The effect of different visual variables and images on the reaction of a general target market

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ABSTRACT

The unmanageable amounts of marketing information consumers are exposed to – also known as marketing clutter – are identified as one of the major problems that the modern marketing specialist faces on a daily basis. The human brain absorbs 90% of information through the sense of sight – therefore, the visual imagery utilised in marketing will contribute most to success. The focus of this mini-dissertation will be on investigating how marketing specialists can utilise visuals used in marketing more effectively by obtaining an understanding of the physical and psychological reaction that marketing visuals have on consumers. The visual aspects investigated in this mini-dissertation include colours, object placement, symbolism, body language and font usage.

Keywords

Colours, visuals, body language, marketing, images, reaction, targeting, perception, behaviour, emotions, response
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CHAPTER 1: NATURE AND SCOPE OF THE STUDY

1.1 Introduction and problem statement

The ever-cluttered world of marketing increases the difficulty of delivering marketing messages effectively. Marketing specialists spend vast amounts of time and resources attempting to break through the clutter. For the year 2015, E Marketer predicted that the amount spent on worldwide marketing would amount to approximately $590 billion, with a predicted increase of 6% per annum (Anon, 2014a).

Most of this effort is lost, as the average conversion rate of direct marketing – which has the highest recorded return on investment – is usually less than 5% of the total population exposed (Lohrey, 2013). Please note: The word ‘conversion’ is often used during this study and refers to the conversion from the marketing content broadcast to actual tangible enquiries.

In the information age, the average consumer is exposed to approximately 10 000 brand messages per day. Moreover, each year, the number of channels available to marketers increases significantly (Saxon, 2017). A study conducted by Ad Age that focused on the information provided by 410 correspondents suggests that the effect of marketing clutter results in increasing consumer numbness in reaction to the massive information overload (Anon, 2016b).

The IE School of Human Sciences & Technology has become largely focused on exploring new methods of breaking through marketing noise and creating marketing messages with an impact. Academic director of Market Research and Consumer Behaviour, Jaime Veiga Mateos, agrees that the growing number of distractions in the consumer market is an increasing problem for today’s marketing specialists (Saxon, 2017).

A survey conducted by Ad Age that focused information provided by 478 respondents, found that the top three goals for marketing specialists in 2016 were to increase marketing efficiency, improve creative excellence and find new methods of reaching consumers who blocked or skipped advertisements (Anon, 2016b).
As a response to marketing clutter, marketing specialists are moving away from old school mass-marketing methods towards more effective ‘targeting’ methods (Street, 2016). Platforms such as social media, web search engines and database e-mail campaigns offer a precision targeting alternative to old school mass-marketing methods such as newspapers, magazines and TV and radio advertisements with limited targeting capabilities (Martin, 2017). These new platforms target consumers based on aspects such as demographics, interests and behaviours and avoid losing reach by only targeting consumers whose user profiles indicate a high likelihood of a successful conversion (Ward, 2017).

Utilising modern platforms for targeted marketing campaigns requires a steep learning curve as well as marketing specialists to acquire extensive knowledge of the psychology behind the visual material used. As it is now easier to reach the correct audience, marketing specialists should focus their efforts on creating messages that incite the required reaction from the consumer targeted (Street, 2016).

The most important aspect in marketing content is visual imagery, as the human brain absorbs 90% of information through the eyes (Anon, 2014).

1.1.1 Problem summarised

The problem is that marketing specialists do not have enough information available on how different visual variables and images affect the reaction of a general target market.

1.2 Research objectives

1.2.1 Primary objective

The primary objective of this research study is to gain an understanding of how different visual variables and images will affect the reaction of a general consumer market.
1.2.2 Secondary objectives

The secondary objectives of this research study are to:

- identify the various problems that modern marketing specialists face regarding the use of visual marketing material to incite a certain reaction from a general consumer market.
- identify the role of visual imagery and the influence thereof on the success of marketing campaigns.
- identify the effect of variables such as colours, object placement, visual symbolism, body language and different fonts on the reaction of a general consumer market.
- identify guidelines for marketing specialists for utilising variables such as colours, object placement, visual symbolism, body language, facial expressions and different fonts in visual marketing material in order to incite different responses from the targeted consumer.

