

Abhandlung

Severin Bachmann, Richard Reichel, Matthias Wrede*

The effect of a partnership franchising model on consumer satisfaction for a large German cooperative retail chain before and during the COVID-19 pandemic

Die Auswirkung eines Partnerschafts-Franchising-Modells auf die Verbraucherzufriedenheit einer großen deutschen genossenschaftlichen Einzelhandelskette vor und während der COVID-19-Pandemie

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Zusammenfassung: Der vorliegende Artikel analysiert für einen der größten deutschen Einzelhändler anhand von Webrezensionen den Effekt eines Partnerschafts-Franchising-Modells auf die Verbraucherzufriedenheit und die Unterschiede dieser Effekte vor und während der COVID-19-Pandemie. Das Besondere am Franchise-Modell dieser Kette ist, dass sich der Franchisegeber finanziell an einem Partnerschaftsmodell beteiligt und die Franchisenehmer wiederum erhebliche unternehmerische Freiheiten genießen. Das Ergebnis dieser Studie zeigt, dass Verbraucher mit Franchisenehmern wesentlich zufriedener sind als mit zentral geführten Geschäften. Die Zufriedenheit der Verbraucher ging zurück und der Vorsprung der Franchisenehmer nahm während der Pandemie ab.

***Kontaktpersonen:** Severin Bachmann, Nuremberg Research Institute for Cooperative Studies, Findelgasse 7-9, 90402 Nürnberg, E-mail: severin.bachmann@gmx.net

Prof. Dr. Richard Reichel, FOM University, Essen, and Nuremberg Research Institute for Cooperative Studies, Findelgasse 7-9, 90402 Nürnberg, E-mail: reichel@genossenschaftsinstitut.de

Prof. Dr. Matthias Wrede, Nuremberg Research Institute for Cooperative Studies, and Friedrich-Alexander University Erlangen-Nürnberg (FAU), School of Business, Economics and Society, PO Box 3931, 90020 Nürnberg, Germany, E-mail: matthias.wrede@fau.de

Abstract: Using web reviews, we analyze the effect of a partnership franchising model on consumer satisfaction and the differences in these effects before and during the COVID-19 pandemic for one of the largest German retailers. The franchise model of this chain is special in that the franchisor participates financially in a partnership model, and on the other hand, the franchisees enjoy significant entrepreneurial freedom. This study finds that consumers are substantially more satisfied with franchisees than centrally managed stores. Consumer satisfaction declined and the lead of franchisees diminished during the pandemic.

Résumé: À l'aide de revues de web, nous analysons l'effet d'un modèle de franchise en partenariat sur la satisfaction des consommateurs et les différences dans ces effets avant et pendant la pandémie de COVID-19 pour l'un des plus grands détaillants allemands. Le modèle de franchise de cette chaîne est particulier en ce sens que le franchiseur participe financièrement à un modèle de partenariat et que, d'autre part, les franchisés jouissent d'une grande liberté d'entreprise. Cette étude montre que les consommateurs sont nettement plus satisfaits des franchisés que des magasins gérés de manière centralisée. La satisfaction des consommateurs a baissé et l'avance des franchisés a diminué pendant la pandémie.

Keywords: cooperatives, franchise, consumer satisfaction, retail, COVID-19, pandemic

JEL Classification: L22, L81, P13

1 Introduction

The franchise is a common alternative to full vertical integration in retail, ideally combining its advantages with those of decentralization (Mishra, 2017; Beere, 2017; Glaser et al., 2020). Some companies, such as the REWE Group examined in this study, do not opt for one of the two models, but employ a dual-distribution channel model, i.e., they manage some of their businesses in a centrally controlled manner and leave the management of other businesses to local partners. Vertical integration and franchising, therefore, exist side by side not only in one industry but also in a corporation or group of companies. If this structure does exist not only temporarily but also permanently, it can be assumed that the group will benefit from it. She can select the right model for her for specific circumstances on site (Chaudhuri et al., 2001). Whether customers will benefit from this differentiation is an open question.

The COVID-19 pandemic was a major shock for retailers, requiring significant adjustment efforts (Pantano et al., 2020; Bretas & Alon, 2020; Smith & Machova, 2021). The change in customer satisfaction during the pandemic can show to what extent these have been successful. Differences in the adaptability of centralized and decentralized models to shocks such as the pandemic can be identified more easily using companies such as REWE Group, which have established both models, because we can compare centrally managed shops and locally managed shops in a common framework. The results of such a comparison are important for both the retail sector and other sectors and their resistance to crises.

To address these issues, we analyze for one of the largest German retailers, the REWE Group, the effect of a partnership franchising model on consumer satisfaction and, in this context, the dampening effect of the COVID-19 pandemic. We expect that firms that, like franchises, are only active in one location or in one city, can and want to respond more accurately to their customers specific preferences than a nationwide retail chain and thus achieve higher customer satisfaction. Customer satisfaction in a shop would therefore be directly attributable to the legal form, but could also be influenced by the selective choice of location. Because the COVID-19 pandemic and related restrictions, such as distance rules and mask requirements, affect the shopping experience, we assume that customer satisfaction will decrease during the pandemic. Safety concerns, poor wearing comfort of face masks, delivery bottlenecks, and waiting times make shopping a risky and unpleasant event (see, e.g., Eroglu et al., 2022; Meixner & Katt, 2020; Rossetti et al., 2022). We suspect that, on the one hand, positive economies of scale occur when dealing with the pandemic and fulfilling the requirements, and on the other hand, smaller local firms can better assess the safety needs and purchasing behavior of their specific clientele. Although it is not known *a priori* with certainty whether centrally managed shops have an advantage over franchisees during the pandemic, we rather expect that satisfaction with centrally managed shops will increase comparatively, especially given the greater importance of digital shopping.

