

Cognitive biases in marketing communication: Influence of Anchoring and Message Framing on Consumers' Perception and Willingness to Purchase

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Abstract: While in the theory of rational decision making, it is considered that people's choices remain consistent and predictable even in cases when same information is presented in different ways, in real situations consumers' decisions are affected by their personal characteristics, habits, norms and past experience, as well as limitations of human cognitive mechanisms. In general, heuristics can be perceived as fast cognitive processes in decision making which can sometimes lead to the occurrence of biases which shape the final decision. In marketing communication, the general capacity of people to make cognitive errors encourage the application of certain principles in formulation of messages in order to instigate recipients to make predictable cognitive errors when making decisions. The subject of the research is to determine how the encouragement of cognitive biases in marketing communication can affect decisions of message recipients. The research included the application of two research methods - observation and experimental method. In as many as 80% of the observed advertisements, the encouragement of at least one cognitive bias was registered. In both experimental situations, it was shown that the willingness to pay for a product depends on the way the promotional message is formulated.

Key words: *cognitive bias, heuristics, anchoring, framing, message, marketing communication*

JEL classification: M3

INTRODUCTION

In order to plan and establish an effective marketing communication, besides understanding of characteristics, needs and expectations of customers, it is necessary to understand the characteristics of complex human cognitive processes of reasoning and decision making. Uncovering the manner in which complex cognitive processes are functioning has made it possible to understand the way in which messages need to be formulated in order to make maximum impact on target consumers' behaviour. While in rational decision making, it is considered that people's choices remain consistent and predictable even in cases when same information is presented in different ways, in real situations, consumers are affected by their personal characteristics, habits, norms and past experience, as well as limitations of cognitive mechanisms.

Researchers in the fields of psychology and consumer behaviour have noticed that people have the potential to make systemic errors in reasoning in situations of uncertainty. The general capacity of people to make cognitive errors have raised questions about the possibility of applying certain principles when formulating marketing messages, in order to lead message recipients to a foreseeable error in the conclusion when making a decision. The study of cognitive heuristics and biases that commonly occur in reasoning, runs in parallel with the application of such knowledge in the field of marketing communication. The formulation of marketing messages nowadays is a result of understanding how it will be processed and experienced by target groups, based on the knowledge obtained by psychological theory and consumer behaviour research.

This paper analyzes the extent to which cognitive bias, ie. human potential propensities for cognitive errors, are encouraged by differently formulated messages used in marketing communications. The paper is structured into five main sections. The first section is dedicated to the importance of changes in psychological theory of cognitive decision-making with regard to communication planning. The second section covers the topics of the heuristic-based way of reasoning and cognitive bias and their reflections on the formulation of marketing messages. In the third section, the methodology of the research is presented, while results are

given in the fourth section. In the last section, concluding remarks, as well as limitations of the study are presented.

1. COGNITIVE DECISION- MAKING PROCESS AND COMMUNICATION PLANNING

Psychological theory of human behaviour have long been based on the notion that people are perfectly rational beings, able to make decisions that are in their best interest, and that the only precondition for that is the possession of necessary information for making rational choices. The Expected Utility Theory, a normative theory set up by von Neumann and Morgenstern in 1947 represents such view, and it describes how people would behave if they followed certain principles of rational decision-making which would necessarily lead them to the maximization of their expected utility (Stajkić & Damjanović, 2018). However, further studying of human decision making have led to reconsideration of such theories since empirical evidence showed that people often do not behave rationally, and that decision-making process often takes place in uncertain environmental conditions, where the decision-maker does not have all the necessary information to rationally predict different outcomes, and the decision is impacted by selective perception, biased memory and numerous cognitive limitations. Simon, in 1957, criticized the normative theory of decision-making and introduced the notion of Bounded Rationality, which pointed out that real decision-making is accompanied by numerous limitations of human perception and memory, impossibility of recalculating the probabilities of different outcomes, impossibility of eliminating numerous subjective factors of influence and similar (Stajkić & Damjanović, 2018). In the 70s of the XX century, psychologists Kahneman and Tversky, conducted numerous research in which they noticed systematic deviations from normative decision-making. Based on this research, they formulated one of the most important descriptive decision-making models, Prospect Theory (Kahneman & Tversky, 1979), and later Cumulative Prospect Theory (Tversky & Kahneman, 1992). These theories emphasise subjectivity and bias that are consequences of the manner human cognitive system functions and appear during all phases of decision making - collection and interpretation of information, evaluation of various options and making final decision. „A behavior bias occurs from people's

decision making behavior which didn't execute with the rule of rationality and optimization, and did not try to maximize the utility of the result“ (Kuo & Liu, 2014). In accordance with changes in psychological thought, changes in marketing communication also appeared. Until the 1970s, the perceived role of marketing communication and advertising was to simply provide information to consumers and enable them to make choices. Since the 1970s, marketing communication began to rely much more on associations with the preferred lifestyle, emotional connections with the brand, the desired projection of consumers' identity rather than simply provide product-related facts.

