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Erasmus School of Economics,
Erasmus University

CHANGING PRODUCT PERCEPTION FOR COLA BRANDS ACROSS CONSUMPTION SCENARIOS

Bachelor's Thesis

Student Number : 434681

Student Name : Atif Parekh

Thesis Coach : M. Asim MSc

Thesis Co-reader : Prof. dr. W.J.M.I. Verbeke

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Preface

This thesis has been submitted in partial fulfilment of the International Bachelor Economics & Business Economics, under the Department of Marketing within Erasmus School of Economics, Erasmus University. It was written under the supervision and coaching of M. Asim. This thesis is original, unpublished, independent work by the author, Atif Parekh. The copyright of the bachelor thesis rests with the author. The author is responsible for its contents. ESE is only responsible for the educational coaching and cannot be held liable for the content.

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Abstract

The cumulative value of the Top 100 most valuable global brands in 2018 stands at a staggering \$4.4 trillion. Brands are very powerful influencers and have a significant impact on the decision-making of consumers when purchasing goods and services, to the extent that consumers oftentimes would prefer the product of a specific brand from amongst a selection of almost identical products.

Taking into consideration the value of marketing and brand perceptions especially in a competitive consumer goods industry, this thesis attempted to evaluate the influence of brands on product preferences for colas. An experiment was conducted with 29 participants using 3 brands of colas; Coca-Cola, Pepsi and AH Cola; the experiment consisted of three sections, memory recollection survey method, blind taste testing and revealed taste testing. The thesis also conducted additional tests on willingness to switch and elements of advertisements influencing sales.

This thesis concluded that the ratings consumers gave to the different elements of taste did not significantly change over the three consumption scenarios, i.e. perceptive, blind taste test and revealed taste tests. This shows that taste does not seem to be the key driver in influencing perceptions and preferences of consumers with availability & convenience and branding taking first and second place respectively for the main drivers as seen from this test. This paper also rejected the “Pepsi Paradox” along with claims that Cola brands have successfully built a highly positive perception of the experience of consuming cola regardless of brand using convincing marketing strategies and campaigns.

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1. Introduction

*“A brand is no longer what we tell the consumer it is –
it is what consumers tell each other it is”*

- Scott Cook

In medieval times as well as in present day, the act of burning an identifying mark onto the flesh of livestock with a heated iron, is used a way for farmers to identify their livestock. The term ‘brand’ originates from the Old Norse word ‘brandr’, which literally translates “to burn” and refers to the act of “branding” livestock (Clifton & Simmons, 2003). However, the actual origins of using brands and branding to facilitate trade practices can be traced back to the old Greek and Mesopotamian civilizations, where they used name and symbols/marks to differentiate their goods – the majority portion of these goods was covered by wines, ointments and metals amongst other things (Sarkar & Singh, 2005).

As a contrast from the earlier Greek and Mesopotamian times, the definition of a Brand has not revolutionized which can be observed from the definition set by the American Marketing Association in 1960, which is set as, “A name, term, design, symbol, or a combination of them, intended to identify the goods or services of one seller or group of sellers and to differentiate them from competitors”. Similarly, other

recent literature also summarizes brands as a means to differentiate from competitors (Maurya, 2012) which can be divided in two parts; the first part is conveying information about origin and quality of the goods/services and the second part to convey a meaning and/or image in terms of its value, status/power and/or personality (Moore & Reid, 2008).

However, the influence and presence of by these brands has expanded from a small array of products to every almost every interaction in our lives, every day we are surrounded by brands 24/7, in our closets, around the house, at work and even on the road, to the extent that almost everything that we interact with inevitably reminds us of a brand or its products. This presence and understanding of brands is so high that most of us can recognise the brand someone is wearing by a tiny symbol or a specific design on their clothes.

The cumulative value of the Top 100 most valuable global brands in 2018 stands at a staggering \$4.4 trillion, the top 100 brands clocked a 21% increase in value adding a record \$748 billion in new value generated. These top 100 brands belong to different 24 kinds of categories ranging from technology to retail and fast food to Apparel.

These brands have amassed the aforementioned colossal brand values primarily based on all the mental associations that consumers have around them (Brown, 1992). These mental associations are thought to create perceptions which transform the experience of using the services and products provided by these brands. Given that these brand perceptions shape our purchase decisions, sometimes, even without any interaction with the product itself, shows the sheer power of Brand Marketing. However, it is important to note that in majority cases,

these perceptions and expectations need to be delivered with the product, otherwise, in most situations, consumers are likely not to repeat purchases.

An example of these perceptions shaping influence experience was studied by Branthwaite & Cooper (1991), where they conducted a double-blind experiment with a branded and an unbranded (chemically identical) set of painkillers. They concluded that the participants in the experiment perceived the branded pain killer to be relatively more effective as compared to unbranded pain-reliever (Branthwaite & Cooper, 1981; Kühn & Gallinat, 2013)

Brands are very powerful influencers and have a significant impact on the decision-making of consumers when purchasing goods and services, to the extent that consumers oftentimes would prefer the product of a specific brand from amongst a selection of almost identical products (Kühn & Gallinat, 2013; Torres-Moreno, Tarrega, Torrescasana, & Blanch, 2012). Given this scenario, this makes it equally difficulty and important for new brands to develop a brand personality and a communication strategy for this personality in order to garner a positive brand perception which can potentially lead to growing sales.

Within the present study we set out to establish how a new cola brand could go about formulating a brand perception, using product characteristics and marketing campaigns. Cola (soft-drink) has been selected for this research due to a number of reasons. Firstly, the cola industry already has couple of globally established brands, Pepsi and Coca-Cola both of which belong in Top 100 most valuable global brands for the past 10 years - hence, rendering the test on branding to be effective. Secondly, Cola constitutes as a similar and comparable

product across the market with relatively small changes in taste profiles between products. Thirdly, the already existing information in the shape of existing literature on the “Pepsi vs. Coke debate” along with the consumers having strong formulated opinions on preference and perception already.

This paper will compare brand preferences and perceptions of Coca-Cola, Pepsi and Albert-Hiejn Cola by conducting taste, perception and marketing experiments before formulating a marketing and product recommendation for a new cola brand.

1.1 Cola Wars

Before conducting the experiment and reviewing existing literature, it is essential to illustrate the context of the Cola Wars between Pepsi and Coca-Cola, which have enjoyed a lengthy rivalry over the past decades.

A few years after the inception of the formulation of Coca-Cola in 1886 by a pharmacist named John Pemberton, Asa Candler acquired the formula and began commercialising the drink. In 1899, he granted the company, its first bottling franchise from where Coca-Cola’s network proliferated, attracting 370 franchises by 1910.

This rapid growth attracted a lot of attention which led to multiple attempts to copy the cola with the likes of Coca-Kola, Koca-Nola and Cold-Cola etc. Coca-Cola fought these companies aggressively in court with about 153 cases ending in Coca-Cola’s favour in 1916 alone.

Similar to Coca-Cola, Pepsi was also invented by a pharmacist in 1893 which was followed by a franchise bottling system, which by 1910 had amassed a network of 270 retailers.

Pepsi was also one of the companies that faced a lawsuit from Coca-Cola for infringement of its trademark. The court, however, ruled its decision in favour of Pepsi in 1941 ending a long-lasting series of suits and countersuits.

In 1950, Coca-Cola boasted a market share of about 47% as compared to the 10% owned by Pepsi in the U.S. carbonated soft drinks market, with hundreds of other companies collecting the remaining 43% with a wide range of flavours.

In the late 1970s and early 1980s, Pepsi gradually gained market share in comparison to Coca-Cola. In 1979 Pepsi, for the first time surpassed Coke in the number of food store sales with a 1.4 share point lead. A majority of the credit of this feat was owed to the “Pepsi Challenge” launched by Pepsi in 1974.

The Pepsi Challenge was a series of blind taste tests where the goal was to demonstrate that consumers preferred Pepsi to Coke in terms of taste. The challenge was started in Dallas by one of Pepsi’s local bottler, but after the overwhelming response with the increase of sales in Dallas, Pepsi decided to roll the campaign nationwide.

