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Abstract

Premium organic retailers are specialist retailers that exclusively offer organic products. Past literature has not studied their entry, focusing instead on the impact of generalist store entry, such as Wal-Mart. This study examines the impact of premium organic specialist store entry on category performance at incumbent generalist stores for 47 packaged food and beverages categories. The results indicate that incumbent stores lose sales after a local organic store entry, and that the impact of price on sales at generalist stores becomes stronger. The authors postulate that incumbent stores can reduce sales losses by reducing the relative distinctiveness of the entrant along three dimensions: variety, price-quality, and authenticity. Empirical results show that more variety in organic products as well as more organic feature and display advertising protect generalist stores from premium organic specialist store entry. Assortments composed of premium organic products are harmed less, whereas assortments where organic products are subject to more frequent and deeper price promotions are harmed more. Furthermore, including products from an organic specialist brand in generalist's organic assortments, offers additional protection.

Keywords: organic food, organic retailer, specialist, store entry, competition, marketing mix, retailing, grocery shopping

Several studies in marketing have investigated the effects of local store entry on incumbent's store performance (Ailawadi et al. 2010; Gielens et al. 2008; Seenivasan and Talukdar 2016; Singh, Hansen, and Blattberg 2006). The results of these studies indicate that new store entrants can have substantial adverse effects on incumbent store performance, but that incumbents offering more similar assortments to the entrant store are most harmed. Yet, these prior studies have focused on competition between generalist stores (e.g., Wal-Mart, Tesco), whereas this study focuses on competition between a specialist store and generalist stores. Whereas generalists typically respond to relatively heterogeneous preferences within the market with a more proliferated line of offerings that covers a broader variety of market preferences, specialists serve a more homogeneous market niche with a clearly differentiated line of offerings (Swaminathan 2001). By analyzing the impact of organic specialist store entry on incumbent generalist store performance at the category level, this study generates novel insights into how the generalist incumbent can reduce the adverse impact by reducing the relative distinctiveness of the specialist.

Although generalist retailers (e.g., Tesco, Carrefour, and Kroger) are the leading sellers of organic foods (Business Insider 2015), they increasingly face competition from organic specialist stores that enter the retail landscape (Grocery Dive 2021). Examples of organic retailers include Alnatura (Germany), Ekoplaza (Netherlands), Bioplanet (Belgium), Bio c'Bon (France), Paradiset (Sweden), Whole Foods (U.S. and U.K.), Honest to Goodness (Australia), and Ceres Wholefoods (New Zealand). The organic retailer's positioning differs substantially from the generalist retailer, as organic products only represent a small part of the

assortment at the generalist store (Van Doorn and Verhoef 2015). Furthermore, (premium) organic retailers are specialist retailers that target a niche market by offering an assortment of exclusively organic products (Zielke 2010) with a broader product variety and stronger focus on product quality within a given niche than generalist retailers.

Organic specialist retailers play an increasingly important role in the retail landscape as they continue to open new store outlets. For instance, organic specialists like Whole Foods have expanded their store network in recent years, thereby increasing their market share in the grocery market (Grocery Dive 2021). The broader success of organic specialist stores can be related to the growing consumer interest in organic food products. In the United States alone, organic food sales totaled 56 billion dollars in 2020, representing nearly 6 percent of total food sales in the United States (Organic Trade Association 2021). Worldwide, sales of organic products have expanded significantly, and are expected to grow further in the future (The Business Research Company 2021). To meet the rising demand for organic products, generalist retailers increasingly include organic products in their assortments. On the one hand, according to anecdotal evidence in the business press, organic retailers and their growing network of stores are "whipping non-specialist supermarkets", as generalist retailers lose market share to organic retailers (Business Insider 2014). On the other hand, organic retailers may risk "losing at their own game", because they face substantial competition from generalist retailers offering organic foods in their assortment (Business Insider 2017).

Despite the growth of organic retailers, empirical research on the impact of organic store entry is currently lacking. In this research, we take the perspective of the incumbent, generalist retailer. We study how the impact of organic (specialist) store entry on incumbent (generalist) category performance is moderated by the incumbent store's organic focus in the category. Does offering more organic products protect incumbent stores? And does promotional support for organic products help or hurt the incumbent store? We study three

organic store entries of an established, premium, organic retailer in the Dutch market between 2012 and 2015, and identify 38 incumbent store outlets from five generalist retailers near the entries. We use SKU-level volume sales, price, and assortment data on 47 packaged food and beverages categories before and after the organic store entry for the 38 treatment stores exposed to organic store entry, as well as for control stores from the same retailers not exposed to organic store entry.

Our key contribution to the existing literature is twofold. First, we contribute to the existing literature on store entry by illustrating that, contrary to the case of Wal-Mart entry (Ailawadi et al. 2010; Gielens et al. 2008; Seenivasan and Talukdar 2016), having a more similar (i.e., less distinctive) assortment compared to the entrant can have beneficial effects for incumbent stores in the case of competition between a specialist and generalist retailer. We propose a conceptual framework that draws on the resource partitioning theory to provide a theoretical motivation for the role of distinctiveness in the context of specialist store entry. Additionally, building further on this theory, we show that promotional support for the incumbent store's organic assortment plays an important role in protecting itself against an organic specialist entrant. Prior work on Wal-Mart entry (Seenivasan and Talukdar 2016) indicates that higher promotion intensity in an incumbent's category reduces the harm of Wal-Mart entry. This study shows that while more feature and display advertising for the organic alternatives reduces the harm of organic store entry, more frequent and deeper organic price discounts increase the harm for incumbent stores. Second, we contribute to the literature on organic food retailing, which has focused on the success of organic products within generalist retailers (e.g., Bezawada and Pauwels 2013), by (i) showing that incumbent stores do not only suffer sales losses but are also confronted with a stronger negative impact of price on sales, and (ii) offering novel and substantive insights into how retail and store managers can protect category sales against organic store entry via the size and composition of their organic

assortment, and into the role of promotional support for their organic products. Overall, our results will help generalist retailers to gain a better understanding of the category performance impact of organic store entry, and will suggest how a generalist store could protect itself against an organic store entrant.

Theoretical Background

This section outlines how the sales impact of premium organic store entry on generalist store performance depends on a generalist's organic focus within the category. First, we discuss competition between a specialist and a generalist, drawing on the resource partitioning theory. Second, we identify underlying dimensions of a specialist's distinctiveness. Third, we discuss how an incumbent generalist store can protect itself against a specialist store entrant by reducing the distinctiveness of the specialist entrant.

Competition Between a Specialist and a Generalist

We draw on the resource partitioning theory to explain how an incumbent store can protect itself in the context of organic (specialist) store entry on incumbent (generalist) store performance (Carroll 1985; Carroll and Swaminathan 2000; Swaminathan 2001). The resource partitioning theory originates from the organizational ecology literature and has, for instance, been applied in the strategic management literature to explain competition between specialists and generalists (Verhaal, Hoskins, and Lundmark 2017). The theory focuses on the competitive effects between specialists and generalists, and has been supported empirically in a diverse range of industries, including the brewery industry (craft breweries) (Carroll and Swaminathan 2000; Verhaal, Hoskins, and Lundmark 2017), newspaper industry (local newspapers) (Carroll 1985), wine industry (farm wineries) (Swaminathan 2001), as well as in the banking sector (cooperative banks) (Lomi 1995). According to the theory, organizations can be categorized as specialists or generalists (i.e., generalists) (Carroll 1985; Carroll and

Swaminathan 2000; Swaminathan 2001). Specialists "choose narrow homogenous targets, while generalist organizations choose targets composed of heterogenous segments" (Carroll and Swaminathan 2000, p.719). As such, specialists serve a more homogeneous market niche with a clearly differentiated line of offerings, whereas generalists "compete in a variety of domains simultaneously" (Carroll 1985, p.1266), and typically cover a broader variety of market preferences. As a result, "specialist organizations are usually smaller than generalists" (Carroll 1985, p.1266).

Applied to our setting, organic stores can be seen as specialists, and the incumbent (non-organic) stores as generalists. Organic specialist store assortments are substantially different from incumbents' (generalist) assortments, as organic stores specialize in organic products, without providing conventional (non-organic) products. Generalist stores, however, are characterized by more diversified assortments that largely offer conventional products, and only offer a limited number of organic products (Van Doorn and Verhoef 2015), thereby responding to relatively heterogeneous consumer preferences. The premium organic store, oppositely, appeals to the niche segment of organic-minded consumers seeking high-quality organic products. In line with the idea that generalists compete in a variety of domains simultaneously (e.g., organic and non-organic products) (Carroll 1985), non-organic stores can thus be classified as generalists, and organic stores as specialists.

