

The Monterrey Internationalization Behavior

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Abstract: The northern Mexican city of Monterrey is well-known for its high economic development, strong industrial network, and for being the based city of a great number of multinationals from Mexico. However, its business culture has been historically developed in an environment with a lack of inside competition, repercuting their internationalization behavior. In this paper, we develop a binary decision model of Foreign Direct Investment based on the behavioral preferences that characterize multinationals of Monterrey. To test its efficiency, we use the internationalization process of the convenience store chain OXXO, finding that there is a preference for greenfield type of investment in markets with lower levels of competition, and brownfield type of investment for markets where is costly the control over the competition. These factors satisfactorily explain the Foreign Direct Investment process of OXXO in Chile and Peru, except for Brazil, in which we suggest the decision was not optimal. Finally, we discuss that our model could be explanatory for other multinationals from Monterrey and cities with similar business culture history.

Keywords: internationalization behavior; Monterrey multinationals; OXXO

Abstrak: Kota Monterrey di Meksiko utara terkenal dengan perkembangan ekonominya yang tinggi, jaringan industri yang kuat, dan menjadi basis dari sejumlah besar perusahaan multinasional dari Meksiko. Namun, budaya bisnisnya secara historis berkembang di lingkungan dengan kurangnya persaingan di dalam, meniru perilaku internasionalisasi. Dalam penelitian ini, kami mengembangkan model keputusan biner Investasi Langsung Asing (*Foreign Direct Investment*) berdasarkan preferensi perilaku yang mencirikan perusahaan multinasional di Monterrey. Untuk menguji efisiensinya, kami menggunakan proses internasionalisasi rantai toko swalayan OXXO, dan menemukan bahwa ada preferensi untuk jenis investasi *greenfield* di pasar dengan tingkat persaingan yang lebih rendah, dan jenis investasi *brownfield* untuk pasar dengan tingkat persaingan yang lebih tinggi. Faktor-faktor ini secara memuaskan menjelaskan proses Investasi Asing Langsung OXXO di Chili dan Peru, kecuali Brasil, di mana kami menyarankan keputusan yang belum optimal. Terakhir, kami membahas bahwa model kami dapat menjadi penjelasan bagi perusahaan multinasional lain dari Monterrey dan kota-kota dengan sejarah budaya bisnis serupa.

Kata Kunci: perilaku internasionalisasi; perusahaan multinasional Monterrey; OXXO

INTRODUCTION

The newly industrialized economies (Brazil, China, India, Indonesia, Mexico, and Turkey) have been key players in the modern global economy not only because of their dynamic and cheap supply in the Global Value Chains but their multinationals' processes of internationalization in developing countries (Boddin, 2016). Mexico, being the 4th larger economy based on the Gross Domestic Product of the group, has as primary advantage its geopolitical condition (Esquivel, 2000), which allows commercial trades using all types of means of transport (sea, rail, road) with the United States, Canada, and Central American countries. Undoubtedly, the northern region of Mexico is where most of the domestic production passes through to be exported, having as positive spillovers a higher percentage of state income by tax collection, international cooperation with US states, competitiveness, and economic development (IMCO, 2021). Among the northern states that have taken greater advantage of this

productivity conditions, Nuevo León is by far the most recognized for its industrial improvement, being its capital city Monterrey the unofficial “Mexican industrial capital” (UNESCO, 2008). As proof, 4 out of the 9 multinationals from Mexico listed in “The Global 2000” list by Forbes (2022) were founded, and still their headquarters are, in Monterrey: CEMEX, FEMSA, Arca Continental, and Banorte. Analyzing the industries of the multinationals, we can find out a surprising diversity: construction materials, food and beverages, and financial services. Its very interesting when comparing with the multinationals from Mexico City, since 3 from its 5 multinationals are indeed in the same sector: mining and metals. Here, there is certainly competition since all of them have different shareholders, however in the Monterrey case things get very difficult to unscramble, since only two of them (Femsa and Arca Continental) can be pointed out as competitors because they are in the same industry, food and beverages, but indeed their greatest revenue comes from being the biggest bottlers in Latin America of Coca-Cola franchise (Coca-Cola, 2022).

