Digital Transformation in Family Businesses: An Analysis of Drivers with fsQCA

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Posted Date: 6 September 2024

doi: 10.20944/preprints202409.0537.v1

Keywords: Family Firms; Family Businesses; fsQCA; Digital Transformation; Digitalization; Digitization

 doi:10.20944/preprints202409.0537.v1

Article

Digital Transformation in Family Businesses: An Analysis of Drivers with fsQCA

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Abstract: Digital Transformation (DT) encompasses profound technological changes. Businesses face the challenge of adapting their activities to the pace of new technologies to increase the efficiency of business processes, improve the customer experience, and create innovative value propositions. This research focuses on how family businesses, which are a relevant part of global economic activity and job creation, address the challenges associated with Digital Transformation. Based on the case of the automotive retail sector in a small European country characterized by the high acceptance of technologies, we use fuzzy-set Qualitative Comparative Analysis (fsQCA) to understand how critical success factors (causal conditions) combine towards adopting technologies representing different perspectives of the DT. The results confirm the existence of multiple configurations based on the importance of Organizational Culture, Change Management, Knowledge, Human Capital, IT Systems, and DT Strategy towards the adoption of CRM, Digital Marketing, and Social Networks technologies, thus helping family businesses to understand the adoption of these technologies leading to organizational success in the context of the Digital Transformation.

Keywords: family firms; family businesses; fsQCA; digital transformation; digitalization; digitization

1. Introduction

A central aspect of the Fourth Industrial Revolution lies in the accelerated pace of technological transformation unprecedented in previous technological revolutions. In this context, the intense use of digital technologies has led to the development and diffusion of innovations at an extraordinary rate [1].

The development of digital-based technologies has had an important impact on business models in many sectors of activity, leading to the collapse of several traditional business models and giving rise to new business models. For example, the rapid growth of online retail, with emphasis on the giants Alibaba and Amazon, disrupted the business model of traditional retailers such as Toys'R'Us, Claire's, or RadioShack, which became victims of "digital Darwinism" [2].

Family businesses are the most common type of organization in the world [3], although their importance varies depending on the sector of activity and geographic location [4,5], also face the impact of the DTs. However, there are differences between family and non-family businesses, evident in several dimensions of business activities, namely, in strategic options regarding technological innovation.

This research focuses on knowing how the Critical Success Factors associated with the DT process contribute to adopting second-generation DT technologies and how second-generation DT technologies support the adoption of third-generation DT technologies. The sample comprises 30 family businesses whose main activity is in the retail trade of new and pre-owned vehicles and the provision of after-sales services. These family businesses develop their activities in Portugal, a small European country belonging to the European Union characterized by the acceptance of technologies. In general, these family businesses have been representing some of the leading European and Asian

 doi:10.20944/preprints202409.0537.v1

automotive brands in Portugal for several decades. Nowadays, these family businesses face the challenge of transforming their business model, pressured by generalizing digital technologies or transforming the business model itself. Car manufacturers currently focus on electric vehicles, which impacts after-sales services, a relevant part of the family businesses' revenues. Additionally, several European car manufacturers are transitioning their distribution towards an agent model, affecting the revenues of automotive retail firms.

2. Literature Review

2.1. Digital Transformation

The concept of Digital Transformation (DT), a relatively recent topic in literature, lacks a consensual definition and reveals some conceptual inconsistency [6–8]. Several authors [e.g., 6-8] propose definitions of DT. For instance, Verhoef et al. [2] (p. 889) defined DT as "a change in how a firm employs digital technologies, to develop a new digital business model that helps to create and appropriate more value for the firm". Focusing on the determining and success factors for the DT process, another author [9] highlights the importance of the strategic dimension and cultural change – change in the way of thinking, particularly in the importance attributed to data. Kane [10] analyzes the relevance of Human Capital, namely the need for commitment to the DT process, and Porfírio, Carrilho, Felício, and Jardim [11] examine the characteristics of management, namely a more democratic leadership style, as a central driver of the DT process.

However, academics generally agree on the potential of DT to improve the performance of organizations, optimize business models, and achieve a competitive advantage [1,8]. The impact of the DT process, in any sector of activity, originates from both the supply and demand sides [12], for example, the need to reduce the development time of new products, the desire to explore business opportunities in adjacent markets, the use of data as a strategic resource, or the need to respond to customer expectations in the context of the growing and widespread use of digital technologies in the personal sphere, such as Apps, Social Networks or Smartphones.

