (Hallen et al., 2020).

Based on a comprehensive review of the literature review, the main goal of this research is to provide a holistic exploration of the acceleration process and its modus operandi that addresses the context in which accelerators operate and their practices, the services they deliver, the mechanisms activated and the outcomes they achieve. Specifically, the research objectives will focus on the following:

- the external and internal environmental contextual factors.

- the nature of the targeted interventions that significantly impact participating startups by enhancing their visibility, increasing their chances of securing investment and contributing to the overall entrepreneurial ecosystem.
- the essential mechanisms activated that seek to explain the process through which interventions transform into outcomes.
- the nature of the outcomes achieved.

Accordingly, this study is based on the following research question:

***“How does the accelerator process function to assist startups through targeted interventions within a supportive context, to activate mechanisms that will foster significant outcomes?”***

Given the contemporary and contextual nature of accelerator programs, it was decided that a case research methodology combining qualitative data from semi-structured open-ended interviews with participants is the optimal choice when studying the interactions and mechanisms within accelerators during the program event. Secondary data from the report of the previous five program editions will be utilised where possible to triangulate and validate the primary research findings.

### **1.3 Relevance of the Study**

The pertinence of this research study is predominantly significant from the perspective of creating an effective understanding of what accelerators are, how they function, and what role they perform in supporting the development of their participating start-ups, and more broadly in affecting the innovation entrepreneurial landscape. This study has the potential to not only support entrepreneurs, but also accelerator founders, managers of accelerator programs, policymakers, and entrepreneurship educators, in understanding the underlying dynamics that facilitate and inhibit accelerators. After all, it is incumbent for the effective management of accelerator programs to have a holistic understanding of the acceleration process and its modus operandi. It is also important to take into consideration the context in which accelerators operate and their practices, the services they deliver, the mechanisms they activate and the outcomes they achieve. In addition, many local governments hope to use accelerators to transform their local economies through the establishment of startup technology clusters (Hochberg & Fehder, 2015), therefore, more research is needed to support them in this endeavour.

In summary, the relevance of this research extends beyond the immediate context of the Madeira Startup Retreat. It contributes to the broader discourse on the role of accelerators in

fostering innovation and economic development, particularly within peripheral economies that are often underrepresented in existing research. By providing insights into the accelerator process, this dissertation aims to inform the design and implementation of more effective entrepreneurial support programs, ultimately contributing to the development of robust startup ecosystems worldwide.

#### **1.4. Overview of the Research**

This section outlines the structure of the research thesis. Roche (1997) contends that the research process is made up of several decisions that are essentially linked, however, everything comes back to the research question and to understand the research problem, it is necessary to conduct a comprehensive review of the literature.

Chapter two focuses on a comprehensive review of the theoretical perspectives and concepts that present accelerators as distinct forms of innovation intermediaries. In structuring this chapter, we present a roadmap of the literature review to guide our discussion. Firstly, we review the evolution and history of innovation intermediaries from incubators and angel investors to new forms of accelerators. Secondly, we focus on delineating the characteristics of innovation intermediaries. Thirdly, we review the analytical frameworks used to identify the process that explains how new types of accelerator programs function. Finally, we identify the research gaps in the literature concerning the contemporary and relatively unexplored new types of accelerator programs.

Chapter three presents the principal methodological choices. Specifically, we discuss the research question, methodological strategy, and selection of research sites and outline the data collection and data analysis process.

Chapter four presents the results detailing the empirical work and presents the findings, analysis and discussion in the context of the literature.

Chapter five details the main contributions and finally chapter six outlines the conclusions, limitations and future research.

## **2. LITERATURE REVIEW**

This section reviews the evolution and history of innovation intermediaries, their characteristics and the analytical frameworks used to identify the process that explains how new types of accelerator programs function. Finally, we identify the research gaps in the literature concerning the contemporary and relatively unexplored new types of accelerator programs.

## **2.1 Evolution and history of innovation intermediaries**

The evolution of innovation intermediaries, from incubators and angel investors to new forms of accelerators is an interesting journey that exhibits the dynamic nature of the entrepreneurial ecosystem. However, they are often used interchangeably and indeed there is confusion about their specific meanings (Hausberg & Korreck, 2020). As a result, it is necessary to delineate between the concepts.

The origin of innovation intermediaries can be traced back to the 1970s when in developed countries small, agile, and highly innovative companies started to emerge, revolutionising the traditional market of goods and services and the management of organizations (Chesbrough, 2003). They are not a minor model of a large company but can be described as a temporary organization that intends to develop into a scalable, repeatable, and profitable business model (Blank & Dorf, 2020). They are seen as creators of disruptive innovation (Christensen, 2013) with growth potential but with a low rate of survivability (Damodaran, 2009). They seek a repeatable and scalable business model trying to create a new product or service in risky and uncertain conditions (Ries, 2011). Wassermann (2012) contends they are normally looking for market opportunities regardless of their limited resources. In the initial phase, they identify a market problem, recognize demand, and verify the solution it proposes (Skala, 2019). They tend to be innovation-oriented with little staff (Fairlie et al., 2015), are clustered in technology hotspots (Breschi et al., 2018), market and goal-oriented with high competency, and generally adapt easily to difficulties (B. Kim, H. Kim & Jeon, 2018). The following section reviews the literature on the various models of innovation intermediaries from incubators to accelerators and angel investors.

### **2.1.1 Incubators**

As the famous Austrian economist Schumpeter (1942) emphasized, an economy will only be able to survive if its entrepreneurs keep pursuing the path of permanent innovation. Companies during their creations undergo a difficult and decisive period to implement themselves in the market. Since 1959, with the establishment of the first incubator in Batavia, New York (Hackett & Dilts, 2004), business incubators have emerged as an instrument to help foster company growth and development (Vasconcelos, 2020).

Incubation has experienced increased attention as a model of start-up facilitation (Carayannis & Zedtwitz, 2005). The advantages of supporting new businesses through their fragile early stages have been acknowledged for decades (Grimaldi & Grandi, 2005). They argue that business incubators have been a popular policy instrument in the public and private

sectors to help foster entrepreneurship and regional development, aiming to create jobs and catalyse local economic growth. At the same time, investors have moved to incubation to improve the performance of their portfolios and large companies have established in-house incubators to aid new companies to boost supply chains or pursue new ideas (Miller & Bound, 2011).

Aerts et al. (2007) assert that there has been an evolution of the concept over the years and maintain that there are three generations of business incubators whereas each generation added a different dimension to their value proposition. The first generation of business incubators emerged during a critical period for Europe, due to an exponential growth in the unemployment rate. The European governments realised that the solution to this crisis lay in focusing on innovation and technology, with several business incubators emerging as tools to promote this new strategy (Bruneel et al., 2012). In this first wave of incubators, the main services offered to companies were very limited focusing essentially on providing physical resources, basic co-working space, and some support with financial resources (Phan et al., 2005; Pauwels et al., 2016). Thus, this first generation stood out for its focus on job creation and property appreciation (Aerts et al., 2007).

The second generation of business incubators emerged in the 90s, which brought an increase in the services presented to companies such as access to networking, consulting services and training sessions (Aerts et al., 2007). Consequently, this generation of incubators stopped focusing so much on providing workspaces and started to offer other types of services of a more financial nature like access to knowledge-intensive services, support in the development of products, help in assessing different market opportunities (Pauwels et al., 2016). They also provided the opportunity for ventures to access more intangible services (Clarysse & Bruneel, 2007; Soetanto & Jack, 2013).

The first and second generations of incubation models were criticized for simply trying to keep tenant companies alive to secure fees and rents from them. Each generation of incubation models adapts the services they provide according to the evolving needs of their participating startups (Bruneel et al., 2012). As a response, the third generation has evolved from the late 90s to the early 2000s into a new generation of incubation models, the accelerators (Pauwels et al., 2016).

### **2.1.2 Accelerators**

Accelerators have become an umbrella term for any program providing a fixed term, cohort-based programs and mentorship, networking opportunities and access to funding (Cohen &

Hochberg, 2014; Pauwels et al., 2016). The first known accelerator was Y Combinator, which started in 2005 with Paul Graham and his partners who were former internet entrepreneurs in Boston and Silicon Valley (Miller & Bound, 2011). It was designed to teach founders how to market their products, refine their teams and business models, achieve product-market fit and scale the startup into a high-growth business.

Accelerators are known as one of the numerous support organizations which a startup or entrepreneur can rely on to help them go from idea to growing business such as Airbnb, Dropbox, Reddit, Stripe, and Twitch (Fehder & Hochberg, 2014; Cohen & Hochberg, 2014; Hathaway, 2016; Sohail et al., 2023). The accelerator program provides access to physical space for a short period that culminates in a graduation event usually called “demo day” which diminishes the long fixed-term nature of the incubation programs and ensures that startups are forced to contend with market forces rather than being sheltered from them. Furthermore, Brunel et al. (2012) highlight the access to mentoring, education, and networking services, such as suppliers, potential customers and above all investors allowing them to accelerate their learning.

This new wave of accelerator programs is run by experienced and successful entrepreneurs who mentor these new businesses to reduce the high failure rates (O’Connell, 2011). They have moved away from offering mostly rental services and now provide more intangible and knowledge-intensive support, focused mainly on the high technology sector and in the information communication technology area (Aerts et al., 2007). This evolution in technology, the significant fall in costs of experimentation and the time related to launching new startups contributed to the rise of accelerator programs (Clarysse et al., 2016; Kerr et al., 2014). However, startups must leverage the provided resources, while simultaneously avoiding becoming excessively dependent on any given intermediary, which can limit future success (Rothaermel & Thursby, 2005).

### **2.1.3 Angels Investors**

Angels Investors as a part of the Startup scenery saw an ascent in the late 1990s and early 2000s. The term Angel Investor gained popularity with the evolution of the internet and technology sectors, by offering individual funding and mentorship to startups, however, they bring much more than just capital by providing valuable insights and industry connections (Mason et al., 2019). Angel investors are usually former entrepreneurs themselves, who finance young enterprises, guided by the excitement of being involved in growing a venture by providing guidance and expertise (Ibrahim, 2008).

The investment process is a vital component of the journey new ventures pursue to secure funding from private investors. For young entrepreneurial ventures, the source of financing can be critical to success and when a company can access funds, growth is easily obtained (Maxwell et al., 2011). Kerr et al. (2014) maintain that ventures that raised capital from angel groups tend to have a better performance than those that cannot as they are involved in the daily basis activities of the company; they end up mitigating part of the risk that is implied to exist on their investment.

## **2.2 Delineating the characteristics of innovation intermediaries.**

Innovation intermediary programs such as incubators, accelerators, and angel investors were designed to support early-stage and startup companies but with distinct differences in terms of objectives, selection process, stage of development, mechanism, duration of the program and funding (Clarysse et al., 2016; Cohen, 2013; Cohen & Hochberg, 2014; Hausberg & Korreck, 2020; Miller & Bound, 2011). Innovation Intermediaries are usually exploited by startups to scale (Blank & Dorf, 2020). According to Feser (2022), “Intermediaries function as boundary spanners between various stakeholders in the innovation process” (p.1827). In fact, innovation intermediaries are seen as facilitators of knowledge flow within the ecosystem by acting as connectors that facilitate interactions among various stakeholders within the innovation ecosystem (de Vasconcelos Gomes et al., 2018). Accelerators are the inimitable incubation model where batches of ventures join and exit the program together (Cohen, 2013). A summary of the various characteristics that delineate incubators, accelerators, and angel investors is outlined in Appendix A. There are substantial distinctions between incubators, accelerators, and angel investors, based on their overall objectives, duration, cohort-based nature, business model utilised, selection criteria, venture stage, interventions used, location and equity and funding (Clarysse et al., 2016; Cohen, 2013; Cohen & Hochberg, 2014; Hausberg & Korreck, 2020; Miller & Bound, 2011.) In conclusion, the presence of a cohort distinguishes accelerators from other incubation mechanisms. This cohort of ventures supports each other in solving common problems and sharing feedback (Miller & Bond, 2011).

## **2.3 Analysing accelerator programs**

One of the key research challenges identified in the literature has been to get a holistic understanding of how the accelerator process functions (Drori & Wright, 2018). While research is scarce on how to analyse accelerators, nevertheless, several research studies and systematic

literature reviews have attempted to address a multitude of factors in an attempt to clarify the problem (Pilbeam et al., 2012; Pauwels et al., 2016; Kochan & Nowicki, 2018; Cohen et al., 2019; Maalouf & Zaduminska, 2019; Hallen et al., 2020; Crişan et al., 2021; Aljalahma & Slof, 2022).

Pilbeam et al. (2012) in their research on how governance instruments secure specific outcomes in given supply network contexts used the Context–Intervention–Mechanisms–Outcome (CIMO) analytical framework devised by Denyer et al. (2008). They contend that the “CIMO analytical framework is useful to generate prescriptive knowledge, under the following logic: if you want to achieve outcome O in context C, then use intervention type I” (p.395), and they claim that the CIMO-logic thus allows us to explain how accelerators operate considering their variety and particularities. The CIMO framework has been used in several other studies such as Kochan and Nowicki (2018) and Maalouf and Zaduminska (2019) and Sohail et al. (2023) and Aljalahma and Slof (2022) and Crişan et al. (2021).

Kochan and Nowicki (2018) used the CIMO framework in their systematic review of the literature to study chain resilience. Maalouf and Zaduminska (2019) used the CIMO Framework in their research in the food processing industry to add clarity to the contextual factors and underlying mechanisms that influenced the implementation of lean manufacturing principles. Sohail et al. (2023) exploited the CIMO framework to analyse four key literature streams: incubator typology; incubator impact and stakeholders; resources, capabilities, and technology; and knowledge transfer and incubator performance. Aljalahma and Slof (2022) used the CIMO Framework to boost the understanding of seed accelerators in innovation and entrepreneurial activities.

One of the key contributions to understand how the accelerator process functions to assist startups was conducted by Crişan et al. (2021). In their systematic literature review on accelerators, they used the CIMO analytical framework to identify the process that explains how accelerators operate by considering firstly, the contexts in which they operate, secondly, the interventions accelerators deliver in the form of the portfolio of services offered to their start-up users, thirdly, the mechanisms activated and finally, their outcomes in terms of their influence on entrepreneurship and innovation activities.

In conclusion, the decision to use the CIMO analytical framework in this research was constructed on the belief that it allows us to explain how accelerators operate taking into account their variety and particularities. As a result, we hope to get a more comprehensive

understanding of how accelerators facilitate startup growth through context-specific interventions that activate key mechanisms leading to significant outcomes.

### **2.3.1 Context–Intervention–Mechanisms–Outcome (CIMO) analytical framework**

#### **2.3.1.1 Context**

Denyer et al. (2008) use Context to refer to the external and internal environmental factors that influence behavioural change. In their research study, the context includes both the organizational context in which the accelerator operates and the industry where accelerators were launched. Crişan et al. (2021) identified five organizational contexts in which accelerators exist (start-up, governmental, corporate, university, and community context). The start-up context was the most frequent followed by the governmental context.