The concept of the two-mode functioning of human cognitive system was introduced in 1974 by cognitive psychologists Wason and Evans, explained as dual processes in reasoning. Stanovich (1999) named these two modes with generic terms „System 1“ - automatic, fast system, which operates effortlessly and „System 2“ - used for mental activities that require effort and attention. These terms gained wider popularity in 2011 when they were accepted by Kahneman. System 1 mode, in general, is used for automatic operations which do not demand the investment of energy and efforts. In contrast, the activities in the mode of operation of System 2 are those that demand consciously directed attention, and investment of additional efforts, and cognitive operations do not happen automatically. However, System 1, which works continuously and automatically, has its limitations: sometimes it is characterized by bias, mistakes that occur systematically in certain situations (Kahneman, 2011). Terms System 1 and 2 were later criticized by Evans and Stanovich (2013), who suggested terms „Type 1 processing“, which do not require „controlled attention“ and make minimal demands on working memory resources, and „Type 2 processing“, which requires extremely limited and valuable working memory resources as better solution. The theory of two modes of reasoning has an important implications for communication planning. The more certain message activates, provokes and requires the engagement of System 2, the less convincing it is. Therefore, the conclusion that derives from it is that message should not contain too much complex information that demand deeper analysis, but, rather, should enable decisions to be made easily, based on the evoked emotions and impressions of message recipients (Kahneman, 2011). Following the characteristics of people's cognition, communication should follow the principles of the so-called cognitive ease. In cognitive sense, cognitive ease represents decision making without investing too

much effort and time, so individuals should have the impression that certain issue is familiar to them, and that it is likable and trustworthy. As noted by Hanson and Kassar (1999), „developing a positive feeling in consumers about a particular product or place of purchase can significantly increase the assessment of usefulness and significantly reduce the assessment of risk, compared to those who did not create that feeling“. In contrast, a large amount of information creates negative associations and requires the investment of additional mental energy of message recipients, which they likely try to avoid (Berman, 2015).

2. PSYCHOLOGICAL CONCEPT OF COGNITIVE BIASES IN COMMUNICATION CONTEXT

By studying the cognitive errors that people make in their reasoning in the conditions of uncertainty, Tversky and Kahneman, in the early 70s, observed systemic phenomena called cognitive bias, which are based on a specific way of reasoning, ie. cognitive mechanisms called heuristics. As Tversky and Kahnemann (1974) explained, „people rely on a limited number of heuristic principles which reduce the complex tasks of assessing probabilities and predicting values to simpler judgmental operations. In general, these heuristics are quite useful, but sometimes they lead to severe and systematic errors“. Peña and Gómez-Mejía (2019) stated that „cognitive biases are brain processing errors that can arise when making a judgment or a decision, which lead an individual to commit mistakes. They are associated with heuristics since they are a potential consequence of the mental shortcut performed by an individual to solve a problem or situation“. In general, heuristics can be perceived as fast cognitive processes, or „shortcuts“ in decision making that are used in conditions of uncertainty, which often lead to correct decisions, but can lead to systematic errors (bias) as well (Stajkić & Damnjanović, 2018; Peña & Gómez-Mejía, 2019). The major advantage of heuristics is the minimization of the response time necessary to make judgments in conditions of uncertainty, as they enable making decisions through mental shortcuts used by the brain (Peña & Gómez-Mejía, 2019). The use of heuristics in decision making is a general human characteristic, and, therefore, all people, regardless of demographic characteristics, are inclined to use them. In marketing communication, the general capacity of people to make cognitive errors instigated the application of certain principles when

formulating a message, so message recipients are led to make a predictable cognitive errors when making a decision. To date, over 180 different cognitive biases have been described and they are usually grouped into categories, usually according to the type of situations when they occur. There are three general classes of behavioral biases: nonstandard preferences, nonstandard beliefs and nonstandard decision making (Dowling et al., 2020).

Nonstandard preferences include time-inconsistent preferences, reference-dependent utility, and social preferences. Time-inconsistent preferences are linked to consumers' problems of self-control when making decisions in different points in time. Reference-dependent utility includes biases that are consequences of consumers' thinking in terms of gains and losses rather than overall wealth, greater sensitivity to losses than gains, and probability to over/under weigh small/large probabilities. Social preferences include biases that are consequence of consumers' concern with social welfare and fairness rather than just personal interest.

Nonstandard beliefs include belief-based biases, projection bias and probability biases, which occur when there are uncertain factors in decision making. Belief-based biases include overconfidence (overestimation of one's actual ability or chance of success), overplacement (perception one's abilities to be better-than-average) and overprecision (being too confident of one's knowledge). Projection bias are based on the projection of the current state into the future. Third group includes biases that are consequence of perception that small random samples are as representative as large samples, which might lead to false generalizations. Nonstandard decision making include observations of non-utility-maximizing behavior which is a consequence of the fact that individuals are not perfect information processors, make context depending choices and are under the influence of their emotions (Dowling et al., 2020).

Researchers and practitioners in many fields have become interested in examination of cognitive biases so decision making can become more accurate and the probability of making mistakes can be decreased. „The goal of learning about cognitive judgment biases and the process of decision-making is being able to recognize situations in which these particular errors can manifest themselves“ (Zindel, Zindel & Quirino, 2014). In marketing communications, messages are often purposely constructed in a way that stimulates certain cognitive bias, so they can lead consumers to desired outcomes.

