



Research article

B-CORP certification and financial performance: A panel data analysis

Violeta Bringas-Fernández, Carlos López-Gutiérrez, Andrea Pérez ^{*}

Santander Financial Institute (SANFI), Universidad de Cantabria - Fundación UCEIF, Spain

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ABSTRACT

B-Corp certification is a fairly modern business phenomenon. Consequently, research on its relationship with key business strategy variables is still inconclusive, while longitudinal analyses of its link to financial performance are scarce. To determine whether business profit could be a robust argument to attract companies to assess and certify their social and environmental impact, in this research we explore the connection that exists between the B-Corp certification and corporate financial performance in the short-, medium- and long-term. For this purpose, we use an international sample of 103 B-Corp companies that have been certified in 2013–2020 and we use the S&P Capital IQ database to collect their economic data. A control sample of non-B-Corp companies is also collected to establish a comparison and avoid bias in the research. The findings show no differences in the performance of B-Corps and non-certified companies before the certification, so a selection effect does not seem to exist in B-Corp certification. Regarding the performance of companies after the certification, known as treatment effect, B-Corps have smaller economic return than pre- and non-certified companies during two years after certification. Nonetheless, after that and in the long run, differences in financial performance between pre-certified and B-Corps are not statistically significant. These findings set the basis for future studies aiming to understand the reasons behind the initial loss of profitability after the B-Corp certification.

1. Introduction

Shareholder value maximization objectives are no longer the main criteria for companies' management [1]. Overtime, companies have increasingly integrated social, environmental and economic goals, considering the multiple interests of diverse stakeholders [2]. This shift in business focus has given rise to a whole new range of business strategies to demonstrate corporate social commitment, ranging from Corporate Social Responsibility (CSR) activities in traditional for-profit businesses [3] to the creation of hybrid organizations (e.g, social businesses) that give priority to social/environmental goals over profit-making, although they also stress good business planning, value creation and financial accountability [4]. All these social and environmental approaches to business practice are very important in today's society because they combine the power of business acumen with mission-driven goals, contributing to a more sustainable, inclusive and compassionate world [5].

Parallel to the advance of socially committed companies, numerous standards aim to measure and/or certify corporate social impact, such as environmental certifications (ISO 14001, ISO 14006) [1], social responsibility guides (ISO 26000) [6] and the newest

^{*} Corresponding author.

E-mail address: perezran@unican.es (A. Pérez).

international family of standards for circular economy (ISO 59000) [7,8]. Impact measurement is based on the premises that greater transparency from companies is needed to guarantee that they prioritize social value creation [9]. In this context, certification of the social performance provides companies with numerous advantages in terms of competitive differentiation, employee recruitment and credibility building [10]. Based on certification [11] and signaling [12–14] theories, previous literature has even suggested that socially responsible third-party certifications may positively impact corporate financial performance [15] thanks to the treatment (vs. selection) effect that they have on it [16,17].

Among certification proposals, the B Impact Assessment (B-Corp certification) stands out [18]. It basically “measures the positive impact performance of corporate responsible activities for the environment, communities, customers, suppliers, employees, and shareholders” [1]. To receive the B-Corp certification, companies have to “meet the highest standards of social and environmental performance, public transparency and legal responsibility” [19]. While “many of the social certifications that exist often correspond to narrow areas of commercial activities such as specific products (e.g. fair-trade coffee), niche markets (e.g. solar power), and/or highly visible industries (e.g. green energy), yet the B-Corp certification has emerged to audit and certify all businesses as uniformly as possible across a wide range of typical social and environmental measures” [20], which gives it unparalleled power. Indeed, the B-Corp certification is used by an increasing number of companies to demonstrate their social impact, a tendency that is reported to continue in next years [21].

Nonetheless, due to the novelty of the B-Corp certification in business, academic empirical research on it is scarce and its relation to key variables in corporate strategy, such as financial performance, has still not been clarified [2,22]. So far, very few quantitative papers have investigated the link between the B-Corp certification and financial performance empirically [2,15,23] and, unfortunately, their findings are not fully conclusive [2,22]. Whereas some scholars identify a positive effect of certification since the very beginning [2,15,24], others show a negative effect in the first years after certification, attributed to disruptions and deficits in attention produced by the audit that leads to a trade-off between social and financial performances [23]. Some scholars have even claimed that the link between both variables may be insignificant or spurious at best [10,22,25].

In addition to their inconclusive findings, these papers fail to provide a longitudinal analysis of the effect of the B-Corp certification on financial performance over the short-, medium- and long-term, which could assist researchers in better understanding previously reported findings [25]. Along this line, most previous studies have only explored the certification-performance link in the short- [25, 26] and medium-term [24]. However, an exploration of the relationship over the long-run has not been provided yet, which is where the main contribution of our paper lies.

Finally, previous papers on the certification-performance link use diverse performance measures that are different from the one that we use in our study (return-on-assets, ROA). For instance, Romi et al. (2018) use employee productivity along with sales growth [27]. Similarly, Chen and Kelly (2015) also explores employee productivity, along with revenue growth [24]. Lee et al. (2023) exclusively focus on annual growth rate in revenue [25], which is also used by Parker et al. (2019) along with employment growth rates [23]. Other metrics include equity ratio [22] or financial stability [22]. Therefore, exploring a classic measure of financial performance (i.e., ROA) constitutes another contribution of this research that may help providing additional insights into the link between B-Corp certification and financial performance.

