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Mobica's Internationalisation Project

Analysis and Recommendations for the South American Market

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por

Maria de Azevedo Coutinho de Meira Ramos

sob orientação de
Dr. Martin Friesl

e sob co-orientação de
Dra. Francisca Guedes de Oliveira

Católica Porto Business School
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Executive Summary

The purpose of this company-based project is to provide recommendations on which South American low-cost location should Mobica, an UK-based software engineering and integration services firm, establish its new R&D centre. This will be achieved through developing an international market selection framework which the company can use in future internationalisation studies in order to support the expansion of its global low-cost strategy.

The methodology adopted consists of a systematic contractible ranking approach which results in a formal sequential decision-making structure composed of three stages of analysis according to a general consensus in International Market Selection literature: a screening stage, where the initial set of South American countries is reduced to a short-list of countries according to macro-economic criteria; an identification stage, where a specific country is selected from the previous short-list according to micro-economic criteria; and a final selection stage, where the analysis indicates three best-possible city options for location according to the firm's strategic goals and resource availability. Recommendations are then provided regarding one specific city. This will be achieved through the implementation of an Analytic Hierarchy Process method which allows prioritising each indicator through pairwise comparisons surveys.

Data collection methods are mainly focused on collecting secondary data through documentation and evidence from reputable sources such as databases, study reports as well as company insight. Hence, one of this study's limitations is related to the availability of reliable data for each stage of analysis, particularly the city-level stage. A further study limitation regards the interdependence of the various analysis criteria, which leads to problems in terms of priority interpretation. For future projects, it is advisable that the firm

opts for a survey group answer, in order to allow for the combination of different professionals' opinions but as well as for analysis objectivity.

Findings indicate Chile as the best possible location, given the country's general good performance in every indicator, and the project's final recommendations address the three cities of Temuco, Santiago and Viña del Mar.

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Introduction

This dissertation consists of a company-based project aimed at helping Mobica, an UK-based software engineering and integration services company, to find a new market where to internationalise its activities, more specifically, in South America.

The company was formed in 2004 and already operates in four different countries, namely the UK, US, Poland and Mexico. However, despite its international presence, the company is quite Poland-focused, where it concentrates the biggest number of R&D centres. Some of the identified key success factors of the Polish location consist of its predominance of low costs, similar time zone, good availability and quality of tech universities and graduates as well as a good ease of movement for employees. However, due to some recent cost disadvantages in Poland, namely increasing salary inflation rates, it is currently searching for new competitive markets.

Moreover, the company's decision to move its operations into Mexico, with the main purpose to develop a low-cost site designed to service the USA's offices, disregarded the fact that employer, bureaucracy and union contribution costs represent additional 50% costs over salaries. The country also presents some hard restrictions regarding employee mobility, which also applies to the US, which has the additional problem of being a high-cost location. The choice of South America by Mobica as the region to be analysed is mainly motivated by

the desire of selecting an alternative location to Mexico which can serve the US offices with lower costs.

Hence, as widely recognised by the literature, internationalisation is one the most critical factors for a company's success and is a decision which requires careful analysis and planning.

In this context, the purpose of this project can be divided into two main aspects:

1. To develop a comprehensive international market selection framework for the analysis of the South American market, however susceptible of future application in similar internationalisation decisions, regardless of the location under analysis.
2. To develop a qualitative research analysis on South America, based on identified relevant criteria according to academic literature and to the company's strategy and requirements, and provide a final recommendation on a specific South American country and city for the location of a new R&D centre.

According to the prevalent consensus in International Market Selection literature, the methodology adopted consists of a systematic contractible ranking approach. According to Andersen & Buvik (2002), this approach includes defining the problem and scope of the analysis, identifying the relevant criteria, attributing weights to each criterion, identifying the alternatives, testing each alternative and identifying the optimal choice. This results in a formal sequential decision-making structure composed of three stages of analysis: a screening stage, where the initial set of South American countries is reduced to a short-list of countries according to macro-economic criteria; an identification stage, where a specific country is selected from the previous short-list according to micro-economic criteria; and a final selection

stage, where the analysis indicates three best-possible city options for location according to the firm's strategic goals and resource availability. Recommendations are then provided regarding one specific city.

The weighting of the criteria will be achieved through the implementation of an Analytic Hierarchy Process method which allows prioritising each indicator through pairwise comparisons surveys. Data collection methods are mainly focused on collecting secondary data through documentation and evidence from reputable sources such as databases, study reports as well as company insight.

Findings indicate Chile as the best possible location, given the country's good overall performance in every indicator, and the project's final recommendations address the three cities of Temuco, Santiago and Viña del Mar identified in the final selection stage of the analysis.

This dissertation is structured as follows: the first part identifies relevant academic literature and its contributions for the purpose of this project. Part two identifies the methodology undertaken, including the research design, the analysis framework and methods and data collection. Part three contextualises the company-based project within the region of South America taking into consideration the specificities of small and medium enterprises. Part four describes the analysis undertaken and findings. Finally, part five discusses and interprets the findings and provides final recommendations.

Chapter 1
Literature Review

This section provides an overview of existing internationalisation theories limitations and contributions for foreign market selection and implications for entry mode strategy. This is followed by a discussion regarding different international market selection models and arguments are presented for the choice of a specific model category for the purpose of this company-based internationalisation project analysis.

1. Internationalisation Literature

The issue of firms' internationalisation process has long been discussed by scholars, leading to a large number of schools of thought throughout the years. Accordingly, each of them developed different theories with different implications for market selection and entry process.

1.1 Different Internationalisation Schools of Thought

An early explanation for firms' internationalisation was developed by the Nordic School (Johanson & Valne, 1977) which claims that firms follow an incremental entry-pattern, by intensifying their level of commitment as their market knowledge increases. Hence, it predicts that foreign market selection is mainly constrained by psychic distance and experiential knowledge, arguing

that firms will select those markets which are most similar economic, social and politically, therefore facilitating the gain of market knowledge.

A second explanation evolved from the transaction costs-based perspective (Coase, 1937) into the transaction costs-focused contractual theories, defended by international business scholars such as Buckley and Casson (1976), Dunning (1981) and Teece (1975), for whom the internationalisation strategic decision was based on the argument that specific market imperfections such as transaction costs were overcome by firms through internalising activities across borders.

The industrial network approach argues that the transaction cost analysis lacks consideration of the market environment, claiming that firms' internationalisation process is also guided by the interactions with local partners, suppliers and customers. Hence, this internationalisation perspective suggests that the firm's choice of foreign market and market entry will be guided by its network of business relationships (Turnbull (1986), Cunningham (1986)).

Reid (1983) and Welford and Prescott (1994) introduce a business strategy approach, guided by pragmatism, where the firms' internationalisation is based on the analysis of trade-offs between different expansion and entry mode strategies according to variables such as market potential or psychic distance.

In this context, the eclectic paradigm (Dunning, 1988) introduces the vision that a firm's internationalisation process and entry mode decision is motivated by ownership (firm-specific intangible assets and capabilities), location (country-specific benefits) and internalisation advantages (i.e., advantages gained by performing certain activities internally instead of outsourcing them).

More recently, a particularly interesting perspective regarding multinational enterprises' expansion emerged: the internalisation theories. This internalisation perspective adds to the cost-based analysis a strategy perspective of internalisation gains derived from the integrated learning,

knowledge and technology transfer processes within the firm (Teece, 2014). This new perspective argues that the previous theories ignore issues such as the sources of ownership advantage: they argue that learning is crucial to the entrepreneurial creation and transfer of organisational and technological capabilities which are paramount for sustaining competitive advantage. Furthermore, it argues that a firm's rationale when internationalising should not just be focused on efficiency, but also to promote market co-creation for products and services as well as co-specialization among market players (such as suppliers). Hence, this new perspective pretends to complement the cost-based internalisation theory by paying special emphasis to the alignment of firm-specific resources and capabilities to location advantages as a source of sustained competitive advantage. Therefore, it argues that foreign market selection, despite widely influenced by minimization of transaction costs, must be driven by the need and ability to exploit and leverage firms' distinct dynamic capabilities within a specific host-country environment. New criteria such as corporate culture, management style and innovation capabilities are enhanced.

One of the major contributions of this internalisation perspective is the notion that foreign location selection will depend on the firm's non-location bound capabilities, i.e., the firm's capacity to replicate these capabilities and adapt them to the local market, or its ability to gain local capabilities.

In this context, Porter (1990) provides an extremely interesting contribution, arguing that a firm's foreign market selection will not only depend on its resources and capabilities, but also on specific national conditions and how these sustain the firm's competitive advantage. Porter argues that firms achieve competitive advantage through continuous innovation by seizing new market opportunities or by serving new market segments and markets, especially when competitors' response is slow. For this purpose, the author developed the well-known National Diamond framework, which indicates four broad attributes

which provide a comparative advantage to a country. These consist of factor conditions (a country's endowments of factors of production but, most importantly, its ability to specialise and upgrade them), demand conditions (the nature of local demand, and how much pressure for innovation it creates), the presence of related and supporting industries (and how the interactions between them promotes knowledge and technological spillovers) and, finally, firm strategy, structure and rivalry (how local institutions, competition and firms' own structure and strategy motivate investment and innovation).

1.2 Internationalisation Theories' Implications for Entry Mode Strategy

Reasonably, different internationalisation theories have different implications for foreign market selection and entry mode choice.

The Nordic School, led by the Uppsala model (Johanson & Valne, 1977), focuses their analysis on the various types of risks and uncertainties an international market selection process poses, therefore leading the firm to start by choosing entry modes with a smaller ownership, eventually progressing to higher levels of commitment according to the local market experience and knowledge gained.

Both the industrial network approach (Turnbull (1986) and Cunningham (1986)) and the business strategy approach (Reid (1983) and Welford and Prescott (1994)) indicate a set of criteria that influence market entry mode choice. While the former stresses the interactions with competitor and customers, the latter focuses on market evaluation indicators.

The eclectic paradigm (Dunning, 1988) stresses the notion of location advantages which refers to country-specific benefits which are location-bound, hence leading the firm to prefer FDI over other market entry modes as a way to control and exploit both ownership and location advantages and minimize

inter-firm transaction costs. When these advantages are missing, the firm can turn to other type of collaborative market entry modes such as licensing. Thus, the model predicts that market selection is tightly related to choice of entry mode. These are mainly guided by economic and location theory, thus criteria such as resource abundance, trade barriers and transaction costs are critical.

The internalisation perspective has particular implications for multinational firms entering new markets, which requires the possession and replication of strong resources and capabilities that often have to be adapted in order to fit local markets. As stated by Teece (2014), when firms lack these capabilities, or suffer from resource constraints or even time pressure, entry modes such as joint ventures or collaboration with local partners might be preferable in order to improve cost-efficiency and help access local capabilities. This is particularly important for ongoing innovation and upgrading technological capabilities and explains the growing geographical distribution of firms' R&D activities.

Whitelock (2002) suggests that an attempt to integrate the different contributions from this variety of internationalisation theories can present a more comprehensive approach to market entry choice. The author stresses the importance of the interpretation and perceptions by different business decision-makers, the firm's experiential knowledge and the presence of transaction costs for the determination of market selection and entry mode strategy.

2. International Market Selection Literature

2.1 International Market Selection

From the discussion above follows that market selection process is not only a crucial element of a firm's internationalization process (Douglas & Craig, 1992), but also a rather sensitive one. As pointed out by O'Farrell and Wood (1994), the extent to which the identification of a foreign market is suitably undertaken can determine the success or failure of a company, as well as significantly influence its global competitive strategy and operations' coordination.

The complex nature of international market selection translates into a wide variance of academic literature, with many different opinions and suggested approaches from authors, and hardly any consensus on which one is best. Papadopoulos and Denis (1988) identify two main categories of market selection models, the general models and the context-specific models, i.e., models bound to specific circumstances such as the industry or business structure the company belongs to. In the following section, the researcher provides a summary of the existent IMS approaches.

2.2 Different International Market Selection Approaches

2.2.1 Systematic/Unsystematic Approaches

A first distinction to be made is between the traditional systematic and unsystematic approaches (Papadoulos & Denis, 1988). The systematic approach involves using a formal rule-oriented structure with the purpose of assessing foreign market potential and attractiveness. After having identified the internationalisation problem, this structure often includes establishing a set of criteria relevant for the location choice. Afterwards, these criteria are weighted

according to their relative importance and used to test the location alternatives in order to determine the optimal choice (Andersen & Buvik, 2002).

Despite the logical sequential nature of the systematic approach, it is often found that companies resort to unsystematic approaches, i.e., a decision-making process very much based on rules of thumb and opportunistic behaviour. Largely connected to the concept of psychic distance of the already mentioned Uppsala model (Johanson & Valne, 1977), it implies that companies will choose to locate in those countries where the perceived cultural distance is smaller, or gradually increase their involvement in these countries as they gain more experience. Hence, instead of relying on market attractiveness indicators, the location decision is based on uncertainty avoidance strategies (Andersen & Buvik, 2002). The common use of unsystematic approaches is heavily linked with firms' frequent inability to gather and analyse all the precise information needed, as well as most managers' limited experience in foreign market selection (Górecka & Szałucka, 2013).

2.2.2 Expansive/Contractible Approaches

A second distinction relates to the two different expansive and contractible approaches that International Market Selection models might undertake. Expansive models, such as the Uppsala model, determine the choice of a foreign market for expansion as a function of the firm's home country characteristics, prioritising the most similar countries with the least psychic distance. A good example of the expansive approach is the clustering method which applies grouping techniques based on countries' economic, political and cultural similarities. It assumes that firms will tend to internationalise to those countries which are the most similar to the home-market (Johanson & Valne, 1977) and rely heavily on macro and micro-level information (Cavusgil, et al., 2004). While these methods allow operationalising the analysis through

statistical analysis, their main disadvantage is the common disregard of strategic considerations (Kumar, et al., 1994).

On the contrary, contractible models typically start from a broad and general sample of countries with an overview of market and risk information, which is sequentially reduced according to certain indicators and objectives with the purpose of eliminating the worst alternatives and focusing on the most promising ones (Górecka & Szałucka, 2013).

2.3 Systematic Contractible Approach

Despite big controversy among scholars regarding which approach is best, a large number of significant studies rely on a systematic contractible approach composed of three sequential stages of analysis, each one of them aimed at reducing the number of potential markets (Kumar et al., (1994), Cavusgil, (1985) and Root (1994)).

The first stage corresponds to the preliminary screening stage which, through macro-level criteria, eliminates unsuitable countries. Secondly, the identification stage uses industry-specific information, such as competition level, market size and growth or even entry barriers, to narrow the sample down to a short-list of potential countries. The final stage corresponds to the final country selection according to the firm's strategic objectives and resource availability. The selected country should correspond to the best possible match, which is assessed through firm-specific criteria such as earnings and costs forecasts.

Johansson (1997) proposes a four-stage model: country identification (based on macro-economic data), preliminary screening (political and economic context as well geographic distance), in-depth screening (based on industry and product-specific data) and a final selection stage (based on the firm's goals and resources and capabilities).

Nevertheless, differences between foreign market selection process structures are seen as insignificant, leading to a consensus regarding the three-stage international market selection model (Koch, 2001). However, despite the widely agreed model structure, the literature shows no consensus regarding which methodology to apply (Papadoulos, et al., 2002).

Notwithstanding, the literature identifies a common systematic contractible approach: the ranking models. Ranking models attempt to analyse and evaluate foreign markets according to pre-established criteria which are attributed a certain weight according to their relative importance. The main advantage of this methodology is that it allows adding new dimensions of analysis, namely strategic considerations, and firm-specific resources and capabilities (Kumar, et al., 1994).

