Helping SMEs to Succeed in Exports Markets through Good Export Managerial Practices: Experimental evidence from Argentina[1]

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Abstract

We conducted a Randomized Controlled Trial (RCT) in Argentina, administered by the country's National Export Promotion Agency. The program aimed to encourage the adoption of good exporting practices, which were modeled after successful exporting firms. The program provided support through direct one-on-one consulting, totaling 72 hours of assistance. A total of 213 small and medium-sized Argentinean firms in the food and beverages sector, including both existing exporters and prospective exporters, were eligible for the program. Our primary finding reveals that the program did not effectively enhance export performance. The primary factor contributing to this unfavorable outcome is the program's limited success in fostering firms' adoption of good exporting practices. Possible explanations for this result include the relatively low intensity of the program and the absence of a global consensus regarding what constitutes good exporting practices.

Keywords: Exports, Practices, RCT, Consulting, Management

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1. Introduction

Export development, especially involving diversification away from commodities, has long been considered a central conduit for economic development (Balassa, 1978; Hausmann and Rodrik, 2003; Hausmann and Klinger, 2006; Brenton et al., 2009). Despite a unanimous agreement on its importance, achieving the ability to export differentiated products is quite an elusive aim. A variety of hurdles prevent firms from exporting. Prominent among them are barriers such as transport costs (Limao et al., 2001; Hummels, 2007), tariffs (Corden, 1966; Fajgelbaum et al., 2020), and other non-tariff measures (Orefice, 2016). Yet other barriers, often more substantial, relate to the information that firms need to possess, and the capabilities they need to develop based on that information, to enter foreign markets with differentiated products. Domestic producers possess insufficient information about foreign market features such as customer tastes and needs, regulations, and distribution channels, as well as knowledge about how to address those market idiosyncrasies with appropriate products and commercial practices (Easterly and Reshef, 2010; Artopoulos et al., 2013; Urmeneta, 2018). The pervasiveness of these information and knowledge shortages calls for public intervention aimed at gathering, processing, and disseminating information, and at helping firms learn how to use it to enhance their export capabilities (Volpe Martincus et al., 2010; Lederman et al., 2010; Crespi et al., 2014; Cruz et al., 2018).

A wide variety of public agencies and private institutions contribute to support countries' export development efforts, many of them specifically oriented to enhancing firms' export capabilities (Rose, 2007; Gil et al., 2008; Volpe Martincus et al., 2011). However, export promotion agencies (EPA) are those usually at the center of public and private efforts to foster export competitiveness. The number of countries with a national EPA has increased substantially over the past three decades, reaching more than 100 countries in 2010 (Lederman et al., 2010; Cruz et al., 2018). EPAs around the world invest considerable

resources on various types of export promotion services (EPS) in the hope that they will help firms surpass export barriers. Thus, disentangling these services' relative impact is critical to guide EPAs efforts. This paper contributes to this endeavor by conducting a randomized control trial (RCT) of the *Good Exporting Practices* (GEP) program, an export-training program conducted by Argentina´s EPA.

A substantial amount of evidence regarding EPAs' effectiveness in promoting exports has accumulated in recent years. One strand of literature uses cross-country data to assess EPAs' overall performance around the world, finding that they have a significant impact on countries' exports (Lederman et al., 2010; Volpe Martincus et al., 2010; Hayakawa et al., 2014; Gil-Pareja et al., 2015). Another strand of literature uses firm-level data confining each study´s analysis to the performance of one single agency. Consistent with the notion that export barriers are higher in cases where acquiring foreign market information is more difficult, this strand of literature tends to find stronger impacts on firms that are smaller, have no export experience, export to new markets, and aim to export new or differentiated products (in general, impacts are stronger along extensive margins than along intensive ones, especially in developing economies).[2] While this literature sheds abundant light on EPAs' overall impact and on the export outcomes which are more sensitive to their activities, it is silent on the specific effectiveness of the different types of EPS they provide.

One of the earliest and most traditional type of EPS are *marketing* services, such as organizing firms' participation in trade fairs and missions. However, evidence about the impact of this type of services has been mixed.[3] Other important types of EPS are *market*

[2] See Volpe Martincus et al. (2010) for Chile, Volpe Martincus et al. (2008) and Van Biesebroeck (2016) for Peru, Volpe Martincus (2010) for Uruguay, Volpe Martincus et al. (2010) for Colombia, Volpe Martincus et al. (2012) for Argentina, Volpe Martincus et al. (2012) for Costa Rica, Cruz et al. (2014) for Brazil, Van Biesebroeck et al. (2015) for Canada, Van Biesebroeck et al. (2016) and Broocks et al. (2017) for Belgium, Munch et al. (2018) for Denmark, and Comi et al. (2020) for Italy.

[3] While some studies suggest that these services contribute to better firm-level export outcomes (Rosson & Seringhaus, 1989; Wilkinson & Brouthers, 2000a; Spence, 2003; Volpe Martincus & Carballo, 2010; Munch et al., 2018; Comi et al., 2020), other studies find instead mixed or no evidence of a significant impact on export performance (Wilkinson and Brouthers, 2000b; Álvarez, 2004; Head & Reis, 2010; Cadot et al., 2015).

intelligence and *financial support* services, of which the evidence is scarcer but displays more positive outcomes.[4] Nonetheless, based on the increasing belief that firms should boost their export capabilities before meeting potential clients in foreign markets (Volpe Martincus, 2010; Iacovone et al., 2012) EPAs in recent years have dedicated a larger fraction of their efforts and resources to providing *capability building* services such as training –often provided in a conference, seminar, or course held in a classroom or virtual setting– and technical assistance to firms –through one-to-one interactions with a consultant at their own premises– (Volpe Martincus, 2010; Lederman et al., 2010, Cruz et al., 2018). Given the growing relevance of this last type of EPS, it is crucial from a public policy standpoint to assess in detail their impact on export outcomes.

The GEP program evaluated in this paper is a capability building program aimed at training firms on the adoption of good exporting practices. It was designed by the paper's authors under the auspices of the World Bank and was implemented in Argentina by the country's EPA, namely the Agency for Investment and International Trade (hereinafter AAICI), between 2017 and 2019. The program involved 213 food and beverages SME and was implemented as a Randomized Control Trial (RCT). The training consisted of 72 hours of technical assistance (consulting) provided to firms selected to the treatment group at no charge on good exporting practices in management areas such as strategy, production, and communication. Following Bloom et al. (2013, 2018), who standardized good *management* practices, we identified –more specifically– good *exporting* practices, standardizing them so that we could score their degree of adoption by all participating firms both before and after

[4] While Breinlich et al. (2017) finds (weak) evidence that providing export related information has a positive impact on UK manufacturing firms, Munch et al. (2018) find positive impacts of market intelligence provided by the Danish Trade Council on the exports of Danish firms. Regarding financial support, Felbermayr & Yalcin (2013) find a positive impact of export credit guarantees issued by the German government while Görg et al. (2008) find that large enough government grants to Irish manufacturing firms can encourage them to increase their exports –but not to start exporting.

the technical assistance. Thus, in addition to the program impact on export outcomes, the RCT allows us to trace the effect of adopting good exporting practices on those outcomes.

The intervention did not deliver the results we originally expected. In the first place, the evidence points to only a weak impact of the program on the adoption of goods exporting practices. In the second place, we find no impact on observable outcomes such as export volume or the probability of exporting. Despite the disappointing results, important lessons arise from the consideration of factors that could have influenced these results. As we discuss later, among these factors are conditions related to the call for participating firms, the degree of previous standardization of program contents, and the need for consultant training. Overall, we think the evaluation of the GEP program we conduct here provides valuable insights to help EPAs around the world design and implement more effective capacity building programs.

The GEP program was built under the notion that firms in developing countries need to change their business practices –shaped by the way they regularly conduct business domestically– when they attempt to export differentiated products to developed countries. Artopoulos et al. (2013) find that introducing those needed changes is hindered by lack of foreign market knowledge, which is hard to acquire without access to fine-grained information about the nature of competition, distributors' ways of doing business, or consumer tastes in targeted markets. Similarly, Mion & Opromolla (2014) show that Portuguese firms improve their export performance by hiring managers with previous experience at exporting firms who presumably bring to the firm lacking foreign market knowledge. Based on these findings, we designed GEP as a technical assistance program aimed at substituting for this lack of foreign market knowledge by standardizing good exporting practices and disseminating them among SMEs.

