

## Article

# Open Innovation Inspired Framework to Support Business Internationalisation: A Cross-Sector and Cross-National Approach

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**Abstract:** In recent years, the business environment has experienced a fast-paced change due to issues such as geopolitics or COVID-19. Accordingly, business internationalisation has been accelerated while the approaches followed for such an end have been improved to maintain companies' competitiveness. Within this context, this paper presents a new framework for the internationalisation of Earth Observation SMEs in two target countries: Australia and Chile. Internationalisation can be an effective strategy for SMEs to grow and expand, but it requires careful research, analysis and agile adaptation to markets and cultures through an integrative and innovative methodology. Secondly, a series of preparatory actions and several internationalisation strategies have been developed, including online bilateral meetings and online trade missions. This work is an innovation driver for the internationalisation of European SMEs, helping them to make the leap into two markets of great interest and in two very attractive sectors, agriculture and maritime, with remote sensing as the nexus.

**Keywords:** small–medium size enterprises; internationalisation; open innovation; maritime and agriculture sectors; earth observation



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## 1. Introduction

The essence of internationalisation of business activities is the search for new opportunities for growth and expansion in foreign markets. It also enables companies to improve their innovation and competitiveness by facing new challenges and opportunities [1]. The internationalisation process consists of identifying business opportunities abroad, establishing relationships with potential suppliers and customers, and adapting the company's products, services, and operations to the needs of the foreign market. In short, the internationalisation process is important for Small and Medium Enterprises (SMEs) because it allows them to expand their market, reduce risks, access resources and improve their competitiveness, which can lead to long-term sustainable and profitable growth [2].

SMEs play a key role in the global economy, and improving their market competitiveness through market strategies based on innovation and competitive advantage is key to their long-term success [3]. On the other hand, the COVID-19 pandemic has created new barriers, such as the inability to conduct face-to-face trade missions, increased risk and uncertainty, and increased financial insecurity for SMEs [4]. It is therefore necessary to develop new strategies that allow companies to adapt to change through Open Innovation

(OI) and collaboration to acquire external resources, promote innovation management and a generate competitive advantage [5].

The OI is a business approach that involves collaboration and cooperation outside the company to develop new ideas, products, services, or processes. It involves greater openness and collaboration with external stakeholders, such as customers, suppliers, universities, start-ups and other partners, to accelerate the innovation process and increase the company's competitiveness [6].

The expected OI for SMEs can vary significantly depending on the size and sector of the company. The main barriers SMEs face in adopting OI include a lack of resources to invest in innovation, a closed corporate culture focused on internal innovation, a lack of knowledge on how to implement it, risks related to security and intellectual property, and other external factors. However, the adoption of the best practices and tools related to OI by SMEs is expected to lead to successful internationalisation and expansion [7].

At the European level, SMEs are one of the fundamental pillars supporting diverse and growing sectors such as Earth Observation (EO). SMEs are key players in the EO sector due to their innovative capacity, flexibility, and ability to collaborate with other organisations to develop new applications and services based on external EO data for OI. They contribute to the development of new technologies and tools, create new business opportunities, and help drive the growth and development of the EO industry [8]. EO is one of the greatest technological tools at our disposal for managing resources at regional/national/continental/global scales to achieve sustainable development and environmental goals, covering sixteen downstream market segments [9]. No other technology or set of tools can provide imagery and data at the global geographic scale and daily temporal resolution required by a range of potential downstream sectors, including for informed policy, strategic natural resource management, monitoring and enforcement, and tactical decision support. Due to the current challenges, European SMEs must face global competition in developing services and products based on EO technologies to address major challenges in different application sectors, such as maritime and agriculture, due to their global importance and impact on the exploitation and management of natural resources. EO is vital for the maritime sector, providing data for the safe navigation, coastal surveillance, and management of marine resources. In agriculture, it monitors crops, supports water management, land planning and crop forecasting. It can detect pests, diseases, and water stress in crops, and monitor water availability and soil conservation. It also contributes to weather and climate forecasting to reduce maritime and agricultural risks.

As the research on the European EO sector proved (through the EARSC's Industry Survey [10]), the significance of the internationalisation and export activities is increasing annually, and SMEs continuously express their interest in expanding their markets on the international scale to new territories. Based on these needs of European SMEs, the ConnectEO ("Connecting European Earth Observation to International Markets") project was born. This project aimed to promote and facilitate market access between European Earth Observation (EO) SMEs and two target countries: Australia and Chile. The project focused on EO SMEs addressing business opportunities and key socio-economic and environmental challenges in the maritime and agricultural sectors through innovative OI methodologies and activities. By extension, providing European EO companies with access to new markets will further increase the growth of the European companies, create more high-quality employment opportunities, as well as support target market users such as farmers, maritime users, and others to drive down costs, increase revenues and become more efficient overall [11].

The ConnectEO project is the successor of another project called "IDEEO" in which six countries were assessed for the potential market of European Maritime and Agriculture Earth Observation services, as this project identified the Australian and Chilean agriculture and maritime markets as being the most attractive for a first thrust of internationalisation. The six countries involved in IDEEO were Argentina, Australia, Chile, Egypt, Japan and South Africa and after the assessment they were narrowed down to the two most crucial

and these are the ConnectEO targets (Australia and Chile) [12]. In selecting the countries and markets of interest for this work, a preliminary analysis was made of the countries with potential in the maritime and agriculture sectors that could benefit from Earth Observation applications. On the other hand, the preferences and interests of European SMEs were also considered, as they are the main beneficiaries of the results of this study.