Aljalahma and Slof (2022) suggest that community and governmental accelerators are meant to affect change at the ecosystem level while business accelerators at the ecosystem level are associated with network building and innovation. Accelerators are also formed in the corporate context and designed to create disruptive innovation (Kanbach & Stubner, 2016). In a university context, the objective focuses on developing a valuable learning experience (Adomdza, 2016). Finally, accelerators are also motivated to improve collaboration in the community context and to develop better business ecosystems and most accelerators are targeted at specific industries (Crişan et al., 2021). Furthermore, Drory and Wright, (2018) highlight that:

Understanding the core meaning of participation in an accelerator program entails a recognition by the start-ups that they are participating in an educational-skill-oriented program which is limited in time. It is a curricula-based program designed to provide specific knowledge pertaining to managing and operating a newly founded firm. (p. 6)

Assenova and Amit (2024) emphasize that design choices are a key consideration for policy managers and may include whether to emphasize the knowledge depth of peers by focusing on a precise industry, or whether to combine cohorts of a diverse set of ventures, drawn from different industries.

Posen and Chen, (2013) claim that this design choice of startup accelerators may affect the gains that participants assemble from a program by affecting mutual and vicarious learning among peers.

Assenova and Amit (2024) conclude that: “there is not a “one-size-fits-all” model that suits the goals and strategies of all startups; the benefits of accelerator participation vary widely with program design and are contingent on the venture stage, industry, and founder expertise” (p.1056). Likewise, in their recent major study based on 8,580 startups in 176 countries, between 2013 and 2019, they found a positive average effect of accelerator participation on startup performance post acceleration. Additionally, they found that this effect alters significantly with the program design, and remains on the venture stage, industry, and founder expertise. They sustain that:

Accelerator participation is associated with positive effects on startup performance post acceleration, and that program design is a factor that explains substantial variation in the benefits of being accelerated across cohorts and programs. Conditional on being selected into an accelerator, startups that participate in accelerators are more likely to raise venture capital (VC), raise more VC, plan to raise more capital over the next 12 months, generate more revenue, have more full-time employees, and pay higher wages to their employees 1 year after “being accelerated, compared to nonparticipants over the same period. (p. 1031)

Their findings highlight the impact of program design on the benefits that startups derive from accelerator participation. As espoused by Drori and Wright (2018) "the challenge for the accelerator is to tailor the program to diverse participants, once it decides to adopt a diverse selection policy" (p. 9).

### **2.3.1.2 Interventions**

An intervention may be described as an intentional effort aimed at achieving the desired result (Aljalahma & Slof, 2022). The vast majority of the interventions take the form of lectures, seminars, workshops, training sessions, masterclasses, networking events and practical learning-oriented events such as hackathons, mentors and industry experts and business games that can cover a wide range of topics, from finance, marketing, human resources, logistics to legal (Clarysse et al., 2016). Cohen and Hochberg (2014) posit that targeted interventions, such as lectures, workshops, mentorship, networking, industry experts, demo day, coworking space and logistical support, have a significant impact on the participating startups by enhancing their

visibility, increase their access to investment, promote network opportunities and contribute to the overall entrepreneurial ecosystem.

According to Isabelle (2013), accelerators engage in specific interventions to catalyse startup growth, providing access to physical resources, office support, financial resources, entrepreneurial start-up support, and networks, which are essential for speeding up business development and reducing uncertainty. Indeed, Shankar and Shepherd (2019) argue that the effectiveness of these programs is further enhanced when they are tailored to the specific industry and regional context, leveraging local strengths, and addressing specific needs.

Crisan et al. (2021) identified three types of interventions: narrow, typical, and extended. Firstly, the “narrow intervention” is mainly made up of virtual community support services (Gabrielsson et al., 2018, Mitra & Euchner, 2016), workshops (Audretsch et al., 2011), geek camps (Fraiberg, 2017), research and development services, legal services, and financial services (Gardner & Webster, 2017), lectures and case studies (Mitra & Euchner, 2016). Drori and Wright (2018) highlight the importance of workshops to develop entrepreneurial skills by stating that “workshops on subjects such as marketing, client relations, branding, business and product cycles, finance and investment, legal issues, the hiring of new employees and technology” (p. 8) are essential for developing successful startups.

Secondly, the “*Typical intervention*” is the most popular type of intervention that provides a wide range of services such as selecting participants organized in cohorts, coaching, networking, mentoring, boot camp training over a fixed period, preparation to pitch investors during the demo-day, access to financing, all in exchange of equity (Crisan et al., 2021; Aljalalma & Slob, 2022). A constant feature in the various accelerator programmes is the demo day (Miller & Bound, 2011). It is the culmination of the programme and the target of frenetic preparation to connect startups with potential investors.

Likewise, participating in an accelerator increases a Startup’s visibility and credibility. The demo day event took place on the 21st of February 2024. is particularly significant in this regard, as it provides startups with a platform to pitch to a large audience of industry experts and potential investors. As highlighted by Cohen and Hochberg (2014), “Graduations are marked by 'demo days' where venture founders pitch their businesses to large audiences of potential investors” (p.13). This exposure is vital for attracting potential investors.

Finally, the “*Extended Intervention*” consists of additional services, based on the participant’s needs, which could go from providing office space, finance, and legal support

(Clarysse et al., 2016), free housing (Bliemel et al., 2019) and an extended programs that could go between 4 to 8 months structured program (Wise & Valliere, 2014).

Many of the interventions in accelerator programs are focused on a community structure. Bánka et al. (2023) contend that this is an important distinction as it allows members through networking to share their knowledge, experience, ideas, and contacts. They argue that:

This would intensify the relationship between the network participants and additionally increase the start-ups' access to the network of partners, capital funds and potential customers. In addition, the strengthened relationships between participants will influence the diffusion of innovation in management processes and the building of sustainable business partnerships to develop shared added value. (p. 3743)

Assenova and Amit (2024) argue that while multiple different forms of interventions may develop startups' knowledge and capabilities, two are essential: "knowledge-building peer interactions and knowledge-building programming" (p.1033).

Knowledge-building peer interactions play a pivotal role in building startup knowledge (Agarwal et al., 2010). The type of interactions taking place between participants can be described as follows: the presentation of ideas, attracting investors, the validation of the business solution and acquiring funds for the implementation of the idea, the marketization of the concept, including expansion and scaling of the solution (Bánka, et al., 2022). startups exchange best practices, share experiences, and act as idea sounding boards, enhancing the real-time knowledge pool, and contributing to vicarious learning (Cao & Posen, 2023). Cohorts grant participants access to a reservoir of knowledge from other founders (Avnimelech et al., 2021) enabling participants to assimilate and employ new insights to enhance Startup development (Cohen & Levinthal, 1990).

On the other hand, knowledge-building programming play a pivotal role in building startup knowledge (Assenova & Amit, 2024). Indeed, they argue that interventions such as mentors, industry specialists, Demo Day, and pitching events are different programming elements to give participants a more comprehensive understanding of the market potential of their ideas.

Similarly, most accelerators seek to develop Startup's knowledge and skills by providing a combination of educational curricula through lectures and workshops (Gonzalez-Uribe et al., 2022), specialised advice from industry experts or mentors (Cohen et al., 2019), and interactions with a cohort of other startups participating in the accelerator (Avnimelech et al., 2021;

McDonald & Eisenhardt, 2020). Assenova and Amit (2024) contend that these interventions are designed to build both know-how and know-what that motivates participants to harness outcomes such as a prototype or a pitch event to assist in accelerating startup development.

Mentorship is a key component of accelerator programs, offering guidance that is integral to the development of viable business models and market strategies (Pauwels et al., 2016).

Indeed, Bagnoli et al. (2020) contend that mentors are among the key partners for an accelerator because mentorship is one of the most significant values that an acceleration program provides to its start-ups. Wise and Valliere (2014) suggested that mentorship and the ability to learn from others who are more experienced is a key attribute of accelerators. The key characteristics of a good mentor are the unique expertise acquired through experience, their network, and their specific sector knowledge.

Networking events are considered an important success factor because they provide the possibility to identify and attract promising start-ups with skilled entrepreneurial teams and excellent ideas. Events like demo days represent the possibility of connecting with potential investors (Nesta, 2014). Radojevich-Kelley and Hoffman (2012) in their study state that the most commonly cited benefit of accelerators is networking. They contend that: "Virtually all the accelerators believe their greatest value is the opportunity for networking opportunities provided to the nascent firms. This support helps startups refine their business models, improve their market strategies, and connect with potential investors and partners" (p. 65).

Investors such as venture capitalists or angel investors are another fundamental category of partners in accelerator programs. They are usually willing to provide funding to the most promising start-ups admitted to the program (Battistella et al., 2017). Dalle et al. (2023) in their research found that alumni of well-known accelerators can attract investors. Indeed, one of the most difficult aspects of angel and venture capital investing is selecting the most promising ventures from groups of early-stage companies. Cohen and Hochberg (2014) suggest that:

The accelerator format helps angels and venture capital funds select firms by combining the funds of many investors, enabling accelerators to spread risk across more portfolio firms. Thus, the accelerator serves as a deal aggregator and provides a real option for investors who learn about a batch of ventures before taking a larger financial stake in them. (p. 14)

Noviaristanti et al. (2024) exhort that the accelerator plays the role of network orchestration to facilitate coordination and collaboration. They espouse the positive effects of knowledge-building peer interactions within a cohort that provides access to extensive networks of entrepreneurs, investors, and industry experts, which is crucial for startup growth and sustainability.

Infrastructure resources such as coworking space, local hosts and logistical support are key interventions. In most cases, startups are co-located in a shared open office space that encourages peer-to-peer learning and collaboration (Clarysse et al., 2016).

Furthermore, Clarysse et al. (2016), highlight the positive role that the local hosts play in hosting meetups and events to foster the community around the event.

In summary, as startups progress through the acceleration process, these interventions enable them to refine their products and strategies (Hallen et al., 2020). Both knowledge-building peer interactions and knowledge-building programming can provide a vibrant learning environment for startups that potentially enhances their performance post-acceleration (Cohen et al., 2019). These targeted interventions significantly impact participating startups by enhancing their visibility, increasing their chances of securing investment and contributing to the overall entrepreneurial ecosystem. The effectiveness of these programs is further enhanced when they are tailored to the specific industry and regional context, leveraging local strengths, and addressing specific needs.

### **2.3.1.3 Mechanisms**

Denyer et al. (2008) state that mechanisms are recognized as the key results of synthesizing research, providing a basic theory on why specific outcomes emerge). The authors argue that one way of identifying mechanisms is by considering the processes triggered by specific interventions in a specific context. Bunge (2004) outlines several explanations of how mechanisms work across the sciences from the inner workings of a watch to market equilibrium in economics. However, Crisan et al. (2021) across all scientific examples in their study contend that mechanisms are more broadly understood as:

One of the processes in a material system that makes it what it is, such as photosynthesis in plants, litigations in courts of law and work in organizations. In the context of accelerators, mechanisms thus refer to the processes that explain their peculiar

functioning or activity, in other words, their *modus operandi*, the processes that make accelerators what they are. (p. 76)

Crisan et al. (2021) using the CIMO analytical framework in their systematic literature review on accelerators, identified four main mechanisms (learning, validation, access and growth and innovation). They claim that these four mechanisms explain how accelerators support entrepreneurship and innovation. Furthermore, the authors argue that the CIMO logic allows us to explore how accelerators function considering the nature of their context given their variety and particularities; these essential mechanisms rather than the context in which accelerators operate uniquely define how they operate. “The way accelerators operate seems to be explained by the connection between interventions and outcomes, rather than by the organizational context in which they are embedded” (Crisan et al., 2021, p.80). However, mechanisms are not directly observable or obvious like interventions; there is no direct method of logic for conjecturing mechanisms other than with imagination (Bunge, 2004). “Most mechanisms are concealed, they have to be conjectured as their identification is not straightforward” (Bunge, 2004, p.186).

Learning is a key basic mechanism as it enables entrepreneurs to gain skills while they are developing their ideas (Crisan et al. 2021). In addition, Hallen et al. (2020) identified learning mechanisms within accelerators as essential, because they are driven by a novel combination of broad, intensive, and paced consultations with many others outside of the venture. They conclude that a key driver is a set of learning-oriented practices that includes lectures, seminars, workshops, mentorship, guidance from program staff, guest speakers, and interactions with other ventures. Drory and Wrigh (2018) claim that “the main thrust of participating in an accelerator program is the idea that effective learning and knowledge is linked to entrepreneurship” (p.6). Therefore, if accelerator involvement is associated with Startup development, one potential mechanism is openness to learning through different sources of external knowledge.

One of the distinctive and unique features of startup accelerators is their cohort intake. This feature is designed to enable interactions among peers within a cohort that enables participants to access distributed knowledge and engage in vicarious learning (Posen & Chen, 2013). Learning through knowledge exchange, collaboration, cross-pollination, and mentoring is a key source of learning and is effective for producing products and services, running a business, or generating a business model (Uhm et al., 2018). Cohorts grant participants access to a reservoir of knowledge from other startups (Avnimelech et al., 2021); and enable participants to

assimilate and employ new insights to enhance venture development (Cohen & Levinthal, 1990). Miller and Bound, (2011) assert that:

One core advantage of cohort working is the peer support that startup teams provide each other. By encouraging the startups to support one another, some of the burden is also taken off the accelerator management team, allowing them to focus on bringing in outside expertise. (p. 10)

Moreover, Cohen et al. (2019) provide compelling quantitative evidence that some accelerators work by examining what entrepreneurs learn through accelerator participation. They argue that entrepreneurs in many of their sampled accelerators reported substantial learning, which took the form of procedural knowledge, technical knowledge, and declarative knowledge. Additionally, Hallen et al. (2020) claim there are three ways this can happen. Firstly, they reported learning processes and skills that improved the execution of their business model, that is, procedural knowledge about how to do things. Secondly, technical knowledge most frequently came from cohort peers who were often facing similar challenges. Thirdly, they also learned declarative knowledge about what to do in their current ventures. This learning reflected shifts in beliefs regarding the expected payoff and risks of planned activities and greater awareness of alternative activities. Hallen et al. (2020) conclude “that many accelerators have a positive treatment effect on venture development, and that this effect appears likely to be primarily driven by a novel form of inter-organizational learning grounded in broad, intensive, and paced consultation” (p.28).

In addition, Bunge (2004) highlights how essential mechanisms such as validation, access, and innovation represent specific functions performed by accelerators and are the key explanatory characteristics of accelerators. The author claims that these mechanisms are the process through which interventions transform into outcomes and make accelerators what they are. Furthermore, Crişan et al. (2021) indicate that the validation of ideas and products is considered an essential basic activity during the acceleration process; representing “an essential process that accelerators perform by leveraging a narrow range of services to validate a product/idea” (p.78).

Moreover, Isabelle (2013) emphasises that accelerators are designed to accelerate the growth of startups, often with a more explicit focus on rapid development and market entry, given the fact that “most accelerators are for-profit organizations designed to bring a return on

investment to their sponsors by providing fast-test validation of business ideas" (p.18). This focus on rapid validation and market testing is a core mechanism of accelerators; however, Regmi et al. (2015) considers the validation of a product or business idea as an implicit result related to participation in classic accelerators.

