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Sonic Branding: How sonic logo contour affect consumers' perceived brand personality and brand recall

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Master in Marketing

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BUSINESS
SCHOOL

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Abstract

Sonic branding strategy is commonly used by brands to show and communicate their values and identity in parallel with other sensory branding strategy. Sonic logos are important part of sonic branding. Being one of the key elements of sonic branding, it is essential to explore how different feature consist in sonic logos affect consumers' behavior. This study aimed to investigate how different sonic logo contour influences consumers' perspective towards brand personality and how it affects their brand recall. This study used brand personality scale developed by Aaker (1997) consisting of five brand personality dimensions (Sincerity, Excitement, Competence, Ruggedness, Sophistication). Sonic logo features were controlled and manipulated resulting in three different versions of sonic logo contour (Ascending, Descending and Constant) with three non-existing brands and placed in eleven seconds dummy podcast show. The result shows that each brand personality dimension was associated with different sonic logo contour with dimension Sincerity and Competence associated with the Ascending sonic logo, dimension Excitement associated with the Constant sonic logo, and dimension Ruggedness associated with Descending sonic logo contour. Furthermore, Brand recall study showed that dimension Sincerity and Competence positively influence brand recall based on consumers' self-evaluation for the hypothetical brand. Further investigation should try to better understand the process of how different sound features affect different consumers' behavior in relation to branding theory for marketing implications.

Key words: Sonic branding; brand personality; brand recall; sensory marketing strategy.

Resumo

A estratégia de branding sónico é uma estratégia utilizada habitualmente pelas marcas para mostrar e comunicar os seus valores e identidade em paralelo com outras estratégias de branding sensorial. O objetivo deste estudo foi investigar como os diferentes contornos do logótipo sónico influenciam a perspetiva dos consumidores em relação à personalidade da marca e como afetam a recordação da marca. Este estudo utilizou a escala de personalidade da marca desenvolvida pela Aaker (1997) que consiste em cinco dimensões de personalidade da marca (Sinceridade, Excitação, Competência, Robustez, Sofisticação). As características do logotipo sónico foram controladas e manipuladas, resultando em três versões diferentes do contorno do logotipo sónico (Ascendente, Descendente, e Constante) com três marcas fictícias e colocadas durante onze segundos de "podcast dummy show". O resultado mostra que cada dimensão de personalidade da marca foi associada a diferentes contornos de logotipo sónico, a dimensão Sinceridade e Competência foi associada ao logotipo sónico Ascendente, a dimensão Excitação foi associada ao logotipo sónico Constante, e a dimensão Robustez foi associada ao contorno do logotipo sónico Descendente. Além disso, o estudo de recordação da marca revelou que a sinceridade e a competência da dimensão influenciam positivamente a recordação da marca com base na auto-avaliação dos consumidores para a marca hipotética. Investigação futura seria necessária para melhor compreender o processo de como diferentes características sonoras afetam o comportamento dos diferentes consumidores em relação à teoria da marca para implicações de marketing.

Palavras-Chave: Sonic branding; brand personality; brand recall; sensory marketing strategy.

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1. Introduction

1.1. Background

Digital advertising worldwide grew to $31.4 billion in Q1 2020 despite Coronavirus impacting the whole industry. It is equivalent to a 12% increase from Q1 2019 (PwC IAB Internet advertising revenue report, 2020). Unlike the traditional advertising that involves signage, banner, commercials that are mainly visuals, many of digital marketing and advertising maximizing the use of sound in their process. One of the main elements in utilizing sound in the companies' digital advertising is the sonic logo.

The sonic logo is the limited melody or acoustic equal to a graphic logo. Companies' in general put the sonic logo in the beginning or at the end of the commercial. It is like when there is a random trailer on YouTube that comes up, "Ta-dum!" you know instantly it's Netflix. The short rhythm of "Parampam pam pam" right before "I'm loving it" in McDonald's commercials. Or just how the older generation remember how Nokia Sonic logo along with the visual of two hands touching.

In the fast-paced society, people are expecting information to passed fast without the need for visuals to be shown. In addition to the increasing usage of IoT, voice experience, and Home operating system, the communication between consumers' and brands are getting more audio-centric. Therefore, there are needs for brands to take sonic branding and audio design to enhance consumers' experience.

Although there are enough brands aware of the importance and the relevance of sonic brandings as part of their branding strategy, branding research has been almost all about visual branding rather than both visual and audio or mixed. Despite there is a high impact of audio on consumer behavior (Alpert & Alpert, 1990; Krishnan, 2012;) there is not much literature on the influence of sonic logos in the brand perception. For that reason, in general, its development is mainly based on intuition rather than objective criteria (Krishnan, 2012). Therefore, it is essential to explore the Sonic branding terms to set up some objective metrics to achieve a more focused outcome.

1.2. Problem Statement

Brand personality associated with Sonic Logo contour

There have been a lot research proofing that music or audio influence mood and behavior intention under business and non-business context(Alpert & Alpert, 1990; Graakjær, 2019; Krishnan *et al.,* 2012; Mas *et al.,* 2020). Audio studies are divided according to its structure and non-structural elements(Alpert & Alpert, 1990). While structural refers to the "properties making up musical" like rhythm, melody, tempo, harmony, and modality, non-structural refers to audio in general.

Non-structural audio studies show that music/audio indeed influence consumers' behavioral intention. Hwang & Oh (2020) investigate how interactive music influence consumer engagement through online platform. On their studies, they do not manipulate the musical structure as the subject, rather put audio layer on original music. They proof that interactive music led to greater consumer engagement on behavioral intention, website perception, attitude and retail preferences. [should I give more example?]

Although in non-structural studies have shown proof of music influences, studies of music influences on mood by Alpert & Alpert (1990) push the necessity to study the influence of music's structural characteristics on cognitive and affective responses. Khrisna (2012) were using 3,6,9 tones sonic logo treatments for the sonic logo influence on willingness to pay studies. Older studies came up with technical music characteristic for inducing emotional response (Bruner, 1990; Husain *et al.,* 2002). It shows different emotional response to different set of audio structure such as mode, tempo, pitch, rhythm, harmony, and volume.

Musical Element	Emotional response								
	Serious	**Sad**	**Sentimental**	**Serene**	**Humorous**	**Happy**	**Exciting**	**Majestic**	**Frightening**
Mode	Major	Minor	Minor	Major	Major	Major	Major	Major	Minor
Tempo	Slow	Slow	Slow	Slow	Fast	Fast	Fast	Medium	Slow
Pitch	Low	Low	Medium	Medium	High	High	Medium	Medium	Low
Rhythm	Firm	Firm	Flowing	Flowing	Flowing	Flowing	Uneven	Firm	Uneven
Harmony	Consonant	Dissonant	Consonant	Consonant	Consonant	Consonant	Dissonant	Dissonant	Dissonant
Volume	Medium	Soft	Soft	Soft	Medium	Medium	Loud	Loud	Veried

Table 1. Music Technical characteristic for inducing emotional response (Brüner, 1990)

Khrisna (Krishnan *et al.*, 2012) focus on the structural sonic logo effect on brand that explore more on fluency and number of tones used in sonic logo. His research shown that sonic logo that has number of tones aligns with the number of syllables tend to more congruent and perform better. Further researcher explain that another structure of sonic logo such as pitch, intensity and speed could affect brand personality (Mas *et al.*, 2020). However, on the How the ascending, descending and zigzag influenced brand perception? And what are the brand personality traits]

Therefore, the following research questions are proposed:

1. a) What are the perceived brand personality associated with ascending sonic logo contour?
   b) What are the perceived brand personality associated with descending sonic logo contour?
   c) What are the perceived brand personality associated with ascending sonic logo constant?

Brand personality affect consumers' brand recall

Brand personality is important to allow consumers, to express with their own self or their ideal self (J. L. Aaker, 1997; Bairrada *et al.*, 2019) more than just instrument of hedonic experience (Cătălin & Andreea, 2014). Further, Self-expression is used to raise the self-concept and personality. The higher the self-value and difference the brand personality is with other brands', the more attractive it will be. (J. L. Aaker, 1997). Although consumers tend to choose to buy brands align with their own self-concept, they match better with their ideal self-concept. From this perspective, the hypothesis is proposed:

H2: Brand that consumers perceived as "Sincerity, Excitement, and Competence" influence consumers' brand recall more positive than others.

1.3. Research Methods

This study considers primary and secondary data. Primary data collected through a quantitative approach implemented through the development of the survey. The survey is a part of the experimental design. Test units are randomly placed into three groups where each group is subjected to one manipulated sonic logo contour (ascending, descending, and constant) of a fiction brand and then asked about perceived brand personality. Sonic logo contour is the only

part that is being manipulated in the research. Subsequently, the rest of the variables are remaining the same between each group. Secondary data gathered according to previous research on various areas of the research topic.

2. Literature Review

2.1. Sensory Marketing

2.1.1. Multi-sensory Marketing

It is widely known that human perceived their external environment through their five senses (smell, sound, sight, taste and touch) (Buzova *et al.*, 2020; Hultén, 2011; Kotler & Keller, 2013; Petit *et al.*, 2019). Human sensory have been used as marketing tool to increase customers' experience both on site (Helmefalk & Hultén, 2017; Roggeveen *et al.*, 2020; Srinivasan & Srivastava, 2010) and online (Petit *et al.*, 2019). Sensory marketing explained as the tools for understanding the sensation and perception to the field of marketing to consumer perception, cognition, emotion, learning, preference, choice, or evaluation (Krishna, 2012).