Given the success of Pepsi’s campaign and knowing that Pepsi was outselling Coke in supermarkets, it sent Coca-Cola on a frenzy looking for strategies to compete with Pepsi. Coca-Cola attempted to counter the campaign and the loss of sales with competing claims, discounts and a series of advertisements questioning the tests’ validity.

One of the strategies adopted by Coca-Cola was to develop a “New Coke” (TIME, 2008). This “New Coke” was intended to have a sweeter taste designed to beat both Pepsi and the classic Coke formulation in blind taste tests. Even though it was envisioned to be a superior product, it turned out to be a business blunder in an attempt to stay afloat. Coca-Cola received significant backlash to the new product with over 40,000 letters of complaint pouring into their headquarters in Atlanta (Hays, 2005), forcing top-level management to revisit and assess their decision. Coca-Cola then went to right this wrong by reintroducing the original formulation under “Coca-Cola Classic” in parallel to the “New Coke” before phasing out “New Coke”.

The years following the Pepsi Challenge, from about 1975 to 1995, served as a great two decades with the consistent rise in worldwide consumption, both Coca-Cola and Pepsi realised and average annual growth of about 10%. Coca-cola has since then made a comeback and retained its position as the market leader and kept their advertising consistent to position Coca-Cola as a shared wholesome experience, for example, with friends and family. Coca-cola owns 17% of the American market for carbonated soft drinks with their regular cola, followed by 9.4% share with their Diet Coke and Pepsi follows in third place with 8.9%

2. Research Question

Taking into consideration the value of marketing and brand perceptions especially in a competitive industry such as the Cola industry. This paper with the help of current research on this subject (elaborated upon in Chapter 3) and elaborate taste experiments (elaborated upon in Chapter 4) will attempt to answer the following central research question:

How perceptions of attributes and brands change across memory recollection survey method, blind taste testing and revealed taste testing?

The answer to this central question will delve into brand product taste characteristic analysis based on the preferences outlined by individuals in a survey method, blind taste test and a revealed taste test.

3. Literature Review

In order to effectively answer the research question framed in Chapter 3, this section will review current research and conduct a thorough analysis. This section will attempt to explore and discuss in depth the aspects of the central research question in terms of the Pepsi vs. Coke debate, difference in results given different consumption scenarios and drivers for Brand Perception and its Influence on Product Preferences

3.1 Pepsi vs. Coke

A lot of people consider the choice between Pepsi and Coke to be a personality defining characteristic, however, Malcolm Gladwell in his book, 'Blink', differentiates the two in terms of their taste and in his research, determines the exact difference that causes people to be either Team Pepsi or Team Coke in a "sip test". (Gladwell, 2005; Wide Open Eats, 2019)

Gladwell argues that nutritionally, Pepsi has a sweeter taste than Coca-cola credited to the additional sugar, calories and caffeine. He forwards his argument by appealing that we are drawn to the sweeter sips of Pepsi in comparison to Coca-Cola, providing Pepsi the advantage in a “sip test”. In his opinion the “citrus burst” of Pepsi does not last the entire can as compared to the consistent smoothness of Coca-Cola with its “raisin vanilla” taste which gives Coca-cola its advantage during purchases (Gladwell, 2005). He wrote in his book, "Pepsi is sweeter than Coke, so right away it had a big advantage in a sip test. Pepsi is also characterized by a citrusy flavor burst, unlike the more raisiny-vanilla taste of Coke. But that burst tends to dissipate over the course of an entire can. Pepsi, in short, is a drink built to shine in a sip test."

Contradictory to Gladwell’s claims about the taste explaining cola preferences, Lane, Zychowski, and Lelli, (1975) and Thumin, (1962) determined that even though people can distinguish between popular brands of cola such as Pepsi and Coca-Cola, they claim that the taste is not an vital factor in explaining their cola preferences. (Lane, Zychowski, & Lelii, 1975; Stanley, 1978; Thumin, 1962)

Nevertheless, when Pepsi launched The Pepsi Challenge in 1974 which was a series of blind taste tests where the goal was to demonstrate that consumers preferred Pepsi to Coca-Cola in terms of taste. Even though the campaign was doing great initially, and Pepsi had even started outselling Coca-Cola in some supermarkets; People were still buying more Coca-Cola than Pepsi overall, referred to as the “Pepsi Paradox”. Lone Frank in her book “*Mindfield: How brain science is changing our world*” described Coca-Cola’s victory as a triumph of branding over flavour, followed by a strong stance stating that “consumer companies should invest lots of money in advertising” (Frank, 2009). Many

researchers were intrigued by the paradox and the potential that Coca-Cola as a brand may actually have the ability to rewire the human brain.

McClure et al., (2004) were also curious how Coca-Cola and Pepsi being almost identical in chemical composition, could be subject to strong subjective preferences for one or the other by individuals. They delivered Coke and Pepsi to the participants in their study and conducted behavioural taste tests while conducting functional magnetic resonance imaging (fMRI) scans. The first part of the experiment was anonymous delivery of Coke and Pepsi where they observed a consistently neural response in the ventromedial prefrontal cortex connected with the participants' preferences between Coke and Pepsi. The second part of the experiment comprised of brand-cued delivery of Coke and Pepsi; in this part, the brand knowledge for Pepsi did not play a significant role, however for Coke, they note a vividly significant behavioural significance. Not only did the participants greatly preferred the Coca-Cola branded sample more than the unbranded, they also showed significantly greater brain activity in the hippocampus and the DLPFC. (McClure et al., 2004)

Koenigs and Tranel (2008) also studied the "Pepsi Paradox" with a blind taste testing adapted from McClure et al., (2004) and attempted to test the role of branding by comparing results in normal adults against patients with damage specifically involving ventromedial prefrontal cortex (VMPC). They used VMPC patients as VMPC is the area of the brain critically involved in emotion, emotional regulation and decision-making (Damasio et al., 1990; Bechara et al., 1997; Anderson et al., 2006; Koenigs and Tranel, 2007; Koenigs et al., 2007; Koenigs & Tranel, 2008)

The control and the experimental groups were organized as neurologically normal adults and lesion patients with intact VMPC forming the control group and VPMC patients forming the experimental group. In the blind taste tests conducted, both the control groups preferred Pepsi, however, in the ‘semi-blind’ taste test or revealed taste test, both groups leaned towards Coca-Cola, this skewness showcased the “Pepsi Paradox”. Similar to the control groups, the VPMC patients preferred Pepsi in the blind taste test, however, in contrast to the control group their preference of Pepsi was maintained in the in the ‘semi-blind’ taste test or revealed taste test, suggesting that VPMC is plays an important part in rendering brand communication into brand preferences. (Koenigs & Tranel, 2008)

Another study was conducted on brand importance in the Cola industry with the aid of neurological examining by Kühn & Gallinat (2013). They used a different method of testing as compared to the ones illustrated above. They created a mixture using 3 equal parts of Coca-Cola, Pepsi and River Cola; this mixture was then provided to participants with 4 brand cues – namely, Coca-Cola, Pepsi, River Cola and T-Cola, with the former two categorized as strong brands and the former two as weak brands. (Kühn & Gallinat, 2013)

In order to evaluate the results they observed fMRI signals in right medial orbitofrontal cortex (mOFC) which is positively associated with the value assigned to various categories of products (Chib, Rangel, Shimojo, & O’doherly, 2009) as well as existing evidence that activation in the same areas represents the value of rewards (Levy, Lazzaro, Rutledge, & Glimcher, 2011). They found that stronger fMRI signals in the mOFC during strong compared to weak brand cues when comparing the two categories, in addition, when directly comparing the two strong

brands cues, there was more activation recorded in the right amygdala Coca Cola cues as compared with Pepsi cues. When comparing the 2 categories, there was stronger activation recorded when it was communicated as a strong brand as compared to when it was communicated as a weak brand. These effects were stronger in individuals who reported as infrequent drinkers of Cola which suggests a stronger reliance on brand cues in less experienced consumers. In summary, the study showed strong effects of brand cues on self-reported pleasantness as well as on neural responses signalling reward in the brain. (Kühn & Gallinat, 2013)