The theory posits that the mechanism underlying the success of specialists is an organizational identity that is distinct from that of generalists. Hence, when entering the market, specialists intend to leverage a distinctive identity as a competitive advantage (Swaminathan 2001). Resource partitioning research indicates that successful specialists indeed specialize in market niches in which they can clearly differentiate themselves from generalists through a distinctive identity that typically leverages a unique ability to deliver a variety of high-quality products in an authentic way within a niche market (Carroll and

Swaminathan 2000). For example, specialist breweries emerged as beer suppliers that provide greater variety to beer consumers with niche taste preferences, and appeal to consumers who value high quality beer that is produced in an authentic, craftmanship-like way (Carroll and Swaminathan 2000). In our context, organic specialists emerged as retailers that provide greater variety of organic products, and appeal to consumers who value high-quality organic products produced by more authentic specialist brands.

The resource partitioning theory has suggested that when a generalist faces intensified competition with another generalist that leverages economies of scale as a competitive advantage (e.g., Wal-Mart leverages its scale to offer lower prices), it can be helpful to increase the distinctiveness between the generalist entrant and generalist incumbent (Carroll, Dobrev, and Swaminathan 2002; Dobrev, Kim, and Hannan 2001). This is in line with prior empirical findings in the store entry literature, where a more distinctive identity of the generalist entrant mitigates the harm for incumbent stores (Ailawadi et al. 2010; Gielens et al. 2008). However, the opposite is expected to hold when generalists face competition from a specialist. Specialists with a distinct identity are better able to enter and compete with generalists in the market when they create a sharper contrast between the entrant and incumbent organizations (Hsu, Hannan, and Pólos 2011). Or, when taking the perspective of the generalist, competition with a specialist is expected to be less fierce if the contrast between the generalist and the distinctive feature(s) of the specialist is smaller. Hence, an incumbent generalist that can successfully reduce the distinctiveness of the specialist, would be less harmed by the specialist. Applied to our specialist store entry context, this leads to the prediction that an incumbent (non-organic) store (i.e., a generalist) is more protected from an organic store entry (i.e., a specialist entrant) if the organic store is less distinctive to the incumbent.

Distinctiveness of a Specialist

Drawing on prior research on the performance impact of specialists on generalists (Swaminathan 2001; Verhaal, Hoskins, and Lundmark 2017), we identify three key dimensions of the distinctive identity of specialists: (1) variety, (2) price-quality, and (3) authenticity. Variety includes actual variety (i.e., the number of distinct options) and perceived variety (e.g., driven by displays) of the assortment (Kahn and Wansink 2004). Price-quality covers perceptions of assortment quality driven by the selling price and price discounts (Rao and Monroe 1989; Völckner and Hofmann 2007). Authenticity "encapsulates what is genuine, real, and/or true" (Beverland and Farrelly 2010, p.839) and captures brand-based perceptions of assortment authenticity (Becker, Wiegand, and Reinartz 2019). For instance, in the case of breweries, specialist breweries enlarged the variety of high-quality specialist beers available to beer consumers, and their specialist brands were perceived to be authentic. Even though generalist beer companies had the resources and technology to produce beer comparable to specialist breweries in terms of quality, they had limited success because their corporate brands lacked perceived authenticity (Swaminathan 2001). These concepts also apply in our setting. First, organic stores typically offer a substantial number of organic products that are not featured by generalist retailers. As such, they provide consumers with a larger *variety* of organic products to choose from. Moreover, while organic specialist store assortments tend to be smaller than generalist store assortments, a typical organic store tends to carry more organic products compared to the more limited range of organic products available at a typical generalist store (Zielke 2010). Second, premium organic stores focus on high *quality* standards for their organic products "that aren't standard anywhere else" (wholefoodsmarket.com/quality-standards), and which are not met by the majority of popular consumer packaged goods that dominate the organic product assortment at the generalist store (Business Insider 2018). Third, premium organic specialist stores focus on an *authentic* organic product range. They predominantly carry products from organic specialist brands, i.e.,

brands that do not produce conventional products (e.g., Natural Temptation, Bionaturae). Organic specialist brands dominate the organic assortment at organic specialist stores, which can help to portray a sense of authenticity of its stores (Carroll and Swaminathan 2000; Olsen, Slotegraaf, and Chandukala 2014). In summary, the core identity of the premium organic store differs from the non-organic store because it is a specialist that appeals to consumers seeking a variety of high-quality/price, authentic organic products.

How Can a Generalist Store Protect Itself from Organic Specialist Store Entry?

The resource partitioning theory states that generalists can reduce the success of the specialist by reducing the distinctiveness of the specialist (Swaminathan 2001). To reduce the distinctiveness of the premium organic store, generalist incumbent stores can leverage their organic focus. Specifically, we predict that higher (i) *variety*, (ii) *price-quality*, and (iii) *authenticity* of the organic products within a category at the generalist store will mitigate category performance losses to the premium organic specialist entrant. These three distinctiveness dimensions can be influenced via the organic focus of the incumbent store. More specifically, we zoom in on how a retail manager's organic assortment and promotional decisions influence organic variety, price-quality and authenticity. Adjusting the category assortment is often the most viable strategy for incumbent stores when faced with competitor store entry (Seenivasan and Talukdar 2016), and attractiveness of the assortment, both in terms of size and composition, is the most important driver of grocery store choice decisions (Briesch, Chintagunta, and Fox 2009). Furthermore, promotional support in the incumbent's category can influence assortment perceptions (Yoo, Donthu, and Lee 2000).

Variety. A larger organic assortment at the generalist store can reduce the distinctiveness of organic product variety at the organic store. This leads us to posit that when generalist stores offer more organic products, they are less harmed by organic store entry. Next to assortment, organic feature and display advertising in the generalist's category can

influence variety perceptions. This can happen because perceived variety may not be the same as actual variety (i.e., the number of options offered), because displays of choice options can affect the perceived variety of the assortment even if actual variety remains constant (Broniarczyk, Hoyer, and McAlister 1998; Kahn and Wansink 2004; Mantrala et al. 2009). In our context, generalist assortments are dominated by conventional products, and organic products represent only a very small fraction of products available at incumbent generalist stores. Feature and display advertising for organic products can increase the perceived variety of organic products available within the category in consumers' minds (Burton, Lichtenstein, and Netemeyer 1999), making the organic alternatives more prominent (Zhang 2006). This leads to amplified organic variety perceptions at the incumbent store, which can diminish the distinctiveness of organic product variety at the organic store.

Price-quality. Lower quality perceptions can make organic-minded consumers less likely to buy organic products at the generalist retailer (Ngobo 2011). In this respect, an assortment that focuses more on relatively higher quality (i.e., more premium) organic products can help generalists to reduce the distinctiveness of the organic specialist retailer on the quality dimension. Hence, we expect that more focus on higher quality organic products will reduce the distinctiveness of the organic specialist store, thereby potentially decreasing the performance loss. However, more intense price promotion support can jeopardize quality perceptions of the organic offerings at the incumbent store (Völckner and Hofmann 2007; Yoo, Donthu, and Lee 2000) in favor of the premium organic specialist store. This can happen because consumers make negative price-quality inferences (Dodds, Monroe, and Grewal 1991; Rao and Monroe 1988), which leads to doubts about the quality of the organic assortment (Völckner and Hofmann 2007). In a similar vein, Ngobo (2011) shows that promoting organic products reduces the likelihood that (core) organic consumers purchase an organic product at the generalist store. Price promotions, and particularly deep discounting,

may be particularly harmful for quality perceptions (Yoo, Donthu, and Lee 2000), and thus increase the distinctiveness of the entrant.

