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# Consequences of the new reference price for multi-channel retailers after lockdown due to SARS-CoV-2

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## Konsekwencje nowej ceny odniesienia dla wielokanałowych detalistów po okresie lockdownu z powodu SARS-CoV-2

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**Abstract**

The article aims to present, based on the psychological theories of consumer behaviour, the essence of a new reference price in a multichannel retail environment after lockdown due to SARS-CoV-2. Multichannel pricing is well explained in the literature; in this article authors wanted to present this issue in an actual context — they indicated the consequences in the area of price perception due to the unplanned and temporary elimination of the brick-and-mortar stores. The forced customer migration to the online environment, caused by the lockdown, has current consequences for multichannel retailers as well as long-term consequences. Authors proposed a conceptual approach to the process of shaping a new reference price during the pandemic. Some practical and theoretical implications have been also provided.

**Keywords**

reference price, price differentiation, price communications, multichannel sales

**Streszczenie**

Celem artykułu jest przedstawienie na podstawie wybranych psychologicznych teorii zachowań konsumentów istoty nowej ceny odniesienia w wielokanałowym środowisku po okresie lockdownu z powodu pandemii SARS-CoV-2. Różnicowanie cen w środowisku wielokanałowym jest opisane w literaturze przedmiotu. Autorzy niniejszego artykułu prezentują to zagadnienie w aktualnym kontekście — wskazują konsekwencje z zakresu postrzegania cen wywołane nieplanowanym i czasowym zamknięciem sklepów stacjonarnych w okresie pandemii. Wymuszona migracja klientów do środowiska online ma dla detalistów wielokanałowych zarówno bieżące jak i długoterminowe konsekwencje. Autorzy zaproponowali koncepcyjne podejście do procesu kształtowania nowej ceny referencyjnej podczas pandemii. Przedstawili też implikacje praktyczne i teoretyczne poruszanych w artykule zagadnień.

**Słowa kluczowe**

cena odniesienia, różnicowanie cen, komunikowanie cen, sprzedaż wielokanałowa

JEL: M31

**Introduction**

In today's pandemic world, both retailers and buyers witness changes in their behaviour that were not planned or forecasted for an undefined future. The 2020 pandemic SARS-CoV-2 that originated from Wuhan city in China in December

2019 has dramatically changed the world in almost every aspect of life for individuals, businesses, industries, and countries (Prentice et al., 2020). SARS-CoV-2 has disrupted and changed the business landscape — pandemic fear directs consumers towards remote sales channels (Tran, 2021); additionally, government-imposed restrictions

do not give buyers other options for purchase. The goal of the lock-down policy was to stop the virus in its track, and in consequence, to buy society some time to find effective mitigation strategies such as a vaccine, or to build healthcare capability (Bin et al., 2020). Depending on the government policy, lockdown can have forms with several degrees of strictness for the market. In some countries, the total lockdown has been adopted, other countries decided to limit the numbers and operations of businesses and services; and several other countries implemented severe limitations onto the possibilities for people to leave home (Pantano et al., 2020). Even the ongoing vaccination process does not exclude periodic lockdown in individual countries. One of the important characteristics of retailing is the importance of regular customer traffic and face-to-face contact. As a result of the pandemic, the brick-and-mortar stores have been severely affected by the reduced market demand caused by the COVID-19 pandemic (Untaru & Han, 2021). According to Deloitte (2020), the pandemic is rapidly changing people's behaviour toward online channels, and the changes are likely to remain post-pandemic. Although the impact of reference prices on consumer decisions is well studied, its impact on consumer price perception during the pandemic has not yet been explored in a scientific literature. The article is devoted to one of the consequences of the ongoing pandemic and the lockdown. Many interesting articles have been published so far on the consequences of the pandemic on consumers' behaviour. This article focuses on the issue of price communication and the formation of a new reference price as a result of the forced migration of consumers to the online environment. To the best of authors' knowledge, price aspects as the consequences of SARS-CoV-2 are not fully recognised in the scientific literature. From a theoretical point of view, this paper contributes to an emerging stream of studies that examine the impact of the COVID-19 pandemic on price communications and perception. The theoretical objective of the study is to indicate the usefulness of some psychological theories in multichannel pricing. Despite the worldwide vaccination process that has started at the end of 2020, a (partial) lockdown can be still a market reality again. As a result, brick-and-mortar stores can operate in a limited form and online sales channel become the main or even the only sales channel. In the long run, this phenomenon has a significant impact on the price perception and the form of the reference price. The article aims to present, based on the psychological theories of consumer behaviour, the essence of a new reference price in a multichannel retail environment after lockdown due to SARS-CoV-2. Based on the presented arguments, authors try to indicate some consequences of this significant

change in price perception and its practical implications. For the purpose of this article, the issue of increasing online shopping is vital. No matter what kind of online shopping gains the importance during a pandemic — each time we talk about purchasing decisions and therefore price perception and price acceptance. As a result of the online sales intensification introduced by multichannel retailers, adjustment processes took place. Online price became more attractive than offline price and online prices determine the consumers' price expectations. The prevalence of online shopping and its growing importance in consumer purchase behaviour has resulted in the formation of a new reference price. In the communication process, the offline sellers, probably after the time of restrictions related to the SARS-CoV-2 pandemic, will emphasize that the prices of the offered products are the same as in online sales. This raises the question of the long-term profitability of offline sales and the possibility of maintaining the extensive stationary sales chain just like before the pandemic.

