

ANA NEVISTIC*

658.89:658.7]:303.62(497.7)

ILIJANA PETROVSKA**

(Original scientific paper)

ANA TOMOVSKA MISOSKA***

NADICA JOVANOVSKA BOSHKOVSKA****

EFFECTS OF NUDGES: EVIDENCE FROM MACEDONIAN CONSUMERS

Abstract: Being aware that many people are not certain and constant in their decisions, it is important to find out as much as possible about what customers want and what influences their choice. Therefore, there has been an increase in research about so-called nudges, believed to be influencing consumer choice at a less than conscious level. The Nudge theory is thought to explain so much of consumer choice and can help companies create strategies to guide their consumers. By knowing how nudges work, companies can choose to include or exclude different tactics within marketing communication strategies.

Research data has been gathered and analyzed through an online survey experiment, on a convenient sample of 195 people, residents of North Macedonia. The use of nudges is tested by creating three experimental surveys, in which the presence of three nudges is being manipulated. Each group had 65 participants (ages 16-61). Overall results show that for some types of nudges and in some situations, their use could lead to higher benefit, to change in choice, prediction, evaluation or perception, however definitely not in all.

Keywords: nudges, decoy, anchoring, mere exposure, consumer choices

JEL Classification: M3

* M.A. Professional Development Advisor, "Causal Capital Pte Ltd" - Skopje, Republic of North Macedonia, e-mail: anaivanev@gmail.com

** Professor, University American College Skopje, School of Business Economics and Management, e-mail: petrovska@uacs.edu.mk

*** Professor, University American College Skopje, School of Business Economics and Management, e-mail: tomovska@uacs.edu.mk

**** Assistant Professor, University American College Skopje, School of Business Economics and Management, e-mail: nadica.j.boshkovska@uacs.edu.mk

Introduction

This research investigates the possibility of using nudges for better Strategic Marketing Communication, seeing whether, and how, choice and perspective of the Macedonian Consumer can change with nudge presence. The Nudge theory is believed to explain so much of consumer choice and can help companies create strategies to guide their consumers towards creating better choice, ease and shorten the time needed for someone to create a decision or do a task, and improve how a company is viewed, create a higher/better flow of goods, and much more (Abhyankar, 2019; Nguyen, 2019; Jung and Mellers, 2016). This paper investigates the possibility of using nudges for better Strategic Marketing Communication, seeing whether, and how, the choice and perspective of the Macedonian Consumer can change with nudge presence. Since it is a newer and wide field of research, this could help understand whether some nudges can influence the everyday consumer in North Macedonia. With this, we aim to help communication management by shifting their views toward better solutions, and hopefully, help others with their future research on the topics.

The aim of this research is to assess whether there is a potential difference in choice and perspective of the Macedonian Consumer when Nudges are being used and speculate how this can add to a better Marketing Strategy. This will be managed by looking into the effect of 3 nudges: decoy, anchoring, and mere exposure. Since the research will investigate more than one factor, it is safe to assume that it will also have more than one goal/objective, splitting into the following:

H1: By changing or adding a 3rd asymmetrical option, choice preference of consumers changes.

H2: When adding a numerical anchor, prediction, and perception of price change.

H3: Previous exposure to a stimulus can lead to change in preference towards it when presented again.

Regardless, if all put together into one, our main hypothesis would be: “With the presence of a nudge, there is a change in preference, perception or choice of alternatives for the Macedonian consumer”.

1. INTRODUCTION TO NUDGES

Nudge theory starts out as a concept in behavioral economics and sciences, indicating a psychological factor by which the decision of a person can be influenced in a less than conscious way (Cherubino et al, 2019). It is a theory considered to be based on the concept of behavioral economics and dual-process theory (Hummel and Maedche, 2019). Years of research show that many of our choices in life, and part of our mental processing, occur on a subconscious level, thus including the decisions made as customers (Cherubino et al, 2019). Due to human beings' cognitive biases, the design of how information/choices are represented to an individual could influence or "nudge" their behavior toward a choice (Venema et al, 2020; Cai, 2019). In a way, nudges are "rules" or "ways" as to how to push or direct someone's attention and choice towards an outcome.