The level of knowledge that SMEs have about the internationalisation process can vary considerably depending on the company and its sector [13]. To be successful in foreign markets, it is not enough to have a competitive product or service; successful businesses must be able to develop a well-thought-out international strategy and implement it effectively. To enter international markets, it is necessary to assess the SME's capabilities and analyse a number of variables [14]. In addition, knowing how to manage the market is a competitive advantage for SMEs, and information on the current situation in these countries would support the internationalisation paths of SMEs [15].

Within this context, the following Research Questions (RQ) have been defined:

- RQ1: Which is the potential market for EO in Australia and Chile?
- RQ2: How can OI practices leverage business internationalisation?
- RQ3: How can the internationalisation readiness level of SMEs be measured?
- RQ4: How can business internationalisation practices be integrated in a holistic, systemic approach?

The answers to these RQs have been integrated into a framework for supporting business internationalisation inspired by OI, which has been validated with real SMEs operating in the EO market. In this document, Section 1 provides a general introduction and Section 2 develops the methodology used in this work. Section 3 presents the results and considerations for SME internationalisation, Section 4 discusses the main aspects and the answer to the RQ raised, and Section 5 presents the main conclusions.

## 2. Materials and Methods

### 2.1. Literature Review

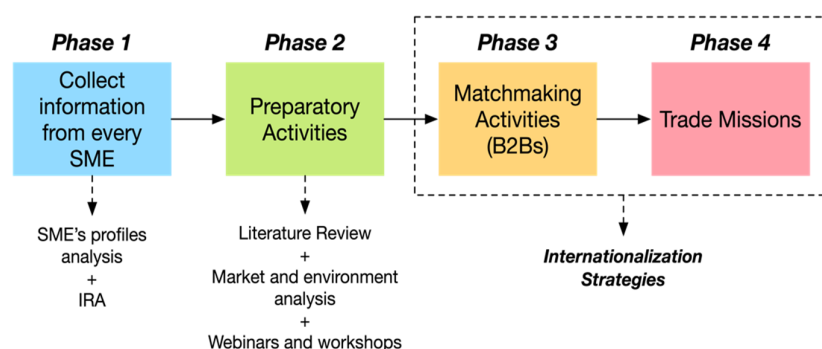
A literature review was used as the research methodology in this work [16]. The first step was to understand the current dynamics in the EO market in Chile and Australia. The literature review focused on key aspects such as barriers to be overcome for an SME wishing to expand their activity on this target market, legal and regulatory framework, and support resources to SMEs, as well as showcases of other EU companies in those countries. This information served to design the path towards the internationalisation of the companies that took part in the study. Both academic and non-academic publications (grey literature) were considered in the study. Research initiatives or reports produced by other organisations (such as the European Commission and its associated Joint Research Centres or Business Educational Organisations) that are engaged in OI and work closely with companies may reflect the current market environment and internationalisation requirements and thus provide additional insightful information. The following data sources were examined: Web of Science, SAGE, Springer, Taylor & Francis, Science Direct Google, European Commission and Scholar on Google, among other smaller sources from business schools, industry associations, project reports, etc. First, papers deemed irrelevant were removed after reviewing the titles, abstracts and/or brief contents of peer-reviewed academic journals, conference papers, research reports, postgraduate theses, books, websites, and reports. Those that dealt with or were indirectly related to the EO market in the selected countries were then thoroughly and rigorously reviewed. The conclusions extracted from the literature review process were used to draft interviews and questionnaires to conduct first-hand Internationalisation Readiness Assessment and SMEs profiles analysis, as explained in Section 2.3.

### 2.2. Business Internationalisation Support Framework

The methodology developed on preparing European SMEs for internationalisation was focused on capacity building and providing them with the right resources (knowledge and

connections) to prepare and carry out their own internationalisation activities. Achieving this firstly involved sector-wide market penetration, gathering information about the markets and establishing links with relevant stakeholders, and secondly, a crucial element was the provision of the collected knowledge to the SMEs.

First, European SMEs were selected through a call for participation in trade missions, where companies provided information about their internationalisation ambitions and their specific needs. Then, a business internationalisation strategy was designed following four steps explained below and shown in Figure 1:



**Figure 1.** Internationalisation strategy phases. Solid arrows representing phases and dashed arrows are added to give relevant information from each phase.

**Phase 1:** Collect the necessary information from each SME to identify their strategic and operational objectives, with the aim of understanding their business profile. An individual analysis of each SME was carried out to identify their business situation based on the SME Business Canvas, aiming to understand the key business aspects of each SME, their customers and their financial situation. Key recommendations, findings and gaps from the target countries through meetings with in-country stakeholders who supported the design, format and structure of the trade missions, where undertaken, are considered.