To answer these research questions, we link data on the location and legal form of the REWE Group's stores in large cities of more than 500,000 inhabitants in Germany with the ratings of the stores that were stored in Google Maps in January 2021.

The key results of our empirical analysis are as follows. Controlling for neighborhood and local market effects, we find that consumers are substantially more satisfied with franchisees than with centrally managed stores. This also holds when we consider the period before and during the pandemic separately. During the pandemic, consumer satisfaction declined. The decline was more pronounced for

franchisees than for centrally managed stores, which implies that the lead of franchises diminished during the pandemic.

With our contribution, we address three research gaps: First, we combine consumer satisfaction, franchising, retail, and the COVID-19 crisis. We are not aware of any studies evaluating the relationship between customer satisfaction and retail store ownership in conjunction with the impact of the COVID-19 pandemic on this relationship. Second, we examine a retail chain in Germany, taking into account the legal, social and economic peculiarities of this large market. Third, we look at a very large retail chain that emerged from a cooperative and has set up a partnership model that includes a financial commitment from the head office and still leaves a lot of leeway for the retailer. This is a special business model that has not yet been examined in scientific studies in this context.

This article is organized as follows. First, Section 2 presents a literature review. Then, Section 3 provides information on the research context, and Section 4 describes the research methodology with a focus on the data and the data collecting process. Section 5 contains the empirical analysis, including descriptive statistics and regression analysis. Finally, Section 6 discusses the results and implications.

2 Literature review and hypotheses

Our empirical analysis is based on the literature on the franchise business model, on the advantages and disadvantages of this business model compared to a centralized structure and on the combination of both models by a company. On the other hand, we refer to the literature on consumer satisfaction and its measurement with online ratings. Finally, our analysis is based on the rapidly growing literature on the effect of the COVID-19 pandemic on retail, consumer satisfaction and the franchise model. In this section, we will present the findings of these strands of literature that are relevant to our questions, one after the other, in order to then derive the hypotheses for the empirical analysis based on literature and theory.

The origins of modern franchising can be traced back to the mid-19th century when German breweries licensed restaurants and tavern owners to serve their products. At about the same time, in the US, franchising as a business model emerged when Isaac Singer sold licenses for the distribution of sewing machines combined with an attractive scheme of deferred payments for the franchisees (Beere, 2017). Later, in the 1920s, the franchise model was introduced in other service-related sectors like retailing, hospitality, and personal/business services (Fulop & Forward, 1997; Salar & Salar, 2013). As the service sector grows in relative terms (as a percentage of GDP), franchising now accounts for a significant fraction of total

production. Though this is particularly the case in emerging economies (Bretas & Alon, 2020), franchising firms significantly contribute to GDP in many high-income countries. While in the US, the fraction is approximately 3 percent (International Franchise Association, 2021), in the European Union it is slightly below 2 percent on average (Abell, 2016). Comparable figures can be found in Germany, with a GDP fraction of 3.35 percent (Czibulinski, 2018). Regarding retail sales, franchising is much more important. In the US, franchising accounts for approximately 40 percent (Evanschitzky et al., 2011).

The rationale behind the introduction of the franchising business model and its subsequent success can be explained by a set of partially interrelated theories. First, agency theory can be applied to determine an optimal combination of a unique product and distribution idea that is provided centrally with a decentralized system of sales outlets under individual shop ownerships. The main argument that agency theory emphasizes is the reduction of moral hazard and adverse selection. This contributes to a minimization of vertical control costs (Beere, 2017). Other theories and arguments are related to the reduction of resource and transaction costs (Glaser et al., 2020). A uniform production and distribution scheme contributes to productivity-enhancing and thus cost-saving routines. Franchising may also lower the franchisor's costs of raising capital. If the franchisee is obliged to incur the investment costs when an outlet is established, the build-up of distribution chains is facilitated when the franchisor is capital-constrained (Beere, 2017).

An important phenomenon in the franchising industry that has attracted research is the coexistence of franchiser-owned retail outlets and outlets owned by individual shopkeepers, the franchisees. In this context, two basic research questions have been addressed. The first is about the general justification for having two different types of store ownership that exist simultaneously (dual distribution). The second question asks for the determinants of the specific success factors in both cases. Many studies in this context evaluated whether there are performance differences between the two ownership types. Regarding coexistence, Chaudhuri et al. (2001) developed a production function-based model outlining that the distribution of company-owned and franchised outlets depends on the location quality. The higher the potential profitability of a location, the higher the likelihood that it is company-owned. Franchised outlets, however, are relatively more profitable if location quality is low. The authors claim empirical support from a number of studies.

However, Kosová et al. (2013) point to the problem of endogeneity. If franchisors decide which location is to be franchised and there is some prior knowledge about the locational quality, empirical studies conducting simple shop performance comparisons may be subject to an endogeneity bias. Therefore, the authors control

for endogeneity and also add a number of other control variables. Their empirical model has been tested for the hotel sector and shows that performance differences between company-owned outlets and franchised shops become insignificant. Ackermann (2019) addressed the endogeneity problem from a different perspective. He focuses on the restaurant sector and tries to tackle the endogeneity problem by looking at ownership changes at a particular location. At least in the specific case of a restaurant chain, it can be shown that revenues increase after an ownership transfer (in 2008) from the company to a franchisee (Ackermann, 2019, 5193). This result is partly confirmed in a study by Sveum & Sykuta (2019). The authors compare full-service and limited-service restaurants. They find that franchisee-owned restaurants are more efficient, but only in the case of full-service restaurants. This finding is astounding at first sight and seemingly contradicts the hypothesis of routine-based efficiency gains. However, the results point to a potentially important role of staff motivation which may be more sales-promotional if full service is offered. This hypothesis is indirectly confirmed by the findings of Beneke et al. (2011). The authors compare customer satisfaction with company-owned and franchised grocery stores (supermarkets) in South Africa. Therefore, a couple of hypotheses are tested. The key findings are as follows. Franchised outlets generally perform better in terms of customer satisfaction. In particular, customers rate franchised stores better regarding service orientation, willingness to solve problems, operational benevolence, and consumer trust. All these factors are closely related to the attitude of the store personnel towards consumers. The non-consideration of an endogeneity bias may be a drawback, although it is highly unlikely that locational disadvantages contribute to better customer satisfaction in the case of franchised stores. A better explanation for the staff's attitudes towards consumers may be the complex relationship between the company owner, franchisee, and the local employees (Evanschitzky et al., 2011). As the authors conclude, higher employee satisfaction translates into higher customer satisfaction and strengthens the link between consumer satisfaction and the likelihood of repurchases.

