

Knowledge-Intensive Business Services and Business Models: a Qualitative Comparative Analysis of Small Private Healthcare Providers

Guillermo Navarro Sanfelix and Francisco Puig

Universitat de Valencia, Spain

guinasan@alumni.uv.es

francisco.puig@uv.es

Abstract: In recent years, companies operating in activities such as dentistry, optometry, physiotherapy, or veterinary have seen the demand for their services grow. Their customers do not require their services only for health reasons but also for aesthetics and welfare issues. As a result, these companies compete in expanding and profitable markets. However, this business context has been detected by many professional entrepreneurs who decided to run their activity in healthcare and set up a firm without the necessary assets and knowledge. To overcome these liabilities, some seek partners who provide them with the resources they do not have by entering into different alliances. In contrast, others choose to compete under an independent business model. This paper sheds light on the factors influencing the decisions about the implemented business model in small knowledge-intensive firms by examining the association between the perception of the institutional environment variables and the dotation of intangible resources. For that purpose, a qualitative comparative analysis (QCA) was performed. Due to government regulations in force in these sectors, and methodological reasons, the study sample consisted of 88 small Spanish firms (less than 15 employees). The data were collected by a questionnaire distributed in 2017. We find that the choice to remain self-governing or to enter into a partnership (e.g., franchising) is heterogeneously motivated by the evaluations that entrepreneurs have about the role of institutions concerning their activities and how high they consider their intellectual capital compared to their main competitors. In terms of institutional capital, these entrepreneurs refuse to implement patient loyalty policies and strive to have high-quality human capital in terms of the training and experience of their professionals. Moreover, the results also showed that independent business models pay little attention to market influences and view a certain level of regulation favorably, suggesting vocational and conservative behavior. This means that a myriad of different business model configurations is possible in that industry and the reasons for it, issues that have thus far been neglected by researchers.

Keywords: Entrepreneurship, knowledge-intensive services, business models, intellectual capital, institutions, QCA

1. Introduction

Associative and cooperative entrepreneurship, in the form of alliances between small businesses, is a reality in the current economic and business environment (Barnir and Smith, 2002). Many entrepreneurs pursue alliances when they start their business ventures. By joining with other people, organizations or groups, entrepreneurs hope to benefit from specific and valuable skills, resources, and capabilities that can help them to carry out their activities and take advantage of business opportunities that are the most favorable for their success (Burgelman and Hitt, 2007).

Participating in associated business models (ABMs) such as franchising chains, cooperative societies, or purchasing centers is a quick way of creating these opportunities. Although there are some disadvantages, such as higher levels of investment or the need for proper coordination mechanisms, there are also plenty of benefits. For example, small companies can enjoy better access to resources (Castrogiovanni and Justis, 1998), a recognizable brand image and an existing customer base (Salar and Salar, 2014); they can avail of synergies, share their experience with other entrepreneurs (Miron, 2014; Bontis et al., 2018), and benefit from economies of scale (Boccatonda, Banchieri and Planas, 2018; Golovina, Antonova and Abilova, 2020).

The advent of these business models has been highly visible in activities such as catering (Alon, Ni and Wang, 2012; Ketchen, Combs and Upson, 2006), agriculture (Pedrosa Ortega et al., 2019), or in food stores (Fuentes et al., 2013). Nowadays, these ABMs are becoming knowledge intensive-based services (KIBS). An example of this can be found in clinics that provide private healthcare services (e.g., opticians, veterinary surgeons, physiotherapists, dentists) or other fields that require compulsory membership of a professional body (e.g., lawyers, solicitors, or engineers).

However, this feature calls our attention to other characteristics: these companies tend to be highly resistant to change (Chandler, 2013), and their activities reflect social contracts (Masella, 2007), which, in addition to other issues, create high entry barriers (Arcas, Peñas and Sacristán, 2016). In short, we are currently in a situation wherein traditional and independent firms (IBMs) that provide healthcare services are coexisting with new organizations under ABMs. This reality leads us to ask: what characterizes firms that defy logic in terms of their size, and compete independently? Do their resources affect the configuration of their business model? Or can it be explained by the environmental pressures they are subjected to by external agents?

The research on these firms is interesting for many reasons. For example, most studies have focused on hospitals or large public organizations (e.g., Tongur and Engwall, 2014), or on so-called 'T-KIBS' (technology development-based activities), although there is a lack of research on other intensive activities, such as the development of new technologies (Abrahamsson, Maga and Nicol, 2019; Baden-Fuller and Haefliger, 2013; Vaillant et al., 2021), leaving aside other non-technological knowledge-intensive activities (Freel, 2006).