Another important aspect of validation is the standing and reputation of the accelerator program. Drori and Wright (2018) in their research found that:

The issue of the selection of accelerators strongly influences their decision to apply and participate in a given accelerator's program. For example, being selected by the Microsoft accelerator implies high prospects for exposure to the best investors; it is a door opener. (p. 12)

On another hand, networking can significantly activate learning thus developing startups' entrepreneurial knowledge and capabilities, improving decision-making, and better execution, and increasing the likelihood of success for ventures that participate in startup accelerators (Hochberg & Fehder, 2015). Wise and Valliere (2014) suggested that "connectivity to a powerful network can be leveraged by the new firm for brand enhancement and signalling of legitimacy" (p.9).

Networking through access and growth act as mechanisms as they focus on key market-orientated results and market success (Hallen et al., 2020). Access and growth through networking are considered vital and concerns access to an international network of associates of the accelerator (Shao & Shi, 2018), access to corporate suppliers and customers (Shankar & Shepherd, 2019), and access to advisors or venture capital (Regmi et al., 2015). Aljalahma and Slof (2022) contend that accelerators by offering learning opportunities, idea authentication, improved access to growth and innovation to their participating startups, they achieve their goals easier. Innovation is another mechanism identified by Crişan et al. (2021) which denotes the activities to support the development of products and services to reach the market. Drori and Wright (2018) highlight the role of innovation and assert that:

Accelerators serve as an organizational type that mobilizes both internal and external resources to enhance the innovation capabilities of start-ups and expose these innovations to markets and institutions. This mission of accelerators, of growing start-

ups and fostering ecosystems of innovation, has placed them at the forefront of providing support for innovations in which new knowledge, products or services emanate from speculative ideas and entail risky execution. (p. 19)

Moreover, investors are identified as another source of knowledge for increasing radical innovation performance, they provide not only finance but also advice and knowledge (Cánovas-Saiz et al., 2020).

Del Sarto et al. (2022) in their research found that services provided by accelerators enhance the innovation performance of the participating startups and can be considered “open environments that foster the exchange of knowledge among startups participating in such programs” (p.2). They concluded that the more conducive the ecosystem and the business environment, the more likely it is that new start-ups will emerge and grow. Entrepreneurs feel more prepared to start new companies when the surrounding social environment provides values that promote business activities and opens a wide variety of opportunities.

Openness to new sources of knowledge and opportunities are considered key mechanisms to enable innovation (Eftekhari & Bogers, 2015). Del Sarto et al. (2022) identified different sources of external knowledge that increase the innovation, especially incremental, performance of startups, namely, “peers, mentors and investors” (p.8). Also, Hallen et al. (2020) argue how peers are considered a valid source of external tacit and non-tacit knowledge that expands the Startup’s knowledge base increasing their incremental innovation performance. This interchange of knowledge is smoothed by the physical proximity of the accelerated startups (Menon & Pfeffer, 2003).

Therefore, the empirical evidence shows that all three external sources of knowledge provided by accelerators increase Startup’s innovation performance and that openness to external knowledge is essential for startups to increase their knowledge base and overcome the liabilities of both newness and smallness (Eftekhari & Bogers, 2015).

Moreover, Lepak and Snell (1999) found that external knowledge represented by mentors increases incremental innovation performance. They argue that interaction and cooperation with mentors in an acceleration program help firms obtain and develop new knowledge that increases their incremental innovation performance (Lepak & Snell, 1999). Moreover, Minbaeva et al. (2014) suggest that the development of professional skills and expertise fosters the generation of boundless ideas for further attempts at innovation.

In summary, the above-cited research suggests that startup accelerators may be highly beneficial for improving startup performance via these learning mechanisms by building founders' knowledge through both specialized programming and peer interactions within cohorts. Eftekhari and Bogers (2015) contend that the open environment provided by accelerators facilitates communication and leads to the exchange of knowledge and expertise, encouraging the emergence of new solutions and new ideas. Startup accelerators may be highly beneficial for improving startup performance via these learning mechanisms by building Startup's knowledge and capabilities through both "knowledge-building peer interactions and knowledge-building programming" (Assenova et al., 2024, p.1033).

Mechanisms are essentially the search for an understanding of what is happening. We need to recognise that while mechanisms are processes that seek to explain the peculiar functioning of accelerators, "most mechanisms are concealed, they have to be conjectured as their identification is not straightforward" (Bunge, 2004, p.186).

#### **2.3.1.4 Outcomes**

Outcomes are often characterized as quantitative changes (Aljalahma & Slof, 2022). The key outcomes identified across the majority of accelerator programs focus on helping founders define and build their initial products, learn from peers, identify promising customer segments, and secure resources to grow and scale (Cohen, 2013). Startups in accelerators benefit from refining their business models, improving their readiness for market entry and potential for success.

To analyse outcomes, it is necessary to differentiate between the levels at which they relate such as participating startups, the accelerators themselves as an organization, and the wider ecosystem level and their nature, soft or hard, depending on whether they translate directly into economic benefits (Crişan et al., 2021). According to these authors there are two main levels of outcomes: "*Startup level*" and "*Ecosystem level*".

At the Startup level the CIMO analysis has typically identified the top five outcomes as funding, validation, product development, network and market access (Crisan et al., 2021). Wright et al. (2017) claim that the key outcomes fostered by accelerators contribute to the development of a viable business model, refinement of business ideas, and identification of market opportunities and are pivotal in helping startups navigate the early stages of business development with financial and infrastructural support.

According to Crişan et al. (2021), market understanding, readiness and expansion are also recognised as key outcomes. Market understanding through "Access and growth" came out as

the most common. This category refers to providing access to investors, avenues to reach new markets, and support for product development and launch (Crişan et al., 2021). The product that accelerators make available to start-ups is the acceleration program and the value proposition for start-ups is to speed up their growth and development (Nesta, 2014). Moreover, Assenova and Amit (2024,) highlight that “by combining different programming elements, accelerators can give participants a more comprehensive understanding of the market potential of their ideas, facilitating new venture development” (p.1035).

Cánovas-Saiz et al. (2020) argue that accelerators have rapidly spread as tools that speed up the business creation process, launch products, increase startup survival rates and help attract early-stage investments.

Product and marketing strategy refinement are key challenges for startups. Yang et al. (2018) assert that “accelerators help startups refine their ideas, build initial prototypes, identify promising customer segments, and provide networking opportunities to external investors and industry experts” (p.4). Accelerators assist in the development of the business solution by providing support from mentors and experts, acting as a bridge between the world of startups and large corporations (Bańka et al., 2022). They allege that accelerators, acting as market makers, fill the funding gap for startups and the information gap for potential buyers and investors.

Del Sarto et al. (2022) highlight how participation in an acceleration program can help startups increase their innovation capability and performance, which is fundamental for small firms that are at the beginning of their lifecycles. Their research highlights the importance of external knowledge from peers, mentors, and investors for increasing incremental innovation performance. Moreover, Minbaeva et al. (2014) suggest that the development of professional skills and expertise fosters the generation of boundless ideas for further attempts at innovation.

The relationship between acceleration and innovative capability and performance can foster economic growth (Del Sarto et al., 2022). Noronha et al. (2022) highlight that "the acceleration process usually focuses on the development of individual startups but can also help developing business ecosystems" (p.6). Yang et al. (2018) have highlighted how accelerators play a critical role in the development of the local ecosystem. They point out that “building a strong, mature and sustainable entrepreneurship ecosystem is crucial for economic development because it can effectively help startups overcome the liability of newness to survive and scale” (p.2).

Hochberg (2016) research highlights that accelerators can stimulate regional economic activity by drawing attention and resources to the area. He suggests that:

The presence of an accelerator leads to a shift in the general equilibrium of funding activity in the region consistent with the notion that an accelerator program may serve as a catalyst to draw attention to the region more generally or may serve to galvanize local activity. (p. 40)

At the “Ecosystem level” they argue that the top three outcomes generated by accelerators are network builder, innovation enabler and entrepreneurship culture. Accelerators promote ecosystem development by fostering innovation and economic growth as well as contributing to the cultural capital development of the region they operate in (Battistella et al., 2017). Indeed, Goswami et al. (2018) in their research assert that accelerators play a key intermediary role in linking founders to their regional entrepreneurship ecosystems. They highlight “the dual role accelerators can play in developing both ventures and ecosystems through entrepreneurial team development and engaging in an ecosystem development intermediation process by combining tangible and intangible infrastructure elements” (p.145).

Moreover, the success of an accelerator is not only determined by the value delivered to its customers, but also by the value delivered to its partners, like alumni, mentors, and investors, and to other actors of the ecosystem in which it operates (Hallen et al., 2020). As posed by Cohen (2014), “network development and expansion is cited as an important aspect of accelerator participation” (p.12), hence, being a key outcome of accelerators. This suggests that successful accelerators play a key role in enhancing new network ties between founders, investors, and other stakeholders (Battistella et al., 2017).

Finally, Voisey et al. (2006) stress that outcomes are also analysed depending on their nature and magnitude. The authors differentiate between soft outcomes including personal skills, knowledge, and validation, and hard outcomes including funding, market access, and access to research facilities. Hard outcomes refer to economic benefits. Soft outcomes consist of non-economic results which may, however, be crucial as an intermediate stage on the path to attaining hard outcomes. Nonetheless, Isabelle (2013) and Richter et al. (2018) argue that this approach to accelerators’ performance fails to distinguish between “outputs” immediate results versus “outcomes” which can be more long-term. As stressed by Crisan et al. (2021), while outcomes are the main interest of policymakers it is important to devote attention to articulating the link between outputs and outcomes.

In conclusion, while the CIMO analysis has been used in a variety of areas especially to review the literature, however, there is no definitive primary research on its use to identify the mechanisms that explain how accelerators operate by considering firstly, the contexts in which they operate, secondly, the interventions accelerators deliver in the form of the portfolio of services offered to their startup users, and finally, their outcomes in terms of their influence on entrepreneurship and innovation activities. Accordingly, the overall goal of this research is to holistically explore the acceleration process and its *modus operandi* by using the CIMO framework, therefore, it will focus on the context in which accelerators operate and their practices, the services they deliver, the mechanisms activated and the outcomes they achieve.

## **2.4 Research gaps in the literature for new types of accelerator programs**

While there has been a considerable amount of research examining accelerators there is however a growing recognition of the need for more systematic research to understand what accelerators are, how they operate, and what role they play in supporting the development of their participating start-ups, and more broadly, in shaping the innovation entrepreneurial landscape (Cohen et al., 2019; Drori & Wright, 2018; Pauwels et al., 2016).

One of the primary obstacles to research has been the absence of large-scale representative datasets on accelerator programs that include program features and information about the companies which enter and graduate from the programs (Cohen & Hochberg, 2014). There are numerous reasons for the absence of published research. Despite the lack of comprehensive data sources mentioned above, the newness of the phenomena is also an issue, and not enough time has passed since the inception of many programs to assess outcomes, particularly since accelerators tend to focus on extremely early-stage start-up ventures (Cohen & Hochberg, 2014).

In addition, there has been a notable absence of research in peripheral economies (Mian et al., 2016) even though the spatial context may influence the entrepreneurial ecosystems and accelerators' performance (Levie et al., 2014). While acceleration programs have rapidly emerged as prominent players in the entrepreneurial ecosystem, entrepreneurs, policymakers, and academics have continued to raise questions about their efficacy when replicated in other geographical areas (Hallen et al., 2020). This is an important consideration as many local governments hope to use accelerators to transform their local economies through the establishment of startup technology clusters (Fehder & Hochberg, 2014). Nonetheless, each region has its own spatial context and unique entrepreneurial ecosystem, so this may not be the case of "one size fits all" (Assenova, et al., 2024). As emphasized by Pauwels et al. (2016),

more research is needed to study the configuration and performance of accelerator programmes, considering the heterogeneity of organizations (activities, objectives, and configurations), as well as the conditions of local entrepreneurial ecosystems.

Therefore, research should explore the way accelerators differ from each other in choices of sponsor objectives (Cohen et al., 2019). In the literature, some researchers highlight the role accelerators play in mediating the relationship between start-ups and investors (Radojevich-Kelley & Hoffman, 2012), other researchers argue that the absence of a comprehensive theoretical framework addressing the accelerator phenomenon impedes a holistic understanding of its impact on the evolution of entrepreneurial ventures (Qin et al., 2019).

As highlighted by Cánovas-Saiz et al. (2020) “Although accelerator programmes have proliferated in recent times, there is still no consensus on how to measure and analyse their performance, and there is a lack of understanding of their role in job creation, investment, start-up survival, and economic growth” (p.333). Additionally, more information is needed to explain how the accelerator process functions to aid startups, and how the ecosystem location and characteristics can condition this process (Crisan et al., 2021). According to Aljalahma and Slof (2022), essential mechanisms such as validation, learning, access, and innovation represent specific functions performed by accelerators and explain the process through which interventions transform into outcomes; however, we still do not understand how the mechanisms transform interventions into outcomes. This an important issue because entrepreneurs need to be more convinced when considering participating in accelerator programmes regarding the performance of the program.

Finally, there is a need for more comprehensive and longitudinal studies to assess the long-term impact of business accelerators on startups. While many studies focus on short-term outcomes, understanding how participation in an accelerator program affects the long-term success and sustainability of startups is crucial (Cohen et al., 2019).

Given the above gaps, this study will focus on investigating how the Madeira Startup Retreat accelerator program functions to assist startups through targeted interventions within a supportive context, to activate mechanisms that will foster significant outcomes using the analytical framework based on the CIMO methodology.

### **3. METHODOLOGY**

This section discusses the overall research methodology and presents the principal methodological choices. Specifically, we discuss the methodological strategy, and selection of the research case study and outline the data collection and data analysis process.

### 3.1 Methodological Strategy

The decision to use a specific research strategy or design is constrained by the nature of the research question or problem. Practical issues such as time and economic resources also play a very significant role in the researcher's choice of methodology. Exploring intricate and complex phenomena in depth is a strength of qualitative research. When the aim is to comprehend the intricacies, motivations, and contextual factors related to accelerator participation and venture development, qualitative methods offer a more detailed and nuanced perspective. Consequently, many business-related research projects opt for one of three methodological strategies: experimental, survey, or case-based research (J. W. Creswell & J. D. Creswell, 2017).

Given the contemporary and contextual nature of Madeira Startup Retreat accelerator programs, it was decided that a case research methodology is the optimal choice when studying the interactions and mechanisms within accelerators during the program event.

The Madeira Startup Retreat (MSR) is an accelerator program, supported by Turismo de Portugal and developed by Startup Madeira, in partnership with Nova School of Business and Economics (SBE). During 6 intensive weeks, 10 Startups in the Tourism, Travel and Leisure sectors have the opportunity to work, share knowledge and experiences, analyse their own business, and set goals, accompanied by expert mentors. Startup Madeira in partnership with Turismo de Portugal has developed and implemented five editions of the program from September 2017 to June 2022. This research has focused on the 6<sup>th</sup> - Edition of this program, which took place from the 15<sup>th</sup> of January 2024 to the 23<sup>rd</sup> of February 2024.