With the increased availability of internet rating systems, consumers have increased opportunities for sharing opinions about product characteristics and thus contribute to a rationalization of purchasing decisions. Producers have also used ratings and reviews to adjust advertising and online sales promotion as well as to deal with consumer complaints (OECD, 2019). A question of particular interest is how reviews and ratings affect sales. This question has been addressed by a couple of studies that consistently find a relationship between both variables. Andersen & Magruder (2012) uncover a quite large positive effect of Yelp ratings on restaurant sales that is unlikely to be biased by rating manipulations. Luca (2016) confirms this positive effect but points out that it can be only attributed to independent

restaurants, not to those that are chain-affiliated (i.e., franchise restaurants). He finds that following increased market penetration of Yelp reviews, the market share of independent restaurants increased. Luca (2016, 2) hypothesizes, " ... that online consumer reviews substitute for more traditional forms of reputation." Askalidis & Malthouse (2016) report similar positive effects of ratings on sales performance in the market segment of high-end specialty gifts that are marketed online. Whether customer satisfaction depends on ownership in the hotel sector has been evaluated by Lawrence & Perrigot (2015). Using TripAdvisor reviews, the authors find that general consumer satisfaction regarding hotel location is significantly higher with company-owned hotels, compared to franchised units. However, with respect to service, franchised hotels perform better when rated by business travelers.

Usefulness of reviews and informational content for buyer's decisions depend on a few factors that have already been evaluated. First, reviews have a greater impact if the number of attributes mentioned is high (Yi & Oh, 2022). Second, reviews seem to be of greater importance for high-quality product suppliers than for low-quality sellers (Sun et al., 2021). This is of particular relevance for the retail market we are going to analyze. As we shall stress in Section 3, REWE retail outlets are in the top range of perceived product quality, contrary to discount stores like Aldi or Lidl (Böhm et al., 2007). Therefore, reviews are of particular relevance. As Li et al. (2020) point out, the length of a review has no significant impact on sales. This is of particular importance for our study, which relies on online reviews of various lengths. To the best of our knowledge, there are currently no studies that evaluate the nexus between review-based customer satisfaction and outlet ownership in the retail sector.

COVID-19 and the government-imposed restrictions have hit the retail sector hard. Based on online reviews and ratings, surveys, survey experiments, reports, and expert interviews, several studies have examined the effects on retail trade. Using web reports, Brandtner et al. (2021) demonstrate that for Austria's five biggest retail chains, the large and significant decline in consumer satisfaction is due to the pandemic, which is also strongly influenced by political regulation. Text analysis of the reviews revealed that store layout and facilities, product availability, and waiting time are important determinants of the pandemic's effect on consumer satisfaction. Survey data show for the U.S. that expectations for in-store safety of consumers have increased and that shopping behavior has changed (Wang et al., 2020). Consumers have reduced the frequency and duration of visits and have spent more per shopping trip. They have developed a preference for spatial proximity. The range of products and the volume of online purchases have increased significantly (Pantano et al., 2020; Wang et al., 2020). Due to a lack of professionalism, however,

small retailers are often unable to participate in this development (Beckers et al., 2021). Consumers have had new experiences with home deliveries, store pick-up, and cashless payment (Pantano et al., 2020). Eroglu et al. (2022) show that higher levels of human congestion lead to lower shopping satisfaction and that this effect is influenced by the relationship between customers and employees, which in turn is related to the handling of the COVID-19 pandemic. Based on a survey in New York, Rossetti et al. (2022) demonstrate that consumers, on average, value safety measures during the pandemic, albeit to varying degrees. DiCrosta et al. (2021) argue that crises affect people's willingness to buy necessities and non-necessities differently. Based on an online survey, they showed for Italy that anxiety and COVID-19-related fear predicts shopping behavior for necessities, but depression is crucial for non-necessities. A shift from non-necessities to necessities is also confirmed by Vazquez-Martínez et al. (2021) and Rydell and Kucera (2021). This shift seems to be more related to perceptions than to practical effects of the pandemic. Watson et al. (2021) highlight demand reductions for higher-priced products. Meixner & Katt (2020) found in a choice experiment in the U.S. that food safety concerns also have become more important. To adjust to the pandemic, retailers have changed their supply chains, product ranges, and customers services, such as contactless payments and digital communication (Pantano et al., 2020; Bretas & Alon, 2020).

Ma (2021) explicitly studies the determinants of customer satisfaction with life-stream shopping during the pandemic. The author reveals that satisfaction was determined mainly by the quality of service and information. Though these findings cannot be indiscriminately generalized and transferred to traditional grocery stores, it is likely that factors like service and information also play a role for these more traditional distribution channels (Rydell & Kucera, 2021). Besides product quality, pricing policy, and the quality of processes and services can be considered the main drivers of customer satisfaction and the disposition to buy. As Evanschitzky et al. (2011) point out, employee satisfaction is a key factor for achieving customer satisfaction. Given these findings, there are two questions we have to answer.