Our paper contributes to a strand of literature that specifically evaluates EPA capability building services. Despite the increasing importance of this type of EPS, the evidence is relatively thin and provides yet inconclusive results. Kim et al. (2018) is the only study to focus on training services, finding no significant impact of export promotion seminars on apparel and textile Vietnamese SMEs. Regarding technical assistances, Cadot et al. (2015) find that a Tunisian government matching-grant program (FAMEX) that co-funded technical assistances to build firm capabilities on subjects such as product development or shaping an export-oriented business had insignificant or even negative impact on assisted firms' exports. On the contrary, Figal-Garone et al. (2017) find that Diverpymex, a fully funded Argentine consulting program to improve export business plans, had a significant increase in firms' exports and likelihood of exporting. Similarly, Alvarez et al. (2004) find a positive impact on the probability of exporting of exporter committees assisted by a specialized consultant organized by Chile's EPA (PROCHILE), while Comi et al. (2020) find that Lombardy's technical assistance and counseling grants to support firms' exporting processes increased their export propensity but not their export intensity. Finally, Volpe Martincus & Carballo (2010) find that training and technical assistance programs offered by the Colombian export promotion agency (PROEXPORT) have as a whole a positive and significant effect on firms' total exports and number of destinations while impacts are larger when those services are combined with other EPS such as helping firms build a trade agenda and prepare for trade fairs.

Our study is the first evaluation of an EPS program that we are aware of implemented as an RCT. By conducting an RCT, we can more rigorously identify the causal effect of the program and avoid potential endogeneity problems arising from the self-selection to the program of firms already more prone to improving their export outcomes. In addition, to our knowledge we are the first to standardize a system of good *exporting* practices, which was a

key component of the program design. Standardizing good export practices makes them amenable for quantification. Thus, it enables tracing the adoption of these practices as a relevant mechanism of improvement in export performance. In addition, standardizing good exporting practices is valuable in itself as it facilitates their dissemination among SMEs. Our effort to standardize good exporting practices complements efforts to standardize, more generally, good management practices such as the World Management Survey developed by Bloom & Van Reenen (2007).

A broader and more extensive literature has assessed the impact of business training programs on business practices and firm outcomes. In general, this literature finds that technical assistance programs can help firms upgrade their productivity and revenues. Bloom et al. (2013, 2018) find that providing free consulting on modern management practices to Indian textile firms improve their management practices and productivity. Bruhn et al. (2018) find that a one-year management consulting service to Mexican SMEs improve their management practices and increases total factor productivity, return on assets, employment and wages. Higuchi et al. (2019) find that a Kaizen training program on Tanzanian small garment producers improves good management practices and business performance. Finally, Iacovone et al. (2020) evaluate the impact of both individual- and group-based consulting approaches on Colombian auto-part manufacturers and find that both approaches similarly improved management practices but only group consulting increased employment. We note that, in contrast to the GEP program, all these management consulting programs train firms on a standardized, globally-widespread, and internationally-recognized set of management practices. We also note that all programs that showed an impact on firms' performance — with the exception of Higuchi et al. (2019)— were more time intensive than the GEP program (72 consulting hours per firm), ranging between 200 and 733 of consulting hours per firm.

The paper continues as follows. Section 2 justifies and describes the GEP program framework. Section 3 describes the GEP intervention. Section 4 describes the program's experimental design. Section 5 presents the main results. Section 6 presents results related to heterogeneous treatment effects. Finally, section 7 discusses the results and concludes.

2. Good Exporting Practices

2.1 Exporting differentiated products from developing to developed countries

Based on four case studies about the export emergence of differentiated good sectors in Argentina, Artopoulos et al. (2013) argue that a distinguishing feature of consistent exporters to developed countries is the adoption of a new set of business practices that are substantially different from those that prevail in their domestic market. These practices involve, for example, adapting products to foreign demand, improving production processes to upgrade quality, and seeking to establish long-term relationships with foreign distributors. Artopoulos et al. (2013) also emphasize that these exporters also display a common mindset about the importance of adopting this new set of business practices and a discourse that implicitly assumes their mutual complementary.

Rauch (1999) first highlighted the informational barriers that hinder international trade flows in the case of differentiated goods. Along a similar logic, Artopoulos et al. (2013) characterize how information constraints affect differentiated good producers from developing economies when they attempt to export to developed ones, and the capabilities they need to acquire to succeed in this endeavor. Developed countries tend to have different tastes and needs that require product adaptations and they impose a vast array of more stringent commercial practices in areas such as logistics, packaging, and invoicing. However, the geographic and cultural distance with those markets usually hinders firms´ ability to acknowledge the crucial importance of taking the necessary actions to meet those different tastes, needs, and demands. By contrast, consistent exporters adopt a new set of business

practices conducive to meeting those requirements, which differ radically from those prevailing in the domestic market. While the international trade literature has long focused on the necessity to upgrade quality to access markets in developed economies (Maskus et al., 2005, Hallak, 2006, 2010; Sutton, 2007; Verhoogen, 2008; Hallak & Sivadasan, 2013; Atkin et al., 2017), Artopoulos et al. (2013) point to the need to upgrade a substantially broader set of business practices, which require the possession of difficult-to-acquire tacit knowledge.

In line with Bloom & Van Reenen´s (2007) idea of management practices, we also conceive good exporting practices as a characterization of the organizational structure and behavior of the firm that represents a specific way of doing business that transcends the individuals –e.g. top managers and CEOs– who implement them. However, a key difference between the good exporting practices highlighted here and the management practices that are the basis of the training programs evaluated in Bloom et al. (2013, 2018) relate to their degree of previous standardization. The modern general management practices that are the focus of the latter work –for example lean manufacturing principles, quality control procedures, and just-in-time inventory management– were already widely acknowledged as standard good practices in the United States, Europe, and Japan and had long been discussed in the business press and top business schools. By contrast, the good exporting practices in the GEP program were neither standardized, nor were they internationally recognized or globally widespread. As a result, crucial tasks previous to implementing the program were first standardizing them and then training consultants so that they could convincingly convey them to participating firms.

During the year 2015, under a joint effort between the Argentine think tank CIPPEC and the World Bank, some of this paper´s co-authors, together with an external advisor with experience in export management consulting, defined and codified a set of 20 good exporting practices (presented in the next section and detailed in Annex 1). This exercise was based on

the findings of Artopoulos et al. (2013), previous academic research, the experience of the aforementioned external advisor, and the exhaustive investigation of the practices promoted by various export promotion agencies through programs such as PEIEX (Brazil), Export Coaching (Chile) and PIPE (Spain).

2.2 The good exporting practices

The set of good exporting practices in the GEP program consists of 20 practices grouped into 7 areas: a) Strategy, b) Market Identification and Segmentation, c) Product Design and Adaptation, d) Production, e) Communication, f) Distribution and g) Administration.[5]

The area "Strategy" includes practices related to determining the role of exporting as a growth channel for the company and planning its execution. Companies that consider exports as a strategic channel for their growth assess the resources they have and plan how to obtain those they do not have in order to develop their export business. Setting exports as a strategic priority for the company favors the alignment of the entire organization in pursuit of establishing their presence in foreign markets.

The area "Market identification and segmentation" includes practices related to the analysis of export markets (current and potential), market segmentation, and product positioning in target market. These practices emphasize the need for companies to acquire in-depth knowledge of foreign market characteristics before strategically determining how best to approach it. Also, targeting a well-defined positioning of the product in the selected market segment facilitates consistency between product, marketing, and communication decisions.

The area "Product design and adaptation" includes practices related to the analysis of export products, including product design and design adaptation. This area focuses on how the company uses its knowledge of target markets and their product positioning decisions to

[5] For a detailed description of the 20 good exporting practices see Annex I.

generate products with attributes that are valued in target markets and are consistent with their positioning objectives.

The area "Production" includes practices that ensure production compliance with quality assurance standards and delivery times. These attributes are inexcusable requirements in business relationships with clients in developed countries and are also widely regarded as signals of reliability. Practices in this area include production planning, quality assurance, and generating supplier commitment with product quality and delivery times.

The area "Communication" includes practices related to communicating corporate and brand identity and values as well as product attributes. It includes corporate identity and brand management, packaging, and dissemination actions with the distribution channels. Having a consistent and appealing communication strategy is a particularly relevant marketing tool for differentiated products whose value stems largely from their symbolic attributes.

The area "Distribution" includes practices related to logistics and to the selection and maintenance of distribution channels. It involves choosing the most appropriate distribution channels, building relationships of trust and commitment with distributors, logistics management for the timely delivery of products, and provision of after sales services. These practices highlight the relevance of conceiving distributors in foreign markets as long-term strategic partners.

The area "Administration" includes practices related to the adaptation of the administrative structure and company systems to the export activity and the establishment of a pricing and financing policy for the distribution channels. Companies usually attempt to export products without having adequate provisions for complying with client´s administrative demands –e.g. invoicing– and without previously worked out their cost structure, which leads to mistakes when setting prices and financing policies.