Previous literature identifies three stages of the DT process: digitization, digitalization, and digital transformation, corresponding to three stages of digital maturity [2,13,14]. The digitization stage corresponds to converting information from analog to digital format, which allows processing, storing, and transmitting large amounts of information at a reduced cost [15]. The stage of digitalization designates the transformation or optimization of business processes, such as communication, distribution, or customer relationship management, through computer systems and digital technologies [2,13]. Finally, the term digital transformation is more comprehensive than the first two stages; in the Digital Transformation stage, the DT process goes beyond the use of digital technologies to digitize information or business processes because here the use of digital technologies results in a cultural transformation of organizations; in reality, the DT process in its most comprehensive stage represents a change in the entire organization, its operating logic and its business model [2].

2.2. Family Businesses

Family businesses constitute a particular form of organization characterized by the influence of one or more families on the organization's operation through the ownership of shares, control and management of the company, and the pursuit of a business vision [16]. Family businesses are instruments that legitimize a family's resources, skills, and entrepreneurial vision in pursuing economic and non-economic objectives [16]. Gomez-Mejia et al. [5] emphasize that families, by nature, are a social group with long histories and lasting memories that influence the behavior of their members and the family business. Gagné, Sharma, and De Massis [4] identified the following non-economic objectives in family businesses: job creation, job stability, personal development of family members, strengthening the reputation of the entrepreneurial family, and the development of social capital.

 doi:10.20944/preprints202409.0537.v1

Chrisman, Chua, and Sharma [17] highlight the following distinctive features of family businesses: the influence of the entrepreneurial family on the strategic direction of the company, the family's intention to maintain control of the company, the idiosyncratic behavior of the family business, and the unique synergies between resources and capabilities resulting from the involvement and interaction between members of the entrepreneurial family.

From a business strategy point of view, it seems clear that family business decisions are different from those made by non-family businesses. There is some consensus among academics about the greater aversion to risk on the part of family businesses compared to non-family businesses [18,19]. The explanation for this risk aversion is that many family business entrepreneurs concentrate a large part of their fortune/assets on companies and are concerned about protecting the socio-emotional dimension of this heritage [20]. On the other hand, it is common for banking institutions to request the endorsement of partners and spouses as a guarantee for bank financing granted to family businesses. Therefore, strategic decisions at the corporate level often directly impact the entrepreneurial family's present and future well-being. The family's influence on family business strategy is reflected in several dimensions: business risk, corporate diversification, international diversification, acquisition policy, debt, investment in R&D, and technological diversification [5].

Risk aversion on the part of family businesses is evident in the process of technological innovation. In general, academics assume that a company's shareholding structure influences the technological innovation process and innovation results. A family's involvement in the company's ownership and management can affect the technological innovation process [20]. Block [21] found that the family ownership of companies included in the S&P 500 index of R&D-intensive sectors was negatively associated with the level of investment in R&D, innovation, and productivity. Chrisman and Patel [22], through a study of companies in the S&P 1500 index, concluded that, generally, family ownership of companies leads to a lower level of investment in R&D due to owners' concern with protecting socio-emotional assets.

The innovation process generally involves taking significant risks, requires a substantial allocation of resources, and the results are not immediate. Furthermore, innovation requires financial resources and skills that do not always exist within the context of the family that owns the business. For these reasons, family businesses reveal a lower propensity to innovate [23]. The DT process, in particular, involves a significant effort in innovation, profound changes in the organization, and the willingness to take risks, which does not seem compatible with risk aversion on the part of family businesses [24].

Sebastian et al. [25] draw attention to a characteristic of digital technology that may condition family businesses' endorsement of the DT process: the scalability potential of digital technology. Scalability is a characteristic of information systems that indicates the ability of a system to support a substantial increase in workload. Some studies corroborate that family businesses face more difficulties in making their investment in technological innovation profitable [26]. Calabró et al. [27] refer to some of the barriers to the innovation process in the context of family businesses, including the emotional connection to historical assets – namely facilities and equipment – and rigid mental models that block innovation in the business model and processes: this type of mental barriers conditions innovation in the business model.

