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Research Paper

The Effect of Discount Price Framing on Purchase Intention of Fast-Food Bundles: An ERP Study

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ABSTRACT

Previous research on consumer behavior has shown that oftentimes, people are susceptible to a cognitive bias called the discount or price framing effect due to their limited capacity to process information. However, the effect of such discount framing in a fast-food bundling context and its neural underpinnings have not been fully characterized. Therefore, the present study investigated the neural correlates of discount framing on the purchase intention of fast-food bundles using event-related potentials. Six different discount framing conditions created and divided into 2 blocks with a maximum difference of Rs.10-Rs.15 between the conditions. The behavioral results showed that the zero pricing condition showed a higher purchase rate although the average reaction times did not differ significantly between the conditions. Neurophysiologically, it was found that there were no significant differences found between the electrodes for both Late Positive Potential and P300 amplitude between the different conditions.

Keywords: *Fast Food Bundles, Discount Framing, Neuromarketing, Event Related Potentials, LPP*

Price of a commodity is undoubtedly one of the most influential factors that consumers look for. They act as a clue for the consumers to use while making purchase decisions (Levrini, Gabriel & Santos, Mirela., 2021). With the advancement of e-commerce today, consumers are exposed to information from multiple sources that help them make effective purchase decisions. Although this may help consumers make better choices, cognitive bias could play an important role and could thereby affect the consumer's attentional processes.

Attribute framing is one such cognitive bias that has received extensive focus in the recent past. Attribute framing is when an attribute acts as a key factor in decision-making. The attribute framing effect occurs when a favourable decision is reached due to the key attribute being framed in a more positive light (Kuvaas, B., & Selart, M., 2004). When price is considered a key attribute, it's called price framing. Discount framing is a cognitive bias where buyers show a notable discrepancy in their preference of item choices when the same price information is portrayed in multiple ways. The role of price as one of the important determinants in a buyer's choice is well-researched in marketing literature and is also

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considered one of the most effective ways to influence their perceptions of the value of an item (Tripathi, A; Pandey, N., 2017).

Consumers have two ways of making choices of multiple items. They can choose an item individually, also called a single offering frame or select all items at once in the form of bundles, also called a bundled offering frame (Mittelman, M et al., 2014). Bundling is the joint selling of two or more products in a package. This common practice is utilized in marketing and is most commonly found in perfume or meal deals in fast-food sectors (Hähnchen, A et al., 2020). These bundles of products are typically cheaper than their individual components. Bundle pricing is a popular approach where a discount is offered on the bundle components or the whole bundle itself. It is a common practice and therefore most often buyers may infer savings when there is no discount information present for the bundle. Studies of price discount framing have attributed differential weighting of the values of individual product offers in the bundle. One paper argued that discounts are more effective when they are assigned to the product that receives the most weightage in the overall evaluation of the bundle. They conducted six experiments that provided evidence that consumers usually subjectively value individual products in an item bundle and then add these values to arrive at an overall evaluation of the bundle. When an individual product is assigned a price discount in a bundle the value of these discounts become referent dependent. These referents then anchor the value of a market priced product offer (Janiszewski, Chris & Cunha, Marcus. 2004). Although previous research has been able to answer the whys of bundling, there have been very few studies directed at how sellers should present their price to promote bundle offers. After carrying out an experiment, Yadav, M. S., & Monroe, K. B. (1993) were able to find out that when additional savings were presented directly on the product bundle, the greater impact it had on buyer's perception of transactional value than when the savings were presented on the bundle's individual items (Yadav, M. S., & Monroe, K. B., 1993). Another common cognitive bias encountered in consumer behavior and psychology is the "Zero Price Framing" effect. Previous studies have demonstrated that when buyers have to choose between two products they switch their preference from the more expensive product to the less preferable cheaper alternative when the cheaper option is free. This is called the zero price effect and applies to multi component contexts when one of the items in the bundle becomes free. A free product can become an attractive marketing strategy and this zero price effect can also be analyzed in the context of simple decision making of a hotel room that is provided with or without breakfast. This technique is mostly used in the tourism industry. The experiments conducted by Nicolau et al. (2012) showed evidence in favour of the free breakfast effect- the demand for the cheaper option that offers a free breakfast increased while for the preferred, more expensive alternative it decreased. This study showed that the zero price effect could be applied not just to single products but also to multi-component products (Nicolau, Juan & Sellers-Rubio, Ricardo.,2012). Another popular instance where the zero price effect is most commonly used is Amazon's free shipping policy for purchases above a particular cost (eg. Free shipping for purchases above Rs.2000/-). This was tested out in several different countries, and the zero price effect was obvious- most customers further added products to reach a purchase value of Rs.2000/- to get free shipping. This showed that for product bundles, zero-priced components can play an essential role in decision-making to increase sales. This usually happens because consumers take less time to make a purchase decision when a zero priced item is included and there also seems to be a higher level of positive emotion from buying a bundle with a zero-priced component than without it (Buynomics, 2019).

Although the practice of discount framing for bundles has been popular for several years, very little is known and understood about the influence of bundle price framing on consumer decision-making. In addition, prior studies have adopted behavioural approaches to understand price framing effects. Since cognitive processes play an important role and cognitive bias seems to influence consumers' decisions, it becomes essential to gain insight into the associated underlying neural mechanisms of how bundle price framing can influence information processing and thereby affect the purchase behaviour of consumers. Neuromarketing is a promising field that helps elucidate consumers' underlying thoughts and intentions. A study by Mo et al., 2019 investigated the electrophysiological brain activity of the effect of discount framing on consumer reactions towards bundles containing a high-priced component as well as a low-priced component. The stimuli used included various utilitarian items such as stationery, electronics, personal hygiene and daily necessities. They found that the participants showed considerable inconsistency in their choices when presented with different discount frames. They were more willing to buy the bundle when the discount was on the high-priced component or on the overall bundle than that on the low priced component. There was an increase in the P300 amplitudes between the 320 - 400 ms time window over the central-parietal regions for the high-priced product and the bundle compared with the low-priced product. The presence of P300 could suggest an increased usage of attentional resources for the evaluation and categorisation of stimuli (Mo et al., 2019). Another study investigating the price framing effect and its underlying neural correlates Ma, H et al., 2018 conducted an Event-Related Potential study and demonstrated that consumers processed different price frames differently. They found that the zero price condition elicited a higher purchase rate than the normal price suggesting that the zero-priced component motivated the buyers' buying decision. It was also noted that the reaction time for zero price was shorter since it was easier for the buyer to process it. The zero price triggered a larger LPP amplitude than the normal price condition, possibly due to the more positive effect induced by the zero price condition (Ma, H et. al., 2018).

The P300 amplitude is an electrophysiological marker of cognitive processing related to attention, working memory, and decision-making. In the context of a study investigating the effects of discount framing on buyers' purchase intention, the P300 amplitude can be used to measure the cognitive processes associated with evaluating the discounts presented to the participants. Specifically, an increased P300 amplitude may indicate that the participants are more attentive to the discount information and that they are more likely to integrate it into their decision-making process.

