

# Cooperation agreements in the food chain: win-win relationships for a more sustainable chain. The case of Mercadona

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**ABSTRACT:** The aim of this paper is to study the impact of cooperation between operators in the food supply chain. And particularly between two of the operators (retailers and suppliers) whose relationship, given the asymmetry between them, has often been questioned and labelled as unequal, favouring the stronger party. Specifically, we will analyze the most demanding type of agreement for suppliers, as it involves exclusive supply. This paper aims to study whether the collaborative relationships between these two food chain operators benefit both parties equally and, therefore, contribute to the economic sustainability of the chain. To this end, we analyze whether it is worthwhile for a supplier in the retail grocery sector to develop a long-term exclusivity collaboration agreement with a retailer to whom they sell their entire production or most of it (exclusive key retailer account). For this purpose, we have analyzed Mercadona's suppliers, the largest food distribution company in Spain, at a time when their relationship was based on exclusivity. Through inferential statistics and a logistic panel regression, a comparison of Mercadona's exclusive suppliers with two control groups (subsector and non-Mercadona intersuppliers obtained by matching) has been carried out.

The results suggest that this type of exclusive collaboration agreement, in the case of Mercadona with its exclusive suppliers, is beneficial and profitable for the weaker party, the supplier. Our findings provide evidence that collaboration and cooperation between suppliers and retailers can provide a win-win relationship, the key to which is maintaining effective cooperation between both parties in order to accomplish common goals.

**KEYWORDS:** Cooperation agreement; Supplier management; key retail account; retailer-supplier partnership, performance; exclusivity; Mercadona.

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**RESUMEN:** El objetivo de este trabajo es estudiar el impacto de la cooperación entre los operadores de la cadena alimentaria. Y en particular, de los acuerdos de suministro entre dos de ellos (distribución alimentaria y proveedores) cuya relación, dada su asimetría, ha sido a menudo cuestionada y tachada de desigual, por favorecer a la parte más fuerte. En este sentido, este estudio pretende analizar si los acuerdos entre la distribución y sus suministradores, y concretamente los más exigentes para los suministradores, por comportar el suministro en régimen de exclusividad, pueden ser beneficiosos para ambas partes, y contribuir a su sostenibilidad económica. Para ello, se ha analizado el conjunto de proveedores de Mercadona, mayor empresa de distribución alimentaria de España, en la época en la que el modelo de relación de una parte de los mismos se basaba en acuerdos de exclusividad. Utilizando la estadística inferencial y la regresión logística de panel, se ha efectuado una comparación de los suministradores en exclusiva de Mercadona con dos grupos de control (empresas del sector al que pertenece cada interproveedor, y no interproveedores de Mercadona obtenidos por matching).

Los resultados sugieren que este tipo de acuerdos de colaboración en exclusiva, en el caso analizado protagonizados por Mercadona con sus entonces interproveedores, son beneficiosos y rentables para la parte más débil, el proveedor. Nuestras conclusiones aportan evidencia de que la colaboración y la cooperación entre operadores de la cadena (proveedores y distribuidores), puede proporcionar una relación beneficiosa para ambas partes, cuya clave es mantener una cooperación eficaz para lograr objetivos comunes.

**PALABRAS CLAVE:** Acuerdo de cooperación, colaboración, gestión de proveedores, cuenta clave del distribuidor, asociación distribuidor-proveedor, exclusividad, Mercadona.

# Resumen amplio

## Acuerdos de cooperación en la cadena alimentaria: relaciones *win-win* para una cadena más sostenible. El caso Mercadona

### Objetivos

El objetivo de este trabajo es estudiar el impacto de la cooperación entre los operadores de la cadena alimentaria, y en particular, el realizado a través de acuerdos de suministro entre dos de ellos (distribución alimentaria y proveedores) cuya relación, por asimétrica, ha sido a menudo cuestionada por favorecer a la parte más fuerte. En este sentido, este estudio pretende analizar si estos acuerdos, y concretamente los más exigentes para los proveedores, por comportar el suministro en régimen de exclusividad, pueden ser beneficiosos para ellos mismos, y contribuir a su sostenibilidad económica. Para ello, se ha analizado el impacto de los acuerdos de suministro del conjunto de proveedores de Mercadona, en la época en la que su modelo de relación se basaba en la exclusividad, y que dieron lugar a la denominación de “interproveedor” para este tipo de suministrador. Específicamente, las preguntas que se abordan en este documento son «¿Merece la pena para un proveedor establecer un acuerdo en exclusiva a largo plazo con una firma de la distribución (ExLTP)? ¿Estos acuerdos (ExLTP) contribuyen a aumentar la cifra de ventas de los proveedores? ¿Contribuyen a mejorar su eficiencia? ¿Las inversiones en activos que se realizan a partir de estos acuerdos por parte del proveedor proporcionan beneficios suficientes para compensar los posibles recortes de precios y los costes amortización asociados? Y en concreto, en el caso de los proveedores de Mercadona en exclusiva (antiguos interproveedores), ¿les compensó mantener esta alianza exclusiva con Mercadona?

Además, se estudia qué elementos (de entre los analizados) determinan o influyen en la decisión de un proveedor de establecer un ExLTP.

### Metodología

La población objeto de estudio está formada por los proveedores que tenían un acuerdo de suministro en exclusiva a largo plazo con Mercadona y, en concreto, aquellos que firmaron este tipo de contrato entre 1999 y 2008. Los años analizados corresponden a un periodo en el que una parte de los proveedores de Mercadona tenían este tipo de acuerdos para toda una categoría de productos (los llamados interproveedores). En años posteriores se eliminó la cláusula de exclusividad.

La población analizada está integrada por un total de 110 proveedores (interproveedores). Los datos sobre los mismos y la fecha de firma del acuerdo fueron facilitados por Mercadona.

Los datos utilizados para el análisis fueron las cuentas anuales de los interproveedores y las del resto de empresas de los distintos subsectores comerciales a los que pertenecía cada interproveedor. El periodo analizado abarca siete años, que comprenden los tres años anteriores a la firma de cada acuerdo (N-1, N-2 y N-3), el año de la firma (N) y los tres años posteriores a la firma (N+1, N+2, N+3).

Las hipótesis se validaron comparando la evolución real de los interproveedores de la muestra (ExSup) con dos grupos de control durante el mismo periodo de tiempo. El grupo de control 1 (A) está formado por el conjunto de empresas del subsector al que pertenece cada ExSup, según la Clasificación Nacional de Actividades Económicas (CNAE, 2009). El número total de empresas del grupo de control 1, dividido en 35 subgrupos, ascendió a 15.098.

El segundo grupo de control (B) se formó utilizando la técnica de emparejamiento o *matching* no experimental, (Heckman et al., 1998), identificando para cada interproveedor de Mercadona, entre las empresas del mismo subsector, una empresa de control lo más similar posible en sus características económicas y financieras y que no tuviera un acuerdo de exclusividad con Mercadona (NMSup).

## Resultados

Los ExSup de Mercadona experimentaron un crecimiento de sus ventas significativamente con respecto a los dos grupos de control (sig 1%).

Igualmente, los ExSup de Mercadona se vieron impulsados a realizar inversiones en activos significativamente superiores a los NMSup y a las empresas de sus respectivos subsectores (sig 1%). Sin embargo, estas inversiones también fueron significativamente más rentables que las de los NMSup (5% sig), lo que confirma los hallazgos previos de Corsten et al. (2011), y Yoon & Moon (2019).

Además, los resultados muestran que los ExSup de Mercadona fueron capaces de aumentar su margen de ventas por encima de la media de su subsector y por encima de los NMSup (sig 5%), consecuencia del aumento de la facturación, a la vez que de la reducción del peso de algunos de sus costes. Por otro lado, se produjo un aumento del ratio de coste de aprovisionamientos sobre ventas en relación con el de los NMSup, aunque no estadísticamente significativo, lo que apunta a una progresiva reducción de la relación entre los precios a los que venden sus productos los ExSup a Mercadona frente a los precios pagados por sus inputs.

Sin embargo, esto no supuso reducciones en la rentabilidad operativa (margen de EBITDA) de los ExSup de Mercadona, que aumentó significativamente (5%) con respecto a los dos grupos de control.

Por otra parte, se han identificado los factores que motivan a un proveedor a la hora de establecer un acuerdo de suministro en exclusiva con un distribuidor: aumento de la facturación, la consecución de economías de escala, una gestión más eficiente de los costes, mayor rentabilidad de los activos, mayor margen de beneficios, que compensa la también esperada menor rotación de activos, y finalmente una mayor rentabilidad operativa.

## Limitaciones a la investigación

La principal limitación es que el estudio se centra en los acuerdos en exclusiva de suministro de una firma de distribución alimentaria española, y hay que contemplar que es posible que los buenos resultados de los proveedores se deban en parte a la dinámica específica entre esta firma con sus proveedores. Sin embargo, las diferencias culturales entre países o distribuidores podrían influir en estos acuerdos. Futuros estudios deberían extenderse a otros sectores, países y contextos culturales.