A common and increasingly popular approach for operationalising the steps of the ranking models consists of applying a Multi-Criteria Decision Making (MCDM) Method (Velasquez & Hester, 2013). As referred by Kumar, et al. (1994), multi-criteria methodologies are particularly helpful for firms' already internationally present wishing to expand their foreign operations for it allows them to evaluate different locations according to their goals and add/drop alternatives. A review some of the MCDM methods commonly used in international market selection, its disadvantages and advantages can be found in the following table:

Method Description	Method Advantages	Method Disadvantages
Multi-Attribute Utility Theory (MAUT) consists of a structured methodology which helps deciding upon alternative trade-offs according to a certain utility assigned to each (Konidari & Mavrakis,	The big advantage of MAUT is that it accounts for different alternatives' uncertainty and preferences (Loken, 2007).	The drawbacks of this method are the fact that it requires an accurate definition of the decision maker's preferences, which leads to intensive data needs and a precise identification of each alternative

2007).		consequences' preferences (Loken, 2007).
The Analytic Hierarchy Process (AHP) is a hierarchical methodology which helps experts prioritise a certain set of criteria through pairwise comparisons (Saaty, 2000).	Besides its ease of use, one of AHP's advantages is that it highly facilitates decision makers' trade-offs between criteria due to its use of pairwise comparisons. These matrices allow experts to use their judgements to compare alternatives and define their priorities. Moreover, it is much less data intensive than MAUT (Saaty, 2000).	The two disadvantages of this method are related to possible problems of interdependence between criteria and alternatives, due to the subjective nature of the pairwise comparisons (Konidari & Mavrakis, 2007). This, however, can be monitored by computing the method's inconsistency ratios, which measures the accuracy of the matrices. Another problem is the possibility of rank reversal when different alternatives are added in the end of the process.
Case-Based Reasoning (CBR) identifies solutions based on a database of similar cases (Daengdej, et al., 1999).	Other than the similar cases gathered, this method does not require much additional data. Moreover the case database often improves over time and adapts to changes in environment (Daengdej, et al., 1999).	The method's disadvantages include a high threat of inconsistency due to possible inaccuracy in the gathered cases or lack of a sufficient number of similar cases in order to make valid assumptions.
ELECTRE is an outranking method (Velasquez & Hester, 2013).	It accounts for uncertainty and vagueness.	It does not identify the causes of different alternatives' strengths and weaknesses (Konidari & Mavrakis, 2007).
PROMETHEE is also an	The method is relatively	However, it does not

outranking method (Behzadian, et al., 2010).	easy to use.	provide a clear criteria weighting method (Velasquez & Hester, 2013).

Table 1: Review of relevant Multi-Criteria Decision Making Methods

2.4 International Market Selection Implications for Entry Mode Strategy

The literature recognises several different structure approaches for market selection entry mode strategy. For instance, Root (1994) recommends a five-stage logical approach: choice of the target product or foreign market; establishing the goals for the new location; choice of the entry mode strategy; definition of a marketing plan; and finally imposing a control system.

O'Farrell and Wood (1994) note that there is a general lack of consideration of international market selection decision's connection to the company's entry mode strategy. More than often, foreign market selection and entry mode choice are treated as two distinct decision processes. In line with this critique, Andersen and Buvik (2002) argue that the choice of a foreign market is highly influenced by the company's entry mode strategy. Based on a transaction costs framework, the authors claim that the higher the extent of ownership and resource commitment, the less flexible will be the firm's selected entry modes. For example, non-contractual entry modes, typically suggesting a higher resource and investment commitment, are more likely to lead firms to opt for the traditional systematic and unsystematic approaches, where the firm choice of foreign markets is the focal unit of analysis. On the contrary, contractual entry modes require a much lesser degree of resource commitment and business control, therefore leading firms to opt for a third approach proposed by the authors, the relational marketing approach, where the focus of the analysis lies on the firm's choice and retention of customer relationships. This

approach, however, is mainly driven by a firm's selling strategy which is irrelevant for the purpose of this project given that Mobica does not intend to sell in the selected location, therefore providing an argument for the adoption of an equity-based entry mode strategy.

Root (1994) indicates three main entry mode approaches which consist of either selecting a foreign market without considering any specific entry mode, long-term horizons or without a systematic selection structure, the naïve approach, where a pre-existing market entry strategy defines market selection, or, finally, the strategy rule-based approach, where the firm adopts systematic comparisons of possible entry modes in order to reach an optimal informed decision.

Koch (2001), therefore, argues that market selection and entry mode choice are both part of the same decision process, which is equally influenced by context circumstances such as the company's market perceptions and information, the selection process logic (or absence of it) and criteria, etc. Hence, the author argues that the wide variety of international market and entry mode selection models can be largely explained by the wide variety and differences between international contexts.

3. Final Conclusions and Research Gaps

The first logical remark to be made is the fact that there is an overwhelming wide variety of internationalisation theories with very distinct implications for firm's international market selection and entry mode strategies (Sakarya & Eckman, 2007). Similarly, a second important remark is the clear lack of consensus among international market selection scholars regarding location decision models. These two research gaps overcomplicate the already complex process of foreign market location, which is particularly prejudicial for small

and medium enterprises which typically suffer from limited resources, financial and managerial capabilities when compared to multinational firms (Brouthers, et al., 2009). This is particularly true for the so-called new-technology based firms, which tend to internationalise quickly by pursuing cost-advantage and risk-avoidance guided location decisions (Coeurderoy & Murray, 2008).

Moreover, an evident research issue is related to the lack of literature regarding service firms' internationalisation, especially when it comes to non-selling activities, such as research and development operations (O'Farrell & Wood, 1994).

A final important remark has to do with the fact that many authors suggest that firm's international market selection and market entry choices belong to the same decision process (Koch, 2001). However, despite the author's suggestion of adopting a systematic international market selection and entry comparison approach to determine the optimal combination, it is clear that most of the systematic international market selection approaches, including the consensual three-stage model, does not include market entry analysis and comparisons. Undoubtedly, this is an interesting academic gap where research must yet be undertaken.

As an attempt to overcome most of these problems, this project develops a flexible and cost-efficient systematic contractible ranking approach, through a multi-criteria decision method analysis which incorporates contributions from some of the most relevant theories in order to develop a more comprehensive and realistic approach to the location decision objective. However, it does not consider market entry choice the reason being that it is outside of the scope of this project.

One of the main purposes of this approach is to avoid the frequent mistake firms do when internationalising which consists of engaging in location and market entry decisions in an unplanned and risk avoidance-oriented way (Górecka & Szałucka, 2013). Moreover, as literature often points out, it is crucial

that the framework structure and chosen criteria approach the wide range of important aspects for the success of firm's international market selection. For this matter, it seems important to take Whitelock's (2002) suggestion of combining different internationalisation theories' contributions. Some of the most evident would be the analysis of Dunning's ownership, location and internalisation advantages (Dunning, 1988), the alignment of the firm's resources and capabilities to the country's location advantages (Teece, 2014) and Porter's (1998) technology cluster analysis approach.

The following methodology section provides a clearer description of the framework developed and further indication of the chosen criteria literature basis.

Chapter 2
Methodology

1. Research Design

As previously mentioned, the aim of this project-based dissertation is to analyse the region of South America and provide recommendations to Mobica regarding the selected location for establishing a new site. In order to achieve that, the researcher has developed a comprehensive framework designed to assess and select foreign markets which, despite being applied to the specific area of South America, is susceptible of application in future similar cases.

The chosen research design will be the qualitative approach. Qualitative research can be defined as "…a naturalistic, interpretative approach concerned with understanding the meanings which people attach to phenomena (actions, beliefs, values etc) within their social worlds" (Snape and Spencer 2003 in (Ritchie & Lewis, 2003)). It is used to provide a qualitative understanding of a certain context or phenomenon. Some of the main advantages of adopting the qualitative research design for international market selection is that, unlike quantitative research, qualitative research allows the use of a small sample representative of the phenomenon under investigation, the use of various sources of information as well as analysing both numeric and non-numeric criteria for providing an in-depth understanding and description of the phenomenon (Kumar, et al., 1994).

2. Research Method

As previously mentioned, the international market selection literature shows no consensus regarding methodology (Papadoulos, et al., 2002).

However, the proposed methodology for this project is the systematic contractible international market selection approach through a three-stage ranking method. This can be justified for the following main reasons:

a) The purpose of this dissertation is to develop a robust analytic decision-making framework that allows the company to choose the optimal location within South America to invest in a fully-owned research and development centre. As stated by Papadoulos, et al. (2002), a useful international market selection model must be relatively simple and generalizable, but also strategic and industry-specific. For this purpose, it makes only sense to adopt a systematic approach, in order to provide the company with a logical structure which can be adopted in future similar studies.

b) A systematic contractible ranking method allows a customized adaptation of the three-stage international selection model to the firm's specific internationalisation criteria and objectives;

c) Finally, it allows taking into consideration not only macro and micro-level information, but also firm-level information, namely strategic goals and resource constraints (Kumar, et al., 1994).

According to Andersen and Buvik (2002), the systematic contractible approach involves the following steps:

1) Problem definition and scope: the problem revolves around which South American country better serves Mobica's internationalisation objectives, from which decisions such as the choice of entry mode are excluded for they have

already been decided – in this case, the firm has previously decided to adopt a fully-owned FDI strategy.

2) <u>Internationalisation criteria identification</u>: these correspond to the relevant objectives of the firm for the process of internationalisation, which the researcher must be able to categorise into a hierarchy of importance (Schoemaker & Russo, 1993). These criteria will be identified according to relevant academic literature and according to the firm's contribution and requirements.

3) <u>Criteria weighting</u>: each criterion must be assigned a relative importance score.

4) <u>Alternatives' identification</u>: selecting the initial list of possible country/ market alternatives - this company-based project will focus on the South American market according to the company's request.

5) <u>Alternative testing</u>: each alternative, i.e., each South American country, must be tested against the information collected for each criterion.

6) <u>Determining the optimal choice</u>: through a selected ranking method, each alternative will be ranked according to the results achieved on the previous step. The alternative ranked the highest is considered the optimal decision.

3. Analysis Framework

The proposed methodology takes the form of a funnel-type framework based on a three-stage ranking model, adapted from the basic three-level IMS theories (Kumar, et al. (1994), Cavusgil (1985) and Root (1994)):

Firstly, identify a group of potential South American countries according to general macro-level criteria - screening stage;

Secondly, identify one country as the most attractive alternative through an extended list of micro-level criteria - identification stage;

Thirdly, according to an agreed list with the company of critical operational factors, identify the three best possible cities within the country and recommend a final one - final selection stage.

Finally, recommendations are provided regarding one specific city within the chosen country according to the findings of each final stage indicator as well as any other relevant information on the location's business context and technological sector.

Screening Stage: Macro-level Analysis

Identification Stage: Micro-level Analysis

Final Selection Stage: City-level Analysis
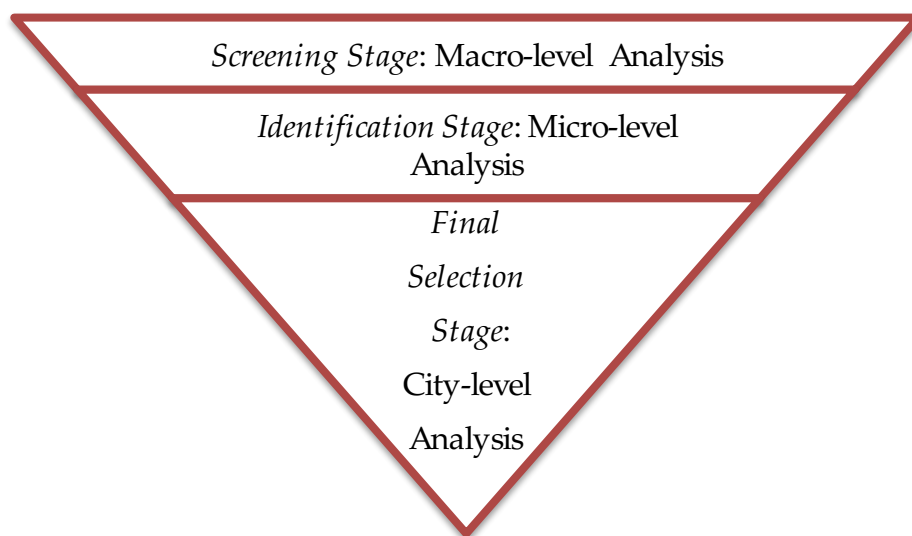
Figure 1: Proposed Funnel-type Framework

4. Selection of Criteria

The criteria used in each stage have been selected based on the relevant literature, the firm's strategic objectives and internationalisation goals, resource and capabilities structure as well as the author's perception of criteria suitability.

The following table provides a brief summary of relevant academic literature, its main contribution regarding important international market selection criteria and identified research gaps.

Author(s)	Theory	Research Strengths/ Research Gaps
Cavusgil (1985)	The author recommends a sequential screening process through a variety of criteria a firm must consider when researching foreign export markets: 1. Preliminary screening: assess the demographic, political, economic and social/cultural environment 2. Industry Market Potential: analysis of the market access, product potential and local production and distribution 3. Company Sales Potential:	The article intends to guide firms aiming to choose foreign markets where to target their exports. Hence, the components of sales/ product potential and local distribution are emphasised, which, for the purpose of this project, are not relevant given that the company does not intend to sell on the selected foreign market in the short/medium term.

	Sales volume forecasting, landed cost and internal distributions costs.	
Porter (1990, 1998), Furman, et al. (2002)	Porter's National Diamond framework states that a country possesses a comparative advantage when certain conditions are met: 1. Factor conditions: the availability of factors of production necessary for the industry. However Porter, unlike the classic International Business theories, argues that is not so much the nation's factors stock that matters, but rather its ability for factor creation and upgrade. 2. Demand conditions: the home-market demand characteristics. The more demanding and sophisticated local buyers are, the more	Overall, the national diamond framework defends that its four dimensions form the basis for innovation clusters, i.e., geographically concentrated groups of interlinked companies and institutions within a certain industry (Porter, 1990). The greater the intensity of the linkages within the cluster, the greater the promotion of information and technology flows, favouring better access to employees, suppliers, buyers, etc. this, on the other hand, favours productivity, investment and new business formation (Porter, 1998). This leads to greater national innovative capacity, which is highly determined not only by the nation's general pool of resources, institutions and

pressure companies get to continuously improve and innovate.

3. Related and Supporting Industries: Porter argues that more important than the presence of supporting industries, is the maintenance of close relationships that provides an advantage for cost-efficiency, innovation and knowledge spillovers.

4. Firm Strategy, Structure, and Rivalry: how local rivalry, institutions and policies and the firm's own characteristics promote motivation for innovation, upgrading and investment.

innovation policies, but also the existence of industrial clusters and the extent to which they foster innovation and, most importantly, the quality of linkages between the two (Furman, et al., 2002).

These theories have particularly important implications for this project, for they introduce a number of crucial factors to be considered in international market selection. Given that Mobica is a high-technology sector company, the importance of national innovation clusters is even more aggravated and may be particularly interesting for the city-level analysis approach.

| **Rahman (2003, 2006)** | The author suggests a two-stage model approach:

1) The first stage tries to | The country's market attractiveness is evaluated according to the firm's resources and international |

assess the size and growth attractiveness of the foreign market, through macro and micro-economic variables as well as some firm related factors:

Macro-economic: GNP; GNP growth rate; Inflation rate; Population size; Size of middle class; Literacy rate; Currency reserve; Stability of exchange rate;

Micro-economic: Current and future demand level; Local production; Trade figures; Competition intensity (current and potential)

Firm's International Business capabilities: Firms' objectives; Resources and capabilities (current and acquirable); Managers' judgement

2) The second stage considers the country's structural attractiveness: costs, infrastructures, government business capabilities, therefore considering the competitive advantage achieved through matching a firm's resources and capabilities to the market's requirements. The author duly points out the difficulty in assessing market potential for developing countries: absolute market size is not enough. Rahman (2006) criticises most international market selection models for not considering the firm's internationalisation strategy, which may vary from a low cost sourcing strategy to specialized selling goals, for example. By identifying important strategic variables for Australian international business, Rahman alerts for the fact that the chosen foreign market must fit with the firm's own operation policies as well as its competitive advantages, existing markets as well as resources and capabilities.