Sensory marketing position human five sense in the center of marketing. It makes individual perceived certain image about brand in their mental concept as a result of the their experience toward the brands (Bertil Hultén, 2011). Studies about sensory marketing also proof the positive influence of sensory marketing to perception on brands value, goods and services, consumers' emotions, and purchase intention (Buzova *et al.*, 2020; Helmefalk & Hultén, 2017). Multi-sensory marketing research have been more focus on a single or combination of senses rather than studying the whole five sensory. Using single or combination of senses bring multiple implication to company, which lead to sensorial strategies.

2.1.2. Sensorial Strategies

Sensorial strategies are specific strategies carried out by a firm for each of the human senses (Bertil Hultén, 2011). It focusses on enhancing the consumers' experience that involve each sense.

Sensorial smell strategy

Smell sensory is one of the most effective sensory marketing. It associates certain smell with brand based on individual past experience (Dörtyol, 2020; Fernández Muñoz *et al.*, 2021). Human are able to remember more than 10,000 different scents, hence the brand perception that comes with the scent experienced are enough for human to associate it with their early memories (Hultén, 2011). Company in practice, can apply sensorial smell strategy to connect specific scents to their brand. That is why many industries such as hospitality (Denizci Guillet *et al.*, 2019), fashion (Fernández Muñoz *et al.*, 2021), retail (Biswas & Szocs, 2019) and many others.

Sensorial sound strategy

Sound have been source of a better understanding and perception of reality for human since they were born, and as an inspiration to shape a person's identity (Hultén, 2011). There are long list of effect of sound in business. Marketing research has been focusing on the effect of music background and noise on consumer behavior like product choice, time spent in store, and attitudes (Biswas & Szocs, 2019; Buzova *et al.*, 2020; Raab *et al.*, 2013). In recent time more companies use sound strategy to even strengthen their identity and image than just to increase customers' store retention through sound experience like jingles, voice, and sonic logo (Gustafsson, 2015; Hultén, 2011; Krishnan *et al.*, 2012; Mas *et al.*, 2020).

Sensorial sight strategy

Visual of a brand treated important strategy to build brand awareness and image. Identity of a brand distinguished often through different characteristic and aesthetic in their marketing elements like the design, the style, the color scheme, advertising etc (Hultén, 2011). Several studies found that visual representation of a brand can affect brand equity (Luffarelli *et al.*, 2019; Phillips *et al.*, 2014; Van Den Bosch *et al.*, 2005). All the visual elements that are used by the brand would be associated with the brand and associated with it (Phillips *et al.*, 2014)

Sensorial taste strategy

Taste sense is very unique compare to all the other four senses. Human use the concept of sour, sweet and a matter of taste (Hultén, 2011). Taste experience can be use to distinguish the brand from others and enhance brand identity with using the taste experience on its product.

For example the wine industry using sensorial taste strategy lsuch as vintage, denomination, grape variety to which consumers recognize the taste better (Benfratello *et al.,* 2009).

Sensorial touch strategy

Brands are benefited through touch strategy. When consumers able to touch the object of goods, they have a better understanding of the product through tits weight, landscapes, and temperature. One of the most common example would be the heavy object are more associated with high quality product. (Hultén, 2011). On the digital era tactile strategy are still in need although it is extremely challenging because it would impact the willingness to buy through the internet (Citrin *et al.,* 2003)

2.1.3. Memory

Memory at the base is a term for structures and processes of maintaining information about stimuli, images, events, ideas and skills after the original information is no longer present over time (Maitlin, 2005; Goldstein, 2011). There are several models that can help understand how human memory works. One of the most influential model is *modal model of memory* proposed by Atkinson and Shiffrin (1968) (Malmberg *et al.,* 2019). On their model it has stages called *structural features* of the model which are:

Sensory memory

Sensory memory mainly is the retention process for a short period of time of the stimuli. It is essential for collecting information to be processed in further stage, holding the information temporarily while the original stimuli is happening and filling in the blanks when stimulation is intermittent (Goldstein, 2011). Although sensory memory can hold numerous amounts of information, it only retains information for seconds even fraction of a second.

Short-term memory

Short term memory (STM) involve storing small amounts of information for some period of time (Baddeley *et al.,* 2009). What people think and remember at the current moment are exist in short-term memory. Only few of the information stored in short-term memory can survived to long-term memory (Goldstein, 2011). Many researchers use recall method to test short-term memory. Recall test involve giving participants stimuli and after a delay are asked to remember as many of the stimuli as possible.

Long-term memory

Long-term memory (LTM) is a system for storing information in a long period of time. People can remember more detailed and specific memories on STM, and memories will fade with time, therefor LTM memories tend to be more general memories. There are several factor that affecting human brain performs STM and LTM((Martin & Prince, 2010). Klein (2001) studied about performance ability in regards to the time of the day on elementary students. It shows that performance ability increases from morning to afternoon.

2.2. Brand

2.2.1. Brand Equity

Brand Equity, in general, is a set of assets that are associated with brands' name and symbol that lead to the increased value for a product or services (D. A. Aaker, 1996). These assets are listed as brand name awareness, brand loyalty, perceived quality, and brand associations. Brand awareness elaborated as the strength of a brand presence in the consumers' minds. It has been a major research topic in psychology and marketing.

Brand name awareness

The recognition of a brand and recall can affect consumers' behavior towards a brand. (Norman *et al.,* 2020) investigate how a brief exposure to unfamiliar TV and online food advertisement that are not primarily targeted to children can actually affecting children's brand recognition and their attitudes toward it. Even an average of 50% of children claim that they want to eat the brand sooner. While (Myers *et al.,* 2020) proving that using taboo content in advertising increases brand recall and recognition.

Brand loyalty

Brand loyalty can be used as foundation information regarding sales prediction and profit stream. Hence, placing a value on a brand is highly needed. A common mistake that a company faced is that to make an effort to create growth by entirely new customers while neglecting existing ones (D. A. Aaker, 1996). A study about smartphones preferences, shown that the brand is the most important attribute when consumers making a purchase decision (Kim *et al.,* 2020). The study was mainly executed in the Korean market where 69.2% own Samsung where the brand is originated. However, the study shows that even though Samsung has higher

consumers' interest, Apple still had the highest brand loyalty even though only 14.6% of the respondents were Apple user.

Perceived Quality

Perceived quality is how consumers' see a brand to lift the status of a brand asset (D. A. Aaker, 1996). Companies use perceived quality as a measurement of companies' performance. Creating a perception of good quality needs an effort to understand the consumers' perceptions of it. For example, a study conducted in China investigates how international certification can impact the company's perceived quality (Wang *et al.,* 2020). It is shown that 70% of the respondents consider certification labels issued by an international organization associated with a safe and high-quality product.

Brand Association

Companies want the brand to be perceived in the customers' minds. Association that consumers make with a brand including the brand ambassador, spokesperson, symbol, logo or even product attributes (D. A. Aaker, 1996). Brand associations are generated by brand identity. Brand identity is a perception of identity type and is associated with company's name and, secondary, to an institutional marque (Essamri *et al.,* 2019). It is essential for the long-term development and differentiation of a brand to one another.

2.2.2. Brand Personality

Having a strong brand consider as one of the most sustainable competitive advantages. Two things that make a brand stand out among others are favorable brand personality and a well-designed logo (Luffarelli *et al.,* 2019). Personality explained as human psychological traits that differentiate brands from each other that lead to a relatively stable response to external stimuli (D. A. Aaker, 1996; J. L. Aaker, 1997; Bairrada *et al.,* 2019; Kotler & Keller, 2013; Luffarelli *et al.,* 2019). It is considered an insightful variable when analyzing consumers' behavior towards brands.

Brand personality is consumers' symbolic function of a brand that is associated with a set of human characteristic based on the anthropomorphizing the brand (J. L. Aaker, 1997). Studies have shown that brand personality can be tools for consumers to express their own and ideal self (J. L. Aaker, 1997; Bairrada *et al.,* 2019). Bairrada (2019) also, explain that self-

expression plays an important role in its self-expressive value which helps consumers enhance their self-concept and reflect their personality.

Consumers' perceived brand personality are simplified into five dimensions: Sincerity, Excitement, Competence, Sophistication, and Ruggedness (J. L. Aaker, 1997). Three dimensions (Sincerity, Excitement, and Competence) are related to the human personality dimension while the other two dimensions (Sophistication and Ruggedness) are poles apart from any human personality. The first three-dimension are associated with common human personality, Aaker (1997) explain that Sincerity can capture the idea of warmth and acceptance while Excitement covered social ability, energy, and vibe, and Competence explains responsibility, security, and dependability. The last two dimensions are trying to discover what individuals are desired but do not necessarily own.

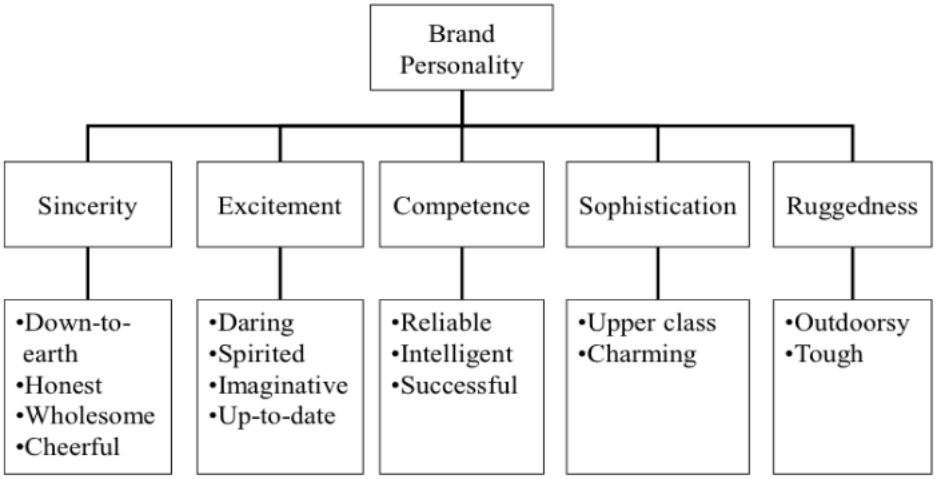

Figure 2. Brand personality framework (J. L. Aaker, 1997)

2.2.3. Brand Recall

Brand recall is the recollection of the brand by consumer when stimuli associated with the brand are occur (Alba & Chattopadhyay, 1986; Krishnan *et al.*, 2013; Norman *et al.*, 2020). It is a part of brand awareness that measure the recall of brand from consumers' memory. It is important for brand to be the top of mind when consumers think about certain product (Krishnan *et al.*, 2013). Because high brand recall index would positively influence consumers' behavior such as purchase intention, preferences, and trust (Grazer & Kessling, 2011; Norman *et al.*, 2020; Sung & Kim, 2010).

