BUSINESS MODELS FOR THE BASE OF THE PYRAMID

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Abstract

Provide insight about which are the factors that foster the emergence of an innovation in a business model within the service sectors and how this innovation diffuse, Trickle-Up Innovation, to other segments of the market in the same country is the aim of this research. We work with a case study, Pharmacy-Doctor business model, adding depth to the literature by defining a specific type of innovation model and discussing the mechanisms by which the innovation emerges and its diffusion happens. We choose the health industry in Mexico, in the 1997-2011 period, for several reason: there was a void in health services, important regulatory changes, the creation of a new institution and a pandemic occurs in this period. All this together provide a unique framework to observe how the health industry adapt, innovate, and evolve. This case demonstrates that country-specific solutions to market failures can be regarded as innovations for the Bottom of the Pyramid.

Key words: Trickle-Up Innovation, Bottom of the Pyramid, business models, emerging economies.

INTRODUCTION

The diffusion of innovations created to address the needs of poor people in developing countries was analyzed, prompted by the considerable interest in business models for the Base of the Pyramid (BoP -individuals that live on less than US$1500 a year). Despite their low income, this segment arguably presents companies with opportunities for profit as it comprises the majority of the world's population (Prahalad, 2005). To benefit from this, companies need to create innovations that address the specific needs of people with very low income levels. Different ways

of achieving these innovations for the bottom of the pyramid (Prahalad and Hart, 2002; and Borger, et al., 2010) have been discussed in the literature.

However, these innovations can be diffused to serve the needs of others. One diffusion process is reverse innovation, whereby innovations created in developing countries to address the needs of the poor may also eventually come to be used in advanced economies. The reverse innovation process by which innovations are created in developing countries and transferred and applied in advanced countries by multinational companies is explained in detail by Govindarajan and Ramamurti (2011).

For the purposes of this study, a different view was taken of the reverse innovation and proposed Trickle-up innovation model, whereby innovations created to address the needs of the BoP in one country are then transferred upmarket to address the needs of people of middle to high income within the same country. This idea was derived from analyzing the pharmacy-doctor business model: the location of a low-cost, quick-service medical consultancy next to a low-cost pharmacy, which emerged in Mexico at the end of the 1990s. *Farmacias Similares* (FS), the leader in the industry, was the particular case examined in this instance. The establishment of a low-cost medical consultancy next to a pharmacy initially resulted from the necessity to serve the needs of individuals at the BoP working in the informal sector with no access to health insurance. However, when regulatory changes and a national health insurance scheme for the poor was implemented in Mexico, the business model did not disappear and instead changed, moving to higher-income locations and serving the needs of both rich and poor citizens. The transfer of the model across income levels revealed that the initial innovation did not only solve the problem of lack of access to health care for the poor, but also the needs of time-poor richer people.

This idea of Trickle-up innovation and the insights derived from the case study adds depth to the literature by identifying a different type of innovation model and discussing the mechanisms by which the transfer happens. In contrast to other studies of innovation (see reviews in Hall, 2005 and Karshenas and Stoneman, 1995) that tend to examine the diffusion of a technology or of a specific product or service in an industry, the diffusion of a business model within an industry and across market segments was analyzed in this instance. The diffusion of a business model is subject to different adoption determinants than that of technologies. There are limited networks, switching costs and uncertainties (Hall, 2005) which present challenges to the diffusion of business models as it is companies replicating the business model rather than consumers purchasing the product, which are the main drivers of diffusion. Moreover, in the case of Trickle-up innovation the diffusion of the model to a different segment was performed by competitors rather than by the innovator, spurred by a change in legislation that threated their traditional model.

It is believed that this study contributes to a better understanding of innovation for the BoP. Previous studies have focused mostly on understanding the process of the creation of specific innovations that address the needs of low-income consumers (see a review in Christensen et al., 2011 and Prahalad, 2005). The diffusion of such innovations once created and particularly their effect on specific diffusion across market segments was focused on in this research. This complements the reverse-innovation literature that has discussed diffusion across countries (Govindarajan and Ramamurti, 2011). In contrast to arguments put forward in current literature, Trickle-up innovation requires a modification in physical location and a challenging of preconceptions within a country in relation to the initial users of the product or service.