1.3 Scope of the study

The scope of this study will be to determine the reaction of a general consumer market when exposed to variables in visual imagery. The study will focus on the South African population of individuals 18 years and older and will not be limited to gender, race, language or education level – some effort will be made to identify patterns relating to these demographics. The geographical location of the research will be limited to the provinces of Gauteng and the North West in South Africa and the researcher will make use of questionnaires and semi-structured interviews to gather data.

1.4 Research methodology

1.4.1 Literature/theoretical study

This research study will follow a methodology consisting of theoretical research of online publications, articles and current academic sources relevant to the topic. The focus of this research will be on theory and literature from the fields of marketing and psychology relating to the research topic and will formulate a picture of the effect that visual variables such as colour, image placement, body language and different fonts will have on the reaction of a
general consumer market. Literature and theory from recent sources (varying between the years 2016 and 2017) as well as older sources (from the years 2010 to 2015) will be used to support this research study. Resources that are older than 2010 will only be included if the concepts are still applicable to this study and corroborated by sources that are more recent. A final review of the literature will then be compiled from the entire source pool consulted and compared to the results of the empirical study to reach a conclusion.

1.4.2 Empirical study

This study adds to the methodology by using a hybrid method of gathering empirical data, including both a quantitative and qualitative component.

1.4.2.1 Expected contribution of the empirical study

A. For the individual

The study will contribute guidelines for marketing specialists to follow during the design phase of visual marketing content with regard to the effective use of visual variables and images to influence the reaction of a target market.

B. For the organisation

The study will contribute guidelines that an organisation can provide to internal marketing specialists to assist them in increasing conversion rates and return on investments from targeted marketing activities.

C. For the I/O psychology literature

The study will add information to current theories on the topic, prove or disprove current theories and identify guidelines for further research into the topic.
1.4.2.2 Empirical research approach

A phenomenologist approach is used, which means that the study evaluates the participants’ reactions when exposed to visual variables and images through a questionnaire. The data is analysed and patterns are identified. Interviews are conducted with certain participants and information obtained is cross-referenced to patterns identified through the questionnaires. A viable reason is allotted to each pattern.

1.4.2.3 Empirical research strategy

The study evaluates the reactions of a sample of consumers when exposed to visual variables and images. The sample is composed of 135 participants attained from a general consumer population of individuals aged 18 years and older. The sample consists of participants with diverse demographics, including gender, race, language and education level.

1.4.2.4 Empirical research method

A. Empirical research setting

The study is conducted on the general consumer population of Gauteng and the North West Province of South Africa.

B. Entrée and establishing researcher roles

Access to the sample is obtained through family ties, friendships, business networking, and co-worker relationships inside the Gauteng and North West Provinces of South Africa. The gate-keepers are directly approached and asked to participate out of free will.

C. Sampling

The snowballing method is used to increase sample quantity. This allows current willing participants to identify other possible candidates. This method increases sample quantity to include participants outside the researcher’s social circle.
D. Empirical data collection methods

135 participants completed quantitative questionnaires consisting of 36 questions. The structure of the questionnaires consists of different formats, which include matching the appropriate concept to the correct perceived option, ranking options from highest to lowest and multiple-choice questions. The reason for using quantitative questionnaires was to gather data in the form of frequency tables, which are used to identify patterns in the data.

After identifying patterns in the quantitative data, the researcher engaged in 25 semi-structured interviews consisting of 40- to 60-minute discussions with each participant. The researcher chose 25 participants, to whom he had easy access, from the 135 participants who completed the questionnaires. The researcher used each chosen participant’s completed questionnaire as structure and guide for the interview and conducted the discussion according to the answers provided by the participants in their questionnaires. At times, the researcher allowed the conversation to deviate from the question when perceived as relevant to the study. The researcher used these discussions to obtain concrete reasons for patterns identified during the quantitative study.

E. Recording of empirical data

The researcher manually imported all data collected from the questionnaires into a Microsoft Excel spreadsheet. Extra effort was made to ensure that the data was imported accurately and completely, such as reviewing data entries and performing random spot checks on data inputs. The Excel spreadsheet was saved on the researcher’s computer and backed-up on a portable USB device to ensure safekeeping in the event of data loss.