Something most agreed upon is that for something to be considered a nudge, its existence must leave space for the choice we want someone to make - to be easily avoided (Korhonen, 2020; Abhyankar, 2019; Sunstein et al, 2019). In other words, a nudge cannot influence the freedom of choice. Their power lies in the ability to modify behavior without coercion (Blumenstein et al, 2018). In a way, nudge theory can be considered a more advanced and modern approach to creating change in people, as appose to the traditional "enforced" change (BusinessBalls, 2020).

The nudge is "any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler and Sunstein 2008), meaning that the possibility for someone to make a choice, can be increased. They comment on the choice architect as someone (individual, company, industry, government etc..) who manages the application of the nudge (BusinessBalls, 2020).

Although the nudge theory has been widely used in different life domains, its effectiveness varies across studies (Hummel and Maedche, 2019). Some studies have even proven nudges to be ineffective, or even create opposite results from those expected (Caraban et al, 2019; Mols et al, 2014).

1.1 Decoy Effect

The primary effect that we research is the asymmetric dominance effect, attraction effect (Kim and Hasher, 2005), or in other words the Decoy Effect/Theory. An asymmetric dominance choice involves more than two options,

where one is dominated, by at least one other option, however not all of them (Bateman et al, 2008). By others, the decoy effect is most optimal while having two options, and introducing a third asymmetrical, clearly inferior choice to one of the primary two, to influence the choosers' final decision (BusinessBalls, 2020; Abhyankar, 2019).

A possible explanation is that when faced with too many alternatives, we look at things that are easier to compare, avoiding those that are too different from one another (Ariely, 2008).

1.2. Anchoring Effect

When speaking about the anchoring effect it is considered that people compare products (and other things in life), with some of their first impressions of something similar to those things (ex. a category), and later on guess subjectively, adjusting their judgment accordingly to the primary anchor (BusinessBalls, 2020; Dennis et al, 2020; Korhonen, 2020; Soga, 2018). New information is viewed relative to the first information gained (Taylor, 2016). Research has shown that presenting even a randomly generated number before creating a choice, can bias and influence a decision maker's decision (Dennis et al, 2020).

1.3. Mere Exposure Effect

The mere exposure effect (MEE) turns towards the accessibility/visibility of a familiar object, meaning that people are more often choosing something because of mere previous exposure to it (BusinessBalls, 2020). The effect represents the "formation of a positive affective reaction (PAR) to repeated or single exposure" (Ye and van Raaij, 1997, p.629), and argues that prolonged exposure to a stimulus is enough to trigger a predisposition and preference toward it (Caraban et al, 2019). Repeated exposure to an object or stimuli, becoming more familiar with it, changes the way we experience it, and changes our attitude toward it, even though the object\stimuli might remain unchanged (Bornstein and Craver-Lemley, 2017). The stimuli might be a person, artifact, product, advertisement, brand name, picture, individual, symbol, logo, etc (Ye and van Raaij, 1997). This makes research and implementation of this effect extremely promising for the marketing communication world.

2. METHODS

For the purpose of this research, an online causal survey experiment was conducted. Due to random assignments thanks to a random redirection tool, we can assume that the only difference between conditions (Groups) is the difference within the treatment. As an experimental manipulation of the independent variable, a seemingly randomized stimulus is added - for questions on the decoy theory, a carefully planned asymmetric dominance option, for anchoring – price, and for exposure – background of the survey.

2.1 Data Collection

Three online surveys - Group A, B, and C (control Group) were created on the online application for surveys – Google Forms. Direct links to each Group were then added to a random redirection tool which created one link instead of three (Fergusson, 2016). The link was then distributed throughout social media, as well as through other participants who had the option to share the link as well.

2.2 Sample

For the aim of this Thesis, data has been gathered and analyzed from a convenient sample of 195 participants, 65 per Group, residents of N. Macedonia. The sample started off with a larger number (230), however, participants who answered with “I do not know” or in another invalid way, were excluded.

3. RESULTS

Gathered data from the Groups were reviewed, coded, and analyzed with the help of SPSS 28.0 for Windows 10. To analyze the statistically significant difference between expected and observed frequencies of categorical variables between Groups, we will be using a Pearson’s Chi-Square test. Mann-Whitney U test and Kruskal-Wallis H Test will be used for differences between Groups.

3.1 Demographic data

Out of all 195 participants whose answers were analyzed, 63,6% (124) were female and 71% (36.4) male. The sample for this online experiment was randomly chosen through social media and “digital word of mouth”. Participants were between the ages of 16 and 61, with a Mean age of 30, and an average monthly salary of around 20-30.000 denars.