Based on literature on the trade-off hypothesis, treatment/selection effects, certification and signaling theories, in this paper we aim to implement a new empirical analysis that explores the connection of the B-Corp certification and companies' ROA before the certification process, immediately after being certified, and over several years after certification. Therefore, we evaluate the ex-ante link between certification and performance, along with the short-, medium- and long-term ex-post effects that this certification has on the performance of certified B-Corp companies. In doing so, the paper will notably contribute to previous literature as researching the connection of the B-Corp certification to financial performance is essential to bridge the gap between profit-making and social impact, promoting responsible businesses and contributing to a more sustainable and equitable economic landscape [15,28].

In the next section, previous literature on the role of social/environmental issues in business strategy, social impact measurement and its connection to corporate profitability is revised to propose our research hypotheses. Second, the method of the study is deployed, paying special attention to the research design, sample and empirical analyses carried out in the research. Third, the main descriptive and multivariate findings are presented and discussed. Finally, the paper is concluded with the identification of managerial implications and future research lines.

2. Literature review

2.1. Social and environmental concerns in business strategy

In today's global landscape, societal and environmental concerns have ascended to the forefront of corporate agendas [29]. With growing awareness and recognition of the negative externalities of business activities, companies are increasingly compelled to navigate these issues as integral components of their organizational strategies [30]. The imperative to address social and environmental concerns emanates from various stakeholders, including consumers, investors, employees, and regulatory bodies [31], who demand accountability and sustainability in business practices [32]. Consequently, companies are compelled to adopt proactive measures to mitigate negative externalities and contribute positively to their surroundings [33].

Corporate Social Responsibility (CSR) emerged as one of the earliest systematic approaches for integrating sustainable concerns into business operations [34]. Originating in the 1950s [35], CSR embodies the notion that for-profit companies have a responsibility beyond maximizing their financial performance to consider the welfare of stakeholders and the broader community [36]. Early initiatives focused on philanthropy, ethical labor practices, and environmental conservation [37], marking a paradigm shift from purely

profit-centric models to more socially conscious business practices [38]. Over the decades, CSR evolved to encompass a broader spectrum of activities, including sustainability initiatives, stakeholder engagement, and corporate governance reforms [37], reflecting a maturation of corporate consciousness towards societal and environmental impacts [38].

More recently, CSR has given way to more disruptive business strategies such as social entrepreneurship and social business [38]. In this regard, social entrepreneurship and social businesses have gained prominence as innovative approaches to addressing social and environmental concerns within corporate strategy [39]. Social entrepreneurship entails leveraging business activities to accommodate social and/or environmental goals while generating sustainable financial returns [40]. This hybrid model transcends traditional dichotomies between profit and purpose, emphasizing the compatibility of economic viability with social and environmental impact [41]. Similarly, social businesses prioritize non-profit goals alongside financial objectives, integrating them into their core mission and operations [42]. These businesses operate with a dual bottom line, striving to achieve positive societal and/or environmental outcomes through market-based activities designed through solid business models where profit-making mechanisms revolve around solving the core societal/environmental problem identified by the entrepreneur [43], thereby challenging conventional beliefs of CSR.

In summary, the imperative to address social/environmental challenges within corporate strategy reflects the evolving expectations and demands of stakeholders in modern society [44]. From the historical roots of CSR to the contemporary emergence of social entrepreneurship and social businesses, organizations are increasingly recognizing the intertwined nature of business success and societal well-being [1]. As companies navigate this landscape, social impact measurement emerges as a necessity both for stakeholders and society, who need to gauge the transparency and good practices of companies [45], and for companies themselves, which require reliable tools to measure their progress and assess the impact of their pro-sustainable commitment on business strategy and performance [46].

2.2. Social impact measurement and certification

Social impact refers to the “change or effect created by the combination of inputs, activities and processes of a business in a social system” [9]. Its measurement allows to “monitor, manage, and report the performance and double bottom line value created by a social venture in terms of both financial and non-financial inputs or investments” [9]. It informs managers, investors and other stakeholders on the impact created by the company and helps them guide their future decisions [28,47]. For instance, executives measure social impact to evaluate their resources and estimate their progress in terms of their corporate goals [48]. Shareholders use social impact measurement to assess capital investments [49]. Through measurement and transparent reporting of social progress, other stakeholders are held accountable for corporate commitments to the SDGs, which allows them to scrutinize efforts and identify shortcomings, encouraging better governance and resource allocation [15].

In this context, certification can be a valuable tool for companies and stakeholders in measuring and signaling social impact [2,48,50]. Certification is a process through which an independent third party evaluates and verifies that an organization, product, or service meets specific standards or criteria [1]. By providing standardized metrics, guidance, accountability, and market access, certifications encourage companies to invest in social impact measurement, leading to more informed decision-making, enhanced credibility, and positive social/environmental externalities [2].

Nonetheless, the certifying standards can vary widely depending on the certification body and the area of focus [49]. For instance, there are certifications for sustainable practices, fair trade, organic products, environmental management, forestry, etc. [1,20]. Although the acceptance and recognition of certifications in academic literature may vary depending on the region and the field of study [51], some certifications that are generally well-regarded in social impact research include ISO standards for environmental management (ISO 14001, ISO 14006) or social responsibility (ISO 26000), B-Corp (certified internationally by B Lab), Social Value International Assurance Standard (provided by Social Value International), Fair Trade (certified internationally by Fairtrade Labelling Organization), Social Enterprise Mark CIC (certified by the Social Enterprise Accreditation Authority in the UK) or Benefit Corporations (legal designation/status in the United States).

