BRAND PRESENCE IN DECISION-MAKING INVOLVING DECOYS

PRISUTNOST MARKE U ODLUČIVANJU KOJE UKLJUČUJE MAMCE

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Abstract

Purpose – Context effects have emerged as an area of interest in cognitive psychology. In the majority of experiments in the field, product alternatives are typically labeled with letters rather than with actual brand names. However, neglecting the ubiquitous brand in research design imposes unrealistic conditions. Thus, the aim of this paper is twofold. The first aim is to replicate classic decoy and compromise effect studies to create space for future meta-analytical research. The second aim is to explore the impact of brand presence on the two previously mentioned effects.

Design/Methodology/Approach – A survey experiment was conducted with a 2x2 fully between-subjects factorial design. Data was collected from 1,050 members of a consumer panel through an online survey and analyzed using the Chi-squared test and binary logistic regression. The effect sizes were computed using Cramer's phi.

Findings and Implications – While the research found no statistically significant decoy effect, regardless of brand presence, the compromise effect was significant and more robust, although of reduced magnitude due to the presence of brands.

Limitations – The major limitation of this study with regard to result interpretation is the fact that the respon-

Sažetak

Svrha – Učinci konteksta područje su interesa koje proizlazi iz kognitivne psihologije. U većini terenskih eksperimenata, alternative proizvoda obično su označene slovima, a ne pravim nazivima maraka. Međutim, zanemarivanje sveprisutne marke u dizajnu istraživanja nameće nerealne uvjete. Dakle, cilj ovog rada je dvostruk. Prvi je replicirati klasične studije o mamcu i kompromisnom učinku kako bi se stvorio prostor za buduća metaanalitička istraživanja. Drugi je cilj istražiti utjecaj prisutnosti maraka na dvama prethodno spomenutim učincima.

Metodološki pristup – Korištena je anketa s eksperimentalnim scenarijem s 2x2 faktorskim dizajnom. Podaci su prikupljeni od 1.050 članova potrošačkog panela putem online anketnog upitnika. Analizirani korištenjem Hi-kvadrat testa i binarne logističke regresije. Veličine učinaka izračunate su pomoću mjere Cramer Phi.

Rezultati i implikacije – Rezultati nisu pokazali statistički značajan učinak mamca, bez obzira na to jesu li marke bile prisutne ili ne, dok je učinak kompromisa bio značajan i robusniji iako je prisutnost maraka dovela do smanjenja njegove veličine.

Ograničenja – Glavno ograničenje za interpretaciju rezultata ove studije jest činjenica da su se ispitanici suočili s hipotetskim odlučivanjem o kupovini i izrazili svoju preferenciju bez ikakvih ekonomskih posljedica svojih izbora.

dents were faced with making hypothetical purchase decisions and expressed their preference without facing any economic consequences of their choice.

Originality – Although the study builds on previous research on context effects and the role of brands, it also focuses on their impact on decision making by Central/Eastern European consumers. A sample representative of the Czech population was used instead of the convenient student samples most often found in the literature.

Keywords – attraction effect, brand, compromise effect, consumer choice, decision-making, decoy effect

Doprinos – Iako se rad temelji na prethodnim istraživanjima o učincima konteksta i ulozi maraka, usredotočuje se i na njihov utjecaj na odlučivanje potrošača u srednjoj/istočnoj Europi te koristi uzorak reprezentativan za češku populaciju umjesto prigodnih studentskih uzoraka na koje se najčešće nailazi u literaturi.

Ključne riječi – učinak privlačnosti, marka, učinak kompromisa, potrošačev izbor, odlučivanje, efekt mamca

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1. INTRODUCTION

In highly competitive B2C markets where supply exceeds demand, it is more important than ever for companies to understand consumers, their behavior, and motives. How consumers behave, what influences their preferences and leads them to buy a certain product has always been a topic of keen interest for marketing researchers and practitioners alike. The wish to understand consumers is reflected in the number of formal models of consumer decision-making which have been developed over the years. The traditional model of the consumer decision-making process, as discussed by Stankevich (2017) or Kotler and Keller (2012), includes five basic stages: need recognition, information search, evaluation of alternatives, purchase, and post-purchase behavior.