## Useful theories

The issues presented in the article are based on the prospect theory presented by Kahneman and Tversky (1979). This theory is said to be one of the most interesting intellectual achievements of modern psychology and economics and it is seen as one of the pillars of behavioural economics (Crompton, 2016). Kahneman and Tversky recognized that price is reference-dependent and perceptions and judgments have their relative nature. The decision about price acceptance is made as a result of comparing it to a reference price (Crompton, 2016). One of the areas of the prospect theory application is price perception and the reference price impact on consumer behaviour (Lin, Xia & Bei 2015). According to the prospect theory, consumers can consider the current price as a gain or loss when it is lower or higher than the current reference price (Tversky & Kahneman, 1991). The reference price plays an extremely important role in the process of subjective price perception in terms of its fairness.

Another theoretical source for this article is the adaptation level theory (ALT) introduced by Helson (1964). Edwards (2018, p. 2) notes that this theory "travelled to economics" with huge impact, at the same time, the author points out that "Helson's theory is overlooked in most of the literature relating psychology to economics." The adaptation level theory describes the process by which a person becomes insensitive to the effects of constant stimuli (Bowling, 2014). ALT is useful in describing

change in perception with repeated exposure including acclimatization, adaptation, stimulus failure, fatigue as well as habituation (Helson, 1964). ATL states that the central process is adaptation (Heim et al., 2020). According to the adaptation level theory, exposure to earlier stimuli serves as a frame of reference against which later stimuli are verified (Bowling et al., 2005). The theory indicates a tendency to adapt to change and to take a new/changed situation as standard over time — this changed situation becomes a new reference point.

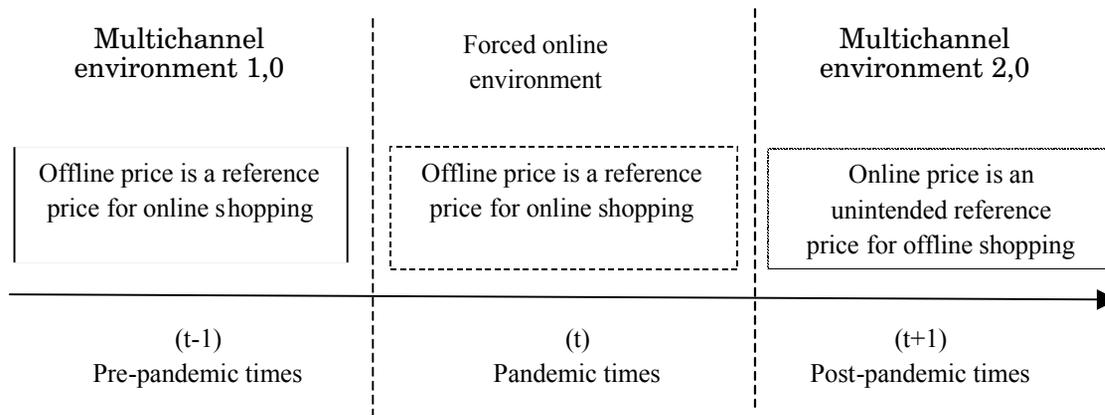
## The concept of reference price

The reference price has been researched since at least the 1980s. (Zhang et al., 2013) and has attracted considerable attention in recent years (Hu et al., 2016). Numerous marketing and psychology researchers have given justified attention devoted to the reference price effect (Chen et al., 2019). According to Monroe (1973), reference prices are standards against which the purchase price of a product is weighted. The reference price is the price that is used to compare the price of the product considered for purchasing by consumers (Popescu & Wu 2007). In the light of the literature, the reference price can have many different bases (Lowengart, 2002; Mezas et al., 2002; Bolton et al., 2002; Mazumdar et al., 2005; Zha et al., 2021; Bi et al., 2017). Raghurir (2006) introduced the idea of unintended reference points resulting in an unfavourable price perception and the customer perception of a loss. An example of this reference price is the promotional price during price offer — in effect, once the promotional campaign ends, the lower price is replaced by a higher one, then the regular price is negatively perceived by buyers as the promotional (lower) price plays a role of the reference price. In literature, researchers have explored the impact of reference price effect in different pricing areas, such as the participative price mechanisms effectiveness (Roy et al., 2016; Weisstein et al., 2019; Gross et al., 2020), the brand positioning and advertising (Malekiana & Rasti-Barzokia, 2019; Lu et al., 2016; Mehra et al., 2020) as well as the dynamic pricing (Zhang et al., 2019; Zhao et al., 2019). Most of the literature on reference price mainly studied its impacts on sales demand and profit (Zhao et al., 2021). With the extraordinary growth of multichannel sales, it has become desirable to study the reference price effect also in the multichannel context. The reference price effect is gaining its importance in terms of multi-channel sales due to price competition among marketing channels. Early studies on price differentiation