2.3. Sonic Branding

Sonic branding in general means branding through audio. Audio or music is able to invoke memories and strong feelings associated with it (Gustafsson, 2015). Music in the marketing concept first brought by Kotler (1973), was used in the literature "Atmospheric" which later well known as the marketing of the senses (Gustafsson, 2015). Sensory marketing has been a crucial part of marketing. Each sensory are impacting the consumer behavior and perceptions differently about brands. Brüner (1990) makes sonic branding more popular as the effort of building the sonic brand more focus on consumers' experience and not only through their subconscious reaction to music.

The term sonic branding is somewhat similar to brand sound, sound branding, corporate sound, acoustic branding, audio branding and sound mark. Nevertheless, to explain audio In consumers' context especially in marketing the term sonic branding, acoustic branding, audio branding, sound branding, branded sound, music branding, Muzak, elevator music, piped music, background music, foreground music, soundscape, audiovisual identity, sound studies and sonic design are widely used (Gustafsson, 2015).

Different literature as explain by Gustafsson (2015) in sonic branding inquired different relation within music and the consumers. In Consumers' Culture theory literature, it focusing on consumers' practice in relation to consumer agency, identity, and community. It is generally using consumers' side to see how they perceive and construct different phenomena in brands, music, and ads. While in sound studies literature, it is a mixed study between sociology, anthropology and media studies. It is mainly investigating the relationship within sound and technology. Other literature like strategic brand management/sonic branding and consumer behavior literature are more consumer-centric studies about the implication and intention of music or sound in advertising and store as experience.

Literature	Sender	Medium	Receiver	Outcome
Sound studies	Technology	Sound	Listener	Reaction
CCT (Consumer Culture Theory	company, consumer/prosumer	Music, sound, silence	Consumer	Consumption, co-production, meaning making
Music sociology	Artist, each person	Music, sound, silence	No "receiver", only agents	Music as everyday practice and art
Strategic brand management/soni	Company	Music, (silence), store, advertising	Consumer	Purchase, enhanced brand images, enhanced consumer-brand relationship
Consumer behavior	Company	Music, store	Consumer	Purchase

Table 2. Consumer research oriented overview of sonic branding in the literature (Gustafsson, 2015)

Sound is an effective stimulus in marketing, especially in consumer-oriented sonic branding literature. Many researchers tried to come up with which type of music fit in a different marketing context. Bode (2009) connected it with advertising, Beverland (2006) connected it with brand values and Khrisnan (2012) connected it with consumers' willingness to pay. Hwang & Oh (2020) connected it to brand awareness, recall attitudes evaluation, behavioral intention (Mas *et al.,* 2020) in various sound/music research objects. Other relevant studies to this research topic have focused on music in an online environment (Hwang & Oh, 2020), music for products (Zampini and Spence, 2005), sonic logo structure influence consumers' behavior (Krishnan *et al.,* 2012). Musical fit and misfit are essential for companies to be the bridge for their relationship with consumers. The perceived fit can turn into a good consumers' experience of the brand and can eventually lead to an increased level of consumers' brand loyalty (Gustafsson, 2015).

2.3.4. Sonic Logo

A sonic logo is viewed as the auditory analog of a visual logo in the form of music and occasionally including a form of speech or non-musical sound (Graakjær, 2019; Krishnan *et al.,* 2012). Sonic logos are different from jingle, brand song or background music. It is a short sequence of notation that last not more than three seconds (Kilian, 2009) . He then elaborates that brand names and logos are one of three types of key visuals that can be observed, and in many cases, the sonic logo is part of these consumers' experiences. Although brand names are often correlated with its logo both visual and audio, there are few brands that linked their brand names with their sonic logo. One of the most famous ones is *Deutsche Telekom*. Its sonic logo is well representing their visual logo.

Figure 1. *Duetsche Telekom* Logo and Acoustics in Tune

Nowadays more and more companies are developing a sonic logo as they are more aware of its benefit. As the generation voice or the practitioner call, voice native users will understand what a good audio experience and not, the brand is forced to developed their audio identity as well. Although there are needs in developing sonic logos, the development of sonic logo are generally based on practitioners instinct rather than objective measurement (Krishnan *et al.,* 2012; Mas *et al.,* 2020).

Krishnan et al. (2012) investigate how a different number of tones (three, six, and nine note) exist in sonic logo can influence brand perceived value. It resulted that there is a non-linear relationship with consumers' willingness to pay. It proved that it is possible to apply objective measurement in developing a sonic logo.

3. Methodology

This study considers primary and secondary data. Secondary data gathered according to previous research on various areas of the research topic. Primary data collected through a causal research design. Causal research is used as to understand the different sonic logo contour to be one of the causes of perceived brand personality. In addition, using causal research do not prove causality, rather to infer a cause-and-effect relationship (Malhotra *et al.*, 2017). Prior to conducting causal assumption, concomitant variation, time order of occurrence of variables, and the absence of other possible causal factors need to be fulfilled.

Concomitant Variation

Different sonic logo influence consumer differently based on its ease of retrieval and detection (Krishnan *et al.*, 2012). It might as well cause by stimulus clarity, flowing from size, regularity, goodness of form, or symmetry (Reber *et al.*, 1998). Consumers' who exposed to the stimuli tends to non-consciously search for any explanation while the other, create illusion of familiarity (Janiszewski and Meyvis, 2001). analogically explain in the sonic branding area, some sonic logos are meant to be "easier to process" and it should influence the experience the consumers' regarding the brand evaluation, including how consumers' perceived brand personality. Audio feature have been proven to be associated with personality traits (Mas *et al.*, 2020). In addition, Big five personality traits model (excitement, ruggedness, sophistication, sincerity) (J. L. Aaker, 1997) proposed by (Zhang, 2010) associating it with music features.

Time order of occurrence of variables

Since the causing event have to happen either before or simultaneously with the effect, the consumer's perceived brand personality will be tested after the subject unit exposed to stimuli.

Absence of another possible causal factor

Extraneous variables need to be controlled in order for casual research to be valid (Malhotra *et al.*, 2017). In this research, no existing sonic logo is used. Each group will be assigned with different sonic logo.

3.1. Experimental Design

use non existing sonic logo as causal variable, no pre-measurement needs to be conducted. It is assumed that all groups are similar before the experiment because of the randomize

assignment and the controlled variable (Malhotra *et al.,* 2017). Thus, Post-test-only Control Group Design suit best for this research design.

In Post-test-only- Control Group Design, the group experiment divided into two groups that were randomly chosen . One group act as control group and the other act as experiment group. Only experiment group given any treatment based on the research, and the control group is not. Subsequently, the result of two groups will show the effect of the treatment given. Control group serve as comparison to experiment group within time of experiment. Following are symbolize the experiment design:

EG 1 : R X1 O1

CG : R O2

3.2. Participants

Participants are university students and young professionals who reside in Portugal. They are recruited through various international networking groups and student associations. Each volunteer will make appointment for an online meeting according to their time availability. Online meeting divided by 2 groups that 3 sonic logos will randomly place and control group.

3.3. Stimuli

This study focuses on three independent variables of sonic logo contour (ascending, descending and constant pitch). The sonic logo design is using 6 tone acoustic (Krishnan *et al.,* 2012) and based on the western music pattern (1 octave, 30dB variation, 4x4, upper tonality C, low-pitched techno instrument) (Mas *et al.,* 2020). The 3 versions of sonic logos are put at the end of a 10 seconds voice message. This message was spoken by female presenters of a sponsorship announcement on a simulated podcast program. Participants are young professional and students based in Lisbon with various background. They are placed randomly into three experimental groups.

The brands used are non-existent brand to avoid previous judgement regarding any personal experience towards the brand. Later, all three sonic logos are placed in made up

podcast commercial with the following structure: Voice announcement, brand name, and sonic logo. Here are the following template for the commercial: “So Today’s episode was sponsored by Aku. Aku is a sustainable fair trade clothing line made perfectly just for you. Use our B Positive code to get 20% discount on their website! [Sonic logo].