Among them, the B-Corp certification is widely recognized and it is currently considered one of the leading standards for businesses [22]. In fact, the B-Corp standards are commonly used to measure progress in the SDGs, through the tool SDG Action Manager developed together with UN Global Compact in 2016. Thus, this is a rigorous certification that demonstrates that companies comply with high social and environmental standards while satisfying public transparency and accountability requirements [2]. Certified B-Corps are hybrid companies that pursue profit while they also implement social/environmental audits because they are formally committed to corporate goals beyond financial performance [20,52]. More specifically, through a series of questions about business practices and results, the B-Corp certification assesses the positive impact that companies generate in five specific areas related to governance, employees, customers, society and the environment [19].

B-Corp companies must be for-profit businesses whose primary objective is not to maximize the profits derived from their actions but to create value for all the agents with which they relate [2]. Today, the B-Corp community is made up of over 8000 businesses from 162 industries, from 96 countries on all continents [53]. In addition, it is a growing movement [25]. According to the B Lab Global's 2022 Annual Report, 2022 was the fastest growth year in B Lab's history, surpassing the 5000 and 6000 certified companies in the same year [21].

2.3. B-corp certification and financial performance

The business case for the B-Corp or any other social impact certification is built upon the idea that businesses can “do well by doing good” [10], which implies that certification and corporate financial performance are closely linked. Along this line, the connection

between certification and financial performance can be studied from two points of view that explore companies' performance before and after certification [16,17]. First, previous scholars have argued that a selection effect may exist, considering that companies that perform financially better may be more willing to certify their social/environmental endeavours than companies with a poorer financial performance [16,17,54,55]. In this situation, financial performance becomes a prerequisite for certification. Second, the treatment effect explores financial performance after certification, defending that an ex-post increase in performance exists after companies certify [56,57]. Therefore, improved financial performance also becomes a positive economic consequence of certification.

As far as the selection effect is concerned, the existence of an ex-ante mechanism prior to certification is explored, defending that financially successful companies have more incentives to become B-Corps [16,17]. Along this line, numerous scholars have defended the trade-off hypothesis [58] between social and financial performance, suggesting that improving and certifying the social impact caused by a company requires assuming a series of costs that not all companies can afford because it may result in a reduction of financial performance. In this regard, complying with social/environmental laws requires that companies incur in high costs, especially when applying the most ambitious prevention tools, that reduce the competitive capacity because they exceed the savings derived from their application [16]. Companies may also face additional difficulties during the certification process, including lack of human resources or government support [59], that may discourage them from opting for certification.

Previous research has explored these arguments in various industries and contexts, including some well-known certifications such as ISO 9001 that certify quality management [1,59], ISO 14001 that assesses environmental management [1,16,59] or PEFC-certification in the forestry industry [17]. For instance, when exploring the ISO 14001 certification, Heras-Saizarbitoria et al. (2011, p. 1) concluded that companies with "better than average performance have a greater propensity to pursue accreditation" [16]. Through an extensive review of studies that explore ISO 9001/14001 and financial performance, Martí-Ballester and Simon (2017, p.84) explain that environmental management systems "involve significant investment and important modifications of manufacturing processes in order to reduce pollution and energy consumption and/or to use renewable sources of energy" [59]. Even though they found empirical evidence that environmental management systems positively influenced financial performance, there were also negative effects derived from the amount of documentation necessary to implement those environmental systems on financial performance, which may act as a disincentive for less profitable companies and/or with fewer resources to pursue certification.

Considering these ideas, we propose the existence of a selection effect in B-Corp certification, since companies in a better financial position prior to the assessment from B Lab will be able to afford the costs of carrying out the certification more easily than less profitable companies. Based on this idea, we propose that.

Hypothesis 1. There is a selection effect associated with B-Corp certifications, meaning that companies with better financial performance have a greater propensity to become certified.

Additionally, the treatment effect refers to the existence of an ex-post increase in the performance of B-Corp certified companies [16,17]. In this sense, the certification hypothesis [11], closely linked to signaling theory [12–14], argues that, among other advantages, certification leads to greater corporate financial performance due to several reasons.

On the one hand, certification improves reputation and credibility in the marketplace [2,25]. By obtaining a recognized certification, a company signals that it meets certain quality, ethical, or environmental standards [23,60], reducing informational asymmetries in the company-stakeholders relationship [50,61]. This enhanced reputation increases stakeholder trust, customer loyalty, and competitive advantages, ultimately contributing to improved financial performance [50].

On the other hand, certification can also lead to operational improvements within a company [2]. The process of obtaining a certification often requires a company to implement best practices, adopt efficient processes, and adhere to specific guidelines [23]. These operational improvements can result in cost savings, increased productivity, and better risk management, all of which can positively impact a company's financial performance [16].

Nevertheless, the treatment effect is still a disputed argument. Whereas some previous studies have found a positive effect of social/environmental certification (e.g., 14001) on financial performance [56,62], the relationship may not always be a direct cause-and-effect one. Other factors and variables can also influence financial performance and the effects of certification vary according to the industry, size of the company, and the specific certification obtained [63]. For instance, Cañón-de-Francia and Garcés-Ayerbe (2006, 2009) showed that certifying with the ISO 14001 did not lead to significant performance changes in corporate market value, whereas it even had a negative effect for less polluting and less internationalized companies [63,64]. Similarly, Heras-Saizarbitoria et al. (2011, p. 1) concluded that "there is no evidence that improvements in performance follow certification" [16].