Nevertheless, this duel was disruptive back in 2011 (Gestión, 2015), year when Arca Continental was founded, in the Monterrey’s strong industrial network since before that year almost non multinational had any sort of direct competition. Arca Continental was a merger of several companies, mostly American, aimed at ending FEMSA’s monopoly of Coca-Cola bottling. However, this was a first taste for Monterrey’s multinationals of what globalization entails. The traditional behavior was holding the production in Monterrey while considering the internationalization via exporting to close cities in the United States like San Antonio, which last while there was a certain control of Monterrey’s businessmen over Foreign Direct Investment entry, but events such as the Free Trade Agreements, new generations of entrepreneurs, new mergers and acquisitions, and dissolution of some cultural barriers, permitted the transition into a new pattern of how business is done in Monterrey (Corrales, 2012). However, even if the new companies, usually leaded by new generations, have adapted to the era of global commerce, there is still the question regarding how the historical multinationals, those that grew up in a business culture environment where there were no competitors to worry about, are getting international. Therefore, the aim of this paper is to propose an alternative model of internationalization behavior of the multinationals of Monterrey, specifically those with a long business history in the city.

In the next section, we selected some relevant findings on what multinationals, specially those in Monterrey, consider setting Foreign Direct Investment outward. We based our literature in the OLI Paradigm and give some brief discussion on some other contributions of internationalization behavior like Vernon (1966) and Williamson (1981). In the third section, we develop a quantitative model that explains the decisions of multinationals based on Foreign Direct Investment and market competition, to diagram a binary decision tree feasible to apply with qualitative data. Then, we use some data regarding the internationalization process of OXXO, a Monterrey’s multinational convenience store chain, to test our model’s efficiency. Finally, we pointed out some of our findings and discuss the applicability of our model to explain other Monterrey’s multinationals internationalization processes, as well as the possibility of explanatory power on other multinationals from cities with similar historical backgrounds.

LITERATURE REVIEW

It’s compulsory for the permanence of firms to seek economic stability by grouping with other firms or exploring new markets (Herbert, 2002), usually leading them to take the decision to internationalize. Going abroad to set up new economic activities not only is about the creation of new networks of cross-border activities, but the enhancement of the cultural integration between countries when done properly. Nowadays, more access to communication, reduction of transport’s costs, and openness of data have brought up better conditions for firms in their search. Vernon (1981) pointed out that, when these conditions are given, historical-comparative advantages between markets are not more of a limitation for firms to enter a market if they can contribute with innovation, technology, and management. Therefore, firms will decide to get international if they have these advantages in their production line compared with the domestic competitors in the market/location. Moreover, this approach can explain why some firms, in markets when innovation had already thrived out across firms, decide to outward their production in less innovative markets. However, this behavior have some limitations in explaining the microeconomic interactions between the demand and the firm, since even a firm has the innovation, technology, and management conditions, if the demand side faces high costs, aside the price, to purchase the product, then there would not be any advantage in the internationalization. This problem is explained

by the theory of transaction cost of Ronald Coase (1937), who argued that additionally to the price there are costs in the exchange of products produced by the market conditions that a rational consumer take into account before purchasing. The posthumous development of Williamson (1981) based on Coase's work define this additional cost for consumers as transaction costs, which consist in the search, bargaining, and enforcement of the product consumption that indeed affect the market share of firms, assuming that competitors offer the same product at the same price and with the same quantity available as the others. Therefore, both theories suggests that is important to: (1) understand the conditions of the market to enter, (2) be aware of the own capabilities, and (3) reduce the transaction costsⁱ borne by the consumer.

However, there is certainly a bias in the internationalization behavior model of Vernon and Coase, since both were economists that assume that some cultural conditions of the firms are not relevant in the decision of a multinational to internationalize. Luo and Tung (2007) offer another perspective: the springboard method. The authors, that revolutionized the internationalization behavior theory, suggest that multinationals from emerging markets know that they will never have in their domestic market the acquisition of the need advantages for a successful internationalization process. This means that a multinational that was founded in an emerging market would never, following Vernon and Coase, have the advantages that incentivize them to go abroad, but this is not necessarily an impediment, since most multinationals recognize their natural disadvantage. Based on their "latercome disadvantage", the multinationals of emerging markets will compensate their weaknesses by the use of Mergers & Acquisitions of multinationals from developed markets. However, some of them may still select other type of Foreign Direct Investment.