2.3. Critical Success Factors

The DT process, in the business dimension, is a complex and challenging topic to implement for several reasons. For example, it involves rethinking the business itself – calling into question its historical foundations – which entails considerable risk in its implementation due to the necessary investment in new resources with no guarantee of success [9]. There are many examples of companies that were unable to keep up with the pace of change caused by the new digital context. Therefore, it is crucial to identify the critical success factors associated with the DT process.

In generic terms, "critical success factors" designate the fundamental principles that should guide an initiative or enterprise toward achieving success in the established objectives [28]. Critical success factors apply at the corporate level and the level of key business processes. Considering the

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complexity associated with the adoption of digital technologies, Osmundsen, Iden, and Bygstad [29] (p. 2) sought to answer three questions, one of which is the following: "How can an organization achieve a digital transformation?" and identified seven Critical Success Factors (CSFs):

Based on the literature review, we formulate the following research proposition:

P1: Critical Success Factors related to Digital Transformation are present in adopting second-generation DT technologies (focused on business processes), representing the second stage of the DT process – digitalization.

2.4. Cumulative Effect of DT Technologies Adoption

Kotarba [30], also starting from the premise that digital technologies are the enablers of the TD process in business activity, proposes a classification of digital-based technologies or processes into three groups: technologies/processes adopted until the 1980s, technologies/processes adopted between the 1980s and 2000 and the technologies/processes adopted from the beginning of the 2000s – for this research we will consider the technologies adopted between the years 1980-2000 (second generation) and those adopted after the beginning of 2000 (third generation). Considering the cumulative effect between the different generations of technologies, we formulate the following research proposition:

P2: The adoption of DT technologies focused on business processes (second generation) precedes the adoption of third generation technologies, moving towards the third stage of the DT process.

3. Methodology

3.1. Automotive Retail Sector

We decided to focus our analysis on the automotive retail sector. The automotive retail subsector is essential to the OEMs' business model as a distribution channel for new and pre-owned vehicles and parts/accessories. Recent research highlights that digital-based technologies reveal a solid potential to influence value creation in the automotive sector [31]. The Portuguese sector of wholesale and retail sales and repair services for motor vehicles and motorcycles had, in 2020, 31,419 companies, employing more than 104 thousand people. This sector recorded a turnover of 18.6 billion euros in 2020, representing around 9.3% of Portuguese GDP [32]. Although the maintenance and repair subsector represented around 59% of companies in this sector in 2020, the light-duty vehicles trade subsector accounted for around 68.6% of the sector's turnover, reaching almost 12.8 billion euros in 2020.

The automotive retail sector is experiencing a period of meaningful change. Environmental and regulatory changes and the digital transformation process will profoundly impact the automotive retail business model. The increasing electrification of the automobile will result in a significant reduction in the provision of scheduled after-sales services, implying the loss of a substantial share of revenue – some estimates predict that the planned after-sales services of electric vehicles will represent only 10% of their counterpart combustion vehicles.

Some European car manufacturers, such as Stellantis, are implementing a new distribution model based on the agent role; that is, traditional dealers will begin to play the agent role as early as 2024. These agents will be excluded from a significant part of the vehicle sales process and the respective financial income even though projections indicate the maintenance of profitability of entities involved in the automotive sector – this change will result, in the medium term, in a profound shift in the business model of automotive retail.

3.2. Data Collection

The first step consists of obtaining information on the dominance of CSF in organizational dynamics and the level of use of digital technologies through a questionnaire aimed at family businesses in the automotive retail sector operating in Portugal. This research seeks to obtain primary data to study the relationships between key variables in the DT process, describing how companies grasp the CSFs associated with the DT process. We also seek to find the optimal CSF combinations

 doi:10.20944/preprints202409.0537.v1

that explain the most advanced stages in the DT process, and how second-generation DT technologies support the adoption of third-generation DT technologies. To achieve the defined objectives, we prepared a questionnaire with twenty-two closed questions: the first six questions relate to the CSF, and the following sixteen questions concern the level of use of digital technologies in business processes. Focusing on the CSF, we used a Likert scale with six positions, which asks the respondent for their degree of agreement regarding the presence of the CSF associated with DT in their company's business processes on a scale that varies between 1 (Strongly Disagree) and 6 (Strongly Agree). Regarding the level of use of digital technologies, we used a Likert scale with six positions, which asks the respondent to indicate the level of use of these technologies in business processes on a scale ranging between 1 (Never uses) and 6 (Uses very often).