Some parts of the decision-making processes (such as the evaluation of alternatives linked to the judgment occurring solely in the mind of the consumer) are difficult to observe directly and for a long time represented a "black box" for marketers. However, as noted by Panwar, Anand, Ali, and Singal (2019, p. 39), and Stankevich (2017, p. 13), it is at least possible nowadays to follow certain tendencies and shed some light on the processes involved. This is being done mostly with the help of recent insights from psychology and the field of consumer decision-making, as well as thanks to modern technologies helping the development of such fields as neuromarketing.

One of the insights gained in the area of consumer decision-making concerns the role of context and its impact on consumer choices. Context in marketing can be understood more broadly, in terms of social context, situational context, or possible interruptions to the choice process. In choice modeling and decision-making, however, context effects typically refer to the impact that the composition of the choice set has on the consumer decision, namely the presence and the relative position of the alternatives (Thomadsen et al., 2017, p. 1-2).

Findings regarding the impact of relative position and choice set structure on consumers' choices have practical implications for companies which might utilize this knowledge when creating their product lines, designing promotional offers or arranging their products, whether in physical stores or e-shops, where technology allows them to directly control which specific product set will be displayed to customers. While some authors (Xiao, Zeng & Feldman, 2021; Frederick, Lee & Baskin, 2014; Yang & Lynn, 2014) question the practical managerial and marketing application based on the experimental results obtained for the decoy effect, an analysis of a diamond retailer's actual sales conducted by Wu and Cosguner (2021) or actual in-store purchases examined by Doye, O'Connor, Reynolds, and Bottomley (1999) nevertheless show the real-world evidence of the effect's existence and robustness. From this perspective, it is valuable to examine how consumers perceive products in different decision-making contexts in addition to exploring their limits and moderators.

From a practical point of view, the context relativity may find its use between several product alternatives belonging to one brand and it could be in the great interest of practitioners to explore whether it is also possible to use context effects between several competing brands. Despite its presence in most of the decision-making consumers face during real product purchases, brand information is often neglected in most experiment designs involving context effects, with product alternatives usually introduced as Brand A, Brand B and so on, without specific brand names. While it is understandable that experiments in social sciences cannot fully reflect all aspects of the complex reality, ommiting such a factor as brands raises questions about the practical marketing implications of context effects, especially since companies often devote significant resources to building their brands. Following this notion, this paper aims to explore the impact of brand presence on two of the context effects – the compromise and decoy effect.

2. THEORETICAL BACKGROUND

When choosing between two alternatives, it might be difficult for a consumer to decide when the decision involves trade-offs; however, when another alternative is added to the choice set, the consumer might be nudged towards their choice by evaluating the relative position of the alternatives. Like an optical illusion where an object may appear larger or smaller based on the surrounding objects, an alternative could either appear likeable or not, depending on its surroundings. Therefore, no alternative is evaluated separately but depending on the context, which is why context effects are thus named for the specific cases when the relative position of the alternatives can lead to a systematic increase of the preference towards one of them.

2.1. Context effects

The term decoy effect, sometimes referred to as attraction effect or asymmetric dominance effect, was first introduced by Huber, Payne, and Puto (1982) as a phenomenon in which the decision-maker's preferences for the existing choice alternatives (A and B) change according to the presence or absence of a decoy alternative (C) in the choice set. Following their work, Simonson (1980) later summarized the concept of compromise effect, establishing that the alternative in the choice set is more likely to be chosen by consumers when it is presented to them as the middle option rather than an extreme one. Consequently, the existence of such effects undermines some of the axioms in utility theory such as regularity, transitivity, and independence of irrelevant alternatives (Trimmer, 2013, p. 1). For example, the addition of the decoy in the choice set violates the assumption of regularity according to which "the addition of an option to a choice set should never increase the probability of selecting an option from the original set" (Rieskamp, Busemeyer & Mellers, 2006, p. 664).

The decoy alternative is designed to be inferior in some or all attributes to one of the original alternatives in the choice set, making the decoy option normatively irrelevant as it is unlikely to be chosen by the consumers. However, its presence creates an asymmetric dominance relationship which results in the dominating alternative appearing more attractive, not only in comparison with the decoy itself but also with the other competitor(s) present in the original choice set.

