DETERMINANTS OF DIGITAL TRANSFORMATION IN THE RESTAURANT INDUSTRY

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Abstract

This article aims to identify the factors that influence the digital transformation process in the restaurant industry. The proposed theoretical framework differentiates three groups of conditioning factors of digitalisation in small and medium-sized enterprises (SMEs) in this sector: (1) the personal characteristics of the entrepreneurs/managers; (2) the characteristics of the businesses; and (3) the spatial location of the restaurants. The data used in the empirical research were compiled from a representative survey of restaurant SMEs in Spain. The study uses an ordinal logistic regression specification to test the hypotheses. The results obtained indicate that the education of entrepreneurs/managers, their entrepreneurial motivations, and their ambition for growth condition the digital transformation of their businesses. Furthermore, the characteristics of the company, such as the number of establishments, belonging to a corporate group, and the employees' educational level, influence the digitalisation of restaurants. Likewise, it is observed that the digitalisation process is stimulated in inland towns compared to coastal areas, as well as in intermediate municipalities with populations of between 10,000 and 100,000 inhabitants.

Keywords: digitalisation, digital transformation, innovation, restaurant, SME, Spain

JEL Classification: R13, Z31, O30, M2

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Introduction

The restaurant industry has considerable quantitative importance in many economies, especially in those with a tourism specialisation such as Spain. Although large chains and corporate groups have a significant presence in the restaurant industry, this sector is characterised by a business structure in which self-employed and small businesses prevail. Restaurant activity is also characterised by a highly competitive market as a result of the continuous entry (and exit) of companies and the increasingly varied offering.

In this context, the introduction and application of digital technologies, which has been a common process in recent decades in the entire tourism sector (Cavusoglu, 2019; Moreno and Tejada, 2019; Dinu, Lazăr and Pop, 2021), represents a source of competitive upgrading for restaurant companies by means of differentiation strategies (Ruiz-Molina, Gil-Saura and Berenguer-Contrí, 2014; Torabi Farsani, et al., 2016). Restaurant customers have become increasingly engaged in the digital environment and this is changing the patterns of interaction between customers and restaurants (Kim, Yoo and Yang, 2020). Furthermore, the use of digital technologies has become decisive within any sector in the context of the COVID-19 pandemic due to the restrictions introduced. In the restaurant industry, adaptation to the pandemic has increased the use of QR codes to present menus and the introduction of home delivery services using online platforms, among other changes. Consequently, far from being an option, digital transformation has become a necessity for the survival and success of companies in this sector. However, there is an important gap in the literature on the factors that condition the adoption of information and communication technologies (ICT) in restaurants.

The objective of this article is to study the determinants of digital transformation in companies in the restaurant sector. In this sense, in the context of small and medium-sized enterprises (SMEs), the personal characteristics of the entrepreneurs/managers are an important dimension to be considered. Furthermore, the characteristics of the restaurant businesses and their location have a significant influence on the digital transformation process in this industry. Data from a representative survey of Spanish SMEs in the restaurant industry are used for the objectives of this research. The empirical analysis applies an ordinal logit econometric model.

The study is structured as follows: Section 1 reviews the literature and presents the theoretical framework of this research; Section 2 describes the database used and the methodology applied; Section 3 presents and discusses the results of the analysis, and the article ends with some final conclusions.

1. Review of the scientific literature and theoretical framework

This section reviews the literature on digital transformation in the restaurant industry and presents the analytical framework for this study, proposing a set of research hypotheses.

1.1. Digital transformation in the restaurant sector

ICT facilitates the management of business activities, increasing firm productivity, and achieving competitive advantages through differentiation and savings in time and costs, as well as enabling an improvement in service quality, in decision-making, and in capturing new

market opportunities. Therefore, ICT has been consolidated as veritable catalysts for the generation of value in companies, both from an internal perspective, considering changes in processes, and externally, in terms of market orientation.

Digital transformation is an innovation process within the organisation by means of which the company reconfigures itself from the use of digital technologies, introducing changes that may affect its products/services, its production processes, its organisation, the marketing/commercialisation of its products and/or its business model itself (Nambisan Wright and Feldman, 2019; Vial, 2019; Tohănean, et al., 2020). Innovation processes in general are hampered to a greater extent in SMEs compared to larger companies due to their cost, associated risk, and the requirement of knowledge management capabilities (Madrid-Guijarro, Garcia and Van Auken, 2009; Tan, et al., 2009; Romero and Martínez-Román, 2012). This aspect is highly relevant for the restaurant sector, given its business structure. In this sector in Spain, the percentage of companies with fewer than 200 workers is 99.3%, with the percentage of micro-companies above 97% of the total (INE, 2016).