**Phase 2:** Preparatory activities, including a market and environment analysis to analyse the SME's business export situation based on threats, weaknesses, the SME's market position, expectations, areas of opportunity and ways to access the market(s) through a series of interviews and questionnaires. The SME's potential to go international was assessed by reviewing their capabilities and requirements. The aim of this analysis was to determine the SME's readiness for internationalisation, to define its strengths, gaps, opportunities and risks, both from the company's point of view (resources, structure, financing, etc.) and from the intrinsic factors of the target market (legal, cultural aspects, etc.). On the basis of this information, several preparatory activities were defined and carried out, including market and environmental analyses of the target countries and sectors. In addition, a series of webinars and workshops were organised on topics of interest to SMEs.

**Phases 3 and 4:** Design general and individual internationalisation strategies based on the SME business information gathered in the previous phases. In addition, a classification of the internationalisation readiness of the SMEs was made thanks to the previous analysis. This classification was relevant to identify and determine their sales potential, competition, strategic importance, strengths of local resources and knowledge of country regulations. The proposed classification scale was explorer, intermediate, advanced and pro; more details are given in the next section.

### 2.3. Internationalisation Readiness Assessment and SMEs Profiles Analysis

Prior to any form of export/international business, several aspects of the existing business need to be assessed to ensure that exporting is right for the company and that it has the capacity to achieve its export objectives. To this end, the Internationalisation Readiness Assessment was used, which aims to identify the strengths and weaknesses in

the internationalisation efforts of SMEs through a series of questions to be answered by the SMEs.

The Internationalisation Readiness Assessment takes into account several criteria reflecting intercultural context, legal and market knowledge, investment capacity, access to capital or new sources of finance, etc. It aims to determine the extent to which SMEs are predisposed to internationalisation and to define their strengths, gaps, opportunities and risks.

The assessment consisted of a questionnaire (overview) and an interview (in-depth assessment), which supported the analysis of the competitive advantages and disadvantages of an SME wishing to enter a specific market. In short, the ConnectEO consortium carried out an Internationalisation Readiness Assessment as shown below:

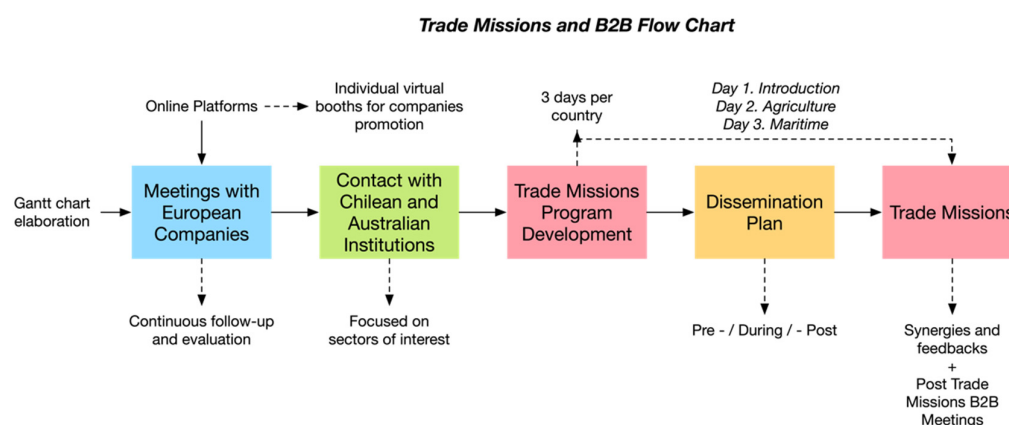
- A questionnaire: identification of strengths and weaknesses (1);
- An interview guide structure: a deeper screening of the SME to define its internationalisation potential and the support required (2);
- The results of 1 and 2 constitute the definition of the internationalisation profile for each SME to access the markets.

This process allowed the following categories to be assessed:

- Internationalisation Capabilities: current SME internationalisation knowledge, experience, and network;
- Technical Capabilities: SME resources in product features and quality investment, R&D, technology, and expertise;
- Market mastery: SME knowledge of its local market and solid establishment;
- Financial resources: willingness to invest and dedicated resources in internationalisation;
- Commitment: SME's initial international commitment, motivation, internal strategy, human resources (decision maker assets), clear internal goals and priorities are critical prior to any export activity.

#### 2.4. Internationalisation Strategy

To develop a suitable and adapted internationalisation strategy for the European SMEs, based on all the information gathered in Phases 1 and 2, a series of activities were programmed, as shown in Figure 2.



**Figure 2.** Trade missions and B2B flow chart. Solid arrows representing phases and dashed arrows are added to give relevant information from each phase.

A series of B2B meetings were arranged through online platforms, supported by local partners in the target countries; each SME defined an agenda and contact list to acquire meetings with organisations that were of interest to them and, in turn, benefit from the products offered by each SME. All these meetings were followed up and contacts were made with Chilean and Australian institutions in the agricultural, maritime and EO sectors, or those directly or indirectly related to both sectors. In parallel with the contacts made and



the results of the meetings, a programme of trade missions was developed for each country and sector, with an associated intensive dissemination plan and subsequent analysis of synergies.

It is important to note that the COVID-19 situation occurred while implementing the methodology presented herein and, accordingly, some face-to-face events needed to be completed online.