RESEARCH

To gain a better understanding of the diffusion of innovations for the BoP the diffusion of the pharmacy-doctor business model was analyzed. This model refers to the positioning of a pharmacy selling mostly generic drugs next to a medical consultancy, enabling the medical practitioner to prescribe the drugs sold at the pharmacy. This model was created and introduced in Mexico in 1997; by 2011 it had diffused both nationwide and across market segments. This innovation was chosen as it exemplifies a specific innovation that not only diffused geographically but also across competitors and market segments. Interestingly, the innovation did not benefit from the traditional network effects that underline most studies of diffusion as it is a service with a limited geographical market, adding nuances to the aforementioned studies.

In order to analyze the case studies the recommendations of Yin (2004). Initially the data for each company was collected and a temporal record of pharmacy-doctor business model interaction was drawn up. In addition, the changes in legislation and the rolling-out of health care provision in the country was recorded in order to better understand the operational environment of the participating companies. Subsequently, changes in the environments, companies and business models were compared and contrasted with a view to understanding the motivational factors behind the actions taken and the resulting interactions. In accordance with this data the specifics of the case studies were abstracted and links established to previous theories. Case study evidence and theoretical arguments were examined alternately to identify any new insights that the case studies undertaken illuminated.

DISCUSSION

The pharmacy-doctor business model emerged in Mexico in 1997; by 2011 it had diffused across both the industry and the competition. Adoption of the model by pharmacy and supermarket chains and changes in the legislature that affected the industry were tracked. Four phases in the diffusion of the innovative business model were analyzed: the emergence of the business model, diffusion of the innovation, diffusion within the industry, and diffusion across income segments.

Emergence of the innovation

The pharmacy-doctor business model was pioneered by the Mexican company Farmacias Similares (FS). The origin of FS is Best Laboratories, founded in Mexico in 1953. In 1997, as a result of legal changes permitting the retail sale of generic drugs, Best Laboratories created a new business model in order to market its low-priced generic products in its own stores in areas of low or medium-low income: Farmacias Similares. FS started with two branches in 1997 with the objective of supplying generic medicines to the population in the BOP with no public health insurance (approximately 56% of the population in the year 1997; only employees in the formal economy were covered by the public health insurance), and who could not afford private healthcare. The difference between Similar and Generic medications is the following: similar drugs are medicines manufactured worldwide by different pharmaceutical companies for patent owners.

Diffusion of the innovation within the company

The innovation enjoyed rapid growth: in 1998 the company had two medical clinics in their pharmacies: this expanded to 1,215 in 2003, 3,630 in 2008 and 4,053 in 2011. Virtually all branches in the country had a doctor and more than 5 million visits a month were recorded (Chu & Garcia-Cuellar, 2007). The cost of the medical consultation was still approximately US$2. In Mexico, for every ten drugs sold, six are generic. FS sells only generic drugs, and over 220 million generic units were sold in 2011 (National Association of Manufacturers of Medicinal Products, 2011).

The business model of providing low-cost access to a doctor and medicines for those without health insurance was subsequently threatened by new legislation. At the beginning of 2005, the *Seguro Popular* (universal public health insurance) launched in Mexico offering medical coverage to all Mexicans with no formal employment, and therefore with no access to Social Security. *Seguro Popular* coverage grew rapidly, and by 2011 more than 49 million Mexicans were affiliated. As a result, when adding 52 million Social Security system users and users of other public health systems, the country's public health coverage today reaches over 89% of the population (Mexican Federal Government, 2011).

Diffusion of the innovation within the industry

The pharmacy-doctor business model began to spread within the industry. Different pharmacy chains place a pharmacy-doctor model for the BoP population, purchasing generic drugs from several laboratories. Events in 2009 and 2010 accelerated the process of imitation and

diffusion of the business model. In the summer of 2009, Mexico was affected by the H1N1 (flu) pandemic which lead to an increase in the regulation of drug sales, making a prescription mandatory for the sale of antibiotics (Mexican Federal Government, 2009). The treatment of the H1N1 public health problem was complicated because the Mexican population was accustomed to self-medication without the necessity of a prescription.

Diffusion of the innovation across income levels

Due to the success of the FS model and the new legislation, new competitors began to emerge. In 2011 most national pharmacy chains (Guadalajara, Benavides, GI, Del Ahorro and supermarkets) had adopted the pharmacy-doctor model in most of their branches, not just in areas populated by the BoP, but also in middle and upper-class neighborhoods. They offered almost the same model: a physician with a reasonable waiting time (10 to 15 minutes) and a low price (between US$0 and $2.50) for the consultation, attached to a pharmacy offering generic (economically- priced) or patented drugs (normally-priced).