The late positive potential (LPP) is a positivity component that belongs to the P300 family and is generally evoked at around 400 ms after the onset of a stimulus and lasts for several 100ms (Schupp et al., 2000). It has a widespread scalp distribution - from the frontal to the parietal sites, with the strongest distribution in the central parietal sites. LPP is said to be sensitive to stimuli that are motivationally relevant to an individual and is thought to reflect overt and post-perceptive deliberative processing that is related to the significance of the stimulus. An augmented LPP is usually triggered by an emotionally significant stimulus relative to a neutral stimulus suggesting that there is an enhanced activation of the motivational system, increased resource allocation and sustained attention processing to motivationally relevant stimuli in the brain (Ferrari et al., 2011; Leite et al., 2012).

Therefore, the main aim of this study is to look at the effect of discount framing on the purchase intention of fast-food bundles using event-related potentials. To understand discount framing and the underpinnings of decision-making through electrophysiological

techniques, six different discount frames were created with almost identical total prices of a fast-food bundle. In the individual price condition (IP condition), the focal and the tie-in products were offered to the participants at a normal price, whereas in the combo price condition (CP condition) the products were bundled together and offered at a price with a difference of Rs.10 and in the zero price condition (ZP condition), the tie-in products were offered at a zero price or "free" price, and the total price of the bundle was increased by Rs. 15. Two other conditions, price slashing (PS condition) and discount stickers (DS condition) were also added to understand bundle pricing strategies better. This study considered four hypotheses: first, that discount framing would influence the purchase intention of the fast food bundle; second, that the reaction time for the discount conditions would be lesser than for individual/single price conditions. The third hypothesis stated that the higher impulsiveness (i.e., greater score on BIS) would result in faster RT on the experimental task. The final hypothesis stated that the LPP amplitude would be higher for discount conditions than for the non-discount conditions.

METHODOLOGY

Participants

The sample consisted of both men and women between the ages of 18-25 (M=22.2, S.D = 1.738) who are either working or pursuing their education. A total of 30 participants (13 females) were selected using a snowball sampling technique. All participants were right-handed, had normal or corrected-to-normal vision and were without any neurological or psychiatric illnesses Only participants who consumed both meat and vegetarian food were considered in the study.

They were provided with printed informed consent and the Barratt Impulsiveness Scale (BIS) to measure their impulsivity prior to the start of the experiment. Data from three participants were excluded from the study due to excessive artefacts during the EEG recording and due to the lack of enough responses during the stimulus presentation, resulting in 27 valid participants.

Experimental Stimuli

The task included 19 fast-food item combinations (burgers, sandwiches, soda, fries etc.) in. All combinations consisted of 3 items (for example: burger, fries and a can of juice) to maintain consistency across all conditions and blocks. All the pictures were taken from Google and were made sure they are neutral. No brand names or logos were shown during the experimental task so as to make sure that this does not interfere with their choices. The task consisted of two blocks based on the different pricing strategies. The first block consisted of individual pricing, combo pricing and zero pricing conditions whereas the second block consisted of single pricing, price slashing and discount sticker pricing strategies. Individual pricing conditions remained in both blocks although it was renamed to single pricing in the second block for convenience. Two different pricing strategies were presented at a time on each slide. The participant was asked to make a choice between the fast-food bundle choice on the left and the one on the right. They were asked to press "4" if they opted for the choice on the left and "6" if their choice was on the right. All pictures had a uniform size of 840 x 640 pixels to ensure consistency in the experimental procedure. The task consisted of 38 trials and under each trial, there were 6 sub-trials. Therefore, in total, the experiment consisted of 228 trials throughout. The price difference for the different pricing strategies was maintained at Rs.10-Rs.15.

Procedure

Participants were asked to come to the Axxonet System Technologies lab for the data collection. All the participants taking part in the study received informed consent before they performed the experiment. They were also asked to fill the Barratt Impulsiveness Scale (see appendix) to measure the participants' impulsiveness. The experiment was conducted in a dimly lit and soundproof room. The distance between the subject and the computer screen was maintained at 1.75m. The stimuli were presented on a 19-inch computer screen. Participants were given a keyboard to record their choices. No practice trials were given before the actual experiment. The participants were given clear instructions about the task and were asked to respond as quickly as possible. As illustrated in Figure 1 (a) and (b), there were 6 discount pricing strategies that the study is aimed to look at - combo pricing (CP), zero pricing (ZP), slash pricing (SP), discount stickers (DS) and individual pricing/single pricing (IP/SP). The experiment was designed in two unrepeated blocks, of which, the first block looked at individual pricing (IP), combo pricing (CP) and zero pricing (ZP), while the second block focused on single pricing (SP), price slashing (PS) and discount stickers (DS). As mentioned previously, the individual pricing (IP) condition will remain constant in both blocks but was termed "single pricing" condition in Block 2 to avoid confusion during data analysis.

As illustrated in Figure 1 (c), each trial began with a central fixation cross for 1000ms, followed by the presentation of the stimulus along with the price for 2000ms. Two different pricing strategies were shown on the screen at a time and the participant was asked to make a choice. They were asked to either press 4 if they chose the bundle option on the left and "6" if they chose the bundle option on the right. The fast-food bundle options were counterbalanced within the block and in each trial to avoid any kind of practice effects. The formal experiment consisted of about 228 trials. The experiment was conducted over approximately 15-20 minutes. After each block, the participants were given about 30 secs as a break.

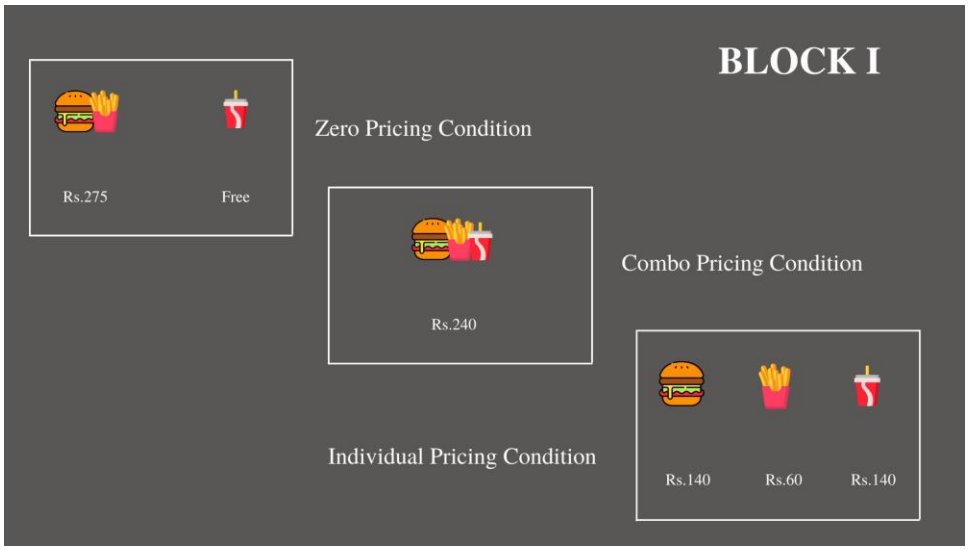

Figure 1 (a). The stimuli in the first block will be presented with different price discounting strategies, ie combo pricing and zero pricing