We sent the questionnaire to family-owned automotive retail companies operating in Portugal, including the autonomous regions of the Azores and Madeira, during the period between August and October 2023. The quantitative results of the questionnaire allow a statistical analysis using descriptive statistics and the fsQCA (fuzzy-set Qualitative Comparative Analysis) methodology.

3.3. Data Analysis

FsQCA is a solution to the need to adopt increasingly effective and sophisticated methodologies in establishing causal relationships between variables. In this sense, the increasing use of the fsQCA methodology has replaced or complemented traditional correlation methods in establishing explanatory causal conditions for a particular result [33]. The QCA methodology is theoretically based on set theory and Boolean algebra and allows the researchers to identify the various combinations of factors that lead to a given result; that is, it enables the researcher to identify equifinal solutions – the concept of equifinality originates in systems theory and represents the property of achieving a result or final state through various combinations of factors or elements of the system.

Compared to other variants of QCA, fsQCA has the advantage of including fuzzy variables in the analysis spectrum – defined based on the degree of belonging to a given set [34]. In the context of this research, fsQCA aims to identify, for the sample of 30 companies, the CSF combinations that allow achieving the highest level of use of technologies associated with second-generation DT technologies and the combinations of second-generation DT technologies that support the adoption of third-generation DT technologies.

The fsQCA methodology aims to evaluate how the variables (called conditions, in the fsQCA nomenclature) defined in the research propositions combine to result in the following outcome under analysis. The different combinations of causal conditions obtained through this methodology represent different paths that lead to a result (outcome) and reveal different patterns in the complex relationships between the causal conditions under study.

The fsQCA methodology produces three solutions: complex, parsimonious, and intermediate. In this research, we will use intermediate solutions [35]. The analysis of results involves the consideration of two metrics: consistency and coverage: consistency varies between 0 and 1 and indicates the extent to which a causal combination produces a given result, with high consistency indicating that a causal combination always leads to the intended outcome. For this research, causal combinations with consistency greater than 0.8 were considered [35]. As for coverage, this indicates the extent to which a combination of causal conditions contributes to the intended result.

The use of the fsQCA methodology implies data calibration. Calibration consists of defining the degree of belonging of each case to a given set (for each of the conditions and outcomes). The degree of belonging can take any value between 0 (low degree of belonging) and 1 (high degree of belonging). The calibration process presupposes the identification of three anchor points: the value of fully in, the point of maximum ambiguity, and the value of fully out. Although some literature recommends that anchor points be defined with information external to the database, recognizing the distribution of responses, the calibration used the following anchors: six for fully in, five as the maximum ambiguity point, and four for fully out.

 doi:10.20944/preprints202409.0537.v1

3.3. Constructs and Variables

The definition of CSFs that explain success in DT was based on Osmundsen et al. [29] (pp. 5-8). These authors carried out an extensive literature review on the DT process, focusing on the empirical contributions of several authors, and identified seven CSFs associated with the DT process: 1) "Supporting and agile organizational culture", 2) "Transformation activities managed well", 3) "Leverage knowledge", 4) "Engaging managers and employees", 5) "Grow IS capabilities", 6) "Develop dynamic capabilities", 7) "Develop a digital business strategy, and align business and IS". These CSFs served as the basis for defining the following CSFs: 1) Company Culture, 2) Knowledge, 3) Human Capital, 4) Computing Systems, 5) Digital Transformation Strategy, 6) Change Management.

The last of the CSFs defined here, 'Change Management', results from the merge of the constructs "Transformation activities managed for good" and "dynamic development capabilities" [29]. As Suddaby [36] acknowledges, the constructs originating from the study of organizations are sensitive and contingent on the context. According to this author, the constructs developed to study large companies, for example, could have little relevance in studying family businesses.

4. Results

4.1. Descriptive Analysis

The questionnaire was disseminated to 35 Portuguese family businesses active in automotive retail through the researchers' network of contacts, which yielded 30 responses. Regarding the size of the companies included in the sample, 97% have a turnover of less than €50M. In essence, the companies that make up the sample fit the definition of SME. 20% of the companies in the sample have been in service for more than 50 years; 60% are in the range <25 years <=50 years; and only 20% have experience of less than 25 years. The average score attributed to the presence of CSF in the dynamics of these companies, on a scale from 1 (Strongly Disagree) to 6 (Strongly Agree), is presented in Table 1.