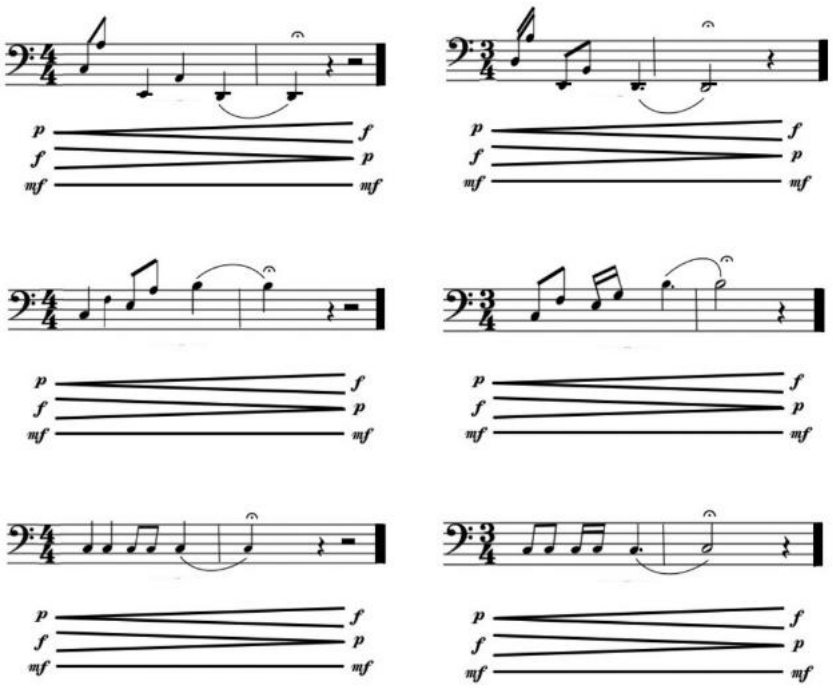

Figure 3. 1-Descending pitch. 2- Ascending pitch. 3- Constant. (Mas *et al.*, 2020)

3.4. Time and Place of Experiment

This experiment conducted online due to the limitation of gathering in a certain place as COVID-19 took place all over the world, including Portugal as the main geographic subject of the research. The time of research stated in August 2020 to March 2021 for theoretical references followed by the experiment on March 2021. The first experiments are conducted on march 13th 2021. Second experiment consist of recall survey conducted two weeks later at 10.00 AM. Only participants who completed the first experiment were allowed to take the survey.

3.5. Measures

Brand Personality

Brand personality scale are used to measure perceived brand personality through self-reported measures. Aaker (1997) identifies the 5 Dimension of BPS which represented 15 traits of brand personality. In this research, the traits used were adjusted to the usage of the brand. Dimension of Sincerity (Cheerful, Friendly & Down-to-earth), dimension of Excitement (Daring, Cool, Imaginative), dimension of Competence (Reliable, Intelligent, Confident), dimension of Sophistication (Glamorous, Feminine & Charming), dimension of Ruggedness (Tough, Masculine & Outdoorsy) (J. L. Aaker, 1997). These 11 traits are put in randomized order with a seven-point Likert Scale from 1 being not the characteristic of the brand to 7 very characteristic of the brand (Mas *et al.*, 2020).

Brand Recall

Participants were given a survey on brand recall. They were showed 3 types of sonic logos and were asked to choose the right sonic logo for the brand that they had been exposed to. The sonic logo that correctly identified became the measure of brand recall for each sonic logo contour.

4. Analysis

The experimental group consist of 117 participants and 36 participants on the control group. There were significant differences between experimental and control groups ($p < 0.05$) on all brand personality dimension. Control group are being used to determine the standard average of each brand personality dimension.

More than half of the participants in the experimental study were female (60.7%) followed by male (39.3%). Participants are young professional and student who reside in Portugal and Indonesia during this study conducted. Their nationality is varied to make this study more diversified in terms of sources. Majority of participants were Indonesian (23.9%) followed by Portuguese (28.2%) and Brazilian (12%). Cronbach's alpha coefficients applied to the brand personality scale and resulting 0.781, making it highly reliable data.

4.1. Brand Personality

First research question was answered using an explanatory factor analysis to determine brand personality of each sonic logo. All the personality traits were factor analyzed using principal component analysis according to each personality dimension, followed by factor analysis with Varimax rotation to investigate if the five dimensions are obtained. The criteria applied on the factor analysis were eigenvalues greater than 1 and explained variance. The result shown five-component, in line with Aaker's Brand Personality model, with all of the factors explaining a total 71.20%. Dimension competence with reliable, confident, and intelligent traits was on the top by explaining 29.73% of the variance. Dimension excitement with imaginative, daring and cool traits explained 18.07% of the variance. Dimension of sophistication with charming, feminine and glamorous traits explained 8.91% of the variance. Dimension ruggedness with tough, outdoorsy and masculine traits explained 7.88% of the variance. Dimension sincerity with friendly, cheerful and down to earth traits explains 6.95% of the variance.

Dimension	Eigenvalue	% of Variance	% Cummulative
Competence	4.407	29.378	29.378
Excitement	2.711	18.071	47.449
Sophistication	1.337	8.913	56.362
Ruggedness	1.182	7.881	64.243
Sincerity	1.044	6.958	71.201

Table 3. Factor analysis result – Total variance explained

	Factor 1: COMPETENCE	Factor 2: EXCITEMENT	Factor 3: SOPHISTICATION	Factor 4: RUGGEDNESS	Factor 5: SINCERITY
C_RELIABLE	.856	.153	.171	-.182	.158
C_CONFIDENT	.836	.079	.184	-.093	.117
C_INTELLIGENT	.803	.022	.080	-.071	.167
E_IMAGINATIVE	.110	.818	.149	.049	.114
E_DARING	.003	.789	.197	.136	-.045
E_COOL	.158	.731	.246	.114	.219
SO_CHARMING	.192	.187	.837	-.068	.202
SO_FEMININE	.117	.220	.763	-.085	-.034
SO_GLAMOROUS	.135	.195	.697	.200	.178
R_TOUGH	-.057	.123	.034	.838	.001
R_OUTDOORSY	-.098	.357	.081	.770	.058
R_MASCULINE	-.192	-.115	-.095	.741	-.232
S_FRIENDLY	.214	-.093	.249	-.143	.798
S_CHEERFUL	.040	.161	.269	-.021	.742
S_DOWNTOEARTH	.286	.211	-.225	-.008	.707

Table 4. Factor analysis result – Rotated component matrix

Reliability test was conducted to all the factors. Factor 1(Dimension Competence) α = 0.842, factor 2 (Dimension Excitement) α = 0.774, Factor 3 (Dimension Sophistication) α = 0.768, Factor 4 (Dimension Ruggedness) α = 0.728, Factor 5(Dimension Sincerity) α = 0.687. Results indicated that all the dimension were reliable. Then one-way ANOVA was processed to all dimension. Levene's homogeneity of variance test showed that the assumption of equality of variance is fulfilled with (competence p = 0.082, excitement p = 0.637, sophistication p = 0.378, ruggedness p= 0.254) with the exception of sincerity (p = 0.003) which later Kruskall-Wallis test shown that the distribution of dimension sincerity is different for at least one of sonic logo contour (p = 7.29). From the one-way ANOVA concluded that dimension

competence ($p = 0.001$), excitement ($p = 0.009$), ruggedness ($p = 0.020$) significantly vary with different sonic logo contour with the exception of dimension sophistication ($p = 0.154$)

	Competence		Excitement		Sophistication		Ruggedness		Sincerity	
	F (2,114)	*p*	*F* (2,114)	*p*	*F* (2,114)	*p*	*F* (2,114)	*p*	*F* (2,114)	*p*
Sonic logo contour	7.291	.001	4971	0.009	1905	0.154	4063	0.020	4403	0.014

Table 5. One-way ANOVA of Sonic logo contour (Ascending, Descending and Constant)

Furthermore, post hoc test are conducted to confirm which brand personality dimension are significantly different according to each sonic logo contour using Tukey's post hoc test. It implies Ascending sonic logo is lean more towards competence ($p < 0.05$, $M = 5.65$) and constant ($M = 5.29$) than descending ($M = 4.32$). Constant Sonic logo is lean towards excitement ($p < 0.05$, $M = 4.14$) than ascending (M = 3.75) and descending ($M = 3$) sonic logo. Constant sonic logo ($p > 0.05$, $M = 4.36$) not significantly different than ascending and descending in sophistication, however, the mean of constant is higher than ascending ($M = 4.18$) and descending (M = 3.5). Descending sonic logo is significantly lean more towards ruggedness ($p < 0.05$, $M = 3.13$) than ascending ($M = 2.37$) and constant ($M = 2.48$) sonic logo. Ascending is lean more towards sincerity ($p < 0.05$, $M = 5.5$) compare to descending ($M = 4.7$) and constant ($M = 4.9$).

	M Competence	*M* Excitement	*M* Sophistication	*M* Ruggedness	*M* Sincerity
Ascending	5.65	3.75	4.18	2.37	5.5
Descending	4.32	3	3.5	3.13	4.7
Constant	5.29	4.14	4.36	2.48	4.9

Table 6. Brand personality dimension means

4.2. Brand Recall

From all the previous 117 participants, only 106 who were successfully submitted the follow-up brand recall survey, with 35 participants for ascending sonic logo, 39 participants for descending sonic logo, and 32 participants for constant sonic logo. The percentage of brand recall for ascending sonic logo is 68.57% followed by descending sonic logo with 61.53% and constant 90.62%. with 0% of ascending and descending logo choose constant sonic logo on their brand recall survey, making it the most distinguish from the three type of sonic logo.

First exploratory analysis is conducted to investigate whether there is a relationship between brand recall and each brand personality dimension using Pearson correlation. The result shown that there is a positive association between brand recall and dimension competence (r = 0.292), dimension of sincerity (r = 0.228) and dimension sophistication (r = 0.098) with the significant is at p = 0.01.

