

Processed Food Imports that Improve Company Competitiveness in Emerging Countries

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Abstract

Company internationalization drives the search for competitive foreign suppliers. Therefore, this study aims to determine the factors that boost processed food imports for large Mexican food companies. We collected data through a 55-question survey applied to major large companies of Northern Mexico. The results of the multiple linear regression model show that international price, required quality, international availability of the product, knowledge of customs clearance procedures and company logistics capabilities explain 66.4% of import drivers. They also confirm that there exists a negative relationship in logistics capabilities. This study is unique in that it shows imports can provide a competitive strategy, using five key factors.

Keywords

Competitiveness, Imports, Processed Foods, Northern Mexico.

1. Introduction

One of the most important company challenges is to develop strategies that achieve competitive advantage. Therefore, for company internationalization, food industry entrepreneurs, managers, buyers and importers should consider importing as an option and should also analyze and assess the significant factors in the import purchasing process.

First, we analyze the context of processed food industry in the world, in Mexico and Nuevo Leon, to show the importance of this sector in the economy. Second, we review the existing theoretical models that describe import process factors, thereby creating a reference framework for selecting the set of factors considered to boost imports. Third, we present statistical results obtained by applying the quantitative measurement instrument to the selected population and significant variables and last, we explain the importance of this study in the discussion and conclusion section.

In Mexico, the manufacturing industry consists of 21 subsectors important for the country's economic growth. The most significant subsectors are the food industry, the beverage and tobacco industry, and the manufacturing of machinery and equipment industry, among others. The food industry is particularly relevant to this nation, since it represents just over 35% of manufacturing companies nationally (DENUE, 2017) and because it contributed 22.7% of the manufacturing Gross Domestic Product in Mexico in 2016 (INEGI, 2018). Food production is classified as both manufactured and unmanufactured industry and in this study manufactured foods are considered exclusively for human consumption and understood as "subject to an alteration of the original state with respect to their components, easy to consume and keep in containers" (Secretariat of Public Education-Secretariat of Health, 2014, p. 88).

The production of processed food worldwide was 5.069 billion dollars in 2015 and the following three countries produce almost 50% of the global total (ProMéxico, 2015): China with a 28.9% share, United States with 16.1% and Japan with 4.7%. The major processed food importing countries in 2015 are the United States (11% share), Germany (7.2%) and China (6.1%). Thus, the following companies stand out worldwide: Pepsico, General Mills, Mondelez International, Mars, Kellogg's, Kraft foods, Unilever, Associated British Foods PLC, Nestlé and Danone (Hess, 2014;

ProMéxico, 2015, 2018; Fortune, 2015). As for the consumption of these foods, Mexico is the seventh per capita food consumer, therefore, processed food imports are required to satisfy this consumption. In 2017 there were already 184.796 food manufacturing companies, representing 35% of Mexico's total manufacturing companies (DENUÉ, 2017). A thorough understanding of procedures and processes regarding processed food importation is essential, since as any product for human consumption, is strictly controlled by government departments such as health and agriculture. Besides, constant changes in import requirements easily entail mistakes that in the long run discourage companies from continuing to import. According to Maggio (2013), importing mistakes may be avoided if the interested party knows how to prevent delayed delivery to the destination country that causes unnecessary increases in the final product cost.

Another import problem is product quality, since as shown by the applied research of McNeil and Felgate (2014), product required quality is considered an import driver, which is often above or at the same importance level as the international product price. Furthermore, price may also be an import problem, since according to Murray, Kotabe and Wildt (1995), the product price is one of the main import drivers. Another problem may be product internal availability, since if goods are unavailable in the domestic market, companies will search them abroad (Paul, 2011), thereby turning the external market into the main supply source.

Lastly, an import problem may arise from the lack of trust toward national suppliers and greatly depend on the supplier's capacity to control quality and processes, thereby international suppliers are used (Jaud, Cadot, & Suwa-Eisenmann, 2009). To address these problems in order to improve the import process, our research question is: What are the drivers of processed food imports in large food companies? In this sense, we aim to determine these factors so that companies can implement strategies for boosting imports in the processed food sector (finished products or raw materials) and thereby gain a competitive advantage. We hypothesize that these factors are: the international product price, the required quality of the product, international availability of the product, the level of trust toward international suppliers, knowledge of customs clearance procedures, and logistics capabilities of the processed food company.