Table 1. CSF average scores.

CSF	Average score
Organizational Culture	5.3
Change Management	5.3
Knowledge	5.0
Human Capital	4.8
IT Systems	5.2
DT Strategy	5.0

From Table 1, it is possible to conclude that, for the sample considered, the highest-scoring CSF in organizational dynamics is Organizational Culture (related to items like 'I accept change' and 'Teamwork'), followed by Change Management (the Change Management capacity as a guarantee of constant adaptation to changes in the technological environment), while the lowest scoring CSF involves Human Capital (commitment/involvement of Human Capital in the digital transformation of the business). The commitment/involvement of human capital in the DT process is fundamental, especially in the most advanced stages of DT, because it will represent a change in terms of the entire organization, its operating logic, and the way of thinking about the business and, ultimately, it depends on the people.

As for the answers regarding the use of digital technologies in business processes, the first group of eight technologies is essentially focused on business processes and without sufficient potential to reinvent the business model. The second group, the third-generation technologies associated with

 doi:10.20944/preprints202409.0537.v1

DT, can potentially reinvent the business model. The questionnaire revealed the results indicated in Table 2 using a scale from 1 (Never uses) to 6 (Uses very often):

Table 2. Technologies use average scores.

Digital Technologies	Average score
CRM	5.5
Social Networks*	5.5
Digital Marketing	5.3
Marketplace	5.1
Integrated Management System	5.0
Client Portal	4.9
Cloud computing*	4.5
Multiservice platform*	3.9
Big Data*	3.8
eCommerce	3.7
Digital self-service	3.4
Mobile application*	3.4
Internet of Things*	2.8
Processes robotic automation	2.1
Virtual reality*	2.1
Artificial intelligence*	2.0

Note: * Identifies the 3rd generation DT.

In this table, it is evident that, for this set of family businesses and the digital technologies considered, the most used technologies are CRM (5.5) and Social Networks, followed by Digital Marketing (5.3) and Marketplace (5.1), while the least used digital technology is Artificial Intelligence (2.0), followed by Processes Robotic Automation (very sensitive to the effect of scale) and Virtual Reality (2.1). Considering the three most used technologies, the next section will address the interconnection between CFS and the use of each technology. From a global perspective, the adoption of third-generation technologies is lagging behind the adoption of second-generation technologies, which is expected but also shows where the most exciting sources of competitive differentiation may lie.

4.2. fsQCA

One of the characteristics of fsQCA is assuming asymmetry, i.e., the configurations leading to the presence of an outcome may be asymmetric from the configurations leading to the absence of the same outcome. For this reason, we will present the results for the presence and the absence of the three outcomes under analysis (CRM, Social Networks, and Digital Marketing). Starting with the presence of CRM, we obtained five configurations presented in Table 3.

Table 3. Configurations for the presence of CRM.

	C1	C2	C3	C4	C5
Organizational Culture	○		●	●	●
Change Management	○	○	●	●	●
Knowledge	○	○	●	●	○
Human Capital	○	○	○		○
IT Systems	●	●	●	●	○
DT Strategy		●		●	○
Raw Coverage	.29	.19	.25	.43	.29

 doi:10.20944/preprints202409.0537.v1

Unique Coverage	.08	.00	.00	.22	.12
Consistency	.93	.89	.99	.95	.93
Solution Consistency	.95				
Solution Coverage	.74				

Note: ● = condition present, ○ = condition absent.

Analyzing Table 3, alternative configurations are leading to the presence of CRM, i.e., family businesses in the automotive retail sector may have different levels on the CSF and still adopt CRM. Focusing on C1, we notice family businesses with an absence of Organizational Culture, Change Management, Knowledge, and Human Capital but with the presence of IT Systems. C2 is a similar configuration, but the presence or absence of Organizational Culture is indifferent, while a DT Strategy is present. C3 is identical to C1 and C2 in the absence of Human Capital and the presence of IT Systems. However, Organizational Culture, Change Management, and Knowledge are also present. The presence of Organizational Culture, Change Management, and Knowledge is also evident in C4, allied with the presence of IT Systems and DT Strategy. Finally, C5 also leads to the presence of CRM, based on the presence of Organizational Culture and Change Management, while all other conditions are absent. C5 is the only configuration leading to CRM presence, whereas the IT Systems condition is absent. These results support the idea of equifinality, which is a relevant concept in the context of fsQCA, i.e., multiple paths to reach the same outcome, in this case, meaning that different family businesses in this sector can achieve high levels of CRM adoption despite differing in their adoption of the CSF under analysis.