As far as the link of financial performance to B-Corp certification is concerned, only few studies have explored the effects of the certification empirically [2,10,15,22–25], also reporting inconclusive findings [22]. For instance, Paelman et al. (2020, 2021) showed that the B-Corp certification positively affected company growth rates with the size of the effect increasing over time [2,15]. Similarly, Chen and Kelly (2015) concluded that B-Corps benefited from higher growth rates compared to non-certified companies [24]. On the contrary, Parker et al. (2019) identified a short-term decrease after certification. This finding, which was stronger for small and young businesses, was associated with organizational disruptions and deficits in attention derived from the certification process [23]. More precisely, businesses have to face several organizational costs during the process of certification, such as making new specialized hires, modifying processes or retooling [65] that will reduce financial profitability before, during and immediately after certification [23]. Similarly, Pollack et al. (2021) observed that performance remain lower among companies aspiring to become B-Corps, their financial performance somewhat slowing down after certification [26].

Richardson and O'Higgins (2019) surveyed managers of 103 B-Corps on their financial performance in the short (1 year) and long-term (5 year) prior and since B-Corp certification [10]. They reported that managers did not observe an evident effect of B-Corp

certification on financial performance, although they do not point to negative financial impacts of certification either. Ultimately, more companies get to observe a slight increase in their financial performance that augment over the longer term. Nevertheless, most of the surveyed managers do not believe that this improvement is directly associated to their B-Corp certification. As justification to their findings, Richardson and O'Higgins (2019, p. 214) resort to the "general public's limited knowledge of B-Corps because no benefits of third-party certification can be realized if the general public does not know what the B-Corp certification means" [10]. They also believe that the insignificant relationship may derive from a lack of change in corporate behavior after certification or simply to the difficulty to isolate how much of financial change can actually be attributable to B-Corp certification. Along this line, Lee et al. (2023) report that the moment of certification (early adoption after the establishment of the company vs. evolution towards B-Corp certification later in life) does not affect financial performance either, thus the timing factor also having to be "taken out of the equation on a firm's economic performance" (p., 1760) [25]. These scholars agree that the lack of promotion on the B-Corp certification and the permanence of business routines after certification are the key factors behind the insignificant link between certification and financial performance. Finally, Patel and Dahlin (2022, p. 177) also corroborate that "the change from non-certified to certified firms does not lead to changes in ROA growth or volatility" [22].

Based on these ideas, in this study we propose that there will not be a treatment effect after B-Corp certification, so our second hypothesis is presented.

Hypothesis 2. There is no treatment effect associated with B-Corp certifications, meaning that B-Corp certification does not have a significant effect on financial performance in the short-term.

However, the initial organizational efforts to obtain the certification are expected to decrease and burden the business less after being certified as a B-Corp, whereas the costs of recertification will also be smaller [2]. Additionally, several benefits of certification (i. e., loyalty, reputation, alignment) take time and are only perceived in the medium- or even long-term [23]. Also, signaling theory [13] suggests that the length of time certified as a B-Corp affects its strength [66]. That is, the longer the business is certified as a B-Corp, the stronger the positive effects of the certification will be [2]. Thus, it is expected that sometime after certification companies will begin to detect positive outcomes in terms of financial profitability, which is also in line with the increase in financial performance over time reported by Richardson and O'Higgins (2019) [10].

Therefore, we expect that.

Hypothesis 3. B-Corp certification has a significant positive effect on financial performance in the medium-term that increases with the time since certification.

3. Method

3.1. Research design

The research goal of our study is to empirically evaluate the connection between the B-Corp certification and companies' ROA. For this purpose, we analyze the profitability of B-Corp companies before and after being certified and we also compare it with that of non-certified companies in the same period of time.

To test the research hypotheses, multivariate analyses based on panel data are performed. Panel data allows us to control for the individual heterogeneity that could bias our estimations. Controlling individual and time effects is common to evaluate unobserved individual and time heterogeneity [67]. In our case, we control for the year and the country, so the results will be robust regarding these two effects. The validity of the model is tested with the Hausman test, designed to check whether the individual characteristics are correlated with the regressors.

3.2. Data collection

The information used to implement the empirical analyses has been extracted from two sources. On the one hand, we collected data from the B-Corp Impact Data available on the data.world website (<https://data.world/blab/b-corp-impact-data>). The website has provided us with the complete list of B-Corps certified from 2013 to 2020 and the following information for each of them: year of certification, country of origin, size and sector. On the other hand, the financial information (balance sheet and P&L account) has been obtained from the S&P Capital IQ database that contains data on over 18.2 million companies (for the four countries analyzed in this paper, it includes records of over 336,000 companies), and SABI database, which contains information on over 3 million Spanish companies.

We started with the total number of B-Corp certified companies between 2013 and 2020 in France, Italy, Spain and the United Kingdom, which amounted to 729 companies. Once these companies were identified, their information was cross-referenced with the S&P Capital IQ and SABI databases. The result of this cross-reference led to a sample of 103 companies certified as B-Corps between 2013 and 2020 in France, Italy, Spain and the United Kingdom with the necessary financial information available for analysis.

In addition, a control sample was also created with non-certified companies. For each B-Corp company, a control sample was selected, including companies of similar size (i.e., the total assets are between 95 % and 105 % of the total assets of the B-Corp in the reference sample), belonging to the same sector, and the same country, all of these in the same year that the B-Corp obtained the certification [2]. These criteria follow Hendricks and Singhal (1997), who argue that companies of the same sector and similar size are affected by similar economic and competitive factors [68]. Considering that the potential number of control companies is notably

higher than that of B-Corps [2], and to ensure randomness in the selection of the sample, for each company between ten and twenty-five control companies were randomly selected, so that there are multiple control companies for each B-Corp in our sample [69]. Specifically, for each B-Corp in the sample we include several control companies, up to a total size of 2010 companies in the control sample. To avoid survivorship bias, it was not required that companies were alive (still running) throughout the whole period, hence we have an unbalanced panel with a different amount of companies in each sample.