Authenticity. We expect that a more authentic organic assortment at the generalist store will decrease the distinctiveness of the organic entrant. We argue that organic products from organic specialist brands (e.g., Natural Temptation, Bionaturae) are perceived as more authentic compared to organic products from mainstream corporate brands (e.g., Lay's organic products), as consumers trust organic specialist brands to produce and deliver authentic organic products, whereas they distrust organic products from large corporate brands (Sridhar, Bezawada, and Trivedi 2012). This can happen because organic falls outside the core identity-related perceptions of large corporate brands (Olsen, Slotegraaf, and Chandukala 2014). We therefore expect that carrying products from an organic specialist brand reduces the distinctiveness of the organic retailer on the authenticity dimension. Hence, this should further mitigate losses after an organic store entry takes place.

In summary, a generalist store is expected to be less harmed by a premium organic store entrant if the entrant is less distinctive within a category. We identify three dimensions of distinctiveness, namely variety, price-quality, and authenticity, which can be leveraged via the generalist store's organic focus. As outlined in Figure 1, we expect that a generalist store is less harmed when (i) offering more organic alternatives, and (ii) engaging in more frequent organic feature and display advertising in order to enhance variety, (iii) focusing more on premium organic products, and less on (iv) frequent and (v) deep price promotions in order to enhance (perceived) quality, and (vi) focusing more on organic specialist brand products in the category in order to enhance authenticity."

[Insert Figure 1 about here]

Data

Setting

We use data on the Dutch grocery retailer market, which is broadly similar to other European countries and the U.S. on several relevant aspects, such as its economic conditions and the retailing landscape (Steenkamp et al. 2005; Nielsen 2014). In 2016, the Dutch market featured 76 grocery stores of the leading Dutch premium organic retailer Ekoplaza, as well as grocery stores from three smaller premium organic retailers Marqt (N =17 stores), Estafette (N = 19 stores) and Natuurwinkel (N = 28 stores) (Consumentenbond 2016), next to about 2,800 generalist stores. According to a survey by the Dutch consumer agency among 1,143 respondents, about half of consumers visit an organic retailer 'at least sometimes' (Consumentenbond 2016).

We focus on organic store entries by the leading premium organic retailer Ekoplaza that were the first organic store openings in a trading area between September 2012 and March 2015. Ekoplaza is the best-known organic retailer in the Netherlands and is known by 29% of the population (Consumentenbond 2016). Ekoplaza opened its first store in 2005, and its stores offer all major food and non-food categories. Hence, consumers would be able to shift purchases from all categories at the generalist store to the organic store.[1] All products at Ekoplaza are organic and are certified as such. Ekoplaza typically does not offer organic products from the leading CPG brands but offers organic products from organic specialist brands (e.g., Natural Temptation). The main reason stated by consumers to visit Ekoplaza is

the larger variety of high-quality organic products compared to generalist stores (Consumentenbond 2016). Ekoplaza can be seen as a premium organic retailer, as a comparison of a basket of about 3,000 product prices (in April 2016) from different categories and retailers revealed that buying organic products at Ekoplaza is on average about 20% (i.e., 19-20% vs. Albert Heijn and Plus, and 20-21% vs. Jumbo) more expensive than buying organic products at the generalist retailers in the Dutch market (Consumentenbond 2016).

Sample

We use weekly store-level data between January 2012 and September 2015 provided by IRI (Information Resources Incorporated), covering all generalist grocery stores in six provinces in the North and Middle of The Netherlands (i.e., Utrecht, Noord Holland, Flevoland, Overijssel, Drenthe, and Friesland). IRI does not cover any of the organic specialist retailers. The categories under investigation cover all major packaged food and beverage categories (e.g., soft drinks, salty snacks, yoghurt, sauces, canned fruits, biscuits, cereal, ice cream) carried by all the generalist retailers and Ekoplaza. In total, we observe 47 categories, which jointly account for 96.5% of all packaged food and beverage revenues. The data does not cover non-food products, fresh fruits, fresh vegetables, and fresh meat. The data includes product sales and prices for all SKUs in each category, and flags organic SKUs. Organic SKUs are defined by IRI as SKUs that carry the EU organic symbol. The organic symbol guarantees that the product is produced according to strict rules aimed at respecting the environment and animal welfare. For processed foods to qualify for the EU organic symbol, at least 95% of the agricultural ingredients must be organic. This definition of an organic SKU is comparable to the one used in Bezawada and Pauwels (2013), where organic SKUs are defined as SKUs with the USDA organic symbol, which is the U.S. equivalent of the EU organic symbol. On average, organic products have a market share of 2.10% within a category but there is substantial variation between categories (SD = 5.41), going from less than 0.01%

in the liquor category and canned fruit category to 6.14% in the eggs category (ranking 3rd), 8.05% in the milk category (ranking 2nd) to 36.21% in the seeds and kernels category (ranking 1st).[2]

Selection of Organic Specialist Store Entries, and Generalist Treatment and Control Stores

Following Ailawadi et al. (2010) and Seenivasan and Talukdar (2016), we subsequently identify (1) organic specialist store entries by Ekoplaza, (2) incumbent generalist stores exposed to organic specialist store entry (i.e., treatment stores), and (3) incumbent generalist stores not exposed to organic specialist store entry (i.e., control stores).

First, to identify organic store entries, we identify areas where (i) an organic retailer opens a store between September 2012 and March 2015, (ii) there is no existing organic store within the trading area of the new store, and (iii) there are no other store introductions in the six months prior and following the organic store entry. A trading area is defined as a five-kilometer radius around the store, which is in line with Haans and Gijsbrechts (2011) and Van Lin and Gijsbrechts (2014), who also study the Dutch grocery market. We identify the areas using information from IRI (for information on the location and opening dates of all generalist stores), from the organic retailers' websites (for information on organic store locations), and from an extensive search of the business press (for information on the timing of organic store openings) (e.g., Distrifood, Biojournaal). This resulted in three store openings from Ekoplaza that meet the above criteria, and which form the focus of this research. The three organic stores opened in March 2013, March 2014, and April 2014, and are located in different areas of the Netherlands.

Second, using IRI location information, we select stores from generalist retailers that (i) are situated within the area of the organic store (i.e., within 5 km of the organic store) and (ii) did not previously have an organic store (focal or non-focal) within their respective area (i.e., within 5 km of the generalist store). The three store openings potentially impact 38

generalist stores, which are the treatment stores that can be affected by the organic store entrant. Location 1 features 16 stores, location 2 has a lower population density and features 5 stores, and location 3 has 17 stores. For each store, we use data from six months before the entry to six months after the entry (Nikolova and Inman 2015). We are unable to consider longer pre- and post-entry periods because other generalist or organic specialist stores open or close stores in the trading area.

Third, we identify a sample of control stores for the treatment stores. These are stores from the same retailer that do not have an organic store (focal or non-focal) within their area. This results in a set of 38 treatment stores and 247 control stores across five retailers (see Table 1 for an overview, and see Web Appendix A for a comparison of the 38 treatment stores to stores where Ekoplaza had opened a store prior to our sample period).[3] The five retailers are the three leading retailers in the Dutch market, which are Albert Heijn, C1000 and Jumbo (with national market shares in 2012 of 33.7%, 12.0% and 9.6%, respectively), and the retailers Plus and Poiesz (with national market shares of 5.8% and 1.0%, respectively) (Distrifood 2012). While Poiesz has a national market share of 1.0%, it captures 2.8% of the total (generalist) retailer sales observed in our dataset in the North and Middle of the Netherlands, which forms the focal area in this study.

[Insert Table 1 about here]

Key Measures

Category performance. The dependent performance variable reflects the total volume sales in a category at the (generalist) store in a given week. Because weekly grocery sales are characterized by substantial peaks (e.g., due to price cuts), we take the log to approximately normalize the distribution of the dependent variable (cf. Haans and Gijsbrechts 2011). We use category sales rather than category shares because our data do not include sales of the organic store required to calculate post-entry category shares.

Variety. Organic assortment size is operationalized as the number of organic SKUs available in the category at the store, as a weekly average across the six-month period before the organic store entry (cf. Ailawadi et al. 2010) to preclude reverse causality concerns (Van der Maelen, Breugelmans, and Cleeren 2017). Organic assortment size is divided by the average number of organic SKUs available in the category across stores to account for overall cross-category differences in (organic) assortment size. Organic feature and display advertising frequency is measured as the percentage of weeks in which an organic product is on feature and/or display in the category at the retailer (see Fok et al. 2006 for a similar operationalization). As decisions on promotions are made at the retailer level (i.e., by the retailer's headquarter) in our empirical setting (i.e., the Netherlands) (Van Lin and Gijsbrechts 2014, p.361), organic promotional support is operationalized at the retailer level. Like for organic assortment size, we operationalize this measure as a weekly average across the six-month period before the organic store entry.

