

Article

Towards a Digital Relational Administration Model for Small and Medium Enterprise Support via E-Tutoring in Spain

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Abstract: In the context of public administrations after COVID-19, this paper formulates and validates a digital model of tutoring (e-tutoring) for small and medium enterprises (SMEs) by public administrations or PAs to help the former reduce their risks to fold in their first few years of existence and with the support of private professionals (economists, accountants, business advisors, managers, etc.). The model draws on ideas about relational administration (RA), a concept that is yet to be fully exploited or assessed in the literature. Several hypotheses derived from the model are formulated and tested using a polytomic-nominal logistic regression. A questionnaire was sent to and returned by 236 small and medium entrepreneurs in Spain facing insolvency proceedings to identify main reasons for business failure and if or how they would accept online tutoring from private professionals associated with PAs. Findings suggest that SM entrepreneurs agree with receiving selected forms of tutoring, requiring public administrations to enhance capabilities for joint information provision and decision making through the use of information and communication technologies or ICTs. These findings have important implications for the potential restructuring of public administrations, their collaborations with professionals, and the future co-design and implementation of e-government services by PAs

Keywords: relational administration; small and medium enterprises (SMEs); business failure; insolvency; information and communication technologies (ICTs); Spain; COVID-19



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1. Introduction

Worldwide and after COVID-19, most optimistic studies still show how, worldwide, only 50% of new small and medium enterprises (SMEs) survive the first three years after being set up, whereas most pessimistic ones increase this figure to 95% in the first five years [1]. In countries like Spain, statistics show that only 50.79% of small and medium enterprises (SMEs) that start up in Spain celebrate their 5th birthday, while the other half fail, particularly if they have fewer than 10 employees [1]. Moreover, two-thirds of Spanish SMEs experience delays in getting their invoices, attributing their business failures (unfolding) to inefficiencies in public administrations or PAs [1].

Additionally and in consideration of how SMES have fared during and after the world coronavirus pandemic, ref. [2] highlights that Spanish business is made up of mostly SMEs at “around 99% in 2018” according to the Spanish National Institute of Statistics, also “showing much higher failure rates than large companies”. On the other hand, business failure has not received much attention in the literature [3] and there are a lot of difficulties as well as managerial incompetence and social isolation [4].

In line with the extant literature, this paper argues that above situation could be helped by better design and use of digital government platforms and services [4]. Public

administrations (local, regional), the main actors in charge of these services, could consider working with private professionals in order to address specific needs of SMEs, if not adequately aligning or integrating their online systems so that the citizen becomes the hub or the 'center' of information gathering and learning [5]. Drawing on a concept of relational administration that to date is underexploited and underassessed in the extant literature of e-government, this paper formulates and validates a digital model of tutoring (e-tutoring) for small and medium enterprises (SMEs) in Spain. The aim of the model is to help SMEs reduce the risk of failures (folding) in their first few years of existence with the help of professionals (accountants, economists, business advisors, etc.) and appropriately supported by online systems.

Several hypotheses derived from the model are formulated and tested using polytomous-nominal logistic regression. A questionnaire was sent to and returned by 236 small and medium entrepreneurs in Spain who were at risk of folding in order to identify the main reasons for business failure and if or how they would accept a form of online tutoring from private professionals (economists, accountants, business advisors, managers, etc.). Findings suggest that small business entrepreneurs agree with receiving some selected forms of tutoring, requiring PAs to enhance capabilities for joint information provision, collaboration and decision making with private professionals and using information and communication technologies or ICTs. These findings have important implications for the potential restructuring of public administrations in the light of post COVID-19 situations, their collaborations with professionals, and the future design of e-government services in Spain and elsewhere.

The paper is structured as follows: The concept of relational administration is presented as a possibility for PAs to develop or further their electronic government services (e-government). Causes of SME failure are identified and four hypotheses are formulated, validated, and tested using data gathered from questionnaires sent and returned by small and medium entrepreneurs residing in the whole of Spain. The results of a polytomous-nominal logistic regression model applied to the data gathered and discussion suggest that small entrepreneurs would be willing to accept a form of e-tutoring by professionals collaborating with the public administration to help them reduce or manage their internal (efficiency, strategy) and external (access to credit) risks. Moreover, the implementation of e-tutoring would require an initial degree of readiness or knowledge by entrepreneurs, professionals, and public administrations about the use of ICTs and their willingness to seek and receive help. A discussion and implications of the findings are provided in the last sections of the paper.

2. Public Administrations (PAs) and Relational Administration

Currently and worldwide, business and government sectors are undergoing profound transformations not least because of the need to face up to new and post-pandemic challenges. Businesses are increasingly exposed to unforeseen and preventable events, whilst public administrations or PAs need to provide efficient and timely support [6,7]. Information and communication technologies or ICTs could be further exploited to offer virtual and digitally based collaborations between relevant business actors. What the coronavirus pandemic demonstrated was that whilst some organizations folded, others survived due to their resilience and collaboration capacities, many of them supported by ICTs. The human element though suffered heavily, and it is now being acknowledged that organizations are in need of protecting such element by ensuring above all their physical survival.

Worldwide and since several decades ago, public administrations or PAs have become an essential part of government. For the most part, they have implemented electronic government or e-government services and are guided by a supply–demand idea that citizens and other constituencies need 24/7 service availability [8,9]. Many PAs at different levels (local, regional) are increasingly finding that the supply of their electronic services exceeds their planned demand and that it is difficult to assess the impact of e-government systems [10]. Despite supporting citizens during COVID-19, what persists is that most

digital or e-government services offered by PAs has been focused on information provision and transacting to the potential detriment of others, for example, business education, mentoring or support [5,10]. What is more, PAs are not advancing to alternative models of e-government that could foster better empowerment and governance, as initially proposed by early research in this area [11]. Often, PAs at different managerial levels (local, regional, national) remain active at providing basic information (i.e., regulations, responses to events) and transaction (i.e., tax payments, registrations) services to users through websites, doing so to enable two-party communication that is physically mediated by third parties like outsources or technologies like cloud or social media.

In the case of countries like Spain, an initial uptake of e-government services based on one-way information provision by PAs was initially flagged by authors like [12] and later confirmed by [4] at in their evaluation of Spanish municipalities' websites. With the incorporation of social media, PAs have had opportunities to engage with already existing online user communities at different levels, and with richer and real-time resources (i.e., videos, tweets, online discussions, or forums). This was also evidenced during the world coronavirus pandemic, where opportunities for interaction between different parties (government, users, and others) and via different channels (including social media) were capitalized on [13,14].

Despite this diversity and an overall increase in services provided by PAs, there still could be missed opportunities to exploit the potential of ICTs by, for example, enabling multi-party collaborations and beyond 'paid' government services, which often fail to fully consult citizens when designed. Aside from technology infrastructure issues to enable interconnection, PAs would need to become smarter with new ways of organizing, thinking, and innovating, as stated by approaches like for instance digital era governance [5], information-based government [15], or exosystemic thinking for joint services [5]. It could well be that new mind shifts related to technology implementation challenge the need to have technology at the center of services, or that conversations about the nature of government services are enacted to look beyond what technology offers or what government institutions are seeking to do [9].

These and other approaches suggest that PAs need to invest or continue investing in acquiring, maintaining, and renovating both their technological and human capital to support or offer better and ICT-mediated services to their citizens [16,17].

A concept that captures the above possibilities offered by joined up and governance-oriented thinking in more operational terms is that of relational administration. According to [18], a relational administration is one that leads and controls, while private organizations render services. PAs design but do not manage services. This concept could contribute to increasing PAs openness, flexibility, and transparency. In a similar vein, for [19], a relational administration is one that establishes new organizational structures based on processes and work teams, outsourcing non-essential activities. The delivery of services is not part of the *raison d'être* of PAs but of others (outsourcers) with more expertise in doing so.

As a concept, relational administration breaks away from traditional PA operating models in which they are in charge oversee managing all aspects of public services, concentrating only on planning, decision making, monitoring, and evaluation. The resulting models of PA operation are strongly directed to outsourcing public services [20,21]. The nature of such services might vary depending on PAs' strategic orientations. Whilst many PAs could genuinely focus on offering citizen-centered services as proposed above, there is also an opportunity to broaden the scope to align such services to business operations so that the sharing of knowledge and technological platforms could be streamlined between PAs and entrepreneurial audiences [4,22], potentially resulting in commercial and non-commercial benefits for the different actors involved.

3. E-Tutoring

Ref. [5] argues that more bureaucratization of PAs means undervaluing knowledge management in business-creation processes (setting up a company). The causes and risks

of business failure in relation to business creation and management could be supported by establishing an e-tutoring service by which entrepreneurs could be trained and supported to deal with the day-to-day and be able to respond appropriately to internal and external changes [23]. Thus, [23] claims that such a service could be offered by private professionals and in coordination with PAs so that PAs also adopt a form of relational administration [18].

As the likelihood of business survival increases with a company's age [24], e-tutoring a new company would not only be take place when it starts but would continue until it is well established. If we consider that public resources are scarce and if, according to the professionals' criterion, in the first 3 years new companies need no further tutoring, no more public resources would be invested in this tutoring.

Authors [25] conducted a study in France with entrepreneurs who were e-tutored. The population included 360 apprentices who had received tutoring services for the purposes of determining if tutoring influenced the benefits obtained by new businesspeople. This study showed that better results were obtained if tutors participated actively. Therefore, if properly designed and maintained, e-tutoring is a service that could maximize new companies' benefits and the importance of their mentoring style to maximize outcomes for novice entrepreneurs. Here, the literature on electronic government could learn much from insights on e-tutoring as a form of education during COVID-19 [26]. In this literature, it has been found that e-tutoring maintained if not opened and improved learning opportunities for students [26–28]. Although there are challenges in relation to how to blend e-tutoring with other (traditional) forms of education, e-tutoring provided several benefits, including an increase in the coverage of tutoring and asynchronous, remote access that respects people's specific situations (i.e., gender, cultural differences) [29].

4. SME Failure

Having considered e-tutoring as a form of government-supported interaction that could benefit entrepreneurs and public administrations or PAs, we now move to explore why or how such entrepreneurs fail, with the view of identifying what sort of conversations could help.

Business failure is a worldwide phenomenon that is just as important as business success. In Spain and according to [30], only 33% of Spanish entrepreneurs consider that their government institutions favor or support entrepreneurship. Despite this, academics and practitioners have focused more on business success [1]. In the SME sector, there is a lack of consensus and conceptual frameworks to provide a greater and effective understanding of internal and external factors contributing to SME failure [31]. In relation to COVID-19, failure has been attributed to supply (access to resources, funding) and demand (reduction of customer base, generalized fear of spending or interacting) factors [32]. These and other factors were present before the pandemic and it is likely that whilst they might not continue affecting entrepreneurs in the same way, they could weaken resilience capabilities [33], which also include abilities or opportunities of entrepreneurs to gain access to relevant knowledge.

An early study by [34] and later replicated by [35,36] has identified three distinct unfolding phenomena by which SME failure could be catalogued: (a) falling into a black hole (not setting off), (b) failure to grow or growing too quickly, and (c) experiencing a significant setback. In all cases, management structures and abilities, including those of acquiring or incorporating sound financial auditing and transparency, play a role. Other authors like [37] state that when a company is created, imperfect and incomplete information about the business domain is handled, and the greatest difficulties in learning appear during the periods immediately after the company has been set up. To enhance entrepreneurs learning and according to [38], the participation of expert professionals can help entrepreneurs with relevant knowledge, skills, and tools to manage after they set up their businesses and thus enhance their intellectual capital [39], as well as institutional networks of support.

Government and digital skills have transformed public administrations, yet the battery of business challenges includes tremendous market competition, access to finance for young

people, and multiple regulatory barriers to new economic conditions for increasingly sustainability-oriented activities. Further studies of business failure have identified aspects like companies' size (i.e., number of executives), management capacity, and flexibility to react as predictors of SME failure likelihood [40]. Similarly, [39,41] state that successful companies are those that better manage their intellectual capital.

5. Knowledge and Awareness of ICT

The relationship between knowledge management and impacts on management outcomes has been extensively studied in multidisciplinary contexts [42], from its role in building skills among employees to be leaders [43] to extending competitive intelligence in organizations [44]. The adequate management of knowledge flows could result in the generation of key intangible assets capable of transforming data into information [45] and a subsequent competitive advantage in innovative organizations [46]. Organizational (business) value could be generated through information and communication technologies (ICTs) or by underlying cognitive developments, systems, or technologies generated by human intelligence [47], for example, training related to ICTs or involving it.

On the other hand, ICTs imply important changes that entail greater transparency in public organizations subject to relational management techniques [48], which is often and indirectly associated with the presence or availability of an independent professional. In this sense, information security considerations in public administrations could lead to a demand for greater efficiency on the part of ICT users [49] and subsequently to less emphasis on the presence of professional outsiders, on whom a permanent continuous improvement in their efficiency is demanded [50]. In this way, the availability of government-driven relationships that shape effective governance (i.e., service innovation, cost-adjusted perception, explicit relational contracts) could contribute to generate high expectations in ICTs involving innovative practices of new knowledge generation [51].

Public administrations could therefore pool their competencies in knowledge and technologies, and link them to the provision of public services to the citizen in order to work efficiently in the presence of cultural differences [52]. By considering key aspects highlighted by the model of technology acceptance introduced by [53] (perceived ease of use, perceived usefulness, attitude towards use, and behavioral intention), the following hypotheses can be formulated:

- H1: E-tutoring is positively related to higher levels of preference for accepting a private professional to improve efficiency and to receive tutoring help instead of an economic subsidy.
- H2: The causes of business failure in relation to strategic business management aspects are positively associated with higher levels of choosing a professional tutor who provides the company with counseling.
- H3: The external causes of failure related to difficulties in accessing credit and the possibility of receiving economic aid are positively associated with higher levels of choosing a professional tutor.
- H4: An entrepreneur's knowledge about information for the decision-making process and about his/her training to manage and use ICT, is negatively associated with accepting a private professional to improve efficiency and to receive help from a tutor instead of an economic subsidy.

6. Methods

6.1. Data Collection

To define SME failure in Spain, we opted for what clearly distinguishes healthy companies from unhealthy ones by considering the latter to equal companies undergoing insolvency (folding) proceedings. The authors of [54] state that, according to INE data, 90% of companies undergoing insolvency proceedings feel they are heading for liquidation and therefore closure.

The sample covered all of Spain. It included businesspeople (i.e., SME owners) having difficulties related to undergoing insolvency proceedings. The population consisted in 236 companies undertaking insolvency proceedings in Spain during the 2012–2016 period. To identify these companies, we consulted the Public Records Office of Bankruptcy Proceedings (www.registropublicoconcurso.net) (accessed on 20/06/2016) created through the 2003 Law on Bankruptcy Proceedings, where the email addresses of these companies and their managing partners were available and to whom the questionnaire was addressed. Primary data were collected from 138 completed questionnaires, which meant a response rate of 58.47%, with an error of 6.7% for $p = q = 50\%$ and a 95.5% confidence level.

6.2. Measures

For data collection purposes, a questionnaire was devised after performing a literature review and hearing the views of a group of experts who tested and filtered it according to their knowledge and dedication to solving insolvency proceedings. With this instrument, the idea was to verify if e-tutoring could alleviate the main problem of high business failure rates. Nowadays, no study into the incidence of non-economic e-tutoring for new entrepreneurs exists nor, therefore, of the influence that e-tutoring could have on lowering business failure rates.

The questionnaire variables were measured on 7-point Likert scales, where 1 meant that an individual completely disagreed with the item and 7 meant (s)he completely agreed with the item. This work used 20 variables that corresponded with the questionnaire questions to seek a model that underlies professionals' knowledge management for tutoring companies and defends relational administration where PAs would implement e-administration, although these professionals would offer their skills and aptitudes to new companies to help lower the high business closure rate.

Ref. [2] considers that logistic regressions offer methodological advantages when talking about failed enterprises, because the hypotheses are less restrictive than the independent variables. The logistic regression model is usually formulated mathematically by relating the probability of some event and this model may be used for classifying an object into one of two populations [55]. In order to explain hypothesis, ref. [56] speaks about the R^2 measure; the Nagelkerke R^2 is usually the most relevant value to report, as it corrects the Cox and Snell value so that it theoretically achieves a value of 1. The rationale for a logistic formulation of the relationship between qualitative and other variables is summarized in the excellent book by [57]. We thus agree with the conclusion of [58] that the "use of the maximum likelihood method would be preferable, whenever practical, in situations where the normality assumptions are violated, especially when many of the independent variables are qualitative". Furthermore, ref. [59] has demonstrated that standard linear regression and logistic regression approaches are asymptotically equivalent to confirm/reject the hypotheses.

Using SPSS software Version 26, the 20 items were evaluated according to the evolution of these variables in the company in the last 2 years, after previously validating with Cronbach's alpha to obtain a value of 0.814, which guaranteed the reliability of the used measuring scale. These variables were introduced into the hierarchical clustering procedure (HCA) and the sampling adequacy KMO (Kaiser–Meyer–Olkin) test was run and related the correlation coefficients observed among the variables. Bartlett's sphericity test, which evaluates the applicability of the factor analysis of the studied variables, obtained a Sig. of 0.000 below 0.05, which meant it was suitable to study the grouping of variables with the factor analysis. The nearer to 1 the KMO test value, the closer the relation among the variables. We obtained a value of 0.634, which meant a close relation among the variables [60].

7. Results

7.1. Descriptive Results

The mean values of each factor were calculated, where one of the variables warned about PAs' deficiencies given their characterization (inflexibility, poorly adapting, and with inefficient management). We identified the best scoring and valued variables by companies as the "determining factors of business failure". With this clustering, it was also possible to establish entrepreneurs' preferences between choosing an e-tutor or receiving an economic subsidy by taking this dummy or dichotomous variable as the main discrimination factor between groups or clusters of entrepreneurs.

The resulting clusters were that the (1st) CLUSTER is composed of entrepreneurs who were less willing to receive "help from a professional as a tutor" (they answered NO) and preferred an economic subsidy as support from the PA; the (2nd) CLUSTER contains a set of entrepreneurs who were more willing to receive help from a professional as a tutor (they answered YES); and if they were to select support from a PA, they would choose a professional tutor rather than an economic subsidy, which is one of the determining factors of relational administration. Entrepreneurs from the (2nd) cluster stated that support from PAs to facilitate a tutor would be most useful to help in their businesses' internal management aspects, including decision making. E-tutoring to offer services directly related to these activities would provide valuable knowledge about these aspects, potentially contributing to avoid folding.

Next, two components of e-tutoring that could provide positive impacts to entrepreneurs and PAs in this cluster are as follows: (a) the definition of production, marketing, and budget plans and (b) making the creation of businesses faster and more efficient. Entrepreneurs perceive PAs as excessively bureaucratic, leading them to often resort to third parties (professionals) to help them surmount obstacles encountered in getting their businesses formally registered and approved. A fourth component relates business failure to unexpected or sudden changes in the external environment. Aspects of this component include the degree of adaptability of entrepreneurs/their companies to changes in their environment, their willingness, or not, to acquire knowledge and technology tools to improve their operations, and difficulties emerging when dealing with companies' human resources.

The fifth component indicates that the external aid received through a program of economic aid via subsidies is not suitable, and that it is possible to improve the system through an institutional program with access to credit. Finally, the sixth component refers to entrepreneurs having the knowledge they need to be able to easily manage their new company, with the necessary information to make suitable decisions, or entrepreneurs having the necessary training, know-how, or capacity to solve problems, as well as the skills needed to use ICT.

7.2. Results of Binary Logistic Regression (BLR)

The dependent variables leading to these circumstances that lie behind the causes of business failure led us to consider the following classification proposal by means of binary logistic regression (BLR):

HLB: The analysis of the association of accepting a professional as a tutor, those willing to receive help from a tutor when their company is new, and they also prefer such help to that provided by an economic subsidy.

From an examination of the results shown in Table 1. The model correctly classified 59.1% of the cases, and none that did not comply with the association conditions was correctly classified; 78 individuals answered affirmatively; i.e., they accepted all the demanded conditions.

Table 1. Variables in the equation.

		B	S.E.	Wald	gl	Sig.	Exp (B)
Step 0	Constant	0.368	0.177	4.315	1	0.038	1.444

The estimated parameter is presented as $(B) = 0.368$, along with its standard error (S.E.) = 0.177 and its statistical significance with Wald's test (Sig. = 0.038), which is a statistic that follows a Chi-square law with one degree of freedom and estimation $\text{Exp}(B)$. As the associated statistical Sig. was not (0.000), then the automatic step-wise process would continue to obtain the best classification.

The probability of the results observed in the study, given the estimations of the parameters, is known as likelihood. The significant omnibus test (Sig. = 0.000) performed with the model's coefficients show a Chi-square that evaluates the null hypothesis that the coefficient (P) of all the terms (except the constant) included in the model are zero. The Chi-square statistics for this comparison are as follows:

$$\text{Chi-square} = (-2\text{LLMODELO } 0) - (-2\text{LLMODELO } 1) = 178.603 - 134.356 = 44.247 \quad (1)$$

Next, Table 2 provides three complementary measures to summarize the former model to globally evaluate their validity: the first is the -2LL value, while the other two are determination coefficients (R2), which are similar to those obtained in the linear regression that express the proportion as 1 unit of the variation explained by the model. A perfect model would take a very low -2LL value (ideally zero) and an R2 close to one (ideally one).

Table 2. The model's summary.

Step	$-2 \log$ of Likelihood	Cox and Snell's R2	Nagelkerke's R2
1	134.356 ^a	0.285	0.384

Source: the Authors, where Sig. is $p < 0.01$ ^a

The $-2 \log$ of likelihood (-2LL) measures to what extent a model fits data well. The result of this measurement is also called a "deviation", and the lower the value, the better the fit. Cox and Snell's R2 is a generalized determination coefficient used to estimate the proportion of the variance of the dependent variable explained by the predictor (independent) variables. Nagelkerke's R2 is a corrected version of Cox and Snell's R2. The maximum value of Cox and Snell's R2 is below one, even for a "perfect" model. The Hosmer and Lemeshow test [48] is used to evaluate the goodness-of-fit of a BLR model, and the aim of this test is that no significance is presented in Model 1 of the Chi-square statistics for this verification of significance (Sig. = 0.119).

We also studied the two \times two table by classifying all the individuals in the sample according to the agreement of the values observed with those predicted or estimated by Model 1. An equation with no classification power would have correct specificity, sensitivity, and total classifications that equal 50% (simply by random).

Model 1 had the following correct classification percentages: specificity (59.3%), sensitivity (79.5%), and global classification (71.2%). This model can be considered acceptable as it increased the classification by 12.1%.

This percentage could increase when more explanatory variables are included in the result or in interaction terms. We thus decided to include three control variables: the company's age, being identified as a new company, and the entrepreneur's age.

The summary of Model 1 provides us with evidence for a better goodness-of fit as the value -2LL lowered ($-128.622a$), while the Cox R2 measures increased (value = 0.315) with Snell and Nagelkerke values (value = 0.425), which behaved as determination coefficients (R2). In this other situation, Model 1 gave the following correct classification percentages: specificity (68.5%), sensitivity (76.9%), and the global classification percentage (73.5%), which is a higher percentage than the previous one and came close to 75%.

In Table 3, we present the estimations of the parameters for the model (HLB), including the results of the estimations performed with the independent and control variables. The values under the Sig. column show that most effects are strongly significant to the association of entrepreneurs accepting a professional as a tutor (Business Tutoring-F1) rather than an economic subsidy and to move towards a relational form of administration (F3). The

results obtained by the binary logistic regression (BLR) model lead us to accept the first hypothesis formulated in our model (H1)

Table 3. The binary logistic regression (BLR) model.

The Model's Results—Estimations of Parameters	B	Wald	Exp (B)
H ^{LB-1} : Business Tutoring (F_1)	1.584	21.266 ^a	4.874
H ^{LB-2} : Causes of Operational Management Failure (F_2)	−0.138	0.681	0.871
H ^{LB-3} : Relational Administration (F_3)	0.551	5.029 ^b	1.734
H ^{LB-4} : Causes of Strategic Management Failure (F_4)	0.315	2.656	1.370
H ^{LB-5} : External Causes of Failure by PA (F_5)	−0.182	0.932	0.834
H ^{LB-6} : Entrepreneur's Knowledge (F_6)	−0.205	0.881	0.815
H ^{LB-7} : The Company's Age ($CV_1 = Ant_Emp$)	−0.739	2.251	0.477
H ^{LB-8} : Identified as a New Company ($CV_2 = Nue_Emp$)	1.521	2.524	4.575
(Constant)	−8.517	14.645	0.000

Source: the Authors, where Sig. is $p < 0.01$ ^a, $p < 0.05$ ^b.

According to these data, the estimated logit model contains the predictive equation, which serves to predict the likelihood of the conditions in Model 1 being accepted as follows:

$$p(X) = \frac{1}{1 + e^{-(8.517 + 1.58(F_1) - 0.13(F_2) + 0.55(F_3) + 0.31(F_4) - 0.18(F_5) - 0.20(F_6) - 0.73(Ant_Emp) + 1.52(Nue_Emp) + 18.87(Eda_Emp))}} \quad (2)$$

7.3. Results of the Polytomic Logistic Regression (PLR) Model

To test hypotheses H2, H3 and H4, a polytomic logistic regression (PLR) model [61] was used to confirm the explanatory power of six independent variables: Business Tutoring (F_1), Causes of Operational Management Failure (F_2), Relational Administration (F_3), Causes of Strategic Management Failure (F_4), External Causes of Failure by PA (F_5), and Entrepreneur's Knowledge (F_6).

In Table 4, we present a summary of the polytomic logistic regression (PLR) model's fit and the estimations of the parameters for the model. The observed dependent variable (prefers a tutor to observation) value was 63% of the sample (all cases). According to the above answers, we found a new variable to classify the level of Business Tutoring engagement by citizens into four categories: level 0 includes a total of 14 users who did not accept a private professional tutor; level 1 consists of a total of 96 users willing to have private professional as a tutor and avoid proceedings; level 2 includes a total of 69 users who are considering a professional tutor as efficient help for new companies; and finally, level 3 includes a total of 78 users with high levels of willingness to receive support from a professional tutor rather than an economic subsidy.

When we studied level 3, where it is important to rely on a professional's help and new entrepreneurs consider that the tutor is efficient help and better than that provided by an economic subsidy (the model's association), the dependent variable is met in 58.2% of the cases (78 cases of 134). Because there are few cases in the use, then it is acceptable to use a multinomial logistic model [61].

The Table 4 also shows a Chi-square- χ value of 44.247, which is highly significant for the three independent variables of our study: Business Tutoring, Relational Administration and Causes of Strategic Management Failure. The pseudo R-square measures indicate the fit and the explanatory power of the model [47]. The Nagelkerke R-square value is usually the most relevant value to report, as it corrects the Cox and Snell value so that it theoretically achieves a value of one. In our model, the Nagelkerke R-square value is 0.38, which suggests that the model fits well. The likelihood ratio tests show that the null hypothesis (that the effects of all log odds ratios of the dependent variable are simultaneously equal to zero) can be rejected for the independent variables "Business Tutoring" and "Relational Administration".

Table 4. Summary of the model’s fit—polytomic logistic regression (PLR)—nominal.

Association of the Causes of Failure with Accepting the Tutor		N (Cases)	(%) Marginal			
Level 0	None—does not accept a private professional tutor	14	10.4%			
Level 1	A private professional as a tutor and avoids proceedings A	96	71.6%			
Level 2	Tutor as efficient help for new companies	69	51.5%			
Level 3	Professional tutor rather than an economic subsidy	78	58.2%			
All Cases:		134				
Information on the Model’s Fit						
		−2 log likelihood	Verifying the likelihood ratio			
Only the intersection	178.603	Chi-square- χ	gl			
Final	134.356 ^a	44.247 ^a	6			
Goodness-of-Fit—Chi-square (Pearson) 129.353 ^a						
Pseudo R2	Cox and Snell = 0.285	Nagelkerte = 0.384		McFadden = 0.248		
Verifying the likelihood ratio						
Effect		−2 log likelihood of a reduced model		χ gl		
Intersection		154.939		20.583 a 3		
HLP1: Business Tutoring		169.333		34.977 a 3		
HLP2: Causes of Operational Management Failure		135.534		1.178 3		
HLP3: Relational Administration		141.126		6.770 a 3		
HLP4: Causes of Strategic Management Failure		137.134		2.778 b 3		
HLP5: External Causes of Failure by PA		134.831		0.475 3		
HLP6: Entrepreneur’s Knowledge		134.698		0.342 3		
The Model’s Results—Estimations of the parameters (degrees of freedom gl = 1)						
		β	Stand. Error	Wald	Sig.	Exp (β)
Level 3 - Professional tutor rather than an economic subsidy	Intersection	9.085	2.276	15.934 ^a	0.000	
	HLP: Business Tutoring	−1.546	0.337	21.065 ^a	0.000	0.213
	HLP: Causes of Operational Management Failure	0.173	0.161	1.156	0.282	1.189
	HLP: Relational Administration	−0.593	0.241	6.080 b	0.014	0.553
	HLP: Causes of Strategic Management Failure	−0.297	0.182	2.674	0.102	0.743
	HLP: External Causes of Failure by PA	0.122	0.178	0.471	0.492	1.130
	HLP: Entrepreneur’s Knowledge	0.117	0.202	0.337	0.561	1.124

Source: the Authors, where Sig. is $p < 0.01$ ^a, $p < 0.05$ ^b.

The probability that companies will accept these criteria (dependent variables) is a function of the changes in the elements that represent them, considering e-tutoring as a fundamental factor in order to reduce business failure. Table 4 gives full support to hypotheses H1–H4. The values under the Sig. column show that most effects are strongly significant. On the one hand, entrepreneurs who prefer a professional tutor rather than an economic subsidy are associated with a minor percentage of operational management failure and external causes due to inadequate interactions with public administrations (i.e., lack of clarity, flexibility, etc.). On the other, addressing these interactions through

e-tutoring and relational administration might be a way to provide better services by PAs, and this could be associated with higher levels of willingness from entrepreneurs to choose a professional tutor, leading us to accept the second (H2) and third (H3) hypotheses of our model.

In order to obtain a robust evaluation of the quality of the sixteen items, we have Tables 5 and 6. The Table 5 shows a Chi-square- χ value of 45.961, which is highly significant for the Business Tutoring in level 1 when a private professional avoids insolvency proceedings. Table 6 shows the estimations of the parameters for the former category (level 2) with a Chi-square- χ value of 20.273, on the way to accepting a tutor as efficient help to new companies in order to reduce the operational and external causes of failure (H2 and H3). This shows the usefulness of our Hypothesis 2 (causes of business failure in relation to strategic business management \rightarrow higher levels of choosing a professional tutor) and our Hypothesis H3 (difficulties in accessing credit and the possibility of receiving economic aid \rightarrow higher levels of choosing a professional tutor). A private professional private (level 1) and a tutor to efficiently help new companies (level 2) are both necessary for the implementation of e-tutoring via relational administration (Hypotheses 2 and 3)

Table 5. Summary of the model's fit – polytomic logistic regression (PLR)—Nominal.

Information on the Model's Fit: Level 1—Private Professional Tutor and Avoid Insolvency Proceedings A.						
–2 log likelihood			Verifying the likelihood ratio			
Only the intersection		183.898	Chi-square- χ		gl	
Final		149.937 ^a	45.961 ^a		6	
Goodness-of-fit—Chi-square (Pearson) 154.424 ^a						
Pseudo R ²	Cox and Snell = 0.294		Nagelkerte = 0.393		McFadden = 0.253	
Verifying the likelihood ratio						
Effect		–2 log likelihood of reduced model			χ	gl
Intersection		160.060			24.123 ^a	1
HLP: Business Tutoring		164.933			28.995 ^a	1
HLP: Causes of Operational Management Failure		138.239			2.302	1
HLP: Relational Administration		135.987			0.049	1
HLP: Causes of Strategic Management Failure		138.159			2.222	1
HLP: External Causes of Failure by PA		137.141			1.204	1
HLP: Entrepreneur's Knowledge		136.041			0.103	1
The model's results: support of a professional private tutor (degrees of freedom gl = 1)						
		β	Stand. Error	Wald	Sig.	Exp (β)
Level 1 - Professional private as a tutor and avoid insolvency proceedings	Intersection	9.288	2.205	17.736 ^a	0.000	
	HLP: Business Tutoring	–1.433	0.333	18.555 ^a	0.000	0.239
	HLP: Causes of Operational Management Failure	–0.242	0.163	2.205	0.138	0.785
	HLP: Relational Administration	–0.049	0.222	0.049	0.825	0.952
	HLP: Causes of Strategic Management Failure	–0.266	0.181	2.169	0.141	0.766
	HLP: External Causes of Failure by PA	0.202	0.183	1.229	0.268	1.224
	HLP: Entrepreneur's Knowledge	–0.069	0.214	0.104	0.747	0.933

Source: the Authors where Sig. is $p < 0.01$ ^a.

Finally, the results confirm a negative association between entrepreneurs' knowledge of ICT and their willingness to accept e-tutoring by a private professional to improve their business. Ultimately, accept a private practitioner to improve efficiency and receive support from a mentor rather than a financial grant. The support to the management through more training in the use of ICT to deal with business operations and improve decision making processes positively influences entrepreneurs' willingness to get help from professionals.

Table 6. Summary of the model's fit—polytomic logistic regression (PLR)—nominal.

Information on the Model's Fit: Level 2—Tutor to Efficiently Help New Companies						
		−2 log likelihood	Verifying the likelihood ratio			
Only the intersection		97.504	Chi-square- χ	gl		
Final		77.231 ^a	20.273 ^a	6		
Goodness-of-fit—Chi-square (Pearson) 99.413 ^a						
Pseudo R²	Cox and Snell = 0.142	Nagelkerte = 0.273		McFadden = 0.208		
Verifying the likelihood ratio						
Effect	−2 log likelihood of the reduced model			χ gl		
Intersection	77.236			0.005 1		
HLP: Business Tutoring	82.300			5.069 ^b 1		
HLP: Causes of Operational Management Failure	85.020			7.789 ^a 1		
HLP: Relational Administration	83.243			6.012 ^b 1		
HLP: Causes of Strategic Management Failure	77.239			0.007 1		
HLP ^{4–5} : External Causes of Failure by PA	78.704			1.472 1		
HLP ^{4–6} : Entrepreneur's Knowledge	78.202			0.970 1		
The model's results: tutor to efficiently help new companies (degrees of freedom gl = 1)						
		β	Stand. Error	Wald	Sig.	Exp (β)
Level 2 - Tutor as efficient help to new companies	Intersection	−0.252	3.532	0.005	0.943	
	HLP: Business Tutoring	−0.703	0.325	4.680 ^b	0.031	7.159
	HLP: Causes of Operational Management Failure	0.609	0.246	6.111 ^b	0.013	0.681
	HLP: Relational Administration	−0.932	0.410	5.174 ^b	0.023	0.738
	HLP: Causes of Strategic Management Failure	0.022	0.252	0.007	0.931	3.882
	HLP: External Causes of Failure by PA	0.444	0.419	1.123	0.289	4.352
	HLP: Entrepreneur's Knowledge	−0.315	0.322	0.954	0.329	0.264

Source: the Authors, where Sig. is $p < 0.01$ ^a, $p < 0.05$ ^b.

Tables 4–6 reflect the robustness of the results when applying an alternative proxy variable of the digital relational administration model for SME support via e-tutoring. In this case, business tutoring presents a negative relationship that is significant at a 99% confidence level with the association of the causes of failure (Table 4). In Table 5, causes of operational management failure present a positive relationship that is significant at a 95% confidence level, and relational administration is equally significant (at a 95% confidence level) and negative (Table 6), which are consistent with the tutor to efficiently help new companies' initial results of the model. Control variables are also significant at a 99% confidence level to business tutoring for the model (HL) when we talk about the entrepreneur's age. This item is related to entrepreneurs' knowledge about information for decision making, their training for management, and using ICT.

The robustness analysis corroborates the initial aim of identifying the relational administration that impacts on the quality of the public administration and is considered preferential to receive aid from a tutor than an economic subsidy. In other words, the causes of business failure related to strategic aspects of business management are positively associated with high levels of choosing a professional tutor who provides the company with knowledge and the external causes of failure related to difficulties in accessing credit and the possibility of receiving economic aid are positively associated with choosing a professional tutor. Finally, entrepreneurs' knowledge and ICT are negatively associated with accepting a private professional to improve efficacy and receiving help from a tutor rather than an economic subsidy.

8. Discussion

E-tutoring is the improvement of the organization and the implementation of new forms of management, enabling adaptation to the needs of entrepreneurs and citizens. The self-employed entrepreneur has become consolidated, given the lack of regulation and attention to many of the specific problems, which has made him or her the object of government attention [62]. Among the challenges for PAs, we can point out those that have been established very recently after COVID-19, drawing up strategic plans for the different sectors of activity in which the self-employed entrepreneur has suffered the most difficulties. The challenges to advance in e-government have always been based on the preparation of a diagnosis to evaluate the situation experienced in recent years, with a special emphasis on the establishment of a legal system of social protection for workers. On the other hand, the actions with e-tutoring have always provided good guidance to self-employed entrepreneurs, always before starting the business or even to stop them when necessary; therefore, its effect is always positive. The entrepreneurship has shown its agreement with e-tutoring, considering that “if a tutor supports the entrepreneur, they could improve their business and its survival in many difficult situations”; therefore, e-tutoring is an emerging public service, as proposed in this paper and others previously cited [18]. Some of the practical implications for policy decisions with the functionality of e-tutoring decreases the rigidity of PAs, increasing their efficiency and using the minimum of public resources; therefore, the theory that the private sector can be more effective and efficient than the public sector in supporting the management of start-ups is defended and this increases the importance of the study.

There are previous studies that have developed learning processes and experiential methodologies on the use of challenges for e-government [25] in which rational resources with the application of these systems have worked with greater creativity, leadership on the part of the driver, and proactivity. This has stimulated the development of skills in entrepreneurs in understanding contextual situations prior to the identification of contextual barriers and personal conflicts in the application of e-tutoring implementation.

There is no doubt that life has become increasingly digitally oriented. However, it should be noted that transforming a business does not happen overnight but is a process that requires preparation and work on many levels. However, our work puts the emphasis on those SMEs that really value the presence of more resources for their activities, not only commercial but also those that require a relationship with government and PAs.

The second hypothesis related to the choice of a mentor in the face of potential issues related to business failure and the battery of business problems is consistent with the multiple regulatory barriers faced by new entrepreneurs [63]. The second and fourth hypotheses were fully validated, as mentioned, with other work supporting digital relational administration; this hypothesis suggests that improving the knowledge and skills of entrepreneurs can offer them a wide range of services from relational management aimed at satisfying their obligations to government and PAs [64]. In addition, it improves efficiency when entrepreneurs are able to be trained in e-tutoring versus the possibility of receiving an economic subsidy for assistance from a professional. In general, implementations of RAs are reducing costs and improving the quality of services, productivity, and profitability; however, their implementation as e-government and related day-to-day activities of entrepreneurs is neither systemic nor consolidated throughout the business community that was envisaged.

9. Conclusions

This work proposes helping new companies by providing a professional tutor to lower the rate of closing companies and to solve aspects related to PAs' bureaucratization as not being flexible and efficient, not being clear, and not making available the forms needed to create a company. It has researched the know-how of the different actors, autonomous entrepreneurial and communities sector activities, professional associations, liberal professionals, and new companies. This is considered very valuable as it is based on

their experiences and their structures that were very recently modernized thanks to the COVID-19. Moreover, the tasks entrusted to each of them are very difficult to delegate to other actors. The e-government and e-tutoring implementation for new companies requires the unquestionable participation of all the abovementioned actors. This was also evidenced during COVID-19 and could continue if no electronic service redesign is undertaken. Providing entrepreneurs with knowledge to lead their SMEs, improve companies' management, and therefore lower the likelihood of closure is a valuable and essential government strategy. In our study, we found essential features of government services like tutoring businesspeople, supporting them to access credit, training them, and allowing them to become people capable of adapting to changes in the future, and above all, helping them regain confidence in the face of uncertainties.

The proposal of this paper is also finding echoes elsewhere and environments specific to the RA. For example, a similar model to that proposed herein is that of a foundation created in Quebec in 2000, which promoted business culture by offering tutoring services for new businesspeople [25]. One of the differences from our proposal is that the tutoring in Quebec was offered by businesspeople, especially retired ones, and via the foundation, whereas our model proposes e-tutoring offered by autonomous professionals registered in the economics domain as an outsourced public service. After COVID-19, these collaborations could prove essential to help governments and countries develop resilience and innovation. There are several factors for the survival of the company under variables such as the product, competition, personnel, capital, technology, and market, which cannot be viewed separately, as they have some synergies with each other. This may be one of the challenges for companies and for government and PAs, which requires a constant adaptation of digital strategies to the inclemency of the market and their structuring within an increasingly digitalized world via relational administration.

Therefore, it can be said that a proposal of a public outsourced service where professionals could e-tutor entrepreneurs in the first years after setting up their company can prove to be very high added value. This new service can be offered efficiently, flexibly, and adaptively, also favoring the creation of new companies. However, the service is not only about ICTs. The activities in e-tutoring can be used for different purposes, among which are evaluating needs, knowing the entrepreneurship better, increasing self-awareness, developing and enhancing personal skills, and challenging self-limiting beliefs and attitudes. E-tutoring does not allow one to get as close to the employer as desired for such effectiveness, nor does it allow one to get as close to the people as to put oneself in their emotional situation; therefore, the human relationship is strengthened thanks to the support of the public administration by proposing this service.

It is important to point out that entrepreneurs need the knowledge a tutor can transmit to them, as it was found that entrepreneurs will accept mentoring, which means that the company's likelihood of business failure could lower and, with the involvement of the mentor, there were always better results among the more early-starting entrepreneurs. ICT support needs careful and participative design in relation to its purpose and how it could fit (i.e., in a hybrid style) within the current economic, social, and cultural situations of public administrations.

Digital Kit is an example of outsourcing that help and the SMEs digitalization entrepreneurs. It is a government initiative entrepreneur with the objective of subsidizing the implementation of digital solutions to achieve significant progress in the level of digital maturity. The program will provide companies with a digitalization voucher that they can use to purchase digital solutions already available on the market in areas such as the development and management of web pages, internet presence, e-commerce, customer management, cybersecurity, supplier management, and digital office. This is where the figure of digitalizing agents comes into play, which are companies with specialized professionals previously authorized by the Ministry for Digital Transformation, with the aim of advising and supplying companies with digital solutions. Therefore, the service, which is public, is provided by private actors with e-tutoring who are the digitizing agents, con-

trolled by the Ministry, and who offer digital solutions for RA to companies. This program, which will be implemented between 2021–2025, is a clear example of the development of RA, not only in the areas of economic consulting and judicial support but also in the digital transformation of the country's companies, and is an example of outsourcing to RA to help entrepreneurs with digital transformation [65].

As a future research line, after including the e-tutoring model, the business failure rate of the business people who accepted e-tutoring can be evaluated and compared to those who did not accept a tutor as non-economic aid. As e-tutoring is understood as an outsourcing activity, one of the challenges for public administrations has been to sponsor mentoring programs to train tutors and recruit them with some guarantee of success. One of the lines of research for future work would be to find out whether these actions have been carried out successfully and whether entrepreneurs have been able to benefit from these technical assistance programs. Other challenges for future lines of research would be to develop an effective strategy to improve the performance of digital relational administration through development based on the strengths of e-tutoring, such as accessibility to new management knowledge and meaningful input on professional experience. Especially in those aspects that have to do with the creation of businesses, these questions are highly topical with artificial intelligence technologies and their advances, which will undoubtedly improve over time, and the quality of the answers will depend on the quality of the questions. The factors influencing the adoption of e-tutoring motivate entrepreneurs to experiment more with the technology, creating perceived usefulness, ease of use and enjoyment. These factors are related to the pattern of technology acceptance by SMEs.

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