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Business Incubators and Survival of Startups in Times of COVID-19

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Abstract: This research seeks to understand the situation that entrepreneurs have experienced during COVID-19 and the impact that this has caused on the entrepreneurial ecosystem. The question is whether business incubators as facilitating institutions of entrepreneurship have been determinants for the survival of startups. The study was conducted using a statistical methodology of analysis based on the application of structural equations modeling (SEM) on a theoretical framework built and validated empirically in a representative sample of entrepreneurs from the Community of Madrid (Spain). The results obtained show that the different tools, actions, advice, and services offered by the business incubators, during confinement to the present, have been key to the survival of the entrepreneurial ecosystem, which in turn promotes the advancement of the productive industry of our country.

Keywords: business incubator; survival impact; entrepreneurship; COVID-19; startup



Citation: De Esteban Escobar, D.; De-Pablos-Heredero, C.; Montes-Botella, J.L.; Blanco Jiménez, F.J.; García, A. Business Incubators and Survival of Startups in Times of COVID-19. *Sustainability* **2022**, *14*, 2139. <https://doi.org/10.3390/su14042139>

Academic Editors: Fabrizio D'Ascenzo and Anna Visvizi

Received: 14 January 2022

Accepted: 10 February 2022

Published: 13 February 2022

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1. Introduction

In December 2019, the alarm rose over an outbreak of pneumonia of unknown etiology in the city of Wuhan (China). It was not until January 2020 that the Chinese authorities identified the cause of the outbreak as a new type of virus of the family Coronavirus. Months later, the rest of the world would be affected, with catastrophic consequences [1].

In March 2020, the World Health Organization [2] raised the public health emergency caused by COVID-19 to an international pandemic and, in Spain, the state of global alarm was staggering [3].

From the beginning of the pandemic to May 2021, more than 168.5 million confirmed cases of COVID-19 have been reached worldwide [4].

The health crisis has not only affected public health, but it has also greatly damaged the economy, so much so that the health crisis has also turned into an economic crisis [5]. The International Labor Organization [6] estimates that this crisis may destroy 305 million jobs in the world and the International Monetary Fund (IMF) also points to a very serious recession, affecting many vulnerable countries; 50% of these countries have a high risk of debt distress [7]. However, the impact of this economic crisis is not equally distributed among the productive industry. A higher impact among small and medium-sized enterprises and the self-employed is estimated [5,6].

This uneven development can lead to a diversity of inequalities, one of which reflects the dualism between large and small firms. Although SMEs are increasingly using the

Internet for a variety of commercial and production-related purposes, on average they are not able to exploit the full potential of e-commerce compared to larger companies. The latter took advantage of their omnichannel and absorbed most of the effective demand during periods of severe restrictions on social mobility, thus widening the gap between small and large enterprises [8].

It is not always possible to simply implement a given strategy or a pattern of activity. Sometimes it is necessary to combine elements chosen from different strategies to develop a specific one, which is tailored to the needs and possibilities of a particular business entity. Each crisis is different, and that is the reason why it is necessary to perform different actions. The important thing is that these actions must be consistent, considering the constant monitoring of both the environment and the inside of the business entity, so that the appropriate actions can be taken, adjusting them to permanent changes in a 21st Century globalized business world [9].

During the home confinement from the first alarm until April 2020, only 10% of Spanish companies were able to continue their activity normally, and 50% could adapt operating with telecommuting. However, 40% were obliged to close temporarily [10].

The perception of the more immediate future, owing to confinement, was very negative, even for those who adapted and were able to continue their activity by telecommuting. Consolidated companies (companies that have exhibited stability at least for three years) expected a more negative impact than younger ones, as shown in Figure 1.



Figure 1. Future expectations of consolidated companies [10].

After the house confinement, the Spanish government has maintained the state of alarm and various sanitary measures for the prevention and containment of the health crisis, which has caused a regression in the profitability of companies, especially in the Small and Medium Size Enterprise (SME) segment, and a sharp increase in the financial pressure borne by companies [11].

This event means a change in the business ecosystem where Madrid is the economic engine of Spain, leading all indicators of GDP growth, business creation, employment, and activity.

According to the report of the Entrepreneurship Map [12], Spain is an increasingly enterprising country, because 63% are entrepreneurs in series compared to 54% in 2019, and of those, 44% are recurrent, as they have formed more than two startups, while for 37% it is their first venture.

At the beginning of the pandemic, 96% of entrepreneurs believed that the coronavirus crisis would offer new business opportunities, and that it would be possible to find new markets and new customers, and generate new services, products, or orders [10].

According to the GEM 2019 report [13], the number of entrepreneurs in the Community of Madrid represented 17.62% of the total of Spanish entrepreneurship and the rate of entrepreneurial activity in Madrid in 2019 was 7.6%, four tenths above the value reached in 2018, and far above the Spanish activity, 6.1%. The main motivation of 59.5% of entrepreneurs was still to generate wealth, but in the pre-COVID-19 phase, it was observed that 42.3% of entrepreneurs mentioned that they had created their business to “earn a living, due to the lack of work” at that time.

Firms are not always prepared to face periods of economic crisis, but no one has been prepared for the events of recent months. This scenario has led governments to act in response to the health crisis. Among the most critical measures, the blocking measures

that have caused the slowdown of economic activities worldwide are found. Under these circumstances, the role of entrepreneurs in the economic recovery must be recognized [14].

In times of previous crises, such as the economic crisis of 2008, which originated in the United States and caused international effects (Spain suffered from high unemployment rates), policies that promote employment become essential. Business incubators in these scenarios of crisis become an especially key instrument in these areas, bringing wealth through business and job creation [15].

In Europe, the creation of business incubators is considered a strategy oriented to provide a support tool for entrepreneurial activity that provides positive results in the face of economic crisis [16].

According to Bain & Company [17], companies are considering a permanent shift to remote work. For some staff, remote work due to COVID-19 has had a mixed impact on productivity. Of Spanish workers, 68% claim to be equal or more productive with telework, and in the case of families with children, avoiding travel is still the most varied reason for remote work (89%), but the conciliation increases to second place (71%), followed by the best use of time (67%) [18].

The COVID-19 crisis has acted as a rupture experiment, challenging the insights on digitization, exposing assumptions made about the universality of digital access, and revealing that fundamental challenges remain in digitization [19]. In recent months, digitalization has accelerated significantly, and the adaptation of companies has been of vital importance for their survival. Those that already had a technological business model have been able to adapt more easily to the “new normality”. Companies, especially startups, have implemented an indefinite hiring freeze. At the same time, communication, entertainment, and online shopping are experiencing unprecedented growth [20].