One of the main goals of this program is to allow entrepreneurs to take advantage of the Madeira ecosystem, as a living laboratory, to test and scale their products and services, and explore new opportunities. Throughout the program, each startup had the permanent support of a local host who facilitated information about the regional ecosystem and culture, as well as making the program duration an unforgettable experience.

The decision to use case study research methodology enables the accelerator process to be investigated utilising both primary and secondary sources of information. Accordingly, J. W. Creswell and J. D. Creswell (2017) emphasise, that “qualitative researchers normally gather multiple forms of data, such as interviews, observations, documents, and audio-visual information instead of relying on a single data source” (p. 295). This case study approach allows the researcher to study the phenomenon in a real-life context. Indeed, Yin (2009) argues that

focusing on a contemporary phenomenon, like the accelerator process, within its real-life context and using multiple sources of evidence necessitates a case research methodology.

In addition, Eisenhardt and Graebner (2007) posit that the case research methodology is most suitable for contemporary and contextual studies, such as accelerator programs. One of the advantages of case-based research according to Yin (2009) is that it typically uses several sources of evidence such as attitudinal, statistical and secondary information. In addition, as accelerators are a complex phenomenon there is a need to uncover the underlying dynamics that facilitate and inhibit the development of the process. As a result, it was decided to survey the participants on the current 6<sup>th</sup> - Edition of the Madeira Startup Retreat accelerator programs. As stressed by Roche (1997) and J. W. Creswell and J. D. Creswell (2017), the use of different data sources from primary and secondary sources increases the validity and reliability of the data collected (data triangulation).

### **3.2 Selection of Research Case Study**

In any research study, Roche (1997) contends that the research question determines the research location or type of case. Yin (2009) refers to the decision on the type of case as embedded or whole (a department or the whole company) and the selection decision to three types of sampling: sampling for difference, sampling for a typical case and sampling for access. As is common with qualitative research, we constructed the sample to generate theoretical insights versus being able to make more conclusive statements of causality (Eisenhardt, 1989, Gehman et al., 2017).

Some of the difficulties in case-based research focus on access to research sites, time, and economic cost. However, these issues were overcome in this research because the researcher has gained unique access to the Madeira Startup Retreat accelerator 6<sup>th</sup> - Edition program by the CEO and Project Manager of the program, which included: access to the management organization, access to participants; and access to all secondary data of the previous five program reports. Details of the 10 Startups and participants are outlined in Appendix B. Permission for the interviews to be recorded was agreed upon Appendix C and the transcripts of the personal interviews were analysed, question by question, to guarantee a complete chain of evidence to be maintained.

### **3.3 Data Collection**

Given the nature of the research problem, a two-staged approach to data collection was considered the most suitable approach, using both primary and secondary data sources of

information. Firstly, the interviews with all participants of the 6th edition of the Startup Madeira Retreat were semi-structured open-ended interviews to deduce how accelerators navigate the new venture process, allowing respondents to gather detailed responses to specific questions. We gathered retrospective and real-time data from the 10 semi-structured open-ended interviews (which were transcribed) with participants; observations from site visits; annual reports and archival data. Given the dynamics of the accelerator process, the research focused on the interplay of the various actors involved in day-to-day interaction. Secondly, all the reports from the previous five Startup Madeira Retreat programs, from September 2017 to June 2022, were analysed as secondary sources of information.

A questionnaire or interview schedule, irrespective of its structure, is the operational roadmap of the researcher's research question. Given the nature of this research question, a semi-structured open-ended questionnaire, was deemed the most appropriate instrument to identify the underlying dynamics of the program.

Based on a detailed review of the literature and the use of CIMO Framework, four key themes emerged highlighting the underlying dynamics of the accelerator process: the nature of the context; the key interventions; the mechanisms activated; and the impact in terms of outcomes. These themes form the basis for the interview structure and the subsequent questions for the semi-structured open-ended interviews (Appendix D). With the respondents' permission, all interviews were recorded. The use of recordings as a tool enabled the researcher to listen and concentrate on what the respondent said. A major advantage of the in-depth semi-structured open-ended interview process is the flexibility it offers the researcher to probe for more specific answers to questions (Appendix E) and decide what questions were the most appropriate to be asked as the interview progressed (J. W. Creswell & J. D. Creswell, 2017).

### **3.4 Data Analysis**

The data analysis procedure in qualitative research focuses on several steps. Firstly, organising and preparing the data for analysis. Secondly, reading through the data (transcripts) and coding the data. Thirdly, grouping the codes into the themes. Fourthly, interconnecting the themes. Fifthly, adding an analytic framework and finally interpreting the data (Appendix F). Analysis was based on in-depth qualitative data to establish the validity of the learning mechanism, specifically by examining whether and what entrepreneurs learn from the accelerator participation.

The analytical framework devised by Denyer et al. (2008) was considered a comprehensive methodology to use to analyse the primary data in this research study. The framework is based

on the CIMO methodology (Appendix G), which serves to identify the mechanisms activated that explain how accelerators operate by considering the contexts in which they operate, the interventions they deliver in the form of the portfolio of services offered to their start-up users, and their outcomes in terms of their influence on entrepreneurship and innovation activities. Secondary data from the reports of the previous five program editions where possible was utilised to triangulate and validate the primary research findings.

#### **4. FINDINGS, ANALYSIS AND DISCUSSION**

This section presents the analysis and discussion of the research study. The findings were analysed using the CIMO framework and are divided into three sections. Firstly, we present the findings from the participants of the Sixth Edition of the MSR accelerator program (Figure 4.1). Secondly, secondary data from the MSR reports of the previous five program editions (Table 4.1) are utilised to triangulate a number of the primary research findings.

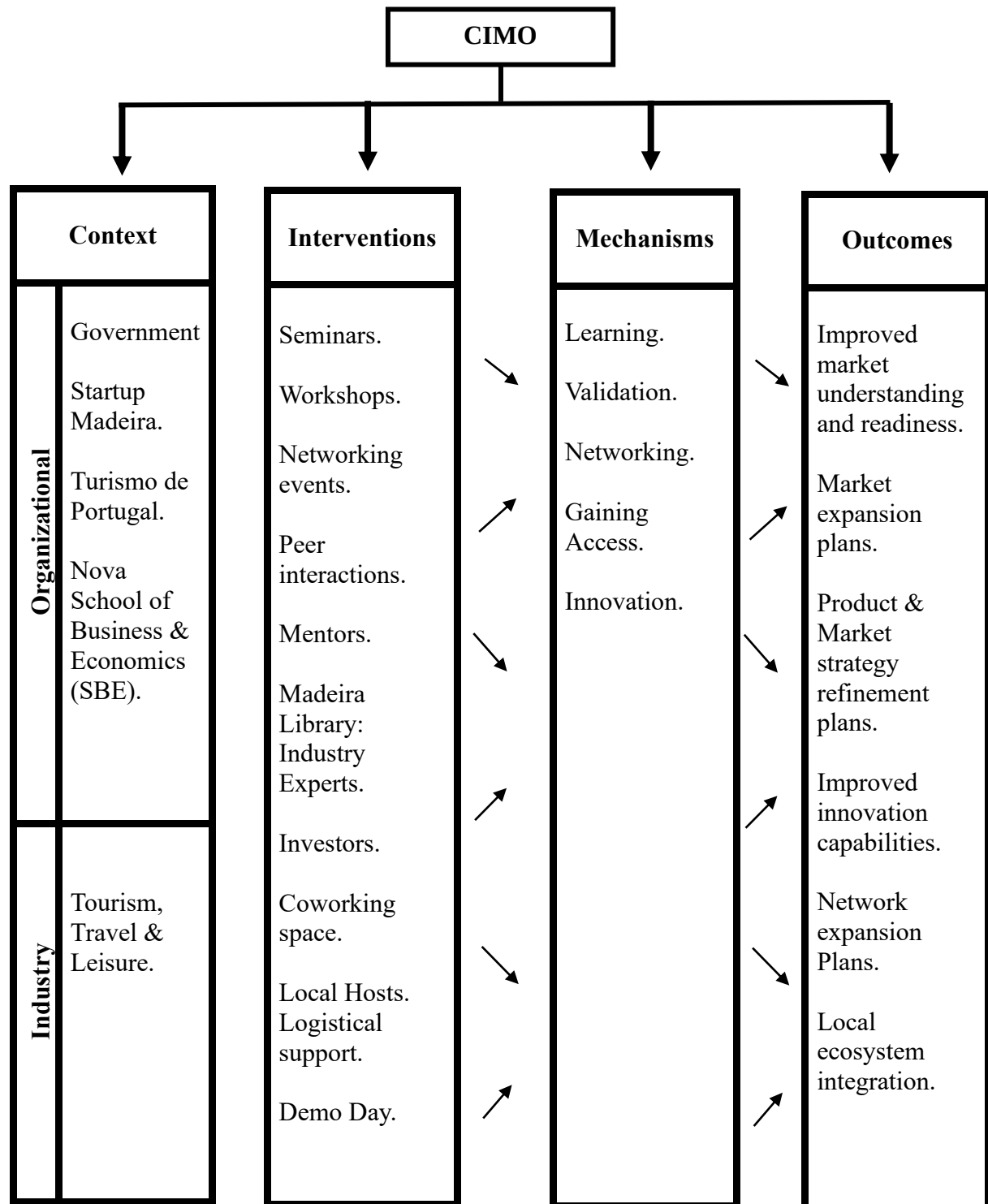
Finally, we present the analysis and discussion of the findings of the Sixth Edition of the MSR accelerator program.

##### **4.1 Findings MSR – Sixth Edition**

This section applies the CIMO framework to analyse and discuss the findings of the MSR accelerator program Sixth Edition and how it has impacted participating startups in a specific context through targeted interventions to activate mechanisms that will foster significant outcomes. The summary findings from the perspective of the startup participants using the CIMO analytical framework are outlined in Figure 4.1.

Overall, participants believe the program's design functions as a critical facilitator to explore business expansion in Madeira and connect with the local ecosystem. Startups at various stages of development sought the MSR accelerator program for specific growth strategies, market understanding, market validation and networking opportunities tailored to the tourism, travel, and leisure sectors. Participants acknowledged how the program offered a range of interventions, including seminars, workshops, networking events, peer interactions, mentors, Madeira library (face-to-face meetings) with industry experts, demo day, investors, co-working space, local host, and logistical support. Additionally, participants were conscious that this accelerator program activated several mechanisms that will foster significant outcomes ranging from learning, validation, networking, gaining access and innovation. Finally, participants outlined a significant range of outcomes that emerged as a result of the targeted interventions that activated mechanisms that will foster outcomes such as improved market

understanding and readiness, market expansion plans, product and market strategy refinement plans, improved innovation capabilities, network expansion plans, and local ecosystem integration.



**Figure 4.1** Context -Interventions – Mechanisms – Outcomes (CIMO) Framework: Summary Findings of the Madeira Startup Retreat Program 6<sup>th</sup> edition.

## 4.2 Findings MSR Reports (1st - 5<sup>th</sup> Edition)

Given the descriptive nature of the MSR reports it was not appropriate to analyse these reports using the CIMO framework to investigate how the interventions activated the mechanisms that will foster innovation outcomes. The five previous MSR reports are essentially secondary sources of information prepared by the MSR management and unlike the primary research in the MRP 6<sup>th</sup> - Edition where semi-structured open-ended interviews were used to interrogate and probe the answers of the participants, this was not feasible with secondary data of this type.

As a result, there is no clear evidence as to what key mechanisms were activated. In the MRP 6<sup>th</sup> - Edition, the researcher using the CIMO framework was able to interrogate the participants through semi-structured open-ended interviews to identify from their perspective what mechanisms were activated that will foster innovation outcomes. Reading the reports of the five previous MSR accelerator programs there is significant evidence to show that the context, interventions, and potential outcomes are similar and validate the MSR accelerator program 6<sup>th</sup> - Edition (Table 4.1).

**Table 4.1** - Summary Findings of the MSR Reports (1st - 5<sup>th</sup> Edition)

| <b>Context</b>                                                                                |                              | <b>Interventions</b>                                                                                                                               | <b>Outcomes</b>                                                                                          |
|-----------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Organisation</b>                                                                           | <b>Industry</b>              | Seminars.<br>Workshops.<br>Mentorship.<br>Networking.<br>Industry Experts.<br>Coworking space,<br>Local Host &<br>Logistical support.<br>Demo Day. | Improved Market understanding.<br><br>Product Strategy Refinement plans.<br><br>Network expansion plans. |
| Startup Madeira.<br><br>Turismo de Portugal.<br><br>Nova School of Business & Economics (SBE) | Tourism,<br>Travel & Leisure |                                                                                                                                                    |                                                                                                          |

From an organisational perspective, the five previous MSR accelerator programs were supported by Turismo de Portugal and developed by Startup Madeira, in partnership with Nova School of Business and Economics (SBE) and tailored to the tourism, travel, and leisure sectors within the unique geographical and cultural setting of Madeira. While there were minor changes

to the inventions in the program over the five years, overall, the programs offer a similar targeted set of interventions, including lectures, workshops, networking, mentors, industry experts, demo day events, office space, local hosts, and logistical support. As all the MSR reports were completed at the end of each program it was not possible to ascertain the detailed outcomes at such an early stage. However, many of the startups commented on their greater market understanding, network expansion and product strategy refinement plans.

In conclusion, it is evident from the MSR reports that the context, interventions, and many of the potential outcomes are similar and validate the findings of MSR - 6<sup>th</sup> Edition.

## **4.3 ANALYSIS AND DISCUSSION**

The in-depth analysis of the MSR accelerator program 6<sup>th</sup> - Edition using the CIMO framework provides a comprehensive overview of how accelerator programs operate and how they impact participating startups, in a specific context, through targeted interventions to activate mechanisms which will foster significant outcomes.

### **4.3.1 Context**

This section focuses on analysing and discussing the context of the MSR accelerator program 6<sup>th</sup> - Edition using the CIMO framework paying particular attention to the internal and external environmental elements that motivated startups to join the program. There is clear evidence that the context of the MSR accelerator program from an organisational and industry perspective has been critical in shaping its effectiveness.

From an organisational perspective, the MSR is an accelerator program, supported by Turismo de Portugal and developed by Startup Madeira, in partnership with Nova School of Business and Economics (SBE). During 6 intensive weeks, 10 startups in the Tourism, Travel and Leisure sectors have the opportunity to work, share knowledge and experiences, analyse their own business, and set goals, accompanied by expert mentors. One of the main goals of this program is to allow entrepreneurs to take advantage of the Madeira ecosystem, as a living laboratory, to test and scale their products and services, and explore new opportunities.

Specifically, the collaboration between Startup Madeira, Turismo de Portugal, and the Nova SBE creates a supportive ecosystem, providing startups with access to a network of industry experts and resources. The partnership highlighted the importance of a supportive collaborative ecosystem in accelerating startup growth with a focus on tourism and leisure. The partnership underlined the commitment to fostering entrepreneurship and innovation within the

local and national tourism sector by providing access to a network of experts, resources, and knowledge in tourism, business, and technology. It acted as a collaborative framework that fosters innovation in the tourism sector, emphasizing the program's integrated approach to supporting startup growth.