### 3. Results and Internationalisation Consideration

In general, to internationalise a company, considering key factors will increase the chances of success of internationalisation efforts when developing market plans for internationalisation activities. Some of the main factors to be considered, which have been tested and included in previous work [17,18], are summarised below:

- Choose the country and target market carefully, based on a thorough analysis;
- Achieve sufficient production capacity to meet an increase in demand for foreign business activities;
- Validate market needs, which are usually different for each country;
- Ensure a return on investment, considering foreign exchange rates;
- Achieve an appropriate level of technology and quality that allows the company to succeed in emerging markets;
- Have the flexibility to adapt the product to the needs of the target market.

Conversely, some of the main weaknesses that will not favour a successful internationalisation are:

- Lack of resources to finance the capital of international operation;
- Lack of information about foreign markets and legal barriers;
- Lack of experience, knowledge of foreign trade, and languages.

The internationalisation strategy for a market development plan should take into consideration the above-mentioned factors. The elements stated should be based on the SMEs' information and classification of their international readiness and experience using evaluation mechanisms.

#### 3.1. Target Markets and Sectors

##### 3.1.1. Australia

Australia is the sixth largest country in the world, comprising the mainland of the Australian continent, the island of Tasmania and numerous smaller islands. It has the 13th largest economy in the world and the 10th highest per capita income, demonstrating its economic dynamism. Australia's economy is based on services, mining, agriculture, education, and tourism, all of which are potential target markets for EO. An extensive coastline, strong coastal tourism and offshore mining sectors make marine services an attractive market. In addition, the strong agricultural sector, which accounts for 14% of total goods and services exports and employs 3% of the workforce, makes this an attractive sector for EO services [19].

Some important barriers to the application of Earth Observation technologies in Australia are identified as a lack of awareness and trust in the technology, vulnerability to cyber-attacks, market acceptance of EO-based applications at an early stage, and a lack of (digital) skills to implement the technology on the user side; as for the public sector, it may be difficult to implement in current workflows. The policy/regulatory side may hinder the full use of EO or support other technologies. In addition, for European SMEs, the long distance and time zone change is detrimental to internationalising to Australia and the logistical challenges sometimes require more time and energy to manage.

In terms of Australia's space policy, the country has a well-recognised position in the international space arena and a national space regulatory framework that is primarily focused on the regulation of launch activities [20]. This legal basis allows industry to

develop its space activities within a framework of regulation and enables international partnerships outside Australia.

In summary, the Australian market is isolated and constrained by long distances within the country, but it has great potential. Australia is a market of more than 25 million potential consumers with a high per capita income. It has a stable, dynamic market economy and is open to international markets. Legal and regulatory cooperation agreements between Europe and Australia provide a promising framework to facilitate innovation and industry engagement. The Copernicus agreement improves data access and analysis in Australia and aims to increase interoperability between satellite data sets.

### 3.1.2. Chile

Chile is located between the Pacific Ocean and the Andes, in the extreme southwest of the American continent, with more than 6000 km of coastline and a total surface area of 756,950 km<sup>2</sup>. The diversity of its relief, together with the length of the country, allows the coexistence of different climates: desert in the north, polar in the south and subtropical in Easter Island.

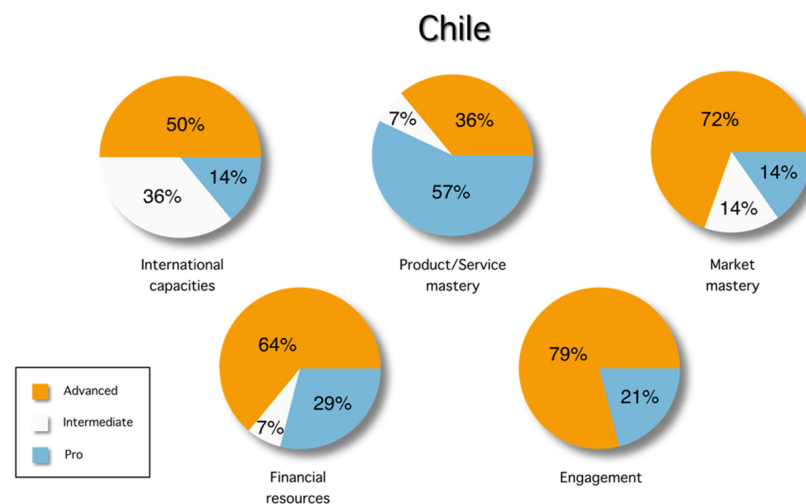
In the field of EO, Chile participates to some extent in international cooperation, but it is not involved in all the major organisations. It has been a member of the Intergovernmental Group on Earth Observations (GEO) since 2004, represented by the Ministry of Foreign Affairs. It is also a member of the World Meteorological Organisation (WMO), but not of the Committee on Earth Observation Satellites (CEOS). In cooperation with Argentina, Paraguay and Uruguay, Chile recently participated in the project “Programme for regional development strategies to allow the increase in agricultural productivity using satellite information”.

In summary, Chile is one of the most competitive, stable, and open countries in Latin America with low levels of corruption, standing out as an important destination for direct foreign investment in the world. In addition, it is distinguished by the solidity of its institutions, for its macroeconomic figures and for being one of the countries with greater freedom to do business and invest. Therefore, Chile is the strongest Latin economy and the best country in the region to do business with. In the World Investment Report 2016, UNCTAD ranked Chile as the world’s 17th largest recipient of Foreign Direct Investment (FDI). In 2018, Chile ranked 55th in the world on the World Bank’s Doing Business report, coming in just after Mexico, which ranked 49th [21]. The country is moving forward on making business creation simpler and more affordable for foreign investors [22].