The interviews were recorded by using a voice recording application on a Samsung Galaxy A3 device. The recordings of the interviews were saved on the researcher’s computer as well as a portable USB device for safekeeping in the event of data loss. The interviewer listened to the recordings and accurately transcribed the recordings into a typed digital format using Microsoft Word. The transcribed documents were also saved on the researcher’s computer and the portable USB device for back up.
F. Empirical data analyses

The data captured in the Excel spreadsheet was handed to a qualified audit trainee with a BCom Honours degree in Charetered Accountancy and extensive data analytics experience. The data analyst used the data captured by the researcher to create graphs for a visual representation of the data collected. The analyst handed the graphs to the researcher for completion of the quantitative aspect of the study.

The researcher interpreted the graphs created by the data analyst and compared the results to the information collected from the interviews to compile an educated conclusion to the study.

1.5 Limitations of the study

Time, access and budget constraints caused certain limitations to the research: First off, the study focused on only 135 participants to represent the entire human race. As the size of the sample was limited, the study did not place a strong focus on certain demographics such as gender, race, language, age and education, but only briefly covered patterns relating to these demographics. Time constraints caused the researcher to make use of the snowball method to increase the sample size; this created a skewed representation when comparing the results to the South African population.

1.7 Layout of the study

Figure 1.1
CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The primary goal of the literature is to better understand how different visual variables and images affect the reaction of a general consumer market. Secondary goals are to identify the problems faced by marketing specialists when designing visual marketing material to provoke a certain reaction from a general consumer market, to understand the role of visuals and their influence on the success of marketing campaigns, to understand the effects of variables in colours, image placement, visual symbolism, body language and different fonts on the reaction of a general target market, and to suggest guidelines that marketing specialists can use when designing visual marketing material.

2.1.1 Keywords used in the literature/theoretical study

Colours, visuals, body language, marketing, images, reaction, targeting, perception, behaviour, emotions, response

2.2 The problems faced by the modern marketing specialist

One of the most prominent problems in the modern marketing industry is the massive information overload caused by marketing clutter. Marketing specialists are constantly battling for consumers’ attention as the average consumer spends less than half a minute’s attention on marketing material that catches their interest. This makes it more challenging for marketing specialists as it is vital to use this short opportunity effectively.

2.2.1 Marketing clutter defined

“An unmanageable amount of marketing information consumers is exposed to on a daily basis”. To counter marketing clutter, it is important for marketing specialists to identify the right time, place, methods and most of all content to connect with consumers in a meaningful way (Kokemuller, 2017).
Karen Johnson, a marketing professional with more than 30 years of experience and specialities in business as well as the writer of peer-approved articles in trade and business publications such as the Houston Chronicle, described marketing clutter (noise) as having a negative connotation in marketing and defined it as an overload of promotional content that is trying on consumers and causes difficulty remembering specific messages (Johnsen, 2017).

2.2.2 The experts and marketing clutter

The Marketing Leadership roundtable, hosted by Target Marketing Magazine in June 2014 in New York, included top marketers and industry experts, and was sponsored by Reach Marketing. The 14 marketing experts who attended the roundtable found that they faced similar issues, even though they came from diverse industry fields and different company sizes. The most notable idea put forward by the roundtable was the challenge of breaking through the wall of clutter that consumers are exposed to daily (McGee, 2014). This was made clear from individual opinions from the attending experts.

Pam Nochlin, the creative manager for Citi Cards (the credit card division of banking and financial services provider Citi) also attended the round table. He perceived that the biggest issue marketers were facing over various industries was consumers who are suffering from information overload and clutter provided by the private sector. He continued to state that this unmanageable amount of data was not limited to the flood of media messages, but was also caused by the marketing content. Due to the excess content in marketing, it is much harder to be recognised and heard when trying to get your message out (McGee, 2014).

The observation of Pam Nochlin connects the frustration that the modern marketer faces to the theory that the average consumer gets over-exposed to advertisements on a daily basis.

Another expert, Kirsten Bjork-Jones, director of global marketing communications at Barrington (NJ-based industrial manufacturer Edmund Optics) also voiced her obeservations on this topic. She stated that there is much more content available now, than five or ten years ago, and that she herself experienced information overload first-hand. Bjork-Jones explained that, by nature, consumers want this information overload as they feel they want to make the best purchasing decisions (McGee, 2014).
This experience of Bjork-Jones was seconded by another expert, Greg Grdodian, CEO of integrated marketing and data solutions provider for Reach Marketing. Grdodian stated that so much information is available that your audience can make an informed decision based on research, feedback and analysis. Therefore, companies that do not invest in their brand equity will never be able to see any positive return (McGee, 2014).