According to Assenova and Amit (2024) from an industry perspective, “the key design choice focuses on whether to emphasize the knowledge depth of peers by focusing on a single industry (industry-specific), or whether to compose cohorts of a diverse set of ventures, drawn from different industries (industry-agnostic)” (pp.1033-1034). The MSR accelerator program decided to focus on a single industry, tourism, travel, and leisure in Madeira by emphasising its unique geographic and cultural context. The design choice of startup accelerators is a critical decision for the management of any accelerator program and may affect the benefits that participants derive from a program. A primary design choice of accelerator programs concerns decisions about cohort composition: the structure, size, and diversity of peers.

Overall, participants believe the program’s design functions as a critical facilitator to explore business expansion in Madeira and connect with the local ecosystem. The unique setting of Madeira, known for its vibrant tourism industry, creates a natural testbed for innovations. The island’s reputation as a top tourist destination offers startups a compelling context for developing and testing their products and services. According to Aljalahma and Slof, (2022) this emphasis on context enables mechanisms to be activated to foster an innovation culture.

Specifically, startups sought the (MSR) accelerator program for growth and access, market validation, expansion opportunities, networking, and strategic guidance specific to the tourism and travel sector. Socialbnb stated that: “I think Madeira Startup Retreat came in a good time, especially now in the beginning of the year and because is tailored for tourism and travel companies, so we thought it could be good for us to connect with tourism and travel experts that actually know how this kind of business model works. We have also been to a few others accelerators programs that were more general, so this one is more specific for our business model, so we thought this would be a great opportunity for us.”

This reflects Cohen and Hochberg (2014) and Cohen et al. (2019), observations that accelerators are not just about the physical resources they provide but also about opening doors to new opportunities and for industry-specific insights, networking, and validation.

Hallen et al. (2020) highlight that the context in which startups operate, including their developmental stage and market aspirations, plays a critical role in how they benefit from

accelerator programs. The evidence from the findings supports this. Indeed, the startup AHOY's decision to apply to the (MSR) accelerator program was driven by the desire to access new markets, learn from diverse entrepreneurial cultures, and establish a business in a new city or country.

The startup Do Your Order joined the (MSR) accelerator program with an already live product, seeking to explore business opportunities in Madeira due to its touristic nature and the presence of digital nomads. The startup PayFor.travel engaged with the (MSR) accelerator program to leverage the specific focus on travel technology, validate its business model in the tourism sector, and explore European funding opportunities. This context underlines the importance of accelerators in offering startups a platform to explore new markets and connect with potential customers.

This is consistent with Cohen's (2013) findings on accelerators as a launching pad for market exploration. eTOLLS.eu applied to the (MSR) accelerator program following exposure at the Web Summit, motivated by the opportunity to consolidate its team in Madeira and leverage the region's business environment. The startup was already live with real revenue and customers, indicating a mature stage in its lifecycle. This decision reflects the strategic consideration of accelerators as platforms for growth and exposure, echoing findings by Hochberg (2016) that accelerators offer startups visibility and networking opportunities crucial for their expansion.

The startups, Girafa.Club, Heavnn, Revisor, Socialbnb, Spendbase and Tourdata.AI, applied to the program seeking mentorship, networking opportunities, and exposure to tourism in Madeira. As outlined by Spendbase: "We are in a constant search for opportunities and we are interested in entering new markets, registering our company in different countries to benefit from local programs". These startups were already live and in a more mature stage of development where strategic guidance for market penetration and operational efficiency was critical. These decisions to join the (MSR) accelerator program, support the motivations outlined by Cohen and Hochberg (2014) that startups seek accelerators for growth, network expansion, and strategic guidance on ecosystem integration, especially when considering geographic expansion.

Participants were concerned about other aspects of the "Program Design" especially the alignment of the program's offerings with the Startup's stages and the specific need to provide a tailored experience that maximises each Startup's potential for growth and impact. They expected that by participating in the (MSR) accelerator program they could capitalise on the

program for strategic networking, market expansion, and skill enhancement, with a keen interest in tailoring the experience to their specific growth stages and industry challenges. While some of the participants suggested more tailored support and quiet workspaces for productivity, others were more interested in networking events and peer interactions. eTOLLS.eu were particularly impressed with the tailored support and stated: “I was really impressed with the well-structured program, which started with speed pitching, value proposition, customer development, sales and marketing development, growth plan, performance review management, and each piece of this puzzle, gave us a picture on how to develop our business.”

The context also provided a well-structured collaborative ecosystem with extensive international reach and diversity. The international reach and diversity of the program were essential elements, which attracted startups from 28 countries. The program's international scope not only enriched the participant mix, and diverse community of entrepreneurs but also expanded the global network and market access for participants.

This diversity enriched the program by bringing together different perspectives, experiences, and solutions to common challenges in the tourism sector. Indeed, AHOY acknowledged the international reach and diversity and reckoned that “It’s an opportunity for us to reach another market, and meet entrepreneurs from different countries, and different cultures.” According to Hallen et al. (2020) diversity in accelerator programs not only enriches the participant experience but also drives more effective innovative solutions to industry challenges, particularly in the tourism sector, highlighting the positive impact of diverse teams in accelerators. Indeed, the program’s international reach attracts a diverse pool of startups, bringing varied perspectives and ideas. This diversity fosters cross-cultural learning, innovation and global exposure helping startups understand and penetrate international markets, increasing their chances of success.

The relative remoteness and size of Madeira might have presented logistical challenges for participants, but the program mitigated these through robust local support. Indeed, the Startup’s utilisation of the (MSR) accelerator program’s resources for growth and expansion reflects Cohen (2013) and Hallen et al. (2020) studies, where accelerators act as catalysts for validating business models, providing learning opportunities, and facilitating market access, with a clear vision and strategy about the objectives that it wants to achieve.

Isenberg and Onyemah, (2016) underline the importance of how regions can foster environments conducive to scaling up business operations and driving economic growth, highlighting the importance of systematic and comprehensive support for entrepreneurship as

a key driver of regional economic development with strategic interventions in areas such as infrastructure development, access to capital, mentorship programs, and regulatory support that can help create a conducive environment for businesses to scale up, partnerships and collaborative efforts. Therefore, we can conclude that these ecosystems not only benefit individual businesses but also contribute to the broader economic health of the region.

In summary, it is evident from the findings that the importance of the context in accelerator programs can provide insights into how different environments affect startup growth as it significantly influences their needs and how they benefit from accelerator programs. It is clear from the analysis that the program design of the MSR accelerator program, the unique location of Madeira and the impact of design choices are key considerations for policy managers. As highlighted before, a key challenge for management is to decide whether to focus on a specific industry or agnostic industries. Finally, it is evident that other considerations for management concern decisions about cohort composition: the structure, size, and diversity of peers.

In conclusion, there is clear evidence that the (MSR) accelerator program by emphasising its unique geographic and cultural context, the collaborative ecosystem it operates within, and its program design focusing on tourism, travel and leisure startups is successful in its aim to foster innovation, support startup growth, and contribute to the regional economy's development.

#### **4.3.2 Interventions**

The (MSR) accelerator program 6<sup>th</sup> - Edition employs a range of targeted interventions that significantly impact the startups. Based on the participants' opinions, the MSR accelerator program offered a range of interventions, including seminars, workshops, networking events, peer interactions, mentorship, investors, Madeira library - industry experts, demo day, coworking space, local hosts and logistical support.

These interventions are designed to address different aspects of startup development, from business model refinement to market strategy and provide startups with the necessary tools and knowledge to navigate the complexities of early-stage business development. The hands-on approach ensures practical learning and immediate application. As highlighted by Clarysse et al. (2016), these essential interventions provided by accelerator programs are crucial for addressing the varied needs of startups. They argue that they provide them with the necessary resources and knowledge to navigate growth challenges, but their effectiveness depends on their alignment with the Startup's immediate needs and strategic goals.

Assenova and Amit (2024) argue that while multiple different forms of interventions may develop startups' knowledge and capabilities, two are essential "knowledge-building peer interactions and knowledge-building programming" (p. 1033). All the participants recognised the importance of both types of interventions. However, many of the participants stated that peer interactions played a pivotal role in building Startup knowledge. However, they highlighted while peer interactions involved engaging with other founders and startups undergoing the acceleration process at the same time and were essential in "knowledge-building", other interventions such as seminars, workshops, networking events and industry experts were essential in developing "knowledge-building programming". This is an important distinction as it allows members to share their knowledge, experience, ideas, and contacts and supports Bánka et al. (2023) research on the importance of focusing on community structure.

Likewise, as stated by Cohen and Hochberg (2014) accelerators "offer a plethora of networking, educational workshops and mentorship opportunities, with both peer ventures and mentors, who might be successful entrepreneurs, program graduates, venture capitalists, angel investors, or even corporate executives" (p.4). AHOY and Do Your Order, highlighted that "mentoring and networking as particularly beneficial." They claimed that the mentors' expertise in tourism and connections in the industry were invaluable. AHOY specifically mentioned, "Networking for me was a big intervention more than mentorship". This aligns with Hochberg (2016) discussion on the critical role of mentorship in accelerator programs and reinforces Cohen's (2013) findings that "intense mentorship and education are cornerstones of accelerator programs" (p.23). Indeed, Wright et al. (2017) state that Alumni who have become entrepreneurs are attracted to contribute to the ecosystem by serving as mentors, coaches, investors, and advisors to the entrepreneurs.

eTOLLS.eu highlighted targeted interventions, such as demo day, pitching, value proposition refinement and branding guidance, to enhance their strategic development. This highlights the importance of tailor-made support in accelerator programs as identified by (Fehder & Hochberg, 2014). Demo days are structured events where startups pitch their business ideas to investors and industry experts. eTOLLS.eu highlighted the importance of the demo day by stating "I'm still in communication with some mentors to follow up on our agreements. Investors loved our pitch on the demo day and requested some documents, so, I think we will be in some negotiation for further investment." These findings are supported by Nesta, (2014) research where he found that events like demo days represent the possibility of connecting with potential investors and significantly enhance visibility and credibility,

providing crucial opportunities for funding, partnerships and also serving as milestones that pushed startups to refine their pitches and business models.

It is also important to note that it is necessary to examine not just the nature of the intervention but also how it is implemented. This was evident in the findings. Many of the startups (Girafa.Club, Revisor, Heavnn, Tourdata.AI and Spendbase) found that the seminars, workshops, networking opportunities, especially the value of connecting with the local ecosystem and the Madeira Library for community integration and exposure to industry experts in various business areas like product development, hiring, and corporate culture provided comprehensive support on conceptual refinement and market strategy development.

Specifically, Tourdata.AI highlighted how the seminars, workshops and networking opportunities had a big impact on them. They stated, “it helped us to focus more on our sales and marketing strategy.” This supports the research of Noviaristanti et al. (2024) which suggests that the accelerator plays the role of network orchestration to facilitate coordination and collaboration. They espouse the positive effects of knowledge-building peer interactions within a cohort that provides access to extensive networks of entrepreneurs, investors, and industry experts, which is crucial for startup growth and sustainability. In addition, these findings support the research of Clarysse et al. (2016) on the role of accelerators in offering diverse forms of assistance to address specific startup needs.

PayFor.travel and Socialbnb highlighted access to venture capitalists and mentorship, and the development of opportunities for networking within the technology and travel industry. Cohen and Hochberg (2014) argue that such interventions are crucial for startups to address operational and strategic challenges and navigate their growth challenges.

Many of the participants stated that collaborating with local tourism businesses and international mentors broadened their network and opportunities for them and facilitated potential access to new markets and expertise. This is consistent with Cohen and Hochberg (2014) research on how networking opportunities presented by the program are essential for knowledge transfer and community building within the accelerator model. Indeed, as stated by Bánka et al. (2023) in their research, “accelerators create a network of connections between startups, investors, mentors and other enterprises, which contributes to increasing the growth potential of the entire innovation ecosystem” (p.2). For example, participants recognised the program's partnerships with Startup Madeira, Turismo de Portugal, and the Nova School of Business and Economics highlighting the importance of a supportive ecosystem in accelerating startup growth. These tailored interventions align with the research of Byrd et al. (2017) who

state that accelerators provide crucial support, including funding, mentorship, and commercialization training, to help move technologies from the lab to the market.

Finally, it was evident from the findings that the diversity of participants, drawn from international applications, enriched the learning and networking experience, promoting cross-cultural exchanges and broadening market perspectives. As stated by AHOY “the international reach and diversity provided them with the opportunity to meet entrepreneurs from different countries and different cultures.”

In summary, this synthesis of experiences from the ten startups and the reports of the past five editions demonstrates the accelerator's role in providing industry-specific targeted interventions such as seminars, workshops, networking events, peer interactions, mentorship, investors, Madeira library - industry experts, demo day, coworking space, local hosts and logistical support, fits in the “typical intervention” category considered to be the most popular type of interventions in accelerator programs, as described by Crisan et al. (2021). They conclude that accelerators essentially create a synergistic ecosystem that supports startups by providing access to a network of experts, resources, and knowledge in tourism, business, and technology.

In conclusion, it is evident from the analysis why participants are motivated to participate in accelerator programs. They know that they lack market traction or the business foundations to develop a startup and its products in compliance with market expectations because, at their early stage of development, they do not have a precise business model and the business knowledge to succeed.

#### **4.3.3 Mechanisms**

Participants’ opinions about the mechanisms that drive impact that will foster significant outcomes ranged from learning through knowledge exchange, collaboration, cross-pollination, validation, networking for access and growth, innovation, and openness to new sources of knowledge and opportunities. Aljahma and Slob (2022) exhort that mechanisms link the interventions to outcomes, emphasizing the importance of alignment between the Startup’s needs and the program's offerings. They suggest that understanding the Startup’s internal processes and how they interact with the intervention is vital. They maintain that through tailored mentorship, networking opportunities, and skills development workshops, startups can leverage the program to address specific needs such as market expansion, client acquisition, and skill enhancement.

AHOY, eTOLLs.eu, PayFor.Travel, Revisor and Tourdata.AI contended that the specific triggering mechanisms for them were learning, validation, access and growth, and innovation. PayFor.Travel detailed, “We got lots of learning from the mentors, industry experts and the cohorts.” AHOY specified that “networking helped us to increase our goals and expand our possibilities to grow.” These mechanisms were also identified in Crişan et al. (2021) study on how accelerators provide support for startups to accelerate their development. Revisor referred that learning was a key basic mechanism as it enables them to gain skills while they were developing their ideas. This supports research by Crişan et al., (2021) and Hallen et al. (2020) on the important role of learning as a mechanism.

Furthermore, Isabelle (2013) outlines the role accelerators play in facilitating learning, strategic recalibration, networking, validation, and market readiness, enabling startups to refine their strategic readiness, reorientation, and planning for better market alignment. Therefore, if accelerator involvement is associated with talented venture development, one potential mechanism is learning.