Thus, the model initially conceived for the BoP in effect migrated upwards to serve middle and upper-income market segments, a process described as Trickle-up innovation. Just as with the BoP, the middle and upper classes also go to the pharmacy to consult a doctor in order to treat non serious diseases that do not require hospitalization. They are able to purchase not only generic drugs, but also patented drugs. It seems that the middle and upper classes use medical services at the pharmacy for reasons similar to the BoP: dispersion, accessibility, geographical convenience, prompt attention, low-priced medical consultation and prescriptions for common ailments.

As a case, Table 1 shows the geographic locations of the pharmacy-doctor model in the municipality of Guadalajara (Mexico's second city) in 2008 and 2011. In 2008 there were only 8 pharmacy-doctor stores (16.7% of the total) in middle and high-income areas (A/B and C+) of the municipality. In 2012 the Trickle-up process of the business model into wealthy areas was observable, with 37 pharmacy-doctor stores (37.4%). Interestingly, very few pharmacy-doctor stores in areas A/B and C+ are owned by the creator of the concept (FS) or their immediate imitator (GI). Most of the stores belong to chains serving the middle and upper -income population segment (Guadalajara, Benavides, Generix and Del Ahorro).

PROPOSITIONS. TRICKLE-UP INNOVATION

Trickle-up is the process whereby business innovations designed for the BoP population are adopted by other companies, who subsequently make some small adjustments to it in order to incorporate the innovation into their business model for the middle and upper classes. In line with the literature analyzing mental models presented by Prahalad and Bettis (1986), we found that industry executives, acting on the dominant logic, do not adopt known, public, nationally-present models which are used successfully by competitors and easily transferable. Because of their previous experience, executives do not see the opportunities offered by the new model until an event beyond their control forces them to adopt and use it intensively.

Propositions:

I. An innovation is created by a company for the BoP as the existing business model is threatened by external changes.

II. As the dominant logic indirectly creates a dampening effect on the strategic behavior of the organization, although innovation in the business model has been implemented in a company, the dissemination of this innovation is slow until an exogenous event occurs.

III. Slow diffusion of innovation in the industry is limited by the mental models of executives working in accordance with the prevailing dominant logic as this is where their experience lies. Companies that generate innovations for the BoP do not migrate to other segments of society where their innovations could succeed but continue working in the BoP. Their initiatives, new products and services focus on this market and seek to strengthen their presence within it.

IV. Likewise, companies that serve the middle and upper classes continue to work with these classes. According to the dominant logic, these do not adopt innovations initially designed for the BoP, and are reluctant to work with the BoP unless there is an exogenous change in the environment.

CONCLUSION

In emerging countries, in contrast to advanced economies, requirements for medical services and medicines for the BoP are not covered by the government. The Mexican company *Farmacias Similares* offered a feasible solution to the unmet needs of the BoP, by having a low-cost, quick-service doctor in the pharmacy and offering a range of low-priced generic drugs. However, the establishment of universal insurance and the increase in regulation governing the sale of drugs led to the diffusion of the business model to the middle and upper classes of the same country.

The literature has discussed different ways of achieving these innovations for the BoP (Prahalad and Hart, 2002 and Borger, et al., 2010) and shows how innovations created in developing countries to address the needs of poor people may eventually be used in advanced economies as well (Immelt, et al., 2009 and Govindarajan and Ramamurti 2011). The literature has not yet shown innovation processes for the BoP in developing economies and how they migrate to the middle and upper class populations of these countries. The aim of Trickle- up innovation is to provide a case study for this phenomenon.

This process reflects the existence of Trickle- up innovation as a new model. Failures in the provision of public services by governments (or their traditional private substitutes) in emerging economies affect not only the BoP population, but also those belonging to higher social echelons. This has pushed companies to adopt and adapt process innovations originally designed for those at the BoP for middle or high-class populations.

Managers in developing countries commonly seek innovations from markets in developed countries. However, the case study shows that solutions to market failures can be found in innovations for the BoP of these developing countries. Trickle- up innovation happens when some innovations for the BoP migrate to middle and upper-class populations within the country. The research related to Trickle–up innovation is underdeveloped in the literature and can bring new insights to the study and analysis of innovation processes in emerging economies.

