THESIS SUMMARY

To the Ph.D. dissertation

Zombor Berezvai

Retail strategies and their effects on performance

Doctoral Advisor:

Irma Agárdi, Ph.D.

Associate Professor

Budapest, 2020.

Department of Marketing Management

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I   Research background and justification of the topic

My thesis aims to analyze the impacts of three retail strategies (pricing, geographical diversification, and innovation) on the market performance of the companies. The Great Recession in 2008/2009 led to a significant decline in household income, hence, retail trade volume also dropped. This sudden shock provides a favorable opportunity to analyze the different strategic responses of the retailers and their success in the marketplace.

The topic could not be timelier due to the COVID-19 pandemic and the worldwide recession following it. The retail sector was heavily impacted. At the outbreak, panic buying caused exceptionally large volume growth, but it did not last long; customers started to decrease their spending to use up their inventories and adjust their expenses to their declining income level (Hall et al., 2020; Dannenberg et al., 2020). However, since restaurants and canteens were (and are again) closed in many countries, this is helping retailers to maintain sales volume in the short-run (Martin-Neuninger and Ruby, 2020). That will change once the pandemic is over and retailers have to prepare strategic responses to avoid sales and profit loss during the economic crisis caused by the pandemic. The strategies analyzed in my thesis can help them in these efforts.

I.1   Research gaps

Retail companies reacted to the challenges of the financial crisis in different ways. Pederzoli and Kuppelwieser (2015) reviewed the retail publications assessing the reactions of retail firms to market challenges. They identified mechanisms such as organizational capability building, innovation, and geographical diversification to overcome the negative market and economic events. Furthermore, pricing is another key element of the retail mix that can be easily altered to attract shoppers (Ellickson and Misra, 2008; Simon and Fassnacht, 2019), especially in a crisis environment. These strategic elements can be related to the performance of the retailers and this is exactly what I am exploring in my thesis.

Academic researchers have shown substantial interest in the performance consequences of geographical diversification (Etgar and Rachman-Moore, 2008; Qian et al., 2008; Qian et al., 2010; Chan et al., 2011; Assaf et al., 2012; Oh et al., 2015; Dimitrova et al., 2019). The retail literature also agrees that geographical diversification might lead to the accumulation of new resources that then influence the strategy of the retailer (Daft, 1982). However, only a few pieces of research have examined the impact of geographical diversification on other strategic

areas. For example, Mohr et al. (2014) suggested that geographical diversification creates firm-specific resources that can enhance the innovation and marketing activity of the retailer. Since international retailers must adapt their operations to foreign markets, this adaptation can create organizational knowledge that can be internalized and converted into new retail solutions. However, to my knowledge, the impact of innovations on financial performance has not been tested empirically in the retail literature yet.

To address this research gap, my thesis specifically focuses on retail innovations and empirically analyze how innovation activities of the retailers impact their profitability as well as the role of geographical diversification in this relationship.

Furthermore, another research gap exists in the identification of retailers' immediate strategic responses. While innovation and geographical diversification are long-term strategic elements, short-term adjustments to market challenges are also needed. The pricing strategy (i.e., pricing and promotional activity) of the retailer is one of the most important tools in this case. The identification of pricing strategies applied by the retailers and the importance of pricing strategies in achieving outstanding market performance are heavily researched areas of retailing (Hoch et al., 1994; Lal and Rao, 1997; Bell and Lattin, 1998; Bolton and Shankar, 2003; Chou and Chen, 2004; Shankar and Bolton, 2004; Ellickson and Misra, 2008). However, the identification of successful pricing strategies in a crisis environment is not understood that well. My thesis also advances research on this topic by analyzing Hungarian retailers during the last financial crisis.