Against this background, the need to protect and strengthen small and medium-sized enterprises is evident, as they are the driving force of the Spanish economy, representing 65% of employment in Spain [21] and 50% worldwide [22], and they are an indispensable source of goods and services.

The total number of companies in Spain as of 30 June 2020 was 2,853,993, of which 99.84% were SMEs. SMEs play a more important role in Spain than in the EU, with a contribution to employment and corporate gross value added (GVA) at 5% above the respective EU average. The information, advice, and provision of useful services for entrepreneurs is facilitated through the multiple platforms and portals created, both at a national level (General State Administration, AGE) and in the Autonomous Communities. The online tools, to make it easier for SMEs to conduct self-assessments of business evaluation, allow them to evaluate the use of good practices in management and to implement tools to improve and prepare a competitiveness plan [23].

The results of the current research available on enterprise policy during the COVID-19 crisis suggest new practices and research paths. Due to the lengthening of these circumstances, research should continue to focus on entrepreneurship, which is why governments and policymakers are trying to use business thinking as a way of responding to the crisis [24]. However, despite the obvious need for entrepreneurship due to the change related to the current situation, there is a lack of research that explains how policy initiatives have been implemented [20].

For these reasons, the importance of business incubators is further highlighted, as they provide a protected environment for those who wish to develop their business ideas, without incurring a large financial burden [25].

It is estimated that there are more than 7000 business incubators worldwide, most of which are supported by local organizations or national governments [26]. There are many terms related to these entities in the field of business ecosystems, ranging from science parks, innovation centers, research centers, parks, and business incubators. This global growth has stimulated the emergence of a wider group of incubators and technology transfer models, often with overlapping and objective functions and an eclectic range of sponsors including corporations, investors, universities, and regional government departments. Incubators

have provided a fascinating scenario for researchers because of the heterogeneity between business incubators in terms of their success [27] and the implications of what works with management practices, corporate strategy, and university and government policy [28].

As a result of these initiatives, the role of business incubators becomes even more relevant as an effective tool to support entrepreneurs [29,30]. It is therefore considered essential to analyze the changes in business incubator management models as well as the business and operational models of the incubated entrepreneurs themselves [5], and to see how the situation has affected the entrepreneurial dynamic, how startups have had to adapt to this new situation, facing challenges such as the need for digitalization, the lack of funding, staff changes, regulatory measures or the perception of new opportunities that can become viable businesses.

In this study, the entrepreneurial scenario of the Community of Madrid is analyzed with the aim of understanding its current situation since the pandemic was declared and, in this way, to show what the main challenges that they must face to create or maintain their company in this situation are. For example: considering digital transformation, promoting business planning for risk, creating training schemes, deploying tentative forms of financing or implementing or improving support for enterprise-driven institutions and business incubators.

The analysis shows the behavior of companies following the impact caused by the health crisis caused by COVID-19, using variables that apply qualitative measures, based on the business promoter or manager's own perception of a number of statements and, thus, capturing the continuing impact of the health crisis on the actions of entrepreneurs. It also captures their perspective with respect to the entities of support to the entrepreneurship, as they are the business incubators, also called incubators, which have been the most common tools implemented by these entities, and, in short, to clarify, if the incubators, apart from facilitating tools, have also proven to be sustainable in scenarios of crisis.

In this sense, the study can help the decision-making of the leaders of these entities to implement actions aimed at the survival of startups in crisis situations. This research complements and enriches the results of recent studies on the role of business incubators as elements that support entrepreneurship [29,30].

After this introduction, this article will be organized as follows: in Section 2, the methodology will be presented and in Section 3, the results will be described and analyzed. Section 4 will provide a discussion of the results. To end, Section 5 will describe the conclusions, with the limitations of the study and future lines of research.

2. Materials and Methods

There is extensive literature that attempts to measure the level of survival of companies and to discover the factors that make them sustainable over time. Some of these studies have analyzed the impact of incubation on long-term business survival [31] and the impact of innovative [32] or technology-based enterprises, as they are businesses with high growth and survival potential according to their innovative nature [33].

This article investigates the extent to which business incubators can affect the survival of startups. Incubators alone cannot impact on survival; it is necessary to consider a combination of incubators and other factors [34]. Below, the hypotheses are set.

2.1. Hypotheses

For the formulation of the hypotheses, four constructs were defined: (Profile) refers to the profile of the startup, taking into account factors such as the formation of the entrepreneur, gender, age of the promoter team, and legal form of the business or sector of activity; (Digitiza) refers to the degree of digitalization that startups had or have adopted during the COVID-19 crisis; and (Blncub) is where the facilitating tools and various helping tools offered by business incubators such as spaces, free training, support in the management, diffusion, and publicity have been considered to favor a network of contacts within the entrepreneurial ecosystem during a season of crisis such as the current one. Finally

(Demand) studies how the demand for a product or service has been affected because of the pandemic.

Understanding the factors influencing the survival of a business is an essential issue for properly managing entrepreneurship projects and business start-up programs, given the high risk of business mortality in its first five years [35].

In the academic literature, various studies can be found that reflect the influence of a company's profile on its survival, such as certain personal characteristics of the entrepreneur, various aspects of the company, its legal form, or the environment in which it operates [36], the age, experience, training, motivation, and socio-economic situation of the entrepreneur among others [37]; the different patterns of human capital among the owners of the enterprises concerned are the key determinants of corporate survival [38], and even the profile of personality traits are significantly related to the more successful functioning of the enterprise [39].

The human factor in small enterprises and, specifically, entrepreneurial actions and management skills are among the strongest predictors of the survival of small enterprises [40].

For this reason, the first hypothesis is posed, taking into consideration first the profile of the startups in the sample, to discover if this determines their survival in times of crisis.

H1. *The profile of startups positively influences their survival.*

The ongoing COVID-19 pandemic has accelerated the need for digital transformation and forced businesses to digitally operate and switch all communication to digital platforms [41]. The practical value of digitization has been widely recognized in the current context as digitization can help small and medium enterprises (SMEs) to implement emergency responses, as well as to react strategically to long-term public crises such as the current pandemic, thus contributing to the improvement of SMEs [42].