Moreover, the second-level

	policy and firm's own business operation policies.	analysis of structural attractiveness tries to ensure that there is no lack of profit potential nor infrastructural compatibility needed to guarantee a successful market entry. However, the micro-economic analysis is mainly focused on product and demand potential which is not specifically important for this project.
Sakarya & Eckman (2007)	The proposed specialized approach to market assessment introduces the future market potential of the emerging markets, the cultural distance between these markets and the country of origin, their competitive strength in the specific industry under analysis (in this case, the technology sector – more specifically, software and app development), and customer receptiveness to the products of the foreign industry and its country of	Sakarya and Eckman (2007) alert for the fact that an international market selection model for emerging economies must be able to assess their long-term growth opportunity, which most developed and saturated markets no longer have. It is not a substitute for existing models, but rather intends to complement them by adding new criteria specific for emerging markets. The study introduces the important criterion of the

origin as new dimensions to complement existing IMS criteria.

According to Sakarya and Eckman (2007), this approach attempts to capture:

1. The dynamism of emerging markets: long-term market potential assessment is demand-driven, instead of risk-driven.

2. The country's heterogeneity: assesses the specific industry's competitive strength through Porter's national diamond framework.

3. The perception of uncertainty through the cultural distance based on Hofstede's national culture dimensions.

4. The commercial and political risk: customer receptiveness on the economic, social and political impact of foreign activities; acceptance of products and services; industry competitiveness, through Porter's national diamond framework, claiming that many emerging markets have specific favourable factor and demand conditions which grant them comparative advantage and investment opportunities.

perceptions of its offers in

relation to local ones.

Table 2: Summary of Important Literature Contributions and Research Gaps

From the previous table two important conclusions follow regarding the choice of international market selection criteria for this project:

The model must not ignore the location's fit with the firm's international business capabilities and strategy. Specifically for this project, the location chosen must provide the necessary conditions for the establishment of a research and development centre, with a focus on cost-efficiency and productivity through the availability of low-cost labour but also specialized in the technological sector.

The city-level approach must take a cluster-based analysis approach, in order to guarantee that the city chosen assembles the characteristics of an innovation cluster in order to account for the heterogeneity of the country (Sakarya & Eckman, 2007).

Finally, the chosen criteria and correspondent justification are identified in the following tables:

4.1 Macro-level Analysis

Criteria	Justification
Ease of Doing Business **(World Bank, 2015)**	A World Bank index which compounds the indicators "starting a business"; "dealing with construction permits"; "getting electricity"; "registering property"; "getting credit"; "protecting minority investors"; "paying taxes"; "trading across borders"; "enforcing contracts"; "resolving insolvency". Its goal is to provide an overview of local business environment.
Inflation Rate **Inflation Growth Forecast**	Two macroeconomic variables with the purpose of assessing consumer prices stability, which highly influences market attractiveness (Cavusgil (1985), Rahman (2003)).
Political Stability	An important variable that assesses the political and social context of each country.
GNI per capita PPP	As an indicator of household income, GNI per capita conveys a general picture of each country's individual income level. This is an important factor given the company's requirement for a low-cost labour location.

Table 3: Selected Macro-level Criteria

4.2 Micro-level Analysis

Criteria	Justification
1. Employee Costs	This criterion, crucial for the low-cost strategy that the company wishes to pursue, is composed of four specific indicators: industry salaries average, salary inflation, employer payroll taxes and statutory benefits. The company's logic behind the choice of these indicators also lies in the fact that they wish to avoid past and current problems, such as the extremely high non-salary employee costs in Mexico and the rapidly growing salary inflation in Poland.
2. Employee Attrition Rate	By maintaining some long-term projects with important international customers, much of Mobica's operations lie on maintenance and support activities. In the past, Mobica has found that this can be highly demotivating, especially for young graduates, therefore indicating employee attrition as an important criterion.
3. Technology exports	The purpose of this criterion is to indicate the country's capacity to generate high-technology exports, therefore providing a perception of the country's technological capacity.
4. Engineering Pool	The purpose of this criterion is to indicate the

	availability of engineers in the country, given that these are the main type of local workers the company wishes to hire.
5. Technical Degree Quality	The purpose of this criterion is to indicate the academic quality and reputation of the main technical degrees the company wishes to hire from: Computer Science, Software Engineering, Telecommunications, Electronics and Computer Systems Engineering.
6. Labour Union Power	This criterion should indicate the bargaining power and implicit costs from labour unions, which is mainly motivated by the company's bad experience regarding the company's operations in Mexico.
7. Bureaucracy	This criterion is also motivated by Mexico's bad experience regarding the high amounts of administrative bureaucracy, which the company wishes to avoid in the new selected foreign market.
8. Government Policies	A policy criterion composed of highly relevant indicators which attempt to portray the regulatory context. These indicators are corporate profit tax rate, international property rights law and profit repatriation restrictions. A fourth proposed indicator is VISAS' availability justified by the international dimension of Mobica. The new selected foreign market must grant good

	employee mobility conditions in order to serve the firm's already established markets, especially the USA which is one of their most important markets, particularly concerning sales potential.
9.Trade Barriers	The purpose of this criterion is to indicate the country's openness to trade by analysing government-imposed trade restrictions. Despite not directly affecting Mobica's core business given that it is a technological service provider business, it can have important implications on its value chain.
10. Cultural Distance	This criterion attempts to capture the country's work-based values differences from the company's home market, which is a critical aspect for multinational firms and contributes for the level of uncertainty (Sakarya & Eckman, 2007).

Table 4: Selected Micro-level Criteria

4.3 City-level Analysis

Criteria	Justification
Presence of Supporting Industries	One of Porter's key national diamond framework (Porter, 1990), the presence of related and supporting industries guarantees for cost-efficiency and good company performance.
Availability of Infrastructures	Related to each location's structural attractiveness (Rahman, 2003), the quality of infrastructures is paramount for the success of the company's operations.
Local Government's Grants and Incentives	The purpose of this criterion is to capture how local government might be taking initiatives to capture investment and foster national innovation (Porter, 1990).
Fit with Firm's Profit Expectations	The selected foreign market must fit with the firm's costs and profit expectations (Rahman, 2006).
City Life Quality	An important indicator for employee high engagement and low turnover purposes.

Table 5: Selected City-level Criteria

Screening Stage: Macro-level Analysis

Ease of doing business

Inflation Rate

Inflation Growth Forecast

Political Stability

GNI per capita

Identification Stage: Micro-level Analysis

Employee Costs

Employee Attrition Rate

Technology exports

Engineering Pool

Technical Degree Quality

Labour Union Power

Bureaucracy

Government Policies

Trade barriers

Cultural Distance

Final Selection: City-level

Supporting industries' presence

Availability of infrastructures

Local Government Grants and Incentives

Fit with firm's profit expectations

City Life Quality

Figure 2: Representation of the funnel-framework with the international market selection criteria

5. Criteria Weighting Method - AHP

As stated by Andersen and Buvik (2002), after having selected the relevant criteria for the international market selection process, the researcher must attribute weights to each indicator according to their relative importance.

However, as duly pointed out by Papadoulos, et al. (2002), there is no consensus in which indicators to use for measuring the criteria nor which method to use to define each criterion's weight. However, as previously mentioned in the literature review section, many studies use multiple-criteria aiding methods (Kumar, et al., 1994), which allows developing a flexible framework which can include a great variety of criteria.

For the purpose of this project, the researcher proposes a methodology consisting of an adaptation of the Analytic Hierarchy Process AHP (Saaty, 2000) to the proposed foreign market selection framework, which was both approved by the client and the research supervisor.

The AHP has long been recognised as an extremely useful method to adopt a hierarchic structure of the decision-making process which allows a meticulous approach through the use of both numeric and non-numeric criteria, involving multiple time periods, as well as helping the researcher decide between criteria trade-offs. It is structured in five main steps:

1. Development of a decision problem hierarchy comprising the target (market selection), the alternatives (South American markets) and criteria and sub-criteria (macro, micro and city-level) according to relevant literature and firm insight.

2. Acquisition of data needed to produce pair-wise comparisons matrices of each criterion accounting for the target, each sub-criterion accounting for the main criteria, and each alternative accounting for all the criteria.

3. Synthesis of each comparison to develop a priority hierarchy.

4. Inconsistency analysis, where inconsistency rates are computed to determine possible errors. If the inconsistency rate is not desirable, the comparison process must be repeated.

5. If inconsistency rates are desirable, the priority levels determined through the pair-wised comparisons are used to determine the relative weights of each criterion.

Despite the already mentioned advantages of AHP, the researcher investigated whether or not this method can be applicable to all three stages of the proposed international market selection framework. Some researchers suggest that the ranking model must be only applied to the initial screening (Cavusgil, 1985). Saaty and Vargas (2012) use the Analytic Hierarchy Process approach for the purpose of assessing market attractiveness by determining the macroeconomic factors such as economic indicators (Risk of direct investment; GDP growth rate; Current account over GDP; GDP per capita; Inflation Rate) and political indicators (Turmoil; Strategic Relevance). The study focuses on the analysis of market attractiveness in developing countries, which is particularly relevant for the analysis of South America, highlighting the importance of political factors. The study does not consider any other level of analysis other than the macroeconomic environment.

However, other scholars such as Kumar, et al. (1994) defend that this approach can be used for the identification and final selection stages, claiming that AHP provides valuable help for decision makers when it comes to evaluate the specific trade-offs between the different alternatives.

6. Data Collection

The methods employed for data collection are strictly related to the International Market Selection model stages. As already mentioned, it is composed by three different stages of analysis: firstly, a screening stage widely reliable in macro-level data; secondly, an identification stage mostly focused on industry micro-level data; and thirdly, a final selection stage mostly oriented by firm-specific requirements and city-level data.

Therefore, depending on the level of primary and secondary data needed for each stage of analysis, different data collection methods will be employed. As argued by Kumar, et al., (1994), while the first two stages of analysis are mostly dependent on secondary data, the final selection stage requires a more detailed analysis based on primary data regarding the firm's needs and strategic goals, as well as resource constraints.

The collection methods employed were mainly focused on collecting secondary data through documentation and evidence from reputable sources such as databases, study reports as well as company insight (see Appendix 1 for collected data).

The data collection followed the three stages of the analysis and can be structured as follows:

6.1 Macro-level Analysis Criteria Indicators

Criteria	Indicator / Proxy (Source)	Justification for Proxy
Ease of Doing Business	2015 Index from World Bank

(World Bank, 2015) | n/a |
| **Inflation Rate** | Consumer prices' annual | n/a |

	percent change in 2015 data.[1] (International Monetary Fund, 2016)	
Inflation Growth Forecast	Consumer prices' annual percent change – projections for 2021. (International Monetary Fund, 2016)	n/a
Political Stability	Corruption Perceptions Index 2015 (Transparency International, 2015)	Index computed by Transparency International providing a perception on the corruption level for each country.
GNI per capita PPP	GNI per capita PPP 2015.[2] (World Bank, 2015)	n/a

Table 6: Selected Macro-level Criteria Indicators

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[1] Note: the data used for Argentina is related to the year 2016 due to unavailable data for 2015.

[2] Note: the data used for Argentina is related to the year 2011, the country's last measured value for GNI per capita.

6.2 Micro-level Indicators

Criteria	Indicator/ Proxy (Source)	Justification for Proxy
1. Employee Costs		
a) Industry Salaries Average	Average salary of software engineers for each country. (PayScale, 2016)	The choice of the software engineer for indicating the industry's average salaries is justified by the fact that it is indicated by Mobica as one of the most common and important functions among its employee pool.
b) Salary Inflation	Consumer prices' annual percent change in 2015 data. (International Monetary Fund, 2016)	There are no data available, therefore real inflation rate will be used as a proxy, assuming that wages' growth will keep up with consumer prices' inflation in order to stabilise purchasing power.
c) Employer Payroll Taxes	Social Security contributions by the employer in each country. (Social Security Administration, 2016)	Social security contributions are proposed as a proxy given that it takes up for the largest part of employer payroll taxes.
d) Statutory Benefits	The OECD indicators on Employment Protection	Employment protection legislation indicators assess

	Legislation. (OECD, 2014)	the country's regulation strictness regarding the use of temporary contracts and dismissal.
2. Employee Attrition Rate	Employment engagement percentage in each country. (Gallup, 2013)	Due to the unavailability of employee attrition data, employment engagement rate is used instead to indicate employees' general work motivation and identification.
3. Technology exports	High-technology exports (% of manufactured exports) (World Bank, 2014)	n/a
4. Engineering Pool	Gross enrolment ratio in tertiary education by both sexes (%) (World Bank, 2016)	There are no available direct data on the engineering university enrolment; gross enrolment ratio in tertiary education by both sexes (%) is used as a proxy for employee availability.
5. Technical Degree Quality	Number of universities listed in the top 200 QS University Rankings for Latin America 2016 for each country. (QS Quacquarelli Symonds	Proxy for the reputation of the national academic institutions.

		Limited, 2016)
6. Labour Union Power	Trade Union Density Rate. (International Labour Organisation, 2016)	Trade union density rate indicates the percentage of the total number of employees that is composed by union members.
7. Bureaucracy	Trading Across Borders Rank (World Bank, 2016)	Trading Across Borders is an index which conveys the necessary procedural and bureaucratic requirements for importing and importing activities in each country.
8. Government Policies		
a) Profit Taxes	Corporate Tax Income Rate (Deloitte International Tax Source, 2016)	n/a
b) IPR law	International Property Rights Index 2016 (Property Rights Alliance, 2016)	n/a
c) Profit Repatriation Restrictions	Profit Withholding Tax Rate (Deloitte International Tax Source, 2016)	n/a
d) VISAS availability	Passport Power Index (PASSPORT INDEX, 2016)	The Passport Power Index ranks each country according to its VISA-free destinations possibilities

		and perception abroad.
9.Trade Barriers	Trade Freedom Index (The Heritage Foundation, 2016)	Trade freedom measures each country's trade barriers.
10. Cultural Distance	Cultural Distance Rate (Hofstede, et al., 2010)	Considered the most comprehensive and generally accepted national culture framework, cultural distance measures the differences between countries regarding work-related values.[3]

Table 7: Selected Micro-level Criteria Indicators

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[3] Cultural distance is composed of six indicators: power distance; individualism vs. collectivism; masculinity vs. femininity; uncertainty avoidance; long term vs. short term orientation; and indulgence vs. restraint. (Hofstede, et al., 2010)

6.3 City-level Indicators

Criteria	Indicator/ Proxy (Source)	Justification for Proxy
Presence of Supporting Industries	Nearby universities and administrative, financial and legal services. Source: Google Maps	Indicator composed of the company's required industries.
Availability of Infrastructures	Nearby airports proximity and number of connections and highway/ road connections. Source: Google Maps	Indicator composed of the company's required infrastructures. Railway connections are not considered given that in Chile, due to the territory characteristics, the main transportation is the bus system which operates throughout the entire territory.
Local Government's Grants and Incentives	Presence of Free Trade Zones. (Cámara Oficial Española de Comercio de Chile, 2016)	Given that the legislation is only available at the national scale, the presence of Free Trade Zones is used as a local indicator for government incentives.
Fit with Firm's Profit	Cost of Living Index	Due to the importance of

Expectations	(Expatistan, 2016)	operating costs, the Cost of Living Index is used as a proxy for the location costs.
City Life Quality	Data only available for a very small number of cities. Due to the very low importance weight attributed, this criterion is dropped.	n/a

Table 8: Selected City-level Criteria Indicators

Chapter 3
SMEs and Internationalisation into South America

As previously mentioned, this study consists of a company-based project addressing Mobica's, an UK software engineering and integration services company, request to find a new South American market where to internationalise its research and development activities.

In this context, two main aspects must be taken into consideration: firstly, the specificities and vulnerabilities of technology-intensive small-medium enterprises' internationalisation processes; secondly, the opportunities and risks associated to firms' international expansion into developing and emerging markets such as happens in the majority of the South American market. This section attempts to address both of these two aspects by providing a brief summary of relevant associated literature.

Traditional internationalisation stage theories defend that firms will tend to internationalise according to an incremental learning process, where the accumulation of knowledge and reduction of psychic distance guide the international locational decisions (Johanson & Valne, 1977). This traditional approach, however, has been increasingly contradicted by technology-intensive small and medium enterprises which, due to limited resources, cannot afford to wait for increased ownership advantages (Coeurderoy & Murray, 2008).