I.2   Theoretical background and conceptual framework

The theoretical underpinning of the thesis is rooted in the resource-based view and the dynamic capability approach of strategic management. In a retail setting, there are different firm-specific resources and capabilities a company might own, e.g., developed procurement system, high quality standards, efficient distribution system, strong private label brands, favorable brand awareness, social media capabilities. The business strategy of a given retailer has to build upon its resources and capabilities. In this thesis, I consider three retail strategies: pricing, geographical diversification, and innovation.

The price level and the price promotional activity of the retailers are bounded by the efficiency of their asset utilization and the negotiation power *vis-á-vis* manufacturers. A more efficiently operated store chain can provide lower prices for its shoppers and can also negotiate better
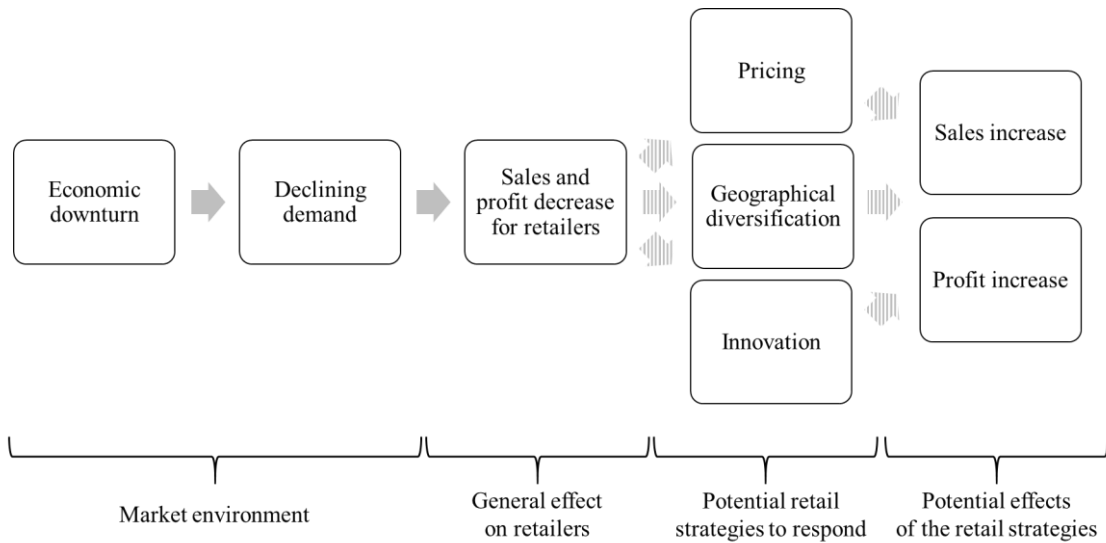
promotions with its suppliers while being profitable at the same time. The chosen pricing strategy of the firm is, hence, connected to the available resources of the retailers.

Additionally, these resources can be further exploited by geographical diversification (Teece et al., 1997). The firm-specific, difficult-to-imitate capabilities substantially contributed to the success and fast penetration of modern supermarkets in developing markets at the beginning of the 1990s (Minten and Reardon, 2008). Geographical diversification is an opportunity for competitive retailers to obtain rents from a larger market.

Geographical diversification can also contribute to organizational learning as the company and its employees, especially managers, get to know other markets and interact with different suppliers and competitors. This organizational learning can enhance the capabilities of retailers through innovations. Innovations can contribute to all aspects of the retail value chain and create dynamic capabilities (Bowman and Ambrosini, 2003). According to the results of Brown et al. (2019), innovation capabilities are particularly important regarding the future of the retail company. However, it should be also noted that dynamic capabilities are essential to enable and enhance innovations (Caniato et al., 2013).

The general conceptual framework of the thesis is illustrated in Figure 1. An economic crisis leads to a decrease in disposable income that will quickly translate to demand reduction. Lower demand is impacting the majority of the retailers and generally leads to sales and profit decrease (Mann et al., 2015). Despite the fact that crises are usual phenomena in a market economy, there is surprisingly limited research on how retailers can efficiently handle them (Pederzoli and Kuppelwieser, 2015; Mann et al., 2015). Different retail strategies can contribute to overcoming on the negative impacts of an economic crisis. These responses and their success vary across retailers.