Table 1 presents the sample characterization.

3.3. Empirical analyses

The multivariate analysis is performed applying the following equation:

$$ROA_{it} = \beta_0 + \beta_1 PreBCorp_{it} + \beta_2 PostBCorp_{it} + \beta_3 CF_{it} + \beta_4 Lev_{it} + \beta_5 Size_{it} + \sum_j \gamma_j Year_{jit} + \sum_m \phi_m Scr_{mit} + \sum_k \lambda_k Country_{kit} + \eta_i + U_{it}$$

As the dependent variable of the study, we propose to explore corporate economic profitability, or return on assets (ROA), a ratio that measures the economic performance that a company obtains from its assets. It is calculated as the ratio between Earnings Before Interest and Taxes (EBIT) and Total Assets (TA).

$$ROA = \frac{EBIT}{TA_{it}}$$

As independent variables, we define three dummies to identify B-Corp companies before (PreBCorp) and after certification (PostBCorp) and differentiate them from non-certified companies (NoBCorp). To avoid perfect multicollinearity problems, we exclude one of the dummies (NoBCorp) from the estimation [70] and we consider it as the reference group. PreBCorp takes the value 1 when it refers to a company before being certified as a B-Corp and the value 0 otherwise. Similarly, PostBCorp takes the value 1 for B-Corp companies (after certification) and the value 0 otherwise.

In addition to the independent variables, *t* control variables that can significantly influence the results of the analysis are also included in the model. These control variables are divided into (1) company-specific and (2) temporary and environmental variables. The company-specific variables are continuous and relate to the financial information of the company. Specifically, in this study we control for cash-flow (CF_{it}), measured as the ratio of cash-flow over total assets, the level of leverage (Lev_{it}), calculated as the ratio of total liabilities over total assets, and corporate size ($Size_{it}$), calculated as the natural logarithm of total assets [2,15,23]. Regarding the temporal and environmental variables, they are qualitative variables, introduced into our model through three groups of dummies: dummy variables to identify the year ($Year_{it}$), the sector of activity (Scr_{it}) and country of the company ($Country_{it}$) [2,15,23].

Table 2 shows the descriptive statistics. The table presents the mean and standard deviation of each variable, along with the minimum and maximum values, the 25th and 75th percentiles. In the case of ROA and CF, a high standard deviation is observed, despite the relatively more grouped values within the interquartile range. Regarding the debt level, variability is much lower, with values closely grouped around the mean. Lastly, in terms of size, significant variability is evident, primarily justified by the size disparities among B-Corp companies. Nonetheless, it has been verified that the presence of outliers in the random selection of the control sample does not bias the results. In all variables, observations of B-Corp companies are present both above and below the

Table 1
Sample characteristics.

	B-Corp companies		Control companies		Global sample	
	N	Obs	N	Obs	N	Obs
COUNTRY						
Spain	42	248	660	3843	702	4091
France	6	40	115	812	121	852
Italy	37	296	809	7282	846	7578
United Kingdom	18	98	426	2666	444	2764
SECTOR						
Agriculture	1	11	10	59	11	70
Manufacturing	38	299	849	7213	887	7512
Construction	2	14	71	591	73	605
Wholesale trade	7	29	228	1563	235	1592
Retail trade	9	74	209	1390	218	1464
Transportation	4	27	78	549	82	576
Finance and insurance	10	54	206	1193	216	1247
General services	32	174	359	2045	391	2219
SIZE						
Micro	–	169	–	824	–	993
Small	–	144	–	5088	–	5232
Medium	–	194	–	5398	–	5592
Large	–	175	–	3293	–	3468
Total	103	682	2010	14,603	2113	15,285

Table 2
Descriptive statistics.

Variable	Mean	Std. dev.	Min	P25	P75	Max
ROA	.062	.099	−.841	.015	.091	.982
CF	.090	.109	−.715	.034	.125	2.217
Lev	.565	.230	.000	.393	.749	.997
Assets	189.530	4441.290	.010	5.060	37.130	172,097.000

interquartile range, confirming that the sample is representative for the B-Corp companies included.

4. Findings

We propose three possible specifications of our model to evaluate the B-Corp - financial performance link and determine how the control variables affect this relationship. In each specification, the different control variables are added progressively. More precisely, in specification M1 only two control variables ($Year_{it}$, $Country_{it}$) are considered. In specification M2 the company-specific control variables are added (CF_{it} , Lev_{it} , $Size_{it}$). Finally, in specification M3 the complete model is reflected, including the sector (Scr_{it}) where each company operates. The findings of the analysis are shown in [Table 3](#).

The analysis shows that in none of the specifications of the model a significant effect of the PreBCorp variable on ROA exists when compared to the control sample (NoBCorp). That is, the ROA of the businesses in the reference sample in the years prior to their certification as B-Corp companies does not show significant differences with respect to the companies in the control sample.

On the contrary, in the three models a significant effect is observed for the PostBCorp variable in comparison to the NoBCorp baseline. Specifically, the ROA of businesses in the years after certification as B-Corp companies is lower than the financial performance obtained by non-certified companies ($\beta_{M1} = -.008$; $\beta_{M2} = -.005$; $\beta_{M3} = -.005$).