The current circumstances have turned out to be positive in the growth of digital businesses, increasing the use of virtual collaborative systems and adopting technologies that favor telework, using synchronous communication applications and asynchronous communication systems such as Microsoft Teams, Zoom, and Visual Studio Live Share from Microsoft, etc. [43].

All this makes the digitalization of companies have a positive influence on their survival. Therefore, the following hypothesis arises:

H2. *The digitalization of startups positively influences their survival.*

Previous studies show mixed results regarding the influence of the resources of business incubators on the chances of survival of a startup [44]. Innovation is linked to aspects of competition and business development, thereby improving productivity, and becoming more competitive in the global market [45]. However, there is a lack of studies directly related to companies located in business incubators [46], which are often integrated into regional innovation systems, playing a key role in boosting small enterprises and stimulating sustainable economic growth, contributing directly and indirectly to national development [46]. Such is the case that business incubators provide important support to reduce the failure rate of their incubators and to promote their long-term presence on the market [47].

In the face of a change such as that experienced by the COVID-19 crisis, the need to undertake change is obvious. The uncertainty generated has fueled entrepreneurship, leading to greater awareness of how innovation and futuristic thinking can turn the difficulties caused by the pandemic into opportunities [24]. For these reasons, we again highlight the importance of business incubators as tools to facilitate entrepreneurship, as they are physical and support infrastructures for entrepreneurs. They work on the initiative of public or private institutions, whose purpose is to offer the firm support to conduct its business project; they are an indispensable factor in this study to discover their impact on the survival of companies in the sample. This leads us to propose the following hypothesis.

H3. *Business incubators are entities that positively influence the survival of startups.*

Finally, it should be noted that the pandemic has introduced considerable uncertainty into traditional demand planning methods [48]. This uncertainty stems from the progression of the disease, which shows us that we are facing an uncertain future, in which anticipation and resistance to change must become the central problem of study [49]. Further, consumer behavior, where entrepreneurs need to understand how their clients have changed and what new demands may arise as a result of this crisis [50], or the economy and government regulations, which aim to understand and measure the causal effects of the COVID-19 pandemic, must also be considered [51].

Restrictions on access to different services has reduced mobility, which decreases demand, as a changing environment makes demand planning and, consequently, production and distribution planning, difficult on consumer markets [48]. This situation makes the fluctuation of demand a factor to be considered by checking if this influences the survival of startups. This leads to the formulation of the following hypothesis.

H4. *Fluctuating demand positively influences survival of startups.*

Figure 2 presents the theoretical model.

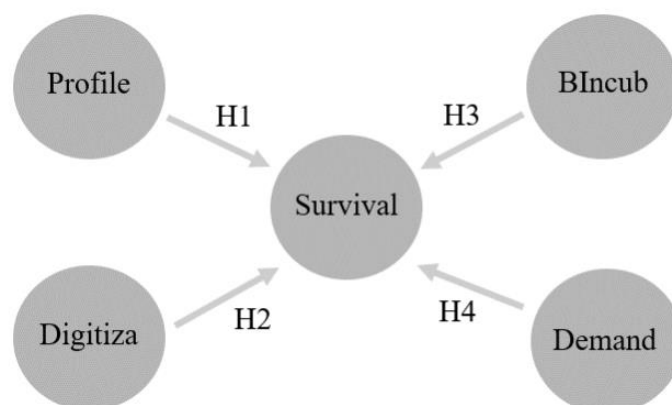


Figure 2. Graph of the theoretical model.

2.2. The Sample

The sample is composed of 104 entrepreneurial projects geographically located in the Community of Madrid. Data are monitored and collected via telephone and e-mail, through an online survey, as this is a very appropriate way to collect information in a structured way where the same questions are asked to all respondents. This way, information is obtained from a representative sample. There are many researchers in the social sciences who use methods of statistical analysis, and in the context of research, at some point it is necessary to go to the development of a survey [52].

Of these 104 entrepreneurs, 46 of them are currently located in a business incubator, which implies that 44.23% of the sample and 45 have in the past been located in a business incubator (43.26%); only 6.7% are entrepreneurs who have not resorted to business incubators, but they know of their services and their work.

To analyze the impact of business incubators on the survival of startups in times of the pandemic, the questionnaire was circulated between January and May 2021 to more than 100 entrepreneurial projects from the Community of Madrid, with the aim of responding by empirical analysis to the four hypotheses formulated, according to the following schedule (Table 1):

Table 1. Sampling schedule and response collection.

	Date	Number of Answers Coming from Entrepreneurs	Description
Search of entrepreneurs	From September 2020 to January 2021	809	A web and telephone search are made of all possible entrepreneurs located in Madrid
Building of the sample and the survey	From January 2021 to February 2021	-	The sample is improved by searching for all the contact details of the entrepreneurs to make the sending of the questionnaire accurate
Online publication of the survey	February 2021	104	The web questionnaire is published, and the link is sent to all the sample of the entrepreneurs
Phone contact	From February 2021 to May 2021	104	A reminder is given to the collection of answers by telephone calls to the whole sample

To test the veracity of these hypotheses, a non-linear model of structural equations (SEM) is proposed. Structural equation models (SEM) are a multivariate statistical tool that allow to study the relationship between latent and observed variables [53]. In addition, these structural models are guide models that show the dependency relationships between independent variables (exogenous) and dependent variables (endogenous). The measurement model shows the relationships between the constructs (latent variables) and the indicators (observable variables). With this model, we can evaluate the contribution of each item (reactive) to the measurement scale, that is, we can specify which indicators define each construct. In addition, assessment of the reliability of the constructs is conducted [54].

To evaluate the impact of the different constructs on the survival of startups in the Community of Madrid, the hypotheses have been tested with the statistical estimates derived from the PLS regression analysis, using Warp PLS 7.0.

PLS is a “causal-predictive” approach to SEM [55], which focuses on explaining variability in model-dependent variables [56]. During the last few decades, there have been numerous introductory articles on this method [57–61].

This study is part of a more extensive research, which studies the effectiveness and sustainability of business incubators and the scope of their benefits for entrepreneurs and start-ups. The questions for this analysis have been drawn from a broader questionnaire, considering four factors, and each was defined through a set of indicators from issues such as those shown in Table 2.

Table 2. Excerpt of questions posed in the questionnaire for each factor in the study.