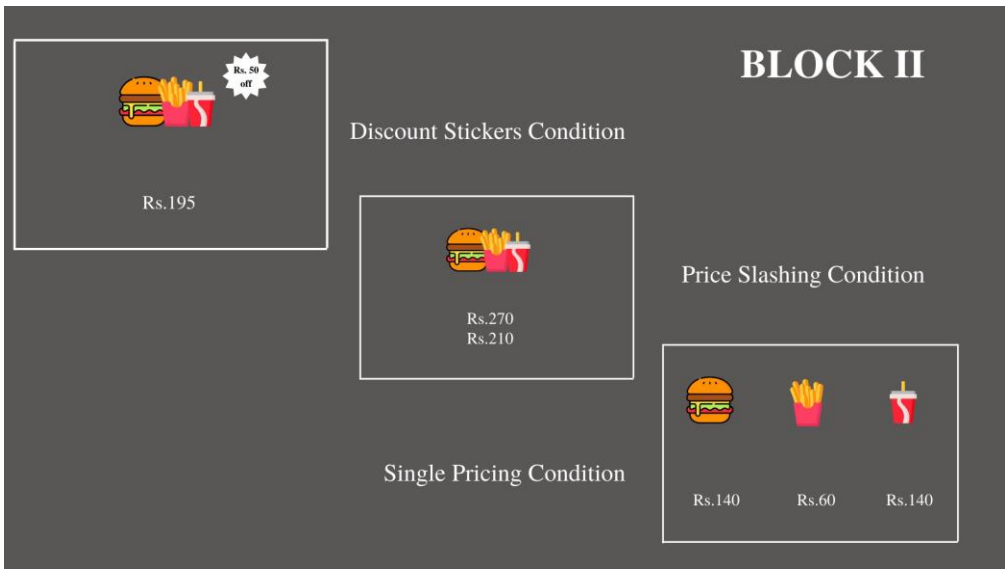

Figure 1 (b). The stimuli in the first block will be presented with different price discounting strategies, i.e. price slashing and discount stickers

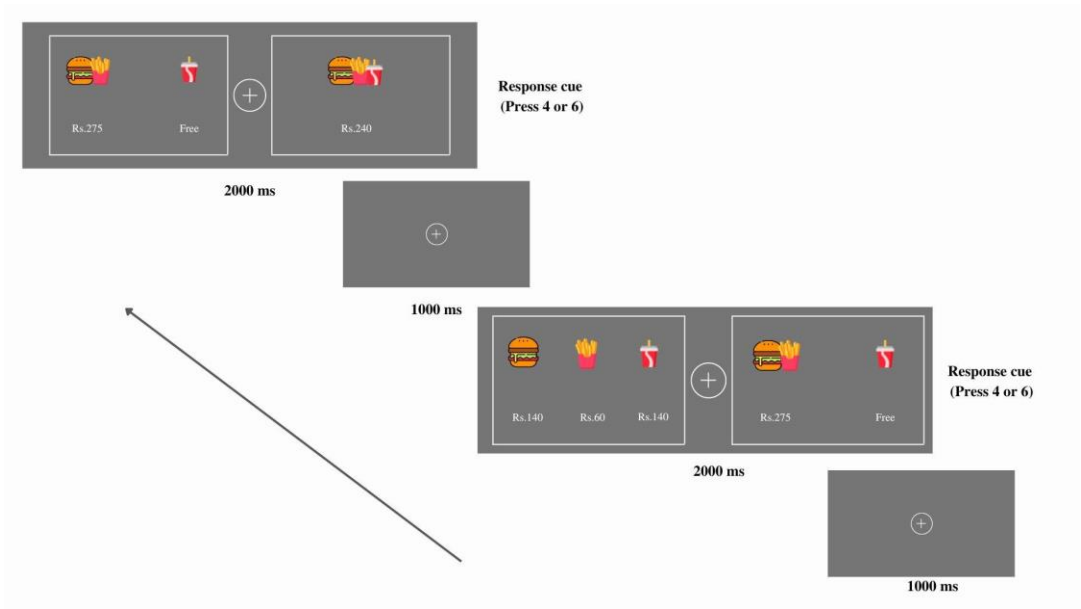

Figure 1(c). The experimental flow of the price discounting task

Electrophysiology & Data Analysis

Event-related potentials can be noted as EEG changes that generally occur in response to a stimulus. ERPs can provide a non-invasive method of understanding the electrophysiology of mental processes. (Sur & Sinha, 2009). EEG was recorded through a 32-electrode RapidCap.

The bandpass filter was maintained at 1-70Hz and the sampling rate at 500Hz. Data was recorded by 32 scalp site Ag/AgCl electrodes which followed the standard international 10-20 system. The EEG data were segmented into epochs of 2500ms, time-locked to price onset and included a 200ms pre-stimulus baseline. Artefacts that exceeded +/-100V were removed from the analysis. The ERP averages will be created separately for each experimental block. Data analysis was carried out through BESS (Brain Electrical Scan System). This study focussed on the late positive potential (LPP) component and P300 that is assumed to be

elicited by the emotional processing of different price frames and allocation of attentional resources respectively. Although EEG data was collected using 32 electrodes, only eight electrodes (C3, Cz, C4, CP3, Cp4, P3, Pz, P4) were used in the ERP analysis. The grand average waveforms were taken from the above-mentioned eight electrodes and the time window for the LPP component was set at 400-600ms after the onset of the stimulus. A 3(price frames: individual pricing, combo pricing, zero pricing) x 8 (C3, Cz, C4, CP3, Cp4, P3, Pz, P4) in block 1 and a 3 (price frames: single pricing, price slashing, discount stickers) x 8 (C3, Cz, C4, CP3, Cp4, P3, Pz, P4) repeated-measure ANOVA analysis was performed for the ERP analysis.