The diffusion of innovation from the BOP to other segments of the same country was analyzed. In the case study three diffusion processes were detected: within the company, within the industry and between market segments. It is this last where Trickle-up innovation was observed. In respect of the BoP, literature already exists analyzing the concept of reverse

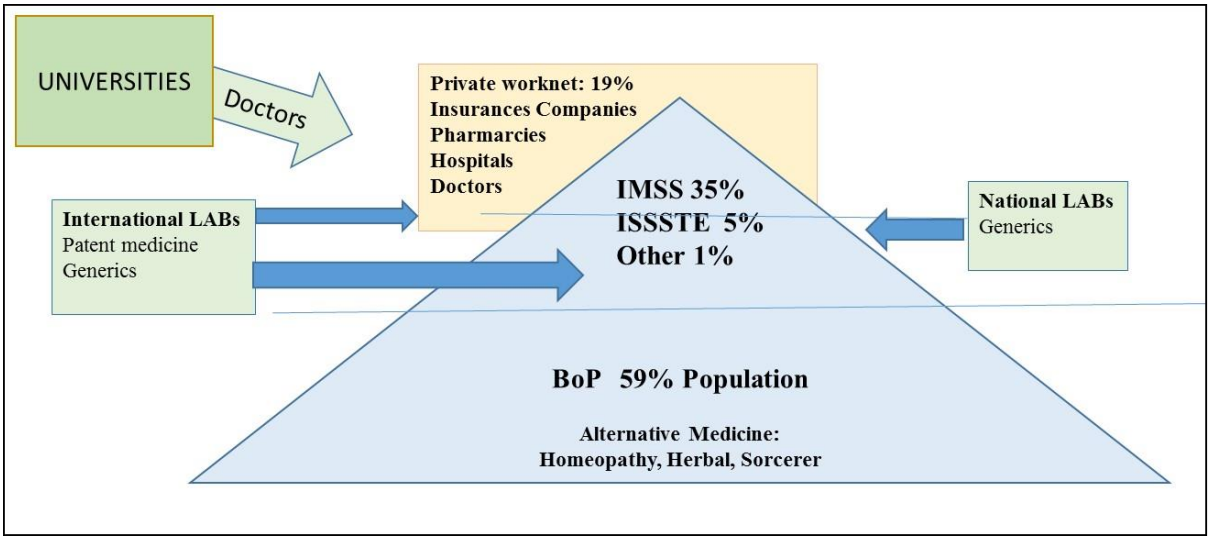
innovation; the contribution to the literature of this present study reviews a process, Trickle- up, which contrasts with reverse innovation.

This research discovered how unplanned innovations emerged to fulfill a specific need of the BoP as a result of internal company factors, leading to the discovery of a market with high growth potential. These innovations were later imitated by competitors not initially involved in the BoP market.

Literature on mental models provides the framework for explaining how institutional changes break barriers to growth. Dominant-logic theory helps to explain why innovations do not quickly migrate between income sectors. Innovation is adopted by and originates in firms operating in different market segments despite these firms still working in their known markets. In conclusion, innovations come from different markets but do not change the main socio-economic market-focus of a company. As the literature indicates, the determinants of dominant logic come from within the organization's environment, and can act as a moderating variable of the organization's strategic behavior, affecting the innovative dimension (Prahalad, and Bettis, 1986).

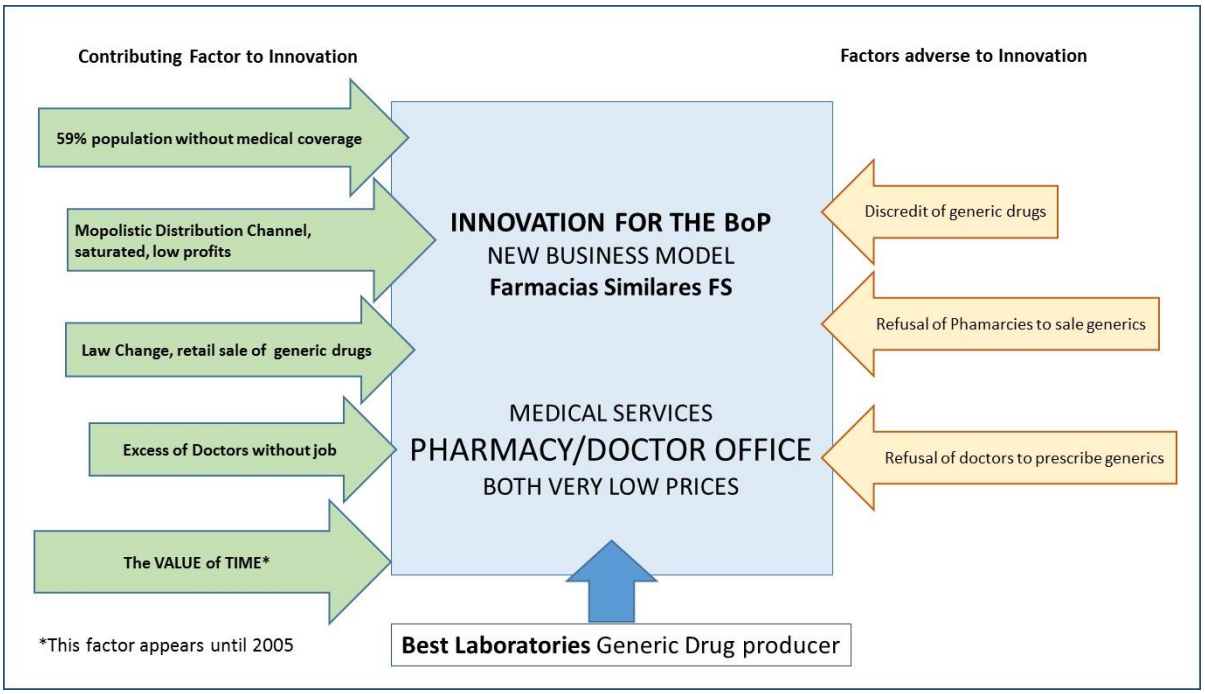
The paper also contributes to managerial thinking. An effective way of working in an atmosphere of institutional change can be found in the practices of other unknown market segments. Poorer markets have more barriers related to institutions, infrastructure, access and legal frameworks, and companies working with the BoP have to solve many such obstacles. Managers should view the BoP market as a possible source of ideas and solutions to problems in all market segments.