TABLE 1. Some of the most represented cognitive biases

Bias	Description
Framing effect	Drawing a different conclusion from the same information depending on how the information is presented.
Anchoring	Tendency to strongly attach to a characteristic or information that is not relevant when assessing value or making a decision.
Availability heuristic	Overemphasizing the significance of phenomena just because they are more represented.
Bandwagon effect	The tendency to do or believe in something just because many other people do so.
Pro-innovation bias	The tendency to have intense optimism about the benefits to society of inventions and innovations without looking to discovering their limitations and weaknesses.
Contrast effect	The use of a particular object for the purpose of emphasizing or diminishing the perception of the observed object or feature.
Bizarreness effect	Bizarre content is better noticed and remembered than ordinary.
Humor effect	Humorous data or events are better noticed and remembered.
Van Restorff effect	It is more likely that an element that stands out will be noticed.
Choice-support bias	The tendency to notice the good sides of the certain choice and to reduce the disadvantages or ignore the advantages of other options.
Confirmation bias	The tendency to notice more aspects that confirm an existing belief, judgment or conclusion.
Ostrich bias	The tendency to focus on the positive aspects and to exclude the negative sides of something.
Outcome bias	Inferring whether a procedure is correct according to result it has led to, without analyzing the reasons for the given outcome.
Optimism effect	Making decisions and conclusions based on feelings and opinions.
Placebo effect	If it is believed that something will have a certain impact on a person, it will have. Conversely, if it is believed that something will not have an effect, then it will not.
Selective perception	The information that is in accordance with the beliefs that the person has and is relevant to him/her is noticed.
Blind spot bias	Belief in one's own immunity to cognitive biases and that other people are more prone to them.
Representativeness	Tendency to infer someone's characteristics or to judge someone based on characteristics related to the group to which they belong.
Insensitivity to sample size	Tendency to draw conclusions based on findings without paying attention to how small the sample on which the finding is confirmed is.
Neglect of Probability	When making judgments and conclusions, the probability of a certain event is ignored.

SOURCE: <https://www.teachthought.com/critical-thinking/the-cognitive-bias-codex-a-visual-of-180-cognitive-biases/>

2.1. Anchoring bias in communication

Anchoring (also known the anchoring-and-adjustment heuristic) is considered to be one of the most common biases in decision-making (Li, Maniadis & Sedikides, 2021), which is also among the most examined biases in laboratory experiments (Beggs & Graddy, 2009). The anchoring effect was first proposed by Tversky and Kahneman (1974), who pointed out that people do not always make their decisions rationally, and often adjust their estimation based on some reference information presented to them. Anchoring, in general, occurs when individual is “trying to

predict the future value of a phenomenon” (Peña, & Gómez-Mejía, 2019) without possessing all relevant information, apart from the provided anchor - a specific information given before a judgement (Furnham & Boo, 2011). When the process of adjustment starts, the value of a certain entity is estimated by gradually adjusting the estimation by “moving it” mentally from the anchor (Kahneman, 2011). Anchoring is, therefore, based on the phenomena that people are likely to attach too much weight to a certain information when estimating a value during the decision making process (van Exel & van den Berg, 2006; Hess & Orbe, 2013). In other words, when making evaluations of something

whose value is ambiguous, most people will start with a particular value that is available to them, and then adjust their final judgment in accordance with that, even in cases when the starting value is completely random (Bowman & Bastedo, 2012). As Shan, Diao and Wu (2020) pointed out, in cases when consumers are uncertain about product's features or quality, they are likely to form their attitudes and purchase intentions in accordance with accessible information, such as advertised prices. Yoon and Fong (2019) examined the long-term effects of anchoring on willingness to pay and found out that anchoring can lead to lasting changes in valuation judgments, which makes it effective even on the long term.

The information presented as anchors often have no real value for message recipients, so they actually cannot determine whether a certain value is high or low, but depending on how the reference value is presented in message, they can feel fear or relaxation for the outcome of the decision they are about to make. In such cases, although anchors are typically insufficient for making rational decisions, customers' final estimates usually remain too proximate to the initial value (Barbosa, Fayolle & Smith, 2019). The probability to be under the influence of anchoring bias is under the impact of certain factors. Zhang and Zhao (2016) noted that consumers' familiarity with risk attached to certain decision affects the anchoring effect, so "the less familiar someone is with a product, the more prone they are to judgment biases based on different anchor values". Furnham and Boo (2011) provided an overview of the research on the topic of anchoring and concluded that ability, personality, processing styles and mood may have a certain impact on the probability of individuals to make anchoring based judgements. Van Exel and van den Berg (2006) noted that "higher ambiguity, lower familiarity, relevance or involvement with the problem, a more trustworthy source and a more plausible bid" are factors associated with a higher probability to accept such anchors as valuable information. By conducting meta-analysis of multiple studies regarding anchoring bias, Li et al. (2021) came to findings that high relevance and compatibility of the anchor are among main factors that lead to higher anchoring effects.

There is an empirical evidence in various fields regarding the impact of externally presented numerical anchors on perceiver judgments (Wegener, Petty, Blankenship & Detweiler-Bedell, 2010). Anchors are used very often in communication in following areas: advertising, political marketing, social marketing campaigns. Anchors are commonly presented in

advertising and marketing communication, often as advertised prices of products, which are then used by consumers to form attitudes and purchase intentions (Shan et al., 2020). Also, it was found that, when consumers are not familiar with the value of certain goods, they can use prices of other goods presented to them as reference points to form attitudes and make purchasing intentions (Chandrashekar & Grewal, 2006; Lin & Chen, 2017). In addition to marketing, anchoring is also observed in fields like finances and investing. Liao, Chou and Chiu (2013) found out that anchoring effect often occurs in investment decision making, and they concluded that foreign institutional investors' behavior is influenced by anchors. Chang, Chao and Yeh (2016) found out that customers in the real estate market are often under the influence of anchoring bias and that the effect is evident for both genders. It is also evident in case of macroeconomic forecasts, where too much importance can be put on the last months' data, while underweighting other important information (Hess & Orbe, 2013).