In contrast to Kühn & Gallinat's (2013) findings, Breneiser & Allen (2011) using an Implicit association Test (IAT) for Coca-Cola and Pepsi argued that majority of consumers had aligned explicit and implicit preferences to one brand or the other and if for the participants in their study which reported themselves as being neutral in their preferences had varied preferences, i.e. not leaning to either Coca-Cola or Pepsi. Similarly Woolfolk, Castellan, and Brooks (1983, Experiment 2) indicate that labelling a soda sample with a competing brand's label changes the results of a Coca-Cola/Pepsi taste test such that the majority of participants were influenced by the brand label on the sample rather than taste of the sample itself. (Breneiser & Allen, 2011; Woolfolk, Castellan, & Brooks, 1983)

The aforementioned articles of literature give proof to the possibility that, for cola brands, consumers are most likely be unable to recognize and/or different between cola brands when brand data isn't given. Additionally the blind taste test provide clear information about how the taste of the products affects preferences or/and perceptions of similarity. Additionally, they illustrate that the label used on the

product can have a significant impact on preferences using branded taste test showing that demonstrate that consumer brand equity and brand loyalty play an important role in determining a consumers preference between brands. (Breneiser & Allen, 2011; DeChernatony & Knox, (1990) Ghose & Lowengart, 2001)

3.2 Drivers for Brand Perception and its Influence on Product Preferences

As discussed in the previous section, the branded test reflects reality relatively more closely as compared to blind taste test, however, it is not very effective in providing valuable investigative evidence about the factors determining consumer preferences. There may be multiple factors effecting consumer preferences in various levels for example an engaging or convincing television commercial to an attractive POS display at the supermarket and so on. (Ghose & Lowengart, 2001)

3.2.1 Intrinsic Drivers - Utility

Consumers form perceptions about brands based on the functional properties that are delivered, on in other words, the utility gain they receive from the brand. This functionality/utility gain can be categorized into three categories – namely, Basic Functions, Social Communication and Hedonism.

3.2.1.1 Basic Functions – Functional Utility

The practical benefits received to the consumer from the brand is what comprises of basic functions and its functional utility (Bhat & Reddy, 1998; Davari, Iyer, & Guzmán, 2017; Geiger-Oneto et al., 2013; Grewal et al., 2004; Kocak et al., 2007; Mittal et al., 1998). These basic functions

that provide functional utility are mostly tangible and thus can be explained as the physical attributes, features of designs, this forms the core benefit provided by the brand is determinantal to driving consumer preferences. (Stokburger-Sauer and Teichmann, 2013; Park et al., 2013; Thomas & Kohli, 2009; Davari et al., 2017). If a brand were to not deliver on these basic functions, consumers would overlook it when making purchase decisions, for example brands such as Evian or SPA that sell bottled water as classified as serving the functional need of quenching an individual's thirst.

3.2.1.2 Social Communication – Self-Adjustive Utility

Consumers use brands to communicate one's self to others in a bid to achieve social-adjustive utility by means of approval or fulfilment provided by the brands in a social context (Bhat and Reddy, 1998; Keller, 1993, Christodoulides & De Chernatony, 2010; Grewal et al., 2004; Keller, 1993, 2003; Davari et al., 2017).

The social-adjustive utility is generated through meanings and associations connected to brand rather than its core functionalities (Keller, 1993) to the extent that consumer may even overlook the functional benefits and regard social meanings higher in priority (Bhat and Reddy, 1998; Davari et al., 2017). For example, a person might wear a Revere XII t-shirt as compared to Tommy Hilfiger to display an image of him/her being social and environmentally responsible to others – consequently, achieving social-adjustive utility when peers observe the brand and connect him/her with that representation.

3.2.1.3 Hedonism – Value-expressive utility

Hedonism as described by Jeremy Bentham (1776) is the act of maximizing net pleasure i.e. pleasure minus pain. The hedonic

pleasures offered by a brand achieve value-expressive utility for the consumer including the expression of the consumers central values and and hence is quite subjective (Grewal et al., 2004; Davari et al., 2017).

For example, consumers might choose to buy a Starbucks coffee instead of the free coffee available at work in order to enjoy a sense of entitlement or achievement – in other hedonic pleasure resulting in value-expression utility gain. These sorts of purchases are aimed at achieving more than the functional benefit which in this case is a coffee by buying a brand such as Starbucks.

All brands possess some mixture of functional, value-expressive and social-adjustive utilities. However, the core benefits that consumers look for are the functional utilities and as for value-expressive and self-adjustive utilities are co-created by consumers and much more difficult to accomplish

3.2.2 Extrinsic Cues/Drivers

Extrinsic drivers or cues are brand related features that are not part of the physical product itself. These drivers are at times more important in comparison to intrinsic cues of the product as they may be relatively easily recognized and established (Purwar, 1982). These extrinsic cues may include but are not limited to price, brand visuals (logo, name, design), advertising & promotions, packaging and etc. (Oubiña, Rubio, & Luis Méndez, 2011). Foroudi et al., (2018) in their study identified that a combinations of various of the aforementioned perceptual elements of brand equity together have stronger impacts on brand loyalty and brand purchasing intention as compared to any single factor by itself (Foroudi et al., 2018).

Almenberg & Dreber, (2011) conducted an experiment to test on of these external cues, price, they tested how the price of wine affects how the it is experienced. The results to their experiment outlined the utility of the consumer is significantly positively influenced by a higher price (expensive wine) while only a small loss in utility when the wine is revealed as being cheap, however, these findings were only significant for women. (Almenberg & Dreber, 2011)

Advertising and promotions are a very significant form of marketing activity for brands as well as a key in the external cue for brand preference, this can be judged by the fact that the expenditures in this area amount to over 2.5% of UK's entire GDP (West and Prendergast, 2009; Buil, de Chernatony, & Martínez, 2013). Ramos & Franco (2005) studied the effect of advertising on brand equity, and found a significantly positive relationship between the two. They argued that advertisements possessed a potential of providing an aid in the perceived quality, brand loyalty, brand awareness and brand image in the eyes of the consumer if done correctly (Ramos & Franco, 2005). In the study conducted by Valette-Florence et al. (2009) on sales promotions, they reported a negative impact of sales promotion intensity on brand equity (Valette-Florence et al., 2009). Similarly, (Ataman, Heerde, & Mela, 2010) in their study also stated that the long-term effects of discounting are one-third the magnitude of the short-term effects (Ataman et al., 2010). Additionally, the use of celebrities was recorded to have an effect on consumer brand loyalty, celebrity trustworthiness and on consumer brand association on the condition that a relationship between celebrity expertise and perceived quality of the product was established. (Ibidunni et al., 2018)

Other elements that have play important roles as external cues are the brand logo, name and heritage – elements which are detrimental to the existence of the brand itself. Naturally, there are significant effects of brand heritage and brand name on a consumers' attitudes and behaviours towards the brand (Wiedmann, Hennigs, Schmidt, & Wuestefeld, 2011). Interestingly, for the logo a studied conducted by Dong & Gleim (2018) showed how small elements of a brand can have a significant impact as external brand cues – they showed in their study that purchase decisions and willingness to recommend a product are influenced by the location of the logo on the product. They argued that positioning the brand logo higher on packaging will cue signs of higher perceived quality and favourable perceptions regardless of brand awareness. brand logo location (Dong & Gleim, 2018).

4. Research Methodology

This section will describe the research method used in this research, detailing the information collected along with outlining the process as well as providing descriptive statistics in order to envision the data. This section also covers the methodology outlining the statistical analysis used in deciphering and interpreting the data collected.

4.1 Data and Methodology

In order to effectively evaluate what combination of branding, product characteristics and advertising a new cola brand should adopt in order to be able to compete with the like of Pepsi and Coca-Cola, this paper conducted an experiment where the data was collected in the form of a survey.