Diagram 1: Major Players in the Health Industry in 1997



Source: authors.

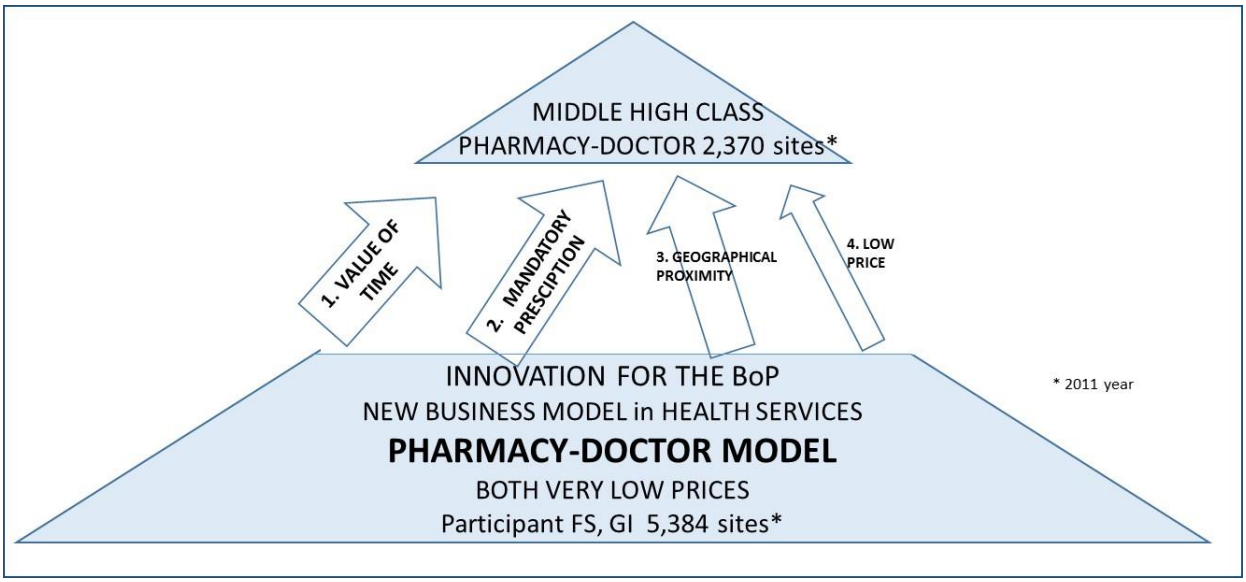
Diagram 2. Contributing and adverse factors of the emergence of the Innovation in the BOP.



Source: authors.