These firms are often characterised by outstanding technology knowledge and capabilities, which associated to the dynamic pace of high-tech markets,

tend to incentivise their fast internationalisation (Cricka & Spence, 2005). Despite their often limited market knowledge, successful high-tech SMEs tend to be the ones who manage to quickly identify and react to international market opportunities. Hence, on the contrary of what stage theory predicts, high-tech SMEs' international expansion is much more influenced by unplanned decision processes based on international entrepreneurship and short-term goals than systematic and planned processes.

Cricka and Spence (2005), therefore, argue that resource-based and social network internationalisation theories play a relevant role in explaining the international expansion of high-tech SMEs. Based on the theory that valuable, rare, inimitable and non-substitutable resources are crucial for sustaining competitive advantage (Barney, 1991), the authors argue that the international orientation of the entrepreneur are particularly important for SMEs' internationalisation. Given the firms' smaller size, the managerial influence is greater and, therefore, the bigger the international openness learning capacity the management team has, the better they will be at identifying and assessing international market opportunities.

Furthermore, initial international expansion by technology-intensive SMEs is often highly reliable on business networks for the purpose of reducing uncertainty and establishing trustworthy long-term business relations (Lindqvist, 1997). This helps firms gain market insight and overcome resource and capabilities constraints through the development of relation synergies and complementary capabilities. Therefore, networking events and initiatives often influence these firms' internationalisation and market entry decisions (Coviello & Munro, 1997). However, Cricka and Spence (2005) note that international entrepreneurship play a decisive role here too: how managers explore business opportunities from these events or have the necessary experience to do so may vary a lot from firm to firm. Therefore, the management of established relationships but also the capability of identifying new network opportunities is

a crucial entrepreneurial capability for international expansion success (Coviello & Munro, 1997).

Coeurderoy and Murray (2008) point out that, although high-tech SMEs' commonly possess this international orientation and easy adaptability to different markets, it does not make them less vulnerable to international market selection risks. In fact, the authors argue that these firms often suffer from resource and experience shortages which tend to make them more averse to transaction costs uncertainty, which highly influences not only their decision to internationalise, but also speed of the process and the markets selected. Moreover, these firms are more likely to search for foreign markets where regulatory environments promote intellectual property rights protection.

The authors argue that it is not just the additional transaction costs that matter, but rather how new market uncertainty and risks substantially increase failure possibility. Hence, once again, it is noted that factors such as intellectual capital imitation hazards and international management team experience often play a more decisive role in market selection that psychic or cultural distance.

Particularly relevant for this project, Castellani, et al. (2013) point out that the reason behind the increasing choice of remote locations for R&D activities' international expansion is not only linked to the codified and tacit nature of firms' internal knowledge transfer and the need to access knowledge located in specialised, and often far away, technology clusters, but also affected by institutional proximity which often helps explain more R&D location than geographic proximity. Hence, it is particularly important that technology-intensive firms are able to implement and upgrade organisational structures that facilitate knowledge transfer and gain national institutional insight, especially in emerging and developing countries. Here, it is specifically important that high-tech SMEs, especially those coming from countries with low corruption levels, learn how to operate and deal with weak institutions (Godinez & Liu, 2015).

1. Implications for Mobica

It is now evident that the success of technology-intensive SMEs' international expansion does not only derive from access to cost or resource advantages, or even access to valuable cluster concentrated knowledge. Often the high performance technology firms are those which tend to acquire and value international experience in identifying and accessing market opportunities.

Another important conclusion is the fact that networking and establishment of long-term relationships is crucial for the definition of market entry strategy. Moreover, as stated by Moen et al. (2004), a key challenge for high-tech SMEs consists of finding an equilibrium between sustaining these existing relationships and exploring new ones.

Finally, institutional and regulatory environments are also an important variable to consider, especially in more volatile environments such as the South American market. Again, despite the many advantages this market has to offer, the company has to be aware of the institutional differences and invest on the acquisition of managerial local experience as well as the capacity of operating in more challenging markets. This is particularly important for the choice of market entry, as well as the definition of important strategic local partnerships that can help acquire local market insight.

Chapter 4
Analysis and Findings

After having defined and agreed with the company on the list of relevant criteria and sub-criteria, the attribution of relative importance weights to each criterion is developed through the application of the Analytic Hierarchy Process. This section describes the development of the AHP model and summarizes and discusses the main findings from the analysis.

1. Hierarchical Model Structure

The first step of the AHP methodology requires the definition of a hierarchical structure for the decision problem. This structure is composed by the main target, each level of criteria and sub-criteria and the different alternatives under analysis.

Normally, this structure aggregates the whole decision problem, including every level of the analysis. However, for the purpose of adapting the methodology to a three-stage international market selection framework, this analysis is conducted through the application of three inter-linked decision problem hierarchical structures. Hence, both the analysis and findings are connected and, therefore, are described jointly for the purpose of logical understanding.

The first hierarchical diagram corresponds to the first level of analysis whose main target corresponds to the pre-screening of countries with the goal of identifying a short list of potential countries out of the initial list of alternatives. This initial alternatives' list is composed of twelve independent South American countries, namely: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela. [4] This pre-screening analysis is made according to only one level of the previously selected list of criteria
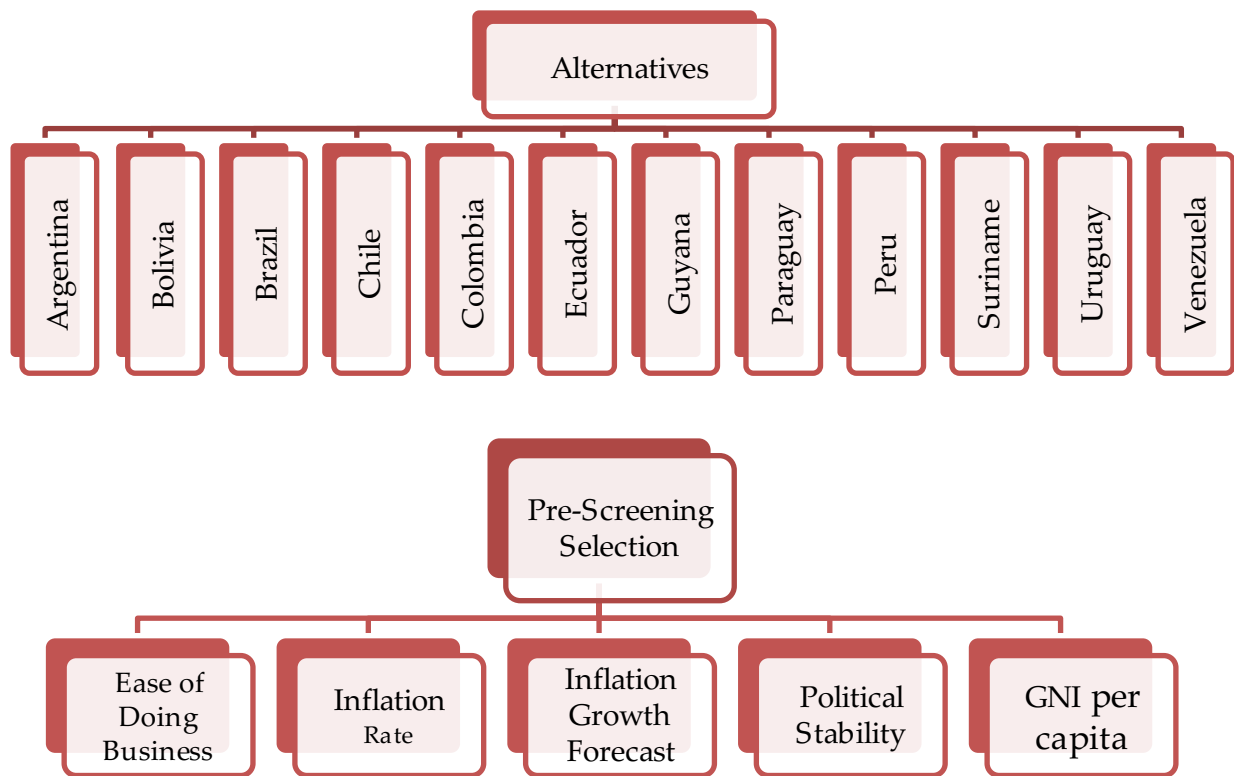
Figure 3: Illustrative decision hierarchy for the pre-screening stage of analysis.

The second hierarchical structure corresponds to the second level of analysis whose target is the identification of a final suitable country. This structure is composed of a first level of criteria composed of ten different indicators, and a

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[4] For the purpose of analysis simplicity and data availability, French Guiana and the Falkland Islands (UK) were excluded from the analysis, given that these are, respectively, French and British overseas territories and not fully independent South American countries.

second level of sub-criteria, corresponding to four indicators for the employee costs' criterion and four indicators for the government policies' criterion. The list of alternatives corresponds to four countries, namely Chile, Colombia, Peru and Uruguay, which were identified based on the previous pre-screening level of analysis.
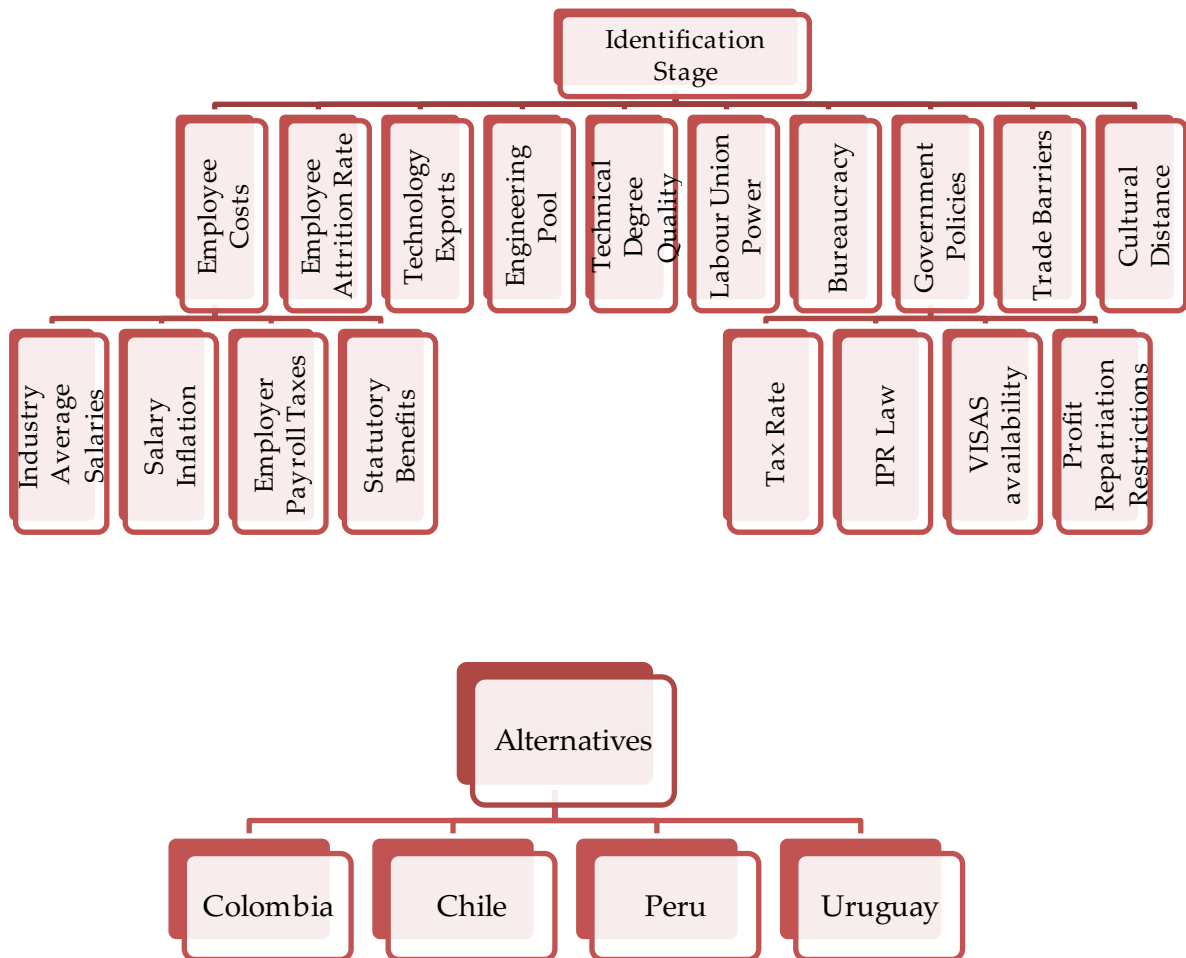
Figure 4: Illustrative decision hierarchy for the identification stage of analysis.

The final hierarchical structure corresponds to the third level of analysis whose target is the final selection city within the previously identified country - Chile. This structure is composed of one level of criteria composed of four different indicators. The list of alternatives corresponds to the top ten most populated cities in Chile according to World Population Review (2016):

Santiago, Antofagasta, Viña del Mar, Valparaíso, Talcahuano, San Bernardo, Temuco, Iquique, and Concepción.
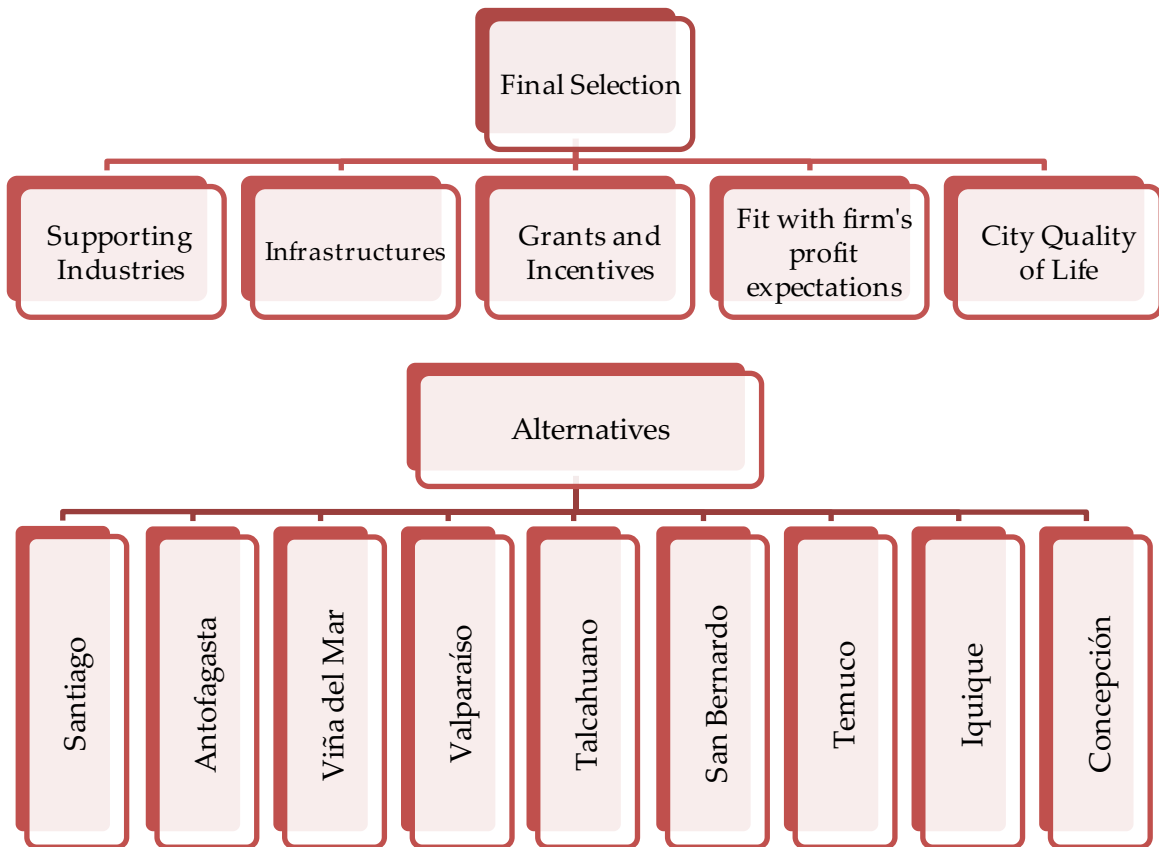
Figure 5: Illustrative decision hierarchy for the final selection stage of analysis.