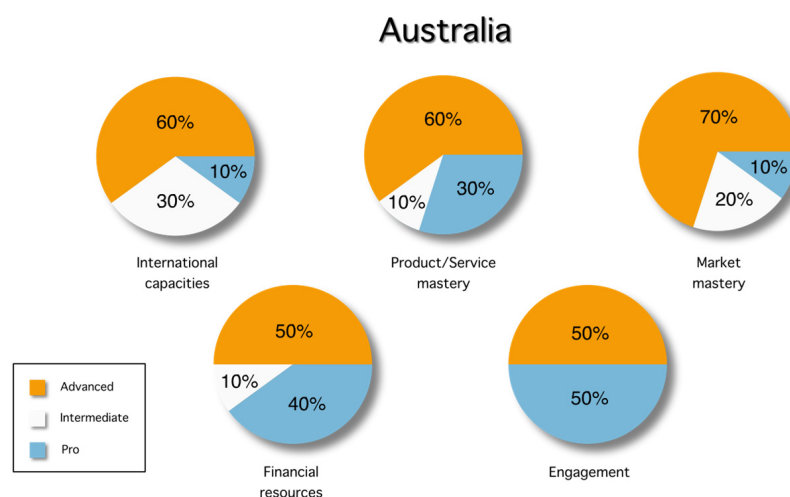
### 3.2. Diagnostic of SMEs International Readiness Level

A total of nineteen European SMEs participated in the ConnectEO project: eight from Spain, four from France, one from the Netherlands, one from Italy, one from Ireland, one from Germany, one from Luxembourg, one from Estonia and one from the Czech Republic. In terms of size, 63% had less than 10 employees, 21% had less than 50 employees and 16% had more than 50 employees. At the start of the project, only 58% of the SMEs had commercial and non-commercial partnerships with organisations in other countries and 50% with organisations outside Europe.

As mentioned in the previous sections, the SMEs were assessed, and their internationalisation readiness levels were defined. Each SME has a specific level, considering the target market, the target sector and the following five variables: international capabilities, product/service mastery, market mastery, financial resources, and commitment. These variables have been analysed per country and are shown in Figures 3 and 4, which indicate the entry level of the selected SMEs per target market.



**Figure 3.** SMEs' level of entry for Chile.



**Figure 4.** SMEs' level of entry for Australia.

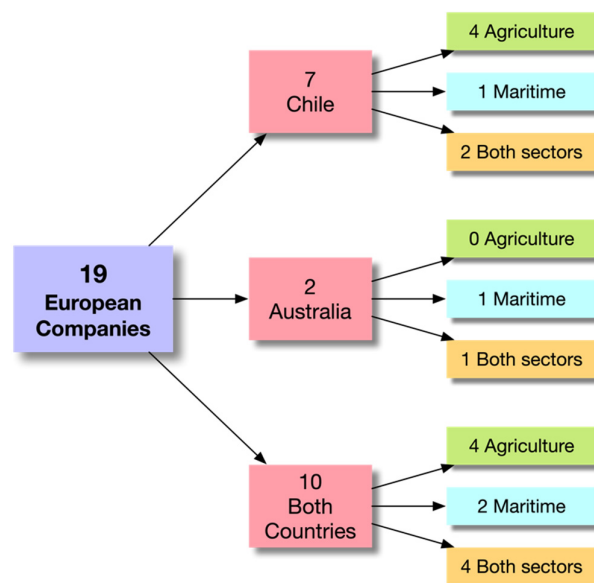
The envisaged profiles are: “Explorer”, “Intermediate”, “Advanced” and “Pro”. For the sake of clarity, the definition of each level is as follows:

- Explorer: the SME should work harder on the internationalisation strategy and clearly define the current situation of its company;
- Intermediate: the SME should work harder in the internationalisation strategy and define concrete actions to develop its business in overseas markets;
- Advanced: The SME needs additional knowledge, experience and expertise related to exporting;
- Pro: the SME has a solid understanding of exporting.

Some SMEs had different profiles depending on the target country and/or sector. For example, an SME interested in Chile and Australia might have an advanced profile for the Chilean agricultural sector, but an intermediate profile for the Australian maritime sector. These profiles influenced the definition of internationalisation activities in the International Market Development Plan. In addition, this information was used to plan the topics of the preparatory activities that are part of our Internationalisation Strategy Plan.

Figure 5 shows the number of interested SMEs per country and per sector. In general, a greater number of companies were interested in the Chilean market and in the agricultural sector; for Australia, commercial interest in the maritime sector was almost equal to that in the agricultural sector.





**Figure 5.** Schematic representation of the SMEs concerned in each country and sector.

Based on the numbers shown in Figure 5, 88% of the SMEs interested in the Chilean market were interested in the agricultural sector, while 53% were interested in the maritime sector. Regarding the Australian market, 82% of the SMEs were interested in the agricultural sector and 73% in the maritime sector.

In addition to the interest in the different sectors, it is important to know the previous experience of each of the SMEs. To this end, in the case of Chile, starting from the entry level, 29% of the SMEs presented an intermediate level, 64% an advanced level and 7% a professional level. On the other hand, in the case of Australia, 22% of the SMEs were at the Intermediate level, 56% at the Advanced level and 22% at the Pro level.