Therefore, this research aimed to determine which factors are associated with business model configurations by studying small private healthcare providers. This article will also serve as a guide for future entrepreneurs, and help them to determine which business model to implement.

This article has several contributions. First, it elaborates upon extant literature with respect to the configuration of existing business models in KIBS. Second, it focuses on micro-firms, which represent the vast majority of firms. (Armstrong, Boardman and Vining, 1999; Henry, Rushton and Baillie, 2016). Third, this article elucidates the role of the institutions closest to these firms, given their influence on these activities. Finally, it also expands upon literature related to the firms' intellectual capital (IC), in which these firms invest heavily.

This paper is structured as follows: first, we define healthcare services as KIBS activities, and justify the importance of institutions and IC within the context of these activities. We then outline some research propositions. The next section explains the methodology used, the sample under study, the operationalization of the variables, and the choice of the technique used to carry out the study. We then present the main results and the discussion section, and finally, the main conclusions.

2. Theoretical Framework.

2.1 Knowledge-intensive services. Definition and characteristics.

Private healthcare services, such as providers of physiotherapy, dentistry, veterinary, optics and similar activities, can be regarded as KIBS (Chung and Tseng, 2019). Windrum and Tomlinson defined KIBS as "*those activities based on the knowledge and experience of professionals in relation to a specific technical field or a specific function.*" (DiMaggio and Powell, 1983, p. 148). This definition includes activities with complex information, developing new technologies, or training those technologies (Li, Gagliardi and Miles, 2019; Miles et al., 1995).

Private healthcare service providers also have distinctive features that differentiate them from other service providers. On the one hand, they require a relevant academic degree in addition to compulsory membership of a professional association¹. On the other hand, these activities necessitate high levels of investment in training and education, as well as in specific tools and machinery (Arcas, Peñas and Sacristán, 2016).

Independent clinics dominate in the healthcare services sector, being led by entrepreneurs who have relevant technical training (e.g., physicians, opticians, dentists, physiotherapists, veterinarians, etc.). The entrepreneur assumes all of the roles proposed by Lumpkin and Dess (1996): a) they assume all of the risk arising from the entrepreneurial initiative; b) they contribute innovative thinking; and c) they have total autonomy over the development of their activities.

However, the assumption of all entrepreneurial functions may lead to inefficiencies in the performance of tasks and work overloads (Gerber, 1997). However, some authors (e.g., Peris-Ortiz et al., 2012) have pointed out that tasks should be delegated if they require in-depth and detailed knowledge, and are impossible to delegate to higher organizational levels. In this way, although coordination problems may arise between firm members,

¹ Art. 3 of Law 2/1974, of February 13, about Professional Associations.

other much higher costs arising from inefficiencies are eliminated. In response to these problems, the introduction of franchising chains, cooperatives, and purchasing centers have been identified as some examples of business models that follow this trend of task delegation.

2.2 Definition and typology of business models in private healthcare services.

Many business models have emerged in the healthcare services sector over the past number of years. For this reason, it is important to identify and examine important trends and problems that have arisen since the emergence of these business models. Although many definitions exist (Chesbrough, 2010; Zott, Amit and Massa, 2011), authors such as Chesbrough (2010) have emphasized that it is important, in the case of business models, to determine the functions that they aim to serve. In the words of this author, a business model must: a) articulate how value is to be created; b) identify the market segment and specify the chosen sales mechanisms; c) define the value chain structure that is required to create and distribute the assets used; d) estimate the cost structure and potential profit; e) identify the position that best allows the firm to connect with its customers and suppliers; and f) design a competitive strategy that aims to secure an advantageous position.

Independent micro-clinics represent a large proportion of the firms that operate in the healthcare services sector, given the organizational culture of the professions in this field, existing traditions, and the strength of relevant professional associations (Chandler, 2013). According to Masella (2007), entrepreneurs in this domain share certain characteristics; that is, they have all undergone training to work in their relevant field, and decided to take this step after they have acquired a certain level of experience working for other clinics. Although they are familiar with new technologies, they encounter limitations in terms of certain tasks that arise from their entrepreneurial endeavors, such as management of the clinic, bureaucracy, and access to financing.