RESULTS

Behavioral Data

Purchase rate

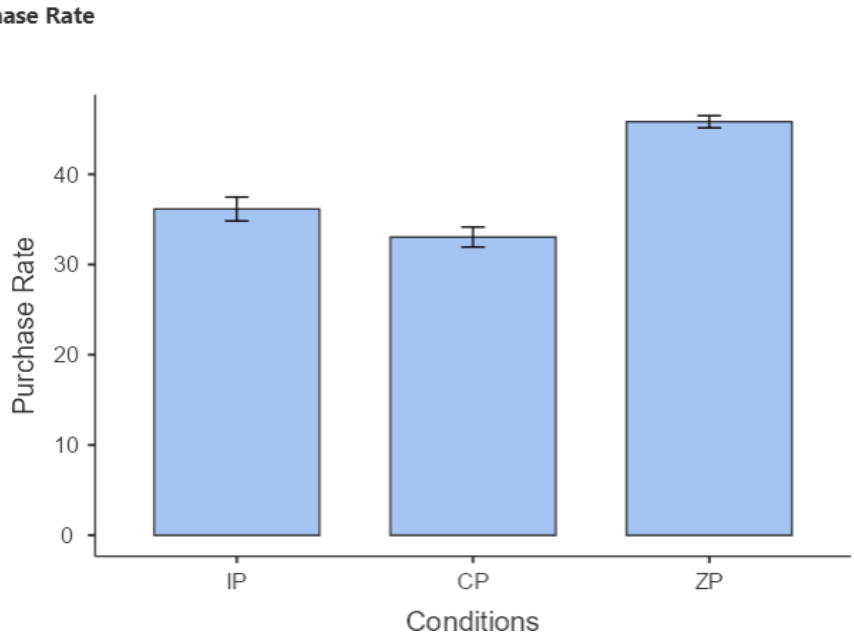

Figure 2(a). Average purchase rate of IP, CP, ZP conditions in Block 1

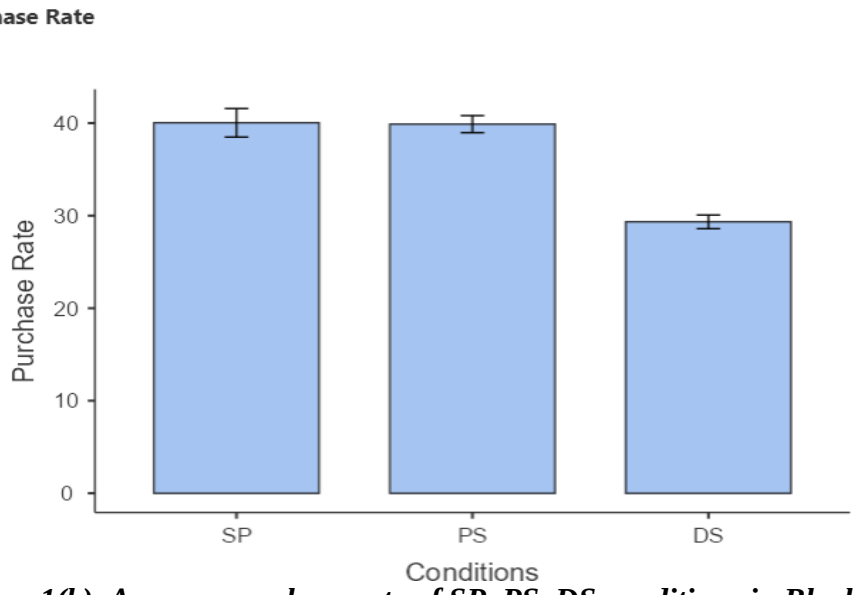

Figure 1(b). Average purchase rate of SP, PS, DS conditions in Block 2

Table 1. Repeated Measures of ANOVA (Friedman's Test)

χ^2	df	p
76.4	5	<.001

Table 2. Pairwise Comparison of Purchase Rate between the conditions (Durbin-Conover)

			Statistic	p
IP	-	CP	1.039	0.301
IP	-	ZP	7.271	<0.001**
CP	-	ZP	8.310	<0.001**
SP	-	PS	0.765	0.445
SP	-	DS	8.256	<0.001**
PS	-	DS	7.490	<.001**

Since the data were not normally distributed, the Friedman test which is the non-parametric alternative of one-way ANOVA was used to analyze the differences in purchase rates across the different conditions. The results suggested that there was a statistically significant difference in purchase rate across the six different conditions with $\chi2(5) = 76.4$, p = <.001 (Table 1).

Pairwise comparisons using Durbin-Conover indicated that purchase rate differed significantly between IP and ZP (F = 7.271, p <0.001), CP and ZP (F = 8.310, p <0.001), SP and DS (F= 8.256, p <0.001) and between PS and DS (statistic = 7.490, p < .001). There was no significant pairwise difference seen for IP and CP (statistic = 1.039, p =0.301) and SP and PS (statistic = 0.765, p = 0.445).