Crişan et al. (2021) indicate that the validation of ideas and products is considered an essential basic activity during the acceleration process. There is clear evidence in the study that the focus on the rapid validation of business ideas and fostering innovation through a supportive environment encouraged experimentation. Feedback from workshops prompted Heavnn to consider product improvements, showcasing a mechanism of validation and innovation. In Aljalalma and Slof (2022) systematic literature review on accelerators, they give evidence that “accelerators foster an innovation culture, speed up the invention process, assist businesses in coming up with new ideas, test those ideas, and share the results” (p. 10). The majority of the startups pointed to the benefit of validation and innovation assisting them to test and refine their ideas, reducing time to market and increasing the chances of developing successful products.

Bunge (2004) highlights how essential mechanisms such as validation and innovation represent specific functions performed by accelerators and are the key explanatory characteristics of accelerators. Spendbase stated that the key mechanisms for them focused on validation, innovation, and networking for future collaboration opportunities. They indicated, “We had a lot of opportunities to do networking, speed dating session, networking with the local community like Madeira Library and meeting local managers, it’s a great way to make contacts for the future” As a result, they claimed that “they were able to gain insights into market expansion and receive valuable feedback on their product and strategies”. They also claimed that their innovation capability was stimulated by exposure to new ideas and

technologies. This supports research by Bunge (2004) who argues that mechanisms are the process through which interventions transform into outcomes and make accelerators what they are.

For eTOLLS.eu, the "Mentoring Madness" exercise was pivotal in challenging its presentation skills and adaptability, underscoring the role of storytelling in enhancing its innovation capabilities. Gabrielsson et al. (2018) in their research support the role of exercises in enhancing innovation.

In addition, Girafa.Club highlighted how “openness to new sources of knowledge enabled it to develop more effective KPIs.” The company points to the value of targeted advice in enhancing its presentation and how developing its storytelling capabilities significantly impacted its pitch quality. This supports research by Isabelle (2013) who argues that mechanisms such as openness to new sources of knowledge reflect the accelerator's role in fostering a supportive environment that encourages learning and strategic refinement.

Noviaristanti et al. (2024) exhort that the accelerator plays the role of network orchestration to facilitate coordination and collaboration. They espouse the positive effects of knowledge-building peer interactions within a cohort that provides access to extensive networks of entrepreneurs, investors, and industry experts, which is crucial for startup growth and sustainability. For example, Do Your Order argues that the Madeira library's role in connecting the startup with local businesses exemplifies the accelerator's ability to facilitate networking for access and growth. Miller and Bound (2011) agree and contend that accelerators facilitate networking, thereby enhancing their potential for innovation, market penetration and expansion.

Openness to new sources of knowledge and opportunities was considered a key mechanism to enable innovation (Eftekhari & Bogers, 2015). Startup Heavnn maintains that the interventions opened them to new sources of knowledge and opportunities and activated mechanisms such as learning. These findings are consistent with Isabelle's, (2013) observations on the role of accelerators in providing startups with critical market insights. In addition, Malek et al. (2014), argue that gaining such market understanding, “allows entrepreneurial teams and their ventures to connect with and access resources from investors and other important stakeholders” (p. 26).

Startup Socialbnb argues that the mentoring sessions triggered significant mechanisms such as learning, innovation, and networking. It reports that it acquired new skills and knowledge, especially in data-driven marketing strategies, cost and customer acquisition calculations, and

value proposition testing. These mechanisms align with findings by Clarysse, et al. (2016), who note that accelerators play a pivotal role in facilitating learning and innovation within startups, pushing them to engage in reflective judgement to rethink their strategies and operations for better market alignment.

In summary, it is evident from the participants that through its diverse range of activities, the MSR – 6<sup>th</sup> Edition facilitated a rich transfer of knowledge enabling startups to refine their business models, develop growth strategies, and gain insights into the tourism industry. Through seminars, workshops and mentoring the program facilitated a rich exchange of knowledge between startups, industry experts, and local entrepreneurs, fostering skill development and innovation. Through workshops and mentoring sessions, participants enhanced their business skills, including pitching, business model validation, and growth strategies.

There is clear evidence that the (MSR) accelerator program 6<sup>th</sup> - Edition promoted the formation of a supportive community by encouraging collaboration and cross-pollination among startups, local businesses, and mentors, thus creating a network that extends beyond the duration of the program. It was structured to foster an environment where collaboration and cross-pollination are fostered to share ideas and gain insights from peers and mentors from diverse backgrounds.

Networking was also a key mechanism, enabling startups to create valuable connections with mentors, peers, and local businesses. These interactions often led to collaborations and partnerships extending beyond the program's duration. The program's ability to integrate startups into a supportive network supports Hochberg (2016) research on the importance of network effects in accelerators, enabling startups to access valuable resources, knowledge, and partnerships.

In conclusion, the study offers compelling evidence that many accelerators have a positive treatment effect on startups and that this effect appears likely to be primarily driven by how the participants used interventions as a critical intermediary to support them through a well-structured process to activate mechanisms such as learning through knowledge exchange, collaboration and cross-pollination, validation, networking, gaining access and innovation.

#### **4.3.4 Outcomes**

As referred by Crişan et al. (2021), it is important to acknowledge in any discussion on outputs that there is “a strong need to differentiate between short and long-term results, which would help alleviate the confusion between outputs (immediate results from the accelerating process)

and outcomes (non-immediate results related to performance)” (p.83). This research was undertaken immediately after the six-week MSR program, where participants are looking at the short-term outcomes of the accelerator program and the outcomes that they hope to achieve in the future arising out of their participation in the program.

Participants reported significant progress in improved market understanding and readiness, market expansion plans, product and market strategy refinement plans, improved innovation capabilities, network expansion plans and ecosystem integration as key outcomes of the program for them (Figure 4.1). This positive impact on startup growth and development through participation in the MSR – 6<sup>th</sup> Edition accelerator program provides evidence of the effectiveness of accelerator programs in advancing startup progress. It is interesting to note that these key outcomes are similar to those identified in the literature (Cohen, 2013).

The focus on market understanding and readiness helps startups identify and exploit new market opportunities. As outlined by Hochberg (2016) in his research, accelerator programs are effective in providing startups with the strategic insights necessary for market readiness and expansion.

AHOY and Revisor reported improvements in understanding the Portuguese market and branding position and highlighted the program's role in enhancing their strategic competencies and market readiness. AHOY referred that: “The program gave us more tools, so we are better prepared than before. We have a better mindset now and are ready to scale”. Hallen et al. (2020) found that “many of the studied accelerators do indeed benefit ventures, increasing both their likelihood and the speed of reaching key outcomes” (p. 25). Revisor believes that they are now “More open to new markets and government programs and opportunities”.

Many of the participants highlighted how the program helped them to make product and market strategy refinement focusing on improving market positioning and value propositions. Spendbase reported that the program “Boosted our confidence and we got new ideas about how to review our business strategy. We feel we are more confident to solve the problems and move on with a regenerated mindset”. The tangible outcomes in product and market strategy reported by Do Your Order, include increased website visitors and engagement, a focused approach to sales and marketing, and a strategic shift away from content marketing towards direct client engagement.

These outcomes illustrate the accelerator's impact on improving the Startup's product and market strategy refinement and support Hochberg's (2016) research suggesting that participation in accelerator programs often leads to refined business strategies and enhanced

product development processes. Revisor plans to reassess its competitors in the Portuguese market and improve its product accordingly. Tourdata.AI reports outcomes such as the validation of its business model, the identification of pain points in the tourism sector, and potential collaboration with PayFor.Travel. Additionally, the mentoring advice to focus on the U.S. market for its data-driven companies represented a strategic pivot in its market approach.

These outcomes demonstrate the accelerator's effectiveness in enabling startups to refine their strategies and operational approaches, as evidenced by their improved communication skills, market positioning and value proposition outlined in their product and market strategy refinement. The findings corroborate the findings of Clarysse et al. (2016), who note that participation in accelerator programs can lead to significant strategic and operational enhancements for startups.

Participants highlight the impact of the program on their innovation capabilities. Heavnn stated, “being in the program provided us innovation in our marketing approach, customer development and value proposition approach”. Socialbnb set up a structured testing framework for new products and marketing channels as a direct result of the interventions and mechanisms activated during the program. This outcome is a testament to the program's effectiveness in providing startups with the tools and frameworks needed for strategic market experimentation and innovation development.

Network expansion was a key outcome for many of the startups. It was evident that the program's impact extended beyond its duration with startups forming community networks with some choosing to establish their businesses in Madeira, and others gaining new clients and partners, demonstrating the long-term value of the network and support provided. startups attributed the growth in network expansion to the insights and support gained through the development of new partnership programs and demonstrated the program's effectiveness in facilitating startup development and readiness for scaling. This aligns with Hallen et al. (2020) research that accelerators help speed up the development process for startups, enabling them to reach critical milestones faster, often facilitated by the strong networks and community support established during the program.

AHOY, Spendbase and Revisor point to network expansion by making strategic connections, new relationships, and business expansion into Portugal through enhanced networking skills as a result of the MSR – 6<sup>th</sup> Edition accelerator program. Network expansion lies in its collaborative nature, where local businesses, government agencies, and educational institutions work together to support startups. This synergy provides a rich support network.

Such a collaborative environment enhances resource sharing, mentoring, and networking opportunities, essential for startup growth.

There is clear evidence that the program provides extensive networking opportunities with mentors, investors, and industry experts. These connections are vital for business growth and sustainability. By integrating startups into the local ecosystem, the program enables them to leverage local strengths and opportunities.

This integration is crucial for long-term sustainability. For example, Spendbase identified new networking opportunities and as a result, gained a deeper understanding of the local market. They are thinking of establishing an office in Madeira and applying to government programs. Outcomes for Revisor included network expansion, enhanced market understanding, and strategic insights into potential governmental collaboration. These outcomes highlight the accelerator's role in broadening the startups' perspectives on new market opportunities and innovation potential. Network expansion for Girafa.Club and Heavnn include establishing new partnerships and relationships during the program. Additionally, they claim the program facilitated their plans for expansion into Madeira, demonstrating tangible outcomes of network expansion and innovation in marketing approaches and product offerings, substantially improving the Startup's overall performance quality.

These outcomes are indicative of the accelerator's success in achieving its goals, supporting the research on the positive impacts of accelerator participation on access and growth through market expansion and readiness (Hochberg, 2016). eTOLLS.eu, PayFor.Travel and Tourdata.AI reported tangible expansion outcomes, including the establishment of new relationships, and initiating potential partnerships, which could lead to expansion into the Portuguese market.

The importance of accelerators in building entrepreneurial ecosystem integration was evident from the findings through the lasting networks formed among participants and local businesses and underscored the importance of accelerators in building entrepreneurial ecosystems. These findings are supported by Drori and Wright (2018) in their research. By attracting international startups and exposing them to Madeira's tourism ecosystem the program contributed to the long-term innovation and diversification of the local tourism industry and reinforced the region's reputation as an innovation hub.

Specifically, the program's emphasis on networking and community building laid the groundwork for long-term collaborations with many startups expressing interest in returning to Madeira or recommending it as a destination and place for business. Also, the formation of lasting relationships among participants, mentors, and local businesses fosters a continued

exchange of ideas and collaborations, contributing to the sustained growth of the entrepreneurial ecosystem in Madeira.

Establishing these connections among startups, local businesses, and international mentors creates a lasting network that can support future entrepreneurial ventures. These findings support existing research identified in the literature. In summary, by introducing innovative solutions and fostering a culture of innovation within the tourism sector, the program contributed to the enhancement of the tourism ecosystem experience in Madeira, positioning the region as a leading destination for tourism innovation.

In conclusion, the MSR – 6<sup>th</sup> Edition accelerator program has shown to have a lasting impact on its participants. It is clear from the analysis that the impact of the program is evident when you consider the range of outcomes delivered such as strategic and operational enhancements for market understanding, readiness and expansion, product, and market strategy refinement plans to enhance market positioning and value proposition, network expansion plans to develop new partnerships, and the development of innovation capabilities fostering local ecosystem integration. These findings demonstrate that accelerator programs help startups develop and contribute to local regions' economic development, confirming Fehder and Hochberg (2014) findings.

## **5. MAIN CONTRIBUTIONS**

The dissertation comprehensively analyzes how accelerator programs function by applying the Context–Intervention–Mechanisms–Outcome (CIMO) analytical framework. The framework allows us to dissect and analyse the functioning of accelerator programs and enables us to highlight the complex interplay between the context in which accelerators operate, the interventions they provide, the mechanisms they activate, and the outcomes they achieve. Doing so, adds a structured methodology to understanding how accelerators support startups, which is particularly valuable given the complexity and variability in accelerator designs. Overall, the CIMO analytical framework contributes to a deeper understanding of how accelerators function and their impact on startups.

By focusing on the MSR accelerator program, the research highlights the importance of the local context (Madeira's tourism and travel industry) in shaping the effectiveness of accelerator programs. This highlights the importance of regional and cultural contexts in shaping the effectiveness of accelerator programs and contributes to the understanding of how these programs can be tailored to specific industries and locations. It also contributes to understanding how specific regional contexts can influence startup success and the development of local

entrepreneurial ecosystems to foster innovation and support the cultural capital of the region, particularly in the context of the tourism sector. This dual impact underscores the role of accelerators in both fostering individual entrepreneurial success and contributing to regional innovation ecosystems.

The dissertation investigates the types of interventions that accelerators deploy and how these interventions are tailored to the needs of startups to enhance their growth and success. It demonstrates how these interventions are strategically designed to meet the specific needs of startups at different stages of development, particularly in the tourism and travel sectors. This provides insights into the critical components that make accelerators effective.

The research identifies and elaborates on the mechanisms through which accelerator interventions translate into startup successes. This contributes to a deeper understanding of the underlying processes that support startup development within accelerators. The research documents significant outcomes resulting from the accelerator program and highlights how these outcomes are linked to the specific interventions and mechanisms activated by the accelerator program.

The findings provide practical and policy insights for the design and implementation of accelerator programs, suggesting that tailored interventions, community-building efforts, and leveraging local contexts are crucial for the success of such programs. It offers practical recommendations for policymakers, accelerator managers, and entrepreneurship educators. The study provides actionable insights into how to design and implement effective accelerator programs, emphasizing the need for context-specific interventions and the importance of fostering a supportive entrepreneurial ecosystem. Additionally, the study offers policy recommendations for governments and other stakeholders aiming to use accelerators as tools for regional economic development.

The dissertation adds to the existing literature on accelerators by providing a detailed case study that applies the CIMO framework in a novel context. It addresses research gaps concerning the systematic understanding of how accelerators operate and their role in supporting startup development. It fills a notable gap in the literature by focusing on accelerator programs in peripheral economies, such as Madeira, which have been underexplored in existing research. It also contributes to the debate on how different accelerator program designs and contexts can influence the success of startups. It exemplifies the use of a qualitative case study methodology to investigate the dynamics of accelerator programs. This approach not only

enhances the validity of the findings but also provides a model for future research on similar innovation intermediaries.

Overall, our analysis leads us to conceptualise accelerators based on the underlying mechanisms that link the context in which they operate with the interventions they deliver and the outcomes they realise. The study offers compelling evidence that many accelerators have a positive treatment effect on startups and that this effect appears likely to be primarily driven by how the participants used interventions as a critical intermediary to support them through a well-structured process to activate mechanisms such as learning through knowledge exchange, collaboration and cross-pollination, validation, networking for access and growth, innovation and openness to new sources of knowledge & opportunities.