The results for the absence of CRM are presented in Table 4.

Table 4. Configurations for the absence of CRM.

	C1
Organizational Culture	○
Change Management	○
Knowledge	●
Human Capital	●
IT Systems	●
DT Strategy	●
Raw Coverage	.24
Unique Coverage	.24
Consistency	1.00
Solution Consistency	1.00
Solution Coverage	.24

Note: ● = condition present, ○ = condition absent.

The analysis reveals a single configuration for the absence of CRM in the family businesses under analysis. In this configuration, the presence of Knowledge, Human Capital, IT Systems, and DT Strategy combined with the absence of Organizational Culture and Change Management yield a lower CRM score than the five configurations presented in Table 3. There is, as expected, asymmetry, although C1 in Table 4 is symmetric to C5 in Table 3, which is a relevant finding.

Moving the focus to Digital Marketing, we start with the presence of this outcome. The analysis identified four configurations, which are presented in Table 5.

 doi:10.20944/preprints202409.0537.v1

Table 5. Configurations for the presence of Digital Marketing.

	C1	C2	C3	C4
Organizational Culture		●	●	○
Change Management	○	●	●	○
Knowledge	○	●	●	●
Human Capital	○	○		●
IT Systems	●	●	●	●
DT Strategy	●		●	●
Raw Coverage	.18	.22	.45	.08
Unique Coverage	.04	.02	.22	.00
Consistency	.87	.89	.99	.95
Solution Consistency	.91			
Solution Coverage	.51			

Note: ● = condition present, ○ = condition absent.

Configuration C1 is an example of multifinality. Family businesses where Change Management, Knowledge, and Human Capital are absent and where IT Systems and DT Strategy are present can simultaneously find the presence of CRM (C1 in Table 3) and Digital Marketing. A similar finding occurs for C2 in Table 5 and C3 in Table 3, and, finally, for C3 in Table 5 and C4 in Table 3. These similar configurations also imply that there are two configurations in Table 3 specific to CRM and do not apply to Digital Marketing. This final finding is informative for family businesses aiming to achieve the presence of CRM and Digital Marketing simultaneously.

C4 is a paradoxal configuration. It is the same configuration we have seen for the absence of CRM. This information implies that family businesses with this specific configuration cannot simultaneously achieve the presence of CRM and Digital Marketing, which can become problematic. Still focusing on Digital Marketing, the analysis for the absence of this outcome does not reveal a consistent solution.

According to P2, adopting second-generation DT technologies will enable the adoption of third-generation DT technologies. Based on this proposition, we analyzed the presence of Social Networks considering second-generation technologies as conditions. The results for the presence of Social Networks are presented in Table 6.

Table 6. Configurations for the presence of Social Networks.

	C1	C2	C3	C4
Client Portal		○	○	●
CRM		○	●	
Marketplace	●	○	●	○
ERP	○			●
Digital Marketing	●	●	●	●
Raw Coverage	.40	.10	.42	.26
Unique Coverage	.18	.00	.20	.18
Consistency	1.00	1.00	1.00	1.00
Solution Consistency	1.00			
Solution Coverage	.81			

 doi:10.20944/preprints202409.0537.v1

Note: ● = condition present, ○ = condition absent.

The results reveal four configurations leading to the presence of Social Networks, all based on the presence of Digital Marketing. C1 associates the presence of Digital Marketing with Marketplace but in the absence of ERP. C3 also reveals the presence of Marketplace but adds the presence of CRM and the absence of a Client Portal. Differently, C2 combines the presence of Digital Marketing with the absence of Client Portal, CRM, and Marketplace. Finally, C4 refers to the presence of Digital Marketing combined with the presence of ERP and Client Portal but the absence of Marketplace. These four configurations support the idea, central in the context of fsQCA, that there are multiple trajectories leading to the same outcome (equifinality) and that the second-generation technologies adoption is helpful to understand the presence of third-generation technologies, here represented by Social Networks, providing support to P2. It is clear, however, that family businesses do not have to have all technologies present to reach the Social Networks outcome.