## Conclusiones prácticas y Valor original

El estudio efectuado de los acuerdos de suministro en exclusiva proveedor-firma de distribución alimentaria revelan que esta estrategia de cooperación es provechosa para la parte más débil o dependiente del binomio, el proveedor.

La cooperación ha sido y es uno de los pilares de la cadena alimentaria, lo que se visibiliza con el rol desarrollado por las entidades de economía social (cooperativas y SAT) en el sector agroalimentario, que, como instrumento de unión y colaboración de socios agricultores, generan una facturación en España equivalente al 69% de valor de la Producción Final Agraria (Cooperativas agroalimentarias 2024). Los resultados obtenidos apuntan a que los beneficios de la cooperación se extienden en general a lo largo de los distintos eslabones de la cadena, y específicamente al binomio suministrador-distribuidor. Por otra parte, el hecho de que estos acuerdos, solo sean accesibles a empresas con elevada capacidad de suministro, pone de relieve el rol fundamental que están llamadas a desempeñar en el contexto actual y futuro las cooperativas y SAT agroalimentarias, como forma asociativa concentradora de la producción agraria, convirtiéndose en la puerta de acceso de los productores a la cuota de mercado de las firmas de distribución, la cual como hemos visto no deja de crecer, y en algunos países como Alemania, Holanda, Francia o el Reino Unido, ya representa más del 75% en manos de 5 operadores.

# 1. Introduction

Over the last thirty years, the global retail sector has undergone major changes that have shifted the balance of power from manufacturers to retailers (Hingley, 2005; Juliá et al., 2011, Chambolle & Villas-Boas, 2015; Maglaras et al., 2015). In the agri-food sector, this process has been especially intense (Montegut et al., 2024). The grocery market is now, dominated by a small number of large retailers in many countries; in Europe, for example, four companies control 75%, 64.8%, 68,7%, 72% and 82% of the market in Germany, Great Britain, France, the Netherlands and Austria, respectively (Kantar World Panel, 2024). This situation represents an oligopoly, which has been accompanied by notable market penetration of retailers' own brands (European Commission, 2013).

In this context, retailers are looking for fewer, larger suppliers and there has been a move away from short-term contracting with numerous suppliers, i.e. arm's-length relationships, to closer, longer-term cooperation agreements or partnerships with fewer suppliers, i.e. embedded or collaborative relationships (Charterina et al., 2016; Hingley, 2005; Hingley et al., 2006).

There is evidence that buyer-supplier partnerships (BSPs) create value over and above what can be achieved by simple purchasing interactions, and help to improve the efficiency of the supply chain as a whole for the mutual benefit of all parties involved (Dyer & Singh, 1998; Duffy & Fearné, 2006; Hsu, 2005; Kim & Choi, 2018; Roloff et al., 2015).

In addition to these positive effects, some scholars (Li et al., 2018) point out that there is also a dark side to relationships in vertical supply channels (such as food) as these are often unequal and favor the stronger party (Hofer et al., 2014), which can reveal opportunistic behavior, thus having a detrimental effect on the sharing of partnership benefits (Duffy & Fearné, 2006).

Key account management focuses on establishing and managing long-term business relationships with important customers that offer a competitive advantage to firms (Kumar et al., 2019). However, having key retail accounts (KRAs), where a KRA represents a large portion of a supplier's sales, has many implications and influences supplier performance (Hofer et al., 2012). Some KRAs are based on exclusivity agreements, whereby a supplier agrees to sell its entire production or the majority of it to a single retailer.

An example of this type of exclusive supplier-retailer relationship is the case of Mercadona, the undisputed Spanish retail leader with a 26.8% market share (Kantar World Panel, 2024). Mercadona's business model has been built largely on the basis of the close relationship it maintains with some of its suppliers (known as intersuppliers) which, for many years, has been based on a relationship of exclusivity or quasi-exclusivity. However, many have pointed to opportunistic behavior on the part of Mercadona in these relationships, indicating that it takes advantage of the power it has over its intersuppliers' high dependence to reduce prices and reap a high share of channel profits at their expense.

The questions addressed in this paper are "Is it worth it for a supplier to engage in an exclusive long-term partnership with a key retail account customer (ExLTP)? Do ExLTP in the agri-food chain improve suppliers' sales? Do these relationships improve suppliers' efficiency? Do

they provide sufficient profits to offset the potential price cuts pointed out by several organizations, and the depreciation costs associated with the frequent asset investments they are often required to make? And specifically, in the case of Mercadona's intersuppliers, is it worth them having this exclusive alliance with Mercadona?

In addition, we study which goals (out of those analyzed) determine or influence the decision of a supplier to establish an ExLTP.

Our results indicate that Mercadona's exclusive intersuppliers, that is suppliers with a long-term exclusivity agreement with a KRA (ExSup) increased their sales and made greater investments in assets than the companies in their same subsector sales volume quartile. They also had higher operating profitability. Comparing the evolution of Mercadona's exclusive intersuppliers with non-Mercadona intersuppliers, we found that intersuppliers significantly increased their sales, their investment in assets, their ROA and their operating profitability compared to non-Mercadona intersuppliers, as a consequence of improvements in cost efficiency, especially in staff costs and other operating expenses, though these did not extend to the cost of goods sold, which were higher in intersuppliers than in non-Mercadona intersuppliers. This implies that the increased input costs of ExSup were not offset by proportional increases in the selling prices, which confirms the aforementioned price cuts made by retailers. However, improvements in sales and more efficient cost management (of staff and other operating costs) offset the negative evolution of the cost of goods sold, with consequent improvements in operating profitability compared to the rest of the subsector and to non-Mercadona intersuppliers. Our results suggest that exclusivity deals with KRAs are a profitable strategy for suppliers. Our results point at a collaborative model, in which both parts are profitable. These results endorse the cooperation strategy as an ideal strategy for generating value for the different actors in the food value chain and contributing to correcting their asymmetries.

Lastly, the variables that determine or influence the decision of a supplier to establish an ExLTP are increased business volume (sales and assets), greater economies of scale and better cost management (in terms of staff costs and finance), higher returns on assets as a consequence of higher profit margins, which offset the lower asset turnover, and lastly, higher operating profitability.

The rest of the paper is organized as follows: in Section 2, we review the most relevant literature on buyer-supplier partnerships and their performance, and we establish our hypotheses. Section 3 provides a description of the data sources, variables and control groups, and the methodology used. In section 4, we present the results of our empirical analysis and the discussion. In sections 5, we offer our conclusions, managerial implications, limitations of our study and options for future research.

## 2. Literature review and hypothesis development

### 2.1. Retailer-supplier relationships

Relationships between suppliers and buyers have changed over the last few decades and, although there is no single dominant relationship type (Pawlak, 2009), retail concentration in the agri-food sector and the reduction in the number of its suppliers (Shin et al., 2000) have changed the conditions of buyer-supplier transactions, shifting from mere trading relationships to more committed, stable partnerships.

In this regard, Cowan et al. (2015) distinguished between inter-firm relationships and partnerships. Relationships, named by some scholars as arm's-length, transaction or exchange-oriented relationships, focus on the immediate benefit of the actors. They are often considered as adversarial, cold, impersonal and opportunistic, with individual firms seeking to achieve cost reductions or improve profits at the expense of their buyers or suppliers (Duffy & Fearné, 2006; Kim et al., 2015; Uzzi & Lancaster, 2003). On the other hand, partnerships, also known as embedded, cooperative or collaborative relationships, are long-term relationships based on commitment, and sharing information, rewards and risks (Mitchell & Kovach, 2016; Pawlak, 2009). They help to improve the efficiency of the supply chain as a whole, benefiting all the parties involved (Duffy & Fearné, 2006; Leuschner et al., 2013; Roloff et al., 2015).

However, when the relationship takes place in a context of high dependency, its effects may be impaired. In fact, while some dependency relationships are balanced, symbiotic, cooperative and mutually beneficial, there is another perspective of dependency, which is associated with the use of coercive strategies, adversarial relationships and negative performance outcomes (Hofer et al., 2012).

### 2.2. Mercadona and its exclusive suppliers

Spain is an EU country with a high concentration of retailers in the agri-food sector -the share of the four biggest operators is 47,7% (Kantar World Panel, 2024)- and a large number of retailer own brands (ROBs). In fact, Spain is the European country with the largest share of ROBs (52%), ahead of Switzerland (51%), the UK (47%), and Germany (45%) (Cuneo et al., 2019). Mercadona is the undisputed retail leader with a 26.8% market share, followed by Carrefour with 10.4% and Lidl with 6.4% (Kantar World Panel, 2024). Moreover, in 2019, Mercadona expanded its operations into Portugal, where it already has more than 49 supermarkets and this number is expected to rise to 60 by the end of 2024.

Mercadona is a family-owned firm which started out in 1981.