Ever since the first mention of the decoy effect and its influence on decision-making, this type of context effect has become one of the most explored and discussed effects in the scientific literature. Given the variety of decisions individuals and groups face on a daily basis, the decoy effect has been explored in many areas, both economic and non-economic situations and frameworks such as the selection of political candidates (Pan, O'Curry & Pitts, 1995), potential employee selection (Slaughter, 2007; Highouse, 1996), investment decisions (Schwarzkopf, 2003), in environmental management choices (Bateman, Munro & Poe, 2008) and public sector non-profit contexts involving donations (Pittarello, Caserotti & Rubaltelli, 2020). Moreover, the decoy effect has not only been observed in human behavior but also in the behavior of the animal species (Parrish, Afrifa & Beran, 2018; Parrish, Evans & Beran, 2015; Lea & Ryan, 2015).

While traditional subject of decision-making research, as well as of decoy effect research, is the consumer, the decoy effect has been explored mainly in an attempt to explain: (a) the mechanisms undermining the effect and (b) the possible moderators and limitations of the effect. Over the years, as evidenced by the behavioral and marketing literature, the decoy effect has become the most popular context effect with notable practical implications. Both the decoy and the compromise effect have been examined with respect not only to various product categories, including tangible products, but services too.

The meta-analysis conducted by Heath and Chatterjee (1995) found the presence of the decoy to raise the share of the dominating alter-

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native by 11.4%. Doyle et al. (1999, p. 225), who first demonstrated the decoy effect in actual, in-store purchases of Heinz baked beans, concluded that the effect is „robust, has a wide scope, is quite sizeable, and is of practical significance." Trueblood, Brown, Heathcote, and Busemeyer (2013, p. 906) support the general validity of the context effects, including the decoy effect, concluding that the effects are a general feature of human choice behavior because they are a fundamental part of decision-making processes. Furthermore, evidence of the effect's managerial significance and relevance in marketing practice, beyond the laboratory experiments, has been supported by the results of empirical research conducted by Wu and Cosguner (2021) focusing on the real, online diamond market. While indeed concluding that the probabilities of detecting the decoy-dominant relationship were indeed low (11-25%) in the diamond market, the authors found that, once detected, the decoy effect significantly increased diamond sales (1.8-3.2 times), leading to a 14.3% increase in the diamond retailer's gross profit.

Contrary to the prior empirical evidence relating to the decoy effect, recently there emerged several studies which failed to demonstrate the decoy effect's impact on consumer decision-making (Frederick et al., 2014; Yang & Lynn, 2014) and one study which failed to replicate the results reported by previous studies using a sample of 1,053 individuals (Xiao et al., 2021) compared to the original sample size of 60 participants (Ariely & Wallsten, 1995).

In reaction to the first reported failures, attention was shifted to the methodology of the prior and future research in this area. For example, by analyzing the previously published studies, Lichters, Sarstedt, and Vogt (2015) found that many important factors (real economic consequences, realistic product presentation, no-buy option, relevant sample characteristics, sensory evaluation, etc.) did not reflect the true marketing reality of the conducted experiments over the past 30 years, thus calling for more realistic conditions of the decision-making in future studies. Moreover, Huber, Payne, and Puto (2014) acknowledged that the existence of pure dominance relationships between alternatives might be rare in real-world conditions and that it was the compromise effect that was more likely to occur in such conditions. However, they believed it was still important to study the choice behavior and decoy effect under various conditions: „Domain replications, in which an effect is tested with different respondents, product categories, or stimuli levels, are also valuable."

One such important factor, which is often omitted in the literature on context effects, is the presence of brands in product description, even though brand information is usually available to consumers in everyday purchase decision-making.

2.2. Why brands matter in decision-making

A brand is a service or product identified by a distinctive and individual name and logo that is used to distinguish the offering of one company from that sold by their competitors (Sharp, 2013, p. 6). Beyond this useful yet elementary definition of the term, we further provide the benefits of the brand in terms of brand equity by describing how the brand affects customer decisions. Brand equity is defined in terms of the marketing effects uniquely attributable to the brand — for example, when certain outcomes result from the marketing of a product or service because of their brand name that would not occur if the same product or service did not have that name (Keller, 1993, p. 1). In other words, it can be estimated by subtracting the utility of the physical attributes of the product from the total utility of the brand (Yoo, Donthu & Lee, 2000, p. 195).