The sentiment of Grdodian and Bjork-Jones enforces the idea that brands need to create specific experiences for consumers to form a connection with them. As consumers have so much information available to them, evoking the correct reaction from your target market is of vital importance (McGee, 2014).

2.2.3 Examples of marketing clutter

Broadcast clutter: This is clutter provided by mass broadcasting mediums such as television and radio. Broadcast clutter is transferred to the consumer through product placement in programmes and advertisements during commercial segments. A show of 30 minutes will on average include eight minutes of advertising (Kokemuller, 2017).

Print clutter: This is clutter experienced in common printed media such as magazines and newspapers. A typical newspaper or magazine has between 100 and 200 small box ads on average and numerous classified business ads. They also have a number of larger half page or full page advertisements (Kokemuller, 2017).

Online clutter: The internet is one of the newest, yet most cluttered, platforms to advertise on. With a few keyword searches consumers are exposed to box ads, widgets, text link ads and pop-up ads. Internet users are some of the most desensitised consumers in the world and the click-through rate of an average online ad is well under 5% (Kokemuller, 2017).

2.2.4 The amount of clutter the average consumer is exposed to every day

Media Dynamics performed a study focusing on media usage and exposure to marketing. The results of this study suggested that the average adult’s daily exposure to media has grown from 5.2 hours in 1945 to 9.8 hours in 2014. This does not suggest an increase in marketing
exposure, as modern consumers have more options available to avoid unwanted exposure such as DVRs and the ability to switch channels (Johnson, 2014).

The study focused on a wide spectrum of mediums that included television, radio, internet, newspapers and magazines. The study suggested that the average consumer is exposed to 360 adverts per day – as a result, a consumer awake for 15 hours a day would be exposed to an advert every 2.5 minutes. A further complication for marketing specialists is that the study suggests an average consumer only notices between 150 and 155 ads per day; far fewer ads make a strong enough impact to be recalled, fewer ads make an impression and even fewer ads ultimately lead to the consumer taking any form of action (Johnson, 2014).

Figure 2.1 below reflects Media Dynamics Incorporated’s average projections of adult consumers’ daily media usage for 1945, 1985 and 2014. Examining the chart, a significant increase in the total time spent on media can be noted, but in contrast, also suggesting a relatively stable ad exposure. This disproves the link between the time spent on media usage and the amount of ad impact (Johnson, 2014).

The Yankelovich study (later quoted by the New York Times) supports the above study by MDI. In addition to counting ad exposure, the Yankelovich study also included the frequency
consumers are exposed to other marketing aspects such as brand logos, names and labels. The results suggested the average consumer is exposed to between 3 000 and 20 000 forms of marketing content a day, depending on their lifestyle and geographic location (Johnson, 2014).

In summary, research suggests that the average consumer is exposed to 5 000+ advertisements and brand messages per day, of which advertisements total 360 exposures. Furthermore, the study determined that the human brain can only take note of an average of 153 advertisements a day and only 86 of those advertisements will create some form of awareness. Out of the 86 advertisements, only an average of 12 will lead to a form of engagement, not even suggesting that these advertisements will necessarily cause the consumer to complete the buying process (Johnson, 2014).

2.2.5 The human brain and marketing clutter

In order to understand why marketing clutter influences the success rate of marketing efforts, we need to understand how it affects the human brain.

The human brain’s ability to process information comes at a cost. The brain consists of neurons, which are living cells with a metabolism. These cells need oxygen and glucose to survive, and the overworking of these cells causes humans to experience fatigue. Every piece of information the brain receives competes for resources, regardless of the importance of the information. As humans have trouble separating the trivial from the important, the brain becomes tired when processing all of this information (Levitin, 2015).

Research by Mihaly Csikszentmihalyi and, independently, by Bell Labs engineer Robert Lucky, has estimated that the processing capacity of the conscious human mind is at 120 bits per second. This capacity sets the speed limit for how much information the brain can process at one time (Levitin, 2015).