Suppliers have historically been a key part of Mercadona's success, and they included a special category created by the company called "intersuppliers". These firms shared Merca-



dona's Total Quality Management philosophy, and their relationships with Mercadona were long-term and indefinite, with a willingness to undertake activities jointly. This required the exclusive manufacturing of some products as a result of the relationship of mutual trust and cooperation between both companies (Miguel & Santiago, 2010). Each intersupplier's exclusivity contract with Mercadona was not made for individual products, but for an entire product category (dairy, meat, cleaning, etc.) or a group of products. As a result, approximately 120 intersuppliers exclusively manufactured the entire range of Mercadona's own brands (Hacendado, Bosque Verde, Deliplus, etc.) in complete product lines. These brands, due to their high share of Mercadona's sales (62.9% in packaged products alone, in 2020), are a key element of its business results (Food Retail & Shoppers, 2021).

However, over time, the shortcomings of some intersuppliers in meeting Mercadona's demands for certain specific products led to changes in Mercadona's procurement. In 2012, a new supplier category was added, that of the "specialist supplier", with whom purchase agreements are established for specific products, such as products that are only sold in a particular geographical area. Subsequently, a new change was made to the figure of the intersupplier, eliminating the exclusive product category contracts.

Mercadona is an ideal subject for the study of supplier-retailer relationships in a high dependency context, conditioned by exclusivity arrangements, insofar as before these changes were introduced, most of the intersuppliers sold more than 70% and often all of their production to Mercadona, although admittedly many of them continue to do so today.

## 2.3. Supply-chain relationships with key retail account (KRA) customers

Key accounts (KA) -also known as global accounts or strategic accounts- are identified by the selling company as their most important customers and serviced by them with dedicated resources (Richards & Jones, 2009; Workman et al., 2003). In supplier-retailer relationships, several studies have identified KAs as retailers that represent a large portion of the supplier's sales, establishing this percentage at 10% (Bloom & Perry, 2001; Gosman & Kohlbeck, 2011; Hofer et al., 2014).

The KA strategy is based on the idea that it is attractive to institutionalize a company's dependency on important customers that offer a competitive advantage to firms, as a way of doing business (Kumar et al., 2019; Piercy & Lane, 2006), given that this involves the adoption of collaborative ways of working with key customers rather than traditional transactional and adversarial practices (Davies & Ryals, 2014).

## 2.4. Exclusivity in supplier-retailer relationships

Exclusivity limits a product's exposure to one retailer, and means that the same supplier cannot make a similar product or material for other parties or for its competitors but can produce different items or products (Hancké, 1998).

For retailers it represents the chance to receive goods from exclusive suppliers, reduce search ties, deprive retail competitors of a particular product source or product advantage and thereby achieve further market differentiation in terms of quality, source continuity, confidentiality, and innovative, new product development. It is also believed that they result in greater economies of scale (Hingley, 2005). Gielens et al. (2014) studied exclusivity in the grocery sector and found that it enhances sales for the retailer that has granted exclusivity, given that earnings come from the focal category as well as from customers who complement these purchases with products from other categories thereby positively impacting the focal retailer's performance.

For suppliers, while some authors such as Johnsen & Lacoste (2016) argue that exclusivity brings an opportunity to increase the volume of sales to specific retailers, and can be used to their advantage to limit the consequences of size asymmetry; others, such as Gielens et al. (2014) state that suppliers typically sell less under an exclusive contract compared to an intensive scenario. Moreover, in four out of the five cases they analyzed, the manufacturer (supplier) incurred in gross-profit losses, whereas the focal retailer always gained from the deal. They suggested that to reach a win-win scenario, margin re-negotiations are needed to offset the manufacturer's sales losses from the exclusive deal. Cai et al. (2012) coincide with this line of reasoning, pointing to the need for retailers to share revenue with suppliers to balance out this exclusive deal strategy.

## 2.5. Impact of having an exclusive KRA on suppliers' business growth

Supplier motivation for maintaining a KRA depends on the benefits obtained. Sweeney & Webb (2002) divided the supplier and buyer benefits of a partnership into seven categories (operational, symbiotic, economic, customised, strategic, psychological and social), and found that suppliers are more 'outcome' oriented, preferring economic and strategic benefits to process benefits. Some of the most visible benefits are to increase sales, gain a better market position (Sukoco et al., 2018), and the assurance that turnover will remain stable over time (Luo et al., 2015). With reference to specific relationships with KRAs, Dukes et al. (2006) and Gosman & Kohlbeck (2011) found that KRA suppliers increased sales. Sales growth as an outcome of BSPs can have different origins. On one hand, it can come from a greater ability to respond better and faster to customer needs and problems because of the cross-functional sharing of market information (Martin & Grbac, 2003). Conversely, it can come from the positive influence on process, product and service quality (Charterina et al., 2016; Joshi et al., 2017), which helps to serve customers better than competitors do (Kim, 1999). At the same time, suppliers can expect sales growth thanks to the larger size of the retailer and the market it supplies. This effect is magnified if the alliance with the supplier is based on the supply of a product line solely for the retailer, since all the demand for it will flow through that supplier. Based on the above, our first hypothesis is as follows:

- **Hypothesis 1.** Suppliers with an exclusive deal with a KRA (Mercadona intersuppliers) achieve greater business growth than the companies in their same sales quartile and subsector and than non-Mercadona Suppliers (NMSup).

## 2.6. Impact of having an exclusive KRA on assets investments and on Return on Assets

In retailer-supplier partnerships, it is common for suppliers to have to invest in tangible and/or intangible assets (Huang & Huang, 2019), in order to increase transaction volumes or production operation improve product quality and delivery performance, increase product and process innovations, enhance cost performance (Brown et al., 2009; De Vita et al., 2010; Corsten et al., 2011), and reduce stock (Dyer & Sing, 1998), to give just a few examples, all of which contribute to retailer performance. Relation-specific assets (RSA), which are the principal focus of transaction-cost economics (Williamson, 1979), are specific assets that are difficult or expensive to transfer to other relationships, or are investments that may lose value when used in alternative relationships (Grover & Malhotra, 2003; Yoon & Moon, 2019).

A supplier's willingness to invest in RSA depends on its identification with the buyer. Corsten et al. (2011) argued that suppliers who identify with buyers are more likely to deploy RSA, mainly because they have expectations of obtaining a satisfactory return on their investment. RSA have been proved to be useful in limiting opportunism and reducing the risk of rupture of the partnership (Huang & Huang, 2019). However, when investments are made mainly by suppliers and not by the buyer, RSA increases suppliers' dependence and makes them more vulnerable to opportunism (Krause et al., 2007), increasing the risk that the other party will exploit this dependence. Although a buyer's threat to create a relationship with a new supplier may not sometimes be very credible, considering that this supplier would incur in significant set-up and learning costs (Carey et al., 2011), the risk exists, thus increasing their vulnerability.

Nevertheless, it is important for a supplier, when entering into an exclusive alliance with a retailer requiring major asset investments, to find out whether they are going to get sufficient returns, or at least a return on assets (ROA) that is equal to or superior to the one they would obtain when opting for an arm's-length relationship with the retailer. In this regard, Gosman & Kohlbeck (2011) reported lower return on assets for KRA suppliers. Hence, we propose the following hypotheses:

- **Hypothesis 2.** Suppliers with an exclusive deal with a KRA (Mercadona intersuppliers) invest more in assets than the companies in their same sales quartile and subsector and more than NMSup.
- **Hypothesis 3.** Suppliers with an exclusive deal with a KRA (Mercadona intersuppliers) improve their ROA more than the companies in their same sales quartile and subsector and more than NMSup.

## 2.7. Impact of having an exclusive KRA on suppliers' cost efficiency

Scholars such as Butler et al. (2000), and Roloff et al. (2015) stated that one of the factors that drives vertical coordination in the food chain is the incentives for all parties to reduce costs in the supply chain in order to gain additional margin and performance. Kalwani & Narayandas (1995) demonstrated that suppliers in long-term relationships with manufacturers were able to reduce inventory holding and control costs through more efficient use of stock.

However, many authors have argued that in BSPs, buyers that are intent on lowering their total costs may become too focused on cost-cutting at the expense of the supplier (Kalwani & Narayandas, 1995; Krause et al., 2007; Roloff et al., 2015; Wyld et al., 2012), thus hindering reaching other goals. Interfirm open-book accounting (OBA) practices are considered to be one of the tools that enable this. OBA enables the disclosure of supplier cost data to retailers, and this is used in BSP as a means for effectively managing costs and improving relationship quality. However, OBA can become a double-edged sword: while it obviously constitutes a valuable mechanism to improve supply-chain efficiency and performance (Yoon & Moon, 2019), buyers' superior knowledge of suppliers can lead to a situation in which they dictate how suppliers should manage their production processes, their workers and their lower-tier suppliers, reducing their autonomy (Roloff et al., 2015), increasing opportunistic buyer behaviour and leading to pressure to reduce costs and with it, suppliers' profit margins (McIvor, 2001; Spanish Competition Authority, 2009; Windolph & Moeller, 2012). According to Wyld et al. (2012), a distributor's knowledge of supplier costs limits their profits, especially through cost imposition rather than supplier pricing, enabling distributors to appropriate the whole of any extraordinary profit. Conversely, other studies such as Noton & Elberg (2018) and Shin et al. (2000), concluded that the reduced costs of buyer companies are not mainly achieved by suppliers' cost performance but by suppliers' quality and delivery performance. In the case of Mercadona, it worked with its intersuppliers under an open-book trade policy, in which both parties set annual productivity improvement targets to be passed on in prices to the consumer. Accordingly, we posit that:

- **Hypothesis 4.** Suppliers with an exclusive deal with a KRA (Mercadona intersuppliers) improve their cost efficiency more than the companies in their same sales quartile and subsector and more than NMSup.