Reaction Time

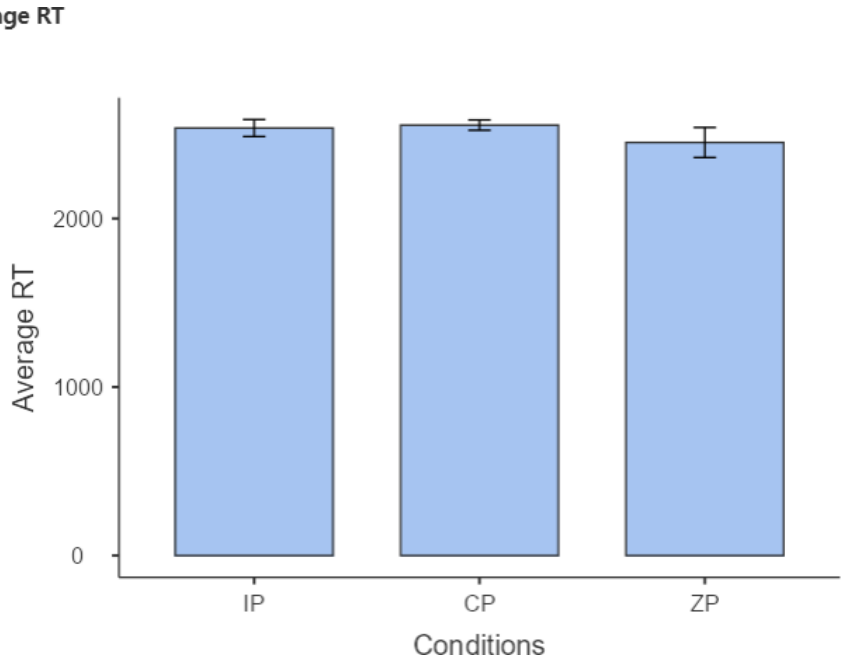

Figure 3(a). Average reaction time of IP, CP, ZP conditions in Block 1

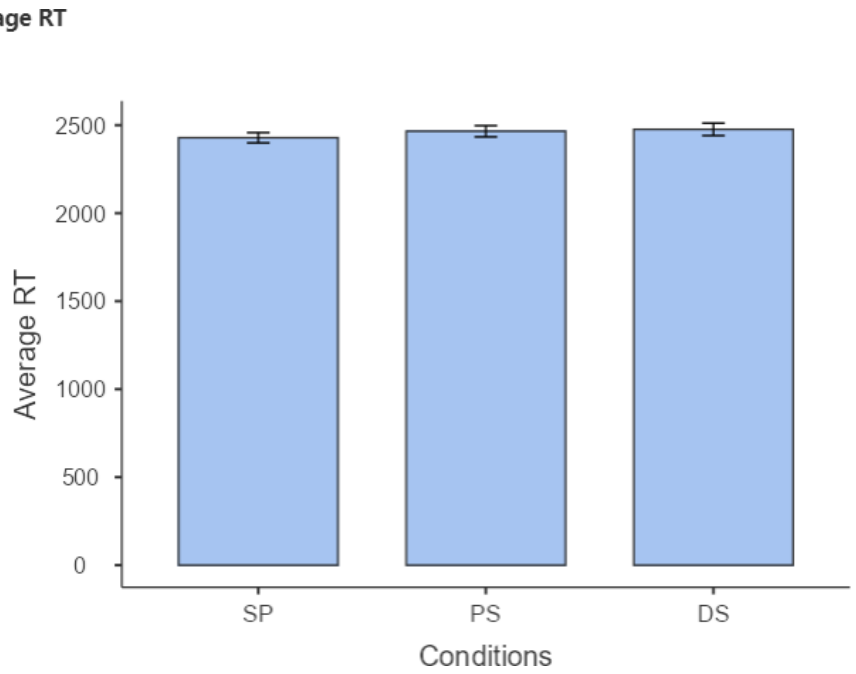

Figure 3(b). Average purchase rate of IP, CP, ZP conditions in Block 1

Table 3. Repeated Measures of ANOVA (Friedman's Test)

χ^2	df	p
28.3	5	<.001

Table 4. Pairwise Comparison of Reaction time between the conditions (Durbin-Conover)

			Statistic	p
IP	-	CP	0.241	0.801
IP	-	ZP	1.525	0.130
CP	-	ZP	1.284	0.201
SP	-	PS	1.766	0.080
SP	-	DS	2.408	0.017**
PS	-	DS	0.642	0.522

A Friedman test was used to analyze the differences in reaction times across the different conditions (Table 3). The results suggested a statistically significant difference in reaction times across the six conditions with $\chi2(5) = 28.3$, $p = < .001$. Pairwise comparisons using Durbin-Conover indicated that there were no significant pairwise differences between the discount conditions (Table 4). There was a significant pairwise difference in reaction times between SP and DS (Statistic = 2.408, p = 0.017).

Impulsiveness

Table 5. Correlation between BIS Score and Reaction Time

		BIS Score	Reaction Time
BIS Score	Spearman's rho	—	
	p-value	—	
Reaction Time	Spearman's rho	0.010	
	p-value	0.961	

*Note. * p < .05, ** p < .01, *** p < .001*

A correlation between BIS score and RT was performed to understand whether there was any relationship between the impulsiveness of the participant and their reaction time during the experimental task (Table 5). A Spearman's rank correlation was computed to assess the relationship between BIS Score and RT. It was found that there was a non-significant positive correlation between the two variables, rs = 0.010, p = 0.961.

ERP Data

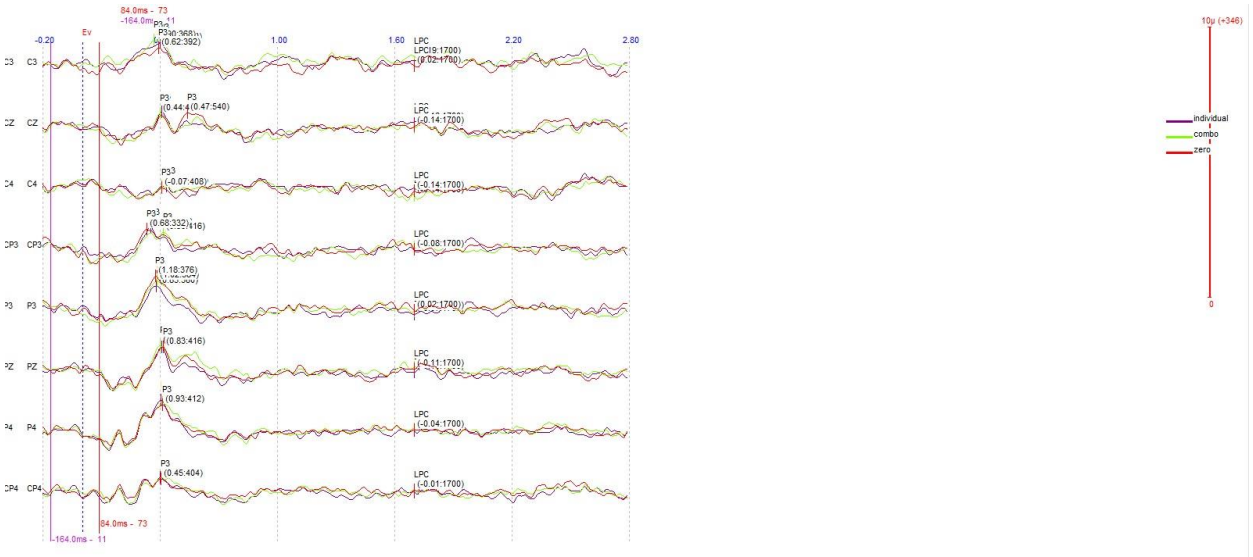

Figure 4 (a). The grand averaged waveforms for conditions individual pricing (left), combo pricing (left) and zero pricing (left) from Block 1.

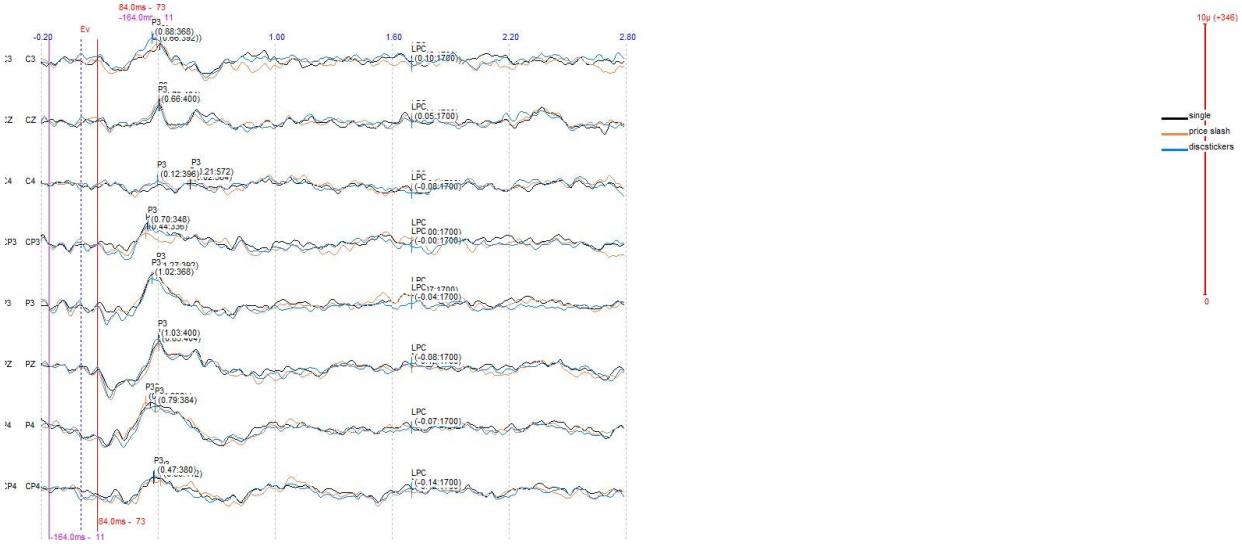

Figure 4 (b). The grand averaged waveforms for conditions single pricing (left), price slashing (left) and discount stickers (left) from Block 2.