		BRAND RECALL	COMPETENCE	EXCITEMENT	SOPHISTICATION	RUGGEDNESS	SINCERITY
BRAND RECAL	Pearson Correlation	1	.292**	-.010	.098	-.123	.228*
	Sig. (2-tailed)		.001	.911	.293	.187	.013
	N	152	117	117	117	117	117
COMPETENCE	Pearson Correlation	.292**	1	.000	.000	.000	.000
	Sig. (2-tailed)	.001		1.000	1.000	1.000	1.000
	N	117	117	117	117	117	117
EXCITEMENT	Pearson Correlation	-.010	.000	1	.000	.000	.000
	Sig. (2-tailed)	.911	1.000		1.000	1.000	1.000
	N	117	117	117	117	117	117
SOPHISTICATI	Pearson Correlation	.098	.000	.000	1	.000	.000
	Sig. (2-tailed)	.293	1.000	1.000		1.000	1.000
	N	117	117	117	117	117	117
RUGGEDNESS	Pearson Correlation	-.123	.000	.000	.000	1	.000
	Sig. (2-tailed)	.187	1.000	1.000	1.000		1.000
	N	117	117	117	117	117	117
SINCERITY	Pearson Correlation	.228*	.000	.000	.000	.000	1
	Sig. (2-tailed)	.013	1.000	1.000	1.000	1.000	
	N	117	117	117	117	117	117

Table 7. Brand recall and brand personality dimension correlation

Regression analysis also conducted to understand further regarding the influence of dimension competence, sincerity and sophistication to brand recall. 14.7% of the variation of brand recall is explained by dimension competence, sincerity and sophistication. (R^2 = 0.147). In case of constant, dimension competence (p = 0.001) and sophistication (p = 0.01) should remain in the model with the exception of dimension sophistication (p = 0.262)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.167	.094		1.780	.078
COMPETENCE	.317	.094	.292	3.360	.001
SOPHISTICATION	.106	.094	.098	1.128	.262
SINCERITY	.248	.094	.228	2.628	.010

Table 8. Brand recall and brand personality Regression model

The estimated brand recall level if dimension competence and sincerity were value to zero is 0.167. While a unit increase in dimension competence will lead to an increase of 0.317 point on brand recall. A unit increase in dimension sincerity will lead to an increase of 0.248 point on brand recall. Here is the equation of the regression model:

Brand recall = 0.167 + 0.317*Dimension competence + 0.248*Dimension sincerity

Test F was conducted as well to test the validity of the multiple linear regression model. F statistic calculated was higher (F = 6.489) than F critical value (F = 3.233). With ANOVA test shown that the $p < 0.05$, it can be concluded that the multiple linear regression under this analysis is valid. At least one of the dimensions is important in explaining the brand recall.

4.3. Discussion

Study of the effect of sound have been thorough ever since the media psychology initiated (Alpert & Alpert, 1990; Gustafsson, 2015; Husain *et al.,* 2002a; Krishnan *et al.,* 2012; Mas *et al.,* 2020; Ogg *et al.,* 2019). Research mainly focusing on the effects on sound elements and pace (Alpert & Alpert, 1990; Husain *et al.,* 2002b; Hwang & Oh, 2020; Mas *et al.,* 2020). In spite of the amount of research conducted in the sound area, there is limited study focusing on sound feature in regards to sound branding (Gustafsson, 2015; Krishnan *et al.,* 2012; Mas *et*

al., 2020). Hence, more study of sound features like pitch, duration, intensity, and timbre need to be initiated.

This research has one research question and one hypothesis. The first research question purpose is trying to explore brand personality traits on different sonic logo contour (ascending, descending, and constant pitch) based on Aaker (1997) Brand Personality Scale. Factor analysis with Varimax rotation test resulted in a consistent pattern of brand personality dimension on sonic logo contour with brand personality scale from Aaker (1997). The brand personality dimensions reduced into five which are dimension competence, excitement, sophistication, ruggedness, and sincerity.

Furthermore, this study found out that dimension competence and sincerity explaining Ascending sonic logo contour, dimension excitement explain constant sonic logo contour and dimension ruggedness explain Descending sonic logo contour. While all sonic logo contour significantly different from each sonic logo on four-dimension, dimension sophistication was the only exception with the lowest mean among all five dimensions. However, since this is a relatively new area of study (Gustafsson, 2015; Krishnan *et al.*, 2012), personal factors and environmental factors may involve in self-reported measures used in this study, hence dynamic physiological ones are required in future research (Mas *et al.*, 2020).

In relation to a previous study regarding sonic logo impact on the consumers' willingness to pay (Krishnan *et al.*, 2012), this study tries to close the gap by investigating the impact of different sonic logo contours on its brand recall based on its perceived brand personality. Brand personality is a metaphor idea that consumer create towards brands based on their personality (Bairrada *et al.*, 2019; Louis & Lombart, 2010). It helps consumers to express their own and ideal self (Freling & Forbes, 2005; Malhotra *et al.*, 2017).

Brand recall study showed that dimension sincerity and competence positively influence brand recall based on consumers' self-evaluation for the hypothetical brand, partially in line with this research hypothesis which is brand that perceived as possessing dimension sincerity, excitement, and competence.

However, this study only used non-existing sonic logo to control all variable that might influence consumers' perception towards brand personality and brand recall. Therefore, this result might only work for company that want to develop new sonic logo or brand. In addition, participants that took part in the study was designed to be as diverse as possible. The result of this study might be relevant enough to used in Europe and Southeast Asia as the participants

were young professional and university students that reside in Portugal and Indonesia at the time of the study. With the international environment in Lisbon and Jakarta, the most place where participant reside, this study would have more different perspective.

4.4.Managerial Implication

Sonic logo contour study is relatively new subject of study. In the recent practice, managers generally work based on their past experience rather than scientific studies when it comes to developing sonic logo for a brand. Although there have been list of study of how different sonic logo contour can influence consumers' behavior, this study help overcome some gaps on the previous studies.

More and more brand aware of the importance of their sonic branding to enhance their consumers' experience. Sonic branding can vary from jingles, background music on the store, sonic logo and many more. In the current situation where brand try to digitalize their brand, they are aware of the importance of distinguishing their brand to the rest of the competitors. One of the most interesting to look at is sonic branding, as sound platform also become more common on consumers' daily use.

This study found two general implications for the company to applied. First, when company decided to develop a sonic logo based on their brand personality, it can be adjusted accordingly with sonic logo features. For instance, if the company's brand personality is tending to be competent and sincere, the ascending sonic logo would fit better for the company. Similar treatment if the brand personality is tending to be more exciting, the constant sonic logo would suit better. Based on this information, managers can develop strategic decision in sonic branding area by using the suitable sonic feature.

Second finding showing that brand recall as a dependent variable is positively impacted by dimension sincerity and competence. Practitioners are able to make decision based on this information that if the company tries to build a new brand awareness where there are no previous products or services that can be associated with it, it is best to use the ascending sonic logo as it associated with competence and sincere.

4.5. Limitation

Researcher is aware that this study has many limitations. This research control variables that might involve in consumers' perception towards brand personality and brand recall. In the first instance, this study using a non-existence brand and sonic logo with no voice-over and use no sound effects. This is mainly for experimental purposes where the stimuli are controlled. Hence, this study might be irrelevant for existing sonic logo, or existing brand that consumers are familiar to begin with. Consumers' previous memory associated with the brand might change the consumers' judgment towards the brand. Therefore, this study only relevant to brand with no pre-existing sonic logo, and/or no pre-existing marketing tools that are associated with the brand.

Although participants are varied on their nationality, the place where they reside were only limited to Portugal and Indonesia where some of them might have lived there for a long time, hence their culture and behavior towards brand tend to similar with each other. The age group of participants that range on young professional and students might be the most relevant age group for sound platform users.

4.6. Future research

This study covered some important gaps in the sound branding area specifically the impact of different sonic logo contours to brand personality and brand recall. However, more issues are raised, for example, other sonic logo features like tempo, pace, a combination of features, need to be considered for future research. The more sonic logo features studied in the marketing fields would expand the knowledge its implication towards consumers' behavior. Future researchers might also need to explore more about the sonic logo features implication such as willingness to pay, trust, purchase decision and others. Nevertheless, this study in general is able to conducted as the foundation for future study.

Analyze the existing sonic logo would also be an interesting topic for future research. Pre-existing memory about sonic logo might influence consumers' perspective towards the brand. However, it would be more interesting to conduct brand recall assessment first, to decide what brand's sonic logo are associated with certain brand personality (example : Netflix sonic logo as exciting, Nokia as sincere, etc). Then future research might explore what consumers' behavior it can influenced by these brand personality.

5. Conclusion

Sonic branding have been a long subject of marketing study as part of sensory marketing strategy. Auditory sensory marketing is one of unique human sensory as it is associated with consumers' past memory. Brands have been using sonic branding in their branding strategy in the form of jingle, background music, sonic logo, and others. In the past studies many have investigate how these form of sonic branding can influence consumers' behavior but only few discussing about sonic logo.

This research was developed to investigate how different sonic logo contour influence consumers' perspective of brand personality and the brand recall. It is concluded that each brand personality dimension associated with different sonic logo contour. However, as a whole, all sonic logo contour are associated with the same combination of brand personality dimension. The experiment was conducted based on non-existing sonic logo with the same music instrument, no sound effect, or voice over. Hence, the only factor that differentiate one stimuli to another is the sonic logo contour. This might have a huge influence on the conclusion.

It can be concluded as well that brand personality dimension of sincerity and competence are the ones that positively influence brand recall based on consumers' self-evaluation. The fact that this research only using non-existing brand, showing that sincerity and competence are the most necessary personality traits for a brand that consumers' have no previous memory associated with it. In other context, it might only be relevant for brand that just recently launch rather than existing brand.

This study show some evidence in regards to sound branding that brand personality and brand recall of a brand can be consistently influenced through different contour of a non- verbal brand element. Based on this research, managers can used this findings as foundation of knowledge in sonic logo design.