The experiment was conducted at Erasmus University Rotterdam with 29 participants, between the ages of 19 and 26 illustrated below in the box and whisker plot (figure 1) with about 2/3 of the participants being females and 1/3 males as observed in the pie chart below (figure 1).

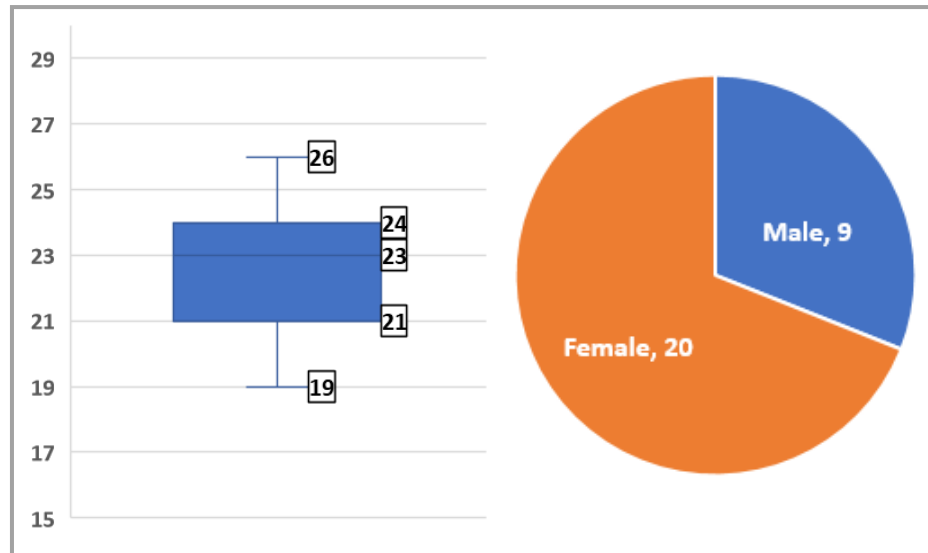


Figure 1. Box and Whisker plot for ages and pie chart for gender distribution of the participants

The experiment was set-up in 6 parts to be undertaken on an individual basis by each participant. The six sections were as follows; Consumer Behaviour, Blind Taste Testing, Revealed Taste Testing, Preference Reveal, Advertisement Selection followed by Demographics. An elaboration to each of the sections mentioned above is given below.

The first section, Consumer Behaviour as the name suggests seeks to investigate the participants' consumption habits, product perceptions and products preferences. Firstly, the participants were asked about their cola consumption, with about 72% of participants consuming cola once ever few weeks and only 24% of participants consuming cola more than once a week as can be seen in appendix ab. The participants were then asked if they had ever consumed Pepsi, Coca-Cola and AH Cola; the results not surprising showed that almost everybody had tried Pepsi and Coca-Cola with only 5 out of 24 people claiming that they had tried

AH Cola as show in appendix 1. The participants who answered yes to the question were then asked to rate each drink on the 11 elements listed below in table 1 out of 100. The 11 items and the order of the 3 drink consumption questions were shuffled for each participant in order to avoid biases.

Availability	Overall Taste	Calories	Smoothness
As a Brand	Caffeine	Sustainability	Sweetness
Value for Money	Fruity Flavour	Fizziness	

Table 1. 11 elements to be rated per drink in the consumer behaviour section

Another part of consumer behaviour questioned the participants on their preference between Coca-Cola and Pepsi, where 66% cited preference for Coca-Cola, 24% for Pepsi and 10% stated that they were indifferent as can be seen below in figure 2.

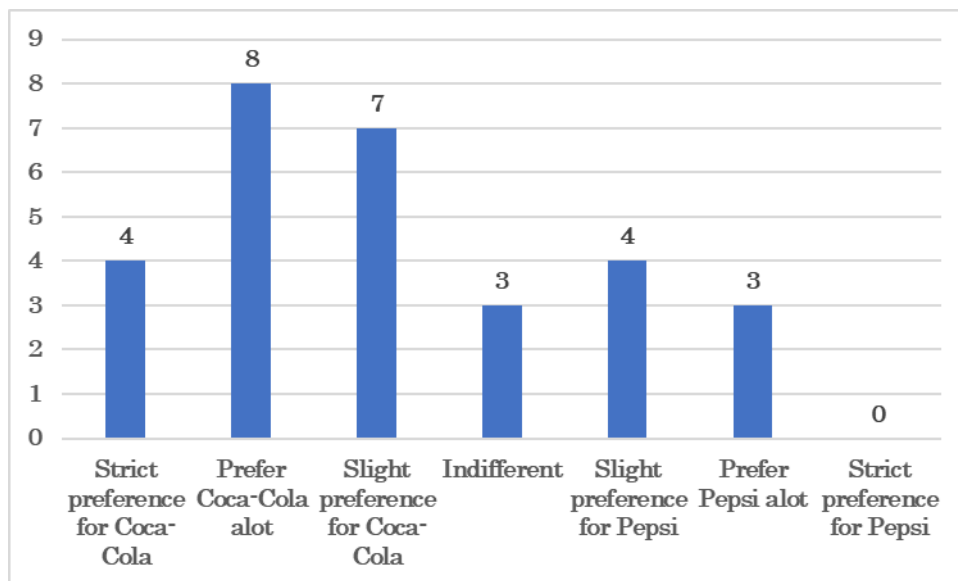


Figure 2. Preference description between Cocoa-Cola and Pepsi

The last question for the section asked the participants whether they would be able to differentiate between & identify Coca-Cola and Pepsi in a blind taste test, the answers to which can be observed below in figure 3.

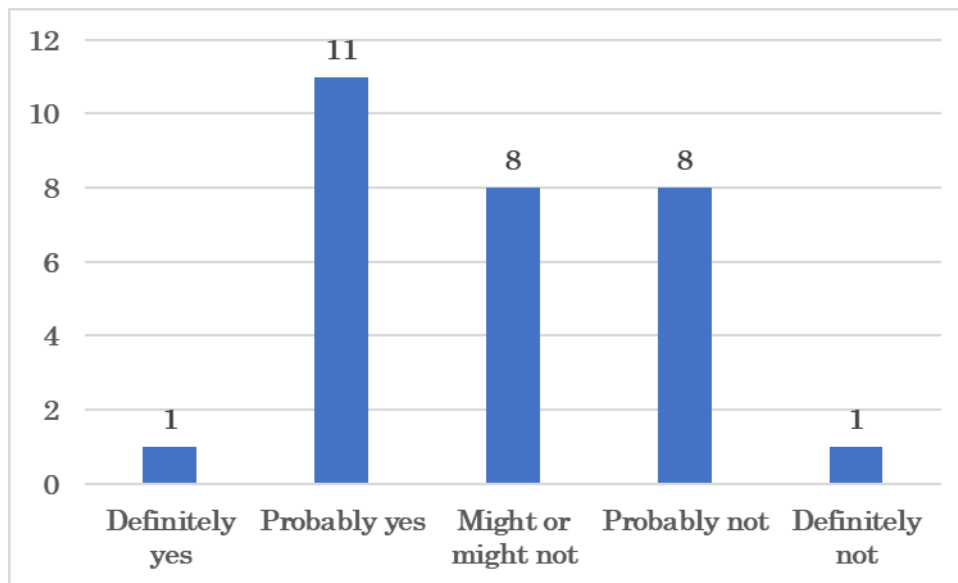


Figure 3. Perceived ability to differentiate between Cocoa-Cola and Pepsi

The second and third second section consists of taste testing sessions, these according to Batsell & Wind (1980) fall into two categories perceptual discrimination test and preference test. The purpose of perceptual discrimination tests is to evaluate whether consumers are able to distinguish between brands in the same product; the latter, preference tests seeks to investigate how a brand is ranked compared to its competitors (Batsell & Wind, 1980; Buchanan & Henderson, 2008; Ghose & Lowengart, 2001). Both the factors tested in these tests, perception and preference, are critical a new brand or an existing brand relaunch a product and its marketing plans. (Ghose & Lowengart, 2001).