Figure 4 (a) shows the grand averaged waveforms for C3, Cz, C4, Cp3, P3, Pz, P4 and Cp4 electrode channels for individual, combo, and zero pricing conditions that were presented in Block 1. Figure 4 (b) shows the grand averaged waveforms for C3, Cz, C4, Cp3, P3, Pz, P4 and Cp4 electrode channels for single pricing, price slashing and discount stickers conditions that were presented in Block 2.

i) LPP Amplitude

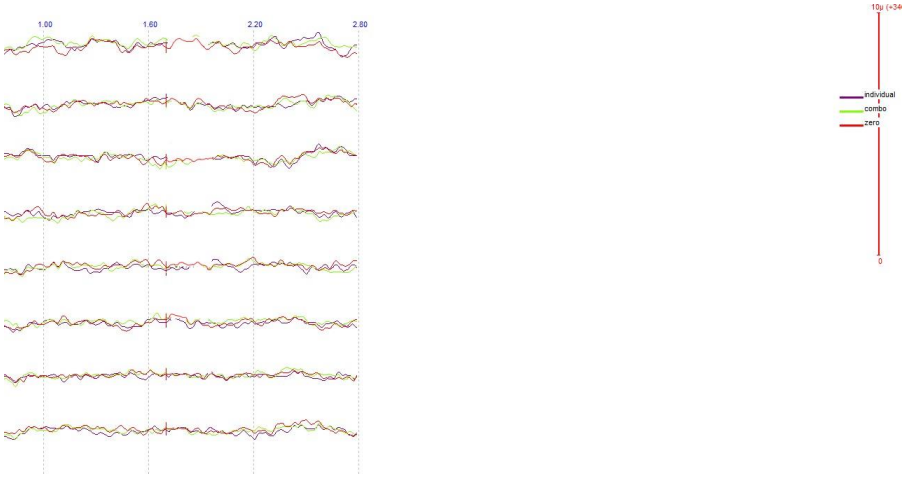

Figure 5 (a). LPP amplitude for individual pricing, combo pricing, and zero pricing conditions seen in Block 1.

Table 6. Repeated Measures ANOVA (Friedman's Test) for Block 1

Friedman

χ^2	df	p
23.8	23	0.414

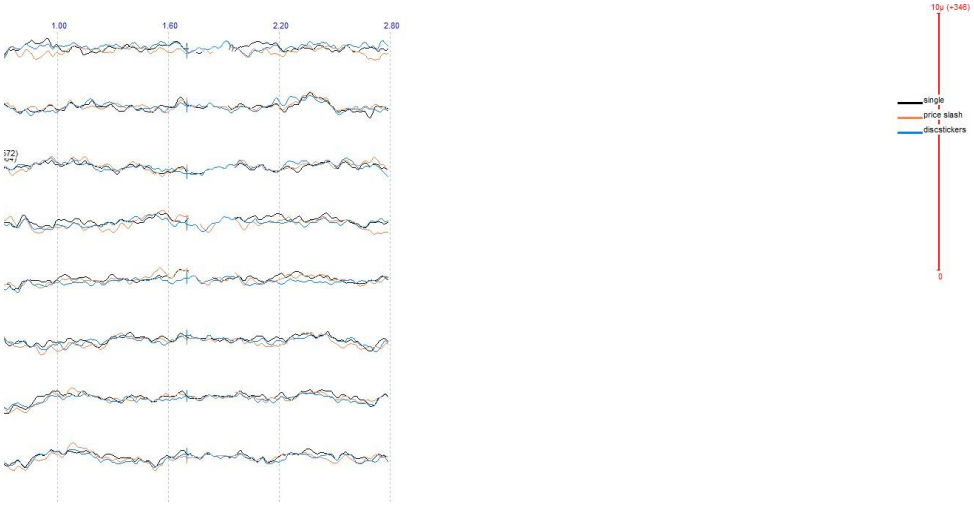

Figure 5 (b). LPP amplitude for single pricing, price slashing and discount sticker conditions seen in Block 2.

Table 7. Repeated Measures ANOVA for Block 2 Within Subjects Effects

	Sum of Squares	Df	Mean Square	F	P	η^2G
Condition and Electrode	3.53	23	0.153	0.986	0.482	0.30
Residual	93.04	598	0.156			

Note. Type 3 Sum of Squares

A Friedman's test examined the differences in LPP amplitude between electrode sites for conditions in Block 1 (Table 6). The results indicated no statistically significant difference in LPP amplitude between electrode sites, $\chi^2(23.8) = 23$, $p = 0.414$.

A repeated measures ANOVA was conducted to examine the differences in LPP amplitude between electrode sites in Block 2 (Table 7). The results indicated no statistically significant difference in LPP amplitude between electrode sites, $F(23, 26) = 0.986$, $p > .05$, $\eta p^2 = 0.30$.