## 2.8. Impact of having an exclusive KRA on suppliers' operating profitability

Multiple scholars have analyzed BSP performance in different fields. However, not many have analyzed it in the financial field, through profitability indicators, and out of these studies only a few have studied performance from the supplier's point of view. Kalwany and Narayandas

(1995) demonstrated that supplier firms in long-term relationships achieved higher profitability than independent suppliers. Mao et al. (2008) proved that long-term relationships that incorporate trust create value and profits. Joshi et al. (2017) stated that both supplier development practices and supplier-buyer relationship practices improve the relationship between a buyer and supplier from the supplier's perspective, and this improved relationship leads to competitive advantages followed by profitability. Duffy & Fearne (2006) studied how collaborative relationships between UK retailers and fresh-produce suppliers affected suppliers' performance (measured by nine items that included cost reductions, benefit-sharing, changes in profits and sales, and suppliers' beliefs regarding the future relationship), and found that suppliers engaged in BSPs with robust collaborative activity performed better. In addition, they proved that commitment, followed by trust, relational norms and functional conflict resolution were the dimensions which contributed the most to performance. Along the same lines, Corsten & Kumar (2005) argued that collaborative relationships with large retailers benefited suppliers.

However, elements such as asymmetries and imbalances between the parties in the chain can lead to opportunism and unfair distribution of profitability. Opportunism, introduced by Williamson (1979) in the transaction-cost economics theory, appears in situations in which one of the parties is heavily dependent on the other. These are known as lock-in situations (Narasimhan et al., 2009) in which one party seeks unilateral gains at the expense of the other by breaking implicit or explicit contracts, shirking obligations and grafting on joint earnings (Luo et al., 2015; Sanchez-Navarro et al., 2019). Opportunism is, according to Zafar et al. (2011), the main obstacle to achieving a win-win relationship.

However, while some authors argue that relationship performance is reduced by opportunism, irrespective of whether it is weak or strong (Kalwani & Narayandas, 1995; Luo et al., 2015), other authors such as Hingley et al. (2006), and Caniëls et al. (2018), stated that in situations where a buyer dominates, suppliers may still be satisfied with the overall relationship because of the growth opportunities offered by large buyers (Bloom & Perry, 2001), and that asymmetric dependence can be related to equal (Villena & Craighead, 2017) or even higher levels of supplier satisfaction (Caniëls et al., 2018).

In the agri-food sector, there are two main factors that account for imbalances and suppliers' dependence in BSP: the increasing concentration of retailers (in several countries in the EU, between three and four companies control more than 75% of the market), and the important introduction of retailers' own brands (Calvo-Porrà & Lévy-Mangin, 2017; European Economic Social Committee, 2013). They have been introduced over the last few decades by retailers with some degree of market power, replacing popular national brands with the aim of lowering prices, strengthening customer loyalty, improving their market position and increasing their margins (Spanish Competition Authority, 2009). Although they bring advantages for manufacturers (suppliers) such as lower promotional and sales costs (these are borne by retailers), lower distribution and logistics costs, taking advantage of idle manufacturing capacity, exploiting economies of scale, privileged access to inventory management information as well as socio-demographic consumer traits and habits, manufacturers have to take on board that

they lose control over part of their output (above all in terms of price and image). They are required to make large investments in RSA whose return outside the partnership is dubious in the short term, as we have seen in the previous subsection and, in general, they lead to greater dependence on the retailer (which increases further when the manufacturer produces ROBs for a single retailer and this production represents a large percentage of its overall output).

In spite of the risks, the stability of many of the retailer-supplier partnerships in the agri-food sector leads us to believe that contributions by and the rewards for each partner must be perceived as balanced and equitable (Porter and Fuller, 1986), and that benefits are fairly shared out (Hsu, 2005). Conversely, Bloom & Perry (2001) found that having a KRA (Walmart) hurts supplier profitability; Gosman & Kohlbeck (2006) proved that financial performance was negatively impacted as sales to the KRA increased, although larger suppliers were able to mitigate part of that effect. Hofer et al. (2012) found no evidence to corroborate this, although they did prove that supplier performance may improve depending on the varying levels of the supplier's and the KRA's market share, which led them to argue that collaborative supplier-KRA relationships, such as a supplier's dependency on KRAs, may positively affect supplier performance. Therefore, our fifth and last hypothesis is:

- **Hypothesis 5.** Suppliers that have an exclusive KRA (Mercadona intersuppliers) improve their profitability, measured by operational profitability, more than the companies in their same sales quartile and subsector and more than NMSup.

## 3. Materials and methods

### 3.1. Sampling and data treatment

The population under study was made up of the suppliers that had a long-term exclusive supply agreement with Mercadona and, specifically, those that signed this type of contract between 1999 and 2008. The years analyzed (before and after the agreement) correspond to a period in which Mercadona's intersuppliers had an exclusive supply agreement with this retailer for an entire product category. In subsequent years the exclusivity clause was eliminated. This meant a total population of 110 suppliers. The data about the suppliers and the date of signing the agreement were provided by the retailer.

The data used for the analysis were the suppliers' annual accounts and those of the other companies in the various business subsectors to which they belonged. They were all taken from the SABI database for the years under analysis.

The period under analysis encompassed seven years, comprising the three years prior to the signing of the agreement (N-1, N-2 and N-3), the year of signing (N), and the three years after signing (N+1, N+2, N+3).

Thirty-three companies were excluded from the initial population on the following grounds:

- The accounting structure of the data to be analyzed and the need for homogeneity meant we could only analyze Spanish companies. Thus, six suppliers based outside Spain had to be excluded.
- Twenty-seven companies whose information was incomplete in one or more of the years under study were excluded.

As a result, the sample under analysis was finally made up of 77 suppliers who signed their agreements in the period between 1999 and 2008 (ExSup)<sup>1</sup>.

## 3.2. Control groups and variables used in the analysis

The hypotheses were validated by comparing the actual evolution of the suppliers in the sample (ExSup) with two control groups over the same period of time.

Control group 1 (A) was made up of the companies in the subsector to which each ExSup belonged which were in the same quartile by turnover in the year the agreement was signed. These companies were chosen for each intersupplier using the National Classification of Economic Activities (CNAE, 2009), taking companies whose primary code coincided in its first four digits with each intersupplier. Thirty-five subsectors were identified. The total number of companies in control group 1, divided into 35 subgroups, came to 15,098 (Table 1).

The second control group (B) was formed using the non-experimental matching technique in which a comparison group which is as similar as possible to the observed one is constructed based on the underlying assumption that selection bias is eliminated if it is conditioned on observables (Heckman et al., 1998). Thus, for each Mercadona intersupplier in the sample, a control firm which was as similar as possible in its economic and financial characteristics and which did not have an exclusive agreement with Mercadona was identified out of the companies in the same subsector (NMSup). This procedure is similar to the one used by Mottner & Smith (2009) in a study analyzing Walmart supplier profitability compared to non-Walmart suppliers.

The matching was performed by asset size, economic profitability, business subsector and year. Hence for each ExSup, the group of suppliers matching its CNAE was identified (Table 1), quartiles were established by asset volume in the year of signing, and the quartile to which each ExSup belonged was selected, identifying the company to be compared with each ExSup as the one in that quartile in that same CNAE group and which had a ROA in the year of signing closest to or similar to that of the ExSup.

1. The representative sample size for this population was 49 suppliers, based on the reliability required for the sample mean of 95% ( $z=1.96$ ), a maximum permissible error of 5%, a population variance of 0.25, and the correction for finite populations (Malhotra, 2004), applicable to the extent that the sample size was greater than 10% of the population.

**Table 1.** Companies in control group 1 for each intersupplier

CNAE	No. suppliers in this CNAE	Total no. of companies in each subsector analyzed	No. of companies in control group 1	CNAE	No. of intersuppliers in this CNAE	Total no. of companies in each subsector analyzed	No. of companies in control group 1
0113	1	1,730	433	1102	3	2,909	727
0147	1	867	217	1107	1	272	68
0311	1	2,050	513	1392	1	822	206
0893	1	49	12	1729	1	312	78
1011	2	922	231	2014	1	193	48
1013	5	2,221	555	2041	2	554	139
1022	2	423	106	2042	1	467	117
1039	6	682	171	2120	1	323	81
1052	2	293	73	2222	1	1,127	282
1054	2	300	75	2229	2	2,741	685
1061	1	359	90	4611	1	2,335	584
1071	2	4,773	1,193	4631	12	6,946	1,737
1072	3	617	154	4632	1	3,806	952
1082	1	407	102	4633	1	1,413	353
1083	3	266	67	4634	1	4,838	1,210
1084	2	158	40	4638	3	4,342	1,086
1089	5	1,314	329	4639	2	6,506	1,627
1102	3	2,909	727	4645	2	3,055	764
Total					77	60,392	15,098

**Source:** Authors' own compilation using SABI data.



The variables used to test the hypotheses are set out in Table 2.