According to Chovanová, Korshunov, and Babčanová (2015, p. 616), a brand is built over time, through the impressions one has of a company and its products or services, and is confirmed (or destroyed) by experiences. Such direct experiences tend to be stronger in building associations and are more quickly

retrieved from memory than those formed by other means (Fazio & Zanna, 1981). Among such means is social influence. Brand choices were found to be dependent on informal social groups (Witt, 1969) or brand communities (Algesheimer, Dholakia & Herrmann, 2005). Moreover, direct communication with other users or customers by word of mouth (negative or positive) was also found to have a significant effect on brand purchase probability (East, Hammond & Lomax, 2008). Prior experience with a product and knowledge of the choices made by others, along with other factors, are all relevant to a judgment (Lynch & Srull, 1982, p. 19). Consequently, brand marketing communication, the behavior and communication of other customers and direct experiences with a brand form overall consumer brand knowledge. Such knowledge refers to the personal meaning relating to a brand stored in the consumers' memory, that is, all descriptive and evaluative brand-related information (Keller, 2003, p. 596).

Keller (2003, p. 596) described eight types of information related to brands. These are Awareness, Attributes, Benefits, Images, Thoughts, Feelings, Attitudes, and Experiences. Importantly, all of these different types of information may become a part of consumer memory and affect consumer response to marketing activities. Based on previous research, brand knowledge is an important factor that could play a role in decision-making and thus potentially influence context effects. Considering the fact that today's customers almost inevitably include brands into their decision-making, using brands in context effect experiments could lead to more practical results. Similar calls have been made in previous literature. By adopting research paradigms that assign memory a subordinate role, decision researchers have framed out of the picture some of the most interesting and practically important questions when it comes to real-world consumer choice.

Some studies answered the call and included brands into their choice sets. Instead of marking the options with letters (for example A, B, C), Sinn, Milberg, Epstein, and Goodstein (2007) measured the relative familiarity of six brands and their impact on the compromise effect of printers and binoculars, identifying a lack of effect in case of a lower relative awareness of the compromise brand. However, it is not clear from the methodology of their research how the relative brand awareness was measured, also did they not include the sample size for the brand awareness research. Another problem we have identified in this research is that the quality of the product, defined numerically, was provided as a product attribute for both product types. Namely, the quality aspect is highly subjective and the objective degree of product quality is not known to the consumer when choosing a product, but may result from other product characteristics, such as staff recommendations, internet reviews, or consumer tests. Often the brand itself can carry quality information in the consumer's consciousness.

As mentioned earlier, brands have long been neglected in experiments involving the decoy and compromise effect, but several studies have included specific brands as product descriptions in the experimental design. Table 1 presents an overview of research conditions of the studies which have included a specific brand in their alternative descriptions.

TABLE 1: Overview of study conditions

Study	Brand	Price attribute	No-buy option	Data collection	Sample	Products
Frederick et al. (2014)*	multiple	no/yes**	no	choice experiment	142-251 participants**	popcorn, mints, bottled water
Ha, Park & Ahn (2009)*	multiple	no	no	experiment with survey	572 students	laptops
Kim, Park & Ryu (2006)	multiple	no	no	face-to-face interviews	320 women	refrigerators
Lichters, Bengart, Sarstedt & Vogt (2017)	single	yes	yes	computer-based survey	196 students	toothbrushes, headphones
Lichters, Müller, Sarstedt & Vogt (2016)	single	yes	yes	computer-based survey	88 students	toothbrushes, headphones
Sellers-Rubio & Nicolau (2015)	multiple	yes	no	online experiment	294 participants	soup broth
Sinn et al. (2007)	multiple	yes	no	PAPI survey	333 students	scanners, binoculars

*considering only choice sets with brands; **depends on the choice set / product category

Source: Authors' own processing.

Of the presented studies, only three focused on the brand aspect while the rest merely included the concrete brand in the product description without specifically focusing on the brand. By measuring the impact of brand knowledge relating to the dominant alternative on the decoy effect of one type of product (refrigerator), Kim et al. (2006) found that women with high brand awareness were not influenced by the decoy. However, the research sample in this case consisted only of women. Sinn et al. (2007), using quality vs. price attributes, found that consumers preferred extreme brands when compromise brands were relatively less familiar and compromise brands when they were relatively more familiar. Sellers-Rubio and Nicolau (2015) examined the relationship between private and national brands and the decoy effect of one type of fast-moving product (soup broth), concluding that private label consumers were more affected by the decoy than national brand consumers. However, although addressing the brand aspect in terms of choice, none of the studies directly compared the magnitude of the effects in no-brand and brand scenarios. In an attempt to fill this gap, this study focuses on the impact of brands on context effects for two chosen product categories as most studies examining these effects to date avoided the usage of real-world brands in their product description.

