
EXPORT MARKET EVALUATION USING A MULTI-CRITERIA DECISION-MAKING APPROACH

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Abstract

This study presents a simple analysis in the context of export market decision. As international trade increases, export market selection can be considered as one of the most important decisions that firms need to consider if they want to establish a global presence. The selection problems of foreign markets involve various criteria such as economic, geographical, political, cultural, technological factors. There is no single attribute that can integrate all these sophisticated dimensions. Thus, export market decision is a complex undertaking. The paper aims to propose a multi-criteria decision making approach to address these issues. A simulation of market selection decision is then conducted using this method in the case study about Viettel Group, which is among the leading telecom corporations in Vietnam and the world.

Keywords: export markets; multi-criteria method; selection problem; business decision.

1. Introduction

Export activities play a vital role in economic development. A growth in exports reflects a rise in demand for the country's goods and services and facilitates greater productivity as well as foreign exchange. Exports also provide domestic enterprises opportunities to expand its markets and production worldwide. As globalization increases international trade, export market selection has become one of the most critical decisions that firms need to take into account when deciding to become more global.

However, reaching an informed decision could be a sophisticated task since it is not easy to process considerable amounts of complex information at the same time. Each decision-maker could either consider different aspects as the most important ones or have conflicting opinions regarding the value of each option. In addition, it is not possible to find a single variable or indicator that comprises all essential aspects of the problem (Miečinskienė et al., 2014). Besides, each foreign market has its own unique characteristics in terms of economic, cultural, social and political dimensions, which could differ considerably from the company's local market (Berry et al., 2010). Although this type of business decision is usually regarded as a rational one, it is possible that firms select their export market using a non-systematic approach due to the decision-makers constrained cognitive and information-processing capabilities (Andersen and Buvik, 2002). Thus, it is necessary to have a multi-criteria method that not only integrates all of these frameworks but also simple enough in application to assist the decision-making process.

This paper aims to propose a multi-criteria method that could be applied to the foreign market selection process. An analysis has been performed with reference to Viettel Group as the company plays a major role in the telecommunications sector in Vietnam. In recent years, Viettel

has gradually expanded its businesses internationally and has established strong presence in 10 foreign markets. A strategic export market selection is a significant consideration for the company.

The rest of this paper is organized as follows. Section 2 reviews some recent works on export market selection and provides a summary of evaluation criteria. Section 3 proposes a simple multi-criteria method that can be used to solve the problem of complex decision-making. Then, the case study (Viettel Group) will be studied in Section 4 to illustrate the usefulness of this method. Some conclusions and remarks are provided in Section 5.

2. Literature review

Export market selection plays an important role in deciding the right target markets for company that plan to expand its business to other countries. Out of various possible options, the decision-maker needs to select the most adequate markets strategically since a failure can be costly due to financial and managerial resource loss and missed opportunities (Czinkota et al., 2004). However, a wise choice can make a huge impact on the company's future performance in foreign market (Górecka & Szalucka, 2013). To alleviate this appalling dilemma, the company needs to be clear about its objectives of international expansions as well as committed to collect valid information about foreign markets. Without profound knowledge of the target markets, it is difficult for firms to develop effective strategy (Köksal, 2008).

In the literature, international market selection models often require a screening method (Koch, 2001; Papadopoulos & Martin, 2011). Initial screening helps eliminate a certain number of markets that do not meet the objectives and requirements. The markets left after this stage are analyzed in-depth before the final decisions are reached. To perform screening and analysis, the companies need to decide relevant criteria against which the options will be evaluated.

Geographic proximity between the home country and the target market is considered vital (Isa et al., 2014; Sheng & Mullen, 2011). Companies are more likely to establish its first entry in immediate neighbors, where culture, political system and level of development are somewhat similar and, thus, firms could have more knowledge about the market (Brewer, 2001; Andersen and Buvik, 2002; Kontinen & Ojala, 2012). The rationale behind this is that culturally related markets imply lower transaction costs and less uncertainties when doing business (He, Lin & Wei, 2016).