2.2. Framing bias in communication

Framing is very common in marketing communications and it plays an important role in advertising strategies (Zubair, Wang, Iqbal, Awais & Wang, 2020) as well as social marketing campaigns (Sunitha & Manoj, 2018). It is based on the "psychological principles that govern the perception of decision problems and the evaluation of probabilities and outcomes produce predictable shifts of preference when the same problem is framed in different ways" (Tversky & Kahneman, 1981). Different descriptions of a decision problem led to different preferences, which is in accordance with the principles of evaluation in prospect theory, which is opposite to the principle of invariance that is basis of the rational theory of choice (Tversky & Kahneman, 1986). It leads to differences in decision making depending on the way certain information is framed in messages. There are various types of frames used in communication. Framing is considered to be very important in the following areas: healthcare, insurance, investment, political campaigns, donations and philanthropic campaigns. Framing represents a psychological concept which considers that the manner certain message was framed and presented to consumers determines the outcomes of their decision-making. This means that people perceive messages differently depending whether they are formulated in terms of gains or losses, in a wider or a narrower perspective (Gál, 2018). One of the most common types are Gain

(positive) framing and Loss (negative) framing. In case of positive framing, the importance and value of doing or possessing something is emphasized, while, in case of negative framing, the risk or a loss that may occur by not doing something is emphasized. As Shan et al. (2020) formulated, „negatively framed messages emphasize the undesirable consequences of refusing to buy a product or service, whereas positively framed messages emphasize the desirable profit or benefits of buying a product or service“. The power of language manipulation, the influence of the formulation of the message in the way that people will accept it, is enormous. However, there is no definite answer which frame is more effective in communication and there are empirical evidence of greater effectiveness of both frames depending on the type of advertised product and communication goals. Lee and Aaker's (2004) findings indicate that advertisements that present promotion of a certain goal achieve greater effectiveness when paired with a gain frame, while messages that present prevention of a negative outcome, are more effective when paired with a loss frame. Zubair et al. (2020) found out higher purchase preferences in case of using messages with positive framing than is the case when negative and neutral framing is used.

On the other hand, Garg, Govind and Nagpal (2021) examined the effectiveness of positive versus negative framing of health related messages, in two points in time. They concluded that negatively framed health messages are more effective than positive messages in both the short and long term. The findings of Chen (2016) also showed that negatively framed messages of health care products were more persuasive than those positively framed. Similarly, Chang and Wu (2015) found out that, in green marketing, it is more effective to stress the potential negative consequences of not buying organic food products than to provide information regarding positive consequences, although the effects were moderated by customer's environmental knowledge and motivation. Similarly, the research conducted by Anghelcev, McGroarty, Sar, Moultrie and Huang (2020) indicated that processed organic foods were perceived as more healthful than non-organic foods solely in case of negative framing, when vice-related product aspects were emphasized in advertisements, while in case of pointing out product advantages in advertisements, organic and non-organic products were perceived as equally healthful. Based on their own research, as well as by analyzing findings of other authors, Chang and Wu (2015) concluded that, in case of health-related communication, the effectiveness of certain frames depends upon the

goal of desired behavior which should be stimulated among recipients. In case when the goal is to provoke preventive behavior aimed at reducing health risks (e.g., quitting smoking, exercising), positively framed messages are found to be more effective than negatively framed messages. On the other hand, when the goal is to provoke behavior aimed at detecting illness (e.g., screening) negatively framed messages are considered to be more effective than positively framed messages. Sunitha and Manoj (2018) examined the effects of positive versus negative message framing in cause marketing campaigns in relation to incitement of consumer response, considering the moderating role of perceived relevance of the social issue for consumers. While in case of high perceived relevance of the issue, message framing did not have an impact on behavioural intentions, negative framing demonstrated higher influence on consumers who perceived a social issue to be of a lesser relevance.

Other important framing type is a Goal framing, which is based on the assumption that consumers will be more likely to respond to the message which is in line with their own goals. In accordance with Self-Determination Theory, there are two categories of goal framing - intrinsic or extrinsic. Intrinsic goal framing is based on emphasising the achievement of intrinsic goals (such as autonomy, growth, and health), while extrinsic goal framing is based on emphasising the achievement of extrinsic goals (such as wealth, image, and fame). Majority of the research have showed that intrinsic goal framing leads to more desirable goal-related outcomes than is the case with extrinsic framing, although this may depend on the context variables and consumers' characteristics (Lee & Pounders, 2019). Bacon (2018) examined the effectiveness of motivational, diagnostic and prognostic goal frames in promotion of the importance of family meals to parents. Motivational frames were used to explain why family meals are important, diagnostic frames were used to explain why an issue represents a problem, while prognostic frames concern how to amend the problem and offer solutions. The results suggest that motivational and diagnostic frames were likely to resonate with parents, unlike the prognostic framing which appeared not to align with parents' experiences.

In addition to goal framing, Levin, Schneider and Gaeth (1988) determined two more types of framing effects - attribute and risky choice framing. Attribute framing is based on stressing of particular attributes or characteristics of an object. Risky choice framing is based on stressing the options which carry different levels of risk, or, in other words, it involves var-

iation in the description of a choice between an option which is considered low or no risk and an option which is considered to be risky. Kahneman and Tversky (1979) referred to this type of framing as Reference point framing, which is based on the evaluation of outcomes of different choices as deviations from certain reference points. Kühberger (1998) presented so-called Outcome salience framing which is based on making positive or negative aspects of certain options differently salient.