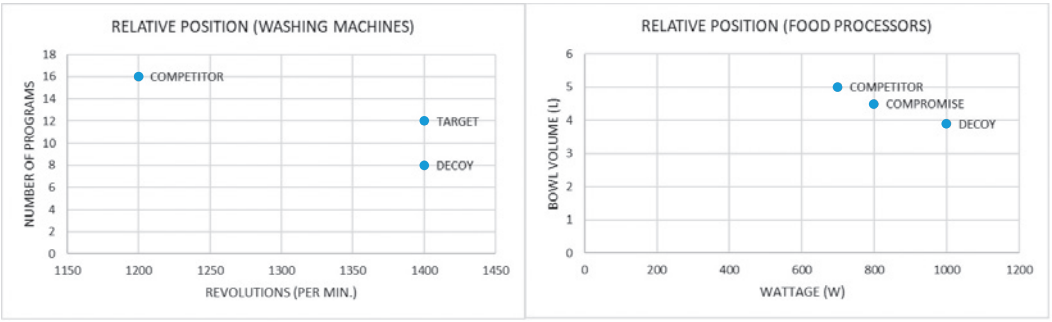
3. METHODS AND DATA

To achieve the intended aim and to be able to observe the casual relationship between the consumer choices and the addition of the decoys and brands, a survey experiment among Czech adult consumers was conducted with 2x2 fully between-subjects factorial design (decoy alternative: present vs. absent; brand: present vs. absent). The between-subjects design was employed to avoid possible priming effects that could bias the respondents. Therefore, each

subject was randomly assigned to only one of the four experimental conditions.

Similarly to most of the studies examining the context effects in decision-making, the respondents were given information about a hypothetical purchase scenario involving washing machines and food processors, including information about a target/compromise product and a competitor product, which was either accompanied by decoy information or not. Moreover, real brand names were used to identify the alternatives in some cases while in others, brand information was not available to the respondents. In the survey, the respondents were asked which from the presented products they were most likely to buy, using choice as a measure of the preference as previously done in studies conducted by Yang and Lynn (2014), Frederick et al. (2014), Simonson (1980), Huber et al. (1982). The following Figure 1 shows the relative positions of the alternatives in the full 3-item choice sets (with the decoys present), according to the attributes in their product description. Following the call put forward by Frederick et al. (2014), Millberg, Silva, Celedon, and Sinn (2014), and Lichters et al. (2015) to describe the alternatives more realistically, quality as a numeric attribute was avoided in the product description because quality perception might be subjective and the objective level of quality is hardly known to the consumers during actual purchase. The alternatives in the choice sets were therefore described using relevant, albeit numeric characteristics specific for the product category such as rotations and the number of programs for the washing machines, and wattage and bowl volume for the food processors. Including only two functional numeric attributes certainly is a simplification, but the reduced complexity of the decision-making should make it easier to detect the context relationships between the alternatives. As can be seen in the figure, based on the attribute dimensions, the asymmetrically dominated relationship and compromise relationship between the alternatives were present in the choice set.

FIGURE 1: Relative position of alternatives in the choice sets – decoy (left) and compromise (right)



Source: Authors' own processing.

Moreover, following the call to make the conditions of the decision-making similar to real-world conditions, the product description also included actual prices and photos of each of the products available to the respondents as they would be presented, for example, in an e-shop. Moreover, the products in a similar price range were chosen in a way that would reflect the specific context effects. The decoy washing maching was, therefore, priced to be more expensive despite offering less value in one attribute than the target, and the compromise decoy food processor being extreme in price as in the rest of the attributes. The detailed overview of the full choice sets (including decoy alternatives, brands, product attributes, prices, and pictures) is displayed in Figure 2.

FIGURE 2: Overview of the full choice set for the decoy (top) and compromise (bottom) effect

Source: Authors' own processing.

Furthermore, the "no-choice" option was available for every condition, so the respondents were not forced to make an actual choice between the alternatives as was suggested and done in previous studies by Lichters et al. (2016; 2017) or Dhar and Simonson (2003) but not in previous studies which involved multiple brands. However, the nature of the choices in the survey was still hypothetical, with no real transactions or purchases taking place. It can be assumed, nevertheless, that the respondents were still able to judge and express their preferences towards the presented alternatives through their hypothetical choices.