2. Literature Review

One of the most recent international trade theories, Porter's theory of competitive advantage extends beyond nations' scarcity or efficiency, since he shows that competitiveness relies on a company's ability to develop better strategies for overcoming competition. Moreover, Porter (1990) introduces a conceptual framework, the so-called Diamond Model, which points out the major determining factors that make companies develop and compete. Porter (1991) argues that the search for products in the international market allow companies to compete through the sale of products that provide customers with characteristic value. Regarding the theoretical analysis and empirical research on import drivers, Linder's Theory (1961) provides a strong theoretical underpinning for the "impetus for imports" dependent variable. This was a precursor theory in manufactured product differentiation since it focuses on demand, where the company must respond to consumer preferences. The theory argues that company competitiveness comes firstly from the experience acquired from domestic sales, which later converts into international sales.

Based on the literature review, we used Maggio's (2013) definition of an import driver, this being the increase in the purchase of foreign products either used for supplies for production or as a finished product for direct sale to the customer. In order to reinforce the theoretical framework of selected variables, we put forward several authors who have contributed to the theory and empirical research on the relationship between each of the six independent variables and the impetus for import (dependent variable)

1.- International Product Price: This is one of the most studied determining factors on imports, and thereby a very significant factor in the supply of foreign goods (Bebczuk, 2008; Arize & Nippani, 2010). Empirical studies conducted worldwide, such as in the United Kingdom (McNeil & Felgate, 2014) and China (Wang, Zhang, Zhang, & Zhu, 2015) acknowledge that imports increase when there are lower import prices. Consequently, the international price is defined as the monetary value exchanged when purchasing a product (Díez & Rosa, 2004).

2.- Required Quality of Product: Barker's theory proposes in the "variety hypothesis" that the consumer demand that prefers product variety in terms of characteristics such as quality, produces an increase in imports, since these extra varieties are available from abroad and not in the domestic market (Gandolfo, 2014). Empirical research has found weighty arguments showing that importation is influenced by the search for new high-quality resources (Gale, Jewison, & Hansen, 2014; Ortega, Wang, & Olynk, 2014; Terano, Mohamed, Rezai, & Hanum, 2016). Therefore,

quality is defined as the level of compliance in terms of the biological, physical and even chemical characteristics of the product with regard to the buyer's quality requirements (ISO, 2005).

3.- International Availability of Product: Kravis (1956) argues that a nation tends to import products that are not available at home in the absolute sense or that they require an increase in production that can only be achieved at a much higher cost. Studies such as those conducted by Chen, Marchant and Muhammad (2012) in China; Welfle, Gilbert and Thornley (2014) in the United Kingdom or Porkka, Guillaume, Siebert, Schaphoff and Kumm (2017) acknowledge that product unavailability promotes importation. Based on theoretical analysis, the international availability of the product is understood in this study to be the product offer that exists abroad in the quantity and within the delivery time required by the buyer.

4.- Level of Trust Toward International Suppliers: Liang and Parkhe (1997) and Saleh, Ali and Julian (2014) argue that international trade begins when the importer perceives the exporter as trustworthy. Empirical studies show that the increase in imports relates more to aspects such as price or the testing process when importation has begun rather than the level of trust towards international suppliers (Jaud, Cadot & Suwa-Eisenmann, 2009; Bernzen, 2014; Head, Jingz & Ries, 2014). Thus, trust is understood in this study as the buyer's belief that the supplier's needs will be met (Ballou, 2004).

5.- Knowledge of Customs Clearance Procedures. When the manufacturing company's staff has superior knowledge, the company will be able to produce differentiated items, thereby entailing a competitive advantage (Caves, 1971 cited by Cabeza, 2010). The empirical studies conducted by Vorush (2013) and Saleh, Ali and Julian (2014) showed that the importers' greater knowledge and experience have the potential to increase international purchases. Therefore, knowledge of customs clearance procedures is defined in this study as the ability to know and manage the information needed to efficiently import a commodity.

6.- Company Logistics Capabilities. Logistics play a crucial role in supply chain management; thus manufacturing companies constantly seek to improve the different phases of this process (Liang & Parkhe, 1997). Cañabate's thesis (2015) shows that logistics and import capabilities are strongly related, but Chaverra's study (2016) argues that this relationship is a negative one, since companies delegate logistics activities to third parties, considering the importance of being able to count on competitive customs agencies for the importation logistics process. In this regard and based on the theoretical information consulted, logistics capabilities are defined in this study as the company's likelihood of directly carrying out product input logistics from the point of origin to the destination.