between the offline and online channels showed different views on the price advantage of online stores over brick-and-mortar stores (Suria et al., 2003; Deleersnyder et al., 2002; Brynjolfsson & Smith, 2000). However, the vast majority of publications from the last two decades on multichanneling and multichannel pricing (Verhoef, Kannan & Inman, 2015; Neslin & Shankar, 2009; Homburg, Lauer & Vomberg, 2019; Kireyev, Kumar & Ofek, 2017), as well as available literature on the cannibalization of sales channels (Kollmann et al., 2012; Kim & Chun, 2018; Luo et al., 2020) is based on the assumption of lower online prices compared to prices in brick-and-mortar stores. According to Wang et al. (2021) as a consequence of the reference price effect, the online retailer's pricing power increases while the offline retailer's pricing power weakens.

## Reference price effect in the pandemic reality

The SARS-CoV-2 pandemic triggered a sharp change in the scale of online shopping in relation to purchases in brick-and-mortar stores. Suddenly, due to the lockdown, consumers were forced to give up their previous purchasing preferences in offline channel and to purchase only via remote channels. Undoubtedly online markets have become highly dynamic and competitive (Schlosser & Richly, 2019; Karray & Sigué, 2021). The pandemic reality created a new kind of customer migration to the online channel. Trampe et al. (2014) identified forced customer migration, voluntary migration strategy and the options based on incentives. According to these researchers, the former type refers to the situation where buyers have no choice in selecting a preferred sales channel and at the initiative of the retailer the original channel is no longer available. In 2020 and partially in 2021, the lack of customer freedom of choice took a different form — the need to move from brick-and-mortar stores to online stores has been imposed on both retailers and consumers. The pandemic of SARS-CoV-2 was the initiator of such changes, so it can be called the unintended forced customer migration to the online channel. As a result, the necessity to find oneself in a new market reality applies to the buyers as well as the retailers. The main difference between the classic forced migration strategy and the unintended forced strategy relates to the duration of the forced migration and the intentions of the retailer. Depending on the retailers' previous experience of operating in the Internet environment, the change is more or less severe. However, customer forced migration to the online channel does not mean migration to a specific store

**Figure 1. The reference price for multi-channel retailers as a consequence of the pandemic**

Note:

solid line — lasting effect; dotted line — fading effect.

Source: own research.

— the competition is enormous because the group of competitors also includes pure online retailers. Pure online retailers cannot offer all the services that customers seek for their convenience (Roggentin et al., 2019), however, the pandemic reality does not have such vital challenges. To successfully compete with pure online players multichannel retailers try to provide very attractive price promotions. As a result, the price promotion in the online channel was noticed on an unprecedented scale due to competitors' pressure. The goal for bricks-and-clicks retailers was obvious — to avoid losing customers when rivals are only a few clicks away (Liu, 2013). However, the tactic of additional price cuts may turn out to be a double-edged sword. The weakening of competitors was not the only result of deep cuts to online prices. The second effect, perhaps more important, was the strengthening of the price sensitivity of customers who shape a new (lower) price standard by interacting with very attractive online prices.

In the context of forced consumer migration to remote channels caused by the pandemic and the lockdown, the adaptation level theory turns out to be extremely useful. H. Helson's theory explains the process of a gradual change in the price perception by consumers who, as a result of the pandemic, were forced to buy via remote channels (online store, mobile application). As a result, according to ALT, in the initial stage of the pandemic, consumers were forced to buy online and saw a favourable difference in online vs. offline price. However, over time, the stage of adaptation to new purchasing circumstances (and lower prices) followed (continues) and these online prices have created a new price standard. It will be a new price reality where prices in brick-and-mortar stores will be compared with after the lockdown. As a result, an unfavourably perceived offline price will

negatively affect the intention to buy via this marketing channel. Figure 1 presents the concept of a new reference price in the multichannel environment 2.0. — the role of the offline price as a reference price will probably vanish during pandemic times and in post-pandemic times, the online price will serve as an unintended reference price.

It can be presumed that the longer the period (t) lasts, the stronger the effect of the new reference price in the period (t + 1) will be.