2. Data Collection for the Pair-wise Comparisons

For the purpose of acquiring the data needed to produce the pair-wise comparisons, the researcher adopted the AHP survey format developed by Saaty (1980) designed to evaluate the perceived relative importance of each criterion (see Appendix 2). As stated by Cheng & Li (2002) the AHP survey requires logical and analytical reasoning and, therefore, it is not advisable to use a large sample of answers, given that this often leads respondents to provide arbitrary and inconsistent answers. Hence, the survey was conducted by only three respondents from Mobica's staff who are professionals directly implicated in the firm's internationalisation strategy.

The AHP survey asks respondents to complete judgement matrices according to Saaty's AHP pair-wise comparison scale:

Importance Degree	Definition
1/9	Extremely less important
1/7	Very strongly less important
1/5	Strongly less important
1/3	Moderately less important
1	**Equally important**
3	Moderately more important
5	Strongly more important
7	Very strongly more important
9	Extremely more important
1/8, 1/6, 1/4, 1/2 2, 4, 6, 8	Intermediate values

Table 9: AHP pair-wise comparison scale (Saaty, 1980)

An example of a pair-wise comparison matrix from one respondent is provided next regarding the first stage of analysis (pre-screening stage):

1. Macro-level Analysis	Ease of Doing Business	Inflation Rate	Inflation Growth Forecast	Political Stability	GNI per capita
Ease of Doing Business	**1**	4	3	3	1
Inflation Rate	1/4	**1**	1	1/3	1
Inflation Growth Forecast	1/3	1	**1**	1/3	1
Political Stability	1/3	3	3	**1**	1/2
GNI per capita	1	1	1	2	**1**

Table 10: Pair-wise Comparison Example

For example, this respondent considers that a good ease of doing business is moderately more important than the country's current inflation rate, inflation growth forecast and political stability. However, it is considered as equally important as the criterion GNI per capita, given that this is an indication of country's average household income and, therefore, provides a perspective on the countries' relative differences in salaries.

3. Development of a Priority Hierarchy

After gathering all three AHP survey respondents' answers, each judgement matrix was analysed and used to compute the final normalised matrices. These matrices are computed by averaging the answers from each respondent, based on the assumption that all three respondents' judgement is equally important.

1. Macro-level Analysis	Ease of Doing Business	Inflation Rate	Inflation Growth Forecast	Political Stability	GNI per capita
Ease of Doing Business	**1**	5	4	3	3
Inflation Rate	1/5	**1**	2	1	1
Inflation Growth Forecast	1/4	1/2	**1**	1	1
Political Stability	1/3	1	1	**1**	1
GNI per capita	1/3	1	1	1	**1**

Table 11: Normalised Macro-level Matrix

2. Micro-level Analysis	Employee Costs	Employee Attrition Rate	Technology Exports	Engineering Pool	Technical Degree Quality	Labour Union Power	Bureaucracy	Government Policies	Trade Barriers	Cultural Distance
Employee Costs	1	2	1	3	3	5	4	1	3	1
Employee Attrition Rate	-	1	5	1	1	4	3	1	3	1
Technology Exports	-	-	1	1/3	1	2	1	1	1/2	1
Engineering Pool	-	-	-	1	1	5	4	3	3	2
Technical Degree Quality	-	-	-	-	1	6	5	4	3	1
Labour Union Power	-	-	-	-	-	1	1/2	1	1/2	1/3
Bureaucracy	-	-	-	-	-	-	1	1	1	1
Government Policies	-	-	-	-	-		-	1	1	1
Trade Barriers	-	-	-	-	-	-	-	-	1	2
Cultural Distance	-	-	-	-	-	-	-	-	-	1

Table 12: Normalised Micro-level Matrix

2.1) Micro-level Analysis - Employee Costs Sub-criteria	Profit Taxes	IPR law	Profit Repatriation Restrictions	VISAS availability
Industry Salaries Average	**1**	2	2	3
Salary Inflation	-	**1**	3	2
Employer Payroll Taxes	-	-	**1**	1
Statutory Benefits	-	-	-	**1**
2.2) Micro-level Analysis – Government Policies Sub-criteria	**Industry Salaries Average**	**Salary Inflation**	**Employer Payroll Taxes**	Statutory Benefits
Profit Taxes	**1**	4	2	2
IPR law	-	**1**	1	1
Profit Repatriation Restrictions	-	-	**1**	1
VISAS availability	**-**	**-**	**-**	**1**

Table 13: Normalised Micro-level Sub-criteria Matrices

3. City-level Analysis	Presence of Supporting Industries	Availability of Infrastructures	Local Government Grants and Incentives	Fit with firm's profit expectations	City Quality of Life
Presence of Supporting Industries	**1**	2	3	1	**5**
Availability of Infrastructures	-	**1**	2	1/4	**5**
Local Government Grants and Incentives	-	-	**1**	1/4	**2**
Fit with firm's profit expectations	-	-	4	**1**	**7**
City Quality of Life	-	-	-	-	**1**

Table 14: Normalised City-level Matrix

The interpretation of the respondents' judgements is similar to the previous interpretation of the pair-wise comparison example in Table 10. Some of the most striking findings from the normalised macro-level matrix (see Table 11) relate to the consensual higher importance of the criterion "ease of doing business" in comparison to all the other four criteria "inflation rate", "inflation growth forecast", "political stability" and "GNI per capita". Moreover, despite "inflation rate" being considered moderately more important than "inflation growth forecast", all the other comparisons indicate the criteria as equally important amongst themselves.

Regarding the normalised micro-level matrix (see Table 12), as one would expect, the criterion "employee costs" is consistently considered more important than all other criteria, with the exception of being considered as equally important as "government policies", "cultural distance" and, surprisingly, the country's "technology exports". On the other hand, "employee attrition rate" is considered strongly more important than "technology exports" as well as "labour union power". General conclusions from this matrix indicate that the criteria "engineering pool" and "technical degree quality", which attempt to provide a perspective on the country's availability and quality of professionals, tend to be considered more important than all other criteria, especially "labour union power", "bureaucracy" and "government policies".

Furthermore, the normalised micro-level sub-criteria matrices (see Table 13) provide predictable interpretations, indicating the criteria "industry salaries average" and "salary inflation" as the most important employee costs' sub-criteria and profit taxes as consensually more important than all other government policies' sub-criteria.

Finally, the normalised city-level matrix (see Table 14) indicates that both criteria "Presence of supporting industries" and "Fit with firm's profit expectations" are considered as equally important between themselves and more important than all other criteria. "City Quality of Life" is consistently considered much less important than the other criteria.

Some of the incongruences in the interpretation of the respondents' judgements result from the subjectivity of the decision-makers' trade-offs analysis as well as from the already pointed out disadvantage of the AHP methodology regarding the difficulty in interpretation associated to the interdependence of criteria. (see Table 1)

These normalised matrices provide a synthesis of the pair-wise comparisons' judgements and are used to compute the priority weights of all criteria and sub-criteria.[5] These can be summarised in the following table:

Macro – level Criteria	Weights assigned by AHP
Ease of Doing Business	47,10%
Inflation rate	12,60%
Inflation growth forecast	11,70%
Political Stability	14,30%
GNI per capita	14,30%
Micro-level Criteria	**Weights assigned by AHP**
Employee Costs	20,3%
Employee Attrition Rate	12,6%
Technology Exports	8,2%
Engineering Pool	13,3%
Technical Degree Quality	12,4%
Labour Union Power	3,2%
Bureaucracy	4,8%
Government Policies	8,5%
Trade Barriers	6,8%
Cultural Distance	9,9%
Micro – level Sub-criteria	**Weights assigned by AHP**
Employee Costs	
Industry Average Salaries	43,1%
Salary Inflation	27,1%
Employer Payroll Taxes	15,9%
Statutory Benefits	13,9%

Government Policies	
Profit Tax Rate	46,6%
IPR Law	15,2%
VISAS availability	20,1%
Profit Repatriation Restrictions	20,1%
City – level Sub-criteria	Weights assigned by AHP
Supporting Industries	33%
Infrastructures	14%
Grants and Incentives	9,60%
Fit with firm's profit expectations	38,10%
City Quality of Life	5,30%

Table 15: Summary of Criteria and Sub-criteria Priority Weights

Logically, the results for the priority weights assigned to each criterion are in line with the previous comments regarding the normalised survey respondents' answers. For the first level of analysis, the macro-level pre-screening, "ease of doing business" is the undeniably most important factor with a 47,1% weight. All the other four criteria have similar weight distributions, with an equal 14,3% weight for both "political stability" and "GNI per capita", followed by "inflation rate" with a 12,6% weight and "inflation growth forecast" with 11,7%.

The second level of analysis, the micro-level identification stage, indicates a higher priority for "employee costs" (20, 3%), which itself is dominated by the sub-criterion "industry average salaries" with a 43,1% priority weight, followed by "salary inflation" with 27,1% and a similar weight distribution for both "employer payroll taxes" and "statutory benefits" with 15,9% and 13,9% respectively. The remainder weight priority is similarly distributed between the criteria "employee attrition rate", "technology exports", "engineering pool", "technical degree quality", "government policies" (from which the main sub-criteria is "profit tax rates" with a 46,6% priority weight) and "cultural

distance". The two criteria to which the lower priority weights were attributed were "bureaucracy" with 4,8% and "labour union power" with 3,2%.

The results from the third stage of analysis, the city-level final selection, indicate that the main priorities are the "fit with the firm's profit expectations" with a weight of 38,1% and the presence of "supporting industries" with a weight of 33%. The lowest priority weight of 5,3% was attributed to "city life quality", followed by "grants and incentives" with a weight of 9,6% and "availability of infrastructures" with a weight of 14%.

4. Inconsistency Analysis

After having obtained all the normalised pair-wise comparisons and the correspondent priority weights, it is possible to check some incongruence in the analysis due to the high degree of judgement subjectivity and criteria interdependence. Hence, it is necessary to check the inconsistency rate for each matrix. According to Saaty (1980), the consistency ratio, which measures for every size of matrix the degrees of departure from pure consistency, is acceptable if less than 0.1. However, some authors state that a ratio below 0.2 is tolerable. This is because the inconsistency tends to increase with more comparisons (i.e., greater matrix size) and a larger sample of survey answers (for instance, an individual answer tends to have smaller consistency ratio than a group answer) (Wedley, 1993).

	Respondent A	Respondent B	Respondent C	Normalised Matrix
1. Macro-level Criteria Analysis	0,1368	**0,2672**	0,1324	0,0346
2. Micro-level Criteria Analysis	0,0893	0,0838	0,1257	0,1328
2.1) Micro-level Sub-criteria Analysis: Employee Costs	0,0045	0,0451	0,0462	0,0388
2.2) Micro level Sub-criteria Analysis: Government Policies	0,0295	0,1876	0,0597	0,0262
3. City-level Criteria Analysis	0,0433	**0,3108**	0,0510	0,0438

Table 16: Summary of Inconsistency Ratios' Results

As can be seen in Table 16, most respondents' answers show consistent judgements with the majority of the consistency ratios below 0.2, or even 0.1.

The only exception is the answer of respondent B, which includes two consistency ratios higher than 0.2 related to the macro-level and the city-level pair-wise comparisons. However, the normalised matrices, which include all three respondents' answers, present all consistency ratios under 0.1 with the exception of the one for the micro-level normalised matrix which has an acceptable value of 0.1328 which is justified by its higher matrix size. Hence, and because this is a qualitative and not quantitative study, it is agreed with the research supervisor that the matrices are sufficiently coherent and, therefore, the priority weights are valid.[6]

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[6] For further explanation of the Analytic Hierarchy Process methodology the following sources can be used:

> Saaty, T., 1980. The analytic hierarchy process: planning, priority setting, resource allocation. US: McGraw-Hill.
>
> Saaty, T. L., 2000. Fundamentals of Decision Making and Priority Theory with the Analytic Hierarchy Process. Pittsburgh: RWS Publications.
>
> Saaty, T. & Vargas, L., 2012. Models, Methods & Applications of the Analytic Hierarcy Process. New York: Springer Science & Business Media.

5. Alternatives' assessment according to the identified priority weights

The final step of the analysis consists in evaluating the alternatives for each stage according to the data collected (seen Table 17, Table 18,), measured by each priority weight. As previously explained, the purpose of this analysis is to develop a ranking model which shows the best possible alternative for each international market selection stage. Therefore, each alternative has to be evaluated according to its performance for each criterion, in order to get a total score.

The data is scaled according to the rule recommended by Liander, et al. (1967) where, for each criterion, the lowest alternative value is subtracted from the highest value and divided by the value 10 to come up with an equal scale composed of ten intervals. This is then applied to every alternative by dividing each alternative value by the equal scale interval in order to provide a ranking value for each criterion in each country or city. Each criteria priority weight is then applied to these ranking values in order to produce a final total score for each alternative. The one which has the highest total score is considered the best viable option. The results can be summarised as follows:

- The pre-screening stage analysis indicates a short-list of viable countries composed of Chile, Peru, Colombia and Uruguay (see Table 17).

- The identification stage analysis suggests Chile as the best country alternatives (see Table 18 – for sub-criteria ranking information see Table 19 and Table 20).

- The final selection stage analysis indicates Temuco, Santiago and Viña del Mar as the three best possible city alternatives (see Table 21).

Country	Ease of Doing Business Scale	AHP Weight	Score	Inflation Rate Scale	AHP Weight	Score	Inflation Growth Forecast Scale	AHP Weight	Score	Corruption Perceptions Index Scale	AHP Weight	Score	GNI per capita PPP Scale	AHP Weight	Score	TOTAL SCORE
Chile	10,000	0,471	4,710	8,807	0,126	1,110	1,333	0,117	0,156	9,298	0,143	1,330	0,973	0,143	0,139	7,444
Peru	9,461	0,471	4,456	8,929	0,126	1,125	1,599	0,117	0,187	3,333	0,143	0,477	1,309	0,143	0,187	6,432
Colombia	8,502	0,471	4,005	7,904	0,126	0,996	1,333	0,117	0,156	3,509	0,143	0,502	0,000	0,143	0,000	5,658
Uruguay	3,554	0,471	1,674	7,447	0,126	0,938	0,644	0,117	0,075	10,000	0,143	1,430	0,109	0,143	0,016	4,133
Ecuador	2,051	0,471	0,966	9,559	0,126	1,204	10,000	0,117	1,170	2,632	0,143	0,376	2,633	0,143	0,377	4,093
Paraguay	2,991	0,471	1,409	9,879	0,126	1,245	0,888	0,117	0,104	1,754	0,143	0,251	2,413	0,143	0,345	3,354
Brazil	2,099	0,471	0,989	7,301	0,126	0,920	0,888	0,117	0,104	3,684	0,143	0,527	0,716	0,143	0,102	2,642
Bolivia	0,642	0,471	0,303	10,000	0,126	1,260	0,799	0,117	0,094	2,982	0,143	0,426	3,487	0,143	0,499	2,581
Guyana	1,244	0,471	0,586	0,000	0,126	0,000	1,333	0,117	0,156	2,105	0,143	0,301	10,000	0,143	1,430	2,473
Argentina	1,868	0,471	0,880	6,700	0,126	0,844	0,833	0,117	0,097	2,632	0,143	0,376	0,417	0,143	0,060	2,258
Suriname	0,669	0,471	0,315	6,700	0,126	0,844	0,999	0,117	0,117	3,333	0,143	0,477	0,462	0,143	0,066	1,819
Venezuela	0,000	0,471	0,000	6,312	0,126	0,795	0,000	0,117	0,000	0,000	0,143	0,000	0,419	0,143	0,060	0,855