One more type of framing which is notable in the literature is Temporal framing, which is based on the notion that most people prefer to have a certain benefit now, instead of having a delayed benefit in some point of the future. Tangari, Folse, Burton and Kees (2014) examined the effectiveness of proximal and distal temporally framed advertisements which promote raising funds as a part of prevention campaign. The authors found that consumers who are more orientated towards present demonstrated more positive brand attitudes and purchase intentions when exposed to proximal temporally framed message. On the other hand, consumers with a future orientation did not demonstrate different brand attitudes and purchase intentions when exposed either to proximal or distal temporally framed messages.

Also, there is Value framing, which indicates that consumers are more probable to respond to certain message if it is framed in a way which affects something they value. The effectiveness of value framed messages would depend on the possibility to connect to consumers' perceptions of value. Krishen, Agarwal, Kachroo and Raschke (2016) found out that a message framework based on "gives" and "gets" leads to different consumer's perception of value. Value framing is a common technique in social marketing communication, especially in cause-related marketing. By examining the impact of different framing of donation messages used in cause-related marketing campaign on purchase intention, it was found that exact message framing (when the exact amount of money which should be donated) generated higher purchase intentions than messages that included percentages or did not specify the amount or percent that would be donated (Kureshi & Thomas, 2020). Similarly, it was found that a message containing donation amount framed in absolute dollar value was more effective than message framed in percentage terms in case of low-priced products, while for more expensive products, message framed as percentage was more effective (Chang, 2008). On the other hand, the research of the influence of framing in cause-related marketing mes-

sages, conducted by Bester and Jere (2012), showed no significant impact of different message framing variations on purchase intentions, whereas other consumer-related factors were found to be more significant.

Different factors are found to be influential when it comes to the effectiveness of message framing. Two factors—accessibility and applicability are often noted as probable mediators of the framing effect. Accessibility refers to the greater probability of people to be influenced by framing bias in case when the message is more frequently or recently presented to them, so it becomes more easily retrieved from memory. Applicability refers to the greater probability of framed message to make an impact when it is perceived as important and relevant by the recipients (Falkowski & Jabłońska, 2019). There are also empirical evidence that consumers' involveness mediates framing effects. In their study, Cheng and Wu (2010) examined the effect of message framing on the Internet buyers' attitude and purchase intentions and found out that less involved participants were more influenced by framing effect than more involved participants. For less involved participants, exposure to prior warning messages still haven't prevented them from being influenced by framing effect, except in case when warning messages were especially strong. Also, consumers who possessed low level of knowledge on the product were more susceptible to framing and anchoring biases (Wu & Cheng, 2011).

Some researchers considered the impact of both, anchoring and framing biases on consumers' behaviour. Shan et al. (2020) examined the effectiveness of gain and loss framed messages and low and high anchor prices on consumers' attitude and purchase intention of organic food. Their results showed that negatively framed message (designed to promote the loss resulting from not purchasing organic food) was more effective than positively framed message (designed to promote the benefits of purchasing organic food), in terms of generating favorable attitudes and purchase intentions. In case of anchoring effect, it was shown that message presenting a low anchor price was considered to be more favorable than the one promoting a high price. Even though framing and anchoring bias were found to be influential when observed separately, the authors found no synergetic effect. Wu and Cheng (2011) also examined the separate influence of message framing and anchoring, as well as their joint effect on Internet consumers' attitudes, willingness to pay and purchase intents. Authors' findings indicate better attitudes and intentions to buy the product in case of positive framing (when product's attributes are

pointed out in positive terms). In addition, the presentation of anchors in banner advertisements significantly influenced consumers' willingness to pay for products. A significant joint effect was also found, so presentation of a product attribute in positive terms, together with presentation of a high anchor point, led to more favorable consumers' responses than other framing and anchoring combinations. Barbosa et al. (2019) investigated the impact of three cognitive heuristics - reference point framing, outcome salience framing, and anchoring on the perception of risk, confidence and participants' decision to join the new venture project. Authors' findings indicated that reference point framing and outcome salience framing influence participants' decision to enter the project via risk perception, but do not affect their confidence in the outcome. Anchoring was found to make an influence on participants' confidence in case when there is a congruence between semantic and numeric influences of anchoring, by making potential positive outcomes more salient.

3. RESEARCH METHODOLOGY

The subject of the research was to determine how the application of cognitive biases in marketing communication can affect the recipients of messages, i.e. decision makers. Also, the objective was to determine whether varying message framing can influence the behavior of the recipients of the message and to what extent. The research included the application of two research methods - observation and experimental method.

The following research questions have been set:

RQ1: Are cognitive biases being encouraged by the way messages are formulated?

RQ2: Do messages formulated to encourage cognitive heuristics affect the willingness to purchase and behavior of message recipients?

RQ3: Does the formulation of messages in a way which stimulates cognitive biases lead recipients to decisions that are not actually the best?