The Czech respondents were contacted, and the data was collected in April 2021 using the Ipsos agency's Instant Research tool, which utilizes the Ipsos ONLINE consumer panel with a database of more than 100,000 registered respondents and is claimed by the agency to offer quality higher than that of SIMAR/ESOMAR standards in terms of the control mechanisms during data collection (Instant Research, n.d.).

In order to establish whether adding a third option in the brand and no-brand scenario leads to a similar increase in the popularity of the target and compromise alternative, the shares of the alternatives were computed and compared for each scenario. The data was analyzed using the Chi-squared test to identify whether there is a significant difference in the consumer choices according to the decoy and brand presence, while in terms of the effect size, Cramer's phi (Φ) was used to measure the relationship between the decoy presence and the target vs. competitor choices, using the following formula:

$$\Phi = \sqrt{\frac{\chi^2}{N}}$$

Consistent with previous studies, decoy shares and the share of individuals choosing no alternative were excluded from the Chi-squared analysis, leaving a two-by-two matrix of target and competitor shares in non-decoyed versus decoyed conditions ($df = 1$; $\alpha = 0.05$). Although, in the literature, the decoy share is often added to the target share as it is considered merely the inferior version of the target, it is not directly applicable in this case on account of the differences between the target and decoy due to the different brands and the pictorial description.

To assess the number of observations needed for the Chi-squared test, a power analysis was conducted with the following parameters: $\alpha = 0.05$, $(1-\beta) = 0.8$; $w = 0.15$ (small effect size); $df = 1$, resulting in $N_{min} = 349$. Therefore, there should be at least 349 observations in the Chi-squared test to have an 80% chance of avoiding an incorrect acceptance of the null hypothesis of independence if the effect size is 0.15 or larger.

When considering the influence of multiple factors on a non-metric binary variable, a binary logistic regression is suitable for data analysis with the choice of option A (competitor) or B (target/compromise) as the dependent variable and the decoy presence, brand presence, and the demographic factors of age and gender as the independent variables. This technique, also used by other researchers (Kim et al., 2006, p. 685; Ha et al., p. 467), was implemented using the SPSS software.

4. RESULTS

In total, 1,050 respondents from the panel participated in and completed the survey. The basic demographic structure of the overall sample is representative of the structure of the adult Czech population when it comes to age and education. Based on the gender characteristic, most of the respondents in the sample were male, while the male to female ratio in the Czech population is 96.98 males per 100 females[1]. Moreover, there are no significant differences in the sample structure between the sample groups. The demographic characteristics of this research sample according to the four groups based on the research conditions are summarized in Table 1.

TABLE 2: Sample characteristics

	No brand		Brand	
	Group 1 (N=210)	**Group 2 (N=210)**	**Group 3 (N=315)**	**Group 4 (N=315)**
Gender				
Female:	43.33%	45.24%	46.98%	48.25%
Male:	56.67%	54.76%	53.02%	51.75%
Age				
Median:	46	45	44	44
Mode:	54	64	58	43
Education				
Primary	10.48%	8.57%	10.48%	10.48%
Secondary	72.38%	75.24%	73.33%	73.01%
Tertiary	17.14%	16.19%	16.19%	16.51%

Source: Authors' own processing.

To evaluate the occurrence of the effects, the choice shares of the alternatives in binary and trinary choice sets were calculated and compared using the data obtained from the respondents. Decision-making relating to washing machines was used to test the decoy effect under the no-brand and brand conditions. According to the results in Table 2, the addition of the third decoy alternative led to a 2.4% increase in the target choice share and a 12.9% decrease in the competitor choice share when the brand information was not available to the consumers. A Chi-squared test was conducted to determine the statistical significance of the difference in the choices of target and competitor based on the presence of the decoy option, indicating that the choices were independent of the decoy presence ($N = 354$; $\chi^2 = 2.02$; $p > 0.05$). The fact that no significant result was found may appear rather surprising given the somewhat less complex choice set structure with numeric attributes, although it is possible that the pictures could have played the moderating role in this case.

When the products contained the brand in their descriptions, the presence of the decoy led to cannibalization in both the target and the competitor shares, resulting in a complete lack of the decoy effect. Moreover, the changes in the shares were not statistically significant under the brand condition ($N = 530$; $\chi^2 = 0.27$; $p > 0.05$). Consequently, the effect size was in both conditions negligible, lesser than 0.1.