3. Intervention

3.1 General features

The Good Exporting Practices (GEP) program was an export-management consulting service jointly implemented by the Argentine Agency for Investment and International Trade (AAICI, or "the Agency"), the Secretary of Trade of the Argentine National Ministry of Production, and the World Bank between March 2017 and December 2019. The GEP program was an innovative program for the Agency as it was the first to provide a comprehensive consultancy for firms and the first to incorporate a rigorous evaluation method. The program had national reach and was delivered at no cost for its participants.

The implementation of GEP was led by a full-time dedicated team composed of representatives from AAICI, the Secretary of Trade and the World Bank. This management team was responsible for the program´s quality control at every phase and compliance with the experimental design. This involved supervising the work of consultants through daily monitoring and evaluation activities, administering satisfaction surveys to participating companies and consultants, accompanying consultants to diagnostic interviews and technical assistance meetings, and reviewing the contents of all deliverables (meeting minutes, reports, scores, etc.). Along the various phases and program activities, the GEP management team received support from the National Institute of Industrial Technology (INTI), the Secretary for Productive Transformation (STP) at the National Ministry of Production, the National Direction of Food and Beverages (DNAB) at the National Ministry of Agriculture, Livestock and Fishery (MAGyP), and the Center for Development Economic Studies (CEED) at Universidad de San Martín.

A key decision was to focus the program on a specific sector to facilitate setting common evaluation criteria and recruiting consultants with a common knowledge background. Also, the chosen sector would have to be of strategic relevance for the Argentine

Government and should not be targeted by any other export promotion program. Three sectors were first identified as strategic: automotive parts, metal-mechanics, and the food-and-beverages sector. However, since the first two sectors were already beneficiaries of existing public programs, the food-and-beverages sector was the one finally chosen. This sector had approximately 14,000 producers of a diverse set of differentiated goods with a low degree of internationalization –only 4% had exported continuously during the period 2011-2015 and 93% had never exported (Argentine National Ministry of Production, 2017).

The Argentine Government led various dissemination activities from March 2017 to April 2017 to raise awareness of the program and invite firms to enroll. Among them, AAICI advertised the program in other activities it held with the food-and-beverages sector and organized specific dissemination events in collaboration with sectoral business chambers and provincial export promotion agencies. The Agency also released newsletters in specialized media, gave radio interviews, made telephone calls to firms, and advertised through social media. In addition, the program was officially launched in an event with the presence of authorities from all government areas involved in the program and potential program beneficiaries. At these events, firms were informed that the program would offer technical assistance on business practices to improve their export performance. Also, they were told that the program would be costless, but participation would require substantial commitment of management time and effort.

Signing up to the program required firms to complete an online form on AAICI's website. To be considered eligible to participate firms had to: 1) be legally constituted as a firm, 2) produce food or beverages, 3) have a legal address in Argentina, 4) have no less than twelve months of existence as of December 31st 2015, 5) be a SMEs (between 5 and 250 employees) as of December 31st 2015, and 6) not be in a bankruptcy process.

Out of 279 inscribed firms, 213 (76%) firms were identified as eligible and took part in the random assignment process.[6] To randomly assign firms into the treatment and control groups we carried out a stratified randomization in April 2017 after the call for firms ended and before the baseline survey started.[7] This procedure resulted in 107 firms assigned to the treatment (technical assistance) group and 106 firms to the control group.[8]

3.2 The Good Exporting Practices program

The program was executed in Argentina between March 2017 and December 2019. Its implementation was structured around three phases: diagnostic, technical assistance and follow-up.

3.2.1 Diagnostic phase

During the diagnostic phase (June 2017 to December 2017), both treated firms and firms in the control group received the visit of a consultant to conduct a 9-hour survey on their degree of adoption of the program´s 20 good exporting practices. The diagnostic was typically implemented in three different meetings between the consultant and executive directors or area managers at the firms´ productive locations. After the meetings, the consultants were required to analyze the information surveyed and score each of the 20 practices with an integer number between 0 and 5, with 0 representing no adoption and 5 full adoption of the practice (a detailed description of the survey instrument and scoring system is provided in Section 4.2). Additionally, consultants had to develop a diagnostic report for each surveyed firm with a description of the extent to which each practice was adopted, an identification of improvement opportunities, and a list of prioritized practices to work upon. On average, each consultant was supposed to spend approximately seven hours to write the

[6] The main reason for non-compliance with the eligibility criteria was that firms had less than 5 or more than 250 employees.
[7] To guarantee the transparency of the randomization, the draw was made before a public notary. All firms were invited to witness the event.
[8] See Annex II for a detailed description of the stratification procedure and the pre-randomization outcomes balance tests.

diagnostic report. The practices scores were neither included in the diagnostic report nor were they communicated to the firms.

Sixty-seven field consultants were hired for the diagnostic phase. Diagnostic consultants were required to be university graduates with more than five years of experience in a related area to the program content, either as generalists or specialists in particular areas of practice such as Strategy or Production. They were either freelance consultants or employees at AAICI or INTI. All the consultants were trained in the good exporting practices framework and the program's work methodology by the program's management team, some of whom had already participated in the efforts to standardize the practices. The training had a workshop format and lasted approximately 16 hours, some of which were aimed at homogenizing scoring criteria. Between March and June 2017, five in-person training sessions were held in five different Argentine provinces (Buenos Aires, San Juan, Mendoza, Salta, and Santa Fe). In total, 125 professionals were trained.

3.2.2 Technical assistance phase

During the "technical assistance phase" (April 2018 to December 2018), firms randomized to the treatment group received a 72-hours individual consultancy over a 6 months period.[9] The 72-hour length was the maximum that could be afforded with the program budget.

The technical assistance was organized around four "assistance modules", of which each firm could receive up to two modules as long as the total consulting hours did not exceed 72 hours. Specialized field consultants oversaw each of the modules. Since the required expertise for the Strategy, Market Identification and Segmentation, Distribution, and Administration practice areas was similar (i.e. specialists in business strategy and foreign trade), a module denoted "Strategy" (abusing terminology) included consulting in all

[9] The last firm to receive the technical assistance started it in July 2018 and finished it in December 2018.

practices under those practice areas. The other three modules were respectively focused on the three remaining practice areas, namely "Product Design", "Production" and "Communication". Based on different combinations of those modules, firms could receive one of the following "assistance packages": i) Strategy: 72 hours; ii) Production: 72 hours; iii) Communication: 72 hours; iv) Strategy: 48 hours, and Communication: 24 hours; v) Strategy: 24 hours, and Product Design: 48 hours; vi) Strategy: 24 hours, and Production: 48 hours; vii) Strategy: 24 hours, and Communication: 48 hours.[10]

Based on the practice areas identified as priority for improvement in the diagnostic report, the diagnostic consultant and the program's management team chose the assistance package they considered most appropriate for the firm. This choice was then validated with the firm, who could request an alternative choice. In general, firms with no export business plan received the 72-hour Strategy package, firms with an export business plan that needed improvement received one of the packages combining the Strategy module with one of the Production, Communication or Product Design modules, and firms with an export business plan that did not require improvement received one of the 72-hour consulting packages in Production, Communication or Product Design.

Each technical assistance had a specific work plan developed by the specialist consultants in each practice area, supervised by the GEP management team. Typically, the consultancy began with a two-hour meeting between the consultant and the company to discuss the work plan, set the consultancy objectives, and assign the company managers who would participate in it. Then, the consultant and the company met every two weeks to evaluate the consultancy progress and redefine the work plan if necessary (in general there were 12 follow-up meetings, each of approximately two hours). The remaining 46 hours were devoted to the implementation of the work plan. For example, firms that received the 72-hour

[10] Out of the 83 firms that ended up receiving the Technical Assistance, 32 firms opted for the Strategy package, 29 for the Strategy & Communication package, 9 for the Strategy & Production package, 6 for the Production package, 5 for the Strategy & Product Design package, and 2 for the Communication package.

Strategy package were first introduced into the good exporting practices in the areas of Strategy and Market Identification and Segmentation. Then, jointly with the consultant they co-developed an export business plan. During this instance, the consultant assisted the firm to develop its export strategy, evaluate foreign markets, and choose which markets to target.

Two types of consultants were required. A first group of field consultants visited the firms to carry out the technical assistance. A second group of lead consultants, those with more seniority, was in charge of mentoring and advising the field consultants. Lead consultants also monitored the entire consultancy, controlled the content of the field consultants' reports, and intervened in the relationship with the company under contingencies that required their expertise. Field consultants were either freelance specialists or specialists employed at AAICI and MAGyP. Seventy-four field consultants were hired, most of which had also been diagnostic consultants during the diagnostic phase. Six lead consultants were hired, two to supervise the implementation of the Strategy module, two for the Communication module, one for the Product Design module, and one for the Production module. Even though all the consultants were specialists in their areas, they received training on the work methodology and the objectives of technical assistance.