As previously referred, another relevant characteristic of fsQCA is asymmetry, explored in Table 7, which focuses on the absence of Social Networks.

Table 7. Configurations for the absence of Social Networks.

	C1	**C2**
Client Portal	○	●
CRM	○	●
Marketplace	○	○
ERP		○
Digital Marketing	○	○
Raw Coverage	.48	.36
Unique Coverage	.31	.19
Consistency	1.00	1.00
Solution Consistency	1.00	
Solution Coverage	.69	

Note: ● = condition present, ○ = condition absent.

The two configurations obtained reveal that both Digital Marketing and Marketing are absent when Social Networks are absent. C1 includes the absence of Client Portal and CRM, which are present in C2, which adds to the absence of ERP. It is interesting to note that adopting Client Portal and CRM is insufficient for the presence of Social Networks.

5. Discussion

The decisive impact of the DT process on company performance is widely highlighted. Several authors state that the DT process is strategic in nature [9]. However, as Casadesus-Masanell and Ricart [37] recall, not all companies have a corporate strategy, while they all have a business model. The impact of the DT on the business model process is widely recognized, and, as Chesbrough [38] reminds us, the business model and technology are complementary.

Most of the family businesses in the sample registered a relatively medium/high level of use of the majority of the second-generation technologies proposed in the questionnaire, with an evident impact on increasing the efficiency of business processes, which corresponds to the Digitalization stage [2]. However, there is a medium/low level of use of third-generation technologies, which include the most sophisticated digital technologies with greater disruptive power. These results align with several studies that point to greater aversion to the risk associated with technological innovation on the part of family businesses [23]. On the other hand, these results reveal, in general, the absence

 doi:10.20944/preprints202409.0537.v1

of a truly disruptive effect of digital technologies on the business model of these companies, which limits the creation of competitive advantage in this way and makes the business models very similar and relatively easy to be replicated by competitors.

Focusing on the extent to which the companies included in the sample mastered the CFS associated with the DT process, the results obtained using the fsQCA methodology, taking as a reference the use of CRM and Digital Marketing technologies (both second-generation technologies), reveal several combinations of causal conditions that highlight the importance of several CSFs, such as, for example, Company Culture, Change Management, Knowledge, IT Systems, and the DT Strategy, in the successful use of digital technologies in the DT process, which, in general, corroborates the results of previous studies [29].

Some authors claim that the Digitalization stage laid the foundations for the Digital Transition stage [31], and the first two stages are necessary to reach the Digital Transformation stage. In this sense, we also used fsQCA to determine the extent to which second-generation technologies are present at the highest level of third-generation technologies.

Taking as a reference the use of Social Networks – third-generation technology most used within the scope of the companies included in the sample – we verify that in the four combinations of causal conditions obtained, Digital Marketing technology is present. In contrast, Marketplace technology is present in two configurations, which corroborates the idea that using the most sophisticated digital technologies implies the adoption of previous-generation technologies.

The results corroborate the idea that digital technologies aimed essentially at business processes (second-generation) allow for the transformation of the business model but are insufficient to reinvent the value-creation process [31]. On the other hand, specifically regarding automotive retail, the results partially corroborate the opinion of previous research [39] regarding the more significant impact of digital technologies in the case of retail companies in the form of how these companies sell and not so much in what they sell.

6. Conclusions, Limitations, and Future Research

6.1. Conclusions

The transformative impact of the DT process on the automotive retail business model is evident and widely recognized by actors in this sector of activity. If, on the one hand, this process represents an enormous strategic and operational challenge, on the other, the DT process offers opportunities and solutions that will allow this sector of activity to face the challenges that await it. The challenges that automotive retail faces, namely the loss of profitability resulting from the loss of revenue in the after-sales segment in the context of the growing electrification of the vehicle fleet and the growing use of digital technologies in the private sphere of consumers, are important drivers of the DT process.

The results obtained here allow us to conclude that this process reveals the potential to increase efficiency in business processes and to explore new sources of revenue in the context of mobility, allowing for the mitigation of any loss of revenue in automotive retail. To the CSF associated with the DT process already identified in the literature, a new CSF was added here, Change Management, to the detriment of less familiar constructs within the universe of family businesses in automotive retail; the capacity for Change Management seems inseparable from the DT process and is present in many causal combinations that support a high level of use of second-generation technologies.