Figure 1. General conceptual framework

The novelty of this thesis is that while prior researches (e.g., Pederzoli and Kuppelwieser, 2015; Mann et al., 2015; Mann and Byun, 2017) rather just identified the strategies applied by retailers in a crisis environment, the studies contained in this thesis also analyzed their performance effects. On the other hand, it only analysis three strategies, not all the available and potentially applied ones.

The thesis is comprised of three papers published in different journals connected to retail strategies. The first one (Berezvai, 2015) is about pricing strategies and their success in a crisis environment in Hungary. The second one (Agárdi et al., 2017) explores how geographical diversification, retail innovation, and performance are related to each other. Finally, the third paper (Berezvai et al., 2019) focuses particularly on digital innovations and their performance consequences.

II Applied methods

The thesis is based on three published journal articles that used different datasets and applied different quantitative methods to analyze them. In this chapter, I provide a short summary of the data and methods of each study.

II.1 Article 1

The purpose of this paper is to analyze the pricing strategies and their effects on the market and financial performance of retail chains in a time of recession in Hungary. The research

methodology included in-store observations, the analysis of price promotion leaflets, and interviews. The in-store observations and leaflet analysis were carried out in two phases (at the end of 2011 and the beginning of 2012).

Baseline prices were collected using in-store observations. Stratified probability sampling was used to draw a 44-store sample out of the stores of 11 food retail chains (Aldi, CBA Príma, G'Roby, Interspar, Lidl, Match, Penny Market, Profi, Spar, Tesco, and Tesco Expressz) in Budapest.

In every store, baseline prices of 15 well-specified products were collected. Following Minten et al. (2010), high-frequency purchased goods were chosen. Branded products sold in every retail chain were selected. Should a product not be sold by a retailer, the prices of similar products were used to estimate the price of the unavailable product. Half of the products represent manufacturer brands, while the other half is made up of private labels.

Similar to the research design of Cataluña et al. (2005), stores were visited twice: first between December 27 and 30, 2011, and second between January 22 and 24, 2012. There was an increase in VAT in Hungary from January 1, 2012. The date of visiting was chosen so that the introduction of the VAT increase (a cost shock) falls between the two visits. If the distribution of the prices is similar before and after the tax shock, the results can be deemed more reliable.

Altogether, 1,320 prices of products were collected. To make the prices comparable, scaled prices were used. According to Fertő and Bakucs (2009), scaled prices are calculated by dividing the prices of a product by their mode. The analysis was performed with these transformed prices.

To compare the structure of the baseline prices of the stores, average price levels, and price variations were compared using analysis of variance (ANOVA). The results of these analyses show that almost every retail chain adopts similar prices in its stores. The only exception is CBA Príma.

Price promotions are communicated in retailers' promotion leaflets. The importance of price promotions is even greater in a time of recession. Price promotion leaflets published between December 2011 and January 2012 were collected during a 5-week period. This investigation was carried out at chain-level as price promotion leaflets are published by the headquarters of the chains and are valid in every store. All the food and beverage products published in price promotion leaflets were analyzed, not only the 15 chosen for the baseline price analysis.

The price promotion activity of a retail chain can be analyzed using several factors. Following Bolton and Shankar (2003), the depth, the duration, and the frequency of price promotions were measured.

The interviews aimed to expose the trends in the Hungarian food retail industry as well as to obtain detailed information about the pricing strategies of the given firm and its rivals. The interviews also enabled me to check the validity of the empirical findings. Furthermore, they highlighted the retailers' point of view on the role of pricing during the economic crisis.