Table 17: Pre-screening Stage Analysis Ranking Findings

	Chile	Colombia	Uruguay	Peru
Employee Costs' Scale	9,45	0,00	6,28	10,00
AHP Weight	0,20	0,20	0,20	0,20
Score	1,92	0,00	1,28	2,03
Employee Attrition Rate Scale	7,00	10,00	6,00	0,00
AHP Weight	0,13	0,13	0,13	0,13
Score	0,88	1,26	0,76	0,00
Technology Exports' Scale	5,70	9,47	10,00	0,00
AHP Weight	0,08	0,08	0,08	0,08
Score	0,47	0,78	0,82	0,00
Engineering Pool Scale	10,00	2,49	5,22	0,00
AHP Weight	0,13	0,13	0,13	0,13
Score	1,33	0,33	0,69	0,00
Technical Degree Quality Scale	9,47	10,00	0,00	3,68
AHP Weight	0,12	0,12	0,12	0,12
Score	1,17	1,24	0,00	0,46
Labour Union Power Scale	2,86	10,00	0,00	10,00
AHP Weight	0,03	0,03	0,03	0,03
Score	0,09	0,32	0,00	0,32
Bureaucracy Scale	10,00	2,74	0,00	5,17
AHP Weight	0,05	0,05	0,05	0,05
Score	0,48	0,13	0,00	0,25
Government Policies' Scale	10,00	1,44	9,37	0,00
AHP Weight	0,09	0,09	0,09	0,09
Score	0,85	0,12	0,80	0,00
Trade Barriers' Scale	9,06	0,63	0,00	10,00
AHP Weight	0,07	0,07	0,07	0,07
Score	0,62	0,04	0,00	0,68
Cultural Distance Scale	0,00	10,00	3,59	1,58
AHP Weight	0,10	0,10	0,10	0,10
Score	0,00	0,99	0,36	0,16
TOTAL SCORE	7,81	5,21	4,70	3,89

Table 18: Identification Stage Analysis Ranking Findings

	Industry Average Salaries' Scale	AHP Weight	Score	Salary Inflation Scale	AHP Weight	Score	Employer Payroll Taxes' Scale	AHP Weight	Score	Statutory Benefits' Scale	AHP Weight	Score	TOTAL SCORE
Peru	10,0000	0,431	4,3100	10,0000	0,271	2,7100	3,4948	0,159	0,5557	0,2550	0,139	0,0354	7,6111
Chile	4,1160	0,431	1,7740	9,1783	0,271	2,4873	10,0000	0,159	1,5900	10,0000	0,139	1,3900	7,2413
Uruguay	10,0000	0,431	4,3100	0,0000	0,271	0,0000	5,1154	0,159	0,8133	0,0000	0,139	0,0000	5,1233
Colombia	0,0000	0,431	0,0000	3,0882	0,271	0,8369	0,0000	0,159	0,0000	0,5648	0,139	0,0785	0,9154

Table 19: Employee Costs' Ranking Findings

	Tax Rate Scale	AHP Weight	Score	IPR Law Scale	AHP Weight	Score	VISAS Availability Scale	AHP Weight	Score	Profit Repatriation Restrictions' Scale	AHP Weight	Score	TOTAL SCORE
Chile	10,0000	0,46	4,6	10,0000	0,152	1,5200	10,0000	0,201	2,0100	0,0000	0,201	0,0000	8,1300
Uruguay	7,2000	0,46	3,312	6,8421	0,152	1,0400	7,4286	0,201	1,4931	9,6454	0,201	1,9387	7,7839
Colombia	7,2000	0,46	3,312	0,5263	0,152	0,0800	0,0000	0,201	0,0000	0,1461	0,201	0,0294	3,4214
Peru	0,0000	0,46	0	0,0000	0,152	0,0000	3,0769	0,201	0,6185	10,0000	0,201	2,0100	2,6285

Table 20: Government Policies' Ranking Findings

City	Presence of Supporting Industries' Scale	AHP Weight	Rank	Availability of Infrastructures' Scale	AHP Weight	Rank	Local Government Grants and Incentives	AHP Weight	Rank	Fit with Firm's Profit Expectations' Scale	AHP Weight	Rank	TOTAL SCORE
Temuco	0,000	0,330	0,000	9,457	0,140	1,324	0,000	0,096	0,000	10,000	0,381	3,810	5,134
Santiago	10,000	0,330	3,300	9,819	0,140	1,375	0,000	0,096	0,000	0,000	0,381	0,000	4,675
Viña del Mar	0,741	0,330	0,244	9,350	0,140	1,309	0,000	0,096	0,000	8,167	0,381	3,112	4,665
Valparaíso	0,476	0,330	0,157	9,355	0,140	1,310	0,000	0,096	0,000	8,167	0,381	3,112	4,579
San Bernardo	7,566	0,330	2,497	9,607	0,140	1,345	0,000	0,096	0,000	0,000	0,381	0,000	3,842
Puente Alto	7,566	0,330	2,497	9,535	0,140	1,335	0,000	0,096	0,000	0,000	0,381	0,000	3,832
Concepción	0,317	0,330	0,105	10,000	0,140	1,400	0,000	0,096	0,000	5,016	0,381	1,911	3,416
Talcahuano	0,317	0,330	0,105	9,642	0,140	1,350	0,000	0,096	0,000	5,016	0,381	1,911	3,366
Iquique	0,106	0,330	0,035	0,000	0,140	0,000	1,000	0,096	0,096	5,897	0,381	2,247	2,378
Antofagasta	0,106	0,330	0,035	0,055	0,140	0,008	0,000	0,096	0,000	0,824	0,381	0,314	0,357

Table 21: Final Selection Stage Analysis Ranking Findings

Chapter 5
Final Remarks and Recommendations

1. Analysis Findings' Discussion and Implications

As pointed out in the beginning of this study, this project has two main deliverables: the development of a comprehensive international market selection framework as well as the recommendation of a specific city in a South American country for the location of Mobica's new R&D centre. Therefore, it seems logical to discuss not only the analysis findings, but also the implementation and robustness of the chosen methodology.

1.1 Methodology

The first remark to be made concerns the variance in the AHP survey respondents' answers, which might not seem obvious in terms of absolute values, but rather in comparison between each criteria assigned weights (see Appendix 3). Regarding the pre-screening analysis stage (see Figure **6**), there is a visible higher variance regarding the weights assigned to the criteria "Ease of Doing Business" (respondent A – 33,7%; B – 62,7%; C – 22,4%) and to "Corruption Perceptions Index" (A – 17%; B – 7,4%; C – 34%). The same happens in the identification stage (see Figure 7) for the criteria "Technical Degree Quality" (A – 18,7%; B – 17,5%; C – 7,9%) and "Bureaucracy" (A – 7,5%;

B – 2,1%; C – 8,3%), and for the government policies' sub-criteria "IPR law" (A – 20,3%; B – 13,3%; C – 20,9%) and, in a less evident way, "Profit Taxes" (A – 6,4%; B – 22%; C – 38,4%). This is also evident in the final selection stage (see Figure **8**) for the criteria "Presence of Supporting Industries" (A – 6,4%; B – 11,2%; C – 43,7%) and for "Fit with firm's profit expectations" (A – 49,8%; B – 67,6%; C – 27,1%).

This is an obvious consequence of the subjectivity of the analysis which, despite the AHP survey's goal to objectivise it, is accentuated by the fact that the answers were gathered from three different professionals with different roles inside the country: a Human Resource's perspective is often very different from a Financial Department's perspective.
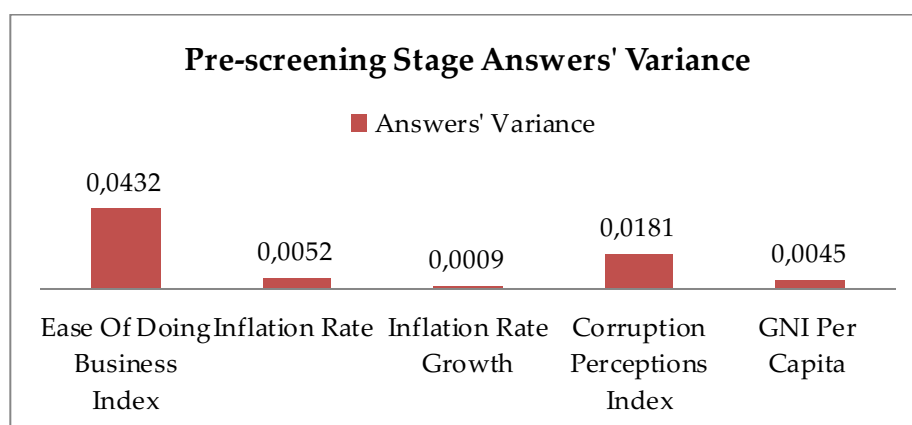

**Figure 6:** Pre-screening Stage Answers' Variance
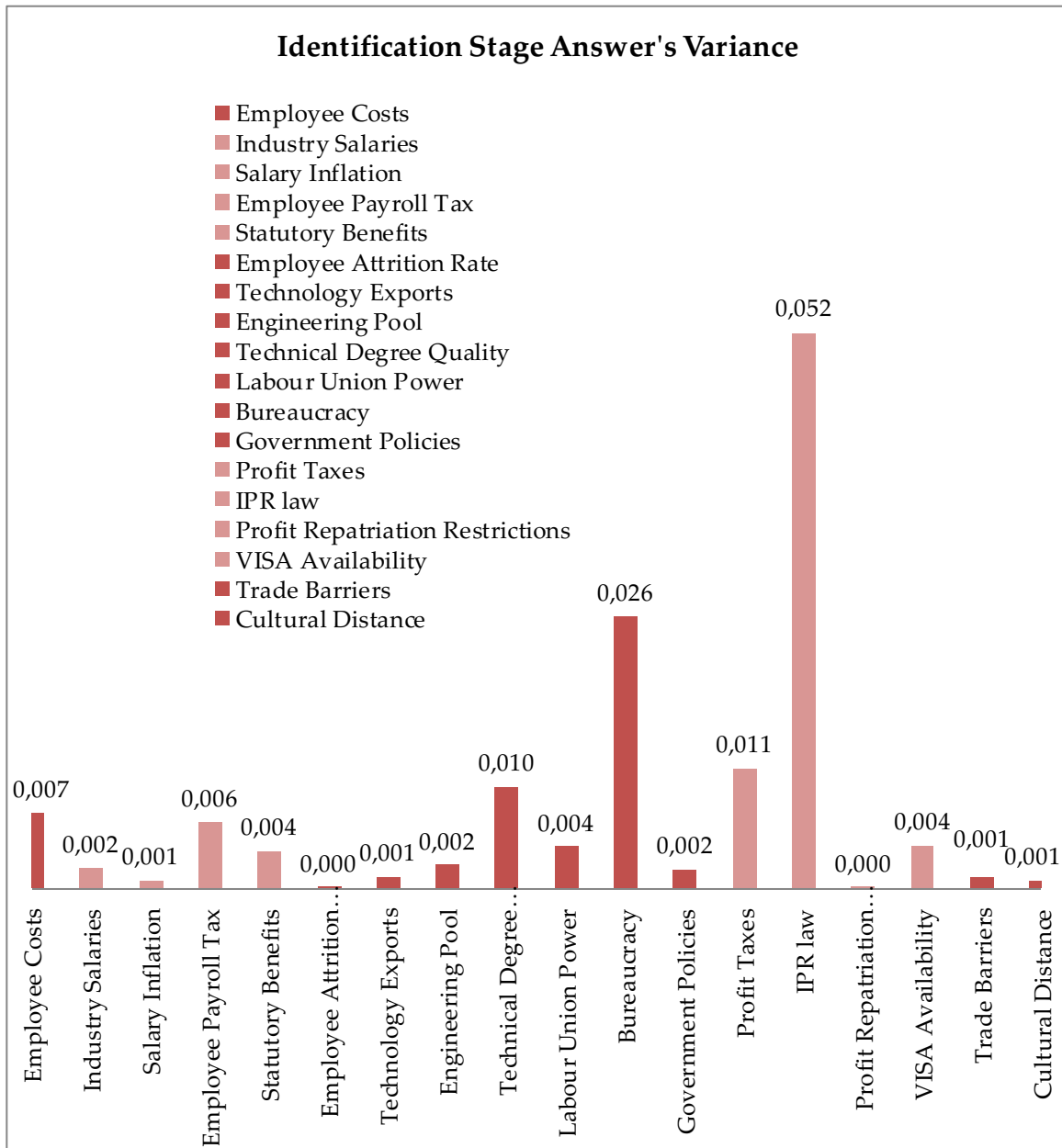
**Figure 7**: Identification Stage Answer's Variance
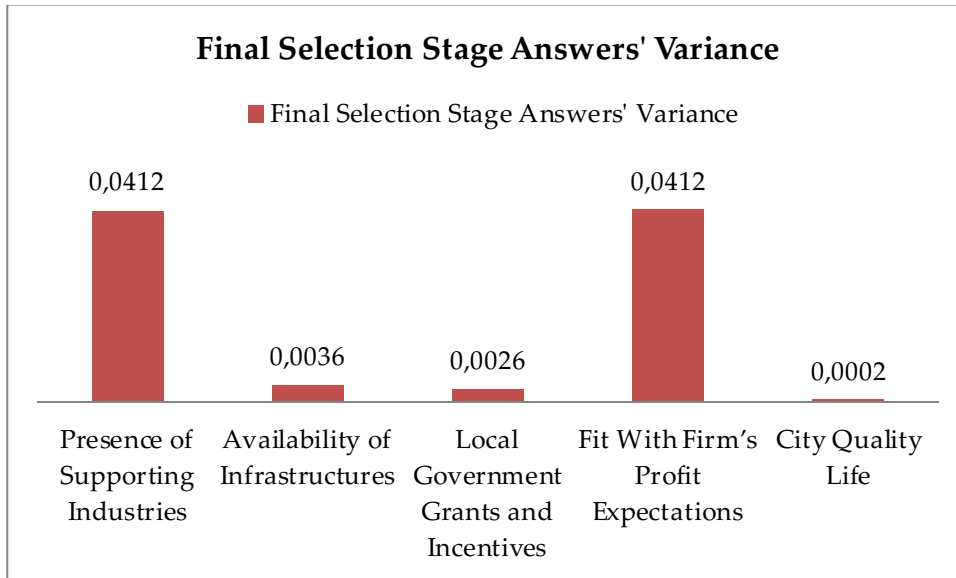
Figure 8: Final Selection Stage Answers' Variance

1.2 Findings

Secondly, a small discussion of the analysis findings is provided. Out of the four countries selected in the pre-screening stage of analysis, Chile, Colombia, Peru and Uruguay, the country selected as the optimal choice in the identification stage was Chile. Overall, the country performs well in every criterion, mainly the ones to which the company assigned the highest priority weights "employee costs", "employee attrition rate", "engineering pool" and "technical degree quality", with the exception of "cultural distance" where the country performs the lowest out of the four countries (see Appendix 1 for data information). The country also ranks the highest regarding the government policies' sub-criteria (presenting the lowest profit tax rate out of the four countries) and comes in second place regarding employee costs' sub-criteria, despite presenting the second highest software engineer salary average (26 005 USD per year according to PayScale (2016). This is an interesting result for it demonstrates that, despite the importance attributed by Mobica to low salary costs, the list of identified criteria and its assigned weights by the company

cover well other highly important dimensions in the choice of a foreign market location.

Overall, the identification of Chile as the best country alternative seems quite reasonable given that it is currently considered as the most competitive and one of the most stable economies in South America. The country has been able to maintain considerable growth rates, however depending highly on its mining industry and copper international prices. Also, despite relatively high income inequality, Chile has been continuously dropping its unemployment and poverty rates. The country maintains its status as one of the world's most open countries to foreign investment and trade (SME Toolkit, 2016).

The final selection stage indicates the top three cities as Temuco, Santiago and Viña del Mar. Temuco appears as the first ranked option given that it ranks the highest in the criterion "fit with the firm's profit expectations", despite ranking the lowest in "presence of supporting industries". On the other hand, Santiago, Chile's capital comes in second place because, despite ranking the lowest in "fit with the firm's profit expectations" due to its higher cost of living index value, it comes in first place regarding the "presence of supporting industries". Viña del Mar occupies the first position by presenting the highest score for "presence of supporting industries" after Santiago and San Bernardo and Puente Alto (which are districts of Santiago Metropolitan Area) as well as the second highest score for "fit with the firm's profit expectations", given that it presents the lowest cost of living index after Temuco.