Regarding the mastery of the CSF associated with the DT process, the results obtained reveal a medium/high mastery, on the part of the companies included in the sample, of the fundamental conditions for achieving success in the DT process.

Among the CSF proposed here, Company Culture and the capacity for Change Management, associated with the widespread use of IT Systems in business processes, clearly favor the DT process – the presence of this last CSF in practically all causal combinations that support a high level of use of the second-generation technologies considered here confirms the enabling function of digital technologies in the DT process.

 doi:10.20944/preprints202409.0537.v1

The CSF least present in the organizational dynamics of these companies is the commitment/involvement of Human Capital in the DT process. However, the relationship between the various CSFs was not the object of study in this research. Nevertheless, it is relevant to highlight the positive and moderate/strong correlation between commitment/involvement in the digital transformation of the Human Capital business and the promotion/use of Knowledge about digital technologies in business processes.

The results also reveal that most family businesses in the sample are in the digitalization stage of business processes. Among the digital technologies most used by the family businesses in the sample, digital technologies whose widespread use occurred in the 1990s stand out – for example, CRM, Marketplace, ERP, or Digital Marketing. Among the most sophisticated digital technologies, only the use of Social Networks stands out, a digital technology widespread in the early 2000s. These results highlight the importance of partnerships in the DT process – Marketplace and Social Networks digital technologies are forms of digital collaboration.

The level and type of use of digital technologies suggest a transformation of the business model by family companies in automotive retail without, however, achieving the reinvention of the business model. These results corroborate the opinion of many academics regarding the greater aversion to risk associated with technological innovation on the part of family businesses. It follows that, as a result, and in the case of most companies included in the sample, the DT process does not yet represent a source of competitive advantage through the business model – the current business models of automotive retail companies are relatively similar, therefore, relatively easy to replicate among competitors.

Taking the use of CRM technologies and Digital Marketing as a reference, the results suggest that the combination of the presence of IT Systems in business processes with the presence of Company Culture, Change Management, and the business's DT Strategy significantly reinforces the probability of success in the DT process. On the other hand, the results obtained do not confirm the decisive importance of the commitment/involvement of Human Capital in the DT process because this CSF is absent in almost all causal combinations that support the high level of second-generation technologies, which, to a certain extent, contradicts some previous studies.

In general, the results obtained reveal that, for second-generation technologies, the combined presence of the following CSF: Company Culture, Change Management, Knowledge, IT Systems, and DT Strategy results in the maximum level of raw coverage, that is, it explains most cases that reach a high level in the use of these digital technologies – which also confirms the basis for using these CSF as fundamental conditions for the success of the DT process.

Taking the use of Social Networks as a reference, it appears that the combined presence of the use of several second-generation technologies reinforces the raw coverage of the causal combination that supports the high level of use of Social Networks, reinforcing the idea that the DT process is continuous and evolutionary, that is, a high level of use of highly sophisticated digital technologies – third-generation technologies – implies a high level of use of medium sophistication digital technologies – second-generation technologies.

6.2. Limitations

Regarding the limitations involved in this research, we highlight the fact that the companies included in the sample belong to the automotive retail sector whose value proposition, to a large extent, is developed by OEMs, which may limit the choice of digital technologies to improve the Proposal of Value and, in general, tends to limit the transformation and reinvention of the business model. Secondly, the family nature of the corporate structure of the companies included in the sample may condition the innovative propensity associated with digital technologies. Thirdly, the family businesses sample size, in the context of the questionnaire, although possibly appropriate for work of this nature, tends to limit the diversity of responses and, therefore, may limit the scope of the respective conclusions.

 doi:10.20944/preprints202409.0537.v1

6.3. Future Research

What has already been investigated about the DT process is probably a small part of what future research will reveal. For example, it is worth further studying the difference in the domain of CSF related to the DT process between family businesses and non-family businesses. It is also essential to deepen the relationship between the DT process and the Innovation Management process to identify the practices, in the context of organizations, that lead to commitment, discipline, and effort necessary in exploring the innovation opportunities offered by the digital context.

The comparative study of the DT process between companies located in countries that record different levels of innovation can reveal important insights into the conditions that impact the DT process. Finally, it is critical to deepen the study of how creating competitive advantages through the DT process has contributed positively to improving company performance, relating investment in digital technologies with companies' financial and non-financial performance.

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