## Conclusions

The above conclusion on the new reference price standard is all the more pessimistic as, once brick-and-mortar stores reopen, the vast minority of multichannel retailers will be able to bring their prices down to the online price level. Costs generated by an inactive offline channel should force retailers to resign from additional price promotions after the lockdown. In Poland, as soon as the next brick-and-mortar stores openings took place (the beginning of February 2021), retailers communicated additional price promotions accepted both via offline and online sales channels. Such price messages ("additional rebate code") were sent via mobile applications, email and SMS. As a result, the perception of a low price has been enhanced. The only rational explanation refers to the time of seasonal sales so typical for the beginning of the year. The retailer's intention is quite clear — the problem of the new reference price will only be postponed — it will not disappear. One of the possibilities of how to reduce the negative consequences of the new reference price is to properly communicate the causes of the price

difference between sales channels. According to Dutta, Yaprak, and Grewal (2017), consumers tend to seek some explanations for unexpected events, such as price increases of the products they tend to buy; the most common explanation is information about the retailer's cost. Such a practice is called cost explanation or cost-based communication. However, it needs to be emphasized, the results of the available studies do not support the effectiveness of the cost message in shaping a positive perception of price fairness. Some studies indicate a positive impact of cost information (Grewal et al., 2004) while other researches do not indicate such a relationship (Fassnacht & Unterhuber, 2016). In their studies, Bertrandie and Zielke (2019) have shown that the lack of cost justification negatively affects the perceived price fairness. In the context of returning to multi-channel sales after the lockdown, the main cost components for retailers will be staff wages, rent, and costs referring to implementation regulations of the sanitary regime. Such rules probably will be in place long after brick-and mortar-stores reopen. Another communication approach can be value-based communication resulting from the message about the additional value provided only in brick-and-mortar stores. The research by Fassnacht and Unterhuber (2016) confirmed the effectiveness of communication of price differences based on the difference in value. Researchers indicated that the value of offline purchases resulted from a higher level of customer service, a more extensive product presentation as well as a stronger shopping experience compared to online purchases. Authors strongly believe that the concept of unique customer experience in offline sales channel deserves special attention due to its huge potential in offline price raising without offending and discouraging buyers. The scientific literature on customer experience exploded only a few years ago (Verhoef et al. 2009; Lemon & Verhoef, 2016; Blakeney, 2016; Melero et al., 2016; Parise et al., 2016; Stein & Ramaseshan, 2016; Shen et al., 2018) and in this article, authors wanted to pay attention to its usefulness in the area of improving customer perception of price differences in a multi-channel sales context. Despite of growing popularity of remote communications and sales channel, especially among younger consumers generations (Lipowski & Bondos, 2018), customers still have a desire for a human touch (Ward, 2020). This need for human interaction is defined as the degree of human interaction desired during the transaction (Collier & Kimes, 2013). Online retailers are more and more aware of the importance of human contact in the customer journey, for this reason, the idea of digital human is no longer the science-fiction vision (Silva & Bonetti, 2021). Stein and

Ramaseshan (2016) indicated several elements of the customer experience touch point. Four of them must be deeply connected with sales in a brick-and-mortar store, that is an employee-customer interaction element, customer-customer interaction elements, communicative elements, and product interaction elements. None of these customer experience elements can be equally provided with both online and offline sales environment — brick-and-mortar stores can create advantages above online channel (online store as well as mobile applications) in these areas. As stated by Lemon and Verhoef (2016), creating a strong customer experience is recognized as a leading management objective.

The present research has both theoretical and practical implications. From a theoretical point of view, this work contributes to the literature and to an emerging stream of studies that examine the impact of the SARS-CoV-2 pandemic on price communications and price perception. From a practical point of view, authors' findings provide insights into both pure online retailers and multichannel retailers. Based on presented findings, the former could try to expand still existing consumers' price memory and avoid deep price promotion. This type of retailers is not obligated to prove their price attractiveness that is obvious for the buyers. Instead of competing on the price, it is recommended to improve the non-price component of value for the customer in an online environment. The possibilities provided by solutions such as big data, artificial intelligence, augmented reality or machine learning create new levels of communication in the Internet environment (Hilken et al., 2018; Farshid et al., 2018). On the other hand, the latter could try to prepare the market for a customer returning to their brick-and-mortar stores with a new reference price. Undoubtedly, caution is advised with additional online price cuts still in the lockdown time, as well as just after reopening brick-and mortar stores. Price messages such as "additional sales", "additional discounts -30%" etc. can harm the perception of prices that are already significantly reduced compared to offline prices. As it was proved by many researchers, the anchoring effect introduced by Tversky and Kahneman (1974) really works (Furnham & Boo, 2011). What is more, Yang et al. (2018) paid attention to the role of not only informative but also uninformative anchors affecting consumers memory. Thus, even the purely general price image of online stores can serve as a price anchor in offline price perception after the lockdown. The process of lowering the reference price may be automatic, so there is no justification for intensifying it by additional online price cuts. Undoubtedly, the biggest winners of changes in