A note must be made regarding the fact that the final city rank is, evidently, mainly guided by the two criteria "presence of supporting industries" and "fit with the firm's profit expectations", which combined gather a priority weight of 71,1%. The differences between cities regarding the "availability of infrastructures" are not evident, and the "presence of local government's grants and incentives" is only significant for the city of Iquique, which constitutes a free trade zone but performs relatively low in all other criteria.

2. Final Recommendation

This section presents the final recommendation of Viña del Mar as the optimal choice for the location of Mobica's new R&D centre and explains the reasoning behind it in the light of the analysis conducted so far.

Figure 9: Map of Chile (World Atlas, 2016)

2.1 Why Temuco and Santiago are not recommended

Despite occupying the two highest positions in the final city selection ranking, the researcher does not recommend the two cities of Temuco and Santiago for the location of the company's new site.

Temuco is a city located in the region of Araucanía in Southern Chile. It is currently the eighth most populated city in the country. As stated before, the city gathers the lowest cost of living index value from the short-list of cities considered in the analysis, but also the lowest score in terms of presence of supporting industries.

Santiago, the country's capital, is the country's largest and most populated city, concentrating most of the country's infrastructures, businesses and best universities, and therefore high-skilled labour force. However, as one might expect, this translates into high operational costs which are demonstrated by the fact that the city presents the highest cost of living index value from the list of cities analysed.

Therefore, despite their good overall scores, each city evidences a clear disadvantage in some of Mobica's most pressing and important location requirements – low operational costs and good access to legal, financial, administrative and academic services.

2.2 Why Viña del Mar is recommended

Opposite to the previous two alternatives, the city of Viña del Mar presents high values for every criteria, offering a much more balanced alternative for the company's major requirements.

The city is located in the region of Gran Valparaíso which was ranked as the tenth best South American city for doing business in 2016, which is only surpassed by the capital Santiago (América Economía, 2016). The region offers great cost advantages by presenting a cost of living index value 24% cheaper

than Santiago, which is a good indicator of cheaper operational costs for Mobica (Expatistan, 2016). Furthermore, the city of Viña del Mar is extremely well located at a distance of 112km from Santiago's Comodoro Arturo Merino Benítez International Airport which is easily accessible by both car and bus (the city is well served with highway links and bus connections).

Besides facilitating the access to the capital's services and university pool at lower costs, Viña del Mar's neighbouring town Valparaíso is home to the country's second largest port, which itself attracts many other industries and services. Furthermore, the city's coastal position turns it into an attractive living area for young talented labour force, which is a good indicator of city quality life and can play a major role in terms of employee retention. The city was considered in 2015, for the fifth consecutive time, as the most liveable city in Chile (Visión Humana, 2015). Known as a tourism attractive city, the presence of hotels by the sea increases the rent prices in those areas, which means that the city's peripheral areas offer ideal cheaper locations for setting businesses.

Another one of the city's most important aspects is its good availability of services and infrastructures. The Valparaíso region houses a total of twelve universities, including the highly ranked Pontificia Universidad Católica de Valparaíso, and is relatively near or possesses branches from other important academic institutions such as the Universidad Técnica Federico Santa María.

Overall, the city presents very attractive advantages which, despite the obvious risks and sensitivity of any international market selection process, indicate it as a safer choice for a first entry in the Chilean market.

For a summary list of important services and institutions available in the city and country, please check Appendix 4 - Table 34.

3. Study Conclusions, Limitations and Recommendations for Future Projects

Overall, the applied methodology proves to be quite useful, which is shown throughout the analysis results' coherence interpretation and remarks. Despite its inherent difficulty, the project is successful in finding a good criteria list that balances the need to aggregate all the company's requirements but at the same time allows for some methodology simplicity. The identification of Chile as the best optimal country choice does not come as a surprise given the country's widely economic and social development progress, especially among South American countries. Moreover, the final selection stage indicates the three cities of Santiago, Temuco and Viña del Mar which offer varied advantages and from which Viña del Mar seems to be the best logical city choice.

However, the study suffers from a small number of limitations. First of all, there is an obvious difficulty in collecting all the demanded data due to time and resource constraints, therefore leading to a dependency on secondary data sources.

Moreover, the project's scope does not include recommendations on entry mode strategy, nor is it intended to. However, for the purpose of future studies, as suggested by literature review, the study would benefit from a joint analysis and recommendations on the entry mode which the company should apply to the chosen location (Koch, 2001).

Finally, the findings' discussion reports incidents of the AHP analysis subjectivity that lead to certain inconsistencies or high variance between the criteria priority weights assigned by each survey respondent. The inclusion of different departments' perspectives in the AHP's survey's answers and criteria interpretation is not only interesting, but also extremely important for assuring that the analysis does not disregard the firm's different operational needs and

professionals' insights. On the other hand, this contributes for a higher variance of answers and interpretation, which can hamper the method's objectivity. Therefore, it is advisable that in a future the company chooses to apply one single answer to the AHP survey, through the joint analysis and combination of each relevant person for the project undertaken. This is not only a means to improve the consistency of the analysis, but can also be an extremely interesting exercise for the company to assess to what extent are the ideas and perspectives from each department aligned.

Bibliography

América Economía, 2016. *¿Dónde poner la firma?.* Available at:
http://rankings.americaeconomia.com/mejores-ciudades-2016/donde-poner-la-firma/
[Accessed 24 August 2016; 21H00M].

Andersen, O. & Buvik, A., 2002. Firms' internationalisation and alternative approaches
to the international customer/market selection. *International Business Review,* 11(3), pp.
347-363.

Barney, J., 1991. Firm resources and sustained competitive advantage. *Journal of
Management,* 17(1), pp. 99-120.

Behzadian, M., Kazemzadeh, R., Albadvi, A. & Aghdasi, M., 2010. PROMETHEE: A
comprehensive literature review on methodologies and applications. *European Journal
of Operational Research,* 200(1), pp. 198-215.

Brouthers, L., Nakos, G., Hadjimarcou, J. & Brouthers, K., 2009. Key factors for
successful export performance for small firms. *Journal of International Marketing,* 17(3),
pp. 21-38.

Buckley, P. J. & Casson, M. C., 1976. *The future of the multinational enterprise.* London:
Palgrave Macmillan.

Cámara Oficial Española de Comercio de Chile, 2016. *ZONAS FRANCAS.* Available at:
http://www.camacoes.cl/index.php/internacionalizacion/chile/informacion-practica-
chile/item/186-zonas-francas [Accessed 23 August 2016; 15H30M].

Castellani, D., Jimenez, A. & Zanfei, A., 2013. How remote are R&D labs? Distance
factors and international innovative activities. *Journal of International Business Studies,*
Volume 44, pp. 649-675.

Cavusgil, S. T., 1985. Guidelines for Export Market Research. *Business Horizons,* 28(6), pp. 27-33.

Cavusgil, S. T., Kiyak, T. & Yeniyurt, S., 2004. Complementary approaches to preliminary foreign market opportunity assessment: Country clustering and country ranking. *Industrial Marketing Management,* Volume 33, pp. 607-617.

Cheng, E. & Li, H., 2002. Construction partnering process and associated critical success factores: quantitative investigation.. *Journal of Management in Engineering,* Volume October, pp. 194-202.

Coase, R., 1937. The nature of the firm. *Economica,* 4(16), pp. 386-405.

Coeurderoy, R. & Murray, G., 2008. Regulatory environments and the location decision: evidence from the early foreign market entries of new-technology-based firms. *Journal of International Business Studies,* Volume 39, pp. 670-687.

Coviello, N. & Munro, H., 1997. Network Relationships and the Internationalisation Process of Small Software Firms. *International Business Review,* 6(4), pp. 361-386.

Cricka, D. & Spence, M., 2005. The internationalisation of 'high performing' UK high-tech SMEs: a study of planned and unplanned strategies. *International Business Review ,* Volume 14, pp. 167-185.

Cunningham, M. T., 1986. The British Approach. In: P. W. Turnbull & J. P. Valla, edits. *Strategies for International Industrial Marketing.* London: Croom Helm.

Daengdej, J., Lukose, D. & Murison, R., 1999. Using statistical models and case-based reasoning in claims prediction: experience from a real-world problem. *Knowledge-Based Systems,* 12(5-6), pp. 239-245.

Deloitte International Tax Source, 2016. *Tax guides and highlights.* Available at: https://www.dits.deloitte.com/#TaxGuides [Accessed 2 August 2016; 13H00M].

Douglas, S. P. & Craig, S. C., 1992. Advances in International Marketing. *International Journal of Research in Marketing,* Volume 9, pp. 291-318.

Dunning, J. H., 1981. Alternative channels and modes of international resource transmission . In: R. W. Moxon & H. V. Perlmutter, edits. *Controlling international technology transfer: Issues, perspectives and implications.* New York: Pergamon Press, pp. 3-27.

Dunning, J. H., 1988. The eclectic paradigm of international production: a restatement and some possible extensions. *Journal of International Business Studies,* Volume 19, pp. 1-31.

Expatistan, 2016. *Cost of Living in Chile.* Available at: https://www.expatistan.com/cost-of-living/country/chile [Accessed 23 August 2016; 15H10M].

Furman, J. L., Porter, M. E. & Stern, S., 2002. The determinants of national innovative capacity. *Research Policy,* Volume 31, pp. 899-933.

Gallup, 2013. *State of the Global Workplace: Employee Engagement Insights for Business Leaders Worldwide,* s.l.: Gallup, Inc..

Godinez, J. R. & Liu, L., 2015. Corruption distance and FDI flows into Latin America. *International Business Review ,* Volume 24, pp. 33-42.

Górecka, D. & Szałucka, M., 2013. Country Market Selection in International Expansion Using Multicriteria Decision Aiding Methods. *Multiple Criteria Decision Making,* Volume 8, pp. 32-55.

Hofstede, G., Hofstede, G. J. & Minkov, M., 2010. *Cultures and Organizations: Software of the Mind.* Revised and Expanded 3rd Edition ed. New York:: McGraw-Hill USA.

International Labour Organisation, 2016. *Country Profiles.* Available at: http://www.ilo.org/ilostat/faces/home/statisticaldata/ContryProfileId?_adf.ctrl-state=jj0pzivwc_88&_afrLoop=288814053998056#!%40%40%3F_afrLoop%3D2888140539 98056%26_adf.ctrl-state%3D11hep13x5u_17 [Accessed 1 August 2016; 20H20M].

International Monetary Fund, 2016. *World Economic Outlook: Too Slow for Too Long*, Washington: International Monetary Fund, Publication Services.

Johanson, J. & Valne, J. E., 1977. The internationalization process of the firm - a model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies,* Volume 8, pp. 23-32.

Johansson, J., 1997. *Global Marketing, Foreign Entry, Local Marketing and Global Management.* Chicago, IL: McGraw-Hill.

Koch, A. J., 2001. Selecting overseas markets and entry modes: two decision processes or one?. *Marketing Intelligence & Planning,* 19(1), pp. 65-75.

Konidari, P. & Mavrakis, D., 2007. A multicriteria evaluation method for climate change mitigation policy instruments. *Energy Policy,* 35(12), pp. 6235-6257.

Kumar, V., Stam, A. & Joachimsthaler, E. A., 1994. An Interactibe Multicriteria Approach to Identifying Potential Foreign Markets. *Journal of International Marketing,* 2(1), pp. 29-52.

Liander, B., Terpstra, V., Yoshino, M. Y. & Sherbini, A. A., 1967. *Comparative analysis for international marketing.* Boston: Allyn and Bacon.

Lindqvist, M., 1997. Infant multinationals: internationalisation of small technology-based firms. In: D. Jones & M. Klofsten, edits. *Technology, innovation and enterprise: The European experience.*

Loken, E., 2007. Use of multicriteria decision analysis methods for energy planning problems. *Renewable and Sustainable Energy Reviews,* 11(7), pp. 1584-1595.

Moen, Ø., Gavlen, M. & Endresen, I., 2004. Internationalization of small, computer software firms - Entry forms and market selection. *European Journal of Marketing,* 38(9/10), pp. 1236-1251.

OECD, 2014. *The OECD indicators on Employment Protection Legislation.* Available at: http://www.oecd.org/employment/emp/oecdindicatorsofemploymentprotection.htm [Accessed 1 August 2016; 23H40M].

O'Farrell, P. N. & Wood, P. A., 1994. International Market Selection by Business Service Firms: Key conceptual and Methodological Issues. *International Business Review,* 3(3), pp. 243-261.

Papadopoulos, N. & Denis, J. E., 1988. Inventory, taxonomy and assessment of methods for international market selection. *International Marketing Review,* Volume 5, pp. 38-51.

Papadoulos, N., Chen, H. & Thomas, D., 2002. Toward a tradeoff model for international market selection. *International Business Review,* Volume 11, pp. 165-192.

Papadoulos, N. & Denis, J. E., 1988. Inventory, taxonomy and assessment of methods for international market selection. *International Marketing Review,* 5(3), pp. 38-51.

PASSPORT INDEX, 2016. *Global Passport Power Rank 2016 - South America.* Available at: https://www.passportindex.org/byRank.php [Accessed 2 August 2016; 14H00M].

PayScale, 2016. *Career Research - Employee & Job Salaries.* Available at: http://www.payscale.com/rccountries.aspx [Accessed 27 July 2016; 10H15M].

Porter, M. E., 1990. The Competitive Advantage of Nations. *Harvard Business Review,* 68(2 (March–April)), pp. 73 - 93.

Porter, M. E., 1998. Clusters and the New Economics of Competition. *Harvard Business Review,* 76(6 (November-December)), pp. 77-90.

Property Rights Alliance, 2016. *The International Property Rights Index.* Available at: http://internationalpropertyrightsindex.org/countries?f=&o=&r=LAC [Accessed 2 August 2016; 13H30M].

QS Quacquarelli Symonds Limited, 2016. *QS University Rankings: Latin America 2016.* Available at: http://www.topuniversities.com/university-rankings/latin-american-university-rankings/2016 [Accessed 27 July 2016; 17H00M].

Rahman, S. H., 2003. Modelling of international market selection process: a qualitative study of successful Australian international business. *Qualitative Market Research*, 6(2), pp. 119-132.

Rahman, S. H., 2006. Organisational and Strategic Considerations in International Market Selection. *International Journal of Applied International Business*, 1(2), pp. 1-14.

Reid, S., 1983. Firm internationalisation, transaction costs and strategic choice. *International Marketing Review*, 7(4), pp. 11-24.

Ritchie, J. & Lewis, J., 2003. *Qualitative research practice.* London: SAGE.

Root, F. R., 1994. *Entry Strategies for International Markets.* San Francisco, CA: Lexington Books.

Saaty, T., 1980. *The analytic hierarchy process: planning, priority setting, resource allocation..* US: McGraw-Hill.

Saaty, T. L., 2000. *Fundamentals of Decision Making and Priority Theory with the Analytic Hierarchy Process.* Pittsburgh: RWS Publications.

Saaty, T. & Vargas, L., 2012. Market Attractiveness of Developing Countries. In: *Models, Methods & Applications of the Analytic Hierarcy Process.* New York: Springer Science & Business Media, pp. 129-147.

Saaty, T. & Vargas, L., 2012. *Models, Methods & Applications of the Analytic Hierarcy Process.* New York: Springer Science & Business Media.

Sakarya, S. & Eckman, M., 2007. Market selection for international expansion: Assessing opportunities in emerging markets. *International Marketing Review*, 24(2), pp. 208-238.

SCB Associates Ltd, 2016. *Analytic Hierarchy Process, AHP.* Available at: http://www.scbuk.com/ahp.html [Accessed 12 June 2016; 11H00M].

Schoemaker, P. J. H. & Russo, J. E., 1993. A pyramid of decision approaches. *California Management Review,* 36(1), pp. 9-31.

SME Toolkit, 2016. *Chile - Overview.* Available at: http://www.smetoolkit.org/smetoolkit/en/content/en/7717/Chile-Overview [Accessed 2 September 2016; 21H00M].

Social Security Administration, 2016. *Research, Statistics, & Policy Analysis - Social Security Programs Throughout the World: The Americas, 2015.* Available at: https://www.ssa.gov/policy/docs/progdesc/ssptw/2014-2015/americas/index.html [Accessed 27 July 2016; 10H40M].