Conversely, ABMs are widespread in non-knowledge-intensive activities (Bartels, 2021) such as catering or retail (Alon, Ni and Wang, 2012), agriculture (Medina-Albaladejo, 2013), or food (Fuentes et al., 2013). Nowadays, examples of this type of business model can be found in the private healthcare companies, such as *Zas visión*, *Multiópticas*, *General Óptica*, *Vitaldent* or *Fisi-On!* According to Dorobantu (2016), these alliances provide benefits derived from bargaining power and transaction costs in the absence of greater dependence on the network of clinics.

In summary, it can be suggested that IBMs and ABMs co-exist in a competitive environment in which small healthcare services providers operate. However, why is there such a variety of independent and associated clinics? It is easy to imagine that certain factors influence the configuration of a business model in this sector, such as the option to select different strategies, perceptions of the environment, or the importance given to intangible resources.

2.3 Different configurations that lead to the same business model.

According to the principle of equifinality (Fiss, 2007, 2011), there is no single way of configuring a business model. The literature review conducted by Morris (2005) highlighted how many variables influence this, including technology, the market segment, relationships with customers, the range of products offered, and distribution channels, etc.

While considering the theoretical approach underlying business model configurations, the decision will be based on the level of intensity of each variable corresponding to the environment and the entrepreneurs' IC. More specifically, it is interesting to examine the following points: the role of professional associations and leading firms in the business environment; the care taken by entrepreneurs to monitor the behavior of their customers and suppliers; efforts to improve human capital, which can be understood in terms of the acquisition of skills and experience, so as to enhance the firm's organizational capabilities; and efforts to improve the firm's loyalty and reputation. For all of these reasons, we developed the last research proposition:

Research proposition 1: *In micro-businesses that provide private healthcare services, there are several combinations that entrepreneurs can adopt to construct their business model.*

2.4 The role of institutions in the business model.

It is well-known in the community that the companies are affected by their environment. Private healthcare service providers are affiliated with institutions that legitimize or disregard the policies developed by their members. Therefore, we believe that institutions play a significant role in the healthcare sector.

Institutions can be defined as "social structures based fundamentally on a shared reality created by the social interaction of their members" (Scott, 1987, p. 495). In the words of DiMaggio and Powell (1983, p. 148), institutions are established for four purposes: a) to increase interaction among organizations in the same field; b) to establish structures and patterns that are acceptable to society; c) to increase the amount of information communicated among their members; and d) to develop mechanisms for the mutual protection and monitoring of members. Some examples of these institutions include organizations or persons legitimized by society, such as organizations, governments, and individuals (Zucker, 1987).

The importance conferred on institutions is based on the ability of these institutions to legitimize themselves (Meyer and Scott, 1983) to attain status (Washington and Zajac, 2005) and authority within society (Deephouse and Suchman, 2008). From an institutional perspective, two types of institutions emerge (Zucker, 1987). First, those of legal origin, to which professional associations (PA) belong; and second, those of market origin, including leading firms that are recognized by both the members of the profession in which they operate and the rest of society.

According to Meyer and Rowan (1977, p. 343), the institutional environment is constituted by "positions, policies, programs, and procedures of organizations enforced by society, including public opinion, laws, the educational system, and by the definitions of negligence and prudence used by judges." In the health services sector, professional associations include organizations that bring together the claims of society. According to Rusaw, these organizations emerged as "societies that emerged out of a social desire for interaction among members in the same profession, to protect their members and to establish collective solutions to common problems" (1995, p. 217). Therefore, it can also be affirmed that they are organizations that are created to mitigate certain risks stemming from the environment, such as ambiguity or uncertainty (Greenwood, Suddaby and Hinings, 2002)².

In short, it can be affirmed that professional associations aim to defend professionals that fall within the scope of their influence; they actively provide training programs for their members, job search services, documentation archiving services, and other auxiliary services. However, some professionals have also noted that these professional bodies have certain shortcomings, such as a lack of transparency or hidden interests with respect to the activities that they carry out (Arruñada, 1992; Jacobson et al., 2005). Given these weaknesses, some clinic networks have emerged as organizations with reputation that have become leading firms.