retailing during the pandemic seem to be omnichannel retailers, who are not so strongly affected by the phenomenon described in the article. In their situation, resignation from channel-based price differentiation counteracts the unfavourable setting of the reference price for offline purchases. The only (but still vital) challenge for omnichannel retailers seems to be the temporary elimination of brick-and-mortar store. However, a moment of restarting offline sales will not be so demanding for them in terms of differences in product prices, due to uniform pricing in each marketing channel. This leads to perhaps provocative conclusion that the post-pandemic period may be the right moment for multi-channel retailers to gradually implement the omnichannel strategy at least in the area of pricing — the resignation from channel-based price differentiation. The biggest challenge in unifying offline prices and remote (online as well as mobile) prices is precisely the fact that a low reference price is already formed in the consumers' minds. However, in the long run, it can be the right direction for changes in price communication. The new reference price may apply in particular to sellers of consumer electronics, clothes and footwear as well as home furnishings. For such products, retailers have been most affected by the lockdown and buyers have been forced to shift to online shopping. In authors opinion, the impact of

the new reference price on the market may be multidirectional. It can lead to blurring price differences in offline and online sales, unifying prices and price incentives regardless of the sales channel, and also more intensive marketing activities in brick-and-mortar stores. All these aspects can be the area of research of the new reference price effects on consumers. The starting point for this research should be the buyer's price perception. However, the methodological challenge of research on the new reference price effect should be emphasized. Authors hope that their article will encourage to conduct quantitative research to validate presented conclusions about the new reference price in the post-pandemic retail landscape.

To the best of authors' knowledge, this is the first article to investigate such a potential change of price perception and its impact on willingness to pay in brick-and-mortar store after the lockdown caused by the SARS-CoV-2 pandemic. Notably, the pandemic is still the market reality, so there is time for some preparation for full-time offline sales. The phenomenon of shaping a new reference price for purchases in a multichannel environment will intensify along with the ongoing lockdown in each industry affected by the pandemic. This article is theoretical, however the conceptual approach points to an interesting research area that can be implemented when the pandemic is finally over.

## References/Bibliografia

- Bertrandie, L., & Zielke, S. (2019). The influence of multi-channel pricing strategy on price fairness and customer confusion. *The International Review of Retail, Distribution and Consumer Research*, 29(5), 504–517. <https://doi.org/10.1080/09593969.2019.1664611>
- Bi, W., Li, G., & Liu, M. (2017). Dynamic Pricing with Stochastic Reference Effects Based on a Finite Memory Window. *International Journal of Production Research*, 55(12), 3331–3348. <https://doi.org/10.1080/00207543.2016.1221160>
- Bin, M., Cheung, P., Crisostomi, E., Ferraro, P., Myant, C., Parisini, T., & Shorten, R. (2020). *On Fast Multi-Shot Epidemic Interventions for Post Lock-Down Mitigation: Implications for Simple Covid-19 Models*. [https://www.researchgate.net/publication/340115414\\_On\\_Fast\\_Multi-Shot\\_Epidemic\\_Interventions\\_for\\_Post\\_Lock-Down\\_Mitigation\\_Implications\\_for\\_Simple\\_Covid-19\\_Models](https://www.researchgate.net/publication/340115414_On_Fast_Multi-Shot_Epidemic_Interventions_for_Post_Lock-Down_Mitigation_Implications_for_Simple_Covid-19_Models)
- Blakeney, J. (2016). What are the benefits of creating an omnichannel brand experience? *Journal of Brand Strategy*, 5(1), 57–66.
- Bolton, L. E., Warlop, L., & Alba, J. W. (2003). Consumer Perceptions of Price (Un)Fairness. *Journal Of Consumer Research*, 29, 474–491. <https://doi.org/10.1086/346244>
- Bowling, N. A. (2014). Adaptation level theory. In A. C. Michalos (Ed.) *Encyclopedia of Quality of Life and Well-Being Research*. [https://doi.org/10.1007/978-94-007-0753-5\\_25](https://doi.org/10.1007/978-94-007-0753-5_25)
- Bowling, N.A., Beehr, T.A Wagner, S. H., & Libkuman. T. M. (2005). Adaptation-level theory, opponent process theory, and dispositions: An integrated approach to the stability of job satisfaction. *Journal of Applied Psychology*, 90(6), 1044–1053. <https://doi.org/10.1037/0021-9010.90.6.1044>
- Brynjolfsson, E. & Smith, M. D. (2000). Frictionless commerce? A comparison of Internet and conventional retailers. *Management Science*, 46(4), 563–585. <https://doi.org/10.1287/mnsc.46.4.563.12061>
- Chen K., Zha, Y., Alwan, L. C., & Zhang, L. (2019). Dynamic pricing in the presence of reference price effect and consumer strategic behaviour. *International Journal of Production Research*, 58(2), 1–16. <https://doi.org/10.1080/00207543.2019.1598592>
- Collier, J. E., & Kimes, S. E. (2013). Only if it is Convenient: Understanding How Convenience Influences Self-Service Technology Evaluation. *Journal of Service Research*, 16(1), 39–51. <https://doi.org/10.1177/1094670512458454>
- Crompton, J. L. (2016). Implications of Prospect Theory for the Pricing of Leisure Services. *Leisure Sciences*, 38(4), 1–23. <https://doi.org/10.1080/01490400.2015.1107516>
- Deleersnyder, B., Geyskens, I., Gielens, K., & Dekimpe, M. G. (2002). How Cannibalistic Is the Internet Channel? A Study of the Newspaper Industry in the United Kingdom and the Netherlands. *International Journal of Research in Marketing*, 19(4), 337–348. [https://doi.org/10.1016/S0167-8116\(02\)00099-X](https://doi.org/10.1016/S0167-8116(02)00099-X)
- Deloitte (2020). *COVID-19 will permanently change e-commerce in Denmark*. <https://www2.deloitte.com/content/dam/Deloitte/dk/Documents/strategy/e-commerce-covid-19-onepage.pdf> (10.12.2021).
- Dutta, S., Yaprak, A., & Grewal, A. (2017). Fairness perceptions of retail price increases by foreign and domestic brands: The roles of ethnocentric beliefs, profit stickiness, and contextual information. *Journal of Business Research*, 75, 37–45. <https://doi.org/10.1016/j.jbusres.2017.02.004>