ii) P300 Amplitude

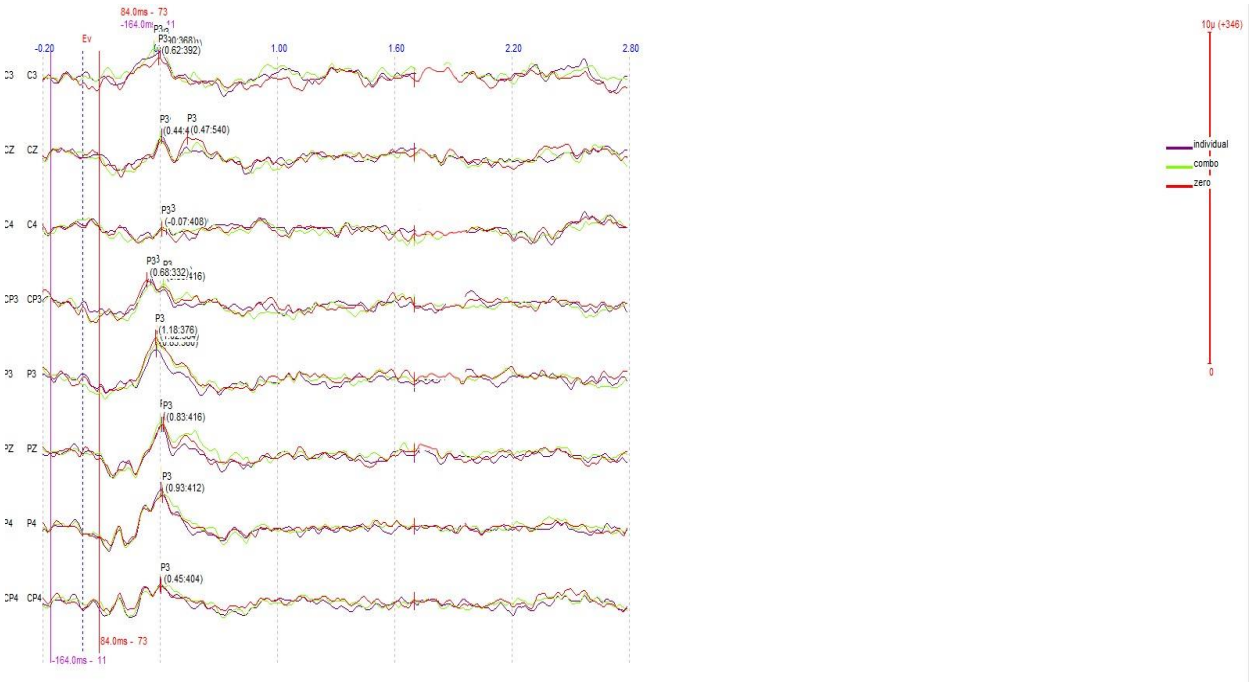

Figure 6 (a). P300 amplitude for individual pricing, combo pricing, and zero pricing conditions seen in Block 1

Table 8. Repeated Measures ANOVA (Friedman's Test) for Block 1

Friedman

χ^2	df	p
52.0	23	< 0.01

Pairwise Comparisons (Durbin-Conover)

		Statistic	p
C3_IP	C3_CP	0.3354	0.737
C3_IP	C3_ZP	0.197	0.84
Cz_IP	Cz_CP	0.2269	0.821
Cz_IP	Cz_ZP	0.7399	0.460
C4_IP	C4_CP	0.3946	0.693
C4_IP	C4_ZP	0.6708	0.503
Cp3_IP	Cp3_CP	0.6116	0.541
Cp3_IP	Cp3_ZP	1.4205	0.156
P3_IP	P3_CP	0.0592	0.953
P3_IP	P3_ZP	0.3749	0.708
Pz_IP	Pz_CP	0.6116	0.541
Pz_IP	Pz_ZP	0.4735	0.636
P4_IP	P4_CP	0.1973	0.844
P4_IP	P4_ZP	0.3058	0.760

Table 8. ***Pairwise Comparisons (Durbin-Conover) (continued)***

		Statistic	p
Cp4_IP	Cp4_CP	0.1184	0.906
Cp4_IP	Cp4_ZP	0.4538	0.650
C3_CP	C3_ZP	0.1381	0.890
Cz_CP	Cz_ZP	0.9668	0.334
C4_CP	C4_ZP	0.2762	0.782
Cp3_CP	Cp3_ZP	0.8089	0.419
P3_CP	P3_ZP	0.3157	0.752
Pz_CP	Pz_ZP	0.1381	0.890

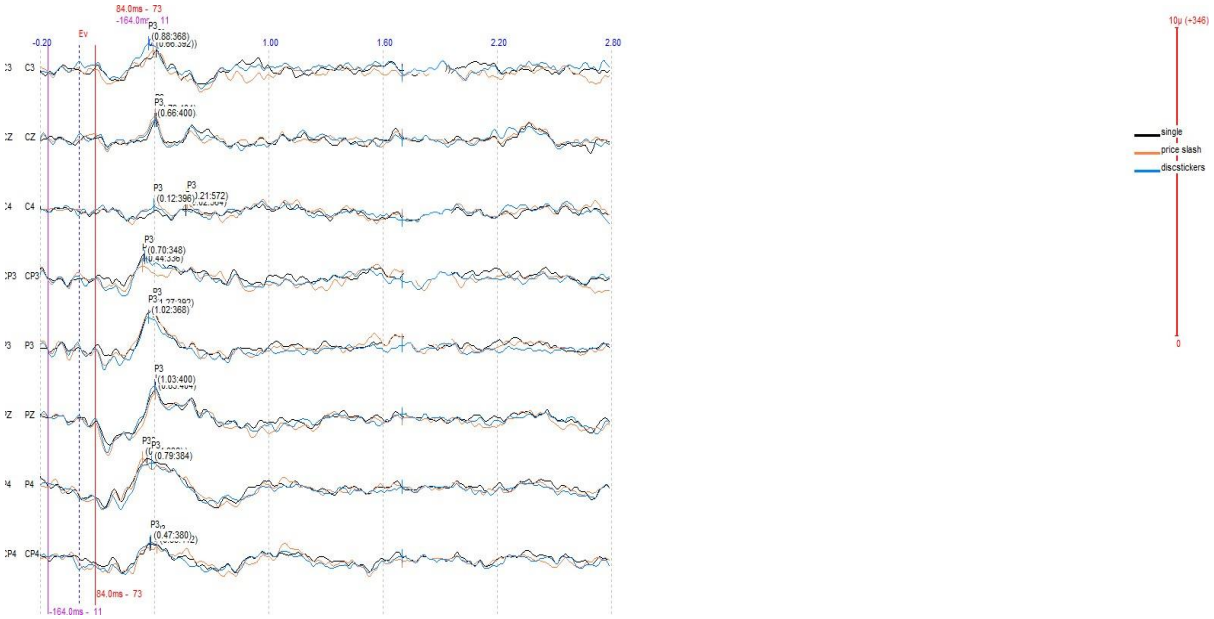

Figure 6 (b). P300 amplitude for single pricing, price slashing and discount sticker conditions seen in Block 2.

Table 9. Repeated Measures ANOVA for Block 2

Friedman

χ^2	df	p
67.0	23	< 0.01

Pairwise Comparisons (Durbin-Conover)

		Statistic	p
C3_SP	C3_PS	0.08998	0.928
C3_SP	C3_DS	0.4798	0.6
Cz_SP	Cz_PS	0.01000	0.992
Cz_SP	Cz_DS	0.39989	0.689
C4_SP	C4_PS	0.84977	0.396
C4_SP	C4_DS	1.30965	0.191
Cp3_SP	Cp3_PS	0.25993	0.795
Cp3_SP	Cp3_DS	0.19995	0.842
P3_SP	P3_PS	0.53986	0.589
P3_SP	P3_DS	0.03999	0.968

Table 9. ***Pairwise Comparisons (Durbin-Conover)*** (continued)

		Statistic	p
Pz_SP	Pz_PS	0.13996	0.889
Pz_SP	Pz_DS	0.01999	0.984
P4_SP	P4_PS	0.37990	0.704
P4_SP	P4_DS	0.49987	0.617
Cp4_SP	Cp4_PS	0.00000	1.000
Cp4_SP	Cp4_DS	0.33991	0.734
C3_PS	C3_DS	0.56985	0.569
Cz_PS	Cz_DS	0.38990	0.697
C4_PS	C4_DS	0.45988	0.646
Cp3_PS	Cp3_DS	0.45988	0.646
P3_PS	P3_DS	0.57985	0.562
Pz_PS	P3_DS	0.15996	0.873
P4_PS	P4_DS	0.11997	0.905
Cp4_PS	Cp4_DS	0.33991	0.734

A Friedman's test was conducted to examine the effect of electrode sites on P300 amplitude for Block 1 (Table 8). The results indicated a statistically significant difference in P300 amplitude between electrode sites, $\chi^2(23) = 52$, $p < 0.01$. Post hoc pairwise comparisons (Durbin-Conover) revealed significant differences between electrode sites but within the same electrode sites, there was no significant difference across the different conditions.