Teece, D. J., 1975. *The multinational corporation and the resource cost of international technology transfer.* Philadelphia: Economics Department, University of Pennsylvania .

Teece, D. J., 2014. A dynamic capabilities-based entrepeneurial theory of the multinational enterprise. *Journal of International Business Studies ,* Volume 45, pp. 8-37.

The Heritage Foundation, 2016. *Index of Economic Freedom.* Available at: http://www.heritage.org/index/ [Accessed 2 August 2016; 15H00M].

Transparency International, 2015. *Corruption Perceptions Index.* Available at: http://www.transparency.org/cpi2015#results-table [Accessed 9 July 2016; 17H50M].

Turnbull, P. W., 1986. Tri-partite interaction: the role of sales subsidiaries in international marketing. In: P. W. Turnbull & S. J. Paliwoda, edits. *Research in International Marketing.* London: Croom Helm.

Velasquez, M. & Hester, P. T., 2013. An Analysis of Multi-Criteria Decision Making Methods. *International Journal of Operations Research ,* 10(2), pp. 56-66.

Visión Humana, 2015. *Barómetro Imagen Ciudad,* Santiago de Chile: Visión Humana.

Wedley, W. C., 1993. Consistency Prediction for Incomplete AHP Matrices. *Mathematical and Computer Modelling,* 17(4/5), pp. 151-161.

Welford, R. & Prescott, K., 1994. *European Business: An Issue Based Approach.* 2 ed. London: Pitman.

Whitelock, J., 2002. Theories of internationalisation and their impact on market entry. *International Marketing Review,* 19(4), pp. 342-347.

World Atlas, 2016. *Chile CIA Map.* Available at: http://www.worldatlas.com/webimage/countrys/samerica/ciamaps/cl.htm [Accessed 24 August 2016; 19H00M].

World Bank, 2014. *World Development Indicators.* Available at: http://databank.worldbank.org/data/reports.aspx?source=2&series=TX.VAL.TECH.MF. ZS&country= [Accessed 2 August 2016; 18H00M].

World Bank, 2015. *Doing Business Project.* Available at: http://www.doingbusiness.org/economyranking [Accessed 9 July 2016; 17H30M].

World Bank, 2015. *International Comparison Program Database.* Available at: http://databank.worldbank.org/data/reports.aspx?source=2&series=NY.GNP.PCAP.PP. CD&country=# [Accessed 9 July 2016; 13H00M].

World Bank, 2016. *Doing Business: Across Borders.* Available at: http://www.doingbusiness.org/data/exploretopics/trading-across-borders [Accessed 1 August 2016; 19H10].

World Bank, 2016. *World Development Indicators.* Available at: http://databank.worldbank.org/data/reports.aspx?source=2&series=SE.TER.ENRR&cou ntry= [Accessed 1 August 2016; 17H30M].

World Population Review, 2016. *Population of Cities in Chile (2016).* Available at: http://worldpopulationreview.com/countries/chile-population/cities/ [Accessed 23 August 2016; 12H00M].

Appendices

Appendix 1 – Collected Data

Country/ Indicator	Ease of Doing Business (World Bank, 2015)	Inflation Rate 2015 (International Monetary Fund, 2016)	Inflation Growth Forecast: Projection for 2021 (International Monetary Fund, 2016)	Corruption Perceptions Index (2015) (Transparency International, 2015)	GNI per capita PPP (2015) (World Bank, 2015)
Argentina	121	25	4,8	32	17250
Bolivia	157	3	5	34	6840
Brazil	116	10,7	4,5	38	15020
Chile	48	4,4	3	70	13520
Colombia	54	6,8	3	37	21740
Ecuador	117	3,4	0,4	32	8220
Guyana	137	-1,8	3	29	6800
Paraguay	100	3,1	4,5	27	8670
Peru	50	4,2	2,5	36	11960
Suriname	156	25	4	36	16870
Uruguay	92	9,4	6,2	74	20360
Venezuela	186	180,9	4505	17	17230

Table 22: Macro-level Data

Country/ Indicator	Employee Costs (source: employee costs AHP scale - Table 19)	Employee Attrition Rate (Gallup, 2013)	Technology Exports per Capita (World Bank, 2014)	Engineering Pool (World Bank, 2016)	Technical Degree Quality (QS Quacquarelli Symonds Limited, 2016)	Labour Union Power (International Labour Organisation, 2016)	Bureaucracy (World Bank, 2016)	Government Policies (source: government policies AHP scale - Table 20)	Trade Barriers (The Heritage Foundation, 2016)	Cultural Distance (Hofstede, et al., 2010)
Chile	7,24	23	6,17	83,8	22	14	63	8,13	86,4	41,6
Colombia	0,92	26	7,71	51,3	23	6	110	3,42	81,0	36,0
Peru	7,61	16	3,85	40,5	11	6	88	2,63	87,0	40,6
Uruguay	5,12	22	7,93	63,1	4	30	153	7,78	80,6	39,4

Table 23: Micro-level Data

Employee Costs' Indicator	Industry Average Salaries (in USD, average per year) (PayScale, 2016)	Salary Inflation (inflation for 2015) (International Monetary Fund, 2016)	Employer Payroll Taxes (Social Security Administration, 2016)	Statutory Benefits (OECD, 2014)
Chile	26005	4,4	4,500	6,7
Colombia	34578	6,8	24,848	10,3
Peru	19200	4,2	9,630	10,4
Uruguay	19200	9,4	7,500	10,6

Table 24: Employee Costs Data

Government Policies' Indicator	Tax Rate (Deloitte International Tax Source, 2016)	IPR Law (Property Rights Alliance, 2016)	VISAS availability (PASSPORT INDEX, 2016)	Profit Repatriation Restrictions (Deloitte International Tax Source, 2016)
Chile	24	6,7	24	35
Colombia	25	4,9	54	33
Peru	28	4,8	39	6,8
Uruguay	25	6,1	28	7

Table 25: Government Policies Data

City	Presence of Supporting Industries (source: presence of supporting industries total score)	Availability of Infrastructures (source: availability of infrastructures total score)	Local Government Grants and Incentives (Cámara Oficial Española de Comercio de Chile, 2016)	Fit with Firm's Profit Expectations (Expatistan, 2016)	City Quality Life
Santiago	272,00	2,06	0	128	n/a
Puente Alto	226,00	2,03	0	128	n/a
Antofagasta	85,00	1,02	0	124	n/a
Viña del Mar	97,00	2,01	0	97	n/a
Valparaíso	92,00	2,01	0	97	n/a
Talcahuano	89,00	2,04	0	107	n/a
San Bernardo	226,00	2,04	0	128	n/a
Temuco	83,00	2,02	0	92	n/a
Iquique	85,00	1,01	1	104	n/a
Concepción	89,00	2,08	0	107	n/a

Table 26: City-level Data

City	Proximity of Administrative Services	Proximity of Legal Services	Proximity of Financial Services	Nearby Universities
Santiago	3	77	156	36
Puente Alto	0	42	148	36
Antofagasta	0	40	40	5
Viña del Mar	0	42	43	12
Valparaíso	0	40	40	12
Talcahuano	0	39	41	9
San Bernardo	0	42	148	36
Temuco	0	40	39	4
Iquique	0	39	39	7
Concepción	0	39	41	9

Table 27: Presence of Supporting Industries Data (based on Google Maps)

City	Distance from International Airports	Domestic connection[7]	Airport Proximity Score[8]	Highways/ Road connections to Santiago
Santiago	17	1	17	2
Puente Alto	35	1	35	2
Antofagasta	26,8	2	53,6	1
Viña del Mar	112	1	112	2
Valparaíso	106	1	106	2
Talcahuano	12,5	2	25	2
San Bernardo	27,6	1	27,6	2
Temuco	24,6	2	49,2	2
Iquique	39,2	2	78,4	1
Concepción	6,4	2	12,8	2

Table 28: Availability of Infrastructures Data (based on Google Maps)

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[7] Domestic connection assumes the value of 1 when no domestic flight connections are required and the value of 2 when it is required.

[8] Airport Proximity Score = Distance from International Airports x Domestic connection

Appendix 2 – AHP survey

SURVEY – MOBICA'S INTERNATIONALISATION PROJECT

Please rank the following internationalisation criteria according to its relative importance for each stage of analysis by using the pair-wise comparison matrices with the following rating scale:

Judgement	Rating
Extremely less important	1/9
	1/8
Very strongly less important	1/7
	1/6
Strongly less important	1/5
	1/4
Moderately less important	1/3
	1/2
Equal importance	1
	2
Moderately more important	3
	4
Strongly more important	5
	6
Very strongly more important	7
	8
Extremely more important	9

Example:

Rank the horizontal axis according to the corresponding vertical axis. For example, A is twice as important as B, so box A (Horizontal)/B(Vertical) would contain the number 2. Similarly, A is a strongly less important than C, therefore box A/C contains the number 1/5 – corresponding to the above ranking scale table.

List of Criteria	A	B	C	D
A	1	2	1/5	5
B	-	1	4	1/2
C	-	-	1	3
D	-	-	-	1

Please only fill the white boxes – do NOT fill the grey boxes.

1. Macro-level Analysis	Ease of Doing Business*	Inflation Rate	Inflation Growth Forecast	Political Stability: Corruption Perception Index	GNI (Gross National Income) per capita
Ease of Doing Business*	1				
Inflation Rate	-	1			
Inflation Growth Forecast	-	-	1		
Political Stability: Corruption Perception Index	-	-	-	1	
GNI (Gross National Income) per capita	-	-	-	-	1

* Ease of Doing Business is a World Bank index which includes: "starting a business"; "dealing with construction permits"; "getting electricity"; "registering property"; "getting credit"; "protecting minority investors"; "paying taxes"; "trading across borders"; "enforcing contracts"; "resolving insolvency".

2. Micro-level Analysis	Employee Costs	Employee Attrition Rate	Technology Exports	Engineering Pool	Technical Degree Quality	Labour Union Power	Bureaucracy	Government Policies	Trade Barriers	Cultural Distance
Employee Costs	1									
Employee Attrition Rate	-	1								
Technology Exports	-	-	1							
Engineering Pool	-	-	-	1						
Technical Degree Quality	-	-	-	-	1					
Labour Union Power	-	-	-	-	-	1				
Bureaucracy	-	-	-	-	-	-	1			
Government Policies	-	-	-	-	-	-	-	1		
Trade Barriers	-	-	-	-	-	-	-	-	1	
Cultural Distance	-	-	-	-	-	-	-	-	-	1

2.1) Micro-level Analysis – Government Policies' Sub-criteria	Taxes	IPR law	Profit Repatriation Restrictions	VISAS availability
Taxes	1			
IPR law	-	1		
Profit Repatriation Restrictions	-	-	1	
VISAS availability	-	-	-	1
2.2) Micro-level Analysis – Employee Costs Sub-criteria	Industry Salaries Average	Salary Inflation	Employer Payroll Taxes	Statutory Benefits
Industry Salaries Average	1			
Salary Inflation	-	1		
Employer Payroll Taxes	-	-	1	
Statutory Benefits	-	-	-	1

3. City-level Analysis	Presence of Supporting Industries	Availability of Infrastructures	Local Government Grants and Incentives	Fit with firm's profit expectations	City Quality Life
Presence of Supporting Industries	1				
Availability of Infrastructures	-	1			
Local Government Grants and Incentives	-	-	1		
Fit with firm's profit expectations	-	-	-	1	
City Quality Life	-	-	-	-	1

Appendix 3 – AHP survey respondent's answers

Micro-level Criteria	A	B	C
Ease Of Doing Business Index	33.7%	62.7%	22.4%
Inflation Rate	11.8%	8.4%	22.2%
Inflation Rate Growth	12.8%	6.8%	9.4%
Corruption Perceptions Index	17%	7.4%	34%
GNI Per Capita	24.7%	14.7%	12%

Table 29: Pre-screening Stage Variance of Respondents' Criteria Attributed Priority Weights

Macro-level Criteria	A	B	C
Employee Costs	9.9%	22.9%	7.1%
Employee Attrition Rate	4.2%	12.6%	10.2%
Technology Exports	2.4%	1.9%	6.9%
Engineering Pool	20.5%	17.1%	5.5%
Technical Degree Quality	18.7%	17.5%	7.9%
Labour Union Power	4%	2.1%	3.9%
Bureaucracy	7.5%	2.1%	8.3%
Government Policies	8%	4.2%	13.5%
Trade Barriers	18.3%	2%	19.5%
Cultural Distance	6.5%	17.5%	17.2%

Table 30: Identification Stage Variance of Respondents' Criteria Attributed Priority Weights

Government Policies' Sub-Criteria	A	B	C
Profit Taxes	6.4%	22%	38.4%
IPR law	20.3%	13.3%	20.9%
Profit Repatriation Restrictions	15.9%	9.8%	30.5%
VISA Availability	24%	54.9%	10.2%

Table 31: Identification Stage Variance of Respondents' Sub-criteria Attributed Priority Weights

Employee Costs' Sub-Criteria	A	B	C
Industry Salaries	38.7%	40.1%	40.5%
Salary Inflation	37.5%	25.7%	27.4%
Employee Payroll Tax	12.5%	19%	15.5%
Statutory Benefits	11.3%	15.1%	16.7%

Table 32: Identification Stage Variance of Respondents' Sub-criteria Attributed Priority Weights

City-level Criteria	A	B	C
Presence of Supporting Industries	6.4%	11.2%	43.7%
Availability of Infrastructures	20.3%	8.4%	13.7%
Local Government Grants and Incentives	15.9%	7%	7.2%
Fit With Firm's Profit Expectations	49.8%	67.6%	27.1%
City Quality Life	7.6%	5.8%	8.2%

Table 33: Final Selection Stage Variance of Respondents' Criteria Attributed Priority Weights

Appendix 4 – List of important contacts in Viña del Mar/ Chile

Institution	Contact
City Hall - Ilustre Municipalidad de Viña del Mar	Arlegui 615-635, Viña del Mar, Región de Valparaíso, Chile +56 32 273 7917 http://www.vinadelmarchile.cl/
British Embassy in Chile	British Embassy Avda. El Bosque Norte 0125, Las Condes, Santiago Chile Tel.: +56 2 2370 4100 Fax: +56 2 2370 4160
USA Embassy in Chile	U.S. Embassy Santiago Av. Andrés Bello 2800 Las Condes Santiago, Chile Tel.: (56-2) 2330-3000 Fax: (56-2) 2330-3710 https://cl.usembassy.gov/
Polish Embassy in Chile	Embajada de la República de Polonia en Chile Chile, Santiago de Chile, Mar del Plata 2055, Providencia Tel.: +562 2 2041213 Fax: +562 2 2049332 http://santiagodechile.mfa.gov.pl/
University - Pontificia Universidad Católica de Valparaiso (PUCV)	Pontificia Universidad Católica de Valparaiso (PUCV) Avenida Brasil 2950 Casilla 4059, Valparaiso, Chile Tel: (56) (32) 227 30 00 Fax: (56) (32) 227 31 83 www.pucv.cl

University - Universidad Técnica Federico Santa María (USM)	Universidad Técnica Federico Santa María (USM) Sede Viña del Mar "José Miguel Carrera" Avenida Federico Santa María n°6090 - Viña del Mar Línea informaciones gratuita: 800 201 300 Tel.: (56)(32) 27 77 00 Fax: (56)(32) 27 77 18 www.usm.cl
University - Universidad Adolfo Ibañez (UAI)	Universidad Adolfo Ibañez (UAI) Santiago: Diagonal Las Torres 2640 Peñaléon: Presidente Errázuriz 3485, Las Condes. Tel.: (56 2) 331 1000 Viña del Mar: Avda. Padre Hurtado 750, Viña del Mar. Tel.: (56 32) 250 3500 www.uai.cl
University - Universidad de Valparaiso (UV)	Universidad de Valparaiso (UV) Dirección: Errázuriz 1834, Valparaíso - Chile Tel.: (32) 250 7000 www.uv.cl

Table 34: List of important contacts in Viña del Mar/ Chile