- Edwards, J. (2018). Harry Helson's adaptation-level theory, happiness treadmills, and behavioral economic. *Journal of the History of Economic Thought*, 40(1), 1–22. <https://doi.org/10.1017/S1053837216001140>
- Fassnacht, M., & Unterhuber, S. (2016). Consumer response to online/offline price differentiation. *Journal of Retailing and Consumer Services*, 28, 137–148. <https://doi.org/10.1016/j.jretconser.2015.09.005>
- Farshid, M., Paschen, J., Eriksson, T., & J. Kietzmann, J. (2018). Go boldly! Explore augmented reality (AR), virtual reality (VR), and mixed reality (MR) for business. *Business Horizons*, 61, 657–663. <https://doi.org/10.1016/j.bushor.2018.05.009>
- Furnham, A., & Boo, H. Ch. (2011). A literature review of the anchoring effect. *The Journal of Socio-Economics*, 40, 35–42. <https://doi.org/10.1016/j.socec.2010.10.008>
- Grevall, D., Hardesty, D. M., & Iyer, G. R. (2004). The effects of buyer identification and purchase timing on consumers' perceptions of trust, price fairness and repurchase intentions. *Journal of Interactive Marketing*, 18(4), 87–100. <https://doi.org/10.1002/dir.20024>
- Gross, H.P., Rottler, M., & Wallmeier, F. (2021). The influence of external reference price strategies in a nonprofit arts organization's "pay-what-you-want" setting. *Journal of Philanthropy and Marketing*, 26(1), e1681. <https://doi.org/10.1002/nvsm.1681>
- Heim, S., Peiseler, N., & Bekemeier, N. (2020). "Few" or "Many"? An Adaptation Level Theory Account for Flexibility in Quantifier Processing. *Frontiers in Psychology*, 11, 1–7. <https://doi.org/10.3389/fpsyg.2020.00382>
- Helson, H. (1964). *Adaptation-Level Theory*. New York: Harper and Row.
- Hilken, T., Heller, J., Chylinski, M., Keeling, D. I., Mahr, D., & de Ruyter, K. (2018). Making omnichannel an augmented reality: the current and future state of the art. *Journal of Research in Interactive Marketing*, 12(4), 509–523. <https://doi.org/10.1108/JRIM-01-2018-0023>
- Homburg, Ch., Lauer, K., & Vomberg, A. (2019). The multichannel pricing dilemma: Do consumers accept higher offline than online prices? *International Journal of Research in Marketing*, 36(4), 597–612. <https://doi.org/10.1016/j.ijresmar.2019.01.006>
- Hu, Z., Chen X., & Hu, P. (2016). Dynamic pricing with gain-seeking reference price effects. *Operations Research*, 64(1), 150–157. <https://doi.org/10.1287/opre.2015.1445>
- Karray, S., & Sigué, S. P. (2021). Multichannel retailing and price competition. *International Transactions in Operational Research*, 28(4), 2002–2032. <https://doi.org/10.1111/itor.12835>
- Kim J.-Ch, & Chun, S.-H. (2018). Cannibalization and competition effects on a manufacturer's retail channel strategies: Implications on an omni-channel business model. *Decision Support Systems*, 109, 5–14. <https://doi.org/10.1016/j.dss.2018.01.007>
- Kireyev, P., Kumar, V., & Ofek, E. (2017). Match your own price? Self-matching as a retailer's multichannel pricing strategy. *Marketing Science*, 36(6), 813–1017. <https://doi.org/10.1287/mksc.2017.1035>
- Kollmann, T., Kuckert, A., & Kayser, I. (2012). Cannibalization or synergy? Consumers' channel selection in online-offline multichannel systems. *Journal of Retailing and Consumer Services*, 19, 186–194. <https://doi.org/10.1016/j.jretconser.2011.11.008>
- Lemon, K. N., & Verhoef, P. C. (2016). Understanding customer experience throughout the customer journey. *Journal of Marketing*, 80(6), 69–96. <https://doi.org/10.1509/jm.15.0420>
- Lipowski, M., & Bondos, I. (2018). The influence of perceived media richness of marketing channels on online channel usage: Intergenerational differences. *Baltic Journal of Management*, 13(2), 169–190. <https://doi.org/10.1108/BJM-04-2017-0127>
- Liu, S. (2013). Non-internet self-service technology failures and recoveries: comparing China with the United States. *Service Business*, 3, 399–417. <https://doi.org/10.1007/s11628-012-0168-4>