The cash-flow, size, country and sector of the company have significant effects on its ROA. The largest the cash-flow and size of the company, the higher its ROA, whereas some sectors and countries also exhibit better financial performance than others. Nevertheless, the level of leverage does not impact financial performance significantly in any of the specifications of the model and the year of the analysis affects ROA only when company-specific control variables (i.e., CF, Lev, size) are not taken into consideration.

Based on these findings, our [hypothesis 1](#) is not supported, as there are no significant differences between the ROA of the B-Corps and the companies in the control group before certification. According to these results, a selection effect in the B-Corp certification was not found because the performance of B-Corps before the certification was not greater than that of the rest of companies. These findings differ from previous studies related to other environmental certifications, such as ISO 14001, which found a positive selection effect [[16,55](#)]. Nonetheless, in some studies this effect has been only partially accepted, depending on the period of time considered before the certification [[17](#)]. The latter are more in line with the absence of a significant relationship that was found in this paper.

The findings do not support the [hypothesis 2](#) either, as there is an overall significant negative impact on ROA immediately after being certified as a B-Corp company. The hypothesis proposed the absence of a treatment effect. Nonetheless, the findings of the study show a negative impact of the certification on financial performance (the ROA of the certified companies is lower after the certification). This negative reaction has also been found for other environmental certifications [[54,71,72](#)].

Nevertheless, it is also interesting to examine if the treatment effect that appears after certification is constant over time. To test this idea, we analyze if the negative effect on the ROA of certified companies is consistent over time or if, on the contrary, it only occurs in some specific periods of time. That is, we also aim to determine the moment in which the negative reaction detected in [Table 2](#) occurs and evaluate whether the negative effect is longitudinal (or not). For this purpose, we implement a new analysis in which we present seven alternative versions of the specification M3, identifying the ROA of certified companies considering different temporary periods. To do so, the data collected for certified companies is divided into two periods of time. In the first model (M3_0), the first period

Table 3
Multivariate findings: Effect of B-Corp certification on ROA.

	M1		M2		M3	
	β	Sig.	β	Sig.	β	Sig.
PreBCorp	.000		.000		−.000	
PostBCorp	−.008	^a	−.005	^b	−.005	^b
CF			.824	^b	.824	^b
Lev			.004		.003	
Size			.018	^b	.018	^b
Year	10.340	^b	1.200		.960	
Scr					3.380	^a
Country	2.860	^a	8.670	^b	4.600	^a
R ²	.002		.765		.766	

^a $p < .05$.

^b $p < .01$.

corresponds to year 0, the year in which the company's capacity to be a B-Corp is evaluated (PostBCorp00), while the second period corresponds to the following years after the certification (PostBCorp Rest). Similarly, in the second model (M3_1), the first period corresponds to year 0 and year 1 (PostBCorp01), the second period corresponding to the following years after the certification (PostBCorp Rest). In the third model (M3_2), the first period corresponds to year 0, year 1 and year 2 (PostBCorp02), the second period corresponding to the following years after the certification (PostBCorp Rest). This pattern is followed for all the models estimated, using a rolling window duration strategy (Fig. 1). This analysis is only implemented for the reference sample of certified B-Corp companies, with the comparison group being PreBCorp. The findings are shown in Table 4.

The findings reveal that the decrease in corporate economic profitability is concentrated in the first three years of the certification (years 0–2), especially in year 2 that corresponds to the first full year following the certification of the company as a B-Corp. The findings also show how the windows that contain year 2 are those that present the significant negative result. Specifically, we find a negative effect in PostBCorp (Rest) in model M3_0 ($\beta = -.003$, $p < .05$) and model M3_1 ($\beta = -.003$, $p < .10$), PostBCorp02 in model M3_2 ($\beta = -.003$, $p < .10$) and PostBCorp03 in model M3_3 ($\beta = -.003$, $p < .05$). Therefore, the main effects are concentrated in the two full years after certification, with an effect that accounts for around 30 basis points of drop in the ROA of certified B-Corps. On the contrary, when we consider longer time periods, the negative effect is diluted as the results are no longer significant.

Based on these results, the hypothesis 3 is not supported as, even if time since certification improves its effects over the ROA, certified companies do not get to perceive significant improvements in their financial performance that significantly surpass those obtained before certification. In this case, the negative effect that was found in the results of hypothesis 2 is maintained only in the short-term, while in the medium- and long-term the effect disappears. This absence of a treatment effect has also been previously found in the literature that relates environmental and financial performance [16,17,73–76].

5. Discussion

This study corroborates the direct relationship between B-Corp certification and financial performance. Nonetheless, this relationship is only found in the ex-post effect, that is, in the influence that certification has on financial performance (treatment effect), while in the ex-ante relationship (selection effect), we did not find evidence that companies with greater financial performance are more prone to request certification. The latter reinforces the idea that companies that opt for the B-Corp certification do not do so based on their financial situation, but rather rely on other reasons of a more institutional nature. This idea is defended by Occhipinti (2023, p.28) when establishing that “becoming a B-Corp should be regarded as a process of legitimization, through which firms attempt to satisfy their stakeholders' expectations that they will develop a sustainable corporate model” [77]. Our findings also suggest that, considering the trade-off hypothesis [58], in the specific case of the B-Corp certification the costs assumed do not require an ex-ante financial situation different to any other company [16,17,55]. This result differs from other studies that found a positive selection effect in environmental certification, confirming that different types of certifications may have unique ex-ante implications [73].

Regarding how financial performance is affected by the B-Corp certification, the findings are also contrary to our expectations, as the effect of certification on corporate economic profitability is significantly negative when analyzed against non-certified companies. Additionally, the negative impact is specially concentrated in the first full year after being certified, with a decrease in ROA estimated around 30 basis points. Thus, the negative effect of the B-Corp certification on financial performance in the short-term is confirmed.