The first question is related to the average customer satisfaction in company-owned stores versus franchisee-owned stores. According to the literature findings, it is likely that franchisee-owned outlets perform better if employees are not dissatisfied with their franchisee-employer. The role of store employees and their service-orientation cannot be overstated in the case of REWE since service-orientation plays an important role, contrary to discount stores like Aldi or Lidl. Following the literature results, we expect better ratings for franchised outlets in general. Three channels may cause differences among company-owned stores and franchised outlets. First, in the case of REWE, franchisees are more flexible to locally set prices for

a variety of products. They are thus capable to faster respond to changing demand patterns. Second, REWE franchisees are entitled to fix their own product portfolio, besides a standard product range that is determined centrally. This may contribute to increased consumer utility, particularly if products from regional suppliers are in high demand. Third, according to partnership models, the remuneration incentives of franchisees are likely to contribute to a higher commitment to performance, compared to the fixed salaries of centrally employed market managers. Thus, we can hypothesize that franchisees get better consumer reviews than centrally owned stores:

H1: Franchised outlets get higher ratings than centrally owned stores.

Following the literature, we cannot expect that the general level of customer satisfaction has stayed constant since the outbreak of the pandemic. In particular, the results of Rydell & Kucera (2021) and Birtus & Lazaroïu (2021) reveal that consumers perceived retailers as less supportive during the pandemic. This may have transformed into worse ratings of customer satisfaction. A similar effect may emerge from restricted product availability due to panic buying and stockpiling behaviors (Birtus & Lazaroïu, 2021). From this we have derived the following hypothesis:

H2: The COVID-19 pandemic causes an average deterioration of ratings.

Finally, we can pose a question regarding the relative position of franchisee-owned stores during the corona-pandemic. Literature gives little guidance to this direction of research apart from certain hypotheses highlighting a shift from traditional outlets to online purchases (Watson & Popescu, 2021). However, in Germany online purchases in the food sector still play a limited role despite respectable growth rates during the pandemic (Handelsverband Deutschland, 2021). Customer satisfaction changes if one of its key determinants change. The question is whether these changes will affect company-owned stores and franchised stores asymmetrically. An unexpected shock like the COVID-19 pandemic is unlikely to suddenly change structural factors like traditional product portfolios or location advantages. Therefore, we can ask whether customer satisfaction may change asymmetrically if determinants like product policy, pricing policy, quality of service, and managerial incentives change. The latter can be excluded, as there were no changes in the institutional arrangements of employment contracts and the autonomy of franchisees. Thus, centrally owned stores and franchised stores may have responded differently to the challenges of the pandemic, thus causing differences in customer satisfaction. As Rydell & Suler (2021) have pointed out, consumers have formed new digital habits during the pandemic, e. g. ordering via digital channels, information

sharing via social media and messaging apps, and flexible forms of delivery. Customers spend more time at home and online (Smith & Machova, 2021) but have also experienced problems in home deliveries (Hopkins & Potcovaru, 2021). These habit changes are likely to reduce the comparative rating advantage of the franchised stores with their focus on local customer services. In this case, local problem-solving capacities are perceived less strongly. Moreover, centrally owned stores may realize positive economies of scale when executing administrative instruction. A relative rating decline of franchised stores can then be assumed. This leads to our third hypothesis:

H3: The pandemic causes a decline of rating differences between franchisees and centrally owned shops.

3 Research context

The food retailing sector in Germany is characterized by an oligopolistic market structure. In 2020, four groups of companies accounted for a market share of more than 75 percent. The REWE group, whose supermarkets we analyzed, is the second-largest supplier with a market share of 20.8 percent (Deutscher Bauernverband, 2021). Its origins can be traced back to the 1920s when independent shopkeepers founded regional purchasing cooperatives that united to the REWE cooperation (Revisionsverband der Westkauf-Genossenschaften) in 1927. After World War II, more and more functions were centralized, and the former classic cooperative structure transformed into a franchise-like system. Since the end of the 1960s, REWE introduced the so-called "Regiebetrieb", a company-owned retail outlet (Warich, 2011; Wortmann, 2021). Today, the group operates more than 1,700 grocery stores and supermarkets and supplies more than 2,600 partners and associated company markets in Germany (REWE Zentralfinanz eG, 2021). REWE thus offers an instructive example of dual distribution. Compared to a pure purchasing cooperative structure, from a principal-agent perspective, principals and agents have changed.

The reasons for the long-term expansion of the "Regiebetriebe" are twofold. First, company-owned grocery stores were intended as a means against the demise of stores, mostly in rural regions. Second, establishing own shops facilitated takeovers (Warich, 2011). More recently, REWE has tried to expand the number of franchisee-owned stores via "privatization". This may also be motivated by cost-reduction aspects. REWE's own employees are subject to collective bargaining agreements which are less likely to be applied in the case of franchisee-owned stores (Warich & Neumann, 2012).

At the heart of the REWE Group is currently the REWE Zentralfinanz eG, a registered cooperative. Besides the supermarkets that are completely owned by the superordinate companies of the REWE Group, which operate under the names “REWE Markt GmbH” or “REWE Regiemarkt GmbH,” the REWE Group operates two different cooperation models, the so-called “REWE Partnerschaftsmodell” (REWE partnership model) and the “Modell ohne REWE Beteiligung” (Model without REWE participation) (REWE, 2021). The main difference between the two types of cooperation is the franchisor's financial commitment to the franchisee's supermarket. In the first model, REWE Zentralfinanz eG holds a significant share in the franchisee's market, while the latter model is limited to the right to use the REWE name. In the partnership model, REWE Group obliges those involved to choose the legal form of an “Offene Handelsgesellschaft” (OHG, Open Trading Company). This is a legal partnership under German company law, in which at least two legal entities join forces to run a company. Although the partners have extensive freedom in structuring the OHG, they are personally liable without limitation for the company's liabilities. In effect, the legal form of the OHG is only found in the partnership models because this legal form without REWE participation is unattractive for franchisees due to the high financial risk of unlimited owner liability. In the model without REWE participation, the owner has more freedom but also bears a greater risk. However, although partner companies are recognizable in the company register and also based on the legal form for outside experts, this does not apply to the ordinary customer, since all markets have a largely comparable appearance both online and offline. This is different for the largest retail chain in Germany, EDEKA, whose ownership structure is much more visible and which we therefore did not select for our analysis.