- Lowengart, O. (2002). Reference Price Conceptualisations: An Integrative Framework of Analysis. *Journal of Marketing Management*, 18(1), 149–150. <https://doi.org/10.1362/0267257022775972>
- Luo, X., Zhang, Y., Zeng, F., & Qu, Z. (2020). Complementarity and Cannibalization of Offline-Toonline Targeting: A Field Experiment on Omnichannel Commerce. *MIS Quarterly*, 44(2), 957–982. <https://doi.org/10.25300/MISQ/2020/15630>
- Malekiana, Y., & Rasti-Barzokia, M. (2019). A game theoretic approach to coordinate price promotion and advertising policies with reference price effects in a two-echelon supply chain. *Journal of Retailing and Consumer Services*, 51, 114–128. <https://doi.org/10.1016/j.jretconser.2019.05.028>
- Mazumdar, T., Raj, S. P., & Sinha, I. (2005). Reference Price Research: Review and Propositions. *Journal of Marketing*, 69(4), 84–102. <https://doi.org/10.1509/jmkg.2005.69.4.84>
- Mehra, A., Sajeesh, S., & Voleti, S. (2020). Impact of Reference Prices on Product Positioning and Profits. *Production and Operations Management*, 29(4), 882–892. <https://doi.org/10.1111/poms.13144>
- Melero, I., Sese, F.J., & Verhoef, P. C. (2016). Recasting the customer experience in today's omnichannel environment. *Universia Business Review*, 50, 18–37.
- Mezias, S. J., Chen, Y.-R., & Murphy, P. R. (2002). Aspiration-Level Adaptation in an American Financial Services Organization: A Field Study. *Management Science*, 48(10), 1285–1300. <https://doi.org/10.1287/mnsc.48.10.1285.277>
- Monroe, K. B. (1973). Buyers' Subjective Perceptions of Price. *Journal of Marketing Research*, 10(February), 70–80. <https://doi.org/10.1177/002224377301000110>
- Neslin, N. A., & Shankar, V. (2009). Key Issues in Multi-channel Customer Management: Current Knowledge and Future Directions. *Journal of Interactive Marketing*, 23(1), 70–81. <https://doi.org/10.1016/j.intmar.2008.10.005>
- Pantano, E., Pizzi, G., Scarpì, D., & Dennis, Ch. (2020). Competing during a pandemic? Retailers' ups and downs during the COVID-19 outbreak. *Journal of Business Research*, 116, 209–213. <https://doi.org/10.1016/j.jbusres.2020.05.036>
- Parise, S., Guinan, P. J., & Kafka, R. (2016). Solving the crisis of immediacy: How digital technology can transform the customer experience. *Business Horizons*, 56, 411–420. <https://doi.org/10.1016/j.bushor.2016.03.004>
- Popescu, I., & Wu, Y. (2007). Dynamic pricing strategies with reference effects. *Operations Research*, 55(3), 413–429. <https://doi.org/10.1287/opre.1070.0393>
- Raghubir, P. (2006). An information processing review of the subjective value of money and prices. *Journal of Business Research*, 59(10), 1053–1062. <https://doi.org/10.1016/j.jbusres.2006.09.013>
- Roggentin, A. S., Litt, M., & Waldau, R. (2019). Adding Bricks to Clicks — Online Retail Evolution. *Marketing Review St. Gallen*, 3, 64–71.
- Roy, R., Rabbane, F. K., & Sharma, P. (2016). Antecedents, outcomes, and mediating role of internal reference prices in pay-what-you-want (PWYW) pricing. *Marketing Intelligence & Planning*, 34(1), 117–136. <https://doi.org/10.1108/MIP-08-2015-0157>
- Schlosser, R., & Richly, K. (2019). Dynamic pricing under competition with data-driven price anticipations and endogenous reference price effects. *Journal of Revenue and Pricing, Management*, 18, 451–464. <https://doi.org/10.1057/s41272-019-00206-5>
- Shen, X.-L., Li, Y.-J., Sun, Y., & Wang, N. (2018). Channel integration quality, perceived fluency and omnichannel service usage: The moderating roles of internal and external usage experience. *Decision Support Systems*, 109, 61–73. <https://doi.org/10.1016/j.dss.2018.01.006>
- Silva, E. S., & Bonetti, F. S. (2021). Digital humans in fashion: Will consumers interact?. *Journal of Retailing and Consumer Services*, 60, 1024–1030. <https://doi.org/10.1016/j.jretconser.2020.102430>