Even though one can argue that a great deal of information is processed underneath the threshold of our awareness, in order for information to become encoded as part of our conscious experience, it is vital for humans to pay attention to the information received (Levitin, 2015).
Human brains have a primal process that filters information. The human brain has never evolved to handle massive amounts of information at once, and therefore the only way the brain can keep neurons from becoming overworked is by being selective about which information it allows to be processed. This is usually a matter of interest. The brain is constantly calculating different environmental factors to search for things that will be either rewarding or dangerous. If information does not fall into any of these two categories, it is simply blocked and not even processed (Levitin, 2015).

In conclusion, this knowledge indicates that the human brain will never be able to process all the information its environment exposes it to – therefore, only the most interesting and attention-grabbing marketing content will be noticed and processed.

2.2.6 Visuals and the human brain

When considering how the human brain processes information, the visual aspects of marketing are very important, as the brain’s response to visual data is much higher than any other type of data. Research suggested that the human brain processes images 60 000 times faster than it processes text, and out of all the information transmitted to the brain, visuals consist of 90%. Because of this, visuals can be used to drastically enhance the amount of information that consumers retain from marketing material (Anon, 2014).

Studies have shown that the brain is not only capable of processing visuals faster, but the rate at which the brain retains and transmits information is also significantly higher when delivered visually. Figure 2.2 on the next page summarises how visuals are processed by the brain (More, 2014).
2.3 The role of visuals and the influence in marketing campaigns’ success

2.3.1 Visual marketing definition

Visual marketing is the strategy of using visual aids to communicate your marketing message, using design elements, graphics, and branding that can make your marketing more authoritative and memorable (Duff, 2013).

2.3.2 The use of visuals in marketing

Experienced marketing and advertising specialists do not create marketing material at random, but instead use psychology and design techniques to create strategically planned content specifically designed to provoke a sought after reaction from a general target market. One of the most important roles of visuals is to evoke emotions and increase the consumer’s state of mind (Johnson, 2017).

Consumer purchase behaviour is often driven by emotions. Therefore, successful marketing specialists do not just ask consumers to buy their products directly, but rather focus on
manipulating consumers to take action based on emotion, even if it might not be rational (Lasquite, 2015).

Marketing specialists should focus on using visual marketing techniques to increase the consumers’ state of mind, by providing more than information, and rather focus on the creation of an experience. This will change the consumers’ perception to a point of being emotionally invested in the product or idea. The result can be a deeper consumer affiliation, which leads to loyalty owing to positive experiences (Lasquite, 2015).

If a marketing message is made public, but the market does not take notice, it is the equivalent of never sending out the message in the first place. In other words, communication has no value if it is not retained by the audience. In today’s cluttered world, it is easy for information to get lost in the noise if it is not in an easily digestible format. The solution to the problem is to “show and not tell” – integrating visuals into your message significantly increases the amount of information the audience absorbs and remembers (More, 2014).

According to OpenView Marketing Lab, companies that post status updates on Facebook with visuals in the form of videos and photos experience up to 180% more engagement than companies that only use text. Figure 2.3 on the next page shows how much visual aspects are able to boost social media engagement (More, 2014).
In conclusion, visuals used in marketing assist in gaining the attention of consumers who are overwhelmed with an overload of marketing information, by making huge amounts of data more easily digestible. Because 90% of information transmitted to the brain is visual, strategically planned-out visuals have the ability to drastically increase the recollection rate of information by evoking emotion and simplifying the data processing process (Duff, 2013).

2.4 The effects of visual variables on the reaction of a general target market

2.4.1 Colour

2.4.1.1 Definition of colour

Colour is the property possessed by an object of producing different sensations on the eye as a result of the way it reflects or emits light (Anon, 2017b). The quality of an object or substance with respect to light reflected by the object is usually determined visually by the measurement of hue, saturation and brightness of the reflected light (Anon, 2017a).
2.4.1.2 The importance of colour in visual marketing

Colour is a powerful component of visual marketing material, capable of directly and indirectly influencing consumers’ reactions. The use of colour in the design of visual marketing material requires an understanding of colour psychology (Lasquite, 2015). Variants in colours are suggested to provoke unique reactions in an audience and can be used as a cue to grab attention, increase the clarity of the marketing message and provoke emotion. Selecting the right colours also requires knowledge of the audience, as colours are interpreted differently depending on culture, sex, and other demographics (Johnson, 2017).