Price-quality. We leverage the pricing of the organic products to generate proxy variables for organic assortment quality. Price has a positive effect on perceived quality (Dodds, Monroe, and Grewal 1991), and lower prices decrease quality perceptions (Yoo, Donthu, and Lee 2000). First, we measure the organic price premium as the (volume market-share-weighted) regular price of the organic SKUs available within a given category at the store relative to the regular price of the conventional SKUs in the category at the store. Mean substitution was used in case of a missing organic price (i.e., when the store had not introduced an organic SKU within the category, we use the average organic price premium across stores) (Keller, Dekimpe, and Geyskens 2016).[4] We also distinguish between two price promotion measures. Organic price promotion frequency is measured as the percentage of weeks in which an organic product is on discount in the category at the retailer (see Nijs et al. 2001 for a similar operationalization). Organic price promotion depth is measured as the

average percentage discount in the category at the retailer across weeks with a price promotion (see Nijs et al. 2001 for a similar operationalization).

Authenticity. The presence of SKUs from organic specialist brands is used as a proxy for authenticity. We define a brand as an organic specialist brand if all SKUs offered by a brand carry the EU organic label. Organic specialist brand focus is operationalized as the number of organic SKUs that are from organic specialist brands within a given category at the store. Table 2 contains the details on the operationalization of all variables.

[Insert Table 2 about here]

Descriptives and Model-Free Insights

Organic focus. Column 1 in Table 3 reports the averages on the organic assortment at the treatment stores. On average, treatment stores carry 3.72 (SD = 6.71) organic products within a category, and 0.11 (SD = .53) organic products from specialist brands. Organic products are, on average, 93% (SD = 26%) more expensive than conventional products. Column 2 in Table 3 reports the averages at the control stores, and Column 3 indicates there are no significant differences between treatment and control stores. Regarding organic promotions, on average, feature and display advertising frequency equals 4.95% on average in the pre period (SD = 9.18%). A category features an organic price promotion in 11.95% of weeks, but there is substantial variation across retailers and categories (SD = 16.03%). Organic price promotion depth equals 8.44% on average (SD = 8.40%).

Store vs. retailer organic focus. While category assortments at generalist stores offer a limited range of organic products and primarily offer conventional products, this is not merely due to a lack of availability of organic products at the retailer level. Across categories, incumbent stores on average adopt 3.85 out of the 11.73 organic products available at the retailer level (vs. an average of 108.25 out of the 238.03 conventional products). Similarly, while about 7% of category-store combinations (i.e., in 965 out of the 13,395 category-store

combinations) offer at least one organic specialist brand, organic specialist brands are available in about a third of the retailer-category combinations (i.e., in 77 of the 235 retailer-category combinations). Thus, even though store managers are restricted to the set of products carried by the retailer, individual stores only adopt a selection of products available at the retailer level. This implies that store managers may be left with ample room to adjust their organic category assortment, which emphasizes the importance of questions on whether and which organic products could be most beneficial when faced with an organic store entrant.

Reaction effects in organic focus. Columns 4 and 5 in Table 3 reports the averages on the organic assortment measures after organic store entry at the treatment and control stores. For example, across post-entry weeks, treatment (control) stores on average offer 4.10 (4.08) organic products. Column 6 indicates that post-entry averages are not significantly different between treatment and control stores. To determine whether there are any significant reaction effects in organic focus at generalist stores, we estimate the following equation:

$$(1)\quad \text{Organic Focus Variable}^{v}_{cst} = \delta^{v}_{0} + \delta^{v}_{1}\,\text{Treatment}_{s} + \delta^{v}_{2}\,\text{Post}_{t} + \delta^{v}_{3}\,\text{Treatment}_{s} \times \text{Post}_{t} + \omega_{cst},$$

where "Organic Focus Variable" identifies the value of respectively organic assortment size, organic price premium, and organic specialist brand presence in category c in store s in period t, using two time periods (pre and post entry). Treatment_{t} equals 1 if store s is a treatment store and 0 otherwise. Post_{t} equals 1 for the post period. The interaction between Treatment_{s} and Post_{t} captures the reaction effect after entry. The results indicate that none of the three organic focus variables show a significantly different change between treatment and control stores ($\delta_{3,\text{organic assortment size}} = .1656$, $p = .52$; $\delta_{3,\text{organic price premium}} = -.0046$, $p = .92$; $\delta_{3,\text{organic specialist brand presence}} = -.0010$, $p = .97$). In other words, treatment stores do not adjust their organic assortment significantly differently from control stores in the post-entry period. This is in line with prior research findings that incumbent stores do not tend to adjust their strategies substantially in response to store entry (Ailawadi et al. 2010). Given that

promotional support decisions are made at the retailer level, and given that treatment stores and control stores have comparable assortments, promotional support does not differ significantly between treatment and control stores.[5]

Category performance. To gain model-free insights into the impact of organic store entry on generalist category performance, we compare the total category volume sales across the six-month pre-entry and six-month post-entry time period. For each category-store combination (i.e., 47 categories × 285 stores = 13,395 combinations), we divide the total post-entry volume sales by the total pre-entry volume sales. The results indicate that treatment stores on average lose 4.6% in category volume sales, whereas control stores see an increase of 0.8% in category volume sales, suggesting that treatment stores on average lose 5.4% in category sales compared to control stores. To gain an initial understanding of whether the degree of organic focus influences the loss, we compare the sales losses between category-store combinations offering a low number of organic products (i.e., observations below or equal to the median organic assortment size) versus a high number of organic products (i.e., observations above the median organic assortment size). The result suggests that offering more organic products reduces the negative impact of organic specialist store entry (i.e., -5.08% when offering a higher number of organic products versus -5.89% when offering a lower number of organic products).

[Insert Table 3 about here]

Method

Our analysis uses difference-in-differences approach which compares the performance differential of stores in the treatment group (exposed to organic store entry) to stores in the control group (not exposed to organic store entry). We compare the change in sales outcomes

for generalist treatment stores (facing organic store entry) before and after the organic specialist store enters the local trading area to the change in sales outcomes for generalist control stores (not facing organic store entry) over the same time period, by adopting the following difference-in-differences model (see Gill, Sridhar and Grewal 2017, and Narang and Shankar 2019 for a similar approach):

$$
\begin{aligned}
(2)\ \text{Sales}_{cst} = {} & \beta_0 + \beta_1\ \text{Treatment}_s \times \text{Post}_t \\
& + \beta_2\ \text{Treatment}_s \times \text{Post}_t \times \text{Organic assortment size}_{cs} \\
& + \beta_3\ \text{Treatment}_s \times \text{Post}_t \times \text{Organic feature and display advertising frequency}_{cs} \\
& + \beta_4\ \text{Treatment}_s \times \text{Post}_t \times \text{Organic price premium}_{cs} \\
& + \beta_5\ \text{Treatment}_s \times \text{Post}_t \times \text{Organic price promotion frequency}_{cs} \\
& + \beta_6\ \text{Treatment}_s \times \text{Post}_t \times \text{Organic price promotion depth}_{cs} \\
& + \beta_7\ \text{Treatment}_s \times \text{Post}_t \times \text{Organic specialist brand presence}_{cs} \\
& + \beta_8\ \text{Paid price}_{cst} + \beta_9\ \text{Assortment size}_{cst} \\
& + \beta_{10}\ \text{Copula paid price}_{cst} + \beta_{11}\ \text{Copula assortment size}_{cst} \\
& + \beta_{12}\text{Treatment}_s \times \text{Post}_t \times \text{Paid price}_{cst} \\
& + \gamma_{cs} + \lambda_t + x_{cst}'\,\omega + \varepsilon_{cst}
\end{aligned}
$$

Sales_{cst} reflects the (log-transformed) total volume sales in category c (c = 1,…,47) for (generalist) store s (s = 1,…,285) in time period t. Treatment_s is a dummy variable that equals 1 for treatment stores and 0 for control stores, Post_t is a dummy variable that equals 1 for post-entry weeks and 0 otherwise, and the interaction term $\text{Treatment}_s \times \text{Post}_t$ represents the change in performance for treatment stores relative to control stores between the pre and post periods (i.e., the treatment effect).[6]

To examine how the impact of organic specialist store entry depends on the generalist store's organic focus, we add six additional interactions terms between the treatment effect ($\text{Treatment}_s \times \text{Post}_t$) and our moderators ($\beta_2$- β_7), which are all measured across the six-month

period before the organic store entry (cf. Ailawadi et al. 2010) to preclude reverse causality concerns (Van der Maelen, Breugelmans, and Cleeren 2017).