Consequently, we can conclude that this study best aligns with the trade-off hypothesis [58] previously defended in certification literature [16,59]. This hypothesis suggests that, because resources are scarce, improvements in one aspect of a company come at the expense of another corporate area. In other words, when a company allocates more resources or effort towards one corporate goal, it may lead to a reduction in resources available for another goal or area [58]. With certification, there seems to be an evident trade-off between a company's pursuit of B-Corp certification and its financial performance [23]. Meeting B-Corp standards require significant investments in terms of time, resources, and operational changes. A company might need to overhaul its supply chain, update production processes, or invest in employee training to ensure fair labor practices [23]. These investments can lead to increased costs and also represent a danger of diverting managerial attention away from increasing corporate growth, which temporarily impact

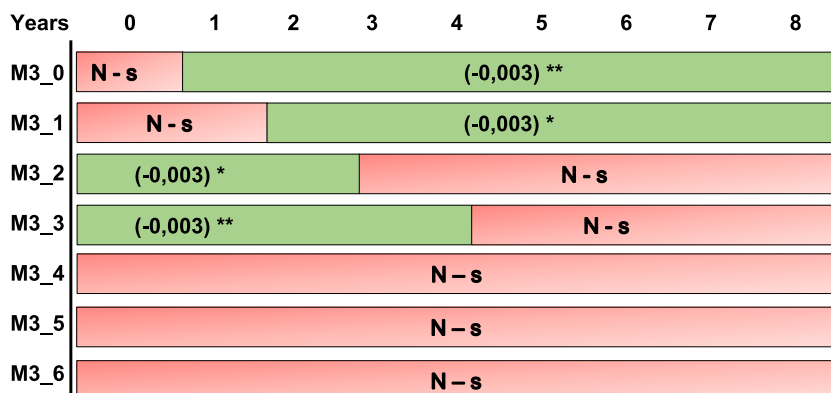


Fig. 1. Temporary scheme of the effect of B-Corp certification on ROA.

Table 4

Temporary scheme of the effect of B-Corp certification on ROA.

	M3_0		M3_1		M3_2		M3_3		M3_4		M3_5		M3_6	
	β	Sig.	β	Sig.	β	Sig.	β	Sig.	β	Sig.	β	Sig.	β	Sig.
PreBCorp	Base		Base		Base		Base		Base		Base		Base	
PostBCorp00	−.002													
PostBCorp01			−.003											
PostBCorp02					−.003	^a								
PostBCorp03							−.003	^b						
PostBCorp04									−.002					
PostBCorp05											−.002			
PostBCorp06													−.002	
PostBCorp (Rest)	−.003	^b	−.003	^a	−.003		−.002		−.004		−.005		−.006	
CF	.938	^c	.938	^c	.938	^c	.938	^c	.937	^c	.937	^c	.937	^c
Lev	−.034	^c	−.034	^c	−.034	^c	−.034	^c	−.036	^c	−.036	^c	−.036	^c
Size	.015	^c	.015	^c	.015	^c	.015	^c	.015	^c	.015	^c	.015	^c
Year	1.530		1.520		1.520		1.490		1.750	^a	1.750	^a	1.770	^a
Scr	1.580		1.580		1.570		1.650		1.450		1.440		1.460	
Country	2.320	^b	2.310	^b	2.300	^b	2.270	^b	2.340	^b	2.330	^b	.330	^b
R ²	.872		.872		.871		.870		.870		.870		.870	

^a $p < .10$.^b $p < .05$.^c $p < .01$.

short-term profitability significantly and negatively [78]. Additionally, while B-Corp certification can provide a competitive edge in attracting socially responsible consumers, there is also a limitation to the demand size. The trade-off can involve the company focusing more on sustainable practices at the expense of tapping into potentially larger markets that prioritize price over social impact [79]. It is also interesting to notice that equivalent findings have been shown in diverse studies exploring the impact of other social/-environmental certifications, such as ISO 14001 or PEFC-certification, on corporate financial performance [17,63,64]. Therefore, it seems to be the case that the negative impact of certification is a common trend when exploring social impact measurement, which gives support to the existence of an ex-post trade-off hypothesis.

Nevertheless, the observed decline in profitability is only temporary, as the B-Corp certification ceases to negatively impact financial performance after the second full year since certification. Therefore, the findings corroborate the temporal thesis hypothesized in this paper that suggests that the burdens of certification in the short term dilute over time, ceasing to impact financial performance negatively and allowing companies to perceive better financial results in the medium- and long-term [2].

As previously defended in academic literature, the medium- and long-term improvement in financial results derived from certification can be associated to two main facts [2,10,15,23,66]. On the one hand, the costs associated with the certification process are mostly allocated to the initial year when the company has to make the necessary adaptations in its organizational procedures and structure to comply with the B-Corp standards (year 0) [2]. After that moment, the costs associated with certification and the effort put in recertification will decrease notably [2] and, consequently, the B-Corp will regain normality in its financial ratios. On the other hand, the longer time the company is certified as a B-Corp, the stronger the positive image and reputation that it translates into the marketplace [66] and therefore the greater the benefits it receives from certification as a corporate signal [10,15]. This argument is theoretically defended by signaling theory [13], which posits that, when it is constructed over time, the longer the signal (i.e., B-Corp certification) is consistently displayed, the more credible it becomes especially for consumers [2]. Short-term signals might be dismissed as opportunistic or temporary efforts to appear favorable. On the contrary, signals maintained over time suggest a deeper commitment on the part of the company. This consistency contributes to building consumer trust and corporate reputation [2] and, consequently, it helps reversing the initial negative financial impacts derived from the increased costs associated to certification [23].