2.4.1.3 Different types of colours

A. Primary colours

The three primary colours are yellow, blue and red. Without these primary colours, other colours could never exist. The combinations of these three colours are the reason that we are able to perceive secondary colours. Figure 2.4 below shows the three primary colours (Taei, 2015).

![Figure 2.4](image)

B. Secondary colours

The colours purple, green and orange are what are considered secondary colours. They are created by mixing primary colours. Figure 2.5 on the next page illustrates the process, with red and blue making purple, blue and yellow creating green, and red and yellow creating orange (Taei, 2015).
C. Tertiary colours

Colours made up by mixing of two or more primary colours are called tertiary colours. The resulting colour is more related to the primary colour red, yellow and blue. Figure 6 below shows how tertiary colours are formed (Taei, 2015).

2.4.1.4 The eight colours focused on in this study

Because of the variety of colours available and the resource limitations of this study, the focus is limited to eight colours, namely red, blue, green, yellow, orange, purple, black and white.

A. The colour red

Red is a warm and positive colour associated with the deepest physical needs and the will to survive. The colour conveys a powerful and strong masculine energy and is energising in nature. The colour unlocks excitable human emotions and has a strong motivational effect. From a psychology perspective, the colour signifies an innovative spirit and strong leadership.
qualities that promote determination and ambition. The colour has a strong-willed effect that can convey confidence to those who experience shyness or lack will power. Red is the colour of physical movement, and awakens the physical life force. It conveys a strong sense of sexuality and stimulates deeper and more intimate passion such as love and sex on the positive side, or revenge and anger on the negative side (Scott-Kemmis, 2013f). As one of the basic colours, red immediately draws our attention. Red is almost always used to depict youthfulness, power and action (Johnson, 2017).

Keywords associated with red

Positive keywords: action, energy, speed, attention, assertive, confident, energising, stimulating, exciting, powerful, passionate, stimulating, driven, courageous, strong, spontaneous, determined (Scott-Kemmis, 2013f).

Negative keywords: aggressive, domineering, over-bearing, tiring, angry, short-tempered, ruthless, fearful, intolerant, rebellious, obstinate, resentful, violent, brutal (Scott-Kemmis, 2013f).

B. The colour blue

Blue is a colour associated with trust, responsibility, honesty and loyalty. Blue is seen as sincere, reserved and quiet. From a psychology perspective, the colour does not make a fuss or draw much attention. The colour blue is non-confrontational, and is often seen as stable and independent. The colour expresses reliability and responsibility. The colour exhibits security, confidence and control. The colour blue is associated with peace and tranquillity and unlocks feelings of physical and mental relaxation (Scott-Kemmis, 2013b). Blue is often relaxing and is often the dominant colour used in furniture or sleep-aid advertisements (Johnson, 2017). Studies have shown that blue is the most popular colour in the world (Dena, 2016b).
Keywords associated with blue

Positive keywords: loyalty, trust, integrity, tactful, reliability, responsibility, conservatism, perseverance, caring, concern, idealistic, orderly, authority, devotion, contemplation, peaceful, calm (Scott-Kemmis, 2013b).

Negative keywords: Depressed, sad, passive, self-righteous, conservative, old-fashioned, predictable, unforgiving, aloof, frigid (Scott-Kemmis, 2013b).

C. The colour green

Green is a colour strongly related to balance and harmony. The colour green, from a psychology perspective, is seen as a balancer that can create equilibrium between emotion and logic. From a colour meaning perspective, green can be seen as the colour of growth, spring, renewal and rebirth. Green has the effect of restoring depleted energy, and can serve as a sanctuary away from stress and modern living, because it restores a sense of well-being. This is one of the main reasons so many people retreat to nature to relax. Green is also seen as emotional and positive, and gives a feeling of peace and avoidance of conflict (Scott-Kemmis, 2013c).

Keywords associated with green

Positive keywords: growth, vitality, renewal, restoration, self-reliance, reliability, dependability, tactful, balanced, calm, nature, practical, sympathetic, compassionate, nurturing, generous, kind, loyal, moral, adaptable (Scott-Kemmis, 2013c).

Negative keywords: over-cautious, envious, selfish, greedy, miserly, inconsiderate, inexperienced, neurotic, do-gooder (Scott-Kemmis, 2013c).