Table 1 and Figure 3 show the analysis of the variables carried out for Chile. Figure 3 shows the percentage of SMEs with a Pro profile in blue, an Advanced profile in orange and an Intermediate profile in white. In terms of commitment and market mastery, there was a high percentage of enterprises with an Advanced profile and 57% with a Pro profile in terms of product/service mastery.

**Table 1.** Variables analysis for Chile.

|              | Chile                    |                         |                |                     |            |
|--------------|--------------------------|-------------------------|----------------|---------------------|------------|
|              | International Capacities | Product/Service Mastery | Market Mastery | Financial Resources | Engagement |
| Explorer     |                          |                         |                |                     |            |
| Intermediate | 36%                      | 7%                      | 14%            | 7%                  |            |
| Advanced     | 50%                      | 36%                     | 72%            | 64%                 | 79%        |
| Pro          | 14%                      | 57%                     | 14%            | 29%                 | 21%        |

Table 2 and Figure 4 show the analysis of the variables carried out for Australia. Figure 4 shows in blue the percentage of SMEs with a Pro profile, in orange an Advanced profile and in white those with an Intermediate profile. In general, SMEs had an advanced profile for this market, highlighting the high percentage of Pro profiles in terms of commitment and financial resources.

We can conclude that the European companies that participated in the ConnectEO project generally had an advanced profile in all the variables involved in the decision to go international, in some cases reaching a pro profile. It should be noted that in the analysis carried out, none of the companies had an explorer profile (the lowest level).

**Table 2.** Variables analysis for Australia.

|              | Australia                |                         |                |                     |            |
|--------------|--------------------------|-------------------------|----------------|---------------------|------------|
|              | International Capacities | Product/Service Mastery | Market Mastery | Financial Resources | Engagement |
| Explorer     |                          |                         |                |                     |            |
| Intermediate | 30%                      | 10%                     | 20%            | 10%                 |            |
| Advanced     | 60%                      | 60%                     | 70%            | 50%                 | 50%        |
| Pro          | 10%                      | 30%                     | 10%            | 40%                 | 50%        |

### 3.3. Business Internationalisation Support Framework Validation

The internationalisation strategic plan was developed in four phases, described in the methodology section, and illustrated in Figure 1. The procedures and outcomes of these phases are described below:

Phase 1. The Internationalisation Assessment (questionnaire, interview and Business Canvas models) provided an overview of the situation of each SME, defining its status in terms of the SME's resources, structure, financing and the intrinsic factors of the target market, defined in five pillars: (1) legal and general aspects, (2) public and private financing, (3) commercial aspects, (4) cultural aspects and (5) key alliances. This assessment thus supports the definition of the internationalisation readiness profile of SMEs, as described below, and will provide SMEs with considerations and suggestions, highlighting their assets and areas for improvement in the development of their own internationalisation strategy and preparation for access to the target countries.

Phase 2. Once the SME profiling had been carried out, a series of preparatory activities were organised and carried out, based on the information obtained previously, to know their expectations and areas of opportunity. These preparatory missions were a key element for the SMEs to have a better knowledge of the target market. Speakers with extensive experience in the business world and the Chilean or Australian market were engaged in various webinars and interviews to know their previous experiences, ideas, and recommendations for our SMEs. Table 3 summarises some relevant preparatory activities in webinar formats, with a special focus on Earth Observation, internationalisation, regulatory and legal barriers in the target countries/sectors, information on funding programmes, intellectual property, new trends in technology, among others, which represent the needs and expectations of the SMEs identified in our interviews.

**Table 3.** List of relevant preparatory activities representing access to local knowledge.

| Event  | Date          |
|--|---------------|
| Business opportunities for SMEs in Chile and Australia                       | November 2020 |
| Intellectual property in Chile with special focus in the ICT sector          | November 2021 |
| Regulatory and market Considerations of EO and Australia                     | January 2022  |
| Chile AgTech Opportunities for European Startups                             | February 2022 |
| Funding opportunities for Earth Observation companies in Australia           | April 2022    |
| Overview of the maritime sector in Chile and opportunities for European SMEs | May 2022      |

Phase 3. The matchmaking activities (B2B) were carried out based on the SME profiling. Later, a thorough identification of local partners for the B2B meetings between the different European companies and the interested organisations in the Chilean and Australian markets was carried out with the support of local stakeholders who played a key role in the process. Another important aspect in the planning of the B2Bs is that the SMEs need more than one B2B meeting to obtain more concrete results. Therefore, an online tool was provided to promote and facilitate the B2B meetings, and a series of follow-ups were carried out.

Phase 4. As part of the virtual trade missions, a series of webinars and networking events were planned based on identified needs, topics of interest and knowledge gaps. It is important to note that a physical presence was preferred for SMEs to interact and do

business; however, online events proved useful where long distances were an economic challenge and due to the COVID pandemic. In addition, each market should be analysed individually, not just the Australian or Chilean market in the agricultural or maritime sectors, but also in the sub-sectors of interest to each company. Company profiling was carried out, which proved useful in planning the matchmaking events, webinars and all the activities described above. This SME profiling is explained in the next section.