As a result, this research opens the accelerators' "Black Box" and provides the conceptual means through which further research can examine and explain how various accelerators characterized by different mechanisms pursue different interventions in other contexts, leading to different outcomes. These insights contribute to the broader understanding of accelerator programs and offer practical implications for designing and implementing effective startup support initiatives.

By introducing innovative solutions and fostering a culture of innovation within the tourism sector, the program contributed to the enhancement of the tourism ecosystem experience in Madeira, positioning the region as a leading destination for tourism innovation. The program has shown to have a lasting impact on its participants, with startups considering Madeira as a base for their operations or seeking to engage with the local ecosystem on a long-term basis. This demonstrated the program's role in not just accelerating startups but also in contributing to the economic development of Madeira.

Overall, the dissertation makes significant contributions to both the theoretical understanding and practical implementation of accelerator programs, particularly in the context of tourism-focused startups. It provides a robust framework for analysing accelerator effectiveness and offers valuable lessons for enhancing the impact of these programs on startup success and regional economic development. The contributions provide valuable insights to enhance our understanding of how accelerators can be effectively designed and implemented to support startups, making significant theoretical and practical implications for policymakers, entrepreneurs, and educators in the entrepreneurial ecosystem.

## 6. CONCLUSIONS

In this section based on our comprehensive analysis and discussion, we present the conclusions of the research study including limitations and suggestions for future research. It is evident from this study that accelerator programs provide comprehensive insights into the context, interventions, mechanisms, and outcomes of the program, highlighting its multifaceted impact on participating startups.

The CIMO framework demonstrates its effectiveness in dissecting the program's components and exploring the causal relationships between context, interventions delivered, mechanisms activated, and outcomes achieved. The study highlights the accelerator's role in fostering innovation and entrepreneurship, with the identified mechanisms serving as critical pathways through which interventions translate into positive outcomes. These insights contribute to the broader understanding of accelerator programs and offer practical implications for designing and implementing effective startup support initiatives.

Specifically, it is evident from the analysis that the geographic and cultural context of Madeira, a region celebrated for its tourism industry and innovative tourism practices was well received. The program provides startups with a vibrant and dynamic environment. By the participant's actions is evident that the setting is favourable to testing and developing tourism-related innovations, leveraging Madeira's status as a world-renowned tourist destination and a "living laboratory" for the tourism travel and leisure sector.

There is clear evidence that the MSR accelerator program by emphasising its unique geographic and cultural context, the collaborative ecosystem it operates within, and its focus on tourism and leisure startups is successful in its aim to foster innovation, support startup growth, and contribute to the regional economy's development. Indeed, accelerators make it possible to develop and finance innovative projects in all areas of the economy and in this way, they create added value not only in the economic area but also in social and environmental areas. This analysis underscores the program's role in bridging the gap between traditional tourism and the digital, startup-driven economy, facilitating a mutual exchange of value that enriches both the local community and the broader entrepreneurial ecosystem.

The detailed findings emphasise the critical role of tailored support, resource access, and strategic interventions ranging from seminars, workshops, networking events, mentorship, investors, industry experts, demo day, coworking space, local hosts, and logistical support in driving startup success.

Participants are motivated to participate in accelerator programs because they know that attracting capital investment and winning business contracts is not an easy task. They are very aware that they lack market traction or the business foundations to develop a startup and its product in compliance with market expectations because at their early stage of development, they do not have a precise business model or financial resources, and the business knowledge to succeed. In this context, they are disposed to startup accelerators as an appropriate choice in the context of development, the fine-tuning of solutions, and the acquisition of customers and capital investors. They realise that accelerators assist not only during the development of the business solution but also act as market makers, filling the funding gap for startups and the information gap for potential buyers and investors.

Finally, understanding this relationship among specific contexts, interventions, mechanisms, and outcomes is an essential asset for all the stakeholders involved in a business acceleration program. It is clear from this research that acceleration programs have a key role in developing an entrepreneurial climate and can be perceived as vehicles that could revitalise industries and regions.

The key limitation of this study is its specific context. The study primarily focuses on startups participating in the Madeira Startup Retreat (MSR) accelerator program and is limited to the participants of this specific program. It is confined to the context of the MSR accelerator program and its specific interventions and looks at the short-term outcomes of the accelerator program. The focus on Madeira means there is little understanding of how national culture is in particular, but also the broader national institutional environment that shapes the accelerator's operations. In addition, exploring how accelerator programs affect startups in different industries beyond tourism could provide insights into the versatility and adaptability of the accelerator model.

Future research should focus on longitudinal studies to assess the long-term impacts of such programs on startup sustainability and regional economic development. Given the design of the (MSR) accelerator program, it is not evident what the effect of the accelerator participation is on startup performance post-acceleration.

The literature review has shown program design can influence the benefits that startups derive from accelerator participation. Policymakers and managers need to decide after an appropriate number of (MSR) accelerator programs when to conduct a follow-up study of past participants to investigate the impact of the program on their practices, activities, policies, and structures. Specifically, issues such as the various design choices, such as cohort size and

composition, types of funding offered, program duration, curricula and whether to focus on a single industry or multiple industries. Because ventures differ in the stage of development, industry, and founder expertise, a one-size-fits-all design may not be beneficial for all participants.

Future studies could analyse which specific interventions are most effective in driving the desired outcomes. This could help refine the design of accelerator programs to maximize their impact. The role of accelerators in the wider entrepreneurial ecosystems is not properly addressed yet. Specifically, more research into the learning effects that the services provided by accelerators offer to participants is also needed to understand how accelerators support the entrepreneurial learning process, what practices are more effective, and in what contexts.

More longitudinal studies of accelerators that allow the exploration of long-term processes and outcomes are needed to address the confusion between outcomes and outputs. Specifically, there is also a strong need to differentiate between short and long-term results, which would help alleviate the confusion between outputs (immediate results from the accelerating process) and outcomes (non-immediate results related to performance). In addition, more objective metrics should be incorporated in evaluating the outcomes of accelerator programs. Metrics such as financial performance, market penetration, and employee growth could provide a more balanced view alongside participant feedback. Further research could explore the broader impact of accelerator programs on the local entrepreneurial ecosystem, including contributions to local economic development, job creation, and innovation culture.

Finally, our methodology using the CIMO logic to expound accelerators based on their underlying mechanisms offers a first step, but future research is required to better underpin the theoretical foundation of accelerators' research to understand how they function and most importantly differentiate results across relevant stakeholders. By addressing these limitations and expanding the scope of future research, a more comprehensive understanding of the effectiveness and broader impacts of startup accelerator programs can be achieved.

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# APPENDIX A: Delineating Incubators, Accelerators, and Angel Investors.

| Characteristics           | Incubators                                                                                                                                                                               | Accelerators                                                                                                                                                                                                                              | Angel Investors                                                                                                                        |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Objective</b>          | <ul style="list-style-type: none"> <li>◇ To help startups to become sustainable and self-sufficient businesses over time.</li> <li>◇ Focus on long-term viability and growth.</li> </ul> | <ul style="list-style-type: none"> <li>◇ Help startups accomplish rapid growth and scale within a short timeframe.</li> <li>◇ Often culminates in a "demo day" where startups pitch to potential investors.</li> </ul>                    | <ul style="list-style-type: none"> <li>◇ Provide seed capital investments and varying amounts of advice to young companies.</li> </ul> |
| <b>Duration</b>           | <ul style="list-style-type: none"> <li>◇ 1-5 years.</li> <li>◇ Programs tend to be longer-term and can last for several years.</li> </ul>                                                | <ul style="list-style-type: none"> <li>◇ 3 months.</li> <li>◇ Programs time-limited, typically three to six months.</li> <li>◇ Focused on helping startups achieve rapid growth within a short period.</li> </ul>                         | <ul style="list-style-type: none"> <li>◇ Ongoing.</li> </ul>                                                                           |
| <b>Cohorts</b>            | <ul style="list-style-type: none"> <li>◇ No</li> </ul>                                                                                                                                   | <ul style="list-style-type: none"> <li>◇ Yes</li> </ul>                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>◇ No</li> </ul>                                                                                 |
| <b>Business Model</b>     | <ul style="list-style-type: none"> <li>◇ Rent; Non-profit.</li> </ul>                                                                                                                    | <ul style="list-style-type: none"> <li>◇ Investment; Non-profit.</li> </ul>                                                                                                                                                               | <ul style="list-style-type: none"> <li>◇ Investment.</li> </ul>                                                                        |
| <b>Selection criteria</b> | <ul style="list-style-type: none"> <li>◇ Non-Competitive.</li> <li>◇ Less competitive selection process.</li> <li>◇ Many startups can join.</li> </ul>                                   | <ul style="list-style-type: none"> <li>◇ Highly competitive selection process.</li> <li>◇ Cyclical.</li> <li>◇ Limited number of startups accepted into each program.</li> <li>◇ Look for startups with high growth potential.</li> </ul> | <ul style="list-style-type: none"> <li>◇ Competitive, Ongoing.</li> </ul>                                                              |
| <b>Venture Stage</b>      | <ul style="list-style-type: none"> <li>◇ Early, or late.</li> </ul>                                                                                                                      | <ul style="list-style-type: none"> <li>◇ Early.</li> </ul>                                                                                                                                                                                | <ul style="list-style-type: none"> <li>◇ Early.</li> </ul>                                                                             |
| <b>Interventions</b>      | <ul style="list-style-type: none"> <li>◇ Access to services at a lower cost or for free.</li> <li>◇ Office space.</li> <li>◇ Mentorship.</li> <li>◇ Networking.</li> </ul>               | <ul style="list-style-type: none"> <li>◇ A more specific and focused approach.</li> <li>◇ Seminars.</li> <li>◇ Mentorship.</li> <li>◇ Networking.</li> <li>◇ Investment.</li> </ul>                                                       | <ul style="list-style-type: none"> <li>◇ Mentor portfolio companies themselves.</li> </ul>                                             |
| <b>Location</b>           | <ul style="list-style-type: none"> <li>◇ On-site.</li> </ul>                                                                                                                             | <ul style="list-style-type: none"> <li>◇ On-site.</li> </ul>                                                                                                                                                                              | <ul style="list-style-type: none"> <li>◇ Off-site.</li> </ul>                                                                          |
| <b>Equity and Funding</b> | <ul style="list-style-type: none"> <li>◇ May or may not take equity.</li> <li>◇ They are less likely to provide direct funding.</li> </ul>                                               | <ul style="list-style-type: none"> <li>◇ Often take equity.</li> <li>◇ Provide initial funding as part of the program.</li> </ul>                                                                                                         | <ul style="list-style-type: none"> <li>◇ As needed, by investor.</li> </ul>                                                            |

Source: Adapted from Clarysse et al. (2016), Cohen (2013), Cohen & Hochberg (2014); Hausberg & Korreck (2020);, and Miller & Bound (2011)

## APPENDIX B: Startup & Participant's Description Details

| NAME / ID                     | COUNTRY     | CORE BUSINESS OR INDUSTRY                                                                                                                                                                                                                                                           | PARTICIPANTS / ROLE                                                                                    | Was this the 1st acceleration program you have attended? |
|-------------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| <b>AHOY! Express Services</b> | Brazil      | Mobile Application and user-friendly platform to connect customers with cleaning professionals.                                                                                                                                                                                     | 1 Participant – CEO                                                                                    | No.<br>Attended 2 other programs                         |
| <b>Do Your Oder</b>           | Switzerland | All-in-one cloud solution designed for the hospitality sector and HORECA channels (restaurants, hotels, and bars).                                                                                                                                                                  | 2 Participants – CEO & Head of Digital Marketing; Back End Developer                                   | No.<br>Attended 1 other program.                         |
| <b>eTOLLS.eu</b>              | Cyprus      | App to pay tolls - is an application that aims to eliminate the need for cash transactions, making toll payments more hassle-free.                                                                                                                                                  | 2 Participants – CEO & B2B Customers Activation Manager                                                | No.<br>Attended 1 other program                          |
| <b>Girafa.Club</b>            | Portugal    | Platform to hire studio services, photographers, and videographers.                                                                                                                                                                                                                 | 3 Participants – Co-founders & Digital Designer                                                        | YES.                                                     |
| <b>Heavnn</b>                 | Estonia     | Technological solution developed to solve the tax challenge for location-independent workers and remote-first companies. A revolutionary solution in tax management                                                                                                                 | 2 Participants – CEO & Co-founder; Partnership Manager                                                 | NO.<br>Attended 3 other programs                         |
| <b>PayFor.travel</b>          | Poland      | App that serves as a digital wallet for order processing. Uses Artificial Intelligence, designed to meet customer needs, facilitating personalized price negotiations in real time, wanting to make negotiations more flexible and aligned with individual customer preferences.    | 5 Participants – CEO & Founder; CTO & Shareholder; Fintech Manager/ Shareholder & Key Account Manager] | No.<br>Attended 1 other program                          |
| <b>Revisor</b>                | Poland      | Technological system that can be implemented in any CMS (Content Management System). an independent review system, a tool that works to improve a brand's reputation. It allows companies to see their customers' point of view, providing a comprehensive view of customer loyalty | 1 Participant – International Project Manager                                                          | YES                                                      |
| <b>Socialbnb</b>              | Germany     | Online platform for accommodation - is a platform that aims to address the negative impacts of tourism in many regions of the world. seeks to enhance and promote social and ecological projects with an impact on the region.                                                      | 3 participants – Co-founder; Co-Founder & CEO; CTO                                                     | No.<br>Attended 5 other programs                         |
| <b>Spendbase</b>              | Ukraine     | Spend management software - a solution that empowers companies to significantly reduce expenses related to SaaS software and cloud services.                                                                                                                                        | 2 participants – Head of Sales; Sales Manager                                                          | YES                                                      |
| <b>Tourdata.AI</b>            | Portugal    | Artificial Intelligence solution applied to tourism. Team of data scientists, dedicated to applying AI and data analysis to the tourism industry.                                                                                                                                   | 2participants – CFO & CEO                                                                              | NO.<br>Attended 3 other programs                         |

## APPENDIX C: Consent Form

### Madeira Startup Retreat - Accelerator Program

**Researcher:** José Bruno de Castro Pereira.

**Startup:**

**Date:**

**Research Agenda:** Accelerators as Distinct Form of Innovation Intermediaries: Evidence from the Madeira Startup Retreat Acceleration Program for Tourism & Travel Startups.

The overall **“Objective”** of this research focuses on providing a holistic understanding of the acceleration process and its *modus operandi* that addresses the context in which accelerators operate and their practices, the services they deliver, the mechanisms identified and the outcomes they achieve. Accordingly, the specific **“Research Question”** is focused on:

***“How does the accelerator process function to assist startups through targeted interventions within a supportive context, to activate mechanisms that will foster significant outcomes?”***

Primary data collection will be through face-to-face interviews with an estimated time of **20** minutes. All information obtained will be recorded and kept completely confidential by the researcher Bruno Pereira, under the guidance of Doctor Carmen Freitas and Professor Sean de Burca. Recording the interview will facilitate the analysis and interpretation of responses. The data obtained will only be used in this dissertation and the participant has the right to obtain a final summary report if requested. As your participation is voluntary, you have the right to withdraw your consent or interrupt the interview at any time.