Garita and van Marrewijk (2007) made an interesting analysis of the different types of Foreign Direct Investment and its distribution. First, is important to define Foreign Direct Investment (FDI from here) as a type of investment that implies a lasting direct relationship between the multinational and the subsidiaries, firms, or employees from the foreign market. There are two types of FDI: greenfield and brownfield. The first one means that the multinational decide to start from the scratch their line of production in the foreign market, while the second implies starting by partnering or acquiring, partly or fully, a firm's line of production. The authors pointed out that most of the FDI in the world is via the brownfield type of investment, since for multinationals is easier to merge or acquire some experienced domestic firms that can guarantee a successful entry due to their already market knowledge. The problem with the greenfield type of investment is that sometimes there are cultural, legal, or political factors that are not predicted by quantitative analysis, but by the experience of working with the employees, living in the city, or facing daily problems. The impacts of FDI in the domestic market are pretty unclear, since Blomstrom and Kokko (1998) found that there is some endogeneous relationship between the entry of FDI and the level of competition in the market, generating that while more FDI a multinational invest, then less market share through time will have. However, there is not strong evidence that different types of FDI have different effects.

Now that we have differentiated the types of FDI, it is important to qualitatively differentiate the components that entail an investment in the internationalization process. Dunning (2008), with his OLI Paradigm, based his analysis of why multinationals decide to internationalize on three fundamental aspects that leads to different types of FDI:

1. Ownership: Referring to all types of capital (tangible or intangible) such as property rights, real estate, skilled labor, technological knowledge, management skills, information, and organizational structures. These assets or knowledge are categorized into property rights and intangible assets, governance benefits shared with all plants, and institutional properties such as corporate culture.
2. Location: Advantages that the place of operations provides to the organization, such as the economic system, legal regulation, cultural behavior, or business environment.
3. Internalisation: Structure and governance of the organization that allows exploiting the advantages of the company to produce intermediate goods instead of subcontracting with other companies.

We provide the following diagram to understand OLI Paradigm factors and outputs:

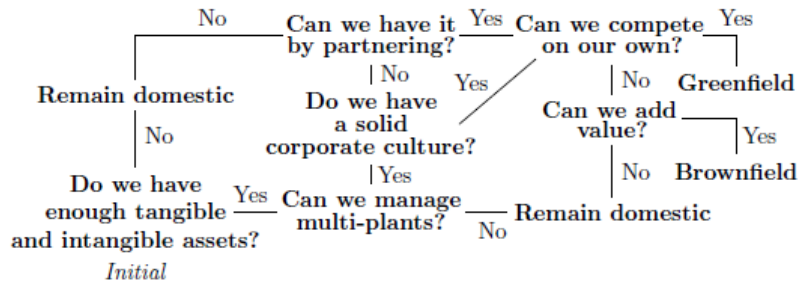


Figure 1. OLI Paradigm

The OLI Paradigm is indeed a good framework that could be explanatory of internationalization behavior of multinationals indistinctly if they come from developed or developing countries, however, as mentioned in the introduction section, the Monterrey case is very particular due to the historical business culture of its multinationals. Regarding the researchs on the modeling of the behavior of multinationals of Monterrey there are very few. The most relevant was made by Huesca-Dorantes et al. (2018), who pointed out four characteristics of the internationalization behavior of multinationals from Monterrey:

1. Control: Having control over the factory or production plant is essential. Since most of the multinationals from Monterrey are family business type, there is not a huge diversification of power through lower-level departments, incentivizing the concentration of management.
2. Cost: Monterrey's multinationals are very conscious that competing globally needs a lot of improvement of their own capabilities, and that indirectly implies increasing the operation costs. Then, it desincentivize starting the journey of searching new markets where to set their production lines up.
3. Alliance: It is especially characteristic that people from Monterrey are not very open to foreign people and culture, and this certainly is noticed in their strategic alliances. For multinationals, any type of partnering should be considered as the last option, and not finding them as a primary need, something very different from today's new enterprises behavior of Monterrey.
4. Market: Monterrey has a predilection for no competition, so definitely multinationals have a strong preference for markets where there are high probabilities to become a monopoly, or in its defect an oligopolic market structure.

Based on these findings across the different researchs, in the next section we propose a model of the internationalization behavior of multinationals from Monterrey.