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Appendix

5.1. Appendix 1 – Survey design

Part 1 - Personal Information

1 How old are you?

17-22
23-28
29-33
>34

2 What is your gender?
Female
Male
Neutral

3 What is your nationality ?

_____

4 What is your occupation ?
Students
Employed
Business Owner
others :

_____

Part 2 - Perceived Brand Personality for Brand Aku

	1 - Strongly disagree	2 - Disagree	3 - somewhat disagree	4 - Neutral	5 - Somewhat agree	6 - Agree	7 - Strongly agree
5	Brand Aku is reliable						

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

6 Brand Aku is Tough

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

7 Brand Aku is down to earth

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

8 Brand Aku is confident

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

9 Brand Aku is Glamorous

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

10 Brand Aku is Outdoorsy

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

11 Brand Aku is Cheerful

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

12 Brand Aku is Charming

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

13 Brand Aku is Friendly

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

14 Brand Aku is Daring

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

15 Brand Aku is Imaginative

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

16 Brand Aku is Cool

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

17 Brand Aku is Masculine

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

18 Brand Aku is Confident

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

Part 3 - Brand Recall

19 Please enter your reference number

_____

20 Please choose the right sonic logo from Brand Aku

Sonic logo 1
Sonic logo 2
Sonic logo 3

21 I can recognise this brand among competing brands

☐ 1 - Strongly disagree ☐ 2 - Disagree ☐ 3 - somewhat disagree ☐ 4 - Neutral ☐ 5 - Somewhat agree ☐ 6 - Agree ☐ 7 - Strongly agree

5.2.Appendix 1 – Survey Result

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.781	.777	15

DIMENSION COMPETENCE

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
C_RELIABLE	5.14	1.531	117
C_CONFIDENT	5.40	1.503	117
C_INTELLIGENT	4.72	1.553	117

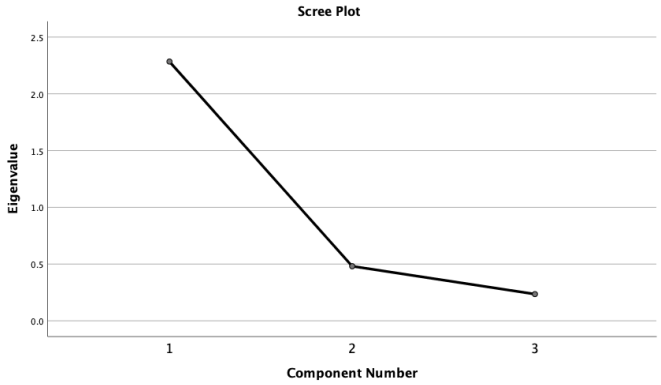
Correlation Matrix

		C_RELIABLE	C_CONFIDENT	C_INTELLIGENT
Correlation	C_RELIABLE	1.000	.740	.651
	C_CONFIDENT	.740	1.000	.529
	C_INTELLIGENT	.651	.529	1.000

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.284	76.135	76.135	2.284	76.135	76.135
2	.481	16.025	92.160			
3	.235	7.840	100.000			

Extraction Method: Principal Component Analysis.



Component Matrix[a]

	Component 1
C_RELIABLE	.920
C_CONFIDENT	.870
C_INTELLIGENT	.825

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

DIMENSION RUGGEDNESS

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
R_TOUGH	2.71	1.408	117
R_OUTDOORSY	2.44	1.505	117
R_MASCULINE	2.86	1.597	117

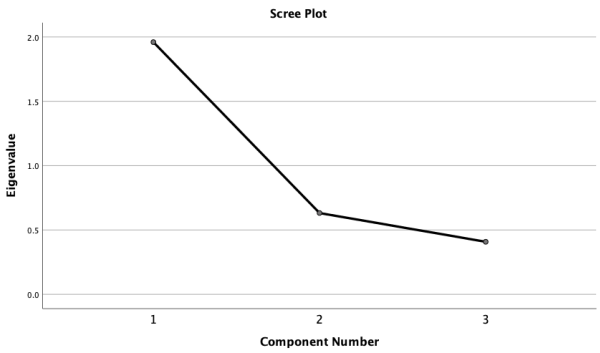
Correlation Matrix

		R_TOUGH	R_OUTDOORSY	R_MASCULINE
Correlation	R_TOUGH	1.000	.589	.442
	R_OUTDOORSY	.589	1.000	.402
	R_MASCULINE	.442	.402	1.000

Total Variance Explained

Component	Initial Eigenvalues Total	% of Variance	Cumulative %	Extraction Sums of Squared Loadings Total	% of Variance	Cumulative %
1	1.960	65.331	65.331	1.960	65.331	65.331
2	.632	21.061	86.392			
3	.408	13.608	100.000			

Extraction Method: Principal Component Analysis.



Component Matrix[a]

	Component 1
R_TOUGH	.850
R_OUTDOORSY	.831
R_MASCULINE	.739

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

DIMENSION SINCERITY

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
S_DOWNTOEARTH	5.06	1.703	117
S_CHEERFUL	4.35	1.642	117
S_FRIENDLY	5.57	1.341	117

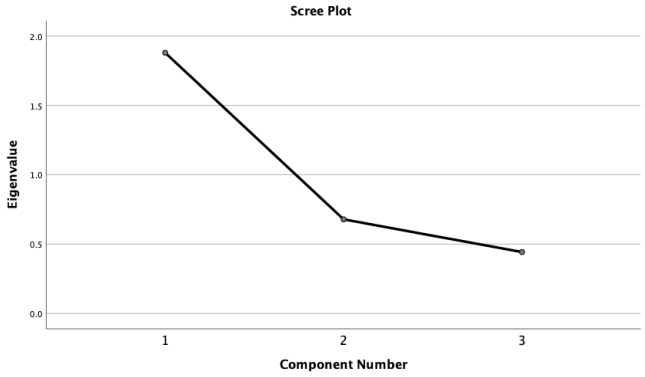
Correlation Matrix

		S_DOWNTOEARTH	S_CHEERFUL	S_FRIENDLY
Correlation	S_DOWNTOEARTH	1.000	.322	.487
	S_CHEERFUL	.322	1.000	.503
	S_FRIENDLY	.487	.503	1.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.880	62.651	62.651	1.880	62.651	62.651
2	.678	22.601	85.252			
3	.442	14.748	100.000			

Extraction Method: Principal Component Analysis.



Component Matrix[a]

	Component 1
S_DOWNTOEARTH	.753
S_CHEERFUL	.764
S_FRIENDLY	.854

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

DIMENSION SOPHISCTICATION

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
SO_GLAMOROUS	3.08	1.577	117
SO_CHARMING	4.39	1.681	117
SO_FEMININE	4.55	1.595	117

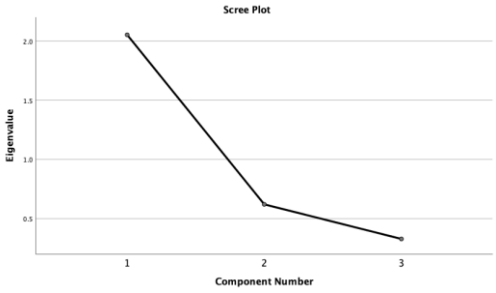
Correlation Matrix

		SO_GLAMOROUS	SO_CHARMING	SO_FEMININE
Correlation	SO_GLAMOROUS	1.000	.558	.384
	SO_CHARMING	.558	1.000	.626
	SO_FEMININE	.384	.626	1.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.052	68.395	68.395	2.052	68.395	68.395
2	.620	20.670	89.065			
3	.328	10.935	100.000			

Extraction Method: Principal Component Analysis.



Component Matrix[a]

	Component 1
SO_GLAMOROUS	.770
SO_CHARMING	.893
SO_FEMININE	.813

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

DIMENSION EXCITEMENT

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
E_DARING	3.56	1.882	117
E_IMAGINATIVE	3.43	1.792	117
E_COOL	3.87	1.774	117

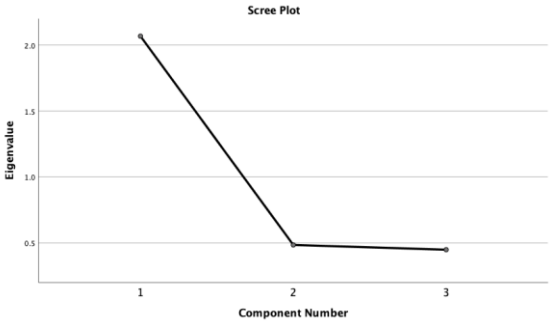
Correlation Matrix

		E_DARING	E_IMAGINATIVE	E_COOL
Correlation	E_DARING	1.000	.522	.528
	E_IMAGINATIVE	.522	1.000	.551
	E_COOL	.528	.551	1.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.067	68.914	68.914	2.067	68.914	68.914
2	.484	16.146	85.060			
3	.448	14.940	100.000			

Extraction Method: Principal Component Analysis.