### 3.4. General Recommendations for SMEs

Based on the information gathered from SMEs during this work, several general recommendations have been defined:

- Before pursuing export activities, conduct an export potential assessment to identify potential needs, opportunities, and strengths in the target market;
- Develop an export plan adapted to each case;
- Modify and adapt products for target markets;
- Familiarise yourself with the potential legal issues associated with exporting in the target country;
- Compare the EO product/service with potential competitors' products/services, if any;
- Adjust the strategy based on time, likelihood of risk, and profit potential;
- Build networks, find partners, and contact investors if possible. With a strong network, profitability may be achieved sooner;
- Evaluate financial options and obtain economic support;
- Dedicate human and financial resources to build a team for export activities and legal affairs.

These recommendations are intended to support companies in maximising business success throughout their internationalisation process. They aim to be extrapolated not only to Australia, Chile and the Earth Observation, agriculture and maritime sectors, but also to other countries and sectors that can be targeted for SMEs.

## 4. Discussion

The diagnostic framework used in this work covers each of the functional areas of the SME (e.g., finance, marketing, R&D, HR, management, etc.) to assess their assets and gaps of a potential internationalisation plan. The evaluation of these areas by the SME through the questionnaire was not sufficient to assess the real readiness of the SME to implement different internationalisation strategies. Therefore, the importance of carrying out the assessment in the two phases described was stressed: a set of questions and then an individual interview with the SMEs to better address all aspects of internationalisation, and finally a detailed analysis of the information and continuous training of the company.

In addition, the Internationalisation Readiness Assessment (IRA) and the associated criteria made it possible to define the SME's capacity to go international, to clarify the internationalisation process, to analyse its resources and motivations, and to identify important aspects of each SME based on five pillars: (1) legal and general aspects, (2) public and private financing, (3) commercial aspects, (4) cultural aspects and (5) key alliances.

On the other hand, the ConnectEO project introduced the innovative concept of the Front Office to establish a stable in-country contact point to facilitate the connection between the European and Australian markets. The concept proved to be effective and SMEs gave positive feedback on its performance.

The methodology adapted to the pandemic situation resulted in successful trade missions. Overall, the Australian trade mission was a success with 50 participants per day. The same was true for the Chilean trade missions, which outperformed Australia with an average of 74 participants per day.

This paper lays the foundations for a successful internationalisation plan, using the fundamentals of OI to access highly competitive countries such as Australia and Chile. Specifically, OI tools for exchanging knowledge and creating new networks such as B2B

meetings and trade missions have proven to be a key aspect in the successful internationalisation of the involved SMEs. This is aligned with the work from [23]. They concluded that despite the limited resources, SMEs may resort to OI practices to overcome internationalisation problems linked to having fewer resources for establishing and sustaining collaborative networks. It is important to note as well that EU funding itself has been acknowledged as a tool and enabler for boosting and implementing OI by [24]. This statement is confirmed by the results presented herein as the ConnectEO project (publicly funded) has acted as an OI tool that has supported the internationalisation of SMEs [23].

In this way, this work can benefit different stakeholders; the first beneficiary will be the SME itself, allowing it to expand into new markets, increasing its sales and profits, while reducing and minimising risks by not being dependent on a single market. Employees can also benefit from an internationalisation plan, as there may be new job opportunities in new markets. Expanding into new markets can allow the company to offer new products and services to customers, which can improve the customer experience and increase customer satisfaction. Finally, investors can also benefit from internationalisation as expansion can increase the value of the company and its long-term profitability.

Finally, the results presented herein aim to contribute to the advancement in the research of potential uses of OI as identified by [20] in their research agenda for OI, where they point out that there is still research to be undertaken on how to adapt existing OI approaches to emerging organisational and societal needs. This paper would answer this question by providing insights on how OI tools and practices can be used to support the internationalisation of SMEs [25].

Finally, the questions initially posed in this paper are answered:

RQ1: Which is the potential market for EO in Australia and Chile?

Earth Observation (EO) has a wide range of potential applications in a variety of industries in both Australia and Chile. Some of the potential markets for EO in these countries include agriculture, maritime, mining, energy, water management, environmental monitoring, and others. In addition to these sectors, specific areas have been identified within the agricultural and maritime sectors, with a focus on the sectors that have been extensively researched as part of the ConnectEO project.

Australia is the largest island in the world and therefore has a continuous maritime industry, opening a large market for innovation. The specific priority areas in this sector are as follows: (1) Infrastructure and shipping—due to its geography, most trade is conducted by sea, including fossil fuels such as liquefied natural gas; such activity requires specific maritime infrastructure. (2) Defence and security—due to its geography, innovation in protection at sea and on land is required, facilitating the protection of national waters. (3) Biodiversity and environment—recent incidents of intensified wildfires have created a need for real-time monitoring of vast areas of land and early warning systems. In addition, the world's largest coral reef ecosystem remains under Australian jurisdiction and protection. (4) Renewable energy—The Australian Renewable Energy Agency supports the development of new renewable energy technologies along the innovation chain.

In agriculture, Australia has become a leading global exporter of grain, meat, and wool. EO solutions can support the arable, horticultural and livestock sectors.