3.2.3 Follow-up phase

During the follow-up phase (September 2019 to December 2019), all participating firms –including those in the control group– received the visit of a consultant to complete a new (follow-up) survey about of their degree of adoption of good exporting practices using the exact same survey used during the diagnostic phase. The survey was administered in only one 3-to-4-hour meeting; this time, firms did not receive a diagnostic report. Seventeen consultants were hired for the follow-up phase. These consultants were the ones with the best performance during the previous phases of the program. The follow-up phase received

logistic and quality-control support from the Center for Development Economic Studies (CEED) at Universidad de San Martín.

4. Experimental design

4.1 Take up & attrition

The take up for the baseline survey (diagnostic phase) was 85.9%, with 183 firms out of the 213 randomized completing it. The take up for the treatment (technical assistance phase) was 77.6%, with 83 firms out of the 107 randomly assigned to the treatment group accepting and completing the 72 hours of consulting. None of the firms randomly assigned to the control group received the treatment. Finally, the take up for the follow-up survey (follow-up phase) was 71,8%, with 153 firms out of the 213 randomized completing it. Only 69.5% (148 firms) completed both baseline and follow-up surveys.

We show that the attrition of firms can be interpreted as random by showing that pretreatment characteristics of firms are not significantly different when comparing them within non attritors, between attritors and non attritors and also by comparing the proportion of attritors between treatment groups (see balance test tables in Annex III).

4.2 Data sources

In order to address the need for a systematic measurement of the degree of adoption of the 20 good exporting practices we developed an export practices survey instrument.[11] In the instrument, each practice is divided into dimensions. Dimensions are thematic segmentations of the practices that offer partial and complementary ways of evaluating how firms carry out their activities – observable behaviors. In turn, dimensions contain questions that aim to survey the activities companies carry out and how they do it. Activities refer to the actions (observable behaviors) companies carry out, how they do them, and in some cases their frequency.

[11] See the survey instrument in [DEFINIR SI ANEXO EN EL DOCUMENTO U ONLINE]

To quantify the degree of adoption of the good exporting practices the survey instrument also included scoring methodology. As part of the survey, the consultants were asked to score each practice and dimension. The practices were scored with an integer number between 0 and 5, where a 0 represents that none of the dimensions of the practice has been adopted and a 5 represents the complete adoption of the practice. Each practice might be composed of one or more dimensions. As for practices, dimensions are also scored with an integer number between 0 and 5. However, those scores do not need to add up to the score for the practice nor do they enter an algorithm that delivers it. Dimension scores are only indicative and are supposed to help the consultants score the practice and justify their choice.

To evaluate the impact on practices adoption, we look at 9 indicators. First, the total practice score is defined as the sum of the score of the 20 practices that can take integer values between 0 and 100. Second, the 7 scores of the areas of practices are defined as the percentage of adoption of the sum of the practices included in each area. For example, since the Market identification and segmentation area has 3 practices the maximum score can be 15. Hence, if a firm scores 9 points out of 15 it would have a 60% adoption of the Market identification and segmentation area. Last, the score of the Strategy package is defined as the percentage of adoption of the sum of the practices of the Strategy, Market Identification and Segmentation, Distribution and Administration areas.

For export outcomes we used Argentine customs' administrative database which contains information on each firm's exports (free on board values in US dollars), export destination country, and HS product code. The data covers the complete 2016-2021 period.

To evaluate the impact on export performance, we look at four main export performance indicators with annual frequency. First, the value of exports defined as the Inverse Hyperbolic Sine transformation of the annual free-on-board export value in US

dollars[12]. Second, the probability of exports is defined as a dummy variable that takes value of 1 if the firm exported and 0 if it did not. Third, the export quality is defined as the average destination GDP per capita (2017) weighted by the share of FOB export value to each destination[13]. This export performance indicator is only defined for the companies that exported in all the periods (101 companies). Lastly, the export variety is defined as the number of unique values of products at a 6-digit level (HS6).

The export value is defined as the sum of the total FOB exports in USD for a given year, while the IHS export value is just equivalent to its inverse hyperbolic sine transformation. The export probability is defined as a dummy variable that takes the value of 1 if the firm exported in a given year, and zero otherwise. The export variety is defined as the total number of unique values of exported products (at a 6-digits level). Lastly, export quality is defined as the weighted average GDP per capita of the destination markets basket for a given year[14].

For employment outcomes, we used Argentine's social security agency (ANSES) administrative data, which contains information of each firm's declared number of employees and average wages. Unlike the export data, for employment and wages we have data up to August 2019. Therefore, for each annual average number of employees and wages, we include the last 4 months of the previous calendar year. For example, the annual average number of employees in 2017, the baseline year, averages the employment data from the 12 months between September 2016 and August 2017.

To evaluate the impact on employment performance, we look at two main indicators with annual frequency. First, the number of employees defined as the average number of

[12] As the ln(0) is not defined we use the inverse hyperbolic sine transformation to include the observations of non exporting firms

[13] We used IMF Outlook and World Bank Development Indicators databases to create the GDP per capita data.

[14] Export quality is defined for the firms that exported during the 4 years. To create the GDP per capita we used IMF Outlook and World Bank Indicators databases for 2017.

employees over a 12-month period. Second, the average wage is defined as the annual average of each company's average wage.

Table 1 presents balancing tests for all pre-treatment variables. Six out of seven pre-treatment variables are statistically balanced across the treatment and control groups.

5. Results

Given random assignment, we identify the causal impact of the program using a standard lineal model

$$\boldsymbol{Y}_i = \beta_0 + \beta_1 T_i + \beta_2 X_i + \epsilon_i$$

where Y_i is the outcome of interest for firm i, T_i is a dummy that takes the value of one if firm i was randomly assigned to the treatment group, X_i is a vector of pre-treatment controls (that include the pre-treatment outcome of interest), and ϵ_i is the firm-level error term.

Given partial compliance, we report estimates on local average treatment effects (LATE), which estimates the effect of the treatment for compliers. The LATE estimator instruments the treatment take-up with the random assignment to the treatment.

Our main finding is that the program has no impact on exports. As Table 2 shows, there are 4 export outcomes observed in 4 post-treatment periods (2018, 2019, 2020, and 2021), and in all cases the estimated coefficients are statistically non-significant.

To explore the reasons for the negative results, we explore the effect of the program on the implementation of good practices. Figure 1 presents the levels of practices both before (represented by the yellow bars) and after the program (depicted by the orange bars) for both the treatment group (on the left) and the control group (on the right). This figure shows an increase in the implementation of good practices of 10 percentage points (23 percent) within the treatment group and of 4 percentage points (8 percent) within the control group. As indicated in Table 3, despite the more substantial point estimate for the treatment group, the difference is not statistically significant.

Table 3 further investigates whether the consulting services resulted in improvements in the management practices of the firms by examining various practice areas.[15] Among the 8 distinct areas contributing to the overall practices score, the point estimates are positive in 5 areas (distribution, product design and adaptation, market research and segmentation, administration, and strategy package) and negative in 3 areas (product design and adaptation, communication, and production). Estimates are only statistically significant in the administration area.

Overall, even in those cases where point estimates are positive, they are smaller than the ones found in other studies, when compared to those in other research studies, such as Iacovone et al. (2021) in Colombia and Bloom et al. (2013) in India. In these studies, consulting interventions increased the business practices score by 8-10 percentage point and 26 percentage points respectively. Compared to ours, those interventions were significantly more intensive and expensive. The individual consulting intervention costed around $30,000 in Colombia and $250,000 in India, while the cost of the technical assistance provided by the consultants in Argentina was about $3,000.

6. Heterogeneous treatment effects

This section explores potential heterogeneous treatment effects across groups of firms with different characteristics. In particular, we focus on firms for which the lack of export management practices could be a more binding constraint and analyze the impact of technical assistance on the export performance of firms by dividing the sample along three dimensions: i) low and high quality of exporting practices at baseline, ii) primary and elaborated goods producers, and iii) small and medium firms.

[15] All the practices outcomes are expressed as the percentage of adoption. For example, as the Distribution area has 5 practices the maximum total score is 25, hence a 60% of adoption means scoring 15 out of 25.

The main problem with our heterogeneity analysis is that given our small size we have low statistical power, so this should be taken more as exploratory descriptive analysis rather than as fully conclusive evidence.