In addition to geographical distance, other factors influencing firm's market selection include economic, political, cultural, technological factors as well as trade policy (Sheng & Mullen, 2011; Miečinskienė et al., 2014; Górecka & Szalucka, 2013). Despite the globalization phenomenon, market conditions are still country-specific (Papadopoulos & Martin, 2011). These aforementioned factors illustrate the attractiveness and risks that are associated with doing business in the foreign markets and provide a way to estimate potential profits.

Nevertheless, the list of criteria in literature that support the selection process could be extensive, such as market size, language differences (Sheng & Mullen, 2011; Schu & Morschett, 2017); product standards of a foreign market (Isa et al., 2014; Ferro et al., 2015); rule of law, local

market knowledge, logistics performance (Schu & Morschett, 2017), intensity of competition (Isa et al., 2014). Some firm-specific factors include specialty expertise, firm’s abilities and resources (Zhao et al, 2009), financial capacity, experience and knowledge, management ability (Yean et al., 2008); firm international competitiveness (Isa et al., 2014). It would depend on firms to decide which factors are worth considering.

3. Methodology

Weighted Sum Method is a multi-criteria decision-making method that is helpful when decision-makers have to handle large amounts of complex information. It can be used to rank alternatives in order of importance, eliminate a number of unfavorable options, and identify the most preferred one. The following sections in this study illustrate the application of this multi-criteria decision method in the initial market assessment process of Viettel Group.

Based on literature review and information about the company, 9 economic, cultural, social and political factors were selected to assess the markets’ attractiveness. It is assumed that these factors are the most vital ones in deciding firm’s export market. In fact, these factors could be different and higher in number due to firm’s priorities and the extent of complexity that the firm wants to conduct its analysis. Table 1 shows the 9 criteria along with their description.

Table 1. Criteria for export market selection

No	Criteria	Description
C1	Politics	Stable political relationship between home country and others
C2	Trade policy	Trade policy of the importing country (i.e. amount of taxes and non-tariff barriers, trade protection policy)
C3	Economics	Level of income of citizens, market growth rate, market size
C4	Culture	Cultural differences between exporting and importing countries and consumers' ability to accept these differences.
C5	Geography	Geographical distance between exporting country and importing country; climate conditions
C6	Technology	Available technologies at the export markets, labour qualifications and competence
C7	Competition	The price of firm’s product in relation to local product. Market share, growth rate of the firm compared to other competitors in the export market.
C8	Firm capability	Resources including specialty expertise, financial capacity, management and technological abilities.
C9	Market knowledge	Firm’s experience in exporting and knowledge about the target market or similar ones

(Source: Summary of work by Miečinskienė et al., 2014; Górecka & Szalucka, 2013; Isa et al., 2014; Zhao et al, 2009; Yean et al., 2008).

After the criteria are identified, the assessment process can be carried out. The Weighted Sum Method consist of the following steps:

Suppose there is a panel of k decision makers D_t ($t = 1 \sim k$) that is responsible for evaluating n alternatives A_i ($i = 1 \sim n$) based on m evaluation criteria C_j ($j = 1 \sim m$).

Step 1: Determine the weight of each criterion

The weight W_j of each C_j criterion is determined as follows:

$$W_j = \frac{w_{j1} + w_{j2} + \dots + w_{jt} + w_{jk}}{k}$$

where W_{jt} denotestheweightofthe C_j criterion as determined by member D_t of the decision-making board.

Step 2: Determine the value of the alternative in terms of each criterion

The value r_{ij} of i^{th} alternative in terms of j^{th} criterion is determined as below:

$$r_{ij} = \frac{r_{ij1} + r_{ij2} + \dots + r_{ijt} + r_{ijk}}{k}$$

where r_{ijt} is the value of the i^{th} alternative determined by the decision-making board D_t in terms of criterion C_j .