**Table 2.** Variables used to test the research hypotheses

Variable	Ratio	Acronym
Business growth (H1)	Sales (thousand euros)	S
	Employees (number)	E
	Total Assets (thousand euros)	TA
Return on assets (ROA) (H3)	ROA= Operating income/ total assets = Profit margin x Asset turnover	ROA
	Profit margin= Operating Income/Sales	PM
	Asset turnover= Sales/Total Assets	ATurn
Cost efficiency (H4)	Staff costs/Sales	SCs
	Cost of goods sold/Sales	CGs
	Depreciation /Sales	Ds
	Financial costs/Sales	FCs
Operational profitability: EBITDA margin (H5)	EBITDA/Sales = = Earnings before interest, taxes, depreciation and amortisation/Sales = 1 - SCs - CGs - Other operating costs/sales	EbitdaM

### 3.3. Analysis methodology

An analysis consisting of two complementary parts was chosen: bivariate inferential analysis and multivariate analysis with panel data.

#### 3.3.1. Bivariate inferential analysis

Given the lack of normality in the population distribution, non-parametric contrasts (between the ExSup and control groups 1 and 2) were used, in particular the Wilcoxon signed-rank test which enables the median of two related samples to be compared. The comparisons were made in two ways: the simple-difference method and the differences-in-differences method:

- Simple-difference method: the ExSup group was compared to control groups A and B in the years before the alliance with the retailer (N-1, N-2, N-3), in the year of signing (N), and in the years after the alliance (N+1, N2, N+3). The differences between the ExSup and control group 1 were called DA and the differences between the ExSup and control

group 2 were called DB. Thus, when these differences (DA or DB) showed a positive value for a particular indicator, this meant that the ExSup were above the control group in that year with the difference indicated by the number of units in which they exceeded it.

$$DA = \text{ExSup} - \text{Control group 1} \quad DB = \text{ExSup} - \text{Control group 2}$$

Subsequently, the median of the pre-alliance situation (MED-PRE(DA)) was calculated using the three values derived for each ExSup (DAN-3, DAN-2 e DAN-1). The median of the post-alliance situation (MED-POST(DA)) was estimated using DAN+1, DAN+2 and DAN+3. Similarly, the MED-PRE(DB) and MED-POST(DB) medians were calculated with the differences being compared to the control group

- Differences-in-differences method: this factored in both the differences between the ExSup group and the control groups (DA and DB) and included their evolution over time. The situation of each indicator with respect to the control groups was compared after (MED-POST) and before (MED-PRE) the alliance and it was determined whether this (POST-PRE) difference was significant. Positive POST-PRE data indicated a significant increase in the indicator's difference with respect to the control group in the post-alliance compared to the pre-alliance period, and therefore a significant and, in this case, positive impact of the alliance on the evolution of this variable. Differences-in-Differences (DID) is one of the most widely used identification strategies in applied economics and has been used for ex ante – ex post analysis in companies in various papers (Colarte & Rodriguez, 2006; Martynova et al., 2006; Fernan & Pinto, 2019)
- $POST-PRE(DA) = MED-POST(DA) - MED-PRE(DA)$
- $POST-PRE(DB) = MED-POST(DB) - MED-PRE(DB)$

### 3.3.2. Multivariate model

Secondly, an analysis was conducted using a discrete binomial choice model with panel data, in this case, a logit model which was selected on the grounds that given similar conditions in terms of sector and business size, a company ( $y_{it}$ ) will decide to opt for an alliance with the retailer if the benefits or advantages that this alliance brings are greater than those it would obtain by supplying its products independently. Therefore, the variables shown to be significant in the model can be interpreted as the ones that have a significant influence (positive or negative) on the intersupplier in deciding to enter into a supply alliance with a retailer.

$$y_{it} = \begin{cases} 1 & \text{if } \beta X_{it} + \varepsilon_{it} > 0 \\ 0 & \text{otherwise} \end{cases} \quad i = 1, \dots, n; t = 1, \dots, T$$

$$\varepsilon_{it} = \alpha_i + \mu_{it} \quad (t = 1 \dots, T)$$

We assumed that  $\varepsilon_{it}$  had two components, a permanent firm-specific effect  $\alpha_i$ , and a transitory component  $\mu_{it}$ . In the proposed model,  $y_{it}$  had a value equal to 0 in the companies in control groups 1 and 2, thus representing the NMSup, and it had a value equal to 1 for the ExSup in the years in which the latter signed its exclusivity agreement (N+1 to N+3). Year N, the year of

signing the alliance, was identified as a year with no alliance as it is unlikely that any changes would emerge in this first year.

Moreover, the maximum likelihood estimator of the fixed-effects model involves constraints which can significantly reduce the sample. In particular, its operation does not depend on observations whose dependent variable does not change over time which, in practice, means that observations containing only “zeros” or “ones” over the whole period analyzed are excluded. In our model, this was the case for the companies in both control groups (NMSup). Consequently, the random effects model was chosen in order to leverage all the sample information, albeit accepting the potential bias this entails due to the restrictions arising from the non-correlation of the individual effects with the regressors. This option was adopted by Zúñiga and Vicente (2006).

Accordingly, when we assumed normal distribution for  $\alpha_i$ , the independence of  $\alpha_i$  from  $X$ , and that  $\mu_{it}$  ( $t= 1\dots, T$ ) were serially uncorrelated and had a logistic distribution, a random effect panel logit maximum likelihood estimator could be implemented.

The observable firm characteristics ( $X_{it}$ ) used in the model were the ones previously identified (Table 2), although in this case a problem in correlation between EBITDA margin or ROA with the indicators making up the latter (profit margin and asset turnover) meant two models were proposed, one with the asset turnover and profit margin variables (model 1) and the other with the ROA and EBITDA margin variables (model 2).

In terms of the period analysed in the panel and given that each ExSup signed its exclusivity alliance in a different year, it was decided to consider a period of 7 years: three years before the alliance, the year of signing the alliance and the three subsequent years. The years of each intersupplier matched those of its counterpart in groups 1 and 2 exactly, although in the panel there was no match between the years  $N-3$ ,  $N-2$ , ...  $N+3$  of the different individuals since this depended on the year in which each one signed its agreement. Consequently, no dummy events or macroeconomic data were introduced which might have had an influence on the variables analysed other than the signing of the alliance.

## 4. Results and discussion

The results of the comparisons made by means of bivariate inferential analysis are shown in Tables 3 and 4 and the ones for the panel logit random effects are presented in Tables 5 and 6.

### 4.1. Impact of having an exclusive KRA on suppliers' business growth

Firstly, it can be seen that the profile of Mercadona's exclusive intersuppliers (ExSup) before signing the agreement was that of a company with a significantly higher turnover (1%) than control group 1, where the median of the ExSup in the three years prior to signing was higher

than the median for the subsector in 85.7% of cases (Table 3). This confirms that these companies were already very large within their subsector, as almost all the intersuppliers were in the first quartile by turnover. Moreover, they were also companies that had been expanding more than their subsector before the alliance, as the difference in their turnover compared to group 1 (subsector) before the alliance (from N-3 to N-1) had increased by 104.5% (from €11 million to €22.5 million). Following the alliance, the difference compared to all the companies in the subsector rose, with turnover exceeding the subsector median in 93.5% of cases.

As for the alliance's impact on turnover (POST-PRE), it was positive and significant at 1% both in comparison with control group 1 (subsector) and with respect to the NMSup (control group 2) (Tables 3 and 4). Thus, for example, the superiority of the ExSup in their turnover with respect to the median in the subsector after the alliance was €10,590,600 greater than before the alliance, and this difference increased after the alliance in 92.2% of the ExSup (at 1% sig). This difference also rose by €9,901,500 with respect to the NMSup (control group 2), with their superiority in turnover compared to NMSup rising after the alliance in 87% of cases (at 1% sig).

Job creation evolution, which together with sales, confirms business growth, had identical results in comparison with both control group 1 and control group 2, as the alliance with the retailer had a positive impact leading to significant increases in their superiority in job creation in 72.1% of cases (1% sig).

The logit analysis backs up these results, showing the expected increase in activity in both turnover and number of employees to be one of the factors which significantly influenced the decision to enter into a long-term exclusive alliance with a retailer (at 1% sig), both in the model that included the ExSup with control group 1 and in the one that did so with control group 2 (Tables 5 and 6).

These results contrast with those found in other studies such as Kalwani and Narayandas (1995), which showed that manufacturers in a long-term BSP were able to obtain the same level of sales growth as firms with a transactional approach to servicing customers, but coincide with the ones obtained by Dukes et al., (2006) in their work about KRA.