4 Research methodology

In this section, we describe the data sources and data retrieval. Our data include information about REWE supermarkets in all major German cities with more than 500,000 inhabitants, with the exception of Frankfurt am Main.¹ We take the data from the REWE Group website, the web mapping platform Google Maps, the consolidated financial statements of REWE Group companies, which are included in the register “Unternehmensregister” (company register), as well as the website of

¹ We exclude Frankfurt am Main from the analysis due to difficulties in identifying the supermarkets in Frankfurt, which result from their representation in our data source.

the service provider North Data GmbH who, among other things, describes corporate relationships. In addition, we obtain the necessary geographic information for the large cities, which all have the status of a county, from the shapefiles VG250 of the Federal Agency for Cartography and Geodesy (© GeoBasis-DE / BKG 2020). Finally, we obtain socio-economic data on the 1 km grid level from the RWI-GEO-GRID database.

The website <https://www.rewe.de/marktseite> of the REWE Group enables customers and other interested parties to search for REWE supermarkets and provides detailed information about the supermarkets. We collect brand names, specific market names, addresses consisting of street, house number, zip code, city, and geo tags from this website.

In order to determine the ownership structure of a supermarket, we first use the name of the supermarket given on the REWE Group website. We can classify every supermarket that is referred to as “REWE Markt GmbH” or “REWE Regiemarkt GmbH” on the REWE website as being wholly owned by REWE. Of the 657 supermarkets that we found, 348 belong to the first and 22 to the second category. Due to the characteristics of the legal form OHG and its role in the REWE partnership model, we assign the 236 open trading companies to be found on the REWE website to the REWE partnership model. With data from the consolidated financial statements published in the company register and North Data GmbH, we are able to almost completely assign the remaining markets. In the end, we have 390 centrally controlled stores, 236 stores in the partnership model, 29 stores without REWE participation, and two stores that cannot be assigned. Due to the small number of observations of franchisees without direct REWE participation and the resulting low statistical significance for differences between different franchise models, we concentrate our empirical analysis completely on the centrally controlled stores and the stores in the partnership model and drop the other observations, with 626 remaining observations. The dummy variable *partner* will indicate the partnership model.

Based on the name and address of each REWE supermarket, we use Google Maps to identify additional features using web scraping carried out on March 25, 2021. In this way, we get the average rating, the total number of ratings, and the average time spent by consumers in the respective market. The variable *average rating* will be our primary dependent variable. In addition, we record every single review that is stored on Google Maps, the text of the review, the rating on a scale of 1 – 5, and the information on the time of publication. The stored times are relative values and are more inaccurate with a greater time lag. The information is specific to the day for the first seven days (1/2/.../7 days ago), then week-specific in the first month (1/2/3/4 weeks ago), after the first month in the first year, month-specific,

and finally year-specific. However, the accuracy of the information is sufficient to identify the period of the COVID-19 pandemic. In order to be able to determine differences in the ratings before the COVID-19 pandemic and during the pandemic, we calculate average ratings based on the individual ratings on the one hand for the last 12 months² (*ratings during COVID-19*), i.e., for the time after the first lockdown, and on the other hand for the time before the lockdown (*ratings before COVID-19*). In addition, we calculate the difference between these two ratings (*change in rating*).

We also use Google Maps to determine the longitude and latitude of the locations of REWE competitors such as Aldi, Edeka, Kaufland, Lidl, Netto, Norma, Penny, Real, Spar, and Tegut. With this information, we can determine the Euclidean distance between a REWE supermarket and the closest competitor in one of two categories. To this end, we differentiate between discounters and supermarkets with a full range of products (*distance discounter* and *distance supermarket*). The distances are indicators of the competition intensity.

Using a geographic information system (GIS), we determine the centroids of the cities based on the shapefiles. We then calculate the straight-line distance between these and the locations of the supermarkets (*distance city centroid*). This distance approximates the accessibility of the supermarket for business people and tourists and thus indirectly the properties of the reviewers.

Because the social and age structure of the customers can be correlated with what the supermarket has to offer, the customer orientation of the supermarket, the attitudes of the reviewers, and the decision for a franchise company or a centrally controlled store, we want to control for the socio-demographic properties of the environment. To do this, we match the locations of the REWE supermarkets and the 1 km grids taken from the RWI-GEO-GRID database with the GIS.³ The RWI database provides us with information on the number of households, purchasing power, unemployment, age, and gender structure, the proportion of foreigners, housing types for every 1x1 km grid in the major cities we examined. In the course of our investigations, however, it turns out that only the *population density* and the proportion of those over 65 years of age (*share 65 plus*) show significant effects.

² The second half of March 2020 captures the beginning of the first wave of the COVID-19 pandemic and the state lockdown measures in Germany very well. The Oxford COVID-19 Stringency Index was as low as 25 on March 8th and then rose to a maximum of 76.85 during the first wave in two weeks to March 22nd (Hale et al., 2021).

³ For more information on RWI-GEO-GRID, see Breidenbach & Eilers (2018).

5 Results

In this section, we first describe the variables and their distribution. Second, we conduct an in-depth test of the hypotheses using regression models.