Zucker (1987) pointed out that there are also other organizations and firms which, without the support of public authorities, can be regarded as institutions. These types of institutions can be identified by certain features, such as their innovative character or recognized by other firms of their same activity. For example, Gorovaia, Navarro and Puig (2019) highlighted how some franchising firms introduced changes to certain KIBS. The following table provides a rough summary of the basic principles governing this type of clinical network:

Table 1: Guiding principles of the associated work networks

	Franchisors	Cooperatives	Purchasing centers
Branding	Owned by the franchisor and leased to the franchisee.	Owned by the cooperative, and shared by their members.	There must be a spirit of cooperation among the associates.
Initial and ongoing training	Franchisors provide initial training, and technical and commercial assistance for the duration of the business relationship.	Cooperatives provide education and training to their members, managers, and employees to encourage business growth and success.	Although not established in the guiding principles, they must provide some support to its partners with regard to specific regulations for production activities, and ensure adequate communication mechanisms.

² In Spain, the activities of professional associations are fall within the remit of Law 2/1974. It specifies the functions granted (Art. 5) and some of the powers transferred from public organizations (Art. 9). Regional laws develop their legitimacy. For the Valencian Community, Law 1/2000 and 2/2000 of March 30th have been developed to regulate physiotherapy and dentistry, respectively. In addition, Law 2/2007, of February 5, 2007, regulates optics in this Spanish region.

Table 1: Guiding principles of the associated work networks (continuation).

	Franchisors	Cooperatives	Purchasing centers
Contractual relationship	Franchisors and franchisees are independent entrepreneurs.	Members are autonomous. There is no membership obligation.	The PA and their associates have legal personalities.
Dependence partnership/entrepreneur	The franchisor provides a proven and successful production system.	Cooperatives should serve their members as effectively as possible and strengthen the cooperative movement by working together through local, national, regional, and international structures.	Purchasing centers must guarantee better prices for their members and ensure adequate communication mechanisms.
Orientation	Mainly economic	Economic and social.	Search for better prices on supplies.
Similarities			
<ul style="list-style-type: none"> • Members accept that, to a certain extent, they are dependent on the franchising chain, the bargain center and the cooperative. • All of these enterprises carry out retraining activities. • All alliances establish some levels of quality control for their products and services. • Coordination is necessary between the network and their members. 			

These networks have a legal entity, and they make entrepreneurs dependent on the network in which they operate. Training activities are broad and varied, and franchising chains are the most active. Cooperatives and purchasing centers also carry out training activities. Another common feature of the networks is the image provided. Although purchasing groups are not obliged to ensure homogeneity among their members, there have been examples of ABMs with highly similar clinics, following the guidelines set out by many cooperatives and franchising chains.

Therefore, it can be affirmed that the different forms of association imply a delegation of tasks and necessary coordination between the associations to which a micro-clinic is affiliated. This network structure is very different to more traditional independent clinics that operate mostly isolated in the healthcare services sector.

In short, we think that the different business models are more attentive to some institutions than others, depending on whether they have adopted an IBM (wherein they will pay greater attention to professional associations and the legal environment) or an ABM (wherein they will pay greater attention to the guidelines and recommendations of the network of clinics to which they belong). Therefore, the following proposition is put forward:

Research proposition 2: *In the case of micro-firms that provide private healthcare services, differences in the impact of environmental institutions will depend on the business model adopted.*

2.5 The role of intellectual capital in the business model.

The role of the IC in the healthcare services sector is critical, given the high level of expertise that is required to carry out such activities (Kühn et al., 2016) and the need to secure specific personnel and skills to these professions (Bontis et al., 2018). Moreover, the degree of the influence exerted by different dimensions of IC (i.e., mainly human capital and relational capital) can affect the business model configuration (Ujwary-Gil, 2017).

IC represents "the stock of knowledge that exists in an organization for a given time, and includes all knowledge-based resources that create value, but are not included in the accounting books" (Ordóñez De Pablos, 2004, p. 636). Many different authors (Bontis and Fitz-End, 2002; Claver-Cortés, Zaragoza-Sáez and González-Illescas, 2018; Watson and Stanworth, 2006) have classified IC into three types to include human, structural and relational³ capital.

³ Some studies (e.g., Nagy, 2013; White, 2017) have pointed out that the provision of advanced technology equipment and other specialized machinery is necessary for any clinic that wishes to be competitive. Since structural capital is a present condition, the discussion focuses on analyzing human and relational capital.

Human capital (HC) refers to the skills, experiences, attitudes, ideas, values, and competencies of a firm, including its members' knowledge, talent, and experience (Bontis and Fitz-End, 2002; Watson and Stanworth, 2006). Relational capital (RC) refers to "*knowledge of distribution channels, relationships between customers and suppliers, as well as the ability to understand public administrations and the role of industry associations*" (Bontis, 1999, p. 448).