D. The colour yellow

Yellow is one of the brightest colours on the visual spectrum, and has been proven to be the most noticeable colour to the human eye. Studies have also shown that yellow often ranks as the least popular colour in the world (Dena, 2016g). The colour yellow resonates with the left
or logical side of the human brain, stimulating mental faculties, improving mental agility and perception. The colour psychology of yellow is both illuminating and uplifting and is known to inspire hope, happiness, cheerfulness and fun. Yellow is known as a colour that inspires thought and inquisitiveness (Scott-Kemmis, 2013h). Bright yellow has many mind-clearing effects, while citron yellow can provoke feelings of emotional instability and deception. Golden yellow can give a feeling of curiosity and an attraction towards further investigation. A cream colour yellow stimulates creativity and the creation of new ideas. Faded yellow will negatively impact confidence and a dark yellow colour can provoke feelings of melancholy, lack of love, and even depression (Dena, 2016g).

Keywords associated with yellow

Positive keywords: optimism, cheerfulness, enthusiasm, fun, good-humoured, confidence, originality, creativity, challenging (Scott-Kemmis, 2013h).

Negative keywords: critical, judgemental, impatient, impulsive, egotistical, inferior, spiteful, cowardly, deceitful, emotional (Scott-Kemmis, 2013h).

E. The colour black

Black is a colour that relates to the secretive, hidden and unknown, the colour black creates a feeling of mystery. The colour black creates an emotional numbness and psychologically gives protection from external emotional stress. Black is the most absorbent of colours and creates an absence of light (Scott-Kemmis, 2013a).

Keywords associated with black

Positive keywords: protection, comfort, strong, contained, formal, sophisticated, seductive, mysterious, endings (Scott-Kemmis, 2013a).

Negative keywords: aloof, depressing, pessimistic, secretive, withholding, conservative, serious, power, control, sadness, negativity (Scott-Kemmis, 2013a).
**F. The colour white**

White is the lightest of all colours and has a strong relation to aspects such as purity, innocence and integrity (Dena, 2016f). The colour white is also the most complete and pure, which can be seen as perfection. The psychological meaning of white is innocence, wholeness and completion. White can be seen as the colour of new beginnings, a clean slate, or a blank canvas waiting to be written on. White is not stimulating to the human senses, but it can open the way for creativity as its seen as the absence of something (nothing), which serves as a starting point for creativity (something). The colour white is an equal balance of all colours on the spectrum. The colour signifies fairness, equality, impartiality, neutrality, and independence (Scott-Kemmis, 2013g).

Keywords associated with white

**Positive keywords:** innocence, purity, cleanliness, equality, completeness, whole, simplicity, immaculate, neat, self-sufficient, pristine, open, new-beginnings (Scott-Kemmis, 2013g).

**Negative keywords:** sterile, stark, fastidious, empty, isolated, cautious, plain, distant, unimaginative, critical, boring (Scott-Kemmis, 2013g).

**G. The colour purple**

The colour purple is a chromatic mixture between red and blue. The colour purple has a strong relationship with imagination and spirituality. The colour purple is known to stimulate imagination and inspire ideas. The colour is reflective in nature and therefore allows the mind to dig deeper into thoughts (Scott-Kemmis, 2013e).

Keywords associated with purple

**Positive keywords:** unusual, individual, creative, inventive, psychic, intuitive, humanitarian, selfless, unlimited, mystery, fantasy (Scott-Kemmis, 2013e).

**Negative keywords:** immaturity, impractical, cynical, aloof, pompous, arrogant, fraudulent, corrupt (Scott-Kemmis, 2013e).
H. The colour orange

Orange is a colour that radiates warmth and happiness, by combining the physical energy and stimulation from the colour red with the cheerfulness of yellow. The colour orange creates a gut reaction rooted in instinct, as opposed to the physical reaction of red, or the mental reaction of yellow. The colour orange offers a feeling of emotional strength in daunting times, as it has strong anti-grief properties. In colour psychology, orange is seen as optimistic and uplifting, and rejuvenating of spirit (Scott-Kemmis, 2013d).

Keywords associated with orange

Positive keywords: sociable, optimistic, enthusiastic, cheerful, self-confident, independent, flamboyant, extroverted, uninhibited, adventurous, gambler, creative, warm-hearted, agreeable, informal (Scott-Kemmis, 2013d).