3.1. Study 1: Observation

The observation was conducted with the aim to examine the use of cognitive biases in advertisements. The procedure for Study 1 included watching advertisements on eight platforms (seven television stations

and one online platform) at three different time frames during two days in March 2020. The observation included a sample of 80 advertisements broadcasted on television and the Internet. The sample of advertisements was selected by pre-setting exact time frames of watching television and online content (same for both days), so all advertisements which were broadcasted during those time frames were included in the sample. The objective was to determine:

- What is the frequency of advertising messages which encourage cognitive biases, observed on a selected sample of ads;
- Are some cognitive biases more frequently encouraged in advertising than others, observed on a selected sample of ads;
- The way advertising messages are formulated to encourage cognitive biases.

By observing advertisements in set time frames during two days, it was examined whether certain cognitive biases are encouraged in the advertisement and how. Following biases were selected for the observation: framing (profit frame, loss frame, time frame, value frame, goal frame), anchoring, availability, bandwagon effect, pro-innovation bias, contrast effect, bizarre effect, humor effect, Van Restorff effect, support for made choices, affirmation of beliefs, Ostlich bias, outcome bias, over-optimism, placebo, survivorship bias, selective perception, blind spot bias, representativeness, insensitivity to sample size, ignoring probabilities.

3.2. Study 2: Experiments

The research included two experiments. The pre-experimental research design was used in this case, considering that all necessary experimental criteria were not achieved and no control groups were used. The convenience sampling was used for the recruitment of the participants. Two experimental situations were conducted in order to determine whether:

- Manipulating the way message is displayed enables achieving a different message experience and consumer reactions (Experiment 1);
- Variation of the positive and negative message frames encourages different behavior among consumers (Experiment 2).

The Experiment 1 was based on the examination whether respondents have a different experience of the same message if it is presented by respecting the prin-

ciples of cognitive ease. In the experiment, the content of the advertisement, ie. the information which was transmitted was constant. The way in which the information is presented was varied, and it was monitored whether the perception and the consequent behavior of the recipients of the message differed.

The aim of the Experiment 2 was to determine which type of message recommending the purchase of insurance is more effective – the one formulated through a loss frame or the one formulated through a gain frame. Two groups of respondents were given an insurance offer presented in two typical ways - positively framed (protection of goods possessed), or negatively framed (a warning of a risk that may occur and for which the insurance would neutralize the loss).

Stimuli

Typical forms of marketing ads that are used in practice are used as the stimuli in the experiments. The language and design used is common in advertisements.

In the Experiment 1, the stimulus contained a story about a product, an advanced version of a fuel that has improved properties due to the addition of additives. The text of the advertisement provided the recipient of the message with all relevant information about the fuel itself, numerical data were given and the number 10 was used as an anchor, i.e. as a percentage of the improvement of certain fuel characteristics. For the first group of respondents, the message was given in the form of the simple text. In case of the second group of the respondents, the same message was given in the visually designed version, based on the principle of cognitive ease, considering that such way it would be easier for recipients to read, notice and remember key data.

In the Experiment 2, a typical text of the advertisement for property insurance against fire was used, but framed in two ways. For the first group of respondents, it was given in the form of a positive framework, where the value of the protected property was pointed out. The message for the second group was created in a way which encouraged the fear of possible loss of the property, which is also common in advertising of insurance products.

Sample and treatment procedure

The sample of respondents for Study 2 consisted of students of master studies at Faculty of Organizational Sciences, University of Belgrade. A total sample of 30

students participated in two experiments, 15 in each experimental situation. Respondents received an advertisement that they read and, then, filled out a questionnaire in which their impressions and purchase intentions were expressed. Prior to experiments, respondents were provided with oral and written instructions for the participation.

Procedure for Experiment 1: Respondents were divided into two groups. One group of respondents (Group A) received a description of the improved version of SUPER 100 fuel in written form, with standard text structure, no special organization and no special design. Other group of respondents (Group B) received the same text describing the characteristics of the product in which the key messages were visually highlighted. Also, through the visual elements, the improvements that the fuel allegedly provides were presented: a stylized chart, a graphic representation of the car that suggests speed, a graphic element that visually unites all the functional improvements that fuel provides. Additionally, the stimulus used anchoring to the number 10: 10% increase in engine power, 10% improved acceleration dynamics, 10% increase in torque.

After reading the ad, both groups of respondents filled out the same questionnaire, answering only to three questions: were they willing to pay for the recommended fuel; would they recommend it to friends or acquaintances; and how much should the recommended fuel cost. Respondents were asked how much they consider that the price of the recommended fuel should be higher in relation to the price of ordinary fuel in RSD per liter.

Procedure for Experiment 2: Two groups were presented with an insurance offer in two typical ways - positively framed as protection of possessed goods, and negatively framed as a warning of an accident that may occur and for which the insurance would neutralize the loss. Thirty respondents were divided into two groups. One group was given a promotional message of insurance offer where, through a positive context, assets that can be protected by the insurance were emphasized. The other group received a message where the loss was emphasized – a risk of fire which can destroy home and all valuable assets. Both groups filled out the same questionnaire where they had to choose the type of the insurance they would be willing to pay for, and to include it in their insurance policy.