We include time varying covariates for the paid price (β_8) and assortment size (β_9), to control for weekly changes in paid price (capturing both regular price and price reductions of the organic and conventional assortment) and weekly changes in category assortment size (capturing both organic and conventional products). Similar to category sales, we log-transform these time varying marketing mix instruments to normalize their distribution. To control for potential endogeneity, we employ an instrument-free method using Gaussian copulas (Park and Gupta 2012). In line with previous research, we include regressors based on the Gaussian copulas (Burmester et al. 2015; Datta, Ailawadi, and van Heerde 2017), i.e., $Copula_{cst} = \Phi^{-1}(H(Z_{cst}))$, where Z_{cst} is respectively paid price and assortment size for category c in store s in week t, Φ^{-1} is the inverse of the cumulative normal distribution function, and H(.) the empirical distribution of the respective marketing mix variable (Park and Gupta 2012). For identification purposes, each variable should be non-normally distributed, which is confirmed by a Shapiro-Wilk test (all *p*-values < .05).

We also include the interaction between the treatment effect and paid price (β_{12}) to explore whether the impact of price changes after the organic store entry. Prior literature shows that discount store entrants attract more price sensitive consumers, meaning they lure away the most price sensitive consumers from the incumbent stores (Ailawadi et al. 2010). Conversely, the entry of a premium specialist store may lure away the least price sensitive consumers, increasing the average price sensitivity of the incumbent's consumer base. In this respect, we explore whether price sensitivity becomes stronger in the premium specialist entrant setting.

We control for unobserved heterogeneity by including category-store fixed effects (γ_{cs}) to take into account time-invariant category-store characteristics, and weekly time fixed

effects (λ_t) to take into account time varying characteristics that are constant across categories and stores.

We additionally include x_{cst}', which is a row vector of control variables, and ω is a column vector of regression coefficients. We account for two sets of control variables. First, we allow the impact of organic store entry to vary depending on three key store characteristics that have been shown to influence store choice (Ailawadi et al. 2010; Van Lin and Gijsbrechts 2014; Vroegrijk, Gijsbrechts, and Campo 2013): (i) the distance (in meters) between the treatment store and the organic entrant store, (ii) the size of the store, and (iii) the store's price level (see Table 2 for details on the operationalization). Second, we include all relevant lower-order interaction terms (see Ma, Ailawadi, and Grewal 2013 for a similar practice). For example, for 'Treatment × Post × Organic assortment size', we also control for, (i) 'Treatment × Organic assortment size', and (ii) 'Post × Organic assortment size'. Note that the main effect of 'Organic assortment size' is absorbed by the category-store fixed effects.

Importantly, organic retailers may strategically decide on locations for their store openings. As a result, whether we observe a store in the treatment versus control group may not be randomly determined. Following extant literature (e.g., Ertekin, Shulman, and Chen 2019; Zhang et al. 2021), we mitigate this selection issue by adopting the inverse probability of treatment weighting (IPTW) method to estimate Equation 2. IPTW involves (i) estimating the probability that a generalist store faces an organic store entrant as a function of a set of observed covariates, and (ii) weighing the stores in the treatment and control groups by the inverse of the probability of receiving the treatment and not receiving the treatment, respectively. To predict the likelihood that the trading area of store s is faced with an organic entrant, we identify a rich set of store trading area covariates, where we define a trading area as a five-kilometer radius around the store (Haans and Gijsbrechts 2001; Van Lin and Gijsbrechts 2014). Details on the covariates and estimation are included in Web Appendix B.

The IPTW-weighted sample is a "synthetic" sample of treatment and control stores that helps to ensure that the treatment assignment is independent of observed confounders (Zhang et al. 2021).

Finally, our difference-in-differences approach relies on the assumption of parallel trends (Gill, Sridhar and Grewal 2017; Narang and Shankar 2019). To verify this assumption, we perform a placebo treatment test (cf. Datta, Knox, and Bronnenberg 2008) and a pretreatment trend test (cf. Keller, Geyskens, and Dekimpe 2020).[7] The results of these tests support the parallel trends assumption underlying the identification strategy. Details on the procedure and results of these tests are included in Web Appendix C.

Details on the operationalization of all variables is included in Table 2. Descriptive statistics are included in Web Appendix D. All correlations (before mean-centering) are below .70 (see Web Appendix E). We grand mean-center all continuous moderating variables for ease of interpretation.

Results

Estimation Results

Table 4 contains the estimates on the impact of organic specialist store entry on category performance at generalist stores (R^2 = .98). As we mean centered the moderating variables, the treatment effect reflects the average impact of organic store entry. In line with the model-free insights, the average effect of organic store entry is significantly negative (β_1 = -.033, p< .01), meaning that organic specialist store entry significantly harms category volume sales at incumbent generalist stores. In addition, the impact of price on demand at generalist stores becomes more elastic after organic specialist store entry (β_{12} = -.138, p< .10).[8]

We observe substantial variation in the impact of organic store entry depending on the

organic focus of the incumbent generalist store. With regard to organic *variety*, we find that the impact of organic specialist store entry is less negative if the generalist store offers a relatively larger assortment of organic products ($\beta_2 = .002$, $p < .01$). In addition, we find that incumbent generalist retailers with more organic feature and display advertising are harmed less by the organic entrant ($\beta_3 = .123$, $p < .01$). Regarding *price-quality*, we find reduced harm when the organic price premium is higher ($\beta_4 = .015$, $p < .01$). Furthermore, the results indicate that incumbent generalist retailers using more frequent ($\beta_5 = -.110$, $p < .01$) and deeper ($\beta_6 = -.193$, $p < .01$) promotions for the organic offerings are harmed more. With respect to *authenticity*, the presence of an organic specialist brand in the category provides further protection for the incumbent generalist store ($\beta_7 = .016$, $p < .05$). Finally, the control variables show substantial face validity. Price has a negative effect on sales ($\beta_8 = -1.610$, $p < .01$) whereas assortment size has a positive effect ($\beta_9 = .411$, $p < .01$). In line with previous research on hard discounter entry (Vroegrijk, Gijsbrechts, and Campo 2013), incumbents geographically closer to the organic entry store are less harmed than those further away ($\beta = -.017$, $p < .01$), which can happen when consumers are more likely to visit both the specialist and generalist store in a combined trip when they are in closer proximity (Brooks, Kaufmann, and Lichtenstein 2004; Dellaert et al. 1998). Smaller stores ($\beta = -.000$, $p < .01$) and more premium stores ($\beta = .498$, $p < .01$), which can be viewed as less distinctive to the specialist entrant, are harmed less.

In summary, our results support the idea that the generalist's organic focus influences the impact of organic specialist store entry. Overall, and in line with our theoretical reasoning, incumbent generalist stores are better off when their distinctiveness relative to the organic store entrant is reduced. This can be achieved through focus on variety, price-quality and authenticity of their own organic offerings. We elaborate further on these findings in the discussion.

[Insert Table 4 about here]

Effect Sizes

To understand the economic significance of our findings, we use the estimates from Table 4 to calculate effect sizes. Because of the log-linear link between volume sales (which is log transformed) and the treatment effect dummy (which enters the model linearly), the effect size translates to an average loss of about 3% in volume sales for incumbent stores (i.e., ((exp(-0.03333))-1)*100 = -3.28%). To gain insights in the effect size of the moderators, we conduct a spotlight analysis. The results of the spotlight analysis in Figure 2 display the effect size for categories with low versus high values on the moderating variables. We set "low" to the 25th percentile and "high" to the 75th percentile of the distribution of the variable (Lim, Tuli, and Dekimpe 2018).[9] Figure 2 indicates that when a store features a higher number of organic products within a category, the loss is reduced to -3.23%, compared to -3.44% when the store features a smaller number of organic products. Higher organic feature and display advertising frequency reduces losses to -2.95% (vs. -3.87% for lower feature and display advertising). Higher focus on premium organic products reduces losses (high = -3.07%, low = -4.15%). Higher focus on more frequent (low = -2.00%, high = -3.93%) and deeper (low = -1.69%, high = -4.52%) organic price promotions, however, increases losses. More focus on organic specialist brands also reduces losses (low = -3.28%, high = -1.88%). Finally, price elasticity changed from -1.52 to -1.59 at treatment stores, indicating an increase in price elasticity by about 5% at treatment stores (i.e., (1.59 – 1.52)/1.52 = 0.046), whereas price elasticity decreased by about 4% at control stores (i.e., (1.54 – 1.61)/1.61 = -0.043).