5.1 Descriptive statistics

We first describe our main variable, the *average rating*, and present results for the bivariate relationship. Table 1 shows the summary statistics for the average rating. The average rating is in the range [2.9, 5], with a mean of 4.05. The average rating of the partner companies (franchised outlets) is approximately 0.1 higher than that of the centrally managed markets, as the lower limit of the average ratings for centrally managed markets is significantly lower than that of the partner companies. A t-test reveals that the difference in means is statistically significant at the 99% level and thus supports our first hypothesis H1. Figure 1 shows that the distributions in the middle and lower value ranges differ greatly. There are obviously more downward outliers in centrally managed stores.

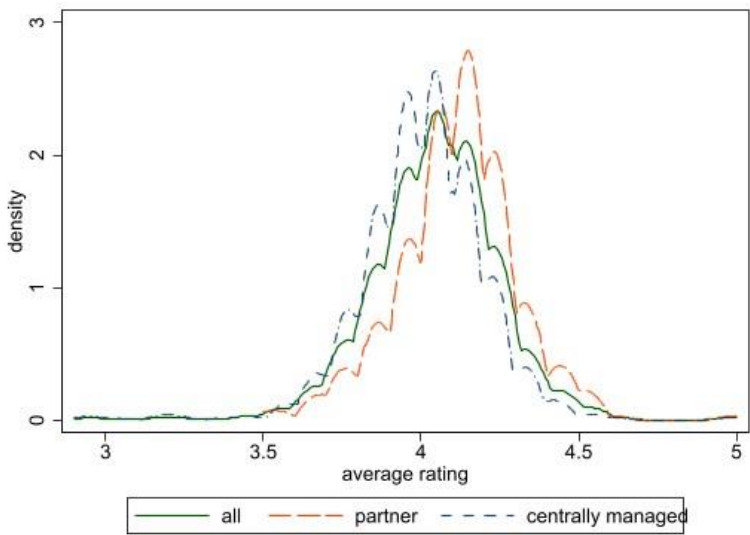


Fig. 1: Density plots for average ratings by store type

Tab. 1: Summary statistics for average ratings

	mean	sd	min	max	count
average rating	4.046486	.2051234	2.9	5	626
partners' average rating	4.113136	.1911809	3.5	5	236
centrally managed stores' average rating	4.006154	.2029679	2.9	5	390
ratings before covid-19 ⁴	4.019695	.224548	2.833333	5	605
ratings during covid-19 ⁵	3.909299	.4275339	1.975904	4.65625	624

Tab. 2: Spatial variation of ratings and ownership

	average rating	partner share
Berlin	3.985616	.3013699
Bremen	4.062069	.4137931
Dortmund	4.030303	.9090909
Dresden	4.28	.9333333
Duisburg	3.925	.5833333
Düsseldorf	4.087879	.1818182
Essen	4.058333	.6666667
Hamburg	3.998701	.1948052
Hannover	4.089474	.4210526
Köln	4.08	.44
Leipzig	4.137037	.5925926
München	4.050725	.2318841
Nürnberg	4.164	.24
Stuttgart	4.008696	.2173913
Total	4.046486	.3769968

When evaluating this finding, it must be taken into account that there are other factors influencing the ratings and that the ownership structure was not created by chance, but rather through active decisions, especially by the REWE Group. The difference described may be due to other factors that are correlated with both the ownership structure and the ratings. For example, Table 2 demonstrates that the ratings and the ownership structures differ considerably between the cities

⁴ Because some stores didn't exist over a year ago, the number of old ratings is lower.

⁵ For two stores the number of ratings is so small that no period specific ratings were calculated.

examined. In Section 5.2, we include city dummy variables to account for these differences.

On average, approximately 38 percent of all retail stores in our sample are (partially) owned by partners. This implies that 62 percent are either centrally owned or fully individually owned (classic franchisees). We must, however, point out that our “urban” sample may not be representative for the population that includes many rural locations.

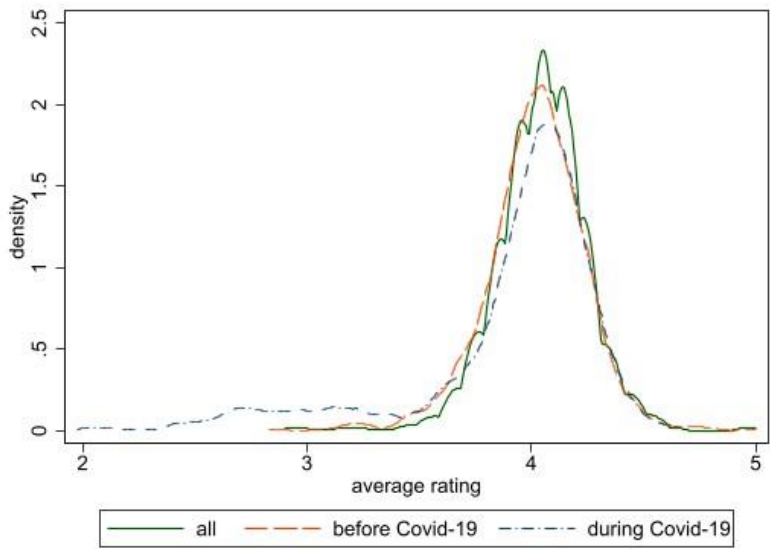


Fig. 2: Density plots for average ratings by period

The ratings vary not only spatially but also temporally. Table 1 and Figure 2 show that the ratings have deteriorated significantly in the course of the COVID-19 pandemic and the associated government countermeasures. The differences in the means are also statistically significant at the 99% level. The pandemic has been accompanied by both a decline in peaks and a deterioration at the lower end of the distribution. All in all, our second hypothesis H2 too gets empirical support.

5.2 Regressions

After we have tested the hypotheses with bivariate analysis and found that partner markets (franchisees) are rated better by customers than centrally managed markets and that the ratings have generally deteriorated in the course of the COVID-19 pandemic, we want to confirm these hypotheses in this section by means of multiple linear regressions (see, e.g., Greene, 2020). Because we do not know all the relevant influencing factors and the form of ownership of the markets is deliberately determined by the REWE group, and thus selection in types of ownership is possible, we cannot identify causal effects with a multiple regression, but we can determine convincing conditional correlations.