HC and RC are essential for the provision of these types of services. As such, different combinations of IC's perceptions may be associated with the business model configuration. This is pointed out by Ujwary-Gil (2017), who stated that IC includes intangible resources and establishes the best channels for knowledge distribution and management. Therefore, it is reasonable to assume that the choice of network is largely determined by the particular dimension of IC on which the entrepreneur chooses to focus their efforts:

Research Proposition 3: *In the case of micro-firms that provide private healthcare services, differences in the influence of intellectual capital will depend on the business model adopted.*

3. Research methodology

The sample was collected between July and September, 2017. The main professional associations that operate within the physiotherapy, dentistry, and optics sectors in Spain were contacted. A link to the online survey was distributed on the "LimeSurvey" platform. The responses were sent directly to the researchers in order to safeguard the anonymity of the respondents' answers. Incomplete questionnaires, and those that concerned public hospitals, retired professionals, and medium- and large-sized companies were excluded.

The European Union defines micro-firms as companies that have less than 10 employees and a turnover of less than €2m per year. However, moonlighting and part-time jobs are traditional practices in the health services (Coren, 2007; Gatsura et al., 2015). According to DentalDoctors report⁴, an average-sized dental clinic in Spain consists of five qualified dentists plus four to five additional employees, including assistants, owners, and managers. Therefore, we decided to include companies with up to 15 employees. In the end, the final sample consisted of 88 valid cases.

3.1 Analysis technique: QCA (Qualitative Comparative Analysis).

Given that one of the aims of our work was to study the presence or absence of some of the variables defined in the adopted business model (outcome), and to observe the different combinations chosen by the entrepreneurs, we chose to employ Qualitative Comparative Analysis (QCA) (Ragin, 1987; Misangyi et al., 2017; Javed and Batool, 2020):

1. to determine whether the expected outcome (or its absence) arises from the presence or absence of a causal condition, or the combination of conditions;
2. to analyze whether there are several combinations of causal factors (*paths*) by which the exact result or outcome is obtained; and
3. that the presence of a condition in the occurrence of an outcome does not imply that its absence is related to the non-occurrence of the outcome.

The QCA technique is presented as a case-comparative technique. It is based on two principles (Legewie, 2013). The first is complex causality which assumes that events occur from a combination of factors. The second principle involves a comparison of cases of interest. It is assumed that researchers can choose the most interesting cases to study to reveal patterns of association between cases and observe causal relationships between cases.

The QCA also has to accomplish some quality standards we have followed in our research design, including a) the generation of outcomes and conditions from an empirical basis, b) the use of other complementary statistical techniques, c) the publication of negative results, d) The interpretation of results from cases studied, or e) calibrating the data according to the purpose of the study among others proposed by (Schneider and Wagemann, 2010). In the same line, studies like Greckhamer, Misangyi, and Fiss (2013) or Finn (2022) suggest using QCA in studies where the sample does not represent more than a hundred cases.

⁴ <https://dentaldoctorsinstitute.com/>

3.2 Operationalization of variables.

Appendix I summarizes the questionnaire that was distributed, which was based on previous studies of institutions (Ang and Cummings, 1997) with respect to the valuation of institutional capital (Sveiby, 1997; Dewhurst and Cegarra-Navarro, 2004; Ordóñez De Pablos, 2004). The variables were measured according to a seven-point Likert-type scale.

The dependent variable or outcome was dichotomized according to the role of the clinic's stakeholders. **IBMs** represented clinics that had not entered into any type of contractual relationship with any network of clinics, wherein decision-making was centralized, and delegation of tasks was minimal. Examples of these firms include traditional clinics. **ABMs** consisted of clinics that were associated with networks of firms with whom they had some form of contractual relationship. These entrepreneurs delegate some activities and coordinate tasks with other clinics in the same network. Examples include clinics that belong to franchise chains, cooperatives, and purchasing centers.

To operationalize the independent variables from the institutional theory, this study referred to the results obtained in a previous factor analysis, and reduced the number to two differentiating factors (Table 2). The highest values refer to dimensions that were perceived by the professionals surveyed in their daily lives. **PA influence** refers to what extent professionals follow Professional Association recommendations and guidelines. **Market influences** consisted of three questionnaire items: consumer trends, attention to competitors, and successful competitors are associated to clinic networks.