- Stein, A., & Ramaseshan, B. (2016). Towards the identification of customer experience touch point elements. *Journal of Retailing and Consumer Services*, 30, 8–19. <https://doi.org/10.1016/j.jretconser.2015.12.001>
- Suri, R., Long, M., & Monroe, K. B. (2003). The impact of the Internet and consumer motivation on evaluation of prices. *Journal of Business Research*, 56, 379–390. [https://doi.org/10.1016/S0148-2963\(01\)00228-4](https://doi.org/10.1016/S0148-2963(01)00228-4)
- Trampe, D., Konuæ, U., & Verhoef, P. C. (2014). Customer Responses to Channel Migration Strategies Toward the E-channel. *Journal of Interactive Marketing*, 28(4), 257–270. <https://doi.org/10.1016/j.intmar.2014.05.001>
- Tran, T. T. T. (2021). Managing the effectiveness of e-commerce platforms in a pandemic. *Journal of Retailing and Consumer Services*, 58, 1–9. <https://doi.org/10.1016/j.jretconser.2020.102287>
- Tversky, A., & Kahneman, D. (1991). Loss Aversion in Riskless Choice: A Reference-dependent Model. *The Quarterly Journal of Economics*, 106(4), 1039–1061. <https://doi.org/10.2307/2937956>
- Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: heuristics and biases. *Science*, 185, 1124–1131. <https://doi.org/10.1126/science.185.4157.1124>
- Untaru, E.-N., & Han, H. (2021). Protective measures against COVID-19 and the business strategies of the retail enterprises: Differences in gender, age, education, and income among shoppers. *Journal of Retailing and Consumer Services*, 60, 102446. <https://doi.org/10.1016/j.jretconser.2021.102446>
- Verhoef, P. C., Lemon, K. N., Parasuraman, A., Roggeveen, A., Tsiros, M., & Schlesinger, L. A. (2009). Customer experience creation: determinants, dynamics and management strategies. *Journal of Retailing*, 85(1), 31–41. <https://doi.org/10.1016/j.jretai.2008.11.001>
- Verhoef, P. C., Kannan, P.K., & Inman, J.J. (2015). From multi-channel retailing to omni-channel retailing. Introduction to the special issue on multichannel retailing. *Journal of Retailing*, 91(2), 174–181. <https://doi.org/10.1016/j.jretai.2015.02.005>
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., McIntyre, R. S., Choo, F. N., Tran, B., Ho, R. V., Sharma, K., & Ho, C. (2020). A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. *Brain, Behavior, and Immunity*, 87, 40–48. <https://doi.org/10.1016/j.bbi.2020.04.028>
- Wang, N., Zhang, T., Zhu, X., & Li, P. (2021). Online-offline competitive pricing with reference price effect. *Journal of the Operational Research Society*, 72(3), 642–653. <https://doi.org/10.1080/01605682.2019.1696154>
- Ward, S. (2020). *Corona lockdown? Time to embrace a digital human AI technology elevating the human experience*. <https://www2.deloitte.com/nl/nl/pages/customer-and-marketing/articles/corona-lockdown-time-to-embrace-a-digital-human.html> (10.12.2021)
- Weisstein, F.L., Choi, P., & Andersen, P. (2019). The role of external reference price in pay-what-you-want pricing: An empirical investigation across product types. *Journal of Retailing and Consumer Services*, 50, 170–178. <https://doi.org/10.1016/j.jretconser.2019.05.017>
- Yang, Ch., Sun, B., & Shanks, D. R. (2018). The anchoring effect in metamemory monitoring. *Memory & Cognition*, 46, 384–397. <https://doi.org/10.3758/s13421-017-0772-6>
- Zha, Y., Zhang, L., Xu, Ch., & Zhang, T. (2021). A two-period pricing model with intertemporal and horizontal reference price effects. *International Transactions in Operational Research*, 28(3), 1417–1440. <https://doi.org/10.1111/itor.12613>
- Zhang S., Zhang J., Shen, J., & Tang, W. (2019). A joint dynamic pricing and production model with asymmetric reference price effect. *Journal of Industrial and Management Optimization*, 15(2), 667–688. <https://doi.org/10.3934/jimo.2018064>
- Zhao, N., Wang, Q., Cao, P., & Wu, J. (2019). Dynamic pricing with reference price effect and price-matching policy in the presence of strategic consumers. *Journal of the Operational Research Society*, 70(12), 2069–2083. <https://doi.org/10.1080/01605682.2018.1510809>
- Zhao, N., Wang, Q., Cao, P., & Wu, J. (2021). Pricing decisions with reference price effect and risk preference customers. *International Transactions in Operational Research*, 28(4), 2081–2109. <https://doi.org/10.1111/itor.12673>

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