The tasting sessions in this experiment were organized similarly to the tasting sessions conducted by Koenigs & Tranel (2008) and McClure et al. (2004) as discussed in section 3.1. The first session was a blind taste test where the participants were given three drinks (Coca-Cola, Pepsi and AH Cola) in a random order marked as A, B and C. The participants were then asked to rate each drink on a 7-point scale on fizziness, sweetness, fruity flavour and smoothness. After ranking all three drinks, they were asked to rank them in preference, give an overall rating out of 100 and make an attempt at identifying which letter was which brand.

In the second tasting session, the participants now had the same 3 drinks, however, this time they were served with the brand name instead of the 3 letters. The participants were then asked to repeat the same process, where they rated each drink on a 7-point scale on fizziness, sweetness, fruity flavour and smoothness. After ranking all three drinks, they were asked to rank them in preference and give an overall rating out of 100 for each.

The following section aimed to identify the ‘willingness to switch’ of the participants who had identified their preference as either Pepsi or Coca-Cola but had selected a different drink as their first preference in the blind-tasting. For example, a participant who had selected Coca-Cola as their initial preference and had ranked AH Cola or Pepsi as their first preference in the blind taste test.

The last part of the experiment focused on identifying different characteristics of advertisements that inspire consumers to buy more cola. For this exercise, participants had to select an advert each from 8 different sets presented in the survey. The advertisements used in this

test were vintage advertisements from the 70s and 80s as opposed to recent advertisements in order to control for biases that could be created by ads that had been viewed by the participant in daily life. Additionally, the 8 sets were split equally between Coca-Cola and Pepsi in order to also control for biases towards the brand as well.

The test revolved around two main foundations, firstly, whether consumers prefer holistic advertisements or attributional advertisements; And the second foundation tested was about the use of (smiling) people in advertisements against open displaying the product.

The table 2 below shows a description of each set

Brand	Advert 1	Advert 2
Coca-Cola	Holistic with smiling subject	Attributional with smiling subject
Coca-Cola	Holistic with smiling subject	Attributional with just product
Coca-Cola	Holistic with just product	Attributional with just product
Coca-Cola	Holistic with smiling subject	Holistic with just product
Pepsi	Holistic with smiling subject	Attributional with smiling subject
Pepsi	Holistic with smiling subject	Attributional with just product
Pepsi	Holistic with smiling subject	Attributional with smiling subject
Pepsi	Attributional with just product	Attributional with smiling subject

Table 2. Sets of Ad Selection Test

4.2 Results

4.2.1 Summary of Scores

The figure 4. below illustrates the spread of the overall scores on taste and experience as expressed by the participants across the three tests for each brand in a box-whisker plot. From the plot we can observe a positive shift in spread for Pepsi and AH Cola, whereas for Coca-Cola it moves from a hugely positive perception in the survey method to a varying rating across the latter two tests. The change in these values can be visually observed with the trendlines shown in figure 5. for the average overall score for Brands across the three tests.

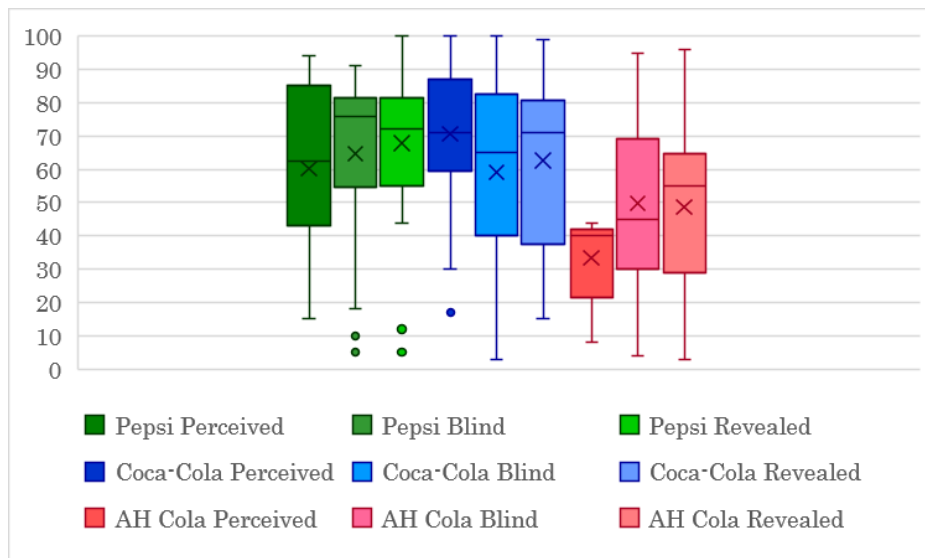


Figure 4. Box and Whisker Plot – Overall scores across brand and tests

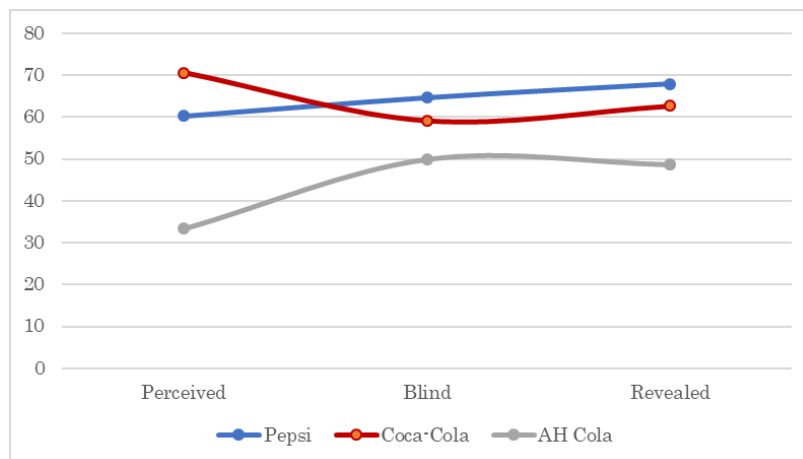


Figure 5. Trendline – Average Overall Score for brands across tests

4.2.2 Multi-variable Regression and ANCOVA – Score of Attributes

A multiple regression was run to determine if the overall score given to the attribute of a cola drink can be predicted using Brand, Type of Test Scenario, existing preferences, age and gender. This regression was run for 5 different attributes; namely, Fizziness, Sweetness, Fruity Flavour, Smoothness and Overall Taste and Experience. The following equation describes the regression analysis run in this section

$$rating_{ijk} = \beta_0 + \beta_1 brand_i + \beta_2 scenario_j + \beta_3 Preference_k + \beta_4 age + \beta_5 male + \epsilon$$

The table below explains each variable individually and how it was used in the model. For Brand, there were 2 dummy variables generated, Brand1 for Coca-Cola and Brand2 for Pepsi; when both were not true that signified AH Cola. For Scenario, there were 2 dummy variables generated, Scenario1 for Blind Test and Scenario2 for Revealed Test; when both were not true that signified perceived test. For existing preferences, there were 2 dummy variables generated, PreferenceC for Coca-Cola and PreferenceP for Pepsi; when both were not true that signified indifference. The last dummy variable was generated for gender where 1 indicated male and 0 for female.

Variable Name	1	0
Brand1	Coca-Cola	AH Cola
Brand2	Pepsi	
Scenario1	Blind Test	Perception Test
Scenario2	Revealed Test	
PreferenceC	Preferred Coca-Cola	Indifferent
PreferenceP	Preferred Pepsi	
Male	Gender=Male	Gender = Female
Age	N/A – continuous variable	

4.2.2.1 Fizziness

		Rating	
Variable	Multiple Regression		
Scenario1	-1.384***	(0.218)	
Scenario2	-1.442***	(0.218)	
Brand1	0.310	(0.217)	
Brand2	-0.087	(0.217)	
PreferenceC	-0.449	(0.289)	
PreferenceP	-0.581*	(0.320)	
Male	-0.425**	(0.183)	
Age	0.027	(0.045)	
Constant	5.384***	(0.988)	
F-value	8.88	R ² (adj.)	0.212
Prob > F	0.000	N	236

*p-value < 0.1, **p-value < 0.05, ***p-value < 0.01

The output from the multiple regression shown above, describes the model to predict Rating of Fizziness from Brand, Type of Test Scenario, existing preferences, age and gender. These variables statistically significantly predicted the Rating of fizziness, $F= 8.88$, $p < .05$, R^2 (adj.) = .212. Only the scenario, preference for Pepsi and gender added statistically significantly to the prediction, $p < .05$.