3.2 Decoy Effect

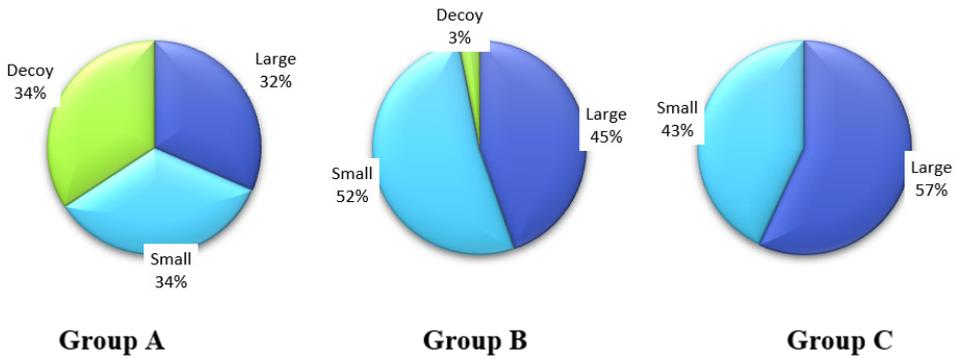
To test the Decoy effect 2 separate experimental questions were created. Answers were analyzed by coding the target and decoy as one, while the competitor as another option.

Our first question has people choose between popcorn of different sizes (Picture 1), taking an example of the National Geographics popcorn experiment (Hochma, 2017). Results here show difference in choice between groups (Figure 1) strangely showing choice of Decoys as well. As seen in Table 1, results suggest that there is a statistically significant difference in frequency of choice of target and decoy, compared to “competitor”, from one Group to another ($\chi^2(2, N=195) = 11.530, p = .003$).

Figure 1 Example of Popcorn options between groups



Figure 2 Percentage of Target, Competitor and Decoy choice within groups



When adding a higher decoy (Group A), there is a significant rise in frequency of choice towards target and decoy ($\chi^2(1, N=130) = 11.5, p = .001$) when compared to Group B. However, compared to Group C, there is only a small significant rise in choice ($\chi^2(1, N=130) = 4.112, p = .043$). A statistically significant difference between Group C, and Group B, does not exist in the frequency of choice, $\chi^2(1, N=130) = 1.97, p = .16.$, as seen in Table 2.

Table 1 Chi-Square Test representing expected and real count of popcorn choice between all groups

Group x Popcorn choice Crosstabulation					
		Popcorn Option		Total	
		Large	Small		
Group	A	Count	48	17	65
		Expected Count	38.0	27.0	65.0
	B	Count	29	36	65
		Expected Count	38.0	27.0	65.0
	C	Count	37	28	65
		Expected Count	38.0	27.0	65.0
Total		Count	114	81	195
Expected Count			114.0	81.0	195.0

Group x Popcorn choice Chi-Square Tests			
	Value	df	Asymptotic Sig. (2-sided)
Pearson Chi-Square	11.530	2	.003
Likelihood Ratio	11.797	2	.003
N of Valid Cases	195		

Table 2 Chi-Square Test Between Groups

Group x Popcorn choice Chi-Square Tests									
	A x C			A x B			B x C		
	Value	df	Asymptotic Sig. (2-sided)	Value	df	Asymptotic Sig. (2-sided)	Value	df	Asymptotic Sig. (2-sided)
Pearson Chi-Square	4.112	1	.043	11.500	1	.001	1.970	1	.160
Likelihood Ratio	3.399	1	.065	11.702	1	.001	1.508	1	.219
N of Valid Cases	130			130			130		

When analyzing the effects of a “free prize choice”, as seen in Table 3, we see no statistically significant difference of choice between any of the Groups, $(2, N=195) = .289, p = .865$, meaning the existence of a decoy choice, created no significant change in the frequency we would wish our target to be chosen. In this setting, our controlled Group (C) chose between chips and a thematic pillow as one option, and chips and a thematic toy as the second option. Our experimental Groups were presented with a third choice- a decoy, an option of only a toy (Group A), or only a pillow (Group B).