The involvement of digital technologies is transforming the restaurant sector - see Moreno and Tejada (2019) for a review of the literature on this topic. From a functional perspective, digitalisation in the restaurant industry is profoundly changing restaurants' services, their management activities, and their marketing, among other business areas. Similarly, from a technological perspective, in the commitment to digitalisation in this sector, the two following basic dimensions can be differentiated:

a) Acquisition of ICT equipment and new software.

Restaurants are making a considerable effort to acquire new digital technologies that allow them to increase their efficiency and improve customer service. In this regard, digitalisation affects management activities and operational processes before the customer tastes the dishes, such as purchasing ingredients, booking tables, the checking the availability of the dish and taking and billing orders. Furthermore, the use of ICT in restaurants affects customer service in the dining room and communication between waiters, customers, and the kitchen. Currently, waiters often have personal digital assistants (PDAs) to digitise customer orders, connecting them to the kitchen automatically. In some cases, the diners themselves request their own orders on table screens, freeing the room staff from taking note of them and allowing them to focus solely on serving customers (Pieska, et al., 2013). Moreover, in the context of the COVID pandemic, menus have been routinely made available online through the use of QR codes. The use of self-service and robotic technologies capable of serving customers is also a field of application and experimentation today (Kincaid and Baloglu, 2005; Ruiz-Molina, Gil-Saura and Berenguer-Contrí, 2014).

b) Use of social networks and digital platforms.

Digital transformation is profoundly modifying customer behaviour in their purchasing processes. The digital purchase route is defined by the different sites, channels, devices, and sources that consumers use to obtain information that supports the decision to buy a product or service online. In this regard, the traditional purchase route of restaurant clients has changed to a new model that includes a wider variety of information, especially from social networks, websites (Trip Advisor, Yelp, etc.), and delivery platforms (Parikh, et al., 2014; Kim, Yoo and Yang, 2020). Customers are frustrated if they cannot access relevant information online about a restaurant, which can damage the customer experience from the first step of the shopping journey. The habit of checking reviews is now part of the customer

experience. Most customers trust the reviews of other customers and find their comments to be more reliable than the information presented by the restaurant. It is the new word-of-mouth (Jeong and Jang, 2011; Ismagilova, et al., 2017; Yang, 2017). Therefore, online reputation management must be integrated into a restaurant's digital strategy (Beuscart, Mellet and Trespeuch, 2014).

Companies in the home delivery business have been the most active in exploiting social networks, mainly through digital delivery platforms (Just-eat, Glovo, Deliveroo, Uber Eats, etc.), which have transformed the operation of establishments of this kind. These platforms not only fulfil a function of transporting the product, but also carry out information and promotion activities of restaurants in an automatic and updated way (Amit and Zott, 2001). Therefore, restaurant companies cut their operating costs by releasing specific staff from transport and marketing functions. These advantages are not exclusive to the home catering market, as many traditional restaurants have incorporated this option into their services, thus reaching a potential market that has so far been unattainable for them. In this regard, due to the total or partial closures that have affected the restaurant industry in the context of the COVID-19 pandemic, many establishments have oriented their activity to serving pick-up meals, with access to menus through the Internet or specific search engines being essential.

1.2. Determinants of the digital transformation of SMEs in the restaurant industry: Analytical framework and research hypotheses

For the purposes of this study, the determinants of the digital transformation of restaurant SMEs are classified into three categories: the personal characteristics of the entrepreneur/manager, the characteristics of the company itself, and the spatial location of restaurants (figure no. 1).

1.2.1. Personal characteristics of entrepreneurs/managers

Previous literature maintains that the age of the entrepreneur/manager can significantly influence the search and recognition of new market opportunities. Both entrepreneurship and innovation are found more frequently among young people due to the growing aversion to risk that is experienced as age increases (Arenius and Minniti, 2005; Martínez-Román and Romero, 2013). Hence, the following hypothesis is proposed:

H1: Younger entrepreneurs/managers drive the digital transformation of restaurant businesses to a greater extent.