Factor of Analysis	Description
Entrepreneur profile	Location of the firm Age of the firm Gender of the promoter team Age of the entrepreneur Branch of studies of the promoter team Sector of activity Legal status
Digitization	Technology that has been most widely deployed during the pandemic
Impact of business incubators	Whether they are currently benefiting from the services in a business incubator, and to what extent this has helped the company to survive the COVID-19 crisis Aids offered by business incubators to mitigate the damage of the crisis Perception on whether business incubators have been fundamental for the survival of the entrepreneur in times of COVID-19 Impact of COVID-19 on the current business situation
Fluctuations in demand	If the activity continues, to what extent was the demand for its products or services affected, whether it has remained constant, decreased, or increased.

3. Results

When analyzing the results, various factors have been considered, such as the age of the business, the gender of the promoter, the educational level, age, and sector, etc.

The first data that stands out are the high gender gap in terms of entrepreneurship. Of the total of entrepreneurial businesses surveyed for this study, only 34% are startups whose promoter team is composed of women.

After analyzing the data obtained from the respondents, we have a clear profile of the entrepreneur in the Community of Madrid. We can affirm that the typical entrepreneur is a man (66%) of Spanish nationality (93%), with an age between 30 and 50 years (62%) with university education (87%), 87% of whom belong to the STEM, business, and legal areas.

A total of 83% of the businesses that these entrepreneurs run prioritize the security that gives them the legal figure of a company; only 17% are autonomous. The sectors preferred by these businesses are technology, Cleantech, education, and health, which comprise 51% of the total.

It should be noted that, of the total companies surveyed, more than 85% have been located or are currently located in a business incubator.

Table 3 summarizes the model's fit, quality relations, and interpretation. All quality indicators successfully exceed quality standard ratios.

Table 3. Quality indicators.

Average path coefficient (APC) = 0.218, $p = 0.005$
Average R-squared (ARS) = 0.321, $p < 0.001$
Average adjusted R-squared (AARS) = 0.294, $p < 0.001$
Average block VIF (AVIF) = 1.061, acceptable if ≤ 5 , ideally ≤ 3.3
Average full collinearity VIF (AFVIF) = 1.264, acceptable if ≤ 5 , ideally ≤ 3.3
Tenenhaus GoF (GoF) = 0.366, small ≥ 0.1 , medium ≥ 0.25 , large ≥ 0.36
Simpson's paradox ratio (SPR) = 0.750, acceptable if ≥ 0.7 , ideally = 1
R-squared contribution ratio (RSCR) = 0.987, acceptable if ≥ 0.9 , ideally = 1
Statistical suppression ratio (SSR) = 1.000, acceptable if ≥ 0.7
Nonlinear bivariate causality direction ratio (NLBCDR) = 1.000, acceptable if ≥ 0.7

The model was estimated using Warp PLS. 7.0 software.

Table 3 shows the quality indicators obtained in the model.

Variables were measured by structural equations modeling (SEM). Figure 3 shows the influence of the four constructs and a summary of the values of the main parameters of the model and their corresponding p -values.

The estimation results show that H1 and H2 are rejected, while H3 and H4 are accepted.

Results related to H1 are rejected, no significant relationship was found between the profile of the company and its survival ($p = 0.35$). In the same way, the results relative to H2 are also rejected, given that no significant relationship can be seen between the level of digitalization adopted during the COVID-19 crisis by startups and their survival ($p = 0.22$).

H4 shows a high influence of demand fluctuation on survival of startups, with a ($p < 0.01$) and $R^2 = 0.32$.

The results of H3 are very promising, because they show a strong relationship between the business incubators and the survival of the startups, with a ($p < 0.01$) and $R^2 = 0.32$. This indicates that 32% of the survival of entrepreneurs is due to the services and support provided by business incubators.

Figures 4 and 5 show the relationship between survival and the constructs of BIncub (H3) and Demand (H4), referring BIncub to the tools offered by business incubators to mitigate the damage of the crisis suffered because of COVID-19 and determine the level of affection of this crisis on the demand.

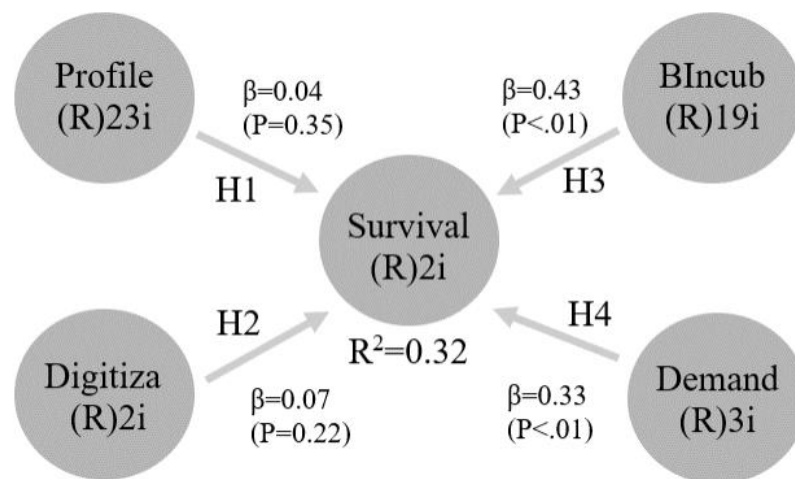


Figure 3. Results of hypothesis from H1 to H4. Structural Equation model.

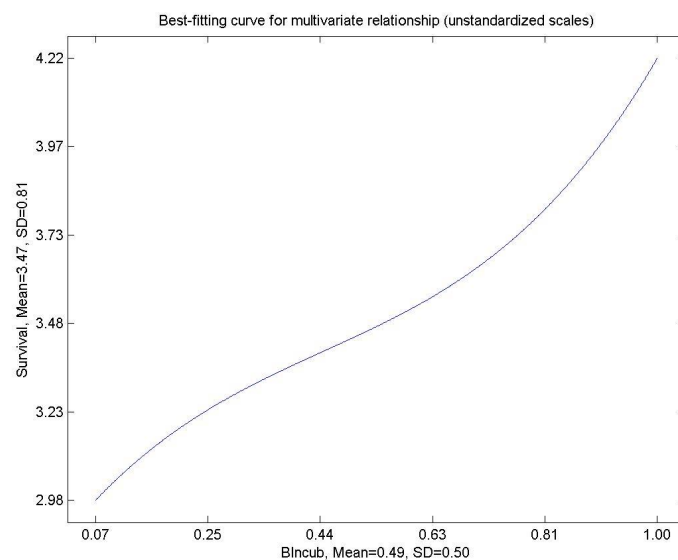


Figure 4. Hypothesis 3.