3. Methods

We used the survey as a field method for collecting information directly from processed food industry entrepreneurs of Nuevo Leon. This survey was prepared with 11 questions on the respondent and company profile. In the second section, we elaborated 42 questions based on the literature review, both of existing theories and several empirical studies. In this part, we used the 6-point Likert scale as possible answers, where 1 represents "Strongly disagree", 2 "Disagree", 3 "Slightly disagree", 4 "Slightly agree", 5 "Agree" and 6 "Strongly agree". At the end, we added 2 questions that measure the order of importance of proposed independent variables, thus we counted on a total of 55 questions.

In terms of population, we considered the top 30 largest manufacturers of food for human consumption located in Nuevo Leon, Mexico (DENUE, 2017), since their size entails a significant experience in importing processed foods. We calculated the sample size by considering a maximum margin of error of 10% and a confidence level of 90%. According to the formula result, the sample consists of 21 large processed food companies and the sampling technique is simple random sampling. It is worth mentioning that this is not a small sample as almost 80% of the population is being covered. The study subject focused on companies' senior management or processed food importers or buyers.

4. Results and Discussion

To validate survey reliability, we used the results from the Cronbach's Alpha test, which yielded acceptable coefficients: Price=0.814, Quality=0.749, Availability=0.770, Knowledge=0.826, Logistics=0.755 and Drive to imports with Alpha=0.757. After adapting the final survey, we applied it to the main large, processed food companies in Nuevo Leon and obtained the following results: Profile of companies that participated in the survey: 52.6% of them

were consolidated companies, established from 1991 to 2000. Large companies use 78.9% of the processed foods purchased as raw material to produce another processed food, while the remaining 21.1% are unaltered, being directly sold to the customer. 63.2% of the companies surveyed, import or have imported certain processed food and 50% of this portion began to import in their first 4 years, while the other 50% did the same on average after 4 years of operation. These importing companies report that in 2016 70.2% of processed food imports came from the United States of America, 8.3% from Asia, 5.7% from Canada, 3.9% from Europe, 3.6% from Latin America and 8.3% from “Other countries”.

We tested the hypothesis using the multiple linear regression model with ordinary least squares in order to determine the relationship between the independent variables and the dependent one. The results yielded a model with an adjusted R-squared (R²) of 0.664 and a Durbin-Watson statistic of 1.871. We eliminated the variable trust toward international suppliers and selected the 5 variables that significantly contribute to the model (Sig. <0.1): international price of the product, required quality of the product, international availability of the product, knowledge of customs clearance procedures, and the importing company’s logistics capabilities, which explain 66.4% of the variation in import drive. (See Table 1).

4.1 Numerical Results

Table 1: Linear Regression Model of Significant Variables

R	R-squared	Adjusted R-squared	Estimate’s Standard Error	Change Statistics					Durbin-Watson
				R-squared Change	F Change	gl1	gl2	Significance of F Change	
.863 ^a	.744	.664	2.504	.744	9.318	5	16	.000	1.871

a. Predictor variables: (Constant), Price, Quality, Availability, Knowledge, Logistics Capabilities

b. Dependent variable: Import drive

Source: Data analyzed with SPSS.

4.2 Validation

To confirm the validity of the multiple linear regression equation, we used the analysis of variance (ANOVA) that shows whether there is a significant relationship or a dependence between the model variables (Pardo & Ruiz, 2005). This test, where the value is larger than $F_{table} = 2.244$ (level of significance 0.1, 5 degrees of freedom in the numerator and 16 degrees of freedom in the denominator), shows that as the means across the groups are not equal, the independent variables have an effect on the dependent variable (Table 2). On the other hand, F-test significance (Sig. or p-value) is = 0.000 and as this is less than 0.1, it confirms the relationship between the model variables.

Table 2: ANOVA of the Linear Regression Model

Model	Sum of Squares	gl	Mean Square	F	Sig.
Regression	292.065	5	58.413	9.318	.000 ^b
Residual	100.299	16	6.269		
Total	392.364	21			

a. Dependent variable: Drive to imports

b. Predictor variables: (Constant), Price, Quality, Availability, Knowledge, Logistics Capabilities

Source: Data analyzed in SPSS.

In terms of significance, we consider that the variable contributes significantly when the significance level is < 0.1, thereby increasing the theoretical probability of relevant variables to be included in the model. As regards Student t-values and critical significance level, Table 3 shows that the variables price (t = 2.280; p = 0.037), quality (t = 5.491; p = 0.000), availability (t = 2.455; p = 0.026), knowledge (t = 2.842; p = 0.012) and logistics capabilities (t = -4.851; p = 0.000) significantly explain the drive in imports (Sig. < 0.1) (Pardo & Ruiz, 2005).