Therefore, our results support H1, in that suppliers that had an exclusive KRA (Mercadona's intersuppliers) achieved higher business growth (measured by sales and employment growth) than their subsector average and than that obtained by NMSup.

**Table 3. ExSup - control group 1 differences**

	N+3		N+2		N+1		N		PRE-partnership		N+2		N+3		POST-partnership		POST vs. PRE						
	DAN-3	sig	%	DAN-2	sig	%	DAN-1	sig	%	MEDPRE	sig	DAN+2	sig	DAN+3	sig	MEDPOST	%	POST-PRE	sig	%			
<b>BUSINESS GROWTH:</b>																							
Sales (thousand €)	7493.9	***	81.3	10150.7	***	82.7	13992.2	***	87.8	11007.1	***	22465.01	***	93.5	27652.9	***	22519.2	***	93.5	10590.6	***	92.2	
Employees	35	***	68.9	53	***	75.4	67	***	78.7	54	***	80.3	102	***	85.2	102	86.9	102	***	86.2	26	***	72.1
TOTAL ASSETS:																							
TA (thousand €)	6796.8	***	75.0	7003.5	***	78.7	10397.0	***	82.4	7940.8	***	17218.7	***	92.2	21291.4	***	18207.7	***	93.5	7774.8	***	93.5	93.5
<b>COST EFFICIENCY:</b>																							
Staff costs / sales (%)	-1.34%	*	36.0	-1.70%	**	30.7	-1.82%	**	36.5	-1.36%	**	32.5	-2.22%	*	38.7	-2.71%	**	34.7	-2.94%	**	37.7	-0.40%	39.0
Cost of goods sold/sales (COGS)	0.32%		50.7	0.69%	**	53.3	0.24%		51.4	10.2%	**	53.2	1.49%		58.4	0.65%		51.9	0.78%	**	54.5	0.41%	53.2
Operational / sales (%)	0.25%	**	60.0	0.15%	**	58.7	-0.03%		47.3	0.19%	*	58.4	0.14%	**	61.0	0.56%	**	59.7	0.47%	**	63.6	0.16%	53.2
Financ. costs / sales (FCs)	0.49%	***	73.3	0.36%	***	73.3	0.24%	***	59.5	0.40%	***	71.4	0.18%	***	61.0	0.06%	**	58.1	0.32%	**	61.0	-0.24%	36.1
<b>PERFORMANCE:</b>																							
ROA	4.22%	***	82.7	4.19%	***	78.7	4.84%	***	83.8	4.34%	***	83.1	4.21%	***	80.5	5.23%	***	82.4	5.46%	***	87.0	1.0%	55.8
-A-Turn	-0.91	*	40.0	-0.101		41.3	-0.044		47.3	-0.100		40.3	-0.149		40.3	-0.019		48.1	-0.085		41.6	0.023	53.2
-PM	2.71%	***	84.0	2.70%	***	77.3	2.94%	***	79.7	3.39%	***	83.1	3.07%	***	81.8	4.27%	***	83.8	4.15%	***	87.0	0.67%	67.5
EbitdaM	3.72%	***	78.7	3.40%	***	72.0	4.40%	***	77.0	3.56%	***	75.0	3.62%	***	85.7	5.81%	***	78.4	5.53%	***	85.1	0.99%	70.0

n = 77; DA: median for each indicator of the differences between the value derived for each ExSup and control group 1 (median quartile subsector) from N+3 to N+3.

MEDPRE is the median for each indicator of DAN-3, DAN+2 and DAN+1. MEDPOST is the median for each indicator of DAN+1, DAN+2 and DAN+3.

POST-PRE is the median for each indicator of the differences between the MEDPOST and MEDPRE of the ExSup sample.

The columns with % represent the percentage of ExSup that are above the control group.

The column with % corresponding to POST-PRE shows the % of ExSup whose MEDPOST is higher than MEDPRE.

Table 4. ExSup - control group 2 differences

	N-3		N-2		N-1		PREpartnership		N		N+1		N+2		N+3		POST-partnership		POST vs. PRE								
	DB <sub>N-3</sub>	sig	%	DB <sub>N-2</sub>	sig	%	DR <sub>N-1</sub>	sig	MEDPRE	sig	DB <sub>N</sub>	DB <sub>N+1</sub>	sig	DR <sub>N+2</sub>	sig	DR <sub>N+3</sub>	sig	MEDPOST	%	POST- PRE	%						
<b>BUSINESS GROWTH:</b>																											
Sales (thousand €)	944271	***	7541	995628	***	770	244357	***	778	991503	***	76.6	144662	153015	***	818	2201751	***	816	2465196	***	81.8	991005	***	87.0		
Employees	16.00	**	60.66	31	**	63.9	56	***	70	45.00	***	68.9	46.00	59	***	721	62	***	80.3	79	***	78.7	28	***	72.1		
<b>TOTAL ASSETS:</b>																											
TA (thousand €)	618525	***	6875	594957	***	68.9	788624	***	73.6	5742.03	***	68.8	1035653	12778.31	***	79.2	157976	***	80.3	1635944	***	80.5	160325	***	81.8		
<b>COST EFFICIENCY:</b>																											
Staff costs / sales (%)	-14.3%	**	295	-3.97%	***	33.8	-3.90%	***	29.2	-3.86%	***	33.8	-3.68%	-4.69%	***	29.3	-3.80%	***	311	-4.97%	***	278	-4.54%	***	30.7	-0.7%	
Cost of goods sold (CGS)	1054%	***	707	797%	**	65.3	6.61%	***	66.2	6.47%	**	65.2	6.79%	5.59%	**	67.5	7.59%	**	68.8	10.36%	***	714	7.24%	**	68.8	1.09%	
Depreciation / sales (%)	0.37%		56.0	-0.01%		49.3	-0.38%		47.3	-0.29%		48.1	-0.22%	-0.19%		44.2	-0.19%		48.1	0.12%		51.9	-0.16%		48.1	0.21%	
Financ. costs / sales (%)	0.54%	**	60.0	0.34%		61.3	0.32%		63.5	0.21%		61.0	0.22%	0.28%		62.3	0.24%		57.9	0.18%		54.8	0.23%		57.1	-0.1%	
<b>PERFORMANCE:</b>																											
ROA	2.36%		54.8	-0.01%		50.0	0.47%		53.5	0.38%		53.2	0.7%	3.00%	***	70.1	2.59%	**	60.0	4.59%	***	70.6	3.17%	***	70.1	2.0%	**
- Return	0.232		55.7	0.90	*	61.1	0.127		61.1	0.127		57.1	0.186	0.059		55.8	0.173		56.6	0.189	**	58.7	0.056		54.5	-0.033	
- PM	0.86%		49.2	-0.53%		45.9	0.24%		52.1	-1.13%		46.8	-1.18%	1.14%		57.1	0.60%		50.7	1.40%		57.4	1.14%		57.1	1.65%	
EBITDA	1.68%		42.6	-0.47%		45.2	-0.36%		45.1	-0.94%		45.5	-1.98%	0.50%		54.5	0.66%		49.3	2.48%		56.7	1.22%		53.9	2.07%	

n=77; DB: median for each indicator of the differences between the value derived for each ExSup and control group 2 from N-3 to N+3. MEDPRE is the median for each indicator of DBN-3, DBN-2 and DBN-1. MEDPOST is the median for each indicator of DBN+1, DBN+2 and DBN+3.

The columns with % represent the percentage of ExSup that are above the control group. In this case their matched firm.

The column with % corresponding to POST-PRE shows the % of ExSup whose MEDPOST is higher than MEDPRE.

## 4.2. Impact of having an exclusive KRA on asset investments and ROA

The results in the comparisons with both group 1 and group 2 are similar to those obtained in the previous section. As already noted, a direct consequence of the exclusive alliance with the retailer and the increase in activity that accompanied it was the need for major investment in relation-specific assets, coinciding with the findings previously reported by Corsten et al. (2011), Huang & Huang (2019) and Lu & Wang (2012). Thus, the impact of having an exclusive KRA on asset investments (POST-PRE) was positive and significant at 1%, both when compared to control group 1 (subsector) and also to NMSup (control group 2). Therefore, hypothesis 2 was validated, that is, investments in assets made by suppliers with an exclusive KRA (Mercadona's intersuppliers) were greater than the average subsector and than NMSup.

It now remains to be seen whether these major asset investments were profitable (Tables 3 and 4). Here it should be noted that, before signing the alliance, the ExSup had a significantly higher ROA (1%) than the group 1 median in 83% of cases. After the alliance, their economic profitability not only continued to be significantly higher (at 1% sig), but the percentage of companies exceeding it increased to 87% (at 1% sig), although this evolution was not significant (Table 3). On the other hand, the comparison with group 2 (NMSup) did show statistically significant growth (5%) in ROA in the post-alliance compared to the pre-alliance period, with superiority over NMSup increasing in 61% of cases (Table 4).