Component Matrix[a]

	Component 1
E_DARING	.821
E_IMAGINATIVE	.833
E_COOL	.836

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

PCA ALL DIMENSION

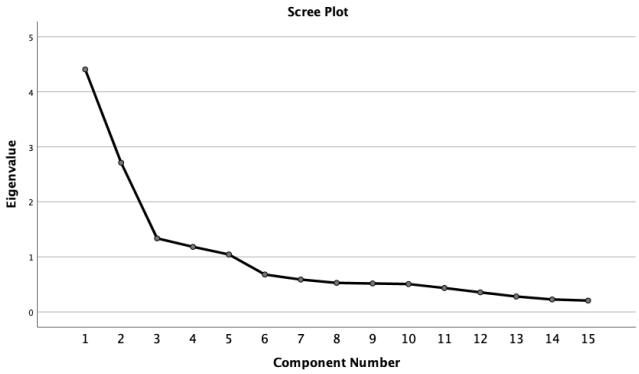
CORRELATION MATRIX

		C_RELIABLE	C_CONFIDENT	C_INTELLIGENT	R_TOUGH	R_OUTDOORSY	R_MASCULINE	S_DOWNTOEARTH	S_CHEERFUL	S_FRIENDLY	SO_GLAMOROUS	SO_CHARMING	SO_FEMININE	E_DARING	E_IMAGINATIVE	E_COOL
Correlation	C_RELIABLE	1.000	.740	.651	-.157	-.150	-.359	.308	.245	.386	.242	.381	.248	.123	.255	.302
	C_CONFIDENT	.740	1.000	.529	-.124	-.116	-.261	.314	.222	.295	.267	.363	.231	.082	.205	.230
	C_INTELLIGENT	.651	.529	1.000	-.121	-.087	-.269	.264	.239	.322	.167	.248	.178	.030	.143	.200
	R_TOUGH	-.157	-.124	-.121	1.000	.589	.442	-.018	.011	-.130	.127	.005	.006	.263	.138	.126
	R_OUTDOORSY	-.150	-.116	-.087	.589	1.000	.402	.050	.070	-.116	.262	.075	.079	.291	.330	.373
	R_MASCULINE	-.359	-.261	-.269	.442	.402	1.000	-.206	-.199	-.301	-.047	-.230	-.140	.043	-.079	-.064
	S_DOWNTOEARTH	.308	.314	.264	-.018	.050	-.206	1.000	.322	.487	.075	.085	.045	.124	.181	.236
	S_CHEERFUL	.245	.222	.239	.011	.070	-.199	.322	1.000	.503	.293	.396	.163	.109	.332	.315
	S_FRIENDLY	.386	.295	.322	-.130	-.116	-.301	.487	.503	1.000	.260	.373	.187	-.001	.066	.212
	SO_GLAMOROUS	.242	.267	.167	.127	.262	-.047	.075	.293	.260	1.000	.558	.384	.314	.321	.380
	SO_CHARMING	.381	.363	.248	.005	.075	-.230	.085	.396	.373	.558	1.000	.626	.328	.278	.410
	SO_FEMININE	.248	.231	.178	.006	.079	-.140	.045	.163	.187	.384	.626	1.000	.268	.316	.311
	E_DARING	.123	.082	.030	.263	.291	.043	.124	.109	-.001	.314	.328	.268	1.000	.522	.528
	E_IMAGINATIVE	.255	.205	.143	.138	.330	-.079	.181	.332	.066	.321	.278	.316	.522	1.000	.551
	E_COOL	.302	.230	.200	.126	.373	-.064	.236	.315	.212	.380	.410	.311	.528	.551	1.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.407	29.378	29.378	4.407	29.378	29.378	2.361	15.742	15.742
2	2.711	18.071	47.449	2.711	18.071	47.449	2.214	14.759	30.500
3	1.337	8.913	56.362	1.337	8.913	56.362	2.161	14.406	44.906
4	1.182	7.881	64.243	1.182	7.881	64.243	1.998	13.320	58.226
5	1.044	6.958	71.201	1.044	6.958	71.201	1.946	12.975	71.201
6	.680	4.532	75.733						
7	.588	3.918	79.651						
8	.528	3.520	83.171						
9	.517	3.444	86.615						
10	.506	3.373	89.988						
11	.434	2.896	92.884						
12	.355	2.368	95.252						
13	.280	1.865	97.117						
14	.227	1.510	98.627						
15	.206	1.373	100.000						

Extraction Method: Principal Component Analysis.



Communalities

	Initial	Extraction
C_RELIABLE	1.000	.843
C_CONFIDENT	1.000	.761
C_INTELLIGENT	1.000	.685
R_TOUGH	1.000	.721
R_OUTDOORSY	1.000	.741
R_MASCULINE	1.000	.662
S_DOWNTOEARTH	1.000	.677
S_CHEERFUL	1.000	.652
S_FRIENDLY	1.000	.773
SO_GLAMOROUS	1.000	.614
SO_CHARMING	1.000	.817
SO_FEMININE	1.000	.652
E_DARING	1.000	.682
E_IMAGINATIVE	1.000	.720
E_COOL	1.000	.681

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component				
	1	2	3	4	5
SO_CHARMING	.726	.101	-.427	-.186	.251
C_RELIABLE	.713	-.373	.080	.432	.060
C_CONFIDENT	.648	-.329	.080	.448	.157
E_COOL	.645	.409	.045	.023	-.306
SO_GLAMOROUS	.595	.298	-.249	-.126	.307
S_FRIENDLY	.578	-.317	.286	-.467	.197
S_CHEERFUL	.578	-.018	.255	-.500	.049
C_INTELLIGENT	.571	-.358	.181	.415	.159
E_IMAGINATIVE	.566	.425	.012	.080	-.460
SO_FEMININE	.556	.159	-.538	-.067	.156
R_OUTDOORSY	.121	.786	.281	.066	.158
R_TOUGH	-.021	.699	.315	.124	.343
R_MASCULINE	-.371	.572	.195	.165	.363
E_DARING	.441	.548	-.099	.111	-.407
S_DOWNTOEARTH	.459	-.166	.619	-.181	-.148

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
C_RELIABLE	.856	.153	.171	-.182	.158
C_CONFIDENT	.836	.079	.184	-.093	.117
C_INTELLIGENT	.803	.022	.080	-.071	.167
E_IMAGINATIVE	.110	.818	.149	.049	.114
E_DARING	.003	.789	.197	.136	-.045
E_COOL	.158	.731	.246	.114	.219
SO_CHARMING	.192	.187	.837	-.068	.202
SO_FEMININE	.117	.220	.763	-.085	-.034
SO_GLAMOROUS	.135	.195	.697	.200	.178
R_TOUGH	-.057	.123	.034	.838	.001
R_OUTDOORSY	-.098	.357	.081	.770	.058
R_MASCULINE	-.192	-.115	-.095	.741	-.232
S_FRIENDLY	.214	-.093	.249	-.143	.798
S_CHEERFUL	.040	.161	.269	-.021	.742
S_DOWNTOEARTH	.286	.211	-.225	-.008	.707

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

ONE-WAY ANOVA

DIMENSION COMPETENCE

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
REGR factor score 1 for analysis 6	Based on Mean	2.555	2	114	.082
	Based on Median	2.593	2	114	.079
	Based on Median and with adjusted df	2.593	2	110.702	.079
	Based on trimmed mean	2.644	2	114	.075

ANOVA

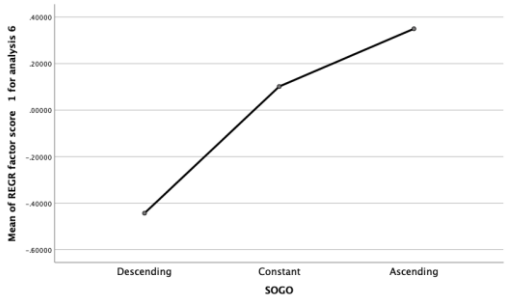
REGR factor score 1 for analysis 6

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.155	2	6.578	7.291	.001
Within Groups	102.845	114	.902		
Total	116.000	116			

Descriptives

REGR factor score 1 for analysis 6

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Descending	40	-.4437671	1.06746694	.16878134	-.7851596	-.1023747	-2.57119	1.77664
Constant	37	.1014907	.96694811	.15896529	-.2209058	.4238873	-2.96327	2.02045
Ascending	40	.3498882	.79655205	.12594594	.0951385	.6046379	-1.59523	1.46665
Total	117	.0000000	1.00000000	.09245003	-.1831089	.1831089	-2.96327	2.02045



Multiple Comparisons

Dependent Variable: REGR factor score 1 for analysis 6

	(I) SOGO	(J) SOGO	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Descending	Constant	-.5452579*	.21664733	.035	-1.0597336	-.0307822
		Ascending	-.7936554*	.21238500	.001	-1.2980093	-.2893015
	Constant	Descending	.54525786*	.21664733	.035	.0307822	1.0597336
		Ascending	-.24839752	.21664733	.488	-.7628732	.2660782
	Ascending	Descending	.79365538*	.21238500	.001	.2893015	1.2980093
		Constant	.24839752	.21664733	.488	-.2660782	.7628732

*. The mean difference is significant at the 0.05 level.

DIMENSION EXCITEMENT

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
REGR factor score 2 for analysis 6	Based on Mean	.452	2	114	.637
	Based on Median	.502	2	114	.607
	Based on Median and with adjusted df	.502	2	113.520	.607
	Based on trimmed mean	.467	2	114	.628

ANOVA

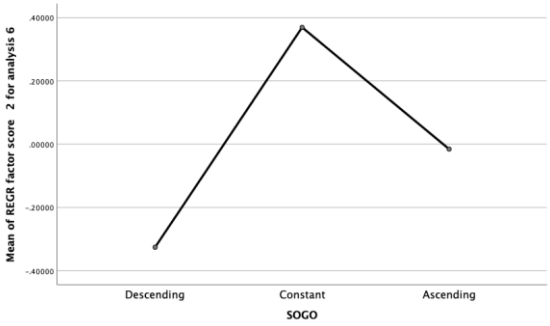
REGR factor score 2 for analysis 6

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.305	2	4.653	4.971	.009
Within Groups	106.695	114	.936		
Total	116.000	116			

Descriptives

REGR factor score 2 for analysis 6

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Descending	40	-.3259650	.99184258	.15682408	-.6431716	-.0087583	-1.70617	1.92137
Constant	37	.3692773	1.00896030	.16587205	.0328731	.7056814	-1.39146	2.37140
Ascending	40	-.0156165	.90128456	.14250560	-.3038613	.2726283	-1.88205	1.86537
Total	117	.0000000	1.00000000	.09245003	-.1831089	.1831089	-1.88205	2.37140



Multiple Comparisons

Dependent Variable: REGR factor score 2 for analysis 6

	(I) SOGO	(J) SOGO	Mean Difference (I–J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Descending	Constant	-.6952422*	.22066491	.006	-1.2192585	-.1712259
		Ascending	-.31034845	.21632354	.327	-.8240552	.2033583
	Constant	Descending	.69524222*	.22066491	.006	.1712259	1.2192585
		Ascending	.38489377	.22066491	.193	-.1391225	.9089101
	Ascending	Descending	.31034845	.21632354	.327	-.2033583	.8240552
		Constant	-.38489377	.22066491	.193	-.9089101	.1391225

*. The mean difference is significant at the 0.05 level.