TABLE 3: Choice shares under the no-brand vs. brand condition with respect to the decoy effect – washing machines

	No-brand condition					
	Competitor	**Target**	**Decoy**	**No choice**	**P-value**	**Effect size (Φ)**
No decoy	128	60	-	22		
	61.0%	28.6%		10.5%		
With decoy	101	65	17	27		
	48.1%	31.0%	8.1%	12.9%	0.15	+0.08
	Brand condition					
	Competitor Grundig	**Target Bosch**	**Decoy Siemens**	**No choice**	**P-value**	**Effect size (Φ)**
No decoy	125	155	-	35		
	39.7%	49.2%		11.1%		
With decoy	106	144	26	39		
	33.7%	46.7%	8.3%	12.4%	0.60	-0.02

Source: Authors' own processing.

With regard to the compromise effect, the choice shares of the compromise alternative increased after the decoy was added as another extreme, both with and without the brand label choice scenario. Under the no-brand condition, the share of the compromise alternative increased by 7.1%, with the competitor's decreasing by 22.4%. The share of the respondents who did not choose any alternative rose by 6.7%. In this case, the Chi-squared test, also used to examine the independence of the choices of the decoy presence, showed no such independence ($N = 344$; $\chi^2 = 9.76$; $p < 0.05$). In this scenario, the association of the decoy presence and the choice shares was the strongest out of all the examined cases with a value of 0.17, signifying a small positive effect.

Even when the brands were included, a similar pattern as under the no-brand condition was observed with an increase in the compromise share (2.9%) and a decrease in competitor share (10.8%) compared to the no-decoy scenario. The change in the choices was also not independent of the decoy presence ($N = 524$; $\chi^2 = 4.59$; $p < 0.05$), but the effect size was reduced (0.09) under the brand condition compared to the no-brand condition.

TABLE 4: Choice shares under the no-brand vs. brand condition with respect to the compromise effect – food processors

	No-brand condition					
	Competitor	**Comp.**	**Decoy$_{Comp}$**	**No choice**	**P-value**	**Effect size (Φ)**
No decoy	123	65	-	22		
	58.6%	31.0%		10.5%		
With decoy	76	80	20	34		
	36.2%	38.1%	9.5%	16.2%	0.002	+0.17
	Brand condition					
	Competitor Rohnson	**Comp. Eta**	**Decoy$_{Comp}$ Philips**	**No choice**	**P-value**	**Effect size (Φ)**
No decoy	119	156	-	40		
	37.8%	49.2%		12.7%		
With decoy	85	164	32	34		
	27.0%	52.1%	10.2%	10.8%	0.03	+0.09

Source: Authours' own processing.

Moreover, in the observed comparisons apart from the last one, the addition of the decoy led to an increase in choice deferral, which indicates that consumers were more prone to avoiding choice altogether as the choice set grew by another item. In the case of washing machines under the no-brand condition, 10.5% of the respondents did not choose any alternative when the decoy was missing from the choice set and 12.6% of them deferred their choice when the decoy was added to the set, although the difference was not statistically significant ($N = 420$; $\chi2(1) = 0.58$; $p > 0.05$). The shift in choice deferral under the brand condition was similar as in the no-brand scenario, with 11.1% of the respondents avoiding choice without decoy presence and once again a larger number of respondents (12.4%) avoiding choice after the decoy was presented, although this shift was also insignificant ($N = 630$; $\chi2(1) = 0.26$; $p > 0.05$).

When faced with decision-making relating to non-branded food processors, 10.5% of the respondents did not choose any alternative under the control condition. Adding the extreme decoy into the choice set led to an increase in choice deferral (16.2%), although such a choice shift was not statistically significant ($N = 420$; $\chi2(1) = 2.96$; $p > 0.05$). When brand information was available, the addition of the extreme decoy resulted in a statistically non-significant decrease in choice deferral by 1.9% ($N = 630$; $\chi2(1) = 0.55$; $p > 0.05$). These results indicate that whether consumers chose an alternative or avoided the choice was independent of the presence of the extreme decoy under both non-brand and brand conditions, contrary to the findings obtained by Hedgecock, Rao, and Chen (2016, p. 10-11) that the detection of the dominated and compromise relationships between the alternatives lowered the tendency to avoid choice.