Table 2: Factor analysis

	Descriptive		Components	
	M	SD	Market influences	PA influence
Consumer trends	4,50	1,83	,805	,020
Attention to competitors	5,06	1,65	,765	-,029
Successful associate competitors	3,64	2,14	,508	-,615
Influence of PA	4,47	1,94	,150	,900
Total variance explained (sum)			37,83 %	29,76% (67,59%)

Extraction method: analysis of main components.

Rotation method: Varimax with Kaiser normalization.

The rotation converged in 3 iterations.

Source: Own elaboration.

In respect to the IC variables, this study chose to adopt the grouping proposed by previous literature (Claver-Cortés, Zaragoza-Sáez and González-Illescas, 2018; Watson and Stanworth, 2006). The highest values indicate the importance that the professionals assigned to each of the dimensions. **Human capital (HC)** grouped three items, namely, autonomy, experience, and HR management, so as to assess the knowledge possessed by professionals which is difficult to share. The **Relational capital (RC)** group consisted of items related to the professionals' loyalty and reputation. It outlines the measures taken by the clinics to maintain a good image with their patients and other professionals.

3.3 Calibration, analysis of necessity and sufficiency.

The QCA technique involves three steps (Schneider, Schulze-Bentrop and Paunescu, 2010; Tutistar Rosero and Pinazo Dallenbach, 2019): data calibration, necessity analysis, and sufficiency analysis. The last two steps indicate the results of existing combinations for the occurrence of the event (*outcome*) or its absence (\sim outcome), calibration of the data involves operationalizing the data to group the cases according to the requirements of the research. Calibration aims to determine the thresholds of maximum interest (membership) and those of null interest (non-membership) in addition to the midpoint (maximum ambiguity) of the cases (Basurto and Speer, 2012). This study chose to calibrate the causal conditions in accordance with prior relevant literature (Rey-Martí, Felício and Rodrigues, 2017). Therefore, only 10% of the most extreme threshold values were included. To determine the point of maximum ambiguity, the median was used (Skaaning, 2011). The outcome is also represented by dichotomous values, where IBM = 0, and ABM = 1. Table 3 shows all information related to descriptive results and data calibration.

The second step of the QCA technique involved conducting a necessity analysis using the FsQCA software (Table 4). According to Schneider and Eggert (2014), a condition is necessary when the presence or absence is tied to

the absence or presence of the outcome. Given the difficulty in identifying purely necessary conditions for the outcome, we considered those that had a consistency higher than 0.90, representing more than 60% of the cases (Glaesser, 2008; Molina-Morales, Martínez-Cháfer and Valiente-Bordanova, 2019; Skaaning, 2011), or even 80% in other articles (Cassar, Bezzina and Fabri, 2021).

Table 3: Descriptive data and data calibration

	Min	Max	M	SD	Threshold of membership (% cases)	Cross-over	Threshold of non-membership (% cases)
Outcome							
Business Model	0	1	0,2	0,41	1 (ABM, 20%)	n/d	0 (IBM, 80%)
Conditions							
PA influence	1	7	4,47	1,94	2 (22,1)	5	7 (18,9)
Market influence	1	7	4,40	1,36	3,33 (24,2)	4,67	5,67 (22,1)
HC	1	7	5,37	1,16	4,33 (20,0)	5,33	6,33 (26,3)
RC	1	7	4,76	1,29	3,50 (22,1)	4,50	6 (23,2)
Cases	88						

Source: Own elaboration.

Table 4: Analysis of necessity

Conditions	ABM		IBM	
	Consistency	Coverage	Consistency	Coverage
PA Influence	0.55	0.22	0.47	0.78
~PA Influence.	0.48	0.17	0.52	0.83
Market Inf.	0.74	0.28	0.46	0.72
~Market Inf.	0.27	0.11	0.54	0.89
HC	0.60	0.21	0.55	0.79
~HC	0.40	0.18	0.45	0.82
RC	0.67	0.26	0.47	0.74
~RC	0.33	0.13	0.53	0.90

Source: Own elaboration

The necessity analysis did not identify any condition that could be deemed necessary for an ABM or IBM. Therefore, none of the conditions analyzed were directly linked to either business model.

4. Analysis and discussion of results.

4.1 Results obtained

As a preliminary step, the descriptive data of the sample were studied following the suggestions proposed by Schneider and Wagemann (2010). For this purpose, a Mann-Whitney U test was performed, in addition to cross-tabulations (Table 5). The tests highlighted the differences between both business models in terms of institutional influences and intellectual capital. ABMs pay significantly greater attention to both consumer trends (ABM = 64.25; IBM = 39,42; Sig. < 0.001) and developing loyalty policies with their customers (ABM = 56.28; IBM = 41.47; Sig. = 0.03).