Diagram 3. TRICKLE-UP INNOVATION

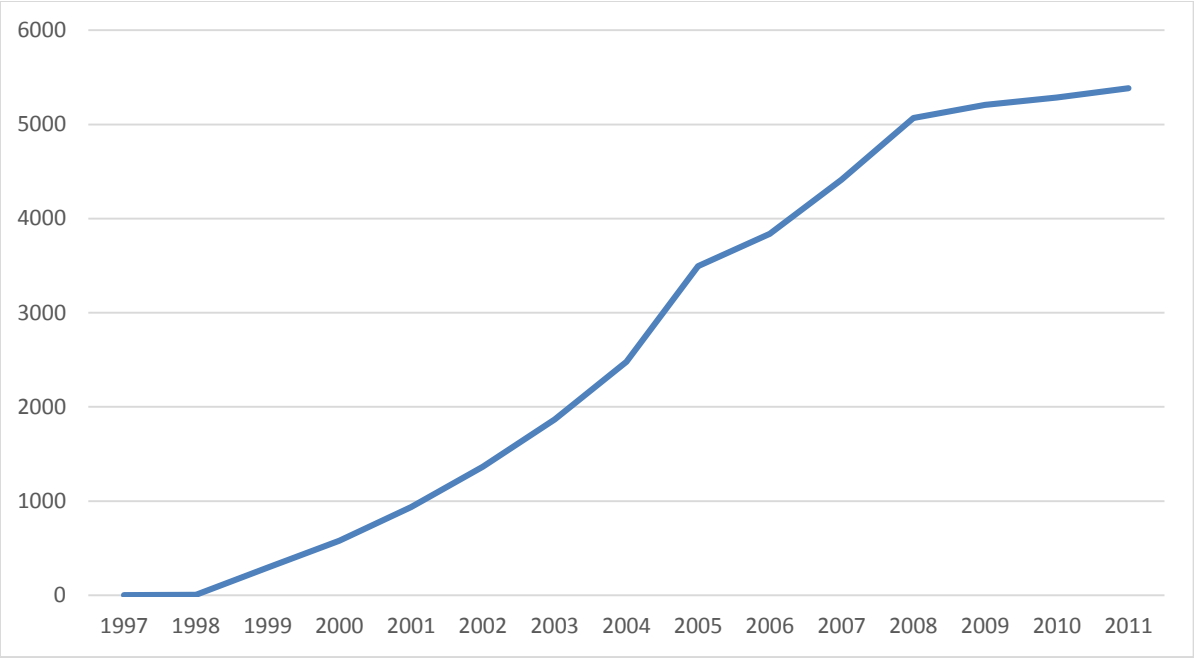
Main contributing factor for the diffusion process of an innovation developed for the BOP to the middle and high-class.



Source: authors.

Graphic 1: Growth of the Pharmacy-Doctor model in BOP

1997-2011 period



Number of Pharmacies of FS and GI together, for details see Table 1

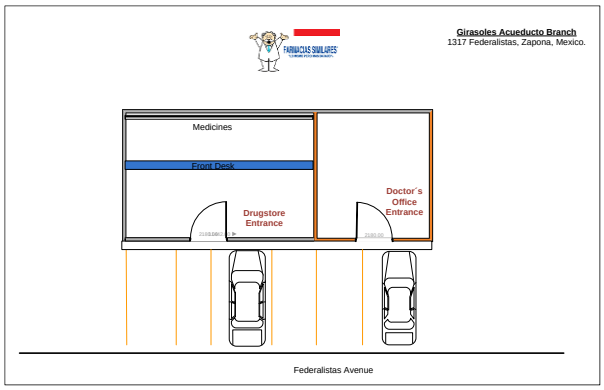
Table 1. Evolution and diffusion of the Pharmacy-Doctor business model in Mexico