With more than 8000 km of coastline, Chile has naturally become dependent on the maritime sector. The main maritime sectors are (1) Fishing—Chile's fish catch is ranked 10th in the world (by 2020), mainly supported by the Chilean Humboldt Current, one of the richest marine environments on the planet. (2) Conservation of biodiversity—Chile has many Marine Protected Areas (MPAs), and more areas are being legally protected, resulting in more than 40% of Chilean waters being protected. (3) Defence and security—The Chilean Navy Coast Guard is responsible for marine environmental protection and Search and Rescue (SAR), and the Chilean fleet is being modernised, seeking new solutions. (4) Renewable energy—Chile does not have enough fossil fuels for its own consumption, so renewable energy has great potential. Chile's extensive coastline, with its powerful waves

and tidal currents, has a great capacity for generating electricity, creating opportunities for numerous green energy power plants.

Agriculture will account for 9% of Chile's GDP in 2021. The country's climate and abundant water resources favour the agricultural sector. However, the sector remains largely traditional, leaving room for innovation to improve process efficiency and increase production.

RQ2: How can OI practices leverage business internationalisation?

OI practices can help companies capitalise on internationalisation by providing access to new markets, technologies, and knowledge, as well as facilitating collaboration, co-creation, and the exchange of ideas. By adopting OI, companies can accelerate their innovation cycles and better position themselves for success in international markets. In addition, the adoption of these methodologies and the move to online formats has enabled the successful implementation of internationalisation activities.

RQ3: How can the internationalisation readiness level of SMEs be measured?

The internationalisation readiness level of SMEs can be measured using a variety of methods and variables, considering the target market, target industry and five key variables: international capabilities, product/service mastery, market mastery, financial resources, and commitment. The internationalisation readiness level of SMEs is an important step in identifying strengths and weaknesses and developing an effective internationalisation strategy. By using a combination of variables, SMEs can gain a comprehensive understanding of their readiness level and take steps to improve their capabilities and competitiveness in international markets.

RQ4: How can business internationalisation practices be integrated in a holistic, systemic approach?

Integrating business internationalisation practices into a holistic and systemic approach involves considering all aspects of a company's operations, aligning organisational structure and culture with internationalisation goals, fostering collaboration and partnerships, and continuously evaluating and adapting the internationalisation strategy. By adopting a holistic, systemic approach, companies can increase their chances of success in international markets and achieve their long-term internationalisation goals. On the other hand, teaching companies to be more flexible allows for a higher level of agility in adopting new practices and adapting to the rapidly changing challenges of international markets.

## 5. Conclusions

The internationalisation of SMEs in international markets can be a difficult and costly process, but it can also offer great opportunities and benefits. Overall, internationalisation can be an effective strategy for SMEs to grow and expand, but it requires thorough research, careful analysis and constant adaptation to local markets and cultures.

The main conclusions derived from this work can be resumed as follows:

- A successful market entry requires an internationalisation plan adapted to the characteristics of each country, the target market, and the specificity of each SME. This requires a detailed analysis of the target country, the market and sector of interest and the company, starting from the current situation, previous experience and medium to long-term objectives;
- It is essential not only to carry out a traditional study of a company's export capacity, but also to complement this analysis with questionnaires, interviews, meetings, and the continuous training of the companies to identify their weaknesses and strengthen them with a view to their internationalisation;
- The European companies analysed have presented an Advanced profile in all the variables involved in the decision to go international, in some cases reaching a Pro profile. It should be noted that none of the companies has an Explorer profile, although some have an Intermediate one;



- Not all companies have the same entry level for all markets, and there are different levels for the same company depending on whether it wants to enter to the Chilean or Australian market;
- Prior to the ConnectEO project, most of the SMEs did not know their entry level, but from the assessment carried out throughout the project, they have enough information to adapt their internationalisation speed to their level, as well as to prepare the organisation, staff, and work program, among others, to take their company to the international market;
- Approximately 4–6 months of individual work with each SME is required to develop an effective, detailed, and customised internationalisation strategy plan. It includes access to the company's organisation chart, financial situation, shareholding, the in-depth analysis of the company's product/service, protection against third parties, intellectual property, barriers to entry, industrial capacity, the state of product development, comparison with what its competitors offer in the target markets, the identification of opportunities, market size and growth, customer identification and segmentation, etc;
- The ConnectEO online activities between European companies and local Australian and Chilean stakeholders have proven useful for the export strategies of EU SMEs. Participants reported that they enjoyed the events, found value in the speakers, learned new things, and would recommend the events to their colleagues;
- Recommendations were extracted for the planning of trade missions and for the SMEs approaching these markets, as well as key facts on (1) business and cultural aspects, (2) legal and financial aspects, (3) key alliances with Chilean and Australian market players, (4) matchmaking cooperation opportunities, and (5) key events;
- Without direct collaboration and interaction with local stakeholders, the beneficiaries would not be well prepared for their internationalisation.

OI, which involves collaboration with external actors such as customers, suppliers, and universities, plays a crucial role in the internationalisation of SMEs. By adopting OI practices through the support of a front office in the target market, made easier the B2B meetings, promotion and international trade missions organisation such as the one set up in the ConnectEO project, SMEs can access new knowledge, technologies, and markets more efficiently and cost-effectively. This allows them to better adapt to different international environments and identify real business opportunities to meet the needs of customers in foreign markets. In addition, by building broader collaborative networks, SMEs can leverage the local knowledge and expertise of international partners to overcome cultural, regulatory, and commercial barriers, facilitating their more successful global expansion.

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