Table 5: Non-parametric Mann-Whitney U test

		N	U	Mean Rank	Sig.
PA influence	IBM	70	583	43,84	0,63
	ABM	18		47,08	
Market influences	IBM	70	274	39,42	0,00
	ABM	18		64,25	
Human capital	IBM	70	584	43,85	0,64
	ABM	18		47,03	
Relational capital	IBM	70	418	41,47	0,03
	ABM	18		56,28	

Source: Own elaboration.

Table 6 shows the results obtained from the QCA sufficiency analysis. Two different paths associated with the IBM configuration were obtained (Coverage = 0.52; Consistency = 0.91). The absence of market influences characterizes both combinations. The first path associates the creation of IBMs with the absence of both market pressures and concern for improving their RC (~Market*~RC). This combination represented 14% of the cases studied, and produced a high consistency value (0.91). The second combination also forgoes market influences but was concerned with improving HC (~Market*HC). This combination was significant and included 10% of the cases, and was characterized also by a high consistency value (0.89).

Table 6: Analysis of sufficiency

Outcome: IBM							
Path	PA Influence	Market Influence	HC	RC	Coverage		Consistency
					Raw	Unique	
1		○		○	0.42	0.14	0.91
2		○	●		0.38	0.10	0.89
Solution coverage: 0.52 Solution consistency: 0.91							
Outcome: ABM							
Path	PA influence	Market Influence	HC	RC	Coverage		Consistency
					Raw	Unique	
1	○	○	●		0.10	0	0.10
2		○	●	●	0.16	0.06	0.15
Solution coverage: 0.16 Solution consistency: 0.12							
a) according to Fiss (2011), <i>core conditions</i> (large circles) are considered when a condition appears in both the intermediate and parsimonious solutions. Small circles are considered <i>peripheral conditions</i> since they only appear in the intermediate solution.							
b) Algorithm: Quine-McCluskey							

Source: Own elaboration.

To complete the analysis, some combinations associated with the ABMs were obtained. However, the coverage and consistency values were insufficient to validate the results (0.16; 0.12). It is possible that the lack of interesting combinations could be attributed to the number of responses obtained from the survey from associated clinics, with only 18 of the 88 cases.

4.2 Discussion of results

The QCA analysis demonstrated the main organizational characteristics that are associated with existing IBMs in private health services. Two paths were obtained. Both have in common the absence of market pressures. Therefore, the first research proposal was achieved: In the private health services sector, entrepreneurs can select several combinations of IBM. However, we observed some homogeneity in IBM private health service firms: The first path involves entrepreneurs that are reluctant to apply disruptive innovations, especially if they are related to market issues. From Jayawarna, Rouse and Kitching’s perspective (2013), these entrepreneurs are primarily concerned with clinic’s prestige and control, whereas the second path is associated with entrepreneurs who are focused on learning and earnings. Their main goal is to improve human capital, although they are not especially interested in collaborating with their professional community.

The second research proposition focused on the extent to which the role of institutions affects the choice of business model. The results showed that IBMs were characterized by an absence of market influences, while the role of professional associations was not strong enough to influence path obtained. In other words, entrepreneurs who choose this configuration rely on other environmental influences as opposed to the opportunities provided by the markets in which they compete. One feasible interpretation of this result is given some entrepreneurs' negative marketing perspectives (Guido, Marcati and Peluso, 2011). That is, in terms of their choice of business model, some environmental variables were influenced by factors such as working conditions, workloads, working hours, and the level of income associated with these professions, as well as by other inhibiting factors, such as a rejection of highly disruptive innovations, given the fact that they may be regarded as threatening actions by the rest of the professional community (Peluso, 2015).

The third research proposition addressed the influence of intellectual capital (i.e., human and relational capital) on the decision to establish a business model. The results identified two types of entrepreneurs who established an IBM. The first consisted of entrepreneurs who rejected relational capital (e.g., taking measures to ensure that their patients remain loyal or measures to enhance the clinic's reputation). It is reasonable to assume that, for this group of entrepreneurs, maintaining loyalty among their patients and improving their clinic's reputation are measures that are regarded as detrimental to their profession, as they do not have the time or skills to implement these types of actions in an effective manner. Moreover, they have a solid understanding of their profession and do not need to acquire a better understanding of the activities that they carry out (Hamm, 2002). The second path is formed by entrepreneurs who do not refuse to take strategic measures to enhance their patients' loyalty and the clinic's reputation; rather, they place an emphasis on improving their clinic's human capital (i.e., employees' personal experience and improving working conditions). This type of entrepreneur adopts a slightly more innovative approach, and regards human capital as a key component in their business model, which focuses on improving coordination with qualified personnel, as well as the acquisition of new skills and experiences (He and Wong, 2009; Ramadan et al., 2017).