Lastly, binary logistic regression was performed to establish the manner in which the decoy condition, brand condition, age and gender of the respondents as independent variables influenced the probability of choosing alternative B (target or compromise) as opposed to competitor A. In the decoy scenario involving washing machines, as shown in Table 5, the age and brand condition had a significant effect on the odds of choosing the target B alternative. All variables were found to be significant when it came to the compromise effect and food processors.

TABLE 5: Odds ratios and significance of the independent variables with respect to choice

Variables		Decoy Effect (N=884)		Compromise Effect (N=868)	
	Categories	Odds Ratio	Sig.	Odds Ratio	Sig.
Age		1.015	.003	1.028	.000
Gender	Female	Ref.		Ref.	
	Male	.793	.097	.706	.016
Decoy condition	Decoy	Ref.		Ref.	
	No decoy	.838	.204	.590	.000
Brand condition	Brand	Ref.		Ref.	
	No brand	.415	.000	.439	.000

Source: Authors' own processing based on SPSS.

For both of the examined context effects, age had a positive impact on the odds of the alternative B (target/compromise) option being chosen, which means that the older respondents were more likely to choose alternative B as opposed to alternative A. On the other hand, the absence of brands in the product description lowerered the likelihood of B being chosen. In the decoy scenario, the absence of the decoy option had no significant impact on choice but lowered the odds of the compromise being chosen, in line with the previous results of the Chi-squared test which found choices to be independent of the decoy presence for washing machines but not food processors. With regard to the compromise effect, gender acted as a significant factor which tended to influence the likelihood of the compromise being chosen, with men specifically less likely to choose the compromise than women.

Before proceeding to the final discussion, attention should be drawn to the limits of our research. There are several limitations to keep in mind when interpreting the research results. First, no actual purchase situation was applied even though some studies have suggested a stronger influence of the decoy effect in real-life situations (Lichters et al., 2017). Second, only two functional attributes beyond brand, picture, and price were used to describe the products in the choice sets. Therefore, one could argue that the lack of attributes does not capture a precise representation of real-life buying situations. On the other hand, this could also make decisions overwhelmingly complex and leave little to no space for absolute reliance on a heuristic or lower the ability to detect the dominance or compromise relationship between the alternatives. In addition, it could make the survey longer, thus resulting in more time-pressed responses. Another limitation that prevents generalization of the obtained results relates to the specific prices and images used in the choice sets. As with brands, price information is always available to consumers when making decisions about a purchase and constitues one of the most crucial attributes. In this specific case, the importance of the role of these features in the consumers' choices is unclear, as is the impact that different price ranges or images would have on the results.

5. DISCUSSION AND CONCLUSION

The study focused on examining the decoy and compromise effect on a sample of Czech consumers using a survey experiment with a total of 1,050 respondents divided into four experimental conditions. The data was collected online using the consumer database of a professional marketing research agency. Given that highly abstract and unrealistic product descriptions were avoided, the descriptions included those of a numeric and pictorial nature. The examined choice sets also included price information and

a "no-choice" option as would be typical in any real-word purchase situation. Following the notion of previous studies, we expanded the product description by adding brand information and explored the impact of brand presence in the choice set, comparing how the decoy changes the target and competitor shares in the choice set, firstly by including and then excluding brand presence.

As in some of the previous studies (Xiao et al., 2021; Yang & Lynn, 2014; Frederick et al., 2014), we failed to demonstrate the statistically significant decoy effect on a sample of Czech consumers, regardless of brand presence. The association of the decoy presence and the choices was negligible, thus supporting the implication that it might be more challenging for marketers to design a suitable choice set and successfully use the decoy effect to increase the popularity of their preferred product alternative. Therefore, the conclusion of this analysis seems to correlate with the suggestion put forward by Huber et al. (2014) that the compromise effect is more likely than the decoy effect to occur in real-world conditions as the compromise effect was detected in both the no-brand and brand scenarios. However, the addition of the brand produced a weaker compromise effect. According to the results of the logistic regression, the brand, together with age, proved to be a significant factor influencing the probability of alternative B being chosen under both the decoy and compromise conditions. The probability of choosing the compromise was furthermore influenced by the respondents' gender and the presence of the extreme decoy.

Given the fact that companies spend their resources on building their brands, we believe it worthwhile to continue exploring how brands might affect consumer decision-making and choice, with the understanding that consumer behavior is a long-term interest of academic researchers as well as marketing practitioners.

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Endnotes

[1] https://knoema.com/atlas/Czech-Republic/topics/Demographics/Population/Male-to-female-ratio