First, we split the sample into a subsample of primary goods producers and a subsample of elaborated good producers. For this analysis we leverage on the Micro-Differentiated (Micro-D) classification criteria (Bernini et al., 2018) to classify firms based on their main product. First, the identification of each firm's main product was carried out by reading the good exporting practices diagnostic reports (for the 183 companies diagnosed during the Diagnostic Phase) and companies' web pages (for the 30 companies that weren't diagnosed). Second, once the main products were identified, we classified firms as elaborated goods producers when their main product is commercialized in small packages and as primary goods producers when their main product is commercialized in bulks or large containers (following the Micro-D classification criteria for agricultural, food and beverage goods). Since we cannot use the Micro-D classification — because we also need to classify goods from non-exporting firms - we opt to call the groups elaborated and primary goods instead of differentiated and undifferentiated goods as in Bernini et al. (2018). Out of the 213 companies 154 (72%) are elaborated goods producers and 59 (28%) are primary goods producers. From the 154 elaborated good producers 81 (53%) belong to the treatment group and 73 (47%) to the control group. While from the 59 primary good producers 26 (44%) belong to the treatment group and 33 (56%) to the control group. As Artopoulos et al. (2013) suggest that one of the underlying factors that enable differentiated good producers to export their products is adopting good exporting practices, a priori we would expect to see a larger impact on export performance on firms producing elaborated (differentiated) goods than on those producing primary (undifferentiated) goods.

A second source of heterogeneity is the level of exporting practices at baseline. The results for the firms with a level of exporting practice below the median are shown in the fourth column, while the results for the firms with better export practices at baseline are shown in the third column of Table 4. While statistically non significant, not surprisingly given our limited power and the large variance of these outcomes, the results point to a consistent result, i.e. firms that started with lower level of businesses practices tend to experience a stronger (more positive or less negative) change in terms of their exports performance.

Lastly, another source of heterogeneity is the firms' size. To analyze heterogeneous treatment effects across this characteristic we split the sample according to the firms' size at baseline. A subsample of small-sized firms below the median number of employees at baseline and a subsample of medium-sized firms above (or equal) the median number of employees at baseline.[16] While our results remain statistically insignificant for both sub-groups, we also find a less clear story which could be driven by different mechanisms at play simultaneously. On one side, smaller firms would be characterized by lower levels of initial practices, and therefore could benefit more, however larger firms are likelier to be closer to the "export threshold" and able to incur in the fixed costs required to break and expand into the export markets

In general, our results show no statistically significant impact on exports outcomes for any of the subgroups. However, there is a clear pattern in our point estimates suggesting that the impact on exporters of differentiated products is always consistently larger and more positive on any of the export outcomes than the impact on exporters or more primary (and less differentiated products) in line with the findings of Artopoulos et al. (2013).

[16] As described in Table 1, we have employment data for 195 firms. The median number of employees at the baseline is 22.5, leaving 97 firms below the median and 98 firms above (or equal) the median. Out of the 97 firms below the median 48 belong to the control group and 49 to the treatment group, whereas from the 98 firms above (or equal) the median 50 belong to the control group and 48 to the control group.

7. Discussion

The GEP program did not deliver the results we expected. While we observe some positive but inconclusive impact on the adoption of good exporting practices, no significant impact on export outcomes comes out of the RCT. A variety of hypotheses could be formulated to explain these results. We discuss them in this section.

One set of hypotheses relate to the characteristics of the knowledge content that the GEP program intends to convey and to whether it can be conveyed effectively to achieve relevant impacts on export outcomes. Among this set, one basic hypothesis to explain the results is that our "good exporting practices" are not really conducive to enhancing export performance. In fact, since there is no widespread agreement over which are good exporting practices, our codification effort could have erroneously identified ineffective ones. However, while more work needs to be done regarding codification and standardization of good exporting practices for producers in the developing world, we think the adoption of our twenty practices should nevertheless generate unambiguously positive outcomes. In particular, these practices are based on the findings of Artopoulos et al. (2013), who identified them as precisely the set of new practices that export pioneers adopted before succeeding in export markets. A caveat here is that Artopoulos et at. (2013) emphasize a change of mindset about how to approach foreign markets encompassing and facilitating the adoption of good exporting practices, which cannot be pinned down as a single "practice". While we expect the dissemination of practices to induce this change of mindset, it is unclear the extent of success in producing that change.

Another related hypothesis is that our twenty good exporting practices are indeed effective but their lack of worldwide standardization makes them hard to disseminate. In particular, the need to train consultants into the practices before they can technically assist firms introduces the risk that they did not fully understand the practices or were not

sufficiently embedded into their logic to be able to convincingly affect management behavior. In addition, lack of worldwide standardization and dissemination of practices creates a limited awareness and credibility background under with they must conduct their consulting work. This disadvantage contrasts, for example, with the level of codification and standardization achieved by what are considered good general management practices, which could make them more apt for dissemination.

Third, it could be that the GEP technical assistance was not sufficiently intensive as it only consisted of 72 hours of in-plant consulting. This training intensity is considerably weaker than that of other management practices training programs implemented as RCT such as Bloom and Van Reenen' (2013) management consulting to textile firms in India (508 hours) and Iacovone et al.' (2021) management consulting to auto part firms in Colombia (190 hours). It is possible that more training hours are needed to achieve the behavioral changes sought for, more so considering that good exporting practices are not standardized.

In contrast to this set of hypotheses, an alternative interpretation of the results is that the program works but it was not correctly implemented. Since the implementation of a technical assistance program like GEP demands strong organizational skills and commitment to the program, there are many instances where an inadequate execution can jeopardize its expected impact. For example, without tight supervision of the consultants' work, the quality of their technical assistance may falter. However, as we were part of the program's full-time dedicated management team in charge of its execution and monitoring, we can attest to the fact that all three phases of the program (diagnostic, technical assistance, and follow up) were implemented in a timely manner and met the objectives set for that phase. Also, beneficiaries of the treatment claimed to be highly satisfied. According to a survey we administered, they rated the level of satisfaction with the consulting provided with an average score of 4.14 (on a

1 to 5 scale[17]) and the level of fulfillment of their previous expectations with an average score of 4.18 (on a 1 to 5 scale). When asked about the consulting´s impact on the adoption of good exporting practices, 32% (37 companies) stated that they modified existing export management practices, 32% (36 companies) that they adopted new ones, 15% that they did both, while only the remaining 20% stated that they did neither of the two.

One caveat regarding how GEP was implemented is that by attempting to comply with administrative deadlines to launch the program, the AAICI may have pushed too hard to attract in time the number of participant firms required to achieve targeted levels of statistical power. In that push, the program may have brought in some firms that were not sufficiently interested in the technical assistance or were not sufficiently willing to commit energy and resources to enhancing their export business. For instance, the final set of participating firms included 56 firms (24%) that primarily sold commodities—rather than differentiated products—in which case it is doubtful that the treatment would have any impact. Notice that although the RCT randomizes treatment recipients, it was supposed to do so only among a pool of firms already interested in enhancing export outcomes.

Lastly, it could be that the macroeconomic crisis that unfolded in Argentina during 2018 at the time the treatment was starting, followed by the coronavirus pandemic, became confounding factors that blurred the program's impact. Indeed, GDP decreased by -2.6% in 2018, -2% in 2019 and -9.9% in 2020, while during that period the Argentine economy suffered from foreign exchange volatility, restricted credit access, and lack of predictability in most relevant economic variables. Under these circumstances, not only would the eventual adoption of good exported practices be expected to have weaker impacts on export outcomes but also firms might have weaker incentives to spare business focus on changing their practices. Nevertheless, we observe outcomes up until three years post treatment (year 2021),

[17] The scores were integer numbers from 1 to 5 where 1 means very dissatisfied and 5 means extremely satisfied with the consulting.

when the economy was already recovering from the pandemic and had achieved a certain degree of stabilization although at the cost of imposing increasing restrictions on imports and access to foreign exchange. Thus, while we cannot rule out that Argentina's economic instability could have acted as a confounding factor, we think that firms had sufficient time during those three years to adopt the practices and have them impact on their export outcomes.

Finally, the fifth and last hypothesis is that the program impact was heterogenous and given large variance it is hard to detect statistically significant impacts. Some our are results previously presented appear to be consistent with this hypothesis. First, the finding about the differential impact on exporters of more differentiated products. Second, the indicative results that impact at the intensive margin (and for existing exporters) tend to be more positive and larger. Third, the finding that firms with initially lower levels of practices seem to benefit more on average. This heterogeneity and the limited intensity of the program are hypothesis that complement each other quite naturally as we could imagine that more powerful and intensive programs could have a broader impact while narrower and less intensive ones could help but only a subset of firms.

An overall assessment of the relative merits of these hypotheses leads us to withdraw some conclusions that can be useful to guide both academic research and public decisions—particularly by EPAs—on the implementation of this kind of programs. In the first place, the degree of standardization of program contents appears to be critical. Non-standardized content is more difficult to convey effectively: consultants need to be more heavily trained on the new content—with uncertain results over their ability to assimilate it—while lack of a knowledge and credibility background impairs their ability to change business behavior. These disadvantages could be compensated by deepening consultants' training and increasing consulting intensity (number of hours). However, already GEP being an expensive program,

the need to incur more expenses to render it effective casts doubts on the cost-benefit convenience of such a program. A more efficient alternative might be to limit (expensive) in-plant technical assistances to more specific topics while providing training on good exporting practices through classes, seminars, or other types of (less onerous) collective forms of knowledge transmission. In addition, a more efficient use of scarce resources might place efforts on standardizing and codifying good exporting practices—generating a public good—in order to help build a common language among export consultants and practitioners that will facilitate the dissemination and adoption of those practices.