THE MODEL

We have an economy i where j firms offers a unique product at price p_j , having in the economy i the average price of

$$E[P_i] = \sum_{j=1}^n p_{ij} P(p_{ij}) = \sum_{j=1}^n p_{ij} \frac{1}{\sqrt{2\pi}} e^{-\frac{(p_{ij}-\mu_i)^2}{2}},$$

since p_{ij} has a normal distribution of probability to be purchased. This means that while a firm j sell the product x at price $p_{ij} \pm z$, where $z \neq 0$, it will have less probabilities to sellⁱⁱⁱ, then the average price of x in the market i will be p_{ij}^* , point in which there is no other p_{ij} with higher probability given $P(p_{ij})$. What differentiates firms is how much quantity q_{ij} does each firm j can produce, which is constrained by the cost per unit $c(q_{ij})$ and fixed cost f_{ij} , having the following benefit function:

$$\max_{p_{ij}} \pi_{ij} = P(p_{ij}) q_{ij} (p_{ij} - c(q_{ij})) - f_{ij} \quad s.t. \quad p_{ij} \geq c(q_{ij}) \wedge \lim_{z \rightarrow 0} z = p_{ij} - \mu_i.$$

In the benefit function, we added the distribution of probability assuming that firms have the information available in advance prior to their production planning. With the prices selected by firms j in an economy i , we create the function

$$F(p_{ij}) = \frac{P(p_{ij})q_{ij}}{\sum_{j=1}^n P(p_{ij})q_{ij}},$$

which measures the percentage of total quantity offered per each price level. With this function, we would determine how competitive is a marketⁱⁱⁱ in an economy i , by calculating the sum of the area under $F(p_{ij})$ near the optimal price level p_{ij}^* :

$$M_i = \left[\int_{p_{ij}^* - \epsilon}^{p_{ij}^* + \epsilon} F(p_{ij}) dp_{ij} \right]^{-1}$$

Now, per each level of competitiveness, there is a needed ammount of FDI to reach the level of price optimality and minimize costs. Let's assume that every economy i has the same amount of firms, there is a natural order of optimal prices p_{ij} taken by each firm and setting up from scratch a line of production has the same cost across economies. Then, assuming an elastic relationship between market competitiveness and costs to enter a market optimally (FDI), we would have \overline{FDI} value that is the total cost needed to achieve the optimal price in an economy with $M_i = 0$. Therefore, per each increase in M_i , there would be a decrease in \overline{FDI} of $\delta(M_i)$. This rate has a quadratic functional form^{iv}, which means that while a market with $M_i = 0$ starts to become less competitive, then $\delta(M_i)$ would be higher than the increase when M_i is close to 1. With this relationship, $f(FDI) = \delta(M_i)FDI$, a firm can take the decision to invest the needed extra amount of FDI to achieve optimality or to destinate an ammount in a region under the optimality function.

Now, we have to recall that Monterrey's multinationals have four characteristics of their internationalization behavior: preference for control, do not assume high costs, alliances if needed, and predilection for markets with less competition. That's why we have to delve into what does it entails for FDI. First, let's say that there is a level of FDI that multinationals are not able to spend for internationalization FDI^Δ . This means that even they would achieve the optimal price, then having benefits, the ammount needed of FDI is so high, due to the need of capabilities improvement, capital resources, etc., that they would never take the risk of putting. Below that level, multinationals would consider enter with or without using domestic alliances, however, what makes the difference is the level of market competition FDI_i^Δ . If an economy has a market below that level, then is considered risky, so it would be needed some alliances (via the brownfield type of investment) if internationalization in that economy is preferred, on the other hand, if an economy has a market competition above the mentioned level, then the multinational has no incentives to FDI via the brownfield type of investment, since the ammount is not high and there is not enough competition, leading to invest via the greenfield type of investment. Graphically, we would observe the following representation of decision categories of multinationals from Monterrey:

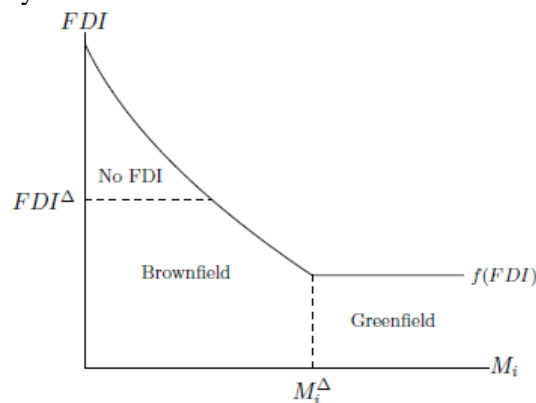


Figure 2. Internationalization behavior of Monterrey's multinationals

The problem of this model is its high demand for quantitative information, so based on the overall findings, we develop a binary decision diagram which serves as an alternative model with the use of qualitative information. As we observe, both models have as possible decisions on internationalization the two types of FDI (brownfield and greenfield), and the decision of not going abroad. Certainly, some adjustments were needed to translate the quantitative model into a qualitative one, however, we found that our diagram is still useful in explaining how multinationals from Monterrey behave to decide to internationalize.