		Name	Presence/social stratum served	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Companies	Pharmacy Chains	Farmacias Similares (Best)	BoP, medium	1 (100% w/doctor)	2 (100% w/doctor)	144 (50% w/doctor)	278 (55% w/doctor)	487 (57% w/doctor)	814 (58% w/doctor)	1215 (63% w/doctor)	1727 (65% w/doctor)	2646 (70% w/doctor)	2888 (80% w/doctor)	3363 (80% w/doctor)	3816 (80% w/doctor)	3921 (80% w/doctor)	3980 (100% w/doctor)	4053 (100% w/doctor)
		Farmacias GI	BoP, medium			150 (100% w/doctor)	300 (100% w/doctor)	450 (100% w/doctor)	550 (100% w/doctor)	650 (100% w/doctor)	750 (100% w/doctor)	850 (100% w/doctor)	950 (100% w/doctor)	1050 (100% w/doctor)	1252 (100% w/doctor)	1287 (100% w/doctor)	1307 (100% w/doctor)	1331 (100% w/doctor)
		Guadalajara (PharmaClinic)	Medium, High	108 (0% w/doctor)	131 (0% w/doctor)	161 (0% w/doctor)	197 (0% w/doctor)	235 (0% w/doctor)	270 (0% w/doctor)	306 (0% w/doctor)	356 (0% w/doctor)	416 (0% w/doctor)	478 (0% w/doctor)	551 (0% w/doctor)	651 (0% w/doctor)	740 (0% w/doctor)	846 (50% w/doctor)	948 (75% w/doctor)
		Benavides (Clinic Express)	Medium, High				568 (0% w/doctor)	582 (0% w/doctor)	523 (0% w/doctor)	507 (0% w/doctor)	506 (0% w/doctor)	529 (0% w/doctor)	569 (0% w/doctor)	641 (0% w/doctor)	716 (0% w/doctor)	710 (0% w/doctor)	723 (0% w/doctor)	746 (12% with doctor)
		Farmacias Del Ahorro	BoP, medium	95 (0% w/doctor)								500 (0% w/doctor)				730 (0% w/doctor)	830 (80% w/doctor)	865 (100% w/doctor)
		Generix (Fast Clinic)	Medium, High									1 (100% w/doctor)					50 (100% w/doctor)	60 (100% w/doctor)
	Supermarkets w/Pharmacy	Wal Mart	Medium, High						579 (0% w/doctor)	624 (0% w/doctor)	678 (0% w/doctor)	771 (0% w/doctor)	886 (0% w/doctor)	1020 (0% w/doctor)	1197 (0% w/doctor)	1466 (0% w/doctor)	2279 (0% w/doctor)	2709 (1% w/doctor)
		Chedrahui	Medium, High				50 (0% w/doctor)	54 (0% w/doctor)	59 (0% w/doctor)	63 (0% w/doctor)	70 (0% w/doctor)	101 (0% w/doctor)	105 (0% w/doctor)	120 (0% w/doctor)	155 (0% w/doctor)	163 (0% w/doctor)	190 (0% w/doctor)	219 (0% w/doctor)
		Soriana	Medium, High						118 (0% w/doctor)	138 (0% w/doctor)	162 (0% w/doctor)	197 (0% w/doctor)	234 (0% w/doctor)	257 (0% w/doctor)	465 (0% w/doctor)	471 (0% w/doctor)	508 (25% w/doctor)	558 (26% w/doctor
		Comercial Méxicana	Medium, High	85 (0% w/doctor)	84 (0% w/doctor)	83 (0% w/doctor)	82 (0% w/doctor)	73 (0% w/doctor)	70 (0% w/doctor)	68 (0% w/doctor)	66 (0% w/doctor)	61 (0% w/doctor)	59 (0% w/doctor)	53 (0% w/doctor)	54 (0% w/doctor)	53 (0% w/doctor)	53 (0% w/doctor)	53 (5% w/doctor)
Country & Industry		Events & Regulation			Change of law: Allow sell generics					Born of: Popular Insurance						H1N1 Flu	Change of law: Prescrpcion is mandatory	
		Social Security Coverage (IMSS founded in 1943) % total population		35%	36%	36%	37%	39%	39%	39%	40%	41%	42%	40%	40%	41%	38%	38%
		Social Security for Bureaucracy Coverage (ISSSTE founded in 1960) % total population		5%	6%	6%	6%	6%	6%	6%	7%	7%	7%	7%	7%	7%	7%	7%
		Social Security Others Coverage (Founded in 1940-50) % total population		1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Popular Insurance Coverage (Pilot program 2001, Launch 2005) % total population		0%	0%	0%	0%	0%	1%	2%	5%	11%	14%	21%	25%	28%	39%	43%
		Total public sector coverage (IMSS+ISSSTE+others+PI). % total population		41%	42%	43%	44%	45%	47%	48%	52%	60%	63%	69%	72%	76%	84%	89%

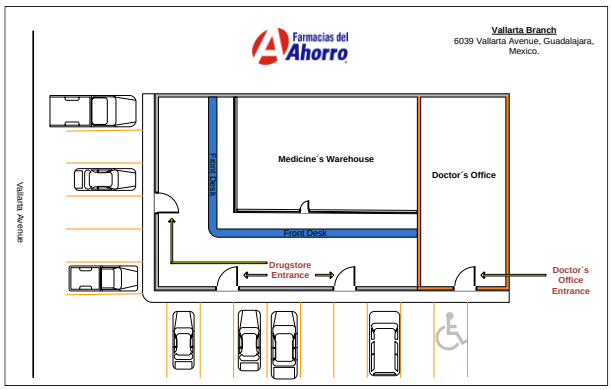
Source: Companies´s web pages, Phone interviews, Euromonitor (2011), Keckley et al. (2011), and Chu & Garcia-Cuellar (2007).