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Figure 1. Impact of consulting on export business practices

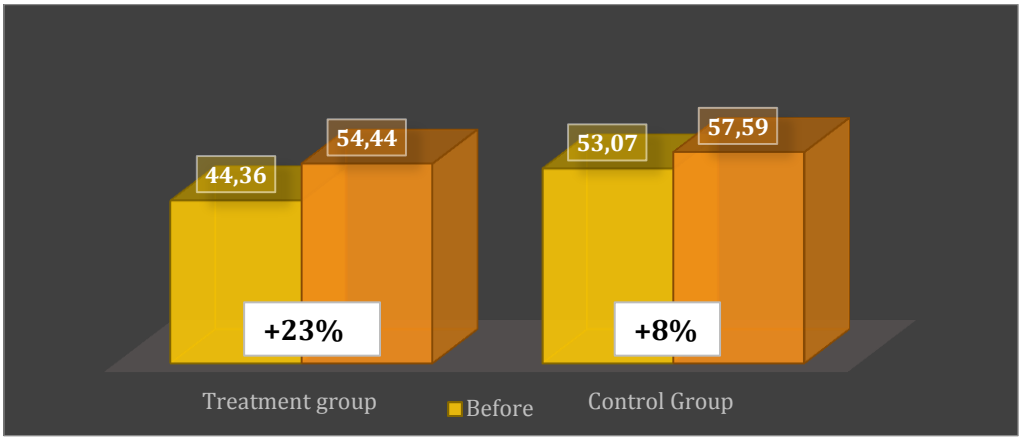

Table 1- Balancing tests

	Treatment	Control	Difference	P-value
Pre-treatment outcomes				
Export value ($'000)	1,796.5	2,204.4	-407.9	0.61
	[4,782.3]	[6,784.4]	[803.7]	
Export value (IHS)	8.46	8.41	0.05	0.96
	[7.13]	[7.06]	[0.97]	
Probability of export	0.60	0.60	-0.01	0.93
	[0.49]	[0.49]	[0.07]	
Export quality ($)	27,490.3	22,976.1	4,514.2	0.19
	[18,183.7]	[15,885.3]	[3,390.3]	
Pre-treatment secondary outcome				
Practices total score	44.4	53.1	-8.7	0.01
	[21.3]	[19.4]	[3.4]	
Pre-treatment characteristics				
Number of employees	100.8	68.9	32	0.43
	[387]	[105.3]	[40.53]	
Average salary	17,511.1	18,460	-949	0.45
	[8,675.8]	[8,988.7]	[1,265]	

Table 2 – Main results

Export value ($'000)		
	2018	406.4
		[268]
	2019	1,078
		[729.6]
	2020	401.4
		[578.7]
	2021	697
		[747.9]
Export value (IHS)		
	2018	0.39
		[0.59]
	2019	-0.38
		[0.77]
	2020	0.11
		[0.87]
	2021	-0.38
		[0.89]
Probability of export		
	2018	0.04
		[0.04]
	2019	-0.03
		[0.06]
	2020	0.01
		[0.07]
	2021	-0.03
		[0.07]
Export quality ($)		
	2018	-335.2
		[1,610]
	2019	953.2
		[2,331]

	2020	-1,934
		[2,360]
	2021	-2,675
		[2,473]
Observations		195 / 99 (for export quality)
Strata FE		YES
Number of employees control		YES
Average salary control		YES

Note: Robust standard errors in parenthesis. Export quality is only defined for firms that exported during the baseline year.

Table 3 – Impact on practices

	LATE
Practices total score	2.23
	[3.06]
Components of practices	
Strategy	2.91
	[3.32]
Market research and segmentation	1.26
	[3.89]
Product design and adaptation	-1.05
	[4.13]
Production	-1.97
	[3.01]
Communication	-0.95
	[3.48]
Distribution	3.53
	[4.01]
Administration	6.68**
	[3.05]
Strategy package	4.18
	[3.23]
Observations	137
Strata FE	YES
Number of employees control	YES
Average salary control	YES
Note: Robust standard errors in parenthesis.	

Table 4 – Heterogeneous treatment effects

	Elaborated	Primary	Over the median total practices score	Below the median total practices score	Over the median # of employees	Below the median # of employees
Export value ($'000)						
2018	347.3	5.1	413.1	111.1	865.2	105
	[287.3]	[332.9]	[297.4]	[90.8]	[602.5]	[149.8]
2019	1,115	-598.9	522.2	-1.8	3,037*	-276.1**
	[726]	[551]	[588.1]	[134.7]	[1,800]	[136.4]
2020	777.9	-554.6	-418	-1.9	1,222	-120.8
	[613.1]	[534.8]	[372.5]	[222.3]	[1,408]	[170.6]
2021	756.5	-249.6	24.8	-57.7	1,676	-124.7
	[756.5]	[863]	[518.4]	[319.7]	[1,760]	[397.3]
Export value (IHS)						
2018	0.70	-1.65	0.34	0.25	0.58	0.10
	[0.74]	[1.03]	[0.35]	[1.00]	[0.93]	[0.78]
2019	1.43	-3.81	1.62	1.08	-0.80	-0.23
	[0.84]	[2.48]	[1.10]	[1.14]	[0.97]	[1.10]
2020	1.51	-4.75*	-0.39	1.51	-0.65	0.39
	[0.87]	[2.45]	[1.38]	[1.33]	[1.27]	[1.15]
2021	0.87	-4.71*	-0.97	1.74*	-0.81	-0.64
	[1.00]	[2.49]	[1.42]	[1.37]	[1.28]	[1.16]
Probability of export						
2018	0.06	-0.11	0.02	0.2	0.04	0.03
	[0.06]	[0.08]	[0.03]	[0.08]	[0.07]	[0.07]
2019	-0.01	-0.25	0.04	0.04	-0.08	-0.01
	[0.07]	[0.18]	[0.09]	[0.09]	[0.07]	[0.09]
2020	0.11	-0.33*	-0.01	0.07	-0.06	0.03
	[0.08]	[0.18]	[0.11]	[0.10]	[0.10]	[0.09]
2021	0.06	-0.33*	-0.05	0.13	-0.06	0.01
	[0.08]	[0.18]	[0.11]	[0.11]	[0.10]	[0.09]
Export quality ($)						
2018	1,082	-622.4	-1,220	1,157	-1,228	-433.4
	[2,069]	[3,588]	[2,230]	[4,663]	[1,605]	[3,001]
2019	247.6	9,858	-654.4	-2,534	-467	-256
	[3,113]	[8,952]	[3,953]	[6,777]	[3,126]	[3,821]
2020	1,398	-1,970	-1,997	-3,492	-37.5	-3,202
	[2,728]	[4,968]	[2,777]	[7,827]	[2,397]	[4,284]
2021	-745	-174	-3,734	-2,538	-686.9	-4,746
	[3,119]	[6,783]	[3,404]	[7,038]	[2,756]	[3,908]

	Elaborated	Primary	Over the median total practices score	Below the median total practices score	Over the median # of employees	Below the median # of employees
Observations	140 / 70 (export quality)	155/29 (export quality)	73 / 51 (export quality)	64 / 18 (export quality)	98 / 59 (export quality)	97 / 40 (export quality)
Strata FE	YES	YES	YES	YES	YES	YES
Number of employees control	YES	YES	YES	YES	YES	YES
Average salary control	YES	YES	YES	YES	YES	YES

Note: Robust standard errors in parenthesis. Export quality is only defined for firms that exported during the baseline year.

Annex I - 20 good exporting practices

Area A: Strategy

The "Strategy" area includes the definition of the export role and the planning of the export business as a growth channel of the company.

Practice 1: Definition of the export role. This practice includes the definition and explanation of the role of the export activity for the business of the firm - the firm's growth channel, risk diversification channel, channel for the placement of surplus products from the domestic market, among others. Explaining the role of exporting allows firms to define the role that exporting plays in its business.

Practice 2: Planning the export business as a growth channel for the firm. This practice includes planning the firm's export business and systematically surveying, processing and analyzing information about its capabilities and resources. It involves detecting the need to develop capacities and resources to carry out the planning and setting objectives in each of the functional areas. It also includes the subsequent monitoring of how the implementation of the planning is going. This allows them to define which are their strategic priorities - how relevant are the export market and the domestic market to the firm; which objective it pursues with exporting - and align the different areas of the firm for pursuing them. Specifying the strategic priorities and the role of exporting for the firm's business allows it to build commitment to the different functional areas. At the same time, it allows it to establish objectives that guide the operation of those functional areas.