Finally, it is also important to notice that company-specific and environmental variables have significant impacts on financial performance that are consistent across diverse types of analysis involving B-Corp certification and corporate economic profitability. More precisely, the largest the cash-flow and size of the business, the higher its economic profitability, a fact that is consistently reported in the multivariate analysis as well as the temporary analysis of this study. In this regard, the findings are in accordance with previous literature on the topic [2,23,63]. Similarly, some countries also exhibit consistently better financial performance than others, as also reported previously by Parker et al. (2019) [23].

6. Conclusion

The integration of environmental and social purposes to traditional economic objectives is increasingly widespread among companies worldwide and numerous organizations promote it given the positive impacts that this strategy generates in society. Consequently, multiple standards and certifications have emerged as a proof of the interest of the international community in social impact measurement. In this context, it has been the goal of this paper to explore the financial implications of the B-Corp certification empirically, to shed light on this certification phenomenon and its strategic consequences for the companies adopting a pro-sustainable commitment. Because of the scarcity and limitations of previous empirical studies developed on the topic, this paper contributes to

literature by providing a longitudinal analysis of the short-, medium- and long-term connection between the B-Corp certification and financial performance compared to pre-certified and non-certified companies.

Becoming a B-Corp implies the company committing to continuous improvement in social and environmental performance, and companies that embrace these values over the long term are more likely to see sustained positive financial impacts that surpass those obtained before the certification, especially return on assets. Nevertheless, this research has also demonstrated that this positive performance after certification cannot be directly attributed to the certification itself, as several company-specific (i.e., cash-flow and size) and environmental characteristics (i.e., country) play a notable role in determining financial performance. Indeed, when compared to financial performance before becoming a B-Corp, there is a decrease of corporate economic profitability during and immediately after certification, and it is not until two full years have passed since that moment that the costs of the certification process are mitigated and cease to negatively affect financial performance. Also, it can be concluded that certifying as a B-Corp negatively affects financial performance if certified businesses are compared to non-certified companies that do not incur in the costs associated with this specific certification.

In terms of managerial implications, when deciding whether to certify themselves as B-Corp or not, companies should avoid basing the decision solely on financial criteria and the direct comparison with non-certified companies. Overall, while B-Corp certification alone may not directly improve corporate economic profitability, it can contribute positively to a company's financial performance in the medium- and long-term through qualitative indicators such as enhanced reputation, access to new markets or easier contact with impact investors. Therefore, it is essential for businesses to approach the B-Corp certification within a broader sustainability strategy, integrating social and environmental responsibility into their core business and basing their decision to certify themselves on a true pro-sustainable commitment. Additionally, although it cannot be directly attributed to certification, there are notable differences in corporate financial performance before and after going through the process of certifying as B-Corp, which is more evident in the long run. It is highly feasible that certification acts as a useful channel for organizational and structural changes that trigger better strategies leading to greater cash-flows and financial returns over time. Consequently, companies must bet on the B-Corp certification taking as a reference the past of the company itself and seeking to extract the necessary learning to continue the path of organizational growth. All in all, companies should not think of B-Corp certification as a cost but as an opportunity for continuous improvement and business professionalization.

Despite its contribution to previous literature, this work also presents some limitations that derive into suggested lines of future research. First, the reference sample is conditioned by the availability of financial data for B-Corp companies. B-Corp companies are mainly small and medium enterprises (SMEs) and, in some cases, recently created companies, which makes access to their financial information difficult. As the databases used for the study do not provide us with the financial data of all B-Corp companies, the reference sample has only consisted of businesses in four countries. Therefore, other researchers need to use larger and more heterogeneous samples to extract robust results. Second, the concentration in years of the collected data is also a limitation of the study. In this regard, the B-Corp certification is quite recent and still the volume of certified companies is relatively small. As time goes by, it is expected that the number of certified companies increases exponentially and it will be possible to work with more representative samples. Third, future studies are necessary to explore more in depth the causes of the loss of financial performance during the first years during and after certification. Future research should contribute efforts to analyze whether the decrease in profitability is due to the monetary costs that companies have to incur to obtain the certification or if, on the contrary, such a decrease is a consequence of the necessary adaptation that companies must undertake to comply with the specifications of the B-Corp certification. Similarly, and because the findings of the present paper are not especially encouraging for companies, it would be interesting to continue researching if adhering to alternative social and/or environmental standards and certifications (e.g., ISO 14001, ISO 26000, ISO 59000) could derive into better financial results than the B-Corp certification. In this regard, the future ISO 59000 set of standards can be a promising area of research [7,8] as this standard also brings the economic, social and environmental perspectives of circular economy into evaluation and, consequently, it can be somehow easily compared to the B-Corp assessment.

Data availability statement

Data will be made available upon request.

Ethics

Review and/or approval by an ethics committee was not needed for this study because the research did not involved/disclosed personal information and it was not related to human and behavioural studies or animal experiments. Informed consent was not required for this study because the research was conducted exclusively with public data available to the authors through economic databases and the corporate websites.

CRediT authorship contribution statement

Violeta Bringas-Fernández: Software, Methodology, Formal analysis, Data curation, Conceptualization. **Carlos López-Gutiérrez:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Methodology, Formal analysis, Data curation, Conceptualization. **Andrea Pérez:** Writing – review & editing, Writing – original draft, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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