Step 3: Calculate the score of each alternative

The weighted value T_j of each alternative is calculated as follows:

$$T_j = \frac{\sum_{j=1}^m (w_j * r_{ij})}{m}$$

Step 4: Compare T_j ($j = 1 \sim m$) and select the best alternative with the highest score

4. Application of multi-criteria methods to export market selection problem

This section presents the results of the application of the multi-criteria analysis in selecting a suitable export market. This paper uses Viettel Group (Vietnam) as a case study.

4.1. Case study: Viettel Group

Viettel Group is a Vietnamese state-owned multinational telecommunication corporation operated by the Ministry of Defense. It is also the largest network operator and among the most valuable brands in Vietnam. Viettel is the first company to launch a 5G network in Vietnam. In 2020, the group's revenue reached around US\$11.5 billion. Besides telecom, Viettel Group

consists of more than 20 subsidiary companies in various fields including investment, real estates, foreign trade and technical services.

Since 2006, Viettel has expanded its business to other countries. Currently, the company is among the leading telecom corporations in the world with a strong presence in three continents including Asia, Africa and the Americas. As the demand for telecommunication services is on the rise, especially in developing countries, Viettel needs to make sound decisions under pressure. How to seize these opportunities to penetrate the international market further and face the fierce competition of local service providers is therefore vital to the future development of the company. The selection of export markets will affect firm's actions and plans afterwards and could be the key factor that influences the success and failure of the projects in foreign markets (Miečinskienė et al., 2014). Thus, it is necessary to choose an export market wisely.

4.2. Assessing criteria for export market selection

In this study, we will evaluate 04 export markets based on 9 evaluation criteria identified Table 1. The details are as follows:

- Potential export markets in consideration are A1 (Cambodia – Asia); A2 (Peru – South America); A3 (Laos – Asia); A4 (Burundi – Africa). In fact, Viettel has already carried out its project in these countries. This study should be considered as a verification of a past decision in order to illustrate the application of a decision aiding method.
- There are 9 evaluation criteria: C1; C2; C3; C4; C5; C6; C7; C8; C8; C9. A literature review is conducted in the beginning of this study to collect the criteria employed in previous research.
- Evaluation panel includes three members: D1; D2; D3.
- Data simulation is employed to generate data for each step in the weighting method procedure.
- It is assumed that the company is willing to use a multi-criteria approach to decide its export market.

Step 1: Determine the weight of each criterion

The weight that each decision-maker gives to each criterion and the calculated mean in terms of each criterion based on these scores can be found in Table 2.

Note: 1 = Very unimportant, 2 = Unimportant, 3 = Normal, 4 = Important, 5 = Very important

Table 2. Weight of each evaluation criteria

Criteria	D1	D2	D3	Criteria Weight
C1	4	5	5	4.67
C2	5	5	5	5.0
C3	4	4	5	4.33
C4	3	3	4	3.33
C5	4	5	4	4.33
C6	3	3	4	3.33
C7	4	5	4	4.33
C8	4	5	5	4.67
C9	4	5	4	4.33

Step 2: Determine the value of the alternative in terms of each criterion

Table 3 presents the scores that each decision-maker gives to each one of the export destinations in terms of their values based on the criteria on the scale of 5 (5 = highest score) and the mean scores of each alternative.

Table 3. Values of each alternative in terms of each criterion

		D1	D2	D3	Mean scores
C1	Cambodia (A1)	5	4	5	4.67
	Peru (A2)	4	4	4	4.0
	Laos (A3)	4	5	5	4.67
	Burundi (A4)	3	4	3	3.33
C2	Cambodia (A1)	5	4	4	4.33
	Peru (A2)	4	3	4	3.67
	Laos (A3)	5	5	4	4.67
	Burundi (A4)	3	4	3	3.33
C3	Cambodia (A1)	4	3	4	3.67
	Peru (A2)	4	4	3	3.67
	Laos (A3)	3	4	3	3.33
	Burundi (A4)	3	4	3	3.33
C4	Cambodia (A1)	4	3	3	3.33
	Peru (A2)	4	4	3	3.67
	Laos (A3)	3	4	3	3.33
	Burundi (A4)	3	3	3	3.0
C5	Cambodia (A1)	4	4	3	3.67
	Peru (A2)	3	3	4	3.33
	Laos (A3)	4	4	5	4.33
	Burundi (A4)	3	4	3	3.33