ANCOVA
Test scenario1 = scenario2
$F(1, 227) = 0.09$
Prob > F = 0.766

The results of this ANCOVA test indicate that the difference between the coefficients for scenario1 and scenario 2 are not significantly different.

4.2.2.2 Sweetness

		Rating	
Variable	Multiple Regression		
Scenario1	-1.130***	(0.228)	
Scenario2	-1.118***	(0.228)	
Brand1	0.256	(0.227)	
Brand2	0.445*	(0.227)	
PreferenceC	-1.234***	(0.303)	
PreferenceP	-1.322***	(0.336)	
Male	-0.491**	(0.192)	
Age	0.237***	(0.047)	
Constant	1.091	(1.036)	
F-value	9.81	R2 (adj.)	0.231
Prob > F	0.000	N	236

*p-value < 0.1, **p-value < 0.05, ***p-value < 0.01

The output from the multiple regression shown above, describes the model to predict Rating of Sweetness from Brand, Type of Test Scenario, existing preferences, age and gender. These variables statistically significantly predicted the Rating of sweetness, $F= 9.81$, $p < .05$, R^2 (adj.) = .231. All variable except Coca-Cola added statistically significantly to the prediction, $p < .05$.

ANCOVA
Test scenario1 = scenario2
F(1, 227) = 0.00
Prob > F = 0.955

The results of this ANCOVA test indicate that the difference between the coefficients for scenario1 and scenario 2 are not significantly different.

4.2.2.3 Fruity Flavour

		Rating	
Variable	Multiple Regression		
Scenario1	0.266		(0.206)
Scenario2	0.462**		(0.206)
Brand1	0.429**		(0.205)
Brand2	0.407**		(0.205)
PreferenceC	-0.465*		(0.273)
PreferenceP	-0.380		(0.302)
Male	0.044		(0.173)
Age	0.118***		(0.042)
Constant	0.590		(0.933)
F-value	2.29	R2 (adj.)	0.042
Prob > F	0.023	N	236

*p-value < 0.1, **p-value < 0.05, ***p-value < 0.01

The output from the multiple regression shown above, describes the model to predict Rating of Fruity Flavour from brand, type of test scenario, existing preferences, age and gender. These variables statistically significantly predicted the Rating of fruity flavour, $F = 2.29$, $p < .05$, R^2 (adj.) = .042. All variable except Pepsi, gender and blind test added statistically significantly to the prediction, $p < .05$

ANCOVA
Test scenario1 = scenario2
$F(1, 227) = 1.14$
Prob > F = 0.286

The results of this ANCOVA test indicate that the difference between the coefficients for scenario1 and scenario 2 are not significantly different.

4.2.2.4 Smoothness

		Rating	
Variable	Multiple Regression		
Scenario1	-0.906***		(0.215)
Scenario2	-0.837***		(0.215)
Brand1	0.344		(0.215)
Brand2	0.525**		(0.215)
PreferenceC	-0.803***		(0.286)
PreferenceP	-0.707**		(0.317)
Male	-0.348*		(0.181)
Age	-0.006		(0.044)
Constant	5.144***		(0.978)
F-value	5.70	R2 (adj.)	0.138
Prob > F	0.000	N	236

*p-value < 0.1, **p-value < 0.05, ***p-value < 0.01

The output from the multiple regression shown above, describes the model to predict Rating of Smoothness from brand, type of test scenario, existing preferences, age and gender. These variables statistically significantly predicted the Rating of smoothness, $F= 5.70$, $p < .05$, $R2$ (adj.) = .138. All variable except Coca-Cola and age added statistically significantly to the prediction, $p < .05$

ANCOVA
Test scenario1 = scenario2
$F(1, 227) = 0.13$
Prob > F = 0.719

The results of this ANCOVA test indicate that the difference between the coefficients for scenario1 and scenario 2 are not significantly different.

4.2.2.5 Overall Taste and Experience

		Rating	
Variable		Multiple Regression	
Scenario1	-0.805	(4.069)	
Scenario2	1.023	(4.069)	
Brand1	16.253***	(4.053)	
Brand2	16.414***	(4.056)	
PreferenceC	10.255*	(5.412)	
PreferenceP	17.280***	(5.984)	
Male	2.201	(3.423)	
Age	-2.347***	(0.833)	
Constant	88.968***	(18.476)	
F-value	4.46	R2 (adj.)	0.105
Prob > F	0.000	N	236

*p-value < 0.1, **p-value < 0.05, ***p-value < 0.01

The output from the multiple regression shown above, describes the model to predict Rating of Overall Taste and Experience from brand, type of test scenario, existing preferences, age and gender. These variables statistically significantly predicted the Rating of overall score, $F = 4.46$, $p < .05$, R^2 (adj.) = .0105. All variable except gender and scenario added statistically significantly to the prediction, $p < .05$

ANCOVA
Test scenario1 = scenario2
$F(1, 227) = 0.26$
Prob > F = 0.614

The results of this ANCOVA test indicate that the difference between the coefficients for scenario1 and scenario 2 are not significantly different.

4.2.3 Multi-variable Regression – Overall Score

Another multiple regression was run to determine how the four attributes, the brand, gender and age impact the overall score of taste and experience across the blind and revealed taste test. The following equation describes the regression analysis run in this section

$$\begin{aligned} \text{rating} = & \beta_0 + \beta_1 \text{fizziness} + \beta_2 \text{sweetness} + \beta_3 \text{fruityflavour} \\ & + \beta_4 \text{smoothness} + \beta_5 \text{CocaCola} + \beta_6 \text{Pepsi} + \beta_7 \text{age} + \beta_8 \text{male} \\ & + \epsilon \end{aligned}$$

4.2.3.1 Effect of Attribute on Overall Score – Blind Test

Overall Score			
Variable	Multiple Regression		
Fizziness	-2.399		(2.392)
Sweetness	-0.493		(2.292)
Fruity Flavour	2.995		(2.428)
Smoothness	-0.196		(2.728)
Age	-1.917		(1.510)
Male	5.986		(6.106)
Coke	8.352		(6.957)
Pepsi	12.048*		(7.058)
Constant	94.776**		(36.645)
F-value	1.22	R2 (adj.)	0.020
Prob > F	0.2974	N	87

*p-value < 0.1, **p-value < 0.05, ***p-value < 0.01

The output from the multiple regression shown above, describes the model to predict Overall Score in a Blind Test from brand, fizziness, sweetness, fruity flavour, smoothness, age and gender. This test

however is not statistically significant in predicting the Overall Score in a Blind Test, $F= 1.22$, $p > .05$, R^2 (adj.) = .020. The only variable adding statistical significance is Pepsi, $p < .05$

4.2.3.2 Effect of Attribute on Overall Score – Revealed Test

Overall score			
Variable	Multiple Regression		
Fizziness	3.874*		(2.1560)
Sweetness	-4.597**		(2.083)
Fruity Flavour	3.846		(2.332)
Smoothness	4.776**		(2.374)
Age	-1.238		(1.390)
Male	1.438		(5.522)
Coke	13.839**		(6.016)
Pepsi	20.212***		(6.190)
Constant	48.251		(32.756)
F-value	3.18	R2 (adj.)	0.169
Prob > F	0.0036	N	87

*p-value < 0.1, **p-value < 0.05, ***p-value < 0.01

The output from the multiple regression shown above, describes the model to predict Overall Score in a Revealed Test from brand, fizziness, sweetness, fruity flavour, smoothness, age and gender. These variables statistically significantly predicted the Overall Score in a Revealed Test, $F= 3.18$, $p > .05$, R^2 (adj.) = .169. All variable except gender and scenario added statistically significantly to the prediction, $p < .05$

5. Ad-Selection

Another additional testing other than the main research of this thesis was conducted in the last part of the experiment which was focused on identifying different characteristics of advertisements that inspire consumers to buy more cola. For this exercise, participants had to select an advert each from 8 different sets presented in the survey. The advertisements used in this test were vintage advertisements from the 70s and 80s as opposed to recent advertisements in order to control for biases that could be created by ads that had been viewed by the participants in daily life. Additionally, the 8 sets were split equally between Coca-Cola and Pepsi in order to also control for biases towards the brand as well.