Based on the baseline prices and price promotion activities, I used hierarchical cluster analysis to identify the currently applied pricing strategies. Finally, the change in market share, turnover per store, and net operating profit were obtained for the chains in each cluster to connect pricing strategy with the market and financial performance. The advantage of using several variables is that it makes it possible to take into account that different chains may have different targets (e.g., a profit target for a product category, a profit target for the whole shop, or a market share target).

II.2 Article 2

The purpose of the second study was to examine the effect of geographical diversification on retail innovations, as well as to quantify the effect of geographical diversification and innovation on the financial performance in the case of the leading European grocery retailers.

Retailers included in the research were selected from the Global Powers Retailing top 250 list, which is published annually by Deloitte.[1] We identified 50 grocery retail companies in total that have a headquarter in Europe,[2] and we collected data about their geographical diversification, innovation activity, and performance from various sources (Global Powers of Retailing reports, annual reports, business news).

The changes in geographical diversification over time, as well as the lagged effects of innovation on firm performance, required the collection of a panel database. In determining the period, we took into consideration that the global financial crisis affected the performance, the innovation activity and also the geographical diversification of the retailers. For example, as a result of the crisis several retailers saw growth opportunities in geographical diversification

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[1] https://www2.deloitte.com/global/en/pages/consumer-business/articles/global-powers-ofretailing.html.
[2] At least 50 percent of the annual turnover was generated by the sales of fast-moving consumer goods.

(Pederzoli and Kuppelwieser, 2015). In our research, we collected data for the period between 2008 and 2013, thus for the period both during and after the crisis.

The variables included in the model were operationalized as follows. We measured geographical diversification with the number of those countries in which the company carried out retail operations in the year concerned. As opposed to Oh et al. (2015), we did not divide geographical diversification into intra- and inter-regional parts, since the separation of this is problematic. Intra-regional diversification is understood as expansion towards close and known countries. The determination of these countries for each retailer is debatable. For example, in the case of a French retailer, does geographical diversification to a former colony (e.g., Algeria for the French-founded Carrefour) belong to this scope or not? Oh et al. (2015) carried out the categorization on a continental basis, however, this is not always accurate. For this very reason, we did not divide geographical diversification into intra- and inter-regional parts.

We collected information about the innovation activity of the retailers from the websites of the companies, their annual reports, and business news (i.e., from secondary data sources). We reviewed all the news that were published on the corporate websites during the period studied, while in the case of annual reports and business news, we used search words characteristic for retail innovation (e.g., "new", "introduction"). We categorized the concrete innovation outputs according to the typology established by the OECD and Eurostat (2005), and then we coded the four innovation types (product, marketing, process, and organizational innovation) with the help of dummy variables (per company and per year). If the dummy variable marking the innovation type concerned had the value of 1 in the year concerned, then it means that the given retailer executed that innovation type in that year. If no such innovation had occurred, then the value of the dummy variable was 0. The methodological approach is very similar to the measure used by Eurostat during the Community Innovation Survey (CIS).

Regression methodology was applied in this study. Fixed effect logit methodology was used for models with a discrete dependent variable and traditional fixed effect models in other cases. In the fixed effect model framework, the logit model is suitable for consistent estimation according to the Neymann–Scott principle (Hsiao, 2014). Other researchers (e.g., Chen and Daito et al., 2014; Selim, 2016) – along the same lines of thoughts – also decided to use the logit model when applying discrete dependent variable panel models.

II.3 Article 3

In the third study, we analyzed the digital innovation activities and their performance effects in the case of the world's largest grocery retailers between 2007 and 2017. The list of retailers was obtained from the top 250 lists published in the Global Powers of Retailing annual reports compiled by Deloitte. The Global Powers of Retailing annual reports have been used in several other studies (e.g., Etgar and Rachman-Moore, 2008; Etgar and Rachman-Moore, 2011; Mohr and Batsakis, 2014) as data are collected using a well-established methodology and from reliable sources (corporate data and Planet Retail database) every year.