The logit analysis shows that ROA was a factor that positively and significantly influenced the likelihood of a supplier having an exclusive KRA, both in the model that included control group 1 (at 5% sig) and the one that included control group 2 (at 1% sig) (Tables 5 and 6).

An analysis of the factors leading to this increase in ROA pointed to a rise in profit margin (operating income to sales), the effect of which was positive and significant at 5% in the inferential analysis with both control groups and at 1% in the logit. The other component of ROA, asset turnover, showed a negative evolution in both analyses (not significant in the inferential analysis and significant in the logit), suggesting that the high asset investment by the ExSup was not accompanied by proportional growth in turnover. Nevertheless, the positive evolution of the sales margin offset the reduction experienced due to asset turnover and, as has already been seen, the impact of having an exclusive KRA on ROA was positive and also significant in the comparative analysis with group 2. These results are in line with those derived by Corsten et al. (2011); Huang & Huang (2019), and Yoon & Moon (2019), which showed a positive influence of investments in RSA on the supplier's performance. Therefore, hypothesis 3 was partially validated, because there was no proof that having an exclusive KRA improved ROA when compared to the subsector, nor that it reduced it, which contrasts with the results obtained by Gosman & Kohlbeck (2006) and Mottner & Smith (2009), who found that suppliers with a higher percentage of sales to Walmart (more dependent) had a lower ROA. On the contrary, proof was obtained that Mercadona's intersuppliers improved their ROA, bettering that obtained by NMSup (Group 2).

**Table 5.** Random effects multivariate logit model for the decision to sign a long-term exclusive supply alliance with a retailer (MODEL 1)

	Panel logit model with group 1			Panel logit model with group 2		
	Coefficient	Std errors		Coefficient	Std errors	
Sales (million€)	0.020	0.006	***	0.020	0.006	***
Number of employees	0.014	0.003	***	0.013	0.002	***
SCs	-11.549	3.640	***	-12.803	3.467	***
Ds	40.740	8.605	***	29.308	7.293	***
FCs	-35.863	13.843	***	-30.072	12.947	**
ATurn	-0.469	0.227	**	-0.524	0.228	**
PM	3.461	1.305	***	2.800	1.010	***
_cons	-3.706	0.781	***	-3.609	0.831	***

Log likelihood: -409.3655 Log likelihood: -426.17145 - Goodness of the models 81.07% 75.5%

\*\*\*, \*\*, \* indicate significance at 1%, 5% and 10% respectively.

**Table 6.** Random effects multivariate logit model for the decision to sign a long-term exclusive supply alliance with a retailer (MODEL 2)

	Panel logit model with group 1			Panel logit model with group 2		
	Coefficient	Std errors		Coefficient	Std errors	
Sales (million €)	0.011	0.004	**	0.015	0.005	***
Number of employees	0.011	0.002	***	0.013	0.002	***
SCs	-6.278	3.616	*	-9.374	3.905	**
CGs	1.758	2.091		1.473	2.199	
Ds	36.994	9.064	***	28.372	7.162	***
FCs	-21.408	12.490	*	-22.731	11.614	**
ROA	9.243	2.120	***	4.280	2.044	**
EBITDAm	1.686	1.114	*	2.329	1.159	**
_cons	-5.906	1.851	***	-5.975	2.024	***

Log likelihood: -404.2193 Log likelihood: -427.9879 - Goodness of the models 81.07% 75.5%

\*\*\*, \*\*, \* indicate significance at 1%, 5% and 10% respectively.



### 4.3. Impact of having an exclusive KRA on cost efficiency and operating profitability

The results show that of the four cost items analyzed, after the alliance only two of them reduced their relative weight to sales to a greater extent than the control groups (1 and 2) (Tables 3 and 4): staff costs (in 61% of cases when compared to group 1 and in 54.7% when compared to group 2) and financial costs (in 64.9% and 53.2% of cases respectively). Although these reductions were only significant in the case of financial costs with respect to control group 1 (5% sig), in the case of staff costs it is evident that their weight to sales ratio was significantly lower after the alliance than the one in both control groups (5% in group 1 and 1% in group 2). However, the same cannot be said about the other two cost items analyzed: the cost of goods sold to sales and the depreciation to sales ratios, which increased more than the control groups after the alliance, although, as in the previous case, this increase was not significant. In the case of depreciation to sales, the increase was a consequence of the major investment in assets and, as noted in the previous section, it was not accompanied by proportional growth in sales. As for the negative evolution of the cost of goods sold to sales (which includes the costs of acquiring or manufacturing the products that the supplier sells during a year) with respect to both groups 1 and 2, this could be the result of either poorer production efficiency or an increase in the acquisition costs of inputs that were not passed on in equal proportion to sales prices. The academic literature on buyer-supplier alliances excludes the first of these causes, since there is considerable consensus among researchers that this kind of alliance leads to efficiency improvements. The most likely issue lies in an increase in the acquisition costs of inputs which was not matched by an equally large increase in sales revenue, which corroborates some of the assumptions of studies such as the one by the Spanish Competition Authority (2011), and of authors such as Maglaras et al. (2015), McIvor (2001) and Mottner & Smith (2009), which point at retailer pressures to reduce acquisition prices. Alternatively, price reductions can be seen as part of the supplier's price strategy for increasing demand, as shown by Narasimhan et al., (2009). What can also occur is that KRA suppliers are self-selecting or are implicitly pre-screened so that they have a low-cost strategy and choose lower returns as a market strategy, as argued by Mottner & Smith (2009) about Walmart suppliers.

From this point onwards, in addition to examining the evolution of costs individually, we believe it is useful to analyze the overall impact of the evolution of costs and turnover on operating profitability to see whether the effect of costs whose evolution was positive offset the effect of costs which had a negative impact. The results show that an exclusive KRA had a positive and significant impact (5%) on operating profitability, both when comparing the evolution of the ExSup with control group 1 (their superiority over group 1 increased after the alliance in 70% of cases) and with group 2 (it did so in 65.8% of cases) (Tables 3 and 4).

Since EBITDA is equal to operating income net of all costs (interest or financial expenses, taxes, depreciation and amortisation) and given the significant increase in sales, even though the ExSup were not able to reduce the cost of goods sold to sales ratio they did achieve a gradual reduction in their staff costs and other operating costs to sales ratio (supplies, transport,

advertising, independent professional services, etc.). The latter, albeit not specifically examined in the analysis, are the only ones to take away in the EBITDA calculation formula (Table 2) and given the significant increase in the EBITDA margin following the alliance they must necessarily have been reduced after it was signed.

The logistic regression yields similar results (Tables 5 and 6). Both the expectation of reducing certain costs – the model includes staff costs (1%) – and the improvement in operating profitability (10% in the panel with group 1 and 5% in the panel with group 2) are variables that significantly influence the decision to enter into an exclusive KRA. This improved the profitability of suppliers compared to the subsector and to non-Mercadona suppliers. These results go against those obtained by Bloom & Perry (2001), who found that having a KRA (Walmart) hurt profitability, and by Gosman & Kohlbeck (2006), who proved that financial performance was negatively impacted as sales to the KRA increased, or Hofer et al. (2012), who found no evidence about this, although they did ascertain that performance may improve depending on the varying levels of the supplier's and KRA's market share.

However, our results corroborate the findings of previous studies about supplier-retailer alliances such as those by Kalwani & Narayandas (1995) and Duffy & Fearn (2006).

These results mean that the fourth hypothesis has to be rejected. This is because even though an improvement in cost efficiency has been noted, compared to the control groups (albeit not significant) in the case of staff costs, and the improvement in other operating costs derived from the positive and significant evolution of the EBITDA margin has been demonstrated, it was not significant and the cost of goods sold to sales ratio increased. By contrast, the fifth hypothesis can be considered valid, i.e., that the ExSup improved their operating profitability, bettering their subsector average and NMSup.

## 5. Conclusions

This paper suggests that having an exclusive KRA in the grocery sector which represents a high percentage of a supplier's turnover can be profitable for the supplier. In this sense, Mercadona's exclusive intersuppliers experienced significantly higher growth in activity than their subsector average and NMSup (at 1% in comparison with control groups 1 and 2), which was visible in both their sales and their number of employees.

This paper also shows that Mercadona's exclusive intersuppliers were driven to make investments in assets that were significantly higher than NMSup and than their subsector average (1% in comparison with control groups 1 and 2). However, these investments were also significantly more profitable than NMSup (5% in comparison with group 2) which confirms the previous findings of Corsten et al. (2011), and Yoon & Moon (2019).

Furthermore, the results show that Mercadona's exclusive intersuppliers were able to increase their operating profitability over their subsector average and over NMSup (significantly at 5% in both control groups). This improvement in operating profit with respect to NMSup was due to the increase in turnover coupled with the reduction in the weight of some of their

costs (staff and other operating costs such as transport, outsourced services, advertising, etc.). On the other hand, there was an increase in the cost of goods sold to sales ratio which, albeit not significant in relation to the NMSup, did make a difference in relation to the falling trend of other costs. The cause of the increase in the cost of goods sold to sales points to a progressive reduction in the relationship between the sales prices of their products compared to the prices paid for their inputs, which would confirm the practices indicated by Adelman (1949), the Spanish Competition Authority (2011), Roloff et al. (2015) and Wyld et al. (2012), in as much as “powerful buyers audit the accounts of their suppliers, check their cost structures and use the information to push down suppliers’ prices in negotiations”, all of which are consistent with our theoretical reasoning.