DIMENSION SOPHISTICATION

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
REGR factor score 3 for analysis 6	Based on Mean	.981	2	114	.378
	Based on Median	.955	2	114	.388
	Based on Median and with adjusted df	.955	2	112.357	.388
	Based on trimmed mean	.989	2	114	.375

ANOVA

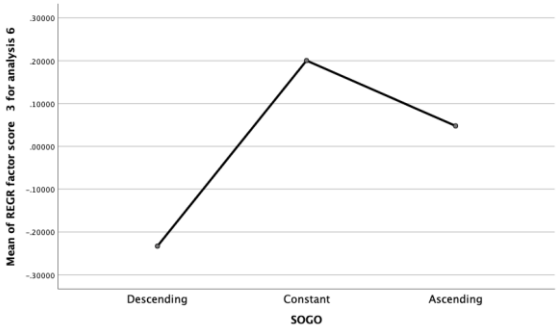
REGR factor score 3 for analysis 6

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.752	2	1.876	1.905	.154
Within Groups	112.248	114	.985		
Total	116.000	116			

Descriptives

REGR factor score 3 for analysis 6

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Descending	40	-.2331386	.86123928	.13617389	-.5085762	.0422991	-1.92223	1.44749
Constant	37	.2004173	1.00850876	.16579782	-.1358362	.5366709	-2.36644	2.13173
Ascending	40	.0477525	1.09434015	.17303037	-.3022344	.3977395	-2.27927	2.04121
Total	117	.0000000	1.00000000	.09245003	-.1831089	.1831089	-2.36644	2.13173



Multiple Comparisons

Dependent Variable: REGR factor score 3 for analysis 6

	(I) SOGO	(J) SOGO	Mean Difference (I–J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Descending	Constant	-.43355590	.22633529	.139	-.9710377	.1039260
		Ascending	-.28089106	.22188236	.417	-.8077985	.2460163
	Constant	Descending	.43355590	.22633529	.139	-.1039260	.9710377
		Ascending	.15266483	.22633529	.779	-.3848170	.6901467
	Ascending	Descending	.28089106	.22188236	.417	-.2460163	.8077985
		Constant	-.15266483	.22633529	.779	-.6901467	.3848170

DIMENSION RUGGEDNESS

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
REGR factor score 4 for analysis 6	Based on Mean	1.387	2	114	.254
	Based on Median	.763	2	114	.469
	Based on Median and with adjusted df	.763	2	101.158	.469
	Based on trimmed mean	1.160	2	114	.317

ANOVA

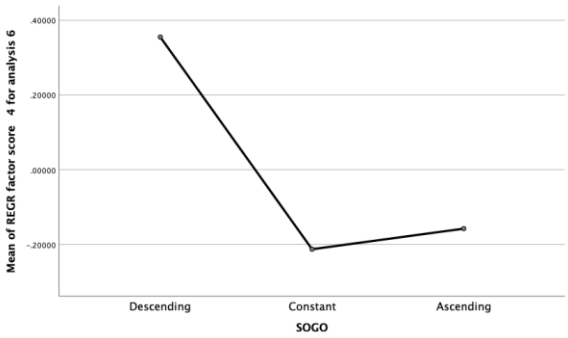
REGR factor score 4 for analysis 6

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.719	2	3.859	4.063	.020
Within Groups	108.281	114	.950		
Total	116.000	116			

Descriptives

REGR factor score 4 for analysis 6

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Descending	40	.3550153	1.01902284	.16112166	.0291160	.6809146	-1.14508	3.51126
Constant	37	-.2130488	.77322007	.12711660	-.4708532	.0447556	-1.42633	1.93642
Ascending	40	-.1579452	1.08910794	.17220309	-.5062588	.1903684	-1.47938	3.11750
Total	117	.0000000	1.00000000	.09245003	-.1831089	.1831089	-1.47938	3.51126



Multiple Comparisons

Dependent Variable: REGR factor score 4 for analysis 6

	(I) SOGO	(J) SOGO	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Descending	Constant	.56806408*	.22229964	.032	.0401657	1.0959624
		Ascending	.51296054	.21792611	.053	-.0045519	1.0304730
	Constant	Descending	-.5680641*	.22229964	.032	-1.0959624	-.0401657
		Ascending	-.05510354	.22229964	.967	-.5830019	.4727948
	Ascending	Descending	-.51296054	.21792611	.053	-1.0304730	.0045519
		Constant	.05510354	.22229964	.967	-.4727948	.5830019

*. The mean difference is significant at the 0.05 level.

DIMENSION SINCERITY

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
REGR factor score 5 for analysis 6	Based on Mean	6.197	2	114	.003
	Based on Median	5.434	2	114	.006
	Based on Median and with adjusted df	5.434	2	104.992	.006
	Based on trimmed mean	5.840	2	114	.004

ANOVA

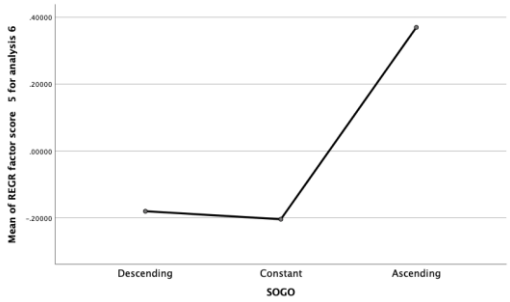
REGR factor score 5 for analysis 6

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.317	2	4.159	4.403	.014
Within Groups	107.683	114	.945		
Total	116.000	116			

Descriptives

REGR factor score 5 for analysis 6

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Descending	40	-.1805699	1.17516824	.18581041	-.5564069	.1952672	-2.84901	1.55261
Constant	37	-.2044494	.96247960	.15823067	-.5253560	.1164573	-2.31243	1.54624
Ascending	40	.3696855	.72454222	.11456018	.1379657	.6014054	-2.30055	1.63517
Total	117	.0000000	1.00000000	.09245003	-.1831089	.1831089	-2.84901	1.63517



Multiple Comparisons

Dependent Variable: REGR factor score 5 for analysis 6

	(I) SOGO	(J) SOGO	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Descending	Constant	.02387950	.22168415	.994	-.5025572	.5503162
		Ascending	-.5502554*	.21732273	.034	-1.0663350	-.0341758
	Constant	Descending	-.02387950	.22168415	.994	-.5503162	.5025572
		Ascending	-.5741349*	.22168415	.029	-1.1005716	-.0476982
	Ascending	Descending	.55025541*	.21732273	.034	.0341758	1.0663350
		Constant	.57413491*	.22168415	.029	.0476982	1.1005716

*. The mean difference is significant at the 0.05 level.

BRAND RECALL

Correlations

		BRAND RECALL	COMPETENCE	EXCITEMENT	SOPHISTICATION	RUGGEDNESS	SINCERITY
BRAND RECALL	Pearson Correlation	1	.292**	-.010	.098	-.123	.228*
	Sig. (2-tailed)		.001	.911	.293	.187	.013
	N	152	117	117	117	117	117
COMPETENCE	Pearson Correlation	.292**	1	.000	.000	.000	.000
	Sig. (2-tailed)	.001		1.000	1.000	1.000	1.000
	N	117	117	117	117	117	117
EXCITEMENT	Pearson Correlation	-.010	.000	1	.000	.000	.000
	Sig. (2-tailed)	.911	1.000		1.000	1.000	1.000
	N	117	117	117	117	117	117
SOPHISTICATION	Pearson Correlation	.098	.000	.000	1	.000	.000
	Sig. (2-tailed)	.293	1.000	1.000		1.000	1.000
	N	117	117	117	117	117	117
RUGGEDNESS	Pearson Correlation	-.123	.000	.000	.000	1	.000
	Sig. (2-tailed)	.187	1.000	1.000	1.000		1.000
	N	117	117	117	117	117	117
SINCERITY	Pearson Correlation	.228*	.000	.000	.000	.000	1
	Sig. (2-tailed)	.013	1.000	1.000	1.000	1.000	
	N	117	117	117	117	117	117

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 5 for analysis 6, REGR factor score 3 for analysis 6, REGR factor score 1 for analysis 6[b]	.	Enter

a. Dependent Variable: REGR factor score 1 for analysis 1

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.383[a]	.147	.124	1.01617486	.278

a. Predictors: (Constant), REGR factor score 5 for analysis 6, REGR factor score 3 for analysis 6, REGR factor score 1 for analysis 6

b. Dependent Variable: REGR factor score 1 for analysis 1

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.167	.094		1.780	.078
	REGR factor score 1 for analysis 6	.317	.094	.292	3.360	.001
	REGR factor score 3 for analysis 6	.106	.094	.098	1.128	.262
	REGR factor score 5 for analysis 6	.248	.094	.228	2.628	.010

a. Dependent Variable: REGR factor score 1 for analysis 1

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.101	3	6.700	6.489	.000[b]
	Residual	116.685	113	1.033		
	Total	136.786	116			

a. Dependent Variable: REGR factor score 1 for analysis 1

b. Predictors: (Constant), REGR factor score 5 for analysis 6, REGR factor score 3 for analysis 6, REGR factor score 1 for analysis 6

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.8948663	.9276763	.1672554	.41627188	117
Residual	-1.4741691	2.85939503	.00000000	1.00294859	117
Std. Predicted Value	-2.552	1.827	.000	1.000	117
Std. Residual	-1.451	2.814	.000	.987	117

a. Dependent Variable: REGR factor score 1 for analysis 1