The test revolved around two main foundations, firstly, whether consumers prefer holistic advertisements or attributional advertisements; And the second foundation tested was about the use of (smiling) people in advertisements against open displaying the product. The table 3 below shows a description of each set

Brand	Advert 1	Advert 2
Coca-Cola	Holistic with smiling subject	Attributional with smiling subject
Coca-Cola	Holistic with smiling subject	Attributional with just product
Coca-Cola	Holistic with just product	Attributional with just product
Coca-Cola	Holistic with smiling subject	Holistic with just product
Pepsi	Holistic with smiling subject	Attributional with smiling subject
Pepsi	Holistic with smiling subject	Attributional with just product
Pepsi	Holistic with smiling subject	Attributional with smiling subject
Pepsi	Attributional with just product	Attributional with smiling subject

Table 3. Sets of Ad Selection Test

Type	holistic	attributional	
subject	97	50	147
product	29	56	85
	126	106	

Table 4. Number of votes per section in Ad Selection Test

If we were to compare the absolute numbers of votes for each category as shown, we can observe from the table below that Holistic advertisements with a smiling subject was the most popular selection. However, the tests were set-up in a different way, the results for these are illustrated below in table 4, sorted per kind of test.

Set No.	Tested	Control	Votes for Set 1	Votes for Set 2
2	Opposites		41.4%	58.6%
6	Opposites		55.2%	44.8%
	Cumulative		48.3%	51.7%
3	Hol vs Att	product	44.8%	55.2%
1	Hol vs Att	Subject	79.3%	20.7%
5	Hol vs Att	Subject	51.7%	48.3%
7	Hol vs Att	Subject	62.1%	37.9%
	Cumulative		59.5%	40.5%
8	Sub vs Pro	Attribute	34.5%	65.5%
4	Sub vs Pro	Holistic	44.8%	55.2%
	Cumulative		39.7%	60.3%

Table 5. Results of Ad-selection test

These tests show a preference towards holistic advertisements as compared to attributional, however, no significant differences were reported between advertisements containing a smiling subject vs just the product.

6. Willingness to Switch

In addition to the testing how perceptions of attributes and brands change across memory recollection survey method, blind taste testing and revealed taste testing, this thesis conducted additional research on consumers willingness to switch.

As a follow-up to the initial preference section and blind taste section of the experiment, one of the sections aimed to identify the ‘willingness to switch’ of the participants. Participants who had identified their preference as either Pepsi or Coca-Cola in the first section of the experiment but had later selected a different drink as their first preference in the blind-tasting were confronted about their conflicted choice and questioned on the willingness to switch based on this information. For example, a participant who had selected Coca-Cola as their initial preference and had ranked AH Cola as their first preference in the blind taste test was asked if he would consider buying AH Cola next time given it follows his preferred taste profile.

There were in total 17 out of 29 participants that had a discrepancy in their perceived and actual preferences based on taste. Twelve of these chose Pepsi, four chose AH Cola and only one chose Coke against

perceived preferences. Table 6. below shows the initial preferences, actual preferences and willingness to switch of these 17 participants.

Initial Preference	Selected	Willingness
Prefer Coca-Cola alot	AH Cola	Might or might not
Slight preference for Coca-Cola	AH Cola	Probably not
Slight preference for Coca-Cola	AH Cola	Probably yes
Slight preference for Coca-Cola	AH Cola	Probably yes
Slight preference for Coca-Cola	AH Cola	Probably not
Slight preference for Coca-Cola	AH Cola	Probably yes
Slight preference for Pepsi	AH Cola	Definitely not
Strict preference for Coca-Cola	AH Cola	Definitely not
Strict preference for Coca-Cola	AH Cola	Probably not
Strict preference for Coca-Cola	AH Cola	Definitely not
Prefer Pepsi alot	Coca-Cola	Might or might not
Indifferent	Pepsi	Probably not
Indifferent	Pepsi	Probably not
Indifferent	Pepsi	Probably yes
Prefer Coca-Cola alot	Pepsi	Probably not
Prefer Coca-Cola alot	Pepsi	Probably not
Slight preference for Coca-Cola	Pepsi	Probably yes

Table 6. Result of Willingness to Switch Test

After stating their willingness to switch, the participants then had to elaborate on their decision and below a written description explaining their choice. One of the most recurring arguments was on convenience and availability with 10 people citing these as motivation behind their selection currently as well as a behaviour for the future; this for AH Cola meant unwilling to switch to the AH Cola brand as it is only available exclusively at their supermarket.

A number of people referred to stronger branding as a reasoning of why they prefer to buy Coca-Cola or Pepsi currently, one participant even mentioned that he is technically indifferent between by Coca-Cola and Pepsi but would buy Coca-Cola as “Coca-Cola just has a better branding,

so it catches my eye more often. Plus, a lot of people usually prefer Coca-Cola, so if I am with them, I would buy it". This shows the social-adjustive nature of the Coke brand which has managed to secure a wide approval amongst consumers. On the other hand, AH Cola was quite openly criticized for "being cheap" by 3 participants who had preferred it in the blind taste test but declared they would not be willing to switch.

In conclusion, taste does not seem to be the key driver in influencing perceptions and preferences of consumers with availability & convenience and branding taking first and second place respectively for the main drivers as seen from this test.

7. Conclusion & Recommendations

This paper was centred around analysing how a consumer's perspective of product evolves in varied settings, with the central question research question "How perceptions of attributes and brands change across memory recollection survey method, blind taste testing and revealed taste testing?"

Using data collected from an extensive experiment conducted, this paper conducted a multiple regression to analyse the effect of consumption scenarios on final scores given to different attributes by consumers. The multiple regression in almost all cases (i.e. for all

attributes) showed a significant effect of test type on the final score of all four attributes as well as the overall score on taste and experience, however, the ANCOVA test conducted following the regression showed that there were no significant differences in ratings reported between test type. In other words, the ratings given by consumers did not significantly change over the three consumption scenarios, i.e. perceptive, blind taste test and revealed taste tests.

The explanation of this test is aided by the willingness to change test where we observed taste does not seem to be the key driver in influencing perceptions and preferences of consumers with availability & convenience and branding taking first and second place respectively for the main drivers as seen from this test. This is also in line with Lane, Zychowski, and Lelli, (1975) and Thumin, (1962) who claimed that claim that the taste is not an vital factor in explaining their cola preferences. (Lane et al., 1975; Stanley, 1978; Thumin, 1962). This would also explain why majority of cola advertisements do not emphasize taste and rather attempt to build strong brand images (Block, 1975).

Another element that was tested in this thesis was the “Pepsi Paradox”. In line with the paradox Pepsi ranked higher in the blind tests along with a significantly higher sweetness rating as claimed by Malcom Gladwell (2005) in his book. However, the Pepsi Paradox was not proven as Pepsi retained a significantly higher positive influence on overall ratings as compared to Coca-Cola. However, it is important to note that the difference between Pepsi and Coca-Cola’s influence on ratings did decrease in the revealed test, however, not enough to prove the “Pepsi Paradox”.

One very distinctive aspect about differences in perceptions of attributes across memory recollection survey method, blind taste testing and revealed taste testing was noted in the results. The perception for attributes is significantly different in memory as compared to when tasting the actual product in both blind and revealed tests. The perception of sweetness, fizziness and smoothness is significantly higher and fruity flavour significantly lower in the memory as compared to consuming the cola. This shows that these Cola brands have successfully built a highly positive perception of the experience of consuming cola regardless of brand using convincing marketing strategies and campaigns.