4. RESEARCH RESULTS

4.1. Results of Study 1

Of a total sample of 80 advertisements, certain cognitive biases were registered in 63 cases (78.7%) (Table 2). In the sample of analyzed advertisements, anchoring was the most common cognitive bias used. Anchoring was presented through numerical values that suggested the offer had a certain value or the price was favorable. Anchoring was used in most cases to communicate price, discount, installment number or some other numerical characteristics. Out of 16 recorded anchoring advertisements, in six cases, the communication of the current reduced price was used, with the previous higher price displayed as crossed. This model was used in television advertising mainly by retail chains, suggesting that the prices of certain items were favorable. There was no comparison of prices on the market in the ad, so it was not clear from the ad itself whether the prices were really favorable, nor the advertiser explicitly claimed that, but advertising the price itself, as well as emphasizing that it was a new reduced price, suggested that the price was favorable. In some cases, the advertiser actually used items with competitive prices in the ads, leading the recipients of the message to the conclusion that other prices were also favorable, although that might not be the case. Advertising of the seasonal items also suggested, by the very listing of items and prices, that it was convenient to purchase them in that particular retail chain, although, in fact, the prices were not competitive compared to the offer on the market. Anchoring was also used in the automotive industry by stating a possible loan installment that would be sufficient to purchase a particular vehicle model. With this method,

the recipient of the message gains the impression that a certain car model can be affordable. The loan offer was communicated through interest rates that actually had no meaning itself to majority of recipients of the messages and they were not presented comparable with the offers of other banks.

The goal frame appeared in 12 advertisements. Goal frame was very common because, practically, the message was framed in a way which showed that message recipients would be able to achieve some of their goal or meet certain needs: get clean laundry without stains, achieve more free time for themselves, speed up or facilitate some not so attractive work that must be done, achieve fitness or flawlessly white and healthy teeth and similar.

Ads based on the value frame were next in frequency. They were created in the way which enabled recipients to connect with something that they considered important (e.g. children, pets or some other relevant groups, environmental protection). Creating connection with the target group, based on the promoted common value, leads to greater acceptance of the message. In a specific sample, these types of ads were those that spoke from the perspective of children or suggested that the product was intended for those who care for "their loved ones". As the observation took place during the outbreak of Covid 19 epidemic in Serbia, a number of advertisements called for "solidarity" and "responsibility" as key values that were highlighted.

Eight ads were presented framed as a gain suggesting that recipients of the message would receive: shiny dandruff-free hair, smooth skin, a prize or a gift with the purchase. The profit frame was also found in the case of advertisements where consumers were promised a gift or reward for a certain action they take, most often for the purchase of products or larger quantities of products.

In seven ads, the contrast effect was used, where, by displaying of extremely bad, unwanted conditions, the product being advertised was brought as a solution that provides an ideal situation. Six out of seven ads with contrast effect were for pharmaceutical products where the video showed a person suffering from pain, the problems were overemphasized, and, then, a drug or other pharmaceutical product were suggested as an ideal solution. At the end of the advertisement, video showed the ideal and desired image of joyful and relieved person. Humor effect was registered in four ads for every day used products where it is very difficult to provide distinctiveness in the market. In one case, the advertiser resorted to both humor and bizar effect to ensure distinctiveness in the category.

TABLE 2. Frequency of cognitive biases encouraged in the sample of advertisements

Cognitive bias used	Frequency
Anchoring	16 (2%)
Contrast effect	7 (8.7%)
Bizarre effect	1 (1.2%)
Humor effect	4 (5.0%)
Representativeness	3 (3.7%)
Goal frame	12 (15.0%)
Gain (profit) frame	8 (10.0%)
Time frame	1 (1.2%)
Value frame	11 (13.7%)
Total with cognitive bias	63 (78.7%)
Total without cognitive bias	17 (21.2%)

TABLE 3. Results of the Experiment 1

Question	Answer	Group A	Group B
Would you be willing to purchase this fuel?	Yes	12	11
	No	3	4
Would you recommend this fuel to others?	Yes	8	10
	No	6	5
How much more than ordinary fuel should this fuel cost per liter?	Provisional value	8.8 (average value of answers)	18.5 (average value of answers)

Representativeness was registered in three advertisements. Representativeness was used in advertisements by associating the product being advertised with a representative category suggesting a link to the key characteristics of the group. For example, when an ad pointed out that a product was made in Germany, it implicitly suggested that it is of a superior quality.

All ads contained two biases that cannot be attributed to one specific ad, but are, literally, a characteristic of advertising in general: the first is about availability - recipients are more inclined to accept what is repeated more often, and the second is Ostrich bias - where only the advantages of the product were emphasised, while the possible disadvantages were ignored.

4.2. Study 2 – Results of Experiment 1 and Experiment 2

Due to a very limited sample of respondents, obtained findings are not based on statistically significant differences but on indications of the direction of the identified differences. The results of the Experiment 1 indicated that there was no difference between the two groups - those who received information on improved fuel in an unstructured form and those who received information in a designed, graphically systematized version, in terms of whether they would purchase the proposed fuel for themselves. Also, it was not possible to eliminate the influence of the factors whether the respondents were drivers and whether they used fuel at all, because, despite the instruction to ignore this fact and answer whether they would use it if they needed fuel, it cannot be said for certain.

However, there were differences in answers whether they would recommend the fuel to someone else. Two-thirds of respondents who read the designed version would recommend the fuel to their friends or acquaintances from their environment. In the case of the first group, half of the respondents stated they would give a recommendation. Almost all respondents in both groups accepted the suggestion that the

offered fuel should be more expensive than ordinary fuel, and the difference in the average price proposed by Group B was higher than 10RSD in relation to Group A. Respondents who viewed the designed advertisement believed that fuel should be more expensive than those who viewed the advertisement presented without graphical structuring and text design.

Out of 30 respondents, number 10 appeared in responses to the question about the price seven times, which cannot be taken as a certain confirmation of the efficiency of anchoring to the number 10.