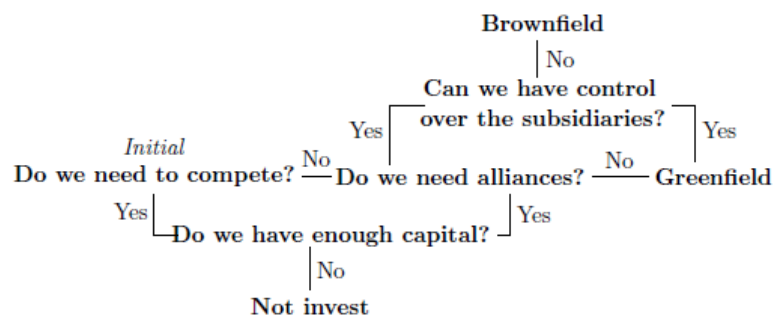


Figure 3. Binary model of internationalization behavior

There are still further improvements that may be needed in order to have more accurate outputs, in addition of some approaches that were omitted, such as the endogeneous relationship between FDI and market share. We avoid including those model extensions due to it requires a depth observation on the significant determinants, currently limited in the literature.

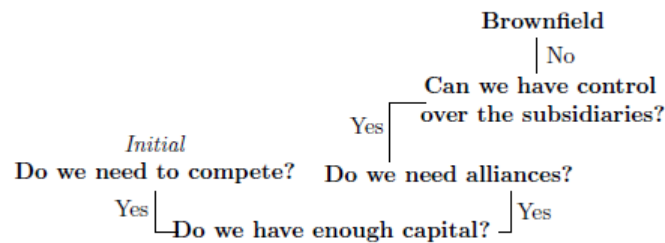
INTERNATIONALIZATION OF OXXO

Among the multinationals from Mexico with highest market value, Fomento Económico Mexicano (FEMSA from here) is the most important in Monterrey^v. Despite their yearly revenue, FEMSA is probably one of the most recognized multinationals across the country since it has a convenience store chain, named OXXO, that is a vital part of the imaginary of Mexican households (Santa, 2014). OXXO has been operating since 1978, and it definitely has developed some institutional advantages throughout the years, so FEMSA decided to incur in the internationalization of OXXO in 2016, when it began operations in Chile through the purchase of Big John convenience stores, obtaining 48 stores in its first year; in 2018, it would be Peru with the opening of 10 stores that competed against Tambo convenience stores (Montoya, 2018); and in 2019, the Raizen Group of Brazil would be acquired 50% by FEMSA in order to offer a convenience store that adapts to the Brazilian market with the experience that the Raizen Group already had (Estrada, 2020). However, it may look like OXXO started its internationalization with systematic planning, but in reality, the first entry try into another country was in 2008, when they decided to open 30 units in Colombia, a country where FEMSA, through Coca-Cola FEMSA, had already operations since 2003 (Ialimenetos, 2015). Therefore, FEMSA before 2011, year when we mentioned that multinationals from Monterrey start feeling the entry of the globalization era, was really not interested in the internationalization, and its selection of Colombia was due to they already had much experience in the country. It was since 2011 that FEMSA, pushed to look upon new markets, became interested in the South American market, because they found low levels of competition in the convenience stores market. Then, the internationalization process of OXXO with this new mindset that claims for going abroad but with the historical business practices, is our main objective to delve into.

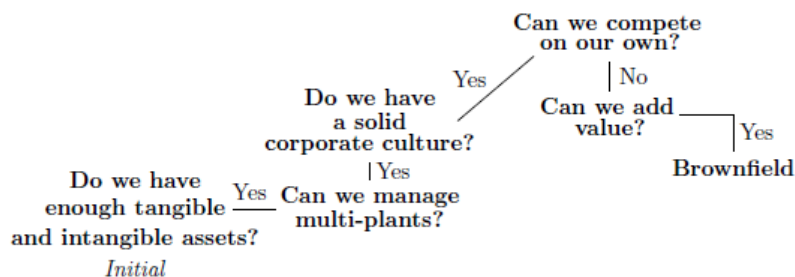
In this section, we are going to analyze OXXO's entry into Chile, Peru, and Brazil, which were during a similar period (2016-2020), applying our binary model of internationalization behavior (see Figure 3) and comparing the results with the OLI Paradigm, a traditional internationalization model, to find whether there are some differences, and which can predict the decision that was taken by the multinational.