In our analysis, we considered only fast-moving consumer goods (FMCG) retailers to avoid the potential bias of different product categories. As a next step, we restricted our sample to include only European and US-based grocery retailers. The reason behind this selection had a cultural, but also an information collection element. Finally, we only analyzed stock exchange listed companies. This criterion was applied as public companies have to publish annual reports that often include innovation data as well. (These sources of information were essential in our research.) Furthermore, public companies are in general more transparent, communicate more to the public about their operations and innovations than other companies do.

Data were obtained from several sources. Digital innovation activities of the retailers were measured using the number of innovation outcomes executed by the given retailer in the given year. Innovation outcome data were collected from different databases. First, we reviewed corporate websites and annual reports, then we searched for innovation outcomes in business journal databases (MarketLine and Business Source Premier). Searching options were exploited using keywords often appearing in news about innovations ("new", "launch", "introduce", "introduction", "initiative", "initiate"). The keywords were derived based on the definition of innovation (OECD and Eurostat, 2005) and prior studies (Chen and Chiang et al., 2014; Hanson and Yun, 2018) and were refined by pre-tests.

The panel structure of the data allows us to deal with both the potential endogeneity and the autocorrelation within the dependent variable via the use of dynamic panel models. Dynamic panel models are built on two principles. On the one hand, longer and longer panel data series are available nowadays, and these call the attention to the problem of autocorrelation. In our case, the dependent variable of the regression is the earnings before interest, taxes, depreciation, and amortization (EBITDA) margin of the retailer, which has inertia; its first-order autocorrelation is 0.73, which can be considered high. In order to treat this autocorrelation, the

lagged dependent variable should be included on the right-hand side of the regression, however, this correlates with the firm-specific effects, hence, distorts the parameter estimates (Roodman, 2009). Neither the fixed effect transformation nor the first difference regression model solves this problem since both include the error term, as well as the lagged dependent variable on the right-hand side of the regression.

The instrumental variable approach seems to be the most appropriate one for treating the distortion (Haile et al., 2016). Another advantage of this is that the potential endogeneity of the other explanatory variables can also be managed using instruments. Simultaneity or reverse causality may be present with regard to retail margin and digital innovations, i.e., the margin and the number of digital innovations might be determined at the same time since better-performing retailers have more resources at their disposal that they can dedicate to innovations. Through the application of the dynamic panel model, these problems can be manageable as well.

During the estimation, in the case of the digital innovations, we applied a one-period delay (Hitt et al., 1994), similarly to all the other explanatory variables (Oh et al., 2015). In the case of the digital innovations we allowed quadratic effects as well, i.e., the marginal rate of return of the digital innovations can be diminishing.

III Results

My thesis analyzed three retail strategies, geographical diversification, innovation, and pricing, that are often applied by retailers to boost market performance. According to the results, all these three strategies can significantly contribute to the market performance that is also a valuable finding for retail managers, especially during and after the current COVID-19 pandemic and the economic crisis caused by it.

Retailers can easily modify their pricing strategy by lowering prices and/or increasing the frequency and/or depth of price promotions. However, this can result in a sizeable decline in profitability. During economic downturns, a price reduction might be successful to maintain sales volume and market share. However, a price war is costly. These are reinforced by the first article in my thesis which showed that a hybrid pricing strategy was the most successful one in Hungary during the 2008/2009 recession. This was a combination of low prices and intense price promotion activities. Other researchers analyzing retailers in a crisis-setting came to similar conclusions (e.g., Chou and Chen, 2004; Bachl et al., 2010).

Results verified that this hybrid pricing strategy performed well in tough market conditions, but the long-run sustainability is in question as the profitability of the retailers declined. To reverse it, retailers have to use other strategic elements besides pricing to attract shoppers and to increase sales and profitability at the same time.