Area B: Market identification and segmentation

The area "Market identification and segmentation" includes practices related to the analysis of export markets (potential and current). This area includes market evaluation and segmentation practices, as well as defining the positioning in the selected market.

Practice 3: Market evaluation. This practice consists in the systematic analysis of external markets and the selection of target markets. The analysis (or evaluation) of the markets consists of gathering information from them in terms of demand, distribution channels, competition, prices, regulations and prospects for market growth. The selection of the target market is the definition of the markets to which to go. The exporting firms must deeply know the external markets in the mentioned terms since this allows them to make strategic decisions linked, among others, to the external market and the market segment to which to go to in each of those markets, to the product to be commercialized, to the positioning of the product in the selected segment and to the distribution channels (Barkema et al., 1997; Milesi et al., 2007). In the domestic market, firms do not usually carry out systematic market research because they know the general characteristics of the market since they are operating in it.

Practice 4: Market segmentation. This practice consists in evaluating the different groups of buyers from a combination of different variables of interest used as a base (geographical, demographic, psychographic - social class, lifestyle, personality - and behavioral - purchase opportunity, usage rate, sought benefits, etc. -) and in characterizing the demand in buyer profiles. It implies acquiring a deeper knowledge of the target markets. The exporting firms must have the greatest possible knowledge of the functional, symbolic and aspirational needs - and preferences, tastes and consumption habits of the buyers given that this allows them to segment the market. At the same time, the segmentation requires a new survey of information more oriented towards the particular characteristics of the targeted segment. Having this specific knowledge of the characteristics of the demand is important for the exporting companies because it allows them to understand to what extent their products meet those needs and preferences and what they must modify in order to have their products accepted by that segment. Segmenting the market, at the same time, allows the companies a better review of the product design, which allows a better performance of the product in the target market, favoring the export performance of those products.

Practice 5: Defining the positioning in the selected market. This practice consists in identifying the differentiating elements of the firm' products with respect to those of the competition. It involves understanding the functional, symbolic and aspirational needs of the consumers that the firm seeks to satisfy with its products and defining with what elements or attributes it will serve them. The exporting firms must establish a clear positioning in the market since this acts as a guide for the definition of numerous aspects of production, communication and distribution of the product. Positioning allows firms to make decisions under a specific line of differentiation in relation to the competition. Explicitly establishing what differentiates the firm's products from competition facilitates consistency in product decisions, communication and marketing of these. This requires a thorough analysis of the demand in the target market segment.

Area C: Product design and adaptation

The "Product design and adaptation" area covers practices related to export product analysis, including product design review practices and product design adaptation.

Practice 6: Definition of the product design. This practice consists of planning the products to be marketed in the foreign markets based on the market segmentation carried out and the positioning sought. The review of the product design involves carrying out evaluations of the export potential of the products and developing new products or defining adaptations to existing ones to meet the needs and preferences of consumers in foreign markets. Also, it involves considering the technical issues of approvals or certifications required in foreign markets. The product design review is crucial for exporting companies because it is the instance in which the viability of their products - usually

already marketed in the domestic market - is defined for foreign markets. The review of the product design allows companies to deliberately address the cultural and idiosyncratic differences by materializing them into product attributes decisions. Additionally, adopting this practice entails working together with the production area, as it must fully understand the reasons that justify the attributes of the products and control that they are carefully taken care of in the production process (Artopoulos et al. 2013). Therefore, it contributes to improving the final quality of the products, thus favoring both the productivity and the export performance of the firm (Milesi et al., 2007; Atkin et al., 2017).

Practice 7: Adaptation of the product design. This practice is the implementation of the decisions derived from the review of the product design. That is, designing and developing the product in a professional way, whether they are new products or modifications to existing ones. It involves hiring design professionals and using tools and processes to adapt the design of the products according to the tastes and needs of the external markets surveyed, documenting, at the same time, the decisions taken. The professionalization of the design and product development is key for exporting companies because it allows them to market products in the external markets whose differentiating attributes were decided on the basis of multiple analysis of the market segment and, at the same time, of the technical possibilities of production and supply of the company (Milesi et al., 2007, Artopoulos et al. , 2011, Artopoulos et al., 2013, González et al., 2012, Atkin et al., 2017). In many cases, the adaptation of the product design requires introducing improvements in the production process tending to increase the final quality of the goods.

Area D: Production

The "Production" area includes practices related to the supply of inputs and production processes. This area includes the practices of production planning, assuring product quality and generating of commitments with suppliers.

Practice 8: Production planning. This practice consists of organizing the production of the company in order to comply with the delivery and replacement times of the products required in foreign markets. Foreign markets, mainly the markets of developed countries, are rigorous when it comes to fulfilling the delivery and replacement times of the products. Many industries have a specific commercial calendar for each product that must be internalized by exporters. Therefore, exporting companies must have tools that allow them to plan their production and adequately meet the delivery deadlines assumed with their customers. One way to carry out this practice is, for example, adopting computer systems for production planning and inventory management and carrying out surveys of information on the delivery and sale times (organization of seasons) of the products.

Practice 9: Ensuring the quality of the products. This practice consists in guaranteeing the production of goods with the quality required by external markets. It includes, at the same time, ensuring consistent quality over time. The exporting companies must obtain quality levels according to the international standards demanded in the external markets. For this they must make the necessary changes in their inputs and production processes. In the domestic market of developing countries, in general, local customers do not have quality requirements with producers. Companies that produce and market defective products are not usually sanctioned by customers and consumers. In developed markets, however, consumers demand high quality standards and reject products that do not comply with them (Artopoulos et al., 2011, Atkin et al., 2017). The exporting companies must understand the importance of guaranteeing the continuity of the production of quality goods. Ensuring the quality of the products, as mentioned above, contributes to the productivity and export performance of the company. Several works on exporting emphasize the quality of the products as a determining factor in the export success of companies (Milesi et al., 2007, Easterly & Reshef, 2010).

Practice 10: Generating commitment with suppliers. This practice consists of the establishment of medium and long-term commitment relationships with respect to the supply in form and time, as well as with regard to product development with suppliers (or potential suppliers) of the main inputs for export products. Having suppliers committed to deliver in a timely manner is crucial for export companies. The suppliers' commitment with their products' quality is what allows the company to obtain inputs with consistent quality over time. The delivery of the supply in time allows the company to carry out its production plans and, consequently, the deliveries to the distribution channels within the agreed deadlines. Adopting this practice favors the adoption of practices for planning and ensuring quality of the products. At the same time, the commitment of the suppliers with the joint work that derives from the development of inputs for new product developments allows the company to expand its productive possibilities. In addition, these relationships with suppliers, based on the commitment, make it possible to have a frequent exchange of information on the innovations in inputs or materials that feed back on the product design decisions. A good export practice is to make important efforts to establish a personal and professional relationship with the suppliers of the main inputs with the objective of intensifying commitment.

Area E: Communication

The "Communication" area includes the practices of corporate identity management, redesign or packaging and complements and development of dissemination actions with the distribution channels.

Practice 11: Corporate identity management. This practice includes the development of the SMEs corporate identity. Corporate identity is a tool that SMEs use to communicate a coherent message to distribution channels, customers and consumers in their different communication media (brand,

packaging, web, brochures, catalogs). Adopting this practice involves reviewing existing brands in order to validate not only the possibility of the registration and use of the company's brand in foreign markets but also the potential for their acceptance. Eventually, it involves creating new brands for foreign markets. The management of a corporate identity is important for exporting SMEs because it allows them to communicate coherently the differentiating elements of their products with respect to competitors. In foreign markets, it is key for SMEs to have a unified communication of their differentiating elements given that neither distribution channels nor consumers have a formed opinion on them.

Practice 12: Redesign of packaging and accessories. This practice consists of adapting the packaging of the products to ensure the preservation of the quality of the products, facilitate their transfer and adapt the labels (language, mandatory information, adaptation of metrics). In addition, it includes the design of product complements such as user or product care manuals. Exporting SMEs must redesign the product packaging, adapting it to the use and technical requirements of the external markets. Addressing the technical requirements implies adapting the information that must be included in the labels of the products and the presentation of the products in the containers approved for them in foreign markets. The redesign of packaging must meet, at the same time, the requirements for adequate storage in international transport. The latter allows to avoid damages to the products, as well as to reduce the delivery times of these.

Practice 13: Development of dissemination actions with the distribution channels. This practice consists of the development of actions to disseminate the brands and products of the company with the distribution channels in foreign markets. Dissemination actions include actions of a different nature, for example, of an advertising or informal dissemination. Joint actions with distribution channels are often a challenge for exporting SMEs not only because of financial resources but also because of the trust relationships they demand. However, they are a key aspect for the success of their international insertion. Distribution channels are the main informants of trends and changes in consumer behavior in foreign markets. Developing together with the channels the dissemination actions guarantees exporting SMEs that their brands and products are known in the market, which contributes to their export performance.