Chile

In 1992, the Big John convenience stores were opened in Santiago de Chile, which coexisted with the traditional *kioscos* in the retail supply of households. This company, after 10 years of starting operations, barely had 16 stores, and in 2015, a year before OXXO bought them for 40 million dollars, they had 49 stores. Despite having such a small number of stores for a country with a large amount of consumption, Big John had consolidated a market share of 49% in the convenience store market, which positioned it as the second largest after OK Market with 51% of the market. This means that Chile was practically dominated by two companies that competed with each other, however, with the purchase of Big John by FEMSA in 2016, Chile was left with only OK Market as a national company. This competition would not last long, because, at the end of 2021, FEMSA decided to buy OK Market, and after government approval, OXXO became the largest convenience store in Chile, with around 258 stores in the country. In this case, the lack of development of this industry, the sufficient capital to buy the competition, and the few competitive advantages of Chilean companies, were decisive for FEMSA to enter the country to invest. Using Figure 3, this is how the decision process would look:

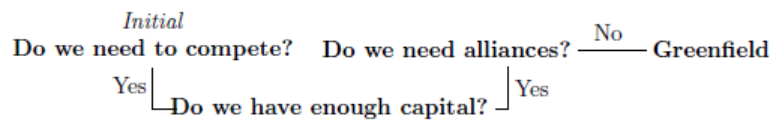


And with OLI Paradigm:

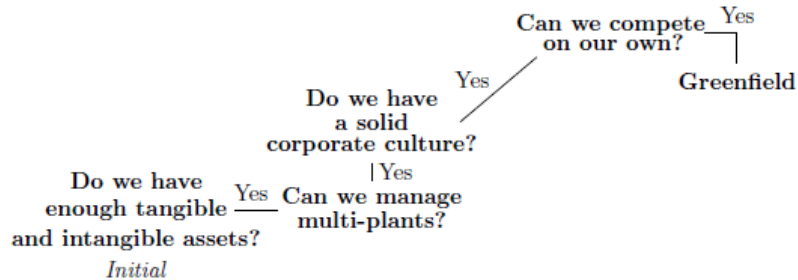


Peru

If in Chile there was a precarious industry of convenience stores, in Peru there was almost no such business model except in gas stations. The first time that the Peruvian market had this type of business was in 2015 when Tambo+ began its operations under the Lindley family group, paradoxically part of the Arca Continental Group. In one year of operations, this chain managed to have 100 stores, and in 2018 it opened its 200th store, which represented a great growth and positioning of the company in the market (Arriola & Melendez, 2017). That year, at the end, OXXO decided to compete with it, promulgating its strategy of opening more than 300 stores in two years, however, the first number of operations barely managed to open 10, and, by 2022, it only has 55 stores in all the country (Arriola & Melendez, 2017). In this case, OXXO encountered several problems, especially the appearance of more competition such as the Mass stores, whose owners were also producers of basic products that generated lower prices and more reception from the Peruvian popular sector. Despite this, OXXO has continued to maintain operations in Peru with the same traditional business model. Using Figure 3, this is how the decision process would look:

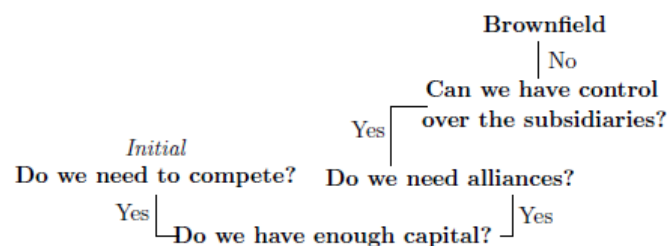


And with OLI Paradigm:

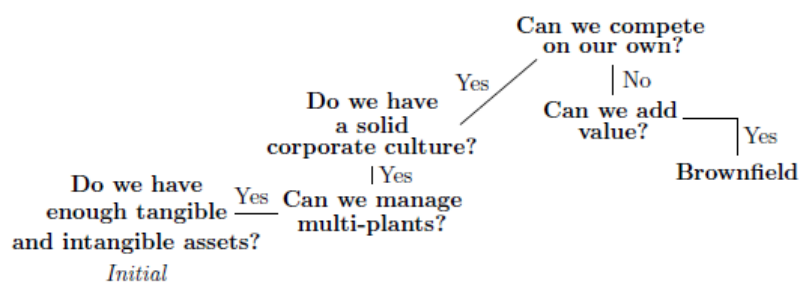


Brazil

Brazil is an interesting case, as it has more than 8,000 thousand convenience stores, which is 10 times more than the stores in Chile, Colombia, or Peru. The first convenience store was opened in 1987, and, currently, 60% are franchises, of which AmPm, BR Mania, and Shell Select stand out (Valdevez, 2021). The latter is precisely part of the Raizen Group, which, together with FEMSA, created Grupo Nos in 2019, in which both have an equal share of the OXXO and Shell Select convenience stores (Valdevez, 2021). This decision was precisely due to the already existing consolidation of the convenience store market in Brazil, so it was necessary to be able to adapt as precisely as possible to consumer demands. In Brazil, OXXO has made some changes, as they have started to offer a variety of freshly baked bread and foods, which is unusual in their stores around the region. Currently, FEMSA only owns 113 stores in Brazil, while 1,162 are under the franchise model, something unusual in its business model (FEMSA, 2022a). Using Figure 3, this is how would look their decision process:



And with OLI Paradigm:



Assuming that FEMSA's decisions were always rational, then optimal, so the FDI binds with the function of FDI given each level of market competition, we expected, using a quantitative approximation, the following positions of each country in our model:

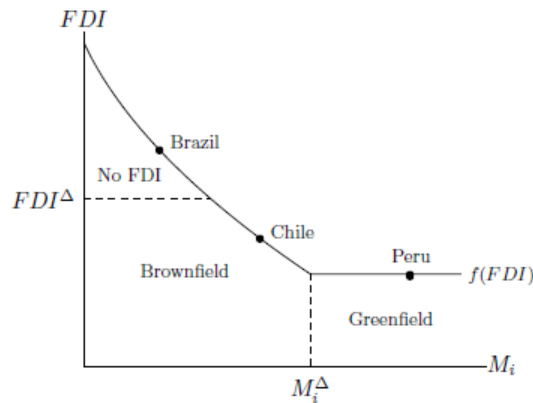


Figure 4. Internationalization behavior of Monterrey's multinationals

CONCLUSION

Our model is effective in explaining the internationalization behavior of a Monterrey's multinational in two out of the three countries of study. We can prove that the greenfield type of FDI is preferred in markets with lower levels of competence, while in markets with higher levels of competence is more likely the brownfield type of FDI, in addition of how costly controlling the competence is in the market. Theoretically, the lower levels of competence in South America can be explanatory behind the decision of FEMSA to internationalize OXXO in the mentioned region, however, as we observed, the region has diversity in its level of competition. One of the cases that couldn't be explained by our quantitative model was Brazil, since we found that the low level of competition and the high cost to enter the market leads to a FDI value higher than the maximum permitted, arguing that in that case FEMSA whether not took an optimal decision or our model has some misspecifications in the Brazilian case.

We suggest that the model took into account the core behavioral preferences of multinationals from Monterrey, so our model could explain other multinationals' internationalization processes. However, since Monterrey's industries of their multinationals are diverse, we expected that the main limitation of our model is explaining other industries different from the service sector. Further research is needed to provide robust results that can support this hypothesis.

Finally, the behavior of multinationals is mainly derived by the historical business culture of the city, therefore, other economies with similar historical roots are expected to fit into our model. Among the possible cities in the region, some northern cities of Mexico like Chihuahua or Tijuana should be tested with our model variables to prove explanatory efficiency in other economies.

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Appendix A

A Brief History of FEMSA's OXXO

During the Civil War (1861-1865), the American militias, especially those in Texas, began to face the impact of scarcity of raw materials, such as cotton, copper, or sugar, which was aggravated by the increase in blockades that various countries stipulated in trade to the United States (Fernandez de Castro, 1982). Faced with this problem in the supply chain, the then governor of Nuevo León, Santiago Vidaurri, authorized the export of the production of Nuevo León, mostly of private origin, through the ports of Matamoros to Texas to replace the routes to New Orleans from Nassau, Havana, and Veracruz (Fernandez de Castro, 1982). In this way, with still primitive textile industry, Nuevo León began to have an industrialization process with foreign and national capitals that achieved, only at the end of the 20th century with the Porfiriismo, an outstanding economic fluctuation in the region, which gave rise to various metallurgical companies that surpassed the textile economy that Nuevo León had due to the Civil War (Flores, 2004).