Pederzoli and Kuppelwieser (2015) analyzed the geographical diversification patterns of retail companies during and after an economic downturn to understand how companies behave and to identify best practices. This is an important question as several previous papers (e.g., Etgar and Rachman-Moore, 2008; Evans et al., 2008; Chan et al., 2011; Oh et al., 2015) indicated that geographical diversification affects retail performance. Therefore, a potential way to improve profitability after the crisis can be done by focusing on geographical diversification. The second article in my thesis dealt with this question.

Results confirmed that geographical diversification is having a negative quadratic effect on net margin in the after-crisis period. This proves that geographical diversification positively impacts profitability. However, this effect is not linear and there is a threshold for geographical diversification, and after the threshold is passed, further geographical diversification will decrease profitability. This result is supported by some prior studies (e.g., Qian et al., 2010) as well.

The novelty of the second article is that geographical diversification not only affects profitability, but also the process innovation activities of the retailers. Retailers with geographically diversified operations should be aware of this additional positive effect, which stems from the synergies between geographical diversification and process innovation. This can arise from gaining knowledge on how business is done in other parts of the world and retailers might re-apply this knowledge within their organization to improve and update processes.

However, the effect is not linear, but negative quadratic again, therefore, retailers must carefully balance their resources devoted to geographical diversification and process innovation. Once a retailer is not expanding geographically, it can draw back its process innovation activities due to the lack of new knowledge accumulation. However, geographical diversification that is too intense can reduce the attention and resources devoted to process innovations, which is another unfavorable effect.

At the same time, product, marketing, and process innovations have a positive impact on the profitability of the retailers. This finding provides empirical verification for the positive profitability impact of different types of innovations. This was theoretically supposed by prior

literature (e.g., Geroski et al., 1993; Hitt et al., 1994; Bowen et al., 2010; Hristov and Reynolds, 2015), but it had not yet been empirically tested for retailers.

Nevertheless, it is important to note that innovations affect the profitability of retailers with time delay. New retail solutions (e.g., new store formats, new loyalty programs, new mobile applications, online store developments), processes, and private label products need time to penetrate the market and, thus, be able to have a significant impact on the retailers' bottom line. This knowledge can contribute to a more precise evaluation of innovations and when to expect the gains to arrive.

Since geographical diversification has an influence on both process innovation and the profitability of the retailers, we identified an indirect effect of geographical diversification on retail performance through process innovations. This effect can come from the efficiency increase that retailers can obtain by getting to know other ways business processes are organized in other countries.

Product and marketing innovations also positively impact profitability, but these are not enhanced by geographical diversification. A reason behind this phenomenon can be that product and marketing innovations are customer-specific, therefore, best practices in one country might not be popular in other ones. This is not the case for processes that are internal within the company and customers do not confront them in the majority of the cases.

These findings imply that well-balanced resource allocation between geographical diversification and innovation can lead to superior value creation by maximizing the positive return from both strategies.

Finally, since digitalization is unavoidable these days, retailers also answered the challenges by introducing digital innovations to the market. Digital innovations mean that retailers develop, apply, or use new digital solutions that were developed directly for the retail sector or, often, for other industries. These innovations can be both product, marketing, process, or organizational innovations, hence, can impact all aspects of the retail activity and all stakeholders of the companies.

Increased innovation activity can be another surviving strategy for retailers and digital innovations are especially important in this regard. This was the reason why I started to analyze retail digital innovations and the way they impact profitability. The third article in this thesis specifically analyzed the digital innovations in retailing. A further novelty of this paper is that

innovation was measured using a new way that enabled me to identify the marginal effect of digital innovations on performance. The applied measurement is similar to the number of patents, which has been often used in the innovation literature (e.g., Atanassov, 2013; Mishra, 2017). However, the number of patents is not an adequate measure for retailers because they typically apply new technologies but do not develop them; hence, the number of patents held by retailers is low (Pantano, 2014; Hristov and Reynolds, 2015). Additionally, the number of patents correlates with technological development, but a patent is not always commercialized in the business environment. Therefore, the number of patents is an incomplete measure for innovations (including digital innovations) since there is no direct and one-to-one relationship between a patent and a commercialized innovation.