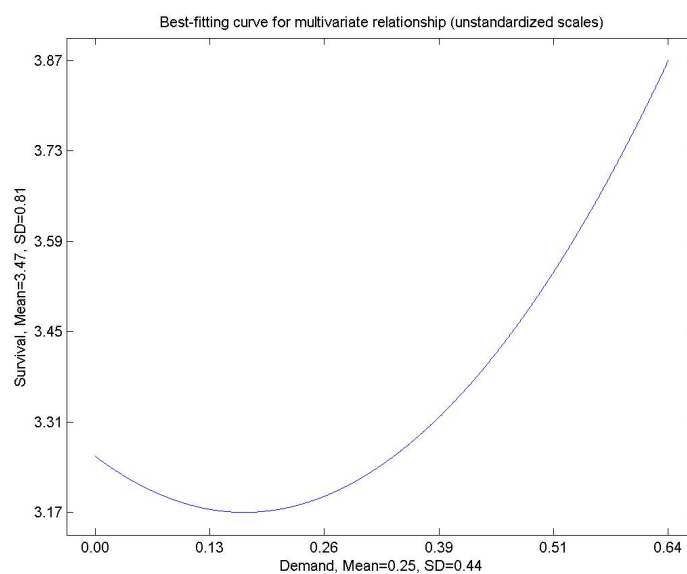


Figure 5. Hypothesis 4.

The survival in both figures is positive, depending on the increase in the tools and services offered by business incubators. The survival curve grows, as shown in Figure 4. Just as demand values are low, survival decreases and as demand grows, so the survival curve does, as shown in Figure 5.

4. Discussion

The pandemic hit the world when the international trade was already in crisis. World trade fell in all quarters of 2019. This trend was intensified in early 2020 through a domino effect that began in China, affecting exports from other countries. China, the European Union, and the United States are not only the world's largest exporters, but they are also important players in global supply chains and, therefore, important importers of raw materials, materials, parts, and components. The blockades appeared in these three economies not only affected business, but also companies from partner countries, and even third-country companies that have no direct business relationship with China, the EU, or the United States [62].

Spain needs to face, in the short and medium term, a profound transformation to recover and consolidate the growth path during the next decade. Given their relevance in the productive environment, SMEs will be essential to ensure economic recovery, as the health crisis has not only impacted economic growth and employment, but it has also had an effect on various internal activities of companies. The innovative activity of SMEs in Spain has decreased because of the health crisis caused by COVID-19, breaking the favorable trend experienced in previous years [63].

According to the PYME 2021 report, the companies with the most favorable expectations are: medium-sized enterprises (28.7% have expectations of job creation), enterprises not covered by an ERTE/ERE, mature enterprises, and enterprises in the construction and trade sectors.

The startups that have been part of this research have been selected for their close knowledge of what a business incubator implies and offers, to gain answers and, consequently, objective, first-hand results.

The relationship between the help offered by business incubators and the degree of survival of their hosted startups (H3) is a hypothesis based on a high degree of compliance, where we can claim that the support tools offered by business incubators have a direct impact on the chances of survival of a start-up company, regardless of whether it is supported by one legal entity or another, or if the promoter team has a concrete training background, gender, or a certain age, so much so that, in this sense, the profile of the startup alone is not decisive to ensure survival in times of crisis. This is inconsistent with the outcome expected, because previous studies show that the survival of a startup is affected by the profile of the entrepreneur [64]. Similarly, the profile has also been shown to determine the usefulness of advice, expert support, activities, and services provided by business incubators [65].

This result leads us to believe that the reason why the profile of the promoter has not been a relevant variable is because the startups analyzed are mostly users of business incubators and have been protected by them. It is possible that outside of these institutions, the profile will become more relevant in determining their survival. For this reason, it may be interesting to analyze the profile of startups in isolation as a future line of research in another case study.

A crisis such as that experienced in recent months has offered the opportunity to consider new challenges that bind public administrations, with the help of employers and companies, to take an active role in strategic projects, making it necessary to be more involved in the role of policy makers, and to participate as co-promoters in regional projects [10].

However, in the results we expected regarding scenario 2, we cannot see a significant relationship between the level of digitalization adopted during the COVID-19 crisis by startups and their survival, which may seem contradictory to what previous literature evidence has shown, where innovation and implementation of digitalization is crucial for

organizations to survive [66]. This may be because most of the companies in the sample of this study belonged to the services sector and already had some prior digitization, so it can be said that the COVID-19 crisis has not had a significant impact on them in the digital field.

This could raise another future line of research, where the limits of digitization will be analyzed, considering how far the digitization of a company should go. It is clear that there is great technological potential, such as artificial intelligence, robotics, and other digital technologies capable of replacing manual tasks with automation. In spite of all this, organizations must be aware that it is still difficult to re-apply the use of unique human skills through technology, such as creativity, empathy, judgment, intuition, interpersonal sensitivity, and problem solving, which are specific interpersonal human competencies that machines do not possess at the moment. The question, therefore, is not whether to replace the human workforce with technology, but how it can be harnessed to enable employees to perform their jobs more effectively [67]. It would be interesting to take stock of the impact of accelerated digital transformation on people and their livelihoods to better understand how humans and technologies can coexist without being threatened [41]. In view of the results obtained in this study, we could state that it has not been so much the digitalization of companies, but rather the good judgment or intuition of the entrepreneur when making decisions, which has led him to survival.

A limitation of this research is that it focuses exclusively on an enterprise support entity, business incubators. Other institutions such as business accelerators, business angels, or venture capital entities among others, become entities to be analyzed in future works.

5. Conclusions

During the preparation of this study, we have been able to observe how the entrepreneurs have had to adapt themselves to the situation experienced during the last year, and the different actions they have conducted to face challenges such as the need for digitalization, lack of funding, staff changes, abrupt fluctuations in demand, regulatory measures such as the “ERTE”, but also the exploitation of new opportunities.

Spanish companies in all sectors during the pandemic, and especially in the state of alarm, have worsened their assessment of the economic situation and their future forecasts. According to the INE 2020, the business confidence indicator has been, since the first term of the year, the lowest value in the historical series (95.5 points). In this unfavorable environment, SMEs have been forced to submit temporary employment regulation dossiers, many have suffered a sharp drop in their invoice, as well as in the investments they planned. Communication, digitization, forms of work, and risk management are the most sensitive areas to these changes. This crisis has strengthened the role and prominence of people within companies. For this reason, it is necessary to consolidate the ethical climate generated in the face of the crisis by strengthening sustainability, organizational resilience, and flexibility as the key pillars of the new business culture and adapting to the new post-COVID-19 scenario [68].