[Insert Figure 2 about here]

Robustness Checks

To assess the robustness of our results, we conduct a series of robustness checks. Table 5 indicates that the results remain substantively the same across all alternative estimations.

Alternative dependent variable. We reran our model using (log-transformed) sales revenues (vs. log-transformed volume sales in our main analysis) as our dependent variable. Compared with the volume sales model, the focal estimates are robust with respect to significance, sign, and size (Model 2).

Alternative operationalizations. In our main results, we use the organic price premium as a proxy for quality perceptions of the organic assortment in the category at the store. As a robustness check, we classify organic products into tiers. Given the relatively limited number of organic products in a category at the generalist retailers, we opt for two tiers and differentiate between top-tier (relatively more premium within the category) and second-tier (relatively less premium within the category) organic products (see Bezawada and Pauwels 2013 for a similar practice). We define the tiers by category using a median split, where the median price is calculated for each category across all organic products offered within this category. More specifically, we use the average regular price per product at a retailer (as price is a retailer decision in our setting rather than a store decision, see also Van Lin and Gijsbrechts 2014), and calculate the unweighted average price across all retailers stocking the product. Next, we calculate the share of organic products from the top-tier (i.e., number of organic top tier products divided by the number of organic products in the category at the store). In a similar spirit, we also express the degree of authenticity using a relative measure, by calculating the share of organic products from organic specialist brands (i.e., the number of organic specialist brand products divided by the number of organic products in the category at the store). Estimating the model using these relative measures confirms a significant and positive effect of more focus on top-tier organic products as well as more focus on organic specialist brand products (Model 3).

Excluding copula correction terms. We assess the robustness of our results against estimating our model without the copula correction terms, indicating robust results (Model 4).

Alternative sample. We assess the robustness of our estimations against excluding categories in which organic products are not available at the incumbent stores (i.e., this removes 5 out of the 47 categories). We retained these categories in our main analysis because they are offered by the organic specialist store and can thus be affected by the organic specialist's entry. However, our results are robust against excluding these categories (Model 5).

[Insert Table 5 about here]

Discussion

The growth of organic specialist retailers raises the need for suitable strategies for generalist retailers to compete with emerging organic retailers. In this study, we examined the role of the organic focus of the generalist store in the context of competition between an organic specialist store and incumbent generalist stores. Using a rich store-level scanner dataset covering all SKUs from all major packaged food and beverage categories, we study the impact of three organic store entries on 38 incumbent generalist grocery stores from five retailers in the organic store's trading area. We provide novel insights on which strategies reduce the harm for generalist stores. We summarize the resulting implications, and discuss promising directions for future research.

Impact of Organic Specialist Store Entry on Generalist Performance

Niche markets such as the market for organic products form an important source of growth for generalist grocery stores, but generalists increasingly face competition from organic specialist stores (Dekimpe et al. 2011; Swaminathan 2001). Generalist grocery retailers should keep in mind that their performance is pressured by organic retailers expanding their store network. This is especially relevant considering the continuous opening of new organic stores (Grocery

Dive 2021). For instance, French retailer Biocoop plans to expand from 530 to 900 stores by 2025 (Organic and Wellness News 2019). Our finding that the average generalist store in our sample suffers a loss of about 3% in sales suggests that incumbent losses due to store entry of an organic specialist are smaller than losses due to store entry of soft discounter Wal-Mart (-17%, Ailawadi et al. 2010; Singh, Hansen, and Blattberg 2006), and due to store entry of hard discounters Aldi and Lidl (-9%, Vroegrijk, Gijsbrechts, and Campo 2013).[10] However, this loss is likely to increase further in the future given the growing popularity of organic products (The Business Research Company 2021; Organic Trade Association 2021). For instance, between 2011 and 2020, organic food sales rose by a minimum of 4.6% per year in the U.S., and, in terms of value, grew from 25.15 billion dollars in 2011 to 56.49 billion dollars in 2020 (Organic Trade Association 2021). As a result, nearly 6% of food sold in the U.S. is organic (Organic Trade Association 2021). Additionally, we find that price sensitivity (i.e., the impact of price on demand) at incumbent generalist stores intensifies compared to pre-entry levels of price sensitivity. Hence, unlike for discounter store entry, incumbent stores are likely to be left with a relatively more price sensitive consumer base.

Mitigating the Performance Impact of Organic Specialist Store Entry

The recommended strategy to mitigate detrimental sales effects differs from the well-documented case of Wal-Mart entry (i.e., increase distinctiveness to the generalist entrant with regard to assortment) (Ailawadi et al. 2010; Gielens et al. 2008; Seenivasan and Talukdar 2016; Singh, Hansen, and Blattberg 2006), as it is beneficial for generalists to reduce the relative distinctiveness of the specialist. Overall, our findings are supported by resource partitioning theory (Carroll 1985), which states that when a specialist enters a market, a generalist can reduce the harm by toning down the relative distinctiveness of the specialist.

We identify three underlying dimensions (i.e., variety, price-quality, and authenticity) of a premium specialist's distinctiveness, and propose that these dimensions can influenced by the organic focus of the generalist incumbent. First, when faced with a premium organic store entrant, incumbents can reduce distinctiveness in terms of variety by offering a larger number of organic products, and more frequent feature/display promotions can maximize variety perceptions of organic products at generalist stores. Second, distinctiveness in terms of price-quality to the premium organic entrant can be reduced by increased focus on more premium organic products. While generalist grocery retailers have stepped up their assortment of organic products (Grocery Drive 2017), we observe that generalist grocery stores tend to focus more on less premium organic products. While this may appeal to price sensitive consumers, increased focus on more premium organic alternatives can be more helpful to better withstand the growing store network of premium organic specialist retailers. Frequent and deep discounting on organic products can amplify the distinctiveness in terms of price-quality relative to the premium specialist store. As we find that retailers engaging in more frequent and deeper discounts on organic products are more harmed by a premium organic specialist, limiting the frequency and depth of these promotions can minimize the possibility of harmful decreases in perceived quality among consumers. Third, distinctiveness in terms of authenticity can be reduced by adopting an organic specialist brand, as this more resembles the assortment of more authentic specialist brands available at the organic specialist. In categories in which few organic specialist brands are available to the non-organic retailer, non-organic retailers may also consider launching their own organic specialist brands using a stand-alone branding strategy. For instance, U.S. retailer Kroger has its own organic specialist brand called 'Simple Truth Organic' (i.e., a stand-alone brand) that only sells organic products that are USDA organic certified. Similarly, U.S. retailer Safeway introduced the "O Organics" organic specialist brand. Although none of the retailers within our sample employ

this strategy, based on our findings, this could be an effective strategy to mitigate losses to organic store entry, when these brands are perceived to be high in quality and authenticity. Finally, generalist stores in our study did not react to the organic store entrant, which may represent a missed opportunity. Increasing organic product variety of high-quality and authentic organic products at the generalist store after entry could further reduce the specialist's distinctiveness and the generalist's sales losses.

Generalist store managers might also wonder to what extent the effectiveness of focusing on organic product variety, price-quality, and authenticity to mitigate losses varies across categories. In Web Appendix F, we explore the potential role of category factors related to our dimensions of distinctiveness (i.e., variety, price-quality, and authenticity). The result suggests that generalists particularly benefit from a focus on a premium organic assortment in categories where the price-quality inference is stronger (i.e., in categories with higher levels of price dispersion (Zeithalm 1988)). Additionally, incumbents particularly benefit from a focus on specialist brand products in categories where the distinctiveness of authenticity is likely higher (i.e., with higher levels of category concentration), because in categories dominated by a smaller number of traditional brands, specialists may be able to exploit their authenticity more easily (Carroll 1985; Carroll, Dobrev and Swaminathan 2002). Still, even in categories with low levels of price dispersion and concentration, we find that increased focus on premium and authentic products, respectively, mitigates sales losses. Overall, this suggest that our key insights generalize across categories that differ in proliferation, price dispersion, and concentration.