During the course of the study do you allow follow-up emails or phone conversations (if needed)? If yes, can you provide your email or other contact you find more convenient?

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If you have any questions, you can contact us via email at: [2058407@student.uma.pt](mailto:2058407@student.uma.pt).

I declare that I have been informed of the research objective and agree to participate in the study.

Interviewee

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Interviewer

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## **APPENDIX D: Participants' Questionnaire.**

### **Madeira Startup Retreat - Accelerator Program (Sixth Edition).**

#### **Participants' Questionnaire.**

**Respondents:** Participants of Madeira Startup Retreat Accelerator Program (Sixth Edition).

**Research Agenda:** *“Accelerators as Distinct Form of Innovation Intermediaries: Evidence from the Madeira Startup Retreat Acceleration Program for Tourism & Travel Startups”.*

The overall **“Objective”** of this research focuses on providing a holistic understanding of the acceleration process and its modus operandi that addresses the context in which accelerators operate and their practices, the services they deliver, the mechanisms identified and the outcomes they achieve. Accordingly, the specific **“Research Question”** is focused on:

*“How does the accelerator process function to assist startups through targeted interventions within a supportive context, to activate mechanisms that will foster significant outcomes?”*

**Researcher:** Bruno Pereira

**Startup:**

**Date:**

**CONTEXT: Internal & External environmental elements that affect behavioural decisions.**

1. Why did you decide to apply to the Madeira Retreat Accelerator Program?
2. At what stage was your product/service at the time you applied for the Madeira Retreat Accelerator Program? - Idea, Prototype, Live.
3. How well do you think the Madeira Retreat Accelerator Program aligned with your Startup's needs?
4. Do you think the duration of the Madeira Retreat Accelerator Program (6 weeks) is sufficient?

**INTERVENTIONS: Intentional effort aimed at achieving the desired result.**

5. What interventions worked best for you? Can you provide specific examples or metrics that illustrate the impact of these interventions?
6. What specific areas did you get guidance and support from mentors? Examples?
7. What was the impact of the “Madeira Library” on your Startup? Explain.
8. Did the local hosts play an important role in the program? Please Explain.
9. Were there any other features you would like to have in the Madeira Retreat Accelerator Program? Explain.

**MECHANISMS: The processes that explain the peculiar functioning or activity that makes accelerators work.**

10. What were the specific triggering “**Mechanisms**” (skills, knowledge, actions, behaviours, or experiences) that occurred between the Interventions you experienced and the Outcomes you achieved? For example, what new skills, knowledge, or capabilities did your team acquire through the accelerator’s interventions?
11. As a result, how did these mechanisms enable you to challenge your thinking/mindset and change your actions or behaviour?

**OUTCOMES:**      **These can be characterised as quantitative changes.**

12. What specific outcomes or goals are you hoping to achieve as a result of the Madeira Retreat accelerator program? Examples of tangible outcomes or milestones.
13. Did you find that being in the program provided your Startup with any innovation, development of new products or services, or improvement in existing offerings?
14. What are the major differences in your Startup after participating in the accelerator program?

## **APPENDIX E: Participants' Questionnaire with Prompts.**

### **Madeira Startup Retreat - Accelerator Program (Sixth Edition).**

#### **Participants' Questionnaire.**

**Respondents:** Participants of Madeira Startup Retreat Accelerator Program (Sixth Edition).

**Research Agenda:** *“Accelerators as Distinct Form of Innovation Intermediaries: Evidence from the Madeira Startup Retreat Acceleration Program for Tourism & Travel Startups”.*

The overall **“Objective”** of this research focuses on providing a holistic understanding of the acceleration process and its modus operandi that addresses the context in which accelerators operate and their practices, the services they deliver, the mechanisms identified and the outcomes they achieve. Accordingly, the specific **“Research Question”** is focused on:

*“How does the accelerator process function to assist startups through targeted interventions within a supportive context, to activate mechanisms that will foster significant outcomes?”*

**Researcher:** Bruno Pereira

**Startup:**

**CONTEXT: Internal & External environmental elements that affect behavioural decisions.**

1. Why did you decide to apply to the Madeira Retreat Accelerator Program?
2. At what stage was your product/service at the time you applied for the Madeira Retreat Accelerator Program? - Idea, Prototype, Live.
3. How well do you think the Madeira Retreat Accelerator Program aligned with your Startup's needs?
4. Do you think the duration of the Madeira Retreat Accelerator Program (6 weeks) is sufficient?

**INTERVENTIONS: Intentional effort aimed at achieving the desired result.**

**Narrow interventions:** (less common) The Accelerator Program provides services such as virtual community support services, workshops, geek camps, communal housing, research and development services, trialling, legal services, financial services, video lectures, case studies, online strategy roundtables, and transforming ideas into workable concepts.

**Typical Interventions:** (most popular type of intervention) The Accelerator program provides; mentoring, coaching, selecting participants organized in cohorts, boot-camp training over a fixed period, preparation to pitch investors during the demo day, networking, local hosts, industry experts, access to financing, exchange of equity, customized distinctive programs for firms at different stages.

**Extended Interventions:** (more based on the participants' needs) The accelerator program provides; office space, free housing, building a product, and Less observed Interventions provided in this extended intervention: financial and legal support, stipends, catering, materials needed for the workshop, participant incentives, semi-structured support program, targeted networking in specific industries, teambuilding, geek camps, media exposure, brand recognition, exposure to relevant and timely R&D, post-program support to all graduates, internet marketing, creating and submitting all of the company formation documents on behalf of the participants, offering free access to online platforms, Internet access, encouragement, assistance and help with technical issues, HR/recruitment support, help to find accommodation.

5. What interventions worked best for you? Can you provide specific examples or metrics that illustrate the impact of these interventions?
6. What specific areas did you get guidance and support from mentors? Examples?
7. What was the impact of the "Madeira Library" on your Startup? Explain.
8. Did the local hosts play an important role in the program? Please Explain.
9. Were there any other features you would like to have in the Madeira Retreat Accelerator Program? Explain.

**MECHANISMS: The processes that explain the peculiar functioning or activity that makes accelerators work.**

- One way of identifying mechanisms is through considering the processes activated or triggered by specific interventions in a specific context.
- Given the “Context – Interventions – Outcomes” what were the mechanisms that enabled that to happen?
- Examples of Mechanisms: “Learning”, “Validation”, “Access to New Markets”, “Performance Growth Metrics”, “Innovation”, Critical Analytic Skills Development”, “Self-Evaluation”, “Reflective Judgement” and “Self Confidence”

10. What were the specific triggering “**Mechanisms**” (skills, knowledge, actions, behaviours, or experiences) that occurred between the Interventions you experienced and the Outcomes you achieved? For example, what new skills, knowledge, or capabilities did your team acquire through the accelerator’s interventions?

11. As a result, how did these mechanisms enable you to challenge your thinking/mindset and change your actions or behaviour?

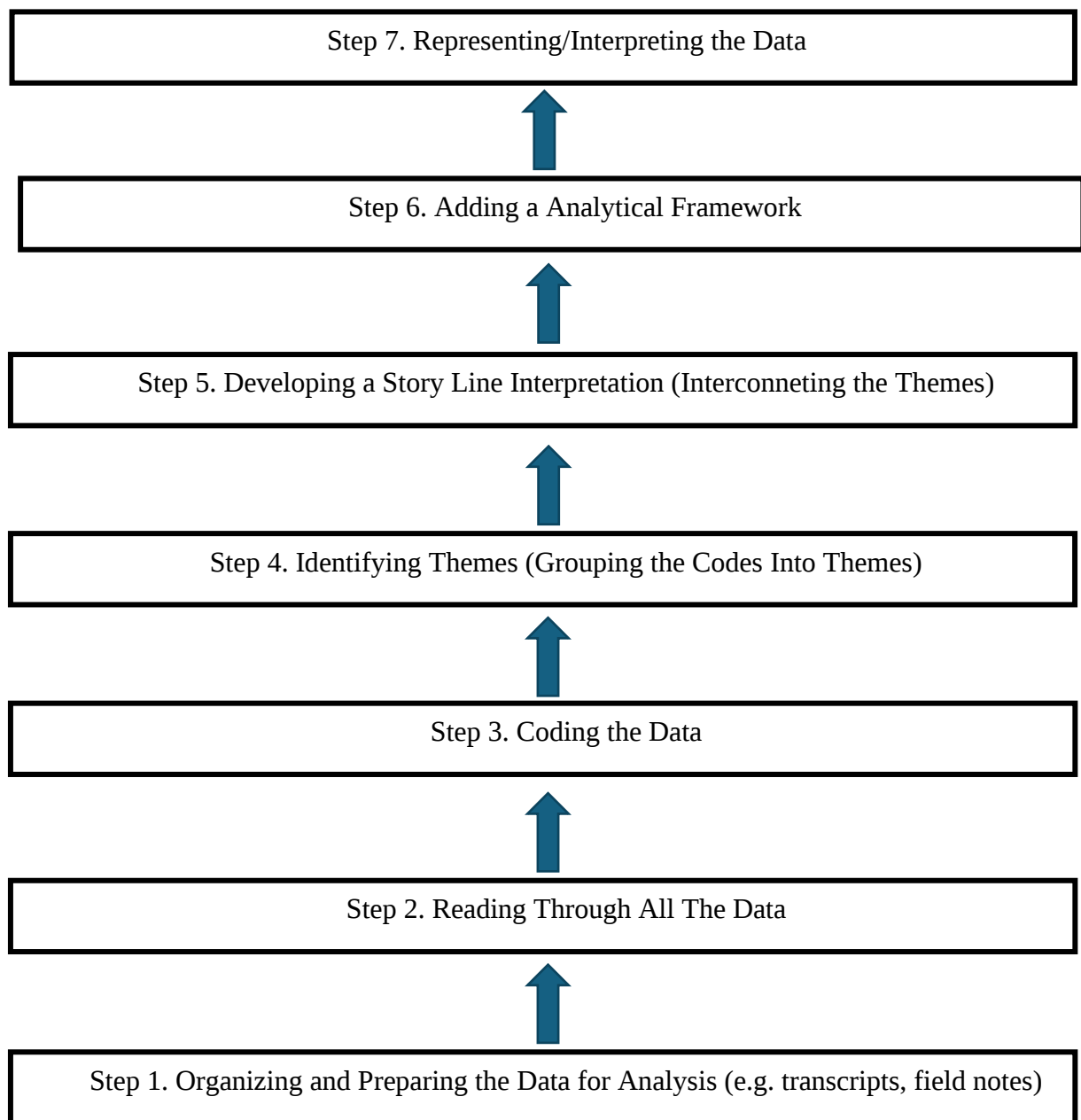
**Prompt Words to help clarify.**

- **Reflection**
- **Anticipation**
- **Motivation**
- **Enthusiasm**
- **Excitement**
- **Achievement**
- **Clarity**

**OUTCOMES:**      **These can be characterized as quantitative changes.**

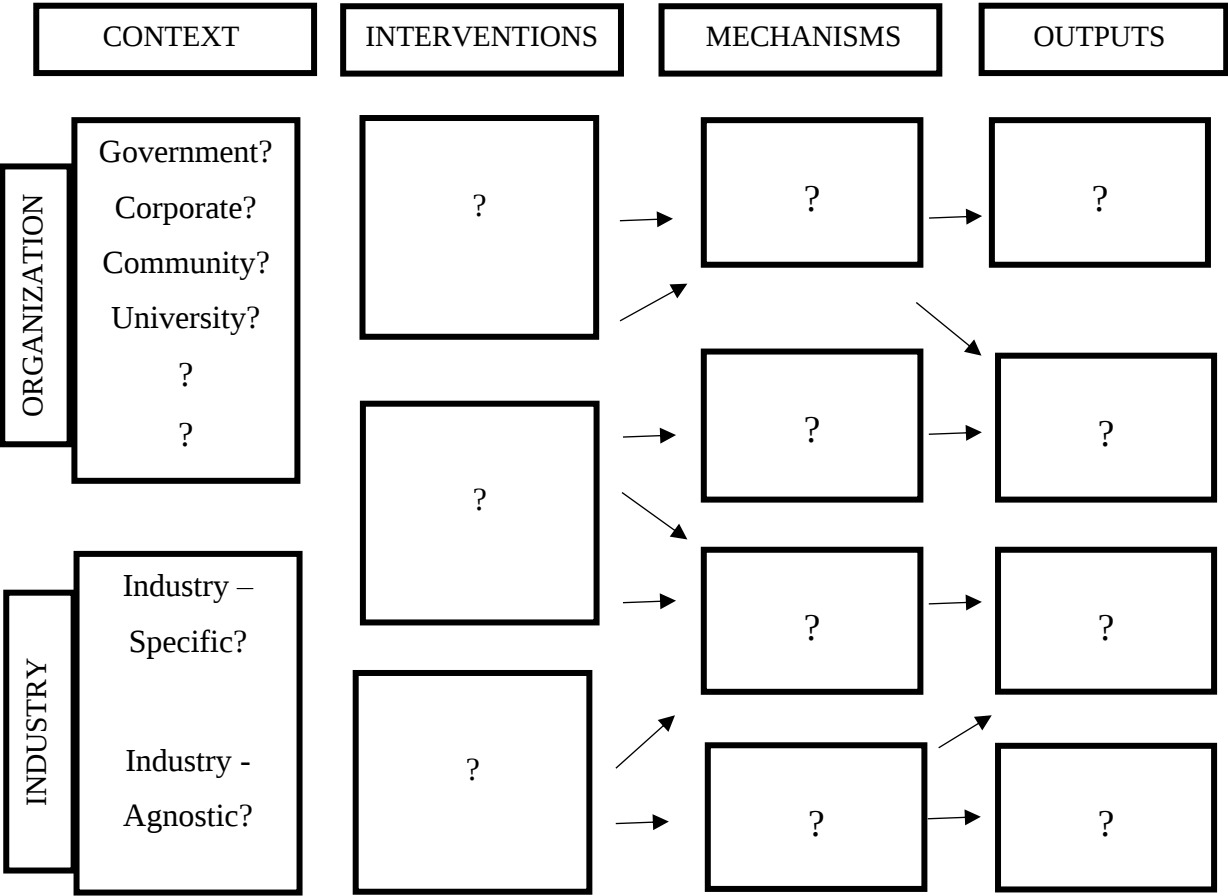
12. What specific outcomes or goals are you hoping to achieve as a result of the Madeira Retreat accelerator program? Examples of tangible outcomes or milestones.
13. Did you find that being in the program provided your Startup with any innovation, development of new products or services, or improvement in existing offerings?
14. What are the major differences in your Startup after participating in the accelerator program?

## APPENDIX F: Qualitative Research Data Analysis Procedures



**Source:** Adapted from J. W. Creswell and J. D. Creswell (2017), p. 208.

**APPENDIX G:** Context–Intervention–Mechanisms–Outcome (CIMO) Analytical Framework



**Source:** Adapted from Crişan et al. (2021)