C6	Cambodia (A1)	5	4	4	4.33
	Peru (A2)	3	3	3	3.0
	Laos (A3)	4	5	5	4.67
	Burundi (A4)	3	4	3	3.33
C7	Cambodia (A1)	5	5	4	4.67
	Peru (A2)	4	3	5	4.0
	Laos (A3)	5	4	4	4.33
	Burundi (A4)	4	4	5	4.33
C8	Cambodia (A1)	5	4	5	4.67
	Peru (A2)	5	5	4	4.67
	Laos (A3)	4	5	4	4.33
	Burundi (A4)	5	4	4	4.33
C9	Cambodia (A1)	4	4	4	4.0
	Peru (A2)	4	5	3	4.0
	Laos (A3)	5	4	5	4.67
	Burundi (A4)	4	4	4	4.0

Step 3: Calculate the score of each alternative

Table 4 displays the weighted mean scores of each alternative in terms of each criterion.

Table 4. Weighted mean scores of each alternative

		Weighted average
C1	Cambodia (A1)	21.81
	Peru (A2)	18.68
	Laos (A3)	21.81
	Burundi (A4)	15.55
C2	Cambodia (A1)	21.65
	Peru (A2)	18.35
	Laos (A3)	23.35
	Burundi (A4)	16.65
C3	Cambodia (A1)	15.89
	Peru (A2)	15.89
	Laos (A3)	14.42
	Burundi (A4)	14.42
C4	Cambodia (A1)	11.09
	Peru (A2)	12.22
	Laos (A3)	11.09
	Burundi (A4)	9.99
C5	Cambodia (A1)	15.89
	Peru (A2)	14.42
	Laos (A3)	18.74
	Burundi (A4)	14.42

C6	Cambodia (A1)	14.42
	Peru (A2)	9.99
	Laos (A3)	15.55
	Burundi (A4)	11.09
C7	Cambodia (A1)	20.22
	Peru (A2)	17.32
	Laos (A3)	18.74
	Burundi (A4)	18.74
C8	Cambodia (A1)	21.81
	Peru (A2)	21.81
	Laos (A3)	20.22
	Burundi (A4)	20.22
C9	Cambodia (A1)	17.32
	Peru (A2)	17.32
	Laos (A3)	20.22
	Burundi (A4)	17.32

Based on these results, we can calculate the weighted sum of each export destination as follows:

$$A1 = \frac{21.81+21.65+15.89+11.09+15.89+14.42+20.22+21.81+20.22}{9} = 17.78$$

$$A2 = \frac{18.68+18.35+15.89+12.22+14.42+9.99+17.32+21.81+17.32}{9} = 16.22$$

$$A3 = \frac{21.81+23.35+14.42+11.09+18.74+15.55+18.74+20.22+20.22}{9} = 18.24$$

$$A4 = \frac{15.55+16.65+14.42+9.99+14.42+11.09+18.74+20.22+17.32}{9} = 15.37$$

Step 4: Compare and select the best alternative with the highest score

According to the scores calculated in step 3, the ranking result $A4 < A2 < A1 < A3$ is derived. Therefore, the best alternative is A3, which is Laos, a country with a similar business culture to Vietnam and close diplomatic ties.

5. Conclusion

Business decisions are complicated since there are many aspects company managers need to take into account. Besides, each decision-maker could give priority to different criteria as well as have different opinions regarding the value of each alternative according to each criterion. Therefore, it is vital to have a multi-criteria selection method that integrates all of these dimensions. This paper proposes the use of weighted sum method and applies it to the problem of export market selection in Viettel Group. Although this method has its own disadvantages, it is simple in use and could provide an effective initial evaluation. This straightforward method also helps firms save considerable amount of time to reach an informed decisions in initial stages of decision-making process. However, for further research, more analyses and calculations that consider more comprehensive criteria and dimensions could be conducted to provide more accurate and complex evaluations.

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