As a recommendation for further research in this area, the most important aspect is to conduct a similar study with a bigger audience with more diverse demographics such as age, working background etc in order to significantly test influences of additional dependent factors. It would also be interesting to conduct it across different geographies or control for residential backgrounds to study the influence of brand exposure in childhood/teenage in perceptions of the brand as for example Europe vs Middle East and Asian region where Pepsi and Coca-Cola differ in market standings, e.g. Pepsi is market leader in the latter markets.

Additionally, given cola drinks is a declining category, it would be a great idea with higher applicability to conduct the study on which factors influence brand perceptions in other food categories such as snack bars in order to help new brands establish their marketing strategies according to consumer analytical perspective, however, there may be critics against the applicability of such “manipulative” marketing campaigns.

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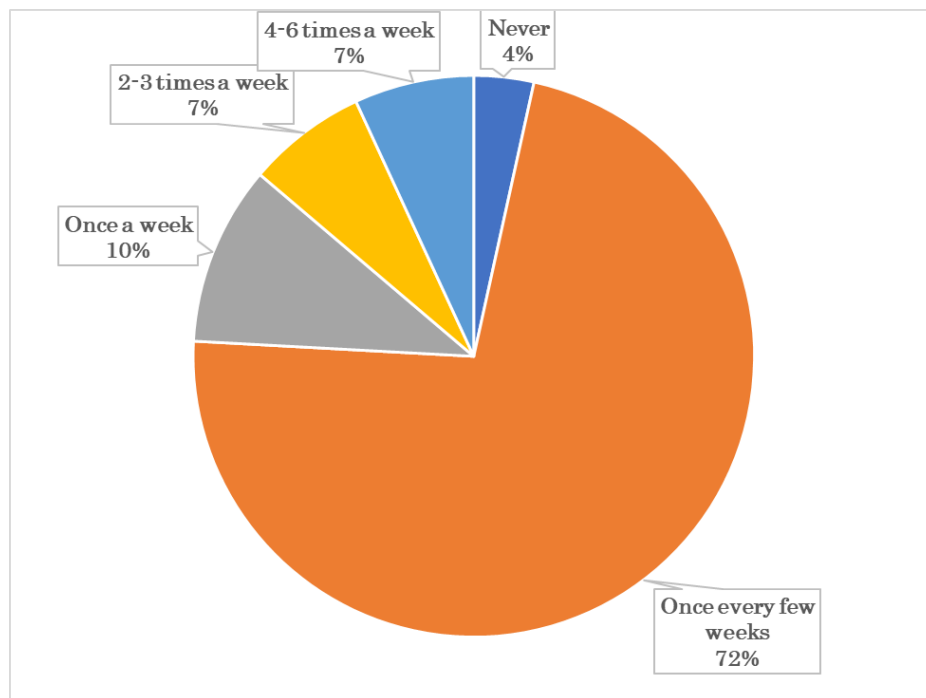
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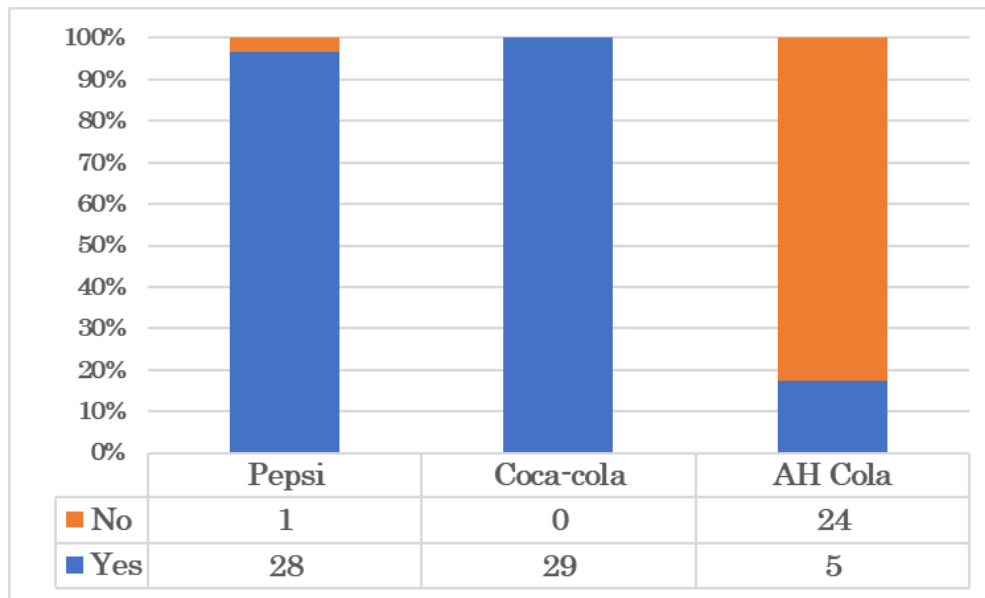
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9. Appendix



Appendix 1. Consumption

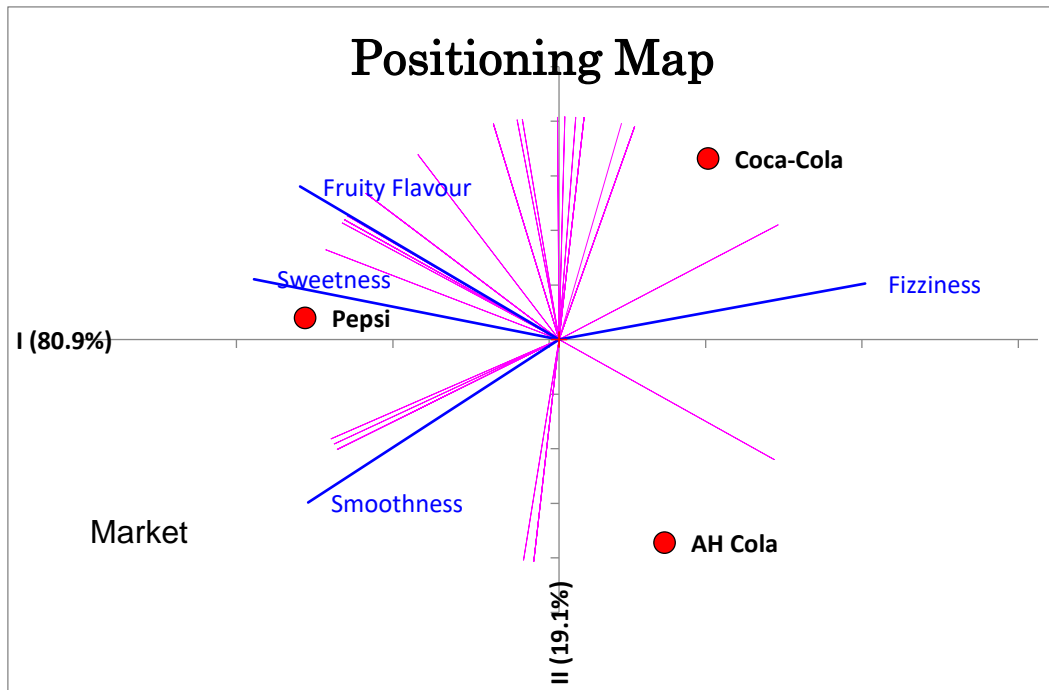
Appendix



Appendix 2

	Pepsi			Coca-Cola			AH Cola		
	Perceived	Blind	Revealed	Perceived	Blind	Revealed	Perceived	Blind	Revealed
Average	60.2	64.6	67.9	70.6	59.1	62.6	33.4	49.9	48.6
Average Deviation	21.9	20.2	15.7	16.3	23.2	20.2	10.2	19.3	20.9
Min	15.0	5.0	5.0	17.0	3.0	15.0	8.0	4.0	3.0
Max	94.0	91.0	100.0	100.0	100.0	99.0	44.0	95.0	96.0

Appendix. 3



Appendix 4