In this context, a lot of foreign companies, mainly German and American, were encouraged to export their products to Mexico, especially beer, but faced a problem that constantly generated shortages: inexperience in distribution (Reyna & Kramer, 2012). For this reason, Isaac Garza and Jose Calderón decided to settle up Cerveceria Cuauhtemoc (later called FEMSA) in 1890 in the state of Nuevo León, which, having owners that knew the geographic market and consumer tastes, managed to be the most recognized brewery in northern Mexico (Flores, 2004). Since then, they began to diversify their

production into glass containers, tinplate, snacks, beverages (the largest global bottler of Coca-Cola), food, and plastics, at the same time they venture into other countries in Latin America (FEMSA, 2021). At the end of 2021, FEMSA is the second-largest holding company in Mexico, which has more than 290 million consumers scattered in 13 countries, 320,000 employees in its business units, 49 Coca-Cola production plants around the world, total revenues of 27,116 million dollars, and being one of the biggest multinationals in Mexico originally from the north side (FEMSA, 2022a). Nowadays, FEMSA's shareholding structure is divided into four main sectors, in which it holds 100% of participation just in FEMSA Commerce and FEMSA Strategic Division (see Figure 1).

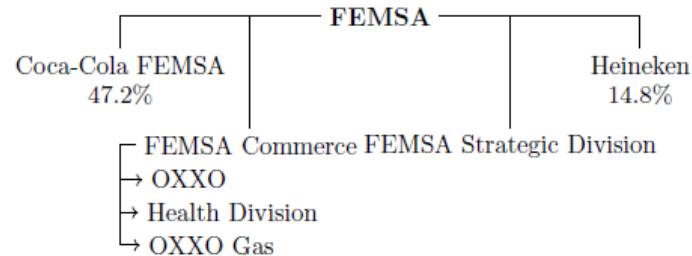


Figure 5. FEMSA's Shareholding Structure

In 1976, the citizens of Nuevo Le'on stocked up in small kioscos in their neighborhoods, a common practice throughout the Latin American region, however, that year the ICONN company decided to bring the 7-Eleven convenience stores to Mexico, which began to have a boom and important acceptance of the national market (7-Eleven, 2022). This led FEMSA, in 1978, to open its own convenience store called OXXO, which sought to match the American model of 7-Eleven but offering better prices for the products they owned, such as Coca-Cola, Jugos del Valle, etc. (FEMSA, 2022b). By 2022, OXXO supplies more than 13 million customers with its 21,706 stores distributed in five countries in Mexico and South America, employs more than 150 thousand people, and has revenues of 9,929 million dollars, representing 36.6% of FEMSA's sales and 58% of FEMSA Commerce (FEMSA, 2022a).

According to the Federal Competition Commission of Mexico, for 2019, OXXO has a 41% market share of convenience stores that are not traditional kioscos, having as competition only Six Stores (26%) and Modelorama (21%), which leaves OXXO as a company with rapid growth, greater dynamism, concentration, and market knowledge above its competitors (COFECE, 2020). Currently, OXXO works with a division between OXXO Mexico, OXXO International (Colombia, Peru, and Chile), and OXXO-Raizen (Brazil), concentrating the following units of sale:

Countries	Units	Share
Mexico	20,121	92.7%
Colombia	133	0.61%
Chile	122	0.56%
Peru	55	0.25%
Brazil	1,275*	5.88%

*1,162 are franchises

Data retrieved from Sustainability Report 2021 (FEMSA, 2022a)

Figure 6. OXXO Units per Country

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ⁱ A simple model of transaction costs is taken distance as the main cause. von Thunen (1826) states that while a firm is further from the market, then less benefits it would obtain. If we replace benefits with costs, we would have

$$P_f = C_t D_i + P_p,$$

meaning that the final price P_f of the consumer is determined by the sum of the price of the product P_p with the multiplication of the transaction cost per km C_t by the total distance taken to buy it D_i . Therefore, we have a direct relationship between distance and the real final price that is borne by the consumer, so the firm has to minimize $\sum D_i$ to reduce the transaction costs of the consumers and then capturing more demand.

ⁱⁱ Here we consider that a product with a price p_{ij} lower can be detrimental for the firm in the market, since may rise suspicions up for bad quality. Then, it's optimal to stay near the average price of the market μ_i .

ⁱⁱⁱ Our index M_i range is $[0, 1]$, where 0 entails an economy i with a high level of competition, and 1 a low level of competition.

^{iv} The equation has the following form: $\delta(M_i) = \beta_0 + \beta_1 M_i - \beta_2 M_i^2$

^v In Appendix A. A Brief History of FEMSA's OXXO we offer a detailed historical background of FEMSA and some current statistics of their convenience store chain OXXO.