Digital innovation was, therefore, operationalized as executed digital innovation outcomes by the given retailer in the given year. Using this variable and applying dynamic panel models, the research verified that digital innovations are having a positive impact on the profitability of the retailers. However, the effect is lagged in time, but linear which means that executing several digital innovations in the same year (by the same retailer) does not reduce the marginal profit impact of the individual innovations. This has an important consequence for retail managers, namely, that it is not worth delaying the market introduction of digital innovations once they are ready to launch.

To summarize the findings of my thesis, retailers have multiple ways to improve their performance. While pricing can help in the short-run, geographical diversification and innovation can be beneficial on a longer time horizon. The latter strategies are, furthermore, partially reinforcing each other that can lead to even better firm performance. Corporate managements need to balance these strategies and find the optimal mix for their company. Short-run challenges and the characteristics of the given company (e.g., geographical footprint) can help to identify the right combination. What is especially important is that short- and long-run strategies and the continuity of the activities have to supplement and reflect on each other.

The most important academic contributions and managerial implications of my thesis are the followings.

1. The empirical identification of retail pricing strategies in a crisis environment and analyzing their performance consequences in the short- to middle-run (article 1). Only a very few numbers of prior studies exist in this domain (Chou and Chen, 2004; Bachl

et al., 2010; Mann et al., 2015; Mann and Byun, 2017) and the results can help retail managers during the next recession to minimize negative impacts.

2. Analyzing the interaction between geographical diversification and retail innovation and the combined effect of these strategies on firm performance (article 2). Despite the fact that geographical diversification was studied in the retail setting earlier, no empirical studies were found regarding the role innovation can play in this relationship. The analysis of retail innovation can shed light on the mechanisms geographical diversification can contribute to performance. Additionally, it also showed how different types of innovations are affected by geographical diversification. Since process innovations were positively related to geographical diversification, retailers can improve their efficiency (and profitability) by learning via geographical diversification.

3. Proposing a new measurement for retail innovation that is specific in several aspects (article 3). The number of executed innovation outcomes can help to estimate the innovativeness of the retailers and to compare companies, furthermore, this is more specific to retail operations and makes more sophisticated econometric modeling possible. These are important advantages compared to previously applied measurements like CIS or patent data (e.g., Cainelli et al., 2004; Mansury and Love, 2008; Ghisetti and Rennings, 2014; Pantano et al., 2017).

4. Estimating the profit impact of (digital) retail innovations based on empirical data from the world's largest grocery retailers (article 2 and article 3). Results indicate a positive and linear effect. Therefore, retail professionals can gain better insights into the financial rewards of innovations, and particularly, digital innovations. These results can function as a guide for retail managers towards a more precise evaluation of (digital) innovations that can lead to an excellent optimization of the available resources and tailoring of innovation activities. Furthermore, results can help to assign the appropriate budget to support (digital) innovation activities of the retailers.

However, the thesis has some limitations as well that future research might address. First, I examined only grocery retailers. Future studies can be conducted in other merchandise categories to show similarities and differences among retail segments regarding strategies, their interactions, and their benefits. Second, I analyzed only a limited number of retailers, and thus, a larger sample might be useful to further verify the results. Third, retail innovations were classified using the Oslo Manual (OECD and Eurostat, 2005). A more refined classification

scheme could help to identify the profit impacts of different subcategories of (digital) retail innovations that can shed light on the differences not visible in the aggregated data.

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19. **BEREZVAI Z. (2019):** A kiskereskedelmi szabályozás hatása a fogyasztói árakra. In Valentiny P.–Nagy Cs. I.–Berezvai Z. (szerk.): *Verseny és szabályozás 2018.* MTA KRTK Közgazdaság-tudományi Intézet, Budapest, 75–97. o. ISSN: 1789-9702.