However, our results show that this practice did not lead to reductions in the profit margin of Mercadona’s exclusive intersuppliers, which increased significantly (5%) over the NMSup, going against what was postulated by McIvor (2001) and the Spanish Competition Authority (2011), or as was noted in terms of operating profit, which increased significantly with respect to non-Mercadona intersuppliers.

This study contributes to inter-firm theory as, through the logistic regression analysis, it provides empirical evidence of the factors that lead a supplier to enter into an exclusive KRA, compared to the rest of their subsectors and to NMSup. These factors are: an increase in activity in terms of turnover (1%) and number of employees (1%); achieving economies of scale as well as more efficient cost management (seen in the proposed models in staff and financial costs, at 1% and 5% respectively); a higher return on assets (at 1% in the model that includes control group 1, and 5% in the model that includes group 2); a higher profit margin (at 1%), which offsets the also expected lower asset turnover (5%); and finally higher operating profitability (at 1% in the model that includes control group 1, and 5% in the model that includes group 2).

It is feasible to think that the alliance’s positive effect on profitability has much to do with the fact that Mercadona is the undisputed leader in the Spanish market. This is in line with authors such as Hofer et al. (2012), who found that as the KRAs gained market share, their suppliers’ performance tended to increase. The business size of the intersuppliers, which were in the first quartile by sales figures in their respective sub-sector, may also have played a role, in line with the work by Gosman & Kohlbeck (2006), who found that supplier power (measured by supplier size) mitigated the adverse consequences of the reduction of the ROA obtained.

We found that the greater risk associated with customer concentration in one customer, and the supplier disadvantage when negotiating with it, had no impact on suppliers’ performance. Quite the contrary, they obtained a higher ROA and operating profitability than the subsector and NMSup.

The results gleaned from this study suggest that, as opposed to the results obtained by authors such as Hingley & Lindgreen (2002), agri-food supplier organizations do not need to sacrifice product profitability for exclusivity, increased market share and wider network influence. Quite the opposite, high supplier dependence as the result of a KRA can provide the supplier with good profitability, as demonstrated by Davies & Ryels (2014), thanks to supplier

access to additional consumers and the increase in sales, which contrasts with studies such as the one by Gosman & Kohlbeck (2006). Our results suggest that embedded, cooperative or collaborative relationships in the agrifood value chain based on commitment and sharing information can be an effective strategy for the suppliers (Arrillaga & Etxebarreta, 2022), as opposed to adversarial or independent ones, with individual firms seeking to achieve cost reductions or improve profits at the expense of other chain operators, as also proved by Gielens et al. (2014), and that suppliers and retailers can reach a balanced strategy to conclude satisfactory exclusive deals (Cai et al., 2012).

Moreover, the answer to the question as to whether Mercadona, the largest retailer in Spain, has exerted power over its intersuppliers and squeezed them financially, as argued by authors such as Bloom & Perry (2002) and Hofer et al. (2012) in relation to Walmart, is no. Our findings provide evidence that collaboration and cooperation between suppliers and exclusive KRA customers (in this case, intersuppliers-Mercadona) can provide a win-win relationship, the key to which is maintaining effective cooperation between both parties to accomplish common goals. In this sense, Mercadona's exclusive intersuppliers had better returns than NMSup, which indicate the model is not a dependency model of market power, in which suppliers give concessions to a stronger retailer in order to obtain or maintain the relationship. On the contrary, the results point to a collaborative or partner model in which both parties are profitable.

It is probable that the high dependency of the intersuppliers which, in many cases, have Mercadona as their only customer, leads to a more collaborative strategy, and this could be key to the good results obtained by the suppliers, in line with Corsten & Kumar (2005), Kumar et al., 2019, Piercy & Lane (2006) and Tzempelikos & Gounaris (2015).

This raises the question of why the media have suggested that the benefits and burdens of Mercadona's intersuppliers are unequally shared out. We agree that this is unjustified and, in line with Benton & Maloni (2005) and Corsten & Kumar (2005), supplier performance has no proven positive effect on supplier satisfaction, and that despite the fact they gain more in these partnerships than their subsector and than NMSup, they still think that they receive less than they deserve. Perhaps, suppliers' dissatisfaction is driven by the nature of the relationship rather than by performance, as stated by the same authors.

## 5.1. Managerial implications

Our study could be of great interest to managers who are considering entering into an exclusive partnership with a KRA, especially if, as in the case of most companies in this study, they are going to produce exclusively or almost exclusively for the retailer (Inderst & Wey, 2007; Villena & Craighead, 2017). For these companies, signing an exclusive partnership with a retailer often brings with it commitments to substantial increases in manufacturing, often to be marketed under the retailer's own brand which, in turn, entails major investments in assets. This makes them highly dependent given the need to make these investments viable as well as the loss of market share or the disappearance of their own brands which have been replaced by those of the retailer. Not surprisingly, companies weigh up the pros and cons of these alli-

ances, yet fear that greater dependence will lead to acceptance of reductions in profit margins beyond what they consider reasonable, which is particularly significant in the cons. The results of this study suggest that while sales prices to the retailer may not evolve in parallel with input prices, this loss is offset by greater economies of scale and efficiency improvements, which has been demonstrated in the case of Mercadona's exclusive intersuppliers, which achieved better ROA and operating profit than NMSup.

Equally, in view of the foreseeable downward pressure on prices exerted by retailers, it would be advisable to include safeguards in supplier-retailer agreements which do not allow retailers to make price adjustments that reduce suppliers' margins to below acceptable thresholds. Thus, according to the model proposed by Cho et al. (2008), there is a supplier's selling price per unit which provides the maximum total profits for both supplier and buyer with a supply chain partnership that are greater than those for any given supplier's selling price per unit without a supply chain partnership, and the aim of these partnerships should be to move towards this ideal.

On the other hand, it is essential to take into account the starting dimension of the inter-suppliers, most of which were in the first quartile by turnover in their subsector. This distances many agricultural producers and their industries from the possibility of entering into supply agreements with retailers, since most of them are small and reduced in size. In this sense, it is essential to promote supply concentration processes in the agri-food sector, which are necessary, as we have seen, to be able to enter into agreements with the distribution sector which, as we have seen, is taking up an increasingly larger share of the market. And in the agricultural sector, cooperatives are the key vehicle for facilitating this concentration, although their capacity is also subject to their achieving sufficient size, not only in terms of enabling economies of scale, but also in terms of volume and timing of supply (Meliá et al., 2024; Valenzuela & Véliz, 2024).

Cooperation has been one of the pillars of the food chain, which can be seen in the role played by social economy organizations in the agri-food sector, which, as an instrument for the union and collaboration of farmers, generate a turnover in Spain equivalent to 69% of the value of Final Agricultural Production (Cooperativas agroalimentarias, 2024). The fact that these agreements, as we have seen, are only accessible to companies with a high supply capacity, highlights the fundamental role that agri-food cooperatives and other social economy enterprises are called upon to play in the current and future context, concentrating production, becoming the gateway for producers to access the market share of distribution firms, which, as we have seen, is constantly growing, and in some countries such as Germany, Holland, France and the United Kingdom, already represents more than 75% in the hands of 5 operators.

## 5.2. Limitations of the study and future research

Despite the contributions to the literature and to managerial practice, this study also has some limitations that may guide future research directions.

Firstly, an increase in the cost of goods sold to sales ratio was found (albeit not significant) which was attributed to a reduction in ExSup prices, as there is some consensus among schol-

ars that these alliances lead to efficiencies in inventory management, and it seems unlikely that the ExSup will have achieved reductions in input acquisition costs. However, it must be acknowledged that no specific analysis of these components was conducted as these items are not reflected in the accounts. Future research could therefore extend our scope by examining the cost of goods sold, which would facilitate a better understanding of their impact on the evolution of ExSup margins.

Secondly, in terms of positive performance development, the fact that the differences between the ExSup and their respective business subsectors (control group 1) were compared reduces potential distortion due to macroeconomic circumstances. However, this does not exclude the existence of circumstances that are specific to each company which may have influenced performance but are not a result of the partnership.

Finally, we only focused on one Spanish retailer, although it is the leader by market share (26.8%). It is therefore necessary to consider the idea that good supplier performance is partly due to retailer-buyer dynamics specific to this retailer. However, Spain is a country that is comparable, in terms of retailers' market share, to many other developed countries, with the top four retailers' market share standing at over 45%, as is the case in France, Germany, the UK and the USA. This means that our results are more or less generalisable for ExSup in developed countries. However, cultural differences between countries or retailers could potentially influence retailer-supplier partnerships. Therefore, future studies should assess the generalizability of our results in other sectors, countries and cultural contexts.

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