Table 2. Examples of layouts of Pharmacy-Doctor model 2011

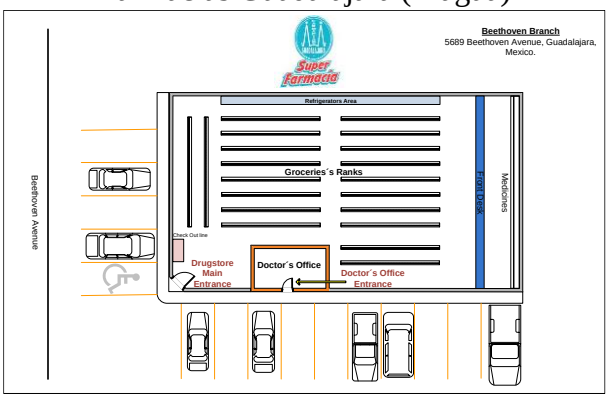
Farmacias Similares



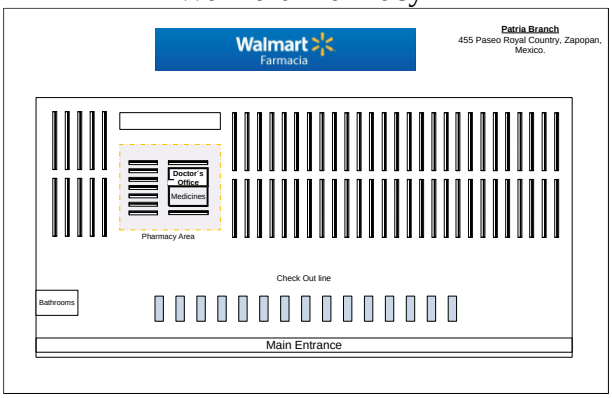
Farmacias del Ahorro



Farmacias Guadalajara (Fragua)



Walmart Pharmacy



Source: authors.

Table 3. Number of clinics at the pharmacy in Guadalajara for 2008 and 2012

Class	Number of Farmacias Similares		Number of Farmacias GI		Number of Farmacias Guadalajara		Number of Farmacias Benavides		Number of Farmacias del Ahorro		Number of Farmacias Generix		Total		% Change ('08-'12)
	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012	
A/B	0	0	0	0	0	2	0	1	0	5	3	9	3	17	467%
C+	3	4	1	2	0	3	0	1	0	4	1	6	5	20	300%
C	16	22	0	1	0	13	0	6	0	4	0	2	16	48	200%
D+	17	23	2	3	0	2	0	5	0	2	0	1	19	36	89%
D	6	7	1	3	0	2	0	2	0	1	0	0	7	15	114%
Total	42	56	4	9	0	22	0	15	0	16	4	18	50	136	172%

Class Description:
A/B: Homes or apartments with more than three or four bedrooms, and two or three bathrooms. Two or more luxury automobiles, two telephone lines, two or more television sets and one computer.
C+: Homes or apartments with two or three bedrooms and one or two bathrooms. One or two cars, two telephone lines, two television sets and 20% of this segment has a computer.
C: Homes or apartments with two bedrooms and one bathroom. One basic automobile, one telephone line, two television sets and one radio.
D+: Homes or apartments with one or two bedrooms and one bathroom. No automobile, one telephone line and one radio.
D:Homes or apartments with one bedroom and one bathroom. No telephone, one television set and one radio.

Source: Chu, M. & Garcia-Cuellar, R. (2007), author's visits, webpages and phone interviews.

Table 4. Survey Results

1. Age 27.8 range 16-60

2. Gender male % female 69%

3. Why you came here for consultancy?

Quickness 37% Prescription 19% Proximity Home 17% Proximity Work 15% Price 12%

4. Did you buy medicine after consultancy? Yes 92% No 8%

5. Would you visit the Pharmacy-Doctor again? Yes 94% No 6%

6. How many times have you been in a Pharmacy-Doctor place? average 5.06 range 1-20

7. Did you have Medical Insurance? IMSS 83% Popular Insurance 2% Nothing 15%

8. Before visiting this clinic, where did you have received medical attention?

Private Doctor 54% IMSS 25% Nothing 13% Public Health Center 8%

9. ¿Quién recibió la atención médica? Myself 96% My Children 4%

Data. 52 surveys at Guadalajara Municipality. Even though researchers focused in high income neighborhoods in order to do the survey, 32% of the respondents lived in low income neighborhoods, 40% in middle income areas and only 28% lived in high income neighborhoods.

Source: authors.