Table 3: Regression Coefficients of the Model’s Significant Variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Multicollinearity statistics	
	B	Standard Error	Beta			Zero Order	Par_tial	Semi_partial	Tolerance	VIF
(Constant)	2.150	3.718		.578	.571					
Price	.461	.202	.357	2.280	.037	.214	.495	.288	.652	1.535
Quality	.925	.168	.843	5.491	.000	.532	.808	.694	.678	1.474
Availability	.480	.195	.376	2.455	.026	.215	.523	.310	.680	1.471
Knowledge	.371	.130	.448	2.842	.012	.255	.579	.359	.643	1.555
Log. Cap.	-.790	.163	-.879	-4.851	.000	-.027	-.772	-.613	.487	2.053

a. Dependent variable: Drive in imports
 Source: Data analyzed in SPSS.

5. Conclusion

This explanatory framework emphasized the global economic importance of the processed food industry in Mexico and the State of Nuevo Leon, regarding production, consumption and imports and it also emphasized the importance of food safety. This industry is particularly important since companies strive to continuously improve the supply of processed food either domestically or internationally, mostly for two reasons. Firstly, they intend to keep production lines supplied in order to meet the market's food demand. Secondly, they aim to achieve a competitive advantage through product differentiation. Using the theoretical analyses performed, we selected the factors considered to drive imports and the results show that the international price of the product, the required quality of the product, the international availability of the product, knowledge of customs clearance procedures and the company's logistics capabilities explain the 66.4% variation in the drive to imports.

Therefore, based on these findings that show the significant variables in accordance with the literature analyzed, in this section we propose strategies that will help Mexican large food companies increase their imports and become more competitive. In this sense, we will briefly discuss the results of each of the proposed variables or factors. First, *the product international price* has always been a key element in international purchasing, generally assessed along with other factors that help the entrepreneur make a purchase decision. In this regard, companies analyze the prices of those products that meet the requirements agreed with the foreign supplier from the start and enable them to have competitive prices in the domestic market. Thus, the company's ability to negotiate the price in international trade transactions confers it another advantage related to imports. However, we should not forget the Dumping issue where several countries practice price discrimination by subsidies granted to particular industries, or companies that sell at less than normal value, engaging in unfair foreign trade practices regulated by Article 28 of the Foreign Trade Law (Laguna, C.E., 2002).

Furthermore, *the product required quality* is a variable that allows companies to produce unique foods in order to compete in the marketplace. Companies report that they would import products at the required quality even if at a higher cost than those found in Mexico. Thus, importers that pursue strategies to enhance their competitiveness may consider importing as a means to purchase, produce and sell quality processed foods. Besides, providing quality products entails product differentiation, since these products may have a specific quality, and as they are products or raw materials sometimes only available abroad, these companies may manufacture products difficult for competitors to imitate. Thereby, they ensure that they will keep up with consumer preferences for longer.

The information gathered from these 2 variables shows that companies should identify the strategy they will use to compete in the domestic or international marketplace, whether they will maintain their leadership position by low prices or by quality products, as this will determine the significance assigned to each factor upon making an import purchase decision.

Another significant variable was *the product international availability* that respondents consider important since food companies use it as a resource to access new supply sources without disregarding the supplier's commitment toward timely delivery of processed foods. A low level of product availability may impact on sales results, but a company that counts on a product almost exclusively available may monopolize the niche market and get ahead of the competition. Furthermore, respondents consider *the knowledge of customs clearance procedures* to be particularly relevant since experience is required to achieve more flexible food imports with less extra costs, as confirmed by

Saleh, Ali and Julian (2014). This variable shows that companies should train employees and seek proper advice from import logistics providers, thereby creating synergistic communication with employees and ensuring operational efficiency.

The last significant variable, the importing company's *logistics capabilities* had a negative relationship. This is an important finding showing that a reduction in direct import logistics activities entails an increase in company's imports. The large companies surveyed explained that they achieve greater advantages, cost savings and faster imports when logistics services are partially or totally provided by expert third companies. Thus, companies should adapt their logistics strategy in order to boost their imports.

As regards *the trust toward international suppliers*, we found that is not statistically significant for large companies due to several factors. First, companies mostly import products from the United States, due to geographic proximity, and given their regular business operations, companies are accustomed to dealing with these suppliers and do not assign any importance to this factor. Second, as they are large companies, they usually depend on the intra-firm supply or international suppliers approved by the parent company's supply policies, and thus suppose that trust has no inference in the import process, being already validated by the parent company.

6. References

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