Table 3 Chi-Square Test for expected and real count of choice of prize between groups

Group * Choice of Prize Crosstabulation					
CTT CTP		Choice of Prize		Total	
Group	A	Count	29.7	35.3	65
		Expected Count	30	35	65.0
	B	Count	28	37	65
		Expected Count	31	34	65.0
	C	Count	29.7	35.3	65
		Expected Count	29.7	35.3	65.0
Total		Count	89	106	195
Expected Count		89.0	106.0	195.0	

Group x Choice of Prize Chi-Square Tests			
	Value	df	Asymptotic Sig. (2-sided)
Pearson Chi-Square	.289 ^a	2	.865
Likelihood Ratio	.290	2	.865
N of Valid Cases	195		

3.3 Anchoring Effect

As the theory proposes, we created 2 questions where participants in Group A were presented with high numerical anchors, Group B with lower ones, and Group C had none. Participants had the freedom to estimate and predict the cost of a product, in the first question a wristwatch, and in the second, a hammock. The existence of outliers was detected, so a total of 60 participants per Group were analyzed in these settings.

Table 4 Descriptive Statistics of Anchoring Questions

		Mean	SD	Min	Max	Sum
Wristwatch	Group A	56,906.08	31,004.580	75	100,000	3,414,365
	Group B	21,115.32	10,446.592	1000	61,000	1,266,919
	Group C	12,380.83	10,074.998	100	43,000	742,850
Hammock	Group A	3,622.63	2,171.399	799	15,000	217,358
	Group B	2,459.97	611.026	990	3,500	147,598
	Group C	3,565.17	3,066.297	100	15,000	213,910

Within the first question, as assumed and seen within Table 4, Group A had the highest predicted price for our product ($M = 56,906$ denars), and Group C had the lowest ($M = 12,380$ denars). Analyses showed a significant difference between the mean of ranks within all Groups ($H(2) = 63.276$, $p = .000$) (Table 5). As seen in Table 6, Group A again had significant difference between both Group B ($U = 852.5$, $N_a = 60$, $N_c = 60$, $p = .000$) and Group C ($U = 497$, $N_a = 60$, $N_c = 60$, $p = .000$). In addition, Group B and Group C showed a statistically significant difference in ranks ($U = 811.5$, $N_b = 60$, $N_c = 60$, $p = .000$).

When evaluating the price of the hammock, Group A again had the highest assumption ($M = 3,622$ denars), however here Group C was close behind ($M = 3,565$ denars). Group B had the lowest assumptions ($M = 2,459$ denars). Analysis of the three Groups shows a significant difference in the rank means between Groups ($H(2) = 15.71$, $p = .000$) (Table 5). Looking at Table 6, a statistically significant difference between experimental settings and the controlled Group is not found. However, when comparing the mean of ranks from high anchors (G.A.) with the mean of ranks from low anchors (G.B), there is a strong significant difference ($U = 914.5$, $N_a = 60$, $N_b = 60$, $p = .000$).

Table 5 Kruskal-Wallis H test for differences in mean ranks of estimated prices

Ranks			
	Group	N	Mean Rank
Wristwatch	C	60	52.31
	B	60	91.18
	A	60	128.01
	Total	180	
Hammock	C	60	91.83
	B	60	71.08
	A	60	108.59
	Total	180	

Test Statistics ^{a,b}		
Question	Wrist Watch	Hammock
Kruskal-Wallis H	63.376	15.710
df	2	2
Asymp. Sig.	<.001	<.001

Table 6 - Mann-Whitney U Test Statistics for differences in mean ranks of estimated prices between all Groups

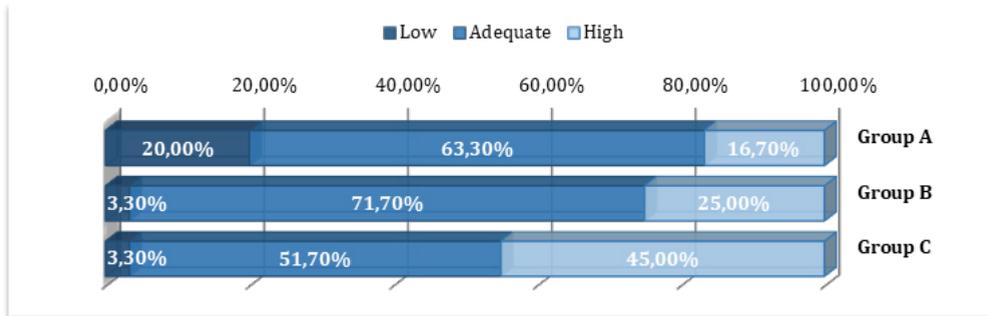
	Wristwatch	Hammock	Wristwatch	Hammock	Wristwatch	Hammock
Groups	AxC		BxC		AxB	
Mann-Whitney U	497.000	1600.000	811.500	1520.000	852.500	914.500
Wilcoxon W	2327.000	3430.000	2641.500	3350.000	2682.500	2744.500
Z	-6.843	-1.053	-5.191	-1.474	-4.976	-4.673
Asymp. Sig. (2-tailed)	<.001	.292	<.001	.140	<.001	<.001