Education of the entrepreneur/manager provides the management skills for the development of a business, promoting a better search and capture of market opportunities and favouring the commitment to new technologies (Romero and Martínez-Román, 2015). In this respect, Barba-Aragón (2014) showed the existence of a correlation between the academic training of business leaders and the innovative orientation of the organisation. On the basis of these arguments, the following hypothesis is postulated:

H2: A higher education level of entrepreneurs/managers is conducive to the digital transformation of restaurant businesses.

Finally, the motivations and ambition of the entrepreneur/manager are relevant qualitative dimensions for the purposes of this analysis. Those entrepreneurs driven by their self-realisation and professional development and those driven by the detection of attractive opportunities in the market might be more motivated for the digital transformation of their companies. On the contrary, those entrepreneurs driven by necessity who run their businesses as a last resort to avoid unemployment or dissatisfaction with their employment could develop a less innovative management of their companies. Previous literature has observed that the survival rates of companies created by opportunity entrepreneurs are higher than those of entrepreneurs motivated by necessity and also that entrepreneurs out of opportunity are more innovative than those out of necessity (Reynolds, et al., 2002; Headd, 2003; Martínez-Román and Romero, 2017). In this regard, the following hypotheses are proposed in this paper:

H3: Entrepreneurs/managers motivated by market opportunities drive the digital transformation of restaurant businesses further.

H4: Entrepreneurs/managers motivated by their professional development drive the digital transformation of restaurant businesses further.

Ambitious entrepreneurs have a better chance of generating successful companies in terms of survival and development. Shane (2009) affirmed that the entrepreneurs' ambition has a direct impact on the way in which they exploit market opportunities and drives the entrepreneur's innovative predisposition. Likewise, Guzmán and Santos (2001) stated that the ambition of the entrepreneur is an energising factor in the activity of SMEs. From this perspective, the following hypothesis is formulated:

H5: The growth ambition of entrepreneurs/managers stimulates the digital transformation of restaurant businesses.

1.2.2. Characteristics of restaurant businesses

Business size has been observed to be a factor that conditions the innovation process in SMEs (Galende and De la Fuente, 2003; Romero and Martínez-Román, 2012, 2015). Larger companies have the resources, both human and technological, that allow them to face the obstacles, costs, and risks associated with innovation processes. In the case of restaurants, business size - both in terms of the numbers of establishments of the company and the number of places per establishment - may affect the decision to get involved in digital transformation processes. The need for coordination of activities among different establishments and the opportunity to take advantage of the economies of scale of investment in digital transformation may benefit this process in larger restaurant companies. Therefore, the following hypotheses are postulated:

H6: The number of establishments of the company positively influences the digital transformation of the restaurant businesses.

H7: The (average) number of places in an establishment influences the digital transformation of restaurant businesses.

The average price per service of a restaurant business is one of the most determining factors when it comes to attracting customers, due to the high competition that exists in this sector. Furthermore, higher prices can be associated with businesses oriented toward more

sophisticated clients who demand more complex services. Similarly, higher margins can help to generate resources in the business to finance investments in digitalisation. Taking these arguments into account, the following hypothesis is postulated:

H8: A high average price per service benefits the digital transformation of a restaurant business.

Regarding the way in which different business units are organised, it is relevant to differentiate those restaurants that belong to a corporate group and/or restaurant chain from those that are independent. Mahmood and Mitchell (2004) observed that participating in a business group or chain is beneficial for innovation. Companies that belong to a corporate group or chain may find it easier to obtain capital to finance business projects, and the relationships with other companies within a network can encourage the transfer of knowledge for the development and exploitation of new ideas (Reddy and Zhao, 1990). In this regard, Oronsky and Chathoth (2007) observed that chain restaurants were more likely to implement new ICT faster than independent restaurants. Thus, the following hypotheses are proposed in this paper:

H9: Participation in corporate groups stimulates the digital transformation of restaurant businesses.

H10: Participation in restaurant chains stimulates the digital transformation of restaurant businesses.

Employees' education and training are considered one of the key factors in innovation and digital transformation. Cooper and Zmud (1990) identified the innovative attitude of companies with the quality and training of their personnel. The training level of a company's workers is a source of competitive advantages since technology and information are available to most companies, but only those that have a qualified workforce are able to differentiate themselves from the rest. In this way, the following hypothesis is postulated in this paper:

H11: The presence of employees with university education encourages the digital transformation of restaurant businesses.

1.2.3. Locational factors

Finally, the geographical location of restaurants could also have an impact on the digital transformation of businesses. In this regard, restaurants located on the coast cater for a type of customer associated with sun, sand, and sea tourism (Tejada and Moreno, 2013; Romero, Fernández-Serrano and Cáceres-Carrasco, 2020). This is particularly relevant in Spain, which is an important destination for this type of tourism (Moreno-Izquierdo, Ramón-Rodríguez and Such-Devesa, 2018; Iamkovaia, et al., 2020). For these customers, the attraction factor would be the mere location close to the beach, not requiring efforts in online marketing, among other aspects related to the digitalisation of the business. Therefore, the following hypothesis is postulated in this paper:

H12: Location on the coast discourages the digital transformation of restaurants.

On the other hand, the size of the municipalities where restaurants are located could also have an effect on the incentives for digitalisation. It would be expected that as the size of the municipalities increases, the type of client will be more demanding in terms of digital services

(Zhai, et al., 2015), which could drive the digital transformation of these businesses in large cities. In contrast, the population in rural areas is often affected by a digital divide due to the lower connectivity and digital competencies. In this regard, the following hypothesis is proposed in this paper:

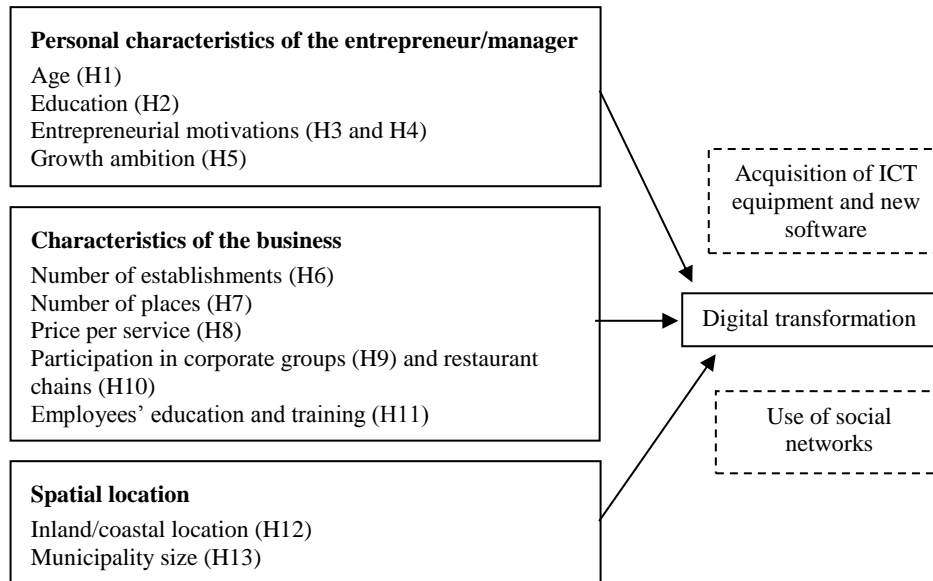H13: Location in larger cities stimulates the digital transformation of restaurants.

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┌─────────────────────────────────────────────────┐
│ Personal characteristics of the entrepreneur/manager │
│ Age (H1)                                         │
│ Education (H2)                                   │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
│ Entrepreneurial motivations (H3 and H4)         │           Acquisition of ICT
│ Growth ambition (H5)                            │         │ equipment and new │
└─────────────────────────────────────────────────┘           software
                                                             └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
┌─────────────────────────────────────────────────┐
│ Characteristics of the business                 │
│ Number of establishments (H6)                   │         ┌─────────────────────┐
│ Number of places (H7)                           │ ──────▶ │ Digital transformation │
│ Price per service (H8)                          │         └─────────────────────┘
│ Participation in corporate groups (H9) and restaurant │
│ chains (H10)                                    │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
│ Employees' education and training (H11)         │           Use of social
└─────────────────────────────────────────────────┘         │ networks          │
                                                             └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
┌─────────────────────────────────────────────────┐
│ Spatial location                                │
│ Inland/coastal location (H12)                   │
│ Municipality size (H13)                         │
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Figure no. 1. Analytical framework and research hypotheses

2. Research methodology

In this section, first, the data employed in this research are described and, second, the econometrical methodology used is presented.

2.1 Data

The database used in this study comes from a survey carried out in the first four months of 2016. The survey was addressed to entrepreneurs/managers of SMEs in the restaurant industry in Spain. For the purposes of conducting the survey, SMEs were defined as companies with at least 1 paid employee and up to 200 employees. In the design of the survey, the Spanish Central Business Directory (DIRCE) of the National Institute of Statistics (INE) was used to calculate quotas for companies classified in terms of their size (microenterprises, small companies, and medium-sized ones).

The SMEs that participated in the survey were randomly selected based on the database of the Iberian Balance Analysis System (SABI). The stratified sample is representative of the business population of the restaurant sector in Spain with an error of ± 5.0% and a confidence level of 90%. The survey technique used was that of computer-assisted telephone interviews

(CATI). A response rate of 20.08% was obtained. No bias was identified between respondents and non-respondents. For the purposes of the current analysis, 365 valid observations are available.

2.1.1. Dependent variables

The dependent variables in this study are related to two dimensions of the digital transformation of businesses: on the one hand, the acquisition of ICT equipment and new software and, on the other hand, the use of social networks and digital platforms.

For business digitalisation through the acquisition of ICT equipment and new software (Dig_ICT), the answers to the following question were used: "During the last 3 years (2013 – 15), with what intensity has your company made the acquisition of computer equipment, software, or information and communication technologies with the objective of potentially developing innovations?" In this respect, the mere replenishment of equipment with the same technological level should not be considered by the interviewees. The responses were coded using a 4-point Likert scale that included the following response options: "high" (coded 3), "medium" (coded 2), "low" (coded 1), and "none" (coded 0).

Digital transformation through the use of social networks and new digital platforms (Dig_socnet) is also captured by a 4-point Likert scale variable, like the previous one. The variable comes from the answer to the following question: "During the last 3 years (2013 – 15), with what intensity has your company used software applications for mobile devices that serve as communication tools (social networks such as Google+, Twitter, etc.), commercial or promotional sites (ElTenedor, Diana, Yelp, etc.)?"

2.1.2. Independent variables

The independent variables considered in this study are the following:

- Age (Age): age in years of the entrepreneur/manager.

- Educational level of the entrepreneur/manager (Education): a categorical variable that indicates the maximum educational level reached by the entrepreneur/manager. Three categories are considered: primary or secondary studies (base category), vocational training or baccalaureate, and university studies.

- Motivation for opportunity (Oppor_mot): a variable that captures the relevance of "the important business opportunities in the market" in the decision to become an entrepreneur/manager. It is measured using a Likert scale that ranges from "wholly disagree" (1) to "wholly agree" (7).

- Motivation for personal and professional development (Devel_mot): a variable that measures the degree of importance that "the desire for personal and professional development" had in the decision to become an entrepreneur/manager of the restaurant company. Like the previous, it is measured on a Likert scale that ranges from "wholly disagree" (1) to "wholly agree" (7).

- Ambition for growth (Grow_amb): a variable measured on a 7-level Likert scale, which reflects the extent to which the entrepreneur/manager wants his/her company to be in the future "manageable by myself or with few employees" (1) versus "as big as possible" (7).

- Sex (Woman): a dichotomous variable that takes the value 1 when the entrepreneur/manager is female and takes the value 0 when it is male.

- Number of establishments (N_establ): a discrete variable which indicates the number of different establishments in the company.

- Number of places (N_places): a discrete variable that expresses the available capacity (average) in the establishment(s) of the company.

- Average price (Price): a continuous variable that indicates the average price (in euros) per customer and service of the restaurant (or of the establishment that generates the highest turnover in those cases in which the company owns more than one restaurant).

- Participation in a corporate group (Group): a dichotomous variable that takes the value 1 if the restaurant company belongs to a business group (as a parent company, subsidiary, joint venture, or investee company) or 0 otherwise.

- Participation in a restaurant chain (Chain): a dichotomous variable that takes the value 1 if the restaurant company belongs to a restaurant chain (as property, franchise, management contract, rental or other related form of contract) or 0 otherwise.

- Employees' education (Employ_edu): a variable that shows the percentage of employees with a university degree.

- Coast (Coast): a dichotomous variable that takes the value 1 when the restaurant(s) is (are) mostly on the coast and 0 if it is (are) mostly inland.

- Municipality size: a categorical variable that captures the (predominant) location of the restaurant(s) in municipalities with fewer than 10,000 inhabitants (base category), between 10,000 and 100,000 inhabitants, or with more than 100,000 inhabitants.

Table no. 1 shows the main descriptive statistics of the dependent and independent variables. In the previous three years to the date of the survey, the intensity of the digital transformation process of the average SME surveyed was medium-low, slightly lower in terms of the use of social networks and new digital platforms compared to the acquisition of ICT equipment and new software.

The average company in the dataset was located in an inland area and in a municipality with more than 100,000 inhabitants. Furthermore, the average company surveyed had two different establishments, each one with 163 seats and an average service price of approximately 22 euros per customer and service. Moreover, the average company did not belong to a group or a business chain, showing a percentage of employees with a university degree that did not reach 20%.

Regarding the personal characteristics of entrepreneurs/managers, they were mostly men, 47 years old on average, and their educational level was predominantly professional training or baccalaureate. Additionally, the main entrepreneurial motivation was their professional development and self-realisation. Finally, the average restaurant owner/manager reported that he/she had high ambitions for growth.

Table no. 1. Descriptive statistics

Variable	Obs.	Average	Std. Dev.	Min	Max
Dig_ICT	365	1.3973	1.1595	0	3
Dig_socnet	365	1.2027	1.1848	0	3
Age	365	47.2247	10.1799	20	84
Education					
Primary or compulsory secondary	365	.1945	.3964	0	1
Baccalaureate or professional training	365	.4274	.4954	0	1
University	365	.3781	.4856	0	1
Oppor_mot	365	4.4767	2.2343	1	7
Devel_mot	365	5.2959	2.0649	1	7
Grow_amb	365	4.9699	2.2279	1	7
Woman	365	.2411	.4283	0	1
N_establ	365	2.0329	2.7664	1	34
N_places	365	162.9315	127.6641	0	850
Price	365	22.2795	17.1323	2	140
Group	365	.126	.3323	0	1
Chain	365	.1699	.376	0	1
Employ_edu	365	18.8986	23.4981	0	100
Inland	365	.6603	.4743	0	1
Coastal	365	.3397	.4743	0	1
Size of municipality					
Less than 10,000	365	.1836	.3877	0	1
Between 10,000 and 100,000	365	.3534	.4787	0	1
More than 100,000	365	.463	.4993	0	1

2.2. Econometric modelling

For the evaluation of factors that influence the probabilities of digital transformation, an Ordinal Logit Model (OLM) was used in this research. This method is useful to understand or predict the effects of a series of variables on an ordinal dependent variable. This model has the following econometric specification:

$$Pr(y_i=m \mid \mathbf{x}_i)=F(\tau_m - \mathbf{x}'_i \boldsymbol{\beta})- F(\tau_{m-1} - \mathbf{x}'_i \boldsymbol{\beta}), \quad \forall \ \ m=1 \text{ to } 4. \tag{1}$$

where $F(z)=(1+e^{-z})^{-1}$ and $\tau_0,\ldots,\tau_4$ are cut-off points or thresholds with τ_0 being defined as $-\infty$ and τ_4 as $+\infty$. $\mathbf{x}_i$ represents the vector of independent variables for the company i, m are the values that the ordinal variable takes and $\boldsymbol{\beta}$ stands for the coefficient vector.

OLM is also known as the proportional odds model; the reason is that when considering the odds

$$\Omega(m)_{>m \mid \leq m}=Pr(y>m \mid \mathbf{x}'_i) \, / \, Pr(y \leq m \mid \mathbf{x}'_i)=exp(\mathbf{x}'_i \boldsymbol{\beta} - \tau_m) , \tag{2}$$

odds(m_1) and odds(m_2) have the same ratio for all combinations of the independent variables. Therefore, the OLM assumes that the coefficients β are the same for all categories, so the estimation results are a set of parallel lines, one for each category of the dependent variable. The parallel lines test did not show a significant result for the study variables in the models presented in this paper, indicating that the OLM was suitable for this case.

Two models were estimated using the two dimensions of digital transformation considered in this paper as dependent variables. These models were estimated using the maximum likelihood method with the STATA software package. No collinearity problems were observed.

3. Results and discussion

Table no. 2 shows the results obtained from the OLM. Model I considers the intensity of digital transformation through the introduction of ICT equipment and new software as the dependent variable, while Model II takes the intensity of digital transformation through the use of social networks and digital platforms as the dependent variable.

With regard to the group of explanatory variables associated with the characteristics of the entrepreneur/manager, the following results must be highlighted. As can be seen in table no. 2, the age of the entrepreneur/manager has no effect on the restaurant's digitalisation process, with the coefficients of the variable "Age" not being significantly different from zero in any model. These results refute hypothesis H1.

Regarding the education of entrepreneurs/managers, only the coefficients associated with university education are observed to be significant, the effect being positive. Therefore, companies whose entrepreneur/manager has a university degree have advanced the digital transformation process in its two dimensions. This result is in line with Romero and Martínez-Román (2012, 2015) among others, pointing out that innovation in SMEs is favoured by the educational level of entrepreneurs/managers, as postulated by hypothesis H2.

Similarly, the results of Models I and II show that those entrepreneurs with a motivation for professional development and self-realisation, as well as those driven by a motivation for opportunity, have greater probabilities of digitally transforming their restaurants, in line with what is postulated in hypotheses H3 and H4. In the case of opportunity motivation, a significant effect is only observed in Model I, regarding the investment in ICT equipment and new software. Though the coefficient of opportunity motivation in Model II is not statistically significant distinct from zero, it is significantly positive (one-tailed) on a 10% level of significance (p-value = 0.0515).

Finally, the results obtained in Models I and II also reflect a positive relationship between the growth ambition expressed by the entrepreneur/manager and the business digitalisation efforts. These results support hypothesis H5 formulated in this study, confirming the results obtained by Romero, Porto Gómez and Zabala-Iturriagagoitia (2019) regarding the relationship between entrepreneurial motivations, growth ambition, and innovation in restaurants.

In the case of the control variable "Woman", it is not statistically significant in the estimated models, indicating that the gender of the entrepreneur/manager does not influence the digital transformation of restaurant businesses.

In relation to the characteristics of the company, the following findings can be presented. The number of establishments shows a statistically significant effect in both models, although it is only marginally significant in the case of investment in ICT equipment and new software. That is, as the number of establishments increases, the intensity of the effort in digitalisation of the restaurant company increases, both through the investment in ICT equipment and new software and the use of social networks and digital platforms. This evidence supports

hypothesis H6 and can be explained by the existence of economies of scale in ICT investments and by the need to connect the different establishments of the same company. In contrast, the number of places in the restaurant does not significantly influence the digital transformation in Model I or II. Thus, hypothesis H7 is rejected.

Table no. 2. Ordinal logit regressions for digital transformation

Variables	Model I Dependent variable: Dig_ICT			Model II Dependent variable: Dig_socnet		
	Coef.	Stand. Error	P-value	Coef.	Stand. Error	P-value
Age	-0.0108	0.0103	0.2971	-0.0001	0.0106	0.9917
Education						
PT or Baccalaureate	0.0996	0.2799	0.7218	0.3483	0.2989	0.2438
University	0.6880**	0.3014	0.0224	0.8249***	0.3169	0.0093
Oppor_mot	0.1141**	0.0512	0.0258	0.0874	0.0536	0.1029
Devel_mot	0.1255**	0.0546	0.0215	0.1840***	0.0578	0.0015
Grow_amb	0.1134**	0.0486	0.0195	0.1216**	0.0494	0.0138
Woman	0.0075	0.2415	0.9752	0.1558	0.2488	0.5310
N_establ	0.0924*	0.0502	0.0659	0.1433**	0.0615	0.0198
N_places	-0.0012	0.0008	0.1482	-0.0005	0.0009	0.5649
Price	0.0053	0.0065	0.4197	0.0056	0.0061	0.3576
Group	0.6076*	0.3172	0.0554	0.6634**	0.3236	0.0404
Chain	-0.3874	0.3121	0.2145	0.2309	0.3110	0.4577
Employ_edu	0.0095**	0.0046	0.0373	0.0114**	0.0046	0.0138
Coastal	-0.4561**	0.2140	0.0330	-0.4480**	0.2213	0.0429
Size of municipality						
Between 10,000 and 100,000	0.6735**	0.2965	0.0231	0.7369**	0.3100	0.0174
More than 100,000	-0.1351	0.2886	0.6396	-0.0037	0.3039	0.9902
Constant cut1	1.0570	0.7170		2.8714	0.7725	
Constant cut2	1.7435	0.7200		3.5647	0.7796	
Constant cut3	3.3476	0.7379		4.9214	0.7996	
No. of observations	365			365		
LR chi2(14)	71.116			87.542		
Prob > chi2	6.360e-09			0		
Pseudo R^2	0.0729			0.0921		

Notes: *** p<0.01, ** p<0.05, * p<0.1

Similarly, the average price per service does not influence the digitalisation efforts of the restaurants studied, either through the acquisition of ICT equipment and software or the use of social networks and digital platforms, thus rejecting hypothesis H8.

Belonging to a corporate group seems to have a positive impact on the digitalisation of companies, since the coefficient for this variable is positive and statistically significant in Models I (only marginally significant) and II. In this way, evidence is obtained in this research supporting hypothesis H9. In contrast, being associated with a restaurant chain does not influence the digital transformation of restaurants. Therefore, the analysis carried out leads to the rejection of hypothesis H10. The results obtained partially coincide with those found by Mahmood and Mitchell (2004), who argued that belonging to a business group or chain favours business innovation. In the current study, only the first of these statements is supported.

The presence of university-degree employees favours digital transformation in restaurants both with regard to the acquisition of ICT equipment and software and the use of social networks and digital platforms. These results support hypothesis H11 in line with previous research (Romero and Martínez-Román, 2015).

Finally, in terms of spatial location, the variable "Coast" is significant in Models I and II. Therefore, the intensity in digitalisation derived from the acquisition of ICT equipment and new software in coastal restaurants is lower than in those in the inland, as expected (hypothesis H12). This could be due to the different profile associated with customers who, in coastal areas, mainly seek a beach and sun experience, while they are undemanding with respect to restaurant services.

Furthermore, in both models, it is observed that the location in medium-sized municipalities (between 10,000 and 100,000 inhabitants) stimulates investment in the digital transformation of the business. However, the effort in digitalisation in municipalities with fewer than 10,000 inhabitants compared to cities with more than 100,000 inhabitants does not appear to show statistically significant differences. Therefore, the effect of spatial agglomeration does not manifest itself linearly, in contrast to hypothesis H13.

Conclusions

The digital transformation process is emerging as a key factor for the survival, growth, and development of companies. In the process of digital transformation, the gap created between companies that can bridge the barriers to digitalisation and those with limited financial and human resources that find it difficult to progress in this transformation is also observed. This digital divide particularly affects SMEs compared to large companies and can manifest itself unevenly throughout the territory.

This research deals with digitalisation in the restaurant industry, with the aim of identifying the main determining factors for digital transformation in SMEs in this sector in Spain. This issue is of greater significance in the current situation stemming from the COVID-19 crisis, in which the restaurant sector is one of the hardest hit activities and where adaptation to the situation requires advances in digitalisation.

The results obtained in the study confirm the positive influence of some characteristics of the companies - the number of establishments, the participation in corporate groups, and the presence of employees with university education - on the digitalisation process in restaurants. Furthermore, this process is critically contingent in restaurant SMEs on the personal characteristics of the entrepreneur/manager who is called to take on a role of digital leader in companies of this kind. In this respect, the educational level of entrepreneurs/managers, their entrepreneurial motivations (particularly when they are driven by market opportunities and their professional and personal development), and their ambition for growth favour the digital transformation of their restaurant companies. From a spatial perspective, progress in the digital transformation of businesses seems to be encouraged in municipalities located in inland areas (versus coastal ones) and in medium-sized cities (between 10,000 and 100,000 inhabitants).

The results of this research could have various implications in both the business management and economic policy arenas in order to support the digital transformation process of restaurant SMEs. In particular, our analysis highlights the great importance of education and

training for the digitalisation process. This is observed not only in the role of the entrepreneur/manager, but also in terms of the whole staff in the restaurant. In this regard, from a business perspective, the results point to investment in human capital and training as a primary line of action to tackle the challenge of digitalisation. Furthermore, in terms of public policy, the observed importance of education and training encourages political action to improve educational levels and, particularly, the digital skills of the population. Although the focus on digital transformation is generally on its technological dimension, this process is primarily conditioned and shaped by human capital.

The conclusions obtained in this paper suggest future research directions. The digital transformation of the restaurant industry is reinforced by the situation that stems from the COVID-19 pandemic. In this way, it would be very interesting to study whether those restaurants that have made progress in their digital transformation in the stage before or during the pandemic crisis survive and perform better than the rest.

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