In a first step, we take into account for the spatial variation in ratings and types of ownership by using city-fixed effects to control for the properties of the respective city as a whole and by controlling for the distance to the city center. Table 3 contains the basic model without control variables (Model 1), a model with city-fixed effects (Model 2), and a model that also takes into account the distance to the city center (Model 3). In all these models, the partnership model increases the average rating by approximately 0.1 points. The adjusted R squared suggests that the city-fixed effects explain the variation in the rating to a considerable extent. However, they do little to change the ownership effect that interests us. However, the distance to the center has no statistically significant effect. All in all, we cannot reject H1.

Tab. 3: Baseline regression

	(1) average rating	(2) average rating	(3) average rating
partner	0.107*** (0.0161)	0.105*** (0.0168)	0.103*** (0.0168)
distance city centroid			0.00353 (0.00238)
Constant	4.006*** (0.0103)	3.978*** (0.0223)	3.949*** (0.0289)
city fixed effects	no	yes	yes
N	626	626	626
F	43.95	8.311	7.841
R ²	0.0640	0.147	0.150
R _a ²	0.0625	0.128	0.130

Heteroscedasticity robust standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The social structure of the neighborhood in which the business is located can influence ratings in a number of ways. On the one hand, it may have an influence on the profitability of a business and on the relationship between consumer satisfaction and profitability and thus on the chosen type of ownership and the incentives for the company to increase consumer satisfaction. On the other hand, it can have an impact on the willingness to evaluate and the level of the ratings. Therefore, it makes sense to control for the observable characteristics of the social structure in the regressions.⁶ We first supplement Model 3 separately with each socio-demographic variable and then carry out an estimate with Model 3 supplemented with two statistically significant socio-demographic variables. In the appendix, Tables A-1 and A-2 demonstrate the effects of the purchasing power per household (*purchasing power per hh*), the share of houses with only one or two units (*share of 1/2 unit houses*), the *unemployment rate*, the proportion of older people (*share 65 plus*), the *population density*, and the share of foreigners (*share foreigner*). These tables reveal that only population density and the proportion of older people are individually statistically significant or at least only marginally insignificant. Model 4 in Table 4 contains the estimate in which we include both variables population density and share 65 plus. A higher population density and a higher proportion of older people each have a negative effect on the average rating. However, the coefficient of the type of ownership falls only slightly when the socio-demographic variables are included.

Tab. 4: Regressions on socio-demographics and competition intensity

	(3) average rating	(4) average rating	(5) average rating
partner	0.104*** (0.0168)	0.101*** (0.0169)	0.100*** (0.0172)
distance city centroid	0.00323 (0.00238)	0.00339 (0.00264)	0.00320 (0.00303)
population density		-0.00000941*** (0.00000337)	-0.00000931*** (0.00000340)
share 65 plus		-0.00767*** (0.00290)	-0.00762*** (0.00292)

6 We remove the REWE market at cologne airport outside the city from every analysis that includes socio-demographics at the grid level. Therefore, the number of observations shrinks from 626 to 625.

	(3) average rating	(4) average rating	(5) average rating
distance supermarket			0.00505 (0.0154)
distance discounter			-0.00466 (0.0218)
Constant	3.952*** (0.0289)	4.131*** (0.0596)	4.129*** (0.0612)
city fixed effects	yes	yes	yes
N	625	625	625
F	7.852	6.728	6.196
R^2	0.151	0.170	0.170
R_a^2	0.130	0.147	0.144

Heteroscedasticity robust standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Competitors could also have an impact on the ratings. For customers, competitors are a benchmark, and dissatisfied customers can switch to competitors. Customer satisfaction can increase with additional purchases in a shop nearby. In order to take these circumstances into account, we also control for the distances to the nearest competitors. Furthermore, we differentiate between supermarkets and discounters. However, Model 5 in Table 4 shows that these variables have no significant effects.

Our analysis is completed by a test of our third hypothesis H3. We already know that the ratings have deteriorated in the wake of the pandemic, but now we want to analyze whether centrally managed stores and stores in the partnership model were affected differently. To this end, we regress the rating before COVID-19, the rating during COVID-19, and the difference in ratings on the ownership variable, and on spatial and socio-demographic controls. Table 5 has the results. It turns out that the partnership model had a more positive effect on the ratings before the pandemic than during the pandemic. During the pandemic, the partnership model has apparently lost some of its advantages in creating consumer satisfaction. This may be because the lockdown deprived companies of the opportunity to satisfy their customers through good service, particularly when customers switch to digital shopping alternatives.

Tab. 5: Change-in-rating regressions

	(1) ratings during covid-19	(2) ratings before covid-19	(3) change in rating	(4) change in rating (recent)	(5) change in rating (recent)
partner	0.0719*** (0.0197)	0.115*** (0.0191)	-0.0409** (0.0181)	-0.0329* (0.0190)	-0.0392** (0.0174)
distance city centroid	0.000527 (0.00341)	0.00595** (0.00303)	-0.00540* (0.00292)	-0.00161 (0.00312)	-0.00366 (0.00292)
population density	-0.0000211*** (0.00000432)	-0.00000652* (0.00000381)	-0.0000143*** (0.00000420)	-0.0000136*** (0.00000422)	-0.0000152*** (0.00000408)
share 65 plus	-0.0123*** (0.00296)	-0.00829*** (0.00304)	-0.00385* (0.00232)	-0.00360 (0.00237)	-0.00480** (0.00216)
change in rating before covid-19					-0.240*** (0.0610)
Constant	3.267*** (0.0825)	4.071*** (0.0670)	-0.808*** (0.0765)	-0.856*** (0.0782)	-0.802*** (0.0729)
city fixed effects	yes	yes	yes	yes	yes
N	623	604	604	603	584
F	44.58	5.876	37.68	35.62	38.21
R^2	0.718	0.158	0.711	0.691	0.733
R_a^2	0.710	0.134	0.702	0.682	0.724