A Friedman's test was conducted to examine the effect of electrode sites on P300 amplitude for Block 2 (Table 9). The results indicated a statistically significant difference in P300 amplitude between electrode sites, $\chi^2(23) = 67.0$, $p < 0.01$. Post hoc pairwise comparisons (Durbin-Conover) revealed significant differences between electrode sites but no significant difference was seen across the different conditions within the same electrode sites.

DISCUSSION

The main aim of the current study was to discern the neural underpinnings of discount framing and how it can influence a consumer to make certain purchase decisions. The behavioural and neurophysiological results obtained from the sample provide evidence that discounts affect the consumer's decision-making.

A remarkable price framing effect was observed regarding the purchase rate: participants showed higher purchase rates when shown fast-food bundles containing a free component rather than individual or combo pricing conditions. One reason that could account for the effects of the zero price is that such options are perceived as "no cost" or "no downside" by the consumer, thereby invoking a more positive affective response in the consumer. This reaction acts as a decision-making cue for the consumer; therefore, they opt for the free option more often than the others (Shampanier et al., 2007). Several studies have also demonstrated the effect of zero price- when people are given a choice between two products, they tend to change their preference from a more expensive product to a cheaper alternative when the cheaper option is offered for free (Votinov, M et al., 2016). An fMRI study was conducted on participants to understand the neural mechanisms of consumers shifting their preferences under the zero price condition. At the same time, they were asked to complete a binary preference choice task for items with different prices. They found greater activation of the chosen network, including the inferior parietal lobule, the posterior cingulate cortex

and the medial prefrontal cortex, during zero-related preference change. They also found that the activation of the medial prefrontal cortex was positively correlated with the subjective happiness score of getting free products. These findings prove that affective evaluations drive the zero-price effect during decision-making (Votinov, M et al., 2016). In this study, too, although the affective states of the participants were not objectively measured, there seems to be a significant difference in the purchase rates between the zero price condition and the other discount conditions, thereby proving that when the tie-in product is offered free, there is a stronger positive affect. In the second block, the discount conditions were price slashing and discount stickers. Here, it was noted that the discount stickers had the least purchase rate. Although it is hard to pinpoint the exact rationale behind this, it may have to do with the consumers' perceived notion of savings. One study investigating the relationship between price discounts and consumers' perceptions of savings, quality and value found that the price discount effect was mediating between the two. When the price discount effect served as a mediator, it led to a positive perception of the product (Lee, J.E et al.,2018). It could be that, in this study, the discount stickers condition could not induce a positive price discount effect as the price slashing or even the single pricing condition and, therefore, had a considerably lesser purchase rate.

Several studies have found that reaction time negatively correlates with task difficulty and cognitive load. Therefore, a shorter reaction time suggests a lower cognitive load and task difficulty. A study conducted in 2017 examined the role of attribute framing in the information processing and decision-making of consumers in an online shopping task. Participants demonstrated a higher purchase intention with a shorter RT when the information was presented positively (positive attribute framing condition) than in the negative framing condition (Jin J et al., 2017). Although other studies have replicated such findings, our study did not find any significant differences in the reaction times of the normal and discount price conditions. This could have been because the stimuli were shown on the participant's screen for a very short duration (2000ms), leading to no differences in the participants' reaction times across the different discount conditions.

Often, food choices are driven by impulsive tendencies rather than rational considerations. Therefore, assessing the participants' impulsiveness became important since some individuals find it harder to resist impulses regarding fast food choices. Although previous research has not considered the correlation between impulsiveness and the participants' reaction time on the task, this study hypothesised that the higher the BIS score, the faster the participants' reaction time on the experimental task. Through the study, we found a non-significant slight positive correlation between impulsiveness and RT.

The fourth hypothesis of the study stated that the LPP amplitude and the P300 amplitudes would be higher for discount conditions than for the non-discount conditions. The late positive potential is often modulated by the emotional intensity of a particular stimulus and is seen over the visual cortical areas. Regarding the LPP amplitude, no significant differences were found between the electrode sites for both blocks. This could suggest that the LPP amplitude did not significantly impact the affective processing associated with the task or stimuli used in the experiment. The P300 is another event-related potential component elicited in the decision-making process. In this study, it was seen that there were significant differences found between the electrode sites for the P300 amplitude. After further analysis, it was seen that the difference did not exist across the different conditions within the same electrode sites. The lack of difference in the P300 component could suggest that the discount did not significantly impact these cognitive processes. Since the difference

between the discounted and the non-discounted prices were kept at a minimal rate (a difference of Rs.10-Rs.15 was maintained), this could have affected the P300 component in the study and therefore did not have a significant effect on the participants' cognitive processes.

CONCLUSIONS

In conclusion, it was found that the discount framing conditions affected the purchase intention of fast-food bundles. The behavioural analysis found that the zero pricing condition had a higher purchase rate than the other two conditions; no significant differences were seen in the purchase rates of the different conditions in the second block of the experiment. There were no significant differences noted in the average reaction times between the discount price conditions and the normal price conditions. It was also found that there is a non-significant positive correlation between impulsiveness and the average reaction time across the different discount pricing conditions.

Lastly, it was also found that there were no significant differences found between the electrodes for both LPP and P300 amplitude across the different conditions within the same electrode site.

Future Directions

The present study mostly focused on fast-food item bundles. Considering other categories such as electronics, furniture etc. would have given us a better understanding of how to price framing works in different contexts and situations. Future research could focus on other categories that use bundle pricing to understand pricing strategies better. Secondly, the research was carried out in a simulated environment and, therefore, could have produced contrasting results than an experiment that is conducted in a more natural setting. The sample size could have played a role too. The study was conducted on a sample size of 30, of which only 27 could be considered for statistical and data analysis. The small size of the sample could have impacted the results of this study. Considering a bigger sample size in future studies could provide us with more insight into consumer behaviour, especially regarding discount framing. Additionally, other electrophysiological techniques, such as eye-tracking, could also give us better insight into consumer behaviour and understand discount framing more effectively.

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Conflict of Interest

The author(s) declared no conflict of interest.

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