Area F: Distribution

The "Distribution" area covers the evaluation and selection of distribution channels, building trust and a relationship of commitment to these channels, logistics management for the delivery of products in the correct time and form and provision of after sales services.

Practice 14: Evaluation and selection of distribution channels. This practice includes the analysis and selection of the distribution channels in terms of their ability to represent the company's brand and

products in the foreign market. The analysis considers each distribution channel's territorial coverage, the mix of products it commercializes, the storage capacity, the profile of the clients represented, the commercial promotion practices used and the number of dedicated employees to sales, among others. The exporting firms must carry out a rigorous analysis of the distribution channels because they are the ones that guarantee the placement of their products in the foreign markets. The selection of distribution channels in foreign markets should be adapted to the delivery and replacement capabilities of the export company's products and should consider the intended profit margins.

Practice 15: Building trust with the distribution channels. This practice consists in the establishment of trust links with the distribution channels in foreign markets. A relationship established on the basis of trust links between exporting firms and distribution channels is essential to develop an export market in the medium term (Artopoulos et al., 2013, González et al., 2012). The exporting firms must pay special attention to the construction of the relationship with the distribution channels because they fulfill a double role. As mentioned above, they are strategic partners in the positioning of the products in the target market. And, at the same time, they are privileged sources of information. Also, Milesi et al. (2007) state that successful export firms maintain a smooth communication with their customers through visits and invitations. Firms that adopt this practice organize several activities to show that they are reliable and that they deliver reliable products.

Practice 16: Building a relationship of commitment with the distribution channels. This practice consists in the establishment of a medium- and long-term relationship of commitment with the distribution channels in foreign markets by complying with contracts and agreements. Also, the commitment involves maintaining a smooth exchange of information on the behavior of buyers in the foreign market or possible opportunities for new markets.

Practice 17: Logistics management for the delivery of the products in a timely manner. This practice consists of managing the logistics of the firm to ensure the delivery of the products to the distribution channels in a timely manner. As mentioned above, the fulfillment of the delivery and replacement times of the products to the distribution channels is required by the foreign markets. The exporting firms must not only plan their production to meet the delivery deadlines assumed with their customers, but must implement the necessary processes to efficiently manage their inventories.

Practice 18: Provision of after sales services. The provision of after-sale services consists of offering guarantees to the distribution channels or customers over the products marketed. After-sale services add value to the product, which is why export firms must incorporate them, complementing the commercialized product. These must take into account the terms of the guarantees in the target market and on the basis of this define a guarantee policy (to distribution channels and to consumers).

Area G: Administration

Finally, the "Administration" area comprises the practices adaptation of the administrative structure and systems of the company to carry out the export activity and the establishment of a pricing and financing policy for the distribution channels.

Practice 19: Adaptation of the administrative structure and systems. This practice consists of adapting the administrative structure and systems of the company in order to meet the requirements of foreign trade operations. On many occasions, this implies the implementation of modern accounting systems and financial circuits for the movement of funds with foreign companies. Milesi et al. (2007) argue that the export success of firms is associated, among other factors, with an adequate adaptation of the administrative structure and systems of the company.

Practice 20: Establishment of a pricing and financing policy for distribution channels. This practice consists in the implementation of differential pricing and financing policies for distribution channels in foreign markets. It involves setting discount or financing policies for these channels. Exporting firms must know the cost structures of products before establishing relationships with potential distribution channels, as this allows them to set pricing policies that offer attractive profit margins.

Annex II - Stratified randomization process

The randomization process among eligible applicants took place in two steps. First, using inscription and administrative data, we generated strata based on location and employment. We divided the sample in two groups according to location: firms from Buenos Aires, Santa Fe, or Córdoba (we call this group "Pampas Area"), and firms from the rest of the country. This left 90 firms from the Pampas Area and 123 from the rest of the country. Within each of these two groups, we stratified in 9 groups according to employment. We created 9 groups of 10 firms from the Pampas Area, and, from the rest of the country, we created 7 groups with 14 firms, one group with 13, and another group with 12. We randomly assigned the size of the group to firms from the rest of the country. Then, within each bin we randomly assigned the technical assistance. For firm groups in the Pampas Area, we randomly assigned 5 firms to technical assistance and 5 to control. For firms in the rest of the country, we randomly assigned 7 firms to technical assistance and the rest to control, except for the group with 12 firms, in which we randomly assigned 6 firms to technical assistance and the rest to control.

Table A1 - T-test of attrition analysis

	Treatment	Control	Difference	P-value
Within non attritors				
Export value (IHS)	7.93	8.31	-0.38	0.75
	[7.06]	[7.14]	[1.17]	
Probability of export	0.57	0.59	-0.02	0.81
	[0.50]	[0.50]	[0.08]	
Export variety	6.47	5.59	0.88	0.70
	[15.15]	[11.92]	[2.25]	
N	77	71	148	
Export quality	27,506	23,655	3,851	0.35
	[18,274]	[16,235]	[4,126]	
N	34	36	70	
Employment	104	75	-29	0.60
	[52.8]	[14.5]	[56.5]	
N	71	66	137	
Within total sample				
Proportion of non attritors	0.72	0.67	0.05	0.43
	[0.45]	[0.47]	[0.06]	
N	107	106	213	
	Non attritors	Attritors	Difference	P-value
Between non attritors and attritors				
Export value (IHS)	8.11	9.17	-1.05	0.32
	[7.08]	[7.08]	[1.05]	
Probability of export	0.58	0.65	-0.07	0.37
	[0.50]	[0.48]	[0.07]	
Export variety	6.05	6.17	-0.12	0.95
	[13.66]	[12.23]	[1.97]	
N	148	65	213	
Export quality	25,526	24,208	1,317	0.72
	[17,238]	[16,965]	[3,701]	
N	70	31	101	
Employment	90	72	-18	0.68
	[28.1]	[14.5]	[44.4]	

N	137	58	195

Table A2 - Post-treatment characteristics

Post-treatment	**Mean**	**SD**	**Min**	**Max**	**p10**	**p25**	**p50**	**p75**	**p90**	**N**
Total practices	56.0	22.4	6	98	25	38	58	74	84	148
Treatment	54.4	22.4	10	97	23	37	57	73	84	77
Control	57.6	22.4	6	98	29	42	60	76	84	71

Table A3 - Impact on 20 export practices

	ITT	LATE
Strategy		
Practice 1	7.65	7.750*
	[4.678]	[4.701]
Practice 2	5.926	6.004
	[4.454]	[4.478]
Market identification and segmentation		
Practice 3	6.398	6.483
	[4.182]	[4.199]
Practice 4	5.209	5.278
	[5.109]	[5.134]
Practice 5	4.796	4.859
	[5.107]	[5.132]
Product design and adaptation		
Practice 6	3.285	3.328
	[4.941]	[4.965]
Practice 7	1.079	1.093
	[5.684]	[5.712]
Production		
Practice 8	0.838	0.849
	[5.202]	[5.226]
Practice 9	5.667	5.741
	[4.974]	[5.003]
Practice 10	2.502	2.535
	[4.946]	[4.972]
Communication		
Practice 11	0.948	0.96
	[4.398]	[4.420]
Practice 12	1.657	1.679
	[5.591]	[5.620]
Practice 13	4.5	4.559
	[4.676]	[4.703]
Distribution		
Practice 14	18.96***	19.21***

	ITT	LATE
	[4.836]	[4.881]
Practice 15	8.762	8.877
	[6.321]	[6.358]
Practice 16	8.981*	9.099*
	[4.941]	[4.968]
Practice 17	12.12**	12.28**
	[5.217]	[5.247]
Practice 18	-4.895	-4.959
	[5.588]	[5.605]
Administration		
Practice 19	8.286*	8.395*
	[4.465]	[4.496]
Practice 20	8.458**	8.569**
	[4.242]	[4.279]
Observations	296	296
Clusters	148	148

Standard errors clustered by firm

*** p<0.01, ** p<0.05, * p<0.1

Table 4 examines the impact that the consulting had on the adoption of each of the 20 good exporting practices. Consistently with the area-level analysis we find that the practices that exhibit a statistically significant increase are those included in the areas where we also find a significant increase. From the practices in the Strategy Area, we found a statistically significant increase in Practice 1 (Definition of the export role) of 7.8%. From the practices in the Distribution area, we found a statistically significant increase in Practice 14 (Evaluation and selection of distribution channels) of 19.2%, in Practice 16 (Building a relationship of commitment with the distribution channels) of 9.1% and Practice 17 (Logistics management for the delivery of the products in a timely manner) of 12.3%. From the practices in the Administration Area, we found a statistically significant increase in Practice 19 (Adaptation of the administrative structure and systems) of 8.4% and in Practice 20 (Establishment of a pricing and financing policy for distribution channels) of 8.6%.