With this set of questions, we also analyzed the perception of price upon the existence of an anchor. For the wristwatch, participants find its true

value of 18,590 denars, much lower than Anchors in Group A, but near those in Group B (Figure 3). For the hammock, participants learn that the true price is 2,790 denars, again near the prices in Group B (Figure 4).

For the wristwatch, both Group A ((1, N=120) = 11.29, p=.001) and Group B ((1, N=120) =5.28, p=.022) significantly differ in the frequency of perceived low or adequate prices for the watches when compared to Group C, and not differ between each other ((1, N=120) = 1.26, p=.261) (Table 8)

Figure 3 Wristwatch real price perception writing groups



Most of the participants have assessed that the given value of the hammock is a low or adequate value. Those with a higher anchor significantly differed with a higher assessment of low and adequate cost of the hammock, with both those from Group B with a lower anchor near the true price ((1, N=120) = 5.56, p= .018), and those with no anchor at all ((1, N=120) = 5.56, p= .018). Group B and C showed no significant difference ((1, N=120) = 4.95, p=0.84) (Table 8).

Figure 4 Hammock real price perception writing groups

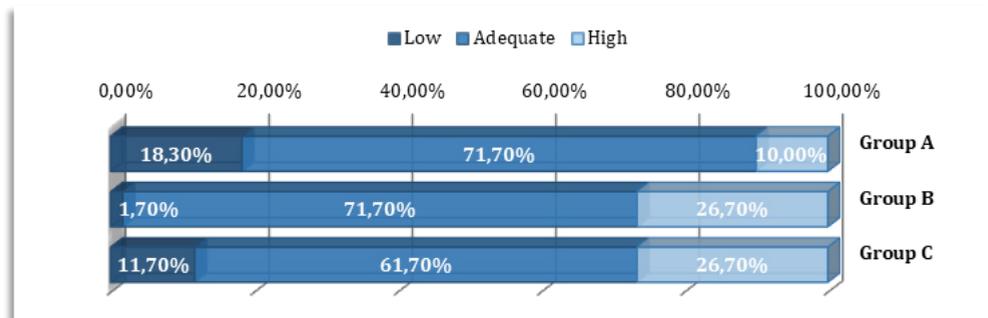


Table 7 - Chi-Square Tests of price perception as low/adequate vs high

		Value	df	Sig. (2-sided)
Wristwatch	Pearson Chi-Square	12.386 ^a	2	.002
	Likelihood Ratio	12.291	2	.002
	N of Valid Cases	180		
Hammock	Pearson Chi-Square	6.672 ^a	2	.036
	Likelihood Ratio	7.363	2	.025
	N of Valid Cases	180		

Table 8 - Chi-Square test of price perception as low/adequate vs high

		AxC			BxC			AxB		
		Value	df	Sig. (2-sided)	Value	df	Sig. (2-sided)	Value	df	Sig. (2-sided)
Wristwatch	Pearson Chi-Square	11.293	1	<.001	5.275	1	.022	1.263	1	.261
	Likelihood Ratio	11.619	1	.002	5.330	1	.021	1.270	1	.260
	N of Valid Cases	120			120			120		
Hammock	Pearson Chi-Square	5.566	1	.018	.000	1	1.000	5.566	1	.018
	Likelihood Ratio	5.739	1	.017	.000	1	1.000	5.739	1	.017
	N of Valid Cases	120			120			120		

3.4 Mere Exposure

In our final set of questions, and for our final hypothesis, we have the mere exposure effect. For this, both Group A and B within their heading had a reoccurring picture as heading/background, while Group C had nothing. Group A had 12.3% (8) more participants than the controlled Group who chose the exposed picture as most attractive. Group B had 16.9% (10) (Figure 5). Analyzing all Groups shows (although close) no statistically significant results ((4, N=195) = 9.453, p = .051) (Table 9).