The results also indicated that graphic text organization facilitated reading of a message, which, in turn, increased the chances that recipients would accept the message and take the expected behavioural actions. Graphical structuring of the text contributed to the acceptability of the message, which was perceived as more credible, desirable, of better quality and more expensive. Therefore, the way message is presented cannot be separated from the content itself and greatly affects how the message will be interpreted.

4.3. Study 2 – Results of the Experiment 2

The group of respondents who read the insurance advertisement formulated through a positive framework chose more risk factors and expressed willingness to spent on average 11,000 RSD more to insure their property (Table 4).

The results indicated that positive framework, rather than negative (loss) framework (based on the fear appeal), acted as an incentive for respondents to purchase insurance. For a clearer conclusion, additional tests are needed, but it can be certainly said that, when it comes to the insurance offer, positively framed messages represent a more efficient way of communication. The loss framework in the case of an insurance offer may be inadvisable for two reasons: the first is because the negative emotions evoked lead respondents to act repulsive and block the future action. It seems that respondents did not want to be associated

TABLE 4. Selected premiums with amounts and total insurance amount by groups

Basic and additional risks (insurance method)	Insurance premium (in RSD)	Premium (RSD)	Group A (positive framework) (frequency)	Group B (negative frame) (frequency)
Buildings, fire, fixed	3.990.000			
Buildings and linings (fire)	119.700			
Household items (fire)	399.000			
Glass from breakage	19.950	3.163,08	11	12
Allowance for the purchase of depreciated value in case of partial fire risk damages for buildings		842,37	3	2
Breakdown of installed installations and installed equipment		1.270,81	5	4
Amortized cost redemption allowance for partial damage for breakage risk		444,76	1	2
Buildings - earthquake	3.500.000	2.952,60	7	3
Burglary and robbery	39.900,00	223,04	11	9
Liability to third parties	50.000,00	247,00	5	4
Discount on contracted sections		914,37	15	15
			68.476,44	57.467,62

with a situation reminiscent of an insurer, they did not want to think about loss, fire, theft, and the possibility that anything bad could happen to them, their loved ones or their property.

Another potential reason that could be the cause of less money spent, ie. fewer selected risks recipients would be willing to insure, was the fact that the ad used as a stimuli in this experiment included only the risk of fire, not earthquake or theft, etc. By stating a specific type of risk, respondents were directed to think about what they want to insure, and not to think about every risk that can happen to their property.

5. CONCLUSION

The principles of cognitive ease are applied in the formulation of communication messages in order to encourage using of cognitive heuristics in decision making of message recipients. Research findings indicate that the content that encourages message recipients to make cognitive errors is very common and prevalent in advertising. In as many as 78.7% of the observed advertisements, the use of at least one cognitive bias was registered. In both experimental situations, it was shown that the willingness to pay for a product de-

pends on the way the promotional message is framed and displayed. Therefore, it was confirmed that the human behavior can be greatly influenced by an effectively formulated message - formulated in a way which stimulates the occurrence of biases which, in some cases, can be misleading for the recipient of the message, leading recipient to ignore some important limitations of a product, or to overestimate its usefulness.

However, the paper possesses certain limitations. First of all, the research was conducted on a limited sample and the research findings are not based on statistically significant differences but on indications of the direction of the identified differences. Therefore, this research could serve as a pilot study that provides valuable indications for the design and conduction of the further research on larger samples and with more complex stimuli and methods used. Also, it is necessary to further investigate the effectiveness of messages in relation to different demographic groups by investigating whether there is a greater sensitivity to certain cognitive biases by special subgroups (gender, age). A better understanding of the tendency of people to resonate and make decisions in a certain way, would allow more accurate evaluation of the effects achieved by targeted marketing communication.

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Apstrakt

Kognitivne pristrasnosti u marketinškoj komunikaciji: Uticaj usidrenja i uokvirivanja poruka na percepciju i spremnost potrošača na kupovinu

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Dok se u teoriji racionalnog donošenja odluka smatra da izbori koje vrše ljudi ostaju dosledni i predvidivi čak i u slučajevima kada se iste informacije predstavljaju na različite načine, u stvarnim situacijama odluke potrošači su pod uticajem njihovih ličnih karakteristika, navika, normi i ranijeg iskustva, kao i ograničenja ljudskih kognitivnih mehanizama. Generalno, pod heuristikama se podrazumevaju brzi kognitivni procesi u donošenju odluka koji ponekad mogu dovesti do pojave određenih pristrasnosti koje oblikuju konačne odluke. U marketinškoj komunikaciji, opšti kapacitet ljudi da prave kognitivne greške podstakao je primenu određenih principa prilikom formulisanja poruka kako bi se na taj način podstakli primaoci poruka da naprave predvidive kognitivne greške

prilikom donošenja odluka. Predmet istraživanja u ovom radu je utvrđivanje kako podsticanje određenih kognitivnih pristrasnosti u marketinškoj komunikaciji može uticati na odluke primalaca poruka. Istraživanje je obuhvatilo primenu dve istraživačke metode - posmatranja i eksperimentalne metode. U čak 80% posmatranih oglasa registrovano je podsticanje bar jednog tipa kognitivne pristrasnosti. U obe eksperimentalne situacije pokazalo se da spremnost da se plati proizvod zavisi od načina formulisanja promotivne poruke.

Ključne reči: *kognitivna pristrasnost, heuristike, usidrenje, uokviravanje, poruka, marketinška komunikacija*

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