Implications Beyond the Grocery Industry

Beyond our implications for the grocery industry, our framework can also be relevant for practitioners in other industries in which organic or green specialists emerge. Examples of specialists in other industries include organic cotton clothing brands (e.g., 'Beaumont

Organic'), green energy suppliers (e.g., 'Green Energy UK'), and green furniture companies (e.g., 'Greenington Furniture'). Our framework implies that generalists can mitigate performance losses by reducing the distinctiveness of these specialists, but that offerings that (are perceived to) resemble the specialists more, will be more successful. For instance, H&M's 'Conscious' line, whose clothing pieces are made from at least 50% sustainably sourced materials like organic cotton, may be less successful in competing with specialist brands than Mango's 100% organic cotton clothing line as part of its 'Take Action' programme. And, while British Gas offers a 'Green Future' tariff consisting of 100% renewable electricity, its success may be limited if it is perceived as a less authentic supplier of green electricity. Hence, our proposed tools to reduce the distinctiveness of specialist competitors through distinctiveness dimensions (i.e., variety, price-quality, and authenticity) could be informative for marketing managers in other industries.

Limitations and Future Research

While the current study provides valuable insights for retailers and academics, its limitations offer important avenues for future research.

We use rich store-level data to assess the impact of organic specialist store entry. Although store-level data have the benefit of covering all purchases, they do not allow us to study effects at the consumer level. First, studying consumer level heterogeneity can provide insights into how different types of consumers reallocate grocery spending following the entry of organic stores. For example, such data would allow researchers to assess whether organic store entry, like discounter store entry, results in fewer store visits at incumbent stores (Singh, Hansen, and Blattberg 2006), or whether consumers still visit the incumbent store as frequently as before, but spend less. Second, future research can quantify changes in price sensitivity at the consumer level, and examine to what extent changes in the impact of price at incumbent stores are driven by less price sensitive consumers switching to the organic store,

and/or consumers intrinsically becoming more price sensitive. Third, future work can disentangle when and which consumers switch from buying organic at the incumbent store to the organic specialist store, or when consumers switch from buying conventional to organic.

Future research with access to scanner data from the organic store, which were unobserved in our setting, could answer several promising research questions. First, the organic retailer in our study reduced, well beyond our sample period (June 2017), their prices for 75 frequently purchased organic products (Distrifood 2017). While reducing prices may attract new consumers, it potentially has important implications for quality perceptions, in particular among core organic consumers. For example, when Whole Foods reduced prices after the Amazon takeover in 2017, Whole Foods shoppers complained about the quality of its produce, even though Whole Foods claimed to have made no changes that would affect quality (Bloomberg 2017). Future research with access to sales and marketing mix data from both organic specialist and incumbent generalist stores can study competition between the generalist and organic store, and explore the impact of marketing mix characteristics of the organic store on generalist store performance and vice versa. Second, access to data on the organic store's assortment allows to study potential overlap in SKUs offered by both stores. While the organic entrant in our study largely carries organic specialist brand products that are not offered by the incumbents, the impact of specialist brand presence could be moderated by whether the same specialist brand is also offered by the organic entrant, thereby further reducing the distinctiveness of the organic entrant store. Third, data on the organic store entrant's sales would allow to quantify the share in category sales the retailer stands to lose, as well as the market share of the entrant in the trading area.

We studied the impact of a premium organic specialist on incumbent (generalist) retailers. We proposed three dimensions that can be leveraged to reduce the distinctiveness of such specialists (variety, price-quality, and authenticity). While less common (and unobserved

in the focal market), future research could investigate the impact of a value-oriented specialist focused on organic products (cf. Trader Joe's in the U.S.). A value-oriented organic specialist is distinctive in that if offers a larger variety of lower priced products. In this respect, variety likely continues to play an important role. However, contrary to premium organic entry, expanding the organic assortment with less premium organic products may protect the generalist store against a non-premium organic entrant, as low price is a distinctive feature of the new entrant. Likewise, more frequent and deeper price promotions on organic products might protect the generalist store.

Because different stores focus differently on organic products in different categories, and because our sample only includes five retailers and three entry events, we focused on moderators that vary at the category level. We recommend for future research with access to data on more retailers and entry markets to explore the moderating role of retailer (e.g., price positioning) and market level (e.g., competitive structure) factors.

Finally, our study was limited to consumer-packaged goods categories. Future research may extend the analysis to non-CPG food categories (e.g., fresh fruit and vegetables), as well non-food categories (e.g., household care products) that are also sold at organic specialist stores.

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Footnotes

[1] Because all stores offer the same categories, entry is expected to lead to negative effects for the local incumbent store rather than to positive (externality) effects that can occur when the entrant offers unique product categories (Zhu, Singh, and Dukes 2011).

[2] When excluding the category of seeds and kernels from our sample, the same substantive findings are obtained.

[3] For one treatment store of Nettorama and for three treatment stores from two store formats of Albert Heijn ('AH To Go' and 'AH XL'), we lack control stores of the same retailer (format). These stores are excluded from our analysis.

[4] The organic price premium effect is robust against estimating the model on category-store combinations that offer at least one organic product.

[5] Estimation of a (log-transformed) paid price reaction effect (i.e., including price promotions) confirms that treatment stores do not use price as a strategic response to organic store entry ($\delta_{3,\text{paid price}} = .00$, $p = .99$). Estimation of reaction effects per retailer further indicates that none of the five retailers reacts significantly in terms of assortment nor price.

[6] The model is estimated on 13,395 'cases', where a case refers to a category-store combination (i.e., 47 categories × 285 stores, where each control store is randomly assigned to an entry event to avoid duplicating cases from control stores).

[7] Note that the parallel trend assumption was not rejected for the IPTW weighted sample but was rejected of the unweighted sample, suggesting that IPTW adequately reduces differences in trends between the treatment and control group in our sample.

[8] While the difference in the change in price elasticity between treatment and control stores is significant ($\beta_{12} = -.138$, $p < .10$), the change at treatment stores (after vs. before) is negative but statistically insignificant ($\beta = -.07$, $p > .10$), whereas the change at control stores (after vs. before) is significant and positive ($\beta = .07$, $p < .01$).

[9] Because organic specialist brands are offered in 7% of the category-store cases, we calculate the impact of having zero versus one organic specialist brand product.

[10] Hard discounter store outlets are approximately 700 square meters in size, whereas an average Ekoplaza store is approximately 360 square meters in size.

Figure 1
Conceptual Framework

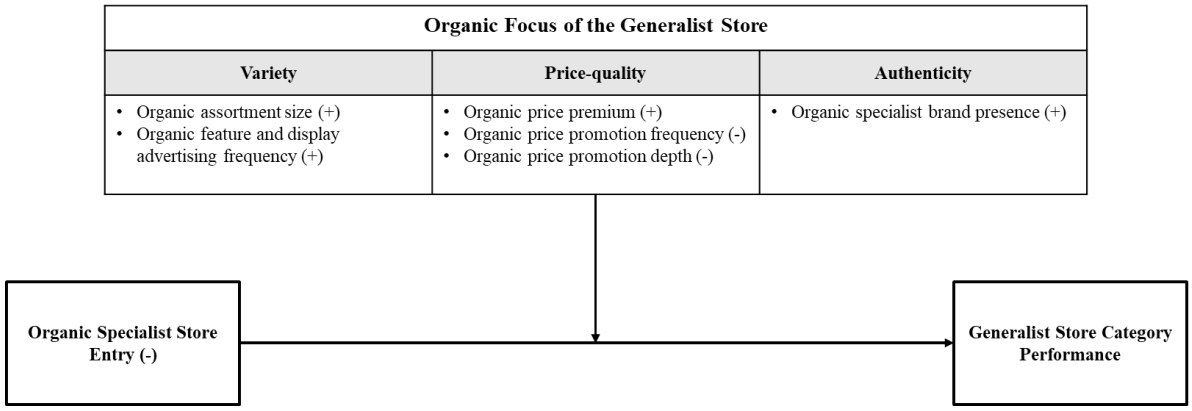
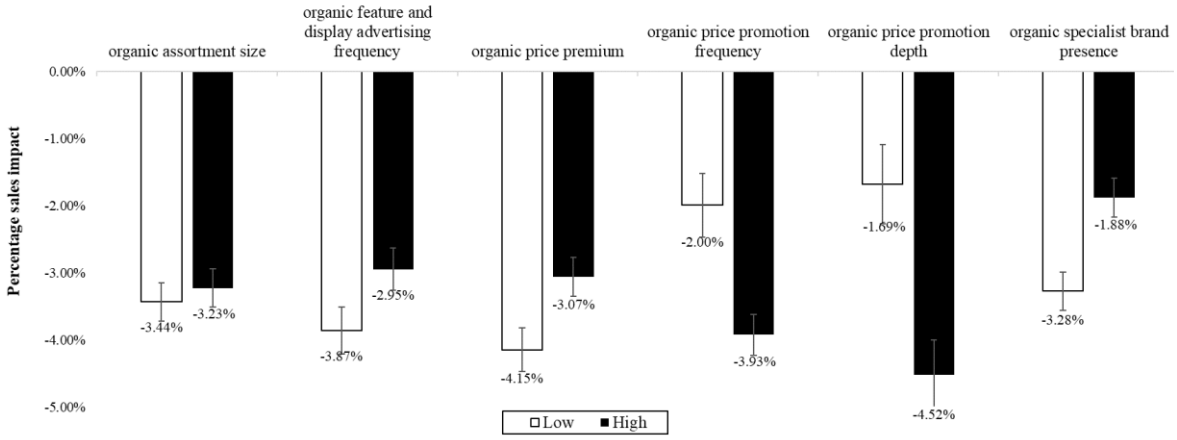