5. Conclusions

This study analyzed the association between the business model configuration of small firms operating in the healthcare services sector and their perception of environmental institutions and their intellectual capital endowment. In line with the research propositions, the QCA technique was applied to identify different configurational patterns in the business models adopted. To complete the analysis, we also developed other more traditional techniques like the non-parametric Mann-Whitney U test, providing a better consistency in our results. Our analysis revealed some interesting findings related to the presence of different business models and the role of institutions and intellectual capital in the business model configuration.

The main finding was that 80% of the cases (70 firms) adopted an IBM, whereas only 20% operated under an ABM (18 cases). This finding is interesting because it contradicts networking trends, which show that other service companies are usually co-created (Bartels, 2021). Firms that provide healthcare services still prefer IBMs, although the influence of ABMs is growing.

The analysis of the business models showed that IBMs were characterized by a lack of concern about market influences. The QCA identified two different paths to configure these firms. The first path revealed that healthcare professionals tend to reject disruptive innovations. In contrast, the second configuration highlighted the importance placed on improving the human capital of these firms by focusing on the acquisition of skills, experience, and better procedures in the clinic.

Beyond the business model configuration, this paper also contributes to society at an institutional and professional level. First, professional associations need to have a more significant presence in their community of members. Their actions are not perceived as profitable for their members and cannot influence their entrepreneurs positively. Therefore, they must adopt more active policies to gain influence in their community. Their situation is even more concerning, given the period of change in which we find ourselves at present. There are opportunities in the healthcare services sector for innovative entrepreneurs who do not hesitate to improve their intellectual capital, invest in better marketing tools and relations, obtaining some potential advantages after their effort (Trathen and Gallagher, 2009).

Second, at the professional level, this work also provides insights into different combinations of factors for firms operating in private healthcare services. This study evaluated the role of institutions and found a generalized absence of market pressure in this regard. It is reasonable to assume that this absence of market pressure is related to other more intrinsic motivations than the economic viability of these healthcare clinics. A critical attitude is also perceived about professional associations' role, which did not influence the decision to adopt their members' business model. Regarding perceptions regarding intellectual capital, there are significant differences in the importance placed on training and knowledge improvement.

This work is not without its limitations. The first shortcoming is related to the definition of a dichotomous business model because it failed to consider the different realities found in franchise chains, cooperatives, and purchasing centers in terms of governance, contractual relationships, and the strategic approach adopted. Second, other interesting KIBS were not included in the study. Therefore, future research should try to resolve

these issues by incorporating cases from similar types of KIBS (e.g., veterinarians, economists, lawyers, or other professions) requiring compulsory membership. Finally, data were collected before the emergence of COVID-19. Therefore, new measures were not considered. This is important because, contrary to many other KIBS (Andrei, 2021), people who work in the healthcare services sector cannot work remotely, as they are generally required to be physically present to provide services to their patients. However, this also represents a research opportunity for future studies.

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Appendix i. Questionnaire.

	Item	Description
	Dependent Variables /Outcome	
	Business Model	0 = Independent business model (IBM). 1= Associated business model (ABM).
	Independent Variables/Causal Conditions (7-point Likert scale).	
Institutional Influences	Consumption Trends	We ask groups in our environment (i.e., suppliers, governments, workers or distributors) about consumption trends.
	Attention To Competitors	We pay attention to the services provided by our competitors.
	Successful Competitors Are Partners	In our business sector, the most successful competitors are part of a network of clinics; that is, franchises, cooperatives, and licenses, etc.
	Professional Association Influence.	The professional association actively works to protect and improve our profession.
Intellectual Capital	Autonomy	The clinic where I carry out my professional activity allows me to organize my work freely.
	Experience	Compared to our competitors, the professionals at the clinic where I work are much more experienced.
	HR Management	In the clinic I work in, HR management is carried out by the entrepreneur or manager of the clinic.
	Loyalty	We take commercial measures to ensure that our patients remain loyal.
	Reputation	Our firm's reputation is higher than that of our competitors.