Heteroscedasticity robust standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

In order to check whether the changes during the pandemic are only perpetuating established trends from the past, we analyze the changes before the pandemic. To do this, we determine the amount by which the average ratings increased in the last year before the pandemic compared to the time before. A t-test of sample means actually shows that the average ratings of the centrally managed stores before the pandemic developed significantly 0.377 more positively than the ratings of the partnerships. The differences in the changes in ratings during the pandemic partially reflect these trends. To account for trends before the pandemic, we analyze changes in average ratings during the pandemic relative to the last year before the pandemic (*change in rating (recent)*) and control for the change in ratings from the next-to-last year to the last year before the pandemic (*change in rating before COVID-19*). Even then, as columns (4) and (5) show, we find a negative effect of the partnership on the changes in the ratings during the pandemic, which is also comparable in terms of size.

6 Conclusion

Based on online ratings, geodata, socio-demographics, and company reports, we analyzed for one of the largest German retailers, the REWE Group, the effect of a partnership franchising model on consumer satisfaction in major cities with more than 500,000 inhabitants in Germany and, in this context, the dampening effect of the COVID-19 pandemic until January 2021. Controlling for neighborhood and local market effects, we showed that in our case, consumers are substantially more satisfied with franchisees than with centrally managed stores. We found that consumer satisfaction declined during the pandemic and that the decline was more pronounced for franchisees than for centrally managed stores. The higher satisfaction observed among franchisees and the decline in customer satisfaction during the pandemic confirms the findings from the literature presented in Section 2. In view of the theoretical considerations which still remain preliminary, the fact that the relative decline in franchisees ratings is more pronounced can be an impetus for innovations in theory.

Our research results indicate, on the one hand, the attractiveness of the partnership model and, on the other hand, suggest that the mechanisms of crisis management can be improved in this model. The fact that the lead in customer satisfaction for franchisees has decreased during the pandemic is an occasion to reconsider the crisis management of both the franchisees and the REWE Group as a whole. Due to the continued threat of COVID-19, but also in view of increasing global political and military conflicts, companies should increasingly focus on crisis resilience. In the context of this study, this means above all making relationships with franchisees more resilient. Investments in crisis resilience are also advisable with regard to primarily economic crises such as financial and debt crises.

Of course, our analysis has limitations. These limitations include restricted data availability and data quality issues. We did not have any internal information about the markets and the decision-making processes in the company. For example, we could not take into account the size of the market, the number of employees, bottlenecks and protective measures during the pandemic, as well as internal company incentive systems in the empirical analysis. Although we were able to determine the exact locations of the markets, we could not fully describe the social and economic determinants of local business activity due to the lack of small-scale data. In particular, due to unobserved selection in types of ownership, we could not identify causal effects with our regression model, but we could determine conditional correlations. The vague dating of the ratings on Google Maps and the spatial heterogeneity of the COVID-19 pandemic in Germany means that the assignment of ratings to the periods before and during the pandemic is inevitably subject to measure-

ment errors, which presumably leads to an underestimation of the differences. Of particular interest for the relevance of our results is the external validity for other regions inside and outside Germany and other companies with a different governance structure. Within Germany and within the company, we assume representativeness, primarily due to the universality of the business model. Due to the special features of the partnership model of the REWE Group and existing international differences in consumer behavior, transferability to other company structures and countries is an open question.

These considerations result in the following tasks for the future: Firstly, further research into the mechanisms that determine the connections between ownership and consumer satisfaction; second, the identification of causal effects with the help of field experiments or quasi-experiments; third, international comparative research. The latter should be relatively easy in German-speaking countries, not least because of the international involvement of many companies in the retail sector and comparable social, economic and legal circumstances.

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Appendix

Tab. A-1: Regressions on socio-demographics

	average rating	average rating	average rating	average rating
partner	0.104*** (0.0168)	0.104*** (0.0169)	0.104*** (0.0168)	0.104*** (0.0169)
distance city centroid	0.00323 (0.00238)	0.00352 (0.00264)	0.00351 (0.00269)	0.00320 (0.00242)
purchase power per hh		-0.000000345 (0.00000169)		
share of 1/2 unit houses			-0.000281 (0.00152)	
unemployment rate				-0.000184 (0.00276)
Constant	3.952*** (0.0289)	3.965*** (0.0750)	3.951*** (0.0292)	3.953*** (0.0357)
city fixed effects	yes	yes	yes	yes
N	625	625	625	625
F	7.852	7.422	7.359	7.352
R ²	0.151	0.151	0.151	0.151
R _a ²	0.130	0.128	0.128	0.128

Heteroscedasticity robust standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Tab. A-2: Regressions on socio-demographics

	average rating	average rating	average rating	average rating
partner	0.104*** (0.0168)	0.105*** (0.0168)	0.102*** (0.0171)	0.104*** (0.0169)
distance city centroid	0.00323 (0.00238)	0.00635** (0.00255)	0.00141 (0.00253)	0.00286 (0.00244)
share 65 plus		-0.00538* (0.00279)		
population density			-0.00000401 (0.00000342)	
share foreigner				-0.000641 (0.00154)
Constant	3.952*** (0.0289)	4.023*** (0.0481)	3.985*** (0.0377)	3.965*** (0.0417)
city fixed effects	yes	yes	yes	yes
N	625	625	625	625
F	7.852	7.122	7.385	7.385
R ²	0.151	0.161	0.153	0.151
R _a ²	0.130	0.139	0.130	0.128

Heteroscedasticity robust standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$