Figure 2
Moderating Impact Organic Focus at Generalist Stores



Notes: Error bars = +/- 1 SE.

Table 1
Overview of Grocery Stores

Generalist retailer	Number of treatment stores	Number of control stores
Albert Heijn	10	91
C1000	13	44
Jumbo	8	51
Poiesz	5	36
Plus	2	25
Total	38	247

Table 2
Variable Operationalization

Variables	Operationalization
$Sales_{cst}$	Volume sales (in equivalent units) in category c in store s in week t (log-transformed)
Variety	
Organic assortment $size_{cs}$	Average number of organic SKUs available in category c at store s, divided by the average number of organic SKUs available in category c across stores
Organic feature and display advertising $frequency_{cs}$	Percentage of weeks in which an organic product is on feature and/or display in category c at the retailer store s belongs to
Price-quality	
Organic price $premium_{cs}$	Average (volume market-share-weighted) regular price per equivalent unit across all organic SKUs available in category c at store s, divided by the average regular price across all conventional SKUs available in category c at store s. We use average market shares across the sample period as weights
Organic price promotion $frequency_{cs}$	Percentage of weeks in which an organic product is on discount in category c at the retailer store s belongs to (cf. Nijs et al. 2001)
Organic price promotion $depth_{cs}$	Average percentage discount across price promotional weeks in category c at the retailer store s belongs to (cf. Nijs et al. 2001)
Authenticity	
Organic specialist brand $presence_{cs}$	Average number of organic SKUs from organic specialist brands available in category c at store s. Organic specialist brands are defined as brands that only sell organic products
Control variables	
Paid $price_{cst}$	Average (volume market-share-weighted) paid price per equivalent unit across all SKUs available in category c at store s in week t (log-transformed) We use average market shares across the sample period as weights
Assortment $size_{cst}$	Number of unique SKUs available in category c at store s in week t (log-transformed)
Store $distance_s$	Distance from treatment store s to the organic store (in meters, log-transformed) (cf. Ailawadi et al. 2010)
Store $size_s$	Surface of store s in square meters (cf. Van Lin and Gijsbrechts 2014)
Store $price_s$	Average relative paid price across categories at store s. Average relative paid price within a category is calculated as the average (volume market-share-weighted) paid price per equivalent unit in category c at store s, divided by the average paid price in category c across stores (cf. Van Lin and Gijsbrechts 2014)

Notes: Characteristics of variety, price-quality, and authenticity, as well as store price, are operationalized as a weekly average across the six-month period prior to the organic store entry (cf. Ailawadi et al. 2010). An SKU is assumed to be available in a store in week *t* if it has non-zero sales at least once in the most recent four weeks (*t*, *t*-1, *t*-2, *t*-3) (cf. Datta, Ailawadi, and van Heerde 2017).

Table 3
Comparison of Treatment and Control Stores Before and After Organic Store Entry

	(1) Treatment pre period (N = 1,786[a])	(2) Control pre period (N = 11,609[b])	(3) t-test for pre period differences between treatment and control	(4) Treatment post period (N = 1,786[a])	(5) Control post period (N = 11,609[b])	(6) t-test for post period differences between treatment and control
Organic assortment size (#)	3.72	3.87	*n.s.(p= .39)*	4.10	4.08	*n.s.(p= .93)*
Organic price premium (organic/conventional)	1.93	1.93	*n.s.(p= .73)*	1.94	1.94	*n.s.(p= .98)*
Organic specialist brand presence (#)	.11	.11	*n.s.(p= .96)*	.18	.18	*n.s.(p= .99)*

[a] 38 stores × 47 categories = 1,786 category-store combinations
[b] 247 stores × 47 categories = 11,609 category-store combinations

Table 4
Impact of Organic Specialist Store Entry on Category Performance at Generalist Stores

Variable	Estimate	SE
Treatment effect		
Treatment × Post	-.033***	.003
Variety		
Treatment × Post × Organic assortment size	.002***	.0003
Treatment × Post × Organic feature and display advertising frequency	.123***	.047
Price-quality		
Treatment × Post × Organic price premium	.015***	.003
Treatment × Post × Organic price promotion frequency	-.110***	.029
Treatment × Post × Organic price promotion depth	-.193***	.064
Authenticity		
Treatment × Post × Organic specialist brand presence	.016**	.008
Control variables		
Paid price	-1.610***	.040
Assortment size	.411***	.052
Paid price - copula	.243***	.030
Assortment size - copula	.055	.044
Treatment × Post × Paid Price	-.138*	.074
Treatment × Post × Store distance	-.017***	.003
Treatment × Post × Store size	-.000***	.000
Treatment × Post × Store price	.498***	.076
Category-store fixed effects	Yes	
Time fixed effects	Yes	

*** $p < .01$. ** $p < .05$. * $p < .10$ (two-sided). Table reports robust standard errors.

Table 5
Robustness Checks

Variable	Model 1 **Main Results**	Model 2 Sales revenues (log-transformed) as dependent variable	Model 3 % Top-tier organic and % Organic specialist brand	Model 4 Excluding copula terms	Model 5 Excluding categories without organic products
Treatment Effect					
Treatment × Post	-.033***	-.033***	-.034***	-.033***	-.035***
Variety					
Treatment × Post × Organic assortment size	.002***	.002***	.001***	.002***	.002***
Treatment × Post × Organic feature and display advertising frequency	.123***	.122***	.134***	.130***	.116**
Price-quality					
Treatment × Post × Organic price premium	.015***	.015***	/	.015***	.015***
Treatment × Post × % Top-tier organic	/	/	.038***	/	/
Treatment × Post × Organic price promotion frequency	-.110***	-.109***	-.086***	-.115***	-.105***
Treatment × Post × Organic price promotion depth	-.193***	-.195***	-.248***	-.198***	-.176***
Authenticity					
Treatment × Post × Organic specialist brand presence	.016**	.016**	/	.016**	.017**
Treatment × Post × % Organic specialist brand	/	/	.112**	/	/
Control variables					
Paid Price	-1.610***	-.631***	-1.611***	-1.298***	-1.610***
Assortment size	.411***	.424***	.424***	.478***	.448***
Paid price - copula	.243***	.241***	.244***	/	.283***
Assortment size - copula	.055	.050	.047	/	.024
Treatment × Post × Paid Price	-.138*	-.142*	-.137*	-.135*	-.150*
Treatment × Post × Store distance	-.017***	-.017***	-.013***	-.018***	-.017***
Treatment × Post × Store size	-.000***	-.000***	-.000***	-.000***	-.000***
Treatment × Post × Store price	.498***	.503***	.477***	.485***	.508***

*** $p < .01$. ** $p < .05$. * $p < .10$ (two-sided). Table reports robust standard errors.