Negative keywords: superficial, insincere, dependent, over-bearing, self-indulgent, exhibitionist, pessimistic, inexpensive, unsociable, proud (Scott-Kemmis, 2013d).

2.4.1.4 The effects of colours on reactions

A. Increasing physical reactions

This category of response includes increased reactions from individuals that are rooted in the physical. The reactions are known to include the fight-or-flight response and can cause physical symptoms such as an increased heart rate, sweaty palms, dry mouth, etc. The effects can be both positive and negative, and will most likely include an adrenalin release.

Keywords: Danger, aggression, dominance, energy, sex

A.1 Increasing danger, aggression and dominance

The colour red is most associated with danger and aggression. Studies suggest that red has a measurable effect on the human physical state, such as an increase in heart and breathing rate, sweaty palms, etc. (this physical reaction is also known as the fight-or-flight response). The
reason for this effect is suggested to be rooted in human biology. Some humans that experience feelings of anger and aggression experience physiological reactions such as an increased redness of the face. This can be a social signal to humans in the vicinity that this individual is becoming aggressive and might be an imminent threat that needs to be avoided or overcome (Macknik, Martinez-Conde, 2014).

The colour red not only has the ability to indicate aggression, but can also provoke it. A good example of this is the effect a red flag has on a bull when used by a bull fighter. This is because a dominating red stimulant not only increases alertness, but can also stress out the individual subjected (Dena, 2016).

The colour black also has a strong connection to danger and aggression. A study conducted on how the colour of sports teams’ uniforms influenced their behaviour, based on the hypothesis that dark colours were more likely to be associated with negativity when compared to lighter colours, showed images of uniforms worn by all National Football League and National Hockey League teams to participants. The study excluded sport fans from the sample to ensure all bias perceptions created by knowledge of the teams were eliminated. The participants rated each uniform on aspects such as preference and level of intimidation perceived. The results of the study suggested that teams wearing black uniforms were perceived as more aggressive than teams wearing non-black uniforms (Frank, Gilovich, 1988).

This research formed the conclusion that colour influenced people’s perception of aggression, but the question as to how the differences in uniform colours actually influence the players’ behaviour was still unanswered. To test this, the researchers used statistics from the NFL and NHL ranging from 1970 to the mid-1980s to compare the penalty records for teams with black uniforms versus non-black uniforms. Statistics for both sports suggested that teams wearing black uniforms were penalised significantly more than teams wearing non-black uniforms. The statistics averaged on eight penalty minutes per game for teams wearing non-black uniforms, compared to the 12 minutes per game for black uniforms (Frank, Gilovich, 1988).

Further studies were conducted in 2012 to determine whether this phenomenon was a result of more harsh penalties being dished out by key role players such as referees, because of
biased perceptions associated with wearing black, or whether wearing black uniforms actually increased the aggressive behaviour of the players themselves, resulting in more penalties (Adam, Galinsky, 2012).

The first unknown was tested by studying university participants asked to act as referees in a game between a team wearing black uniforms vs a team wearing white uniforms. The results revealed that the participants were much more likely to call harsher penalties, for the same action, against the black uniformed team compared to the white uniformed team (Adam, Galinsky, 2012).

The second study placed groups of people wearing black and non-black colours together and examining their behaviour. The study found that those wearing black were much more likely to behave aggressively towards others compared to those wearing white (Adam, Galinsky, 2012).

Combining all the results from the above studies, researchers found that colour not only influences people’s perceptions, but also has a direct influence on behaviour (Adam, Galinsky, 2012).

Black has a strong connection to evil, as well as a frightening element. The result is that black is often used to show an individual as the villain in visuals. It is also a colour that can show aspects such as loneliness, anti-socialness and aggression (Dena, 2016a). The colour red is also associated with evil in religious characters such as the Devil and dragons (Macknik, Martinez-Conde, 2014).

Black is also associated with mystery, the unknown and the hidden. Black can be linked to aspects such as secret knowledge and even has an association with concepts such as magic and esoteric ideas. The colour black can also be used to suppress feelings and separate those subjected from reality. Black can be used to hide truths such as using black clothes to make people look more slimming (Dena, 2016a).

Black as a colour is the absence of light as it absorbs all colours and reflects back none. A study done by psychologist Dr Scott T. Wilson breaks down the cognitive and emotional repercussions of