Figure 5 Choice of picture preference between groups

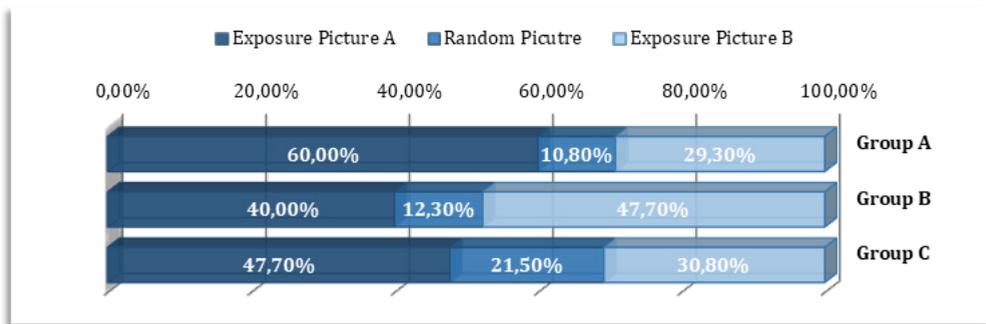


Table 9 Chi-Square test for expected and real count of choice of picture preference

	Value	df	Sig.
Pearson Chi-Square	9.453 ^a	4	.051
Likelihood Ratio	9.130	4	.058
N of Valid Cases	195		

Conclusion

Commenting on the results from the first batch of questions, we need to keep in mind not only the statistical significance of rise in frequency of choice, or in total revenue but also the fact that each company/business exists in different terms. Each business would need to see the effect of a decoy product on its own offerings, evaluate the financial difference that can be created, and see whether that rise in revenue, if small, would lead to higher benefits and help achieve a higher target (Wu and Cosguner, 2018). Results of research on the decoy theory, lead us to believe that we cannot fully accept H₁, nor can we fully accept H₀.

For the anchoring effect, results show that there is a difference between Groups in estimating price when presented with a high anchor, and very often with a low one as well. Something that would need to be kept in mind is the familiarity that people have with a specific brand or product, as well as competitor prices. All results for the Anchoring Effect as nudge can lead to the conclusion that anchors do create change in the prediction of price, as well

as its perception. With this, we accept H2, leading in favor of the Nudge as a marketing strategy tool.

Settings for the mere exposure effect show no statistically significant difference between Groups. Complex stimuli exposure would lead to a longer liking, and people these days need more frequent exposure to a specific advertisement (stimuli) if we wish them to create higher preference, however, we need to mind not over-exposing them as well. This might be why the results here are as they are. Research of the mere exposure effect shows no significant difference in expected and observed values between Groups and leads us to the conclusion that H3 is not accepted.

As with other studies, ours is also unclear on the true effectiveness of nudges.

Hypothesis testing shows significance in the use of some of the nudges, while does not in others. With results for one of the nudges (anchoring) showing a steady significance in difference, another showing some results in favor and others not (decoy), and the final showing no significance (exposure), generalization on the overall use of nudges presents a difficulty. Overall results show that for some types of nudges and in some situations, their use could lead to higher benefit, to change in choice, prediction, evaluation, or perception, however definitely not in all. When implementing nudges within a business, the whole setting surrounding them would need to be evaluated. Marketers need to have a clear idea of how they wish to present themselves, how much this change will cost them and where or when should this change be implemented.

Use of the decoy could possibly help in steering choice from one product to another and could help in smarter product/service offers, leading to overall higher revenue. Anchoring with its influence in price “prediction” and perception would be useful in planning cost and when presenting products and position planning. Mere exposure shows no significant change of preference towards a stimulus. If proven relevant, mere exposure could help marketers understand frequency, place, and type of advertisements that would help get the organization/business/brand to gain a higher position in people’s minds.

Furthermore, it should be noted that since nudges affect a subconscious level of a more generalized population, individualization and personalization of nudges are not always needed, even though they have shown additional positive results (Peer et al, 2020).

While planning a strategy to include nudges, more aspects of the product/service production need to be kept in mind – ex. overall costs vs benefit

of decoy offer, target market, and resources available. Furthermore, knowledge of the existence of such nudges could help organizations by re-evaluating these offers, to see whether some of these nudges are unintentionally used, and steering customers away from our targets. Specifics of the organization's target Group, familiarity with the products/services we are offering, competitor offers, points of difference and points of parity, as well as marketers' target position, need to be kept in mind when implementing and using nudges to help strive a business.

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