Concerning the measures taken to facilitate financing for SMEs, we can find a variety of them, from lines of financial support to encourage entrepreneurs, through participatory loans, or lines of guarantees, to provide extraordinary credit risk coverage of financing operations for SMEs affected by the COVID-19, to lines of guarantees granted on loans granted by financial institutions covering, for SMEs, a high percentage of new loans and renewals of financing. In this context, general direct financial help has been granted to all enterprises or to sensitive sectors during the pandemic.

The European Commission approved the launch of the Recovery, Transformation, and Resilience Plan designed by the Government of Spain, with the aim of channeling economic help from the EU, to tackle the financial and social crisis stemming from COVID-19.

Spain has published important national plans and strategies, such as the Digital Plan 2025, the Digitalization Plan for SMEs, the Digital Skills Plan, and the Spanish Strategy for Science, Technology, and Innovation (EECTI) 2021–2027 [23].

This financial help will undoubtedly boost the maintenance of companies by encouraging the continuity of many of them, because, without these recovery plans, such as the financing for ERTES, and other issues, many startups would not survive the long-term situation of the COVID-19 scenario.

Considering the results obtained in this research, we can affirm that the tools and actions offered by the business incubators have had a direct and positive impact on the survival of startups. This once again gives us a clear vision of the relevance of these entities in supporting the businesses that make our economy grow. However, we cannot confirm that other variables such as digitalization or the profile of the entrepreneur have a significant relevance when facing a crisis as the one lived with the COVID-19, which leaves open the possibility of continuing in this line of research and analyzing in isolation these factors.

All the business incubators in Madrid have applied similar tools, such as, by way of example, making available to entrepreneurs hosted spaces for large-scale work, extending their stay time, increasing training actions to cover them in risk situations, helping them with social media advertising, and offering them advice, in most cases. All these services are offered free of charge. In short, they are entities whose mission and sense of existence is to support entrepreneurs, but now under these circumstances, they have proven to be sustainable tools in times of crisis too. They could mitigate damages that an entrepreneur would possibly have suffered more severely without being housed in a business incubator. The general perception of entrepreneurs in this study has been very positive and confirms that business incubators have been a key part of their success in this difficult time, demonstrating the great relevance they possess in maintaining and improving the sustainability of the entrepreneurial ecosystem.

Author Contributions: Conceptualization and methodology, all authors. Formal analysis, software, data curation, data processing, D.D.E.E.; statistical analysis, J.L.M.-B.; validation and investigation, C.D.-P.-H. and A.G.; supervision, C.D.-P.-H., A.G., and F.J.B.J.; project administration, C.D.-P.-H.; data acquisition, D.D.E.E. All authors have been involved in developing, writing, commenting, editing, and reviewing the manuscript. All authors have read and agreed to the published version of the manuscript.

Funding: This research received external funding from the research project V716 of the Rey Juan Carlos University “Support in the management and development of the Madrid City Council business incubators”.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Acknowledgments: We want to thank all the entrepreneurs who have participated in contributing their data and their time; they have made possible the elaboration of this work. We thank the Rey Juan Carlos University and Openinnova search Group for their support to this article.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Información Científica-Técnica. *Enfermedad por Coronavirus, COVID-19*; Gobierno de España, Ministerio de Sanidad: Madrid, Spain, 2021.
2. Organización Mundial de la Salud. Available online: <https://www.who.int/es/news/item/29-06-2020-covidtimeline> (accessed on 12 September 2021).
3. Real Decreto 463/2020, de 14 de Marzo, por el que se Declara el Estado de Alarma para la Gestión de la Situación de Crisis Sanitaria Ocasionada por el COVID-19. Ministerio de la Presidencia, Relaciones con las Cortes y Memoria Democrática 2020. Available online: <https://www.boe.es/eli/es/rd/2020/03/14/463> (accessed on 15 December 2021).
4. Statista. Available online: <https://www.statista.com/topics/5994/the-coronavirus-disease-COVID-19-outbreak/> (accessed on 20 November 2021).

5. Blanco, F.J.J.; Polo, C.G.O.; Fernández, M.T.F.; Santos, J.L.; de Esteban, D.E.; Asensio, A.C. *Los Servicios que Prestan los Viveros y Aceleradoras de Empresas en España*; Ranking 2021/2022; Funcas: Madrid, Spain, 2020.
6. La COVID-19 y el Mundo del Trabajo. *Estimaciones Actualizadas y Análisis*; Organización Internacional del Trabajo: Geneva, Switzerland, 2020.
7. Un Año Sin Igual. Informe anual del Fondo Monetario Internacional 2020. Available online: <https://www.imf.org/external/pubs/ft/ar/2020/eng/downloads/imf-annual-report-2020-es.pdf> (accessed on 16 December 2021).
8. Meramveliotakis, G.; Manioudis, M. Sustainable Development, COVID-19 and Small Business in Greece: Small Is Not Beautiful. *Adm. Sci.* **2021**, *11*, 90. [CrossRef]
9. Siuta-Tokarska, B. SMEs during the COVID-19 Pandemic Crisis. The Sources of Problems, the Effects of Changes, Applied Tools and Management Strategies—The Example of Poland. *Sustainability* **2021**, *13*, 10185. [CrossRef]
10. *Situación del Emprendimiento en España Ante la Crisis del COVID-19, Análisis y Recomendaciones*; Asociación Observatorio del Emprendimiento de España (GEM): Madrid, Spain, 2020.
11. Blanco, R.; Mayordomo, S.; Menéndez, P.A.; Mulino, M. *El Impacto de la Crisis del COVID-19 Sobre la Situación Financiera de las Empresas no Financieras en 2020*; Banco de España: Madrid, Spain, 2020.
12. Mapa del Emprendimiento. South Summit Innovation Is Business 2020. Available online: <https://ssassetspro.s3-eu-west-1.amazonaws.com/docs/MAPA+EMPRENDIMIENTO+2020.pdf> (accessed on 16 December 2021).
13. *Global Entrepreneurship Monitor*; Asociación Observatorio del Emprendimiento de España (GEM): Cantabria, Spain, 2020.
14. Martínez, C.N.; Bañón, A.R. Emprendimiento en épocas de crisis: Un análisis exploratorio de los efectos de la COVID-19. *Small Bus. Int. Rev.* **2020**, *4*, 53–66. [CrossRef]
15. Ferreiro-Seoane, F.J.; Mendoza, J.M.; Hernández-Carlzada, M.A. Contribution of the nurseries of Spanish companies in the labor market. *Contad. Adm.* **2019**, *63*. [CrossRef]
16. Ramírez, J.P.G. Análisis de la Eficiencia de los Viveros de Empresas de la Comunidad de Madrid. Ph.D. Thesis, Departamento de Economía Aplicada I e Historia e Instituciones Económicas y Filosofía Moral, Facultad de Ciencias Jurídicas y Sociales, Universidad Rey Juan Carlos, Madrid, Spain, 2017.
17. Bain & Company. Available online: <https://www.bain.com/insights/now-that-we-know-remote-works-whats-next/> (accessed on 20 October 2021).
18. Europa Press. 2020. Available online: https://www.elconfidencial.com/alma-corazon-vida/2020-05-07/casi-el-70-de-trabajadores-espanoles-dice-ser-igual-o-mas-productivo-trabajando-en-remoto-segun-un-estudio_2584612/ (accessed on 15 December 2021).
19. Faraj, S.; Renno, W.; Bhardwaj, A. Unto the breach: What the COVID-19 pandemic exposes about digitalization. *Inf. Organ.* **2021**, *31*, 100337. [CrossRef]
20. Donthu, N.; Gustafsson, A. Effects of COVID-19 on business and research. *J. Bus. Res.* **2020**, *117*, 284–289. [CrossRef] [PubMed]
21. Cifras PYME. Gobierno de España 2020. Available online: <http://www.ipyme.org/es-ES/ApWeb/EstadisticasPYME/Documents/CifrasPYME-marzo2020.pdf> (accessed on 14 December 2021).
22. Small and Medium Enterprises Finance. Banco Mundial. 2020. Available online: <https://www.worldbank.org/en/topic/smefinance> (accessed on 15 December 2021).
23. *Marco Estratégico en Política de PYME 2030. Informe de Seguimiento Anual 2020*; Dirección General de Industria y de la Pequeña y Mediana Empresa, Gobierno de España: Madrid, Spain, 2021.
24. Ratten, V. COVID-19 and entrepreneurship: Future research directions. *Strat. Chang.* **2021**, *30*, 91–98. [CrossRef]
25. Jones, O.; Meckel, P.; Taylor, D. Situated learning in a business incubator: Encouraging students to become real entrepreneurs. *Ind. High. Educ.* **2021**, *35*, 367–383. [CrossRef]
26. Weele, M.V.; Rijnsoever, F.J.V.; Nauta, F. You can't always get what you want: How entrepreneur's perceived resource needs affect the incubator's assertiveness. *Technovation* **2017**, *59*, 18–33. [CrossRef]
27. Bergek, A.; Norman, C. Incubator best practice: A framework. *Technovation* **2008**, *28*, 20–28. [CrossRef]
28. Galbraith, B.; McAdam, R.; Cross, S.E. The Evolution of the Incubator: Past, Present, and Future. *IEEE Trans. Eng. Manag.* **2021**, *68*, 265–271. [CrossRef]
29. Lin, C.L.; De-Pablos-Heredero, C.; Montes-Botella, J.L. Value creation of business incubator functions: Economic and social sustainability in the COVID-19 scenario. *Sustainability* **2021**, *13*, 6888. [CrossRef]
30. De Esteban, D.E. Relational coordination in the entrepreneurial ecosystem. *Esic Market Econ. Bus. J.* **2020**, *51*. [CrossRef]
31. Schwartz, M. A control group study of incubators' impact to promote firm survival. *J. Technol. Transf.* **2013**, *38*, 302–331. [CrossRef]
32. Buddelmeyer, H.; Jensen, P.; Webster, E. Innovation and the determinants of company survival. *Oxf. Econ. Pap.* **2010**, *62*, 261–285. [CrossRef]
33. Motohashi, K. University–industry collaborations in Japan: The role of new technology-based firms in transforming the National Innovation System. *Res. Policy* **2005**, *34*, 583–594. [CrossRef]
34. Mas-Verdú, F.; Soriano, D.R.; Roig-Tierno, N. Firm survival: The role of incubators and business characteristics. *J. Bus. Res.* **2015**, *68*, 793–796. [CrossRef]
35. Segura, F.M. El perfil emprendedor y la intensidad competitiva del mercado como predictores de supervivencia en microempresas mexicanas. *Contad. Adm.* **2019**, *65*, 1–27. [CrossRef]

36. García, C.R. Factores de Supervivencia Empresarial: Análisis Desde la Perspectiva del Éxito y Fracaso. Ph.D. Thesis, Departamento de Organización de Empresa, Facultad de Ciencias Económicas y Empresariales, Universidad de León, León, Spain, 2015.
37. Gutiérrez, W.R.; Sepúlveda, C.I.R.; González, G.J.U. Análisis semiparamétrico de los factores asociados a la sostenibilidad de los emprendimientos. *Rev. Fac. Cienc. Econ.* **2016**, XXVI, 163–180. [\[CrossRef\]](#)
38. Carneiro, A.V.R.; Amorim, C.V. Entry and exit dynamics of nascent business owners. *Small Bus. Econ.* **2015**, 45, 63–84.
39. Staniewski, M.W.; Janowski, K.; Awruk, K. Entrepreneurial personality dispositions and selected indicators of company functioning. *J. Bus. Res.* **2016**, 69, 1939–1943. [\[CrossRef\]](#)
40. Ligthelm, A. Survival Analysis of Small Informal Businesses in South Africa, 2007–2010. *Eurasian Bus. Rev.* **2011**, 1, 160–179.
41. Hassani, H.; Huang, X.; Silva, E. The Human Digitalisation Journey: Technology First at the Expense of Humans? *Information* **2021**, 12, 267. [\[CrossRef\]](#)
42. Guo, H.; Yang, Z.; Huang, R.; Guo, A. The digitalization and public crisis responses of small and medium enterprises: Implications from a COVID-19 survey. *Front. Bus. Res. China* **2020**, 14, 19. [\[CrossRef\]](#)
43. Bokolo, A.J.; Petersen, S.A. Examining the digitalization of virtual enterprises amidst the COVID-19 pandemic: A systematic and meta-analysis. *Enterp. Inf. Syst.* **2021**, 15, 617–650.
44. Blank, T.H. When incubator resources are crucial: Survival chances of student startups operating in an academic incubator. *J. Technol. Transf.* **2020**, 46, 1845–1868. [\[CrossRef\]](#)
45. Bernasconi, E.S. Innovación y Competitividad Empresarial. Ph.D. Thesis, Departamento de Gestión de Empresas, Facultad de Ciencias Económicas y Empresariales, Universitat Rovira I Virgili, Tarragona, Spain, 2015.
46. Del Campo Villares, M.O.; Miguéns-Refojo, V.; Ferreiro-Seoane, F.J. Business Survival and the Influence of Innovation on Entrepreneurs in Business Incubators. *Sustainability* **2020**, 12, 6197. [\[CrossRef\]](#)
47. Zapata-Guerrero, F.T.; Ayup, J.; Granados, E.L.M.; Charles-Coll, J. Incubator efficiency vs survival of start-ups. *RAUSP Manag. J.* **2020**, 55, 511–530. [\[CrossRef\]](#)
48. Hoda, S.; Singh, A.; Rao, A.; Ural, R.; Hodson, N. Consumer demand modeling during COVID-19 pandemic. In Proceedings of the 2020 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Seoul, Korea, 16–19 December 2020; pp. 2282–2289.
49. Leach, M.; MacGregor, H.; Scoones, I.; Wilkinson, A. Post-pandemic transformations: How and why COVID-19 requires us to rethink development. *World Dev.* **2021**, 138, 105233. [\[CrossRef\]](#)
50. Veselovská, L.; Závadský, J.; Bartková, L. Consumer Behaviour Changes during Times of the COVID-19 Pandemic: An Empirical Study on Slovak Consumers. *E+M Ekon. Manag.* **2021**, 24, 136–152. [\[CrossRef\]](#)
51. Miescu, M.; Rossi, R. COVID-19-induced shocks and uncertainty. *Eur. Econ. Rev.* **2021**, 139, 103893. [\[CrossRef\]](#)
52. Bouza, C. Encuestas Por Muestreo y Sus Principios. Desafíos de la Actualidad en la Valoración de Competitividad, Desarrollo, Bienestar e Innovación Social para la Investigación. Academia Accelerating the World's Research 2020. Available online: https://www.academia.edu/43707041/ENCUESTAS_POR_MUESTREO_Y_SUS_PRINCIPIOS?from=cover_page (accessed on 15 December 2021).
53. Manzano, P.A.P. Introducción a los modelos de ecuaciones estructurales. *Investig. Educ. Med.* **2017**, 7, 67–72.
54. Martínez, A.M.; Fierro, M.E. Application of the PLS-SEM technique in Knowledge Management: A practical technical approach. *Rev. Iberoam. Investig. Desarro.* **2018**, 8, 130–164.
55. Jöreskog, K.G.; Wold, H. (Eds.) The ML and PLS techniques for modeling with latent variables: Historical and comparative aspects. In *Systems under Indirect Observation*; Elsevier: Amsterdam, The Netherlands, 1982; Volume 8, pp. 263–270.
56. Chin, W.; Cheah, J.-H.; Liu, Y.; Ting, H.; Lim, X.-J.; Cham, T.H. Demystifying the role of causal-predictive modeling using partial least squares structural equation modeling in information systems research. *Ind. Manag. Data Syst.* **2020**, 120, 2161–2209. [\[CrossRef\]](#)
57. Chin, W.W. The partial least squares approach to structural equation modeling. In *Modern Methods for Business Research*; Marcoulides, G.A., Ed.; Erlbaum: Mahwah, NJ, USA, 1998; pp. 295–358.
58. Hair, J.F.; Sarstedt, M. Composites vs. factors: Implications for choosing the Right SEM method. *Proj. Manag. J.* **2019**, 50, 1–6. [\[CrossRef\]](#)
59. Nitzl, C.; Chin, W.W. The case of partial least squares (PLS) path modeling in managerial accounting research. *J. Manag. Control* **2017**, 28, 137–156. [\[CrossRef\]](#)
60. Tenenhaus, M.; Esposito, V.V.; Chatelin, Y.M.; Lauro, C. PLS path modeling. *Comp. Stat. Data Anal.* **2005**, 48, 159–205. [\[CrossRef\]](#)
61. Wold, H. Partial least squares. In *Encyclopedia of Statistical Sciences*; Kotz, S., Johnson, N.L., Eds.; Wiley: New York, NY, USA, 1985; pp. 581–591.
62. COVID-19: The Great Lockdown and Its Impacto on Small Business. SME Competitiveness Outlook 2020. International Trade Centre 2020. Available online: https://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/ITC_SMECO-2020_ExSummary_EN_web.pdf (accessed on 15 December 2021).
63. Impacto Económico de la COVID-19 Sobre la PYME en España, Informe PYME 2021. 2021. Available online: https://www.camara.es/sites/default/files/publicaciones/informe_pyme_2021._impacto_economico_de_la_covid-19_sobre_la_pyme_en_espana.pdf (accessed on 16 December 2021).

-
64. Ptak-Chmielewska, A. Entrepreneurs: Demographic Profile, who has Higher Chances of Survival? In Proceedings of the International Conference on e-Learning, Proceedings of the 2nd International Conference on Innovation and Entrepreneurship (ICIE-2014), Bangkok, Thailand, 6–7 February 2014; Ribiere, V., Worasinchai, L., Eds.; pp. 209–216.
 65. Albort-Morant, G.; Oghazi, O. How useful are incubators for new entrepreneurs? *J. Bus. Res.* **2016**, *69*, 2125–2129. [[CrossRef](#)]
 66. Crittenden, A.B.; Crittenden, V.L.; Crittenden, W.F. The digitalization triumvirate: How incumbents survive. *Bus. Horizons* **2019**, *62*, 259–266. [[CrossRef](#)]
 67. Soto-Acosta, P. COVID-19 Pandemic: Shifting Digital Transformation to a High-Speed Gear. *Inf. Syst. Manag.* **2020**, *37*, 260–266. [[CrossRef](#)]
 68. Bandrés-Goldáraz, E.; Conde-Casado, M.; Iniesta-Alemán, I. The impact of COVID-19 in small and medium-sized communication enterprises in Spain. *J. Adm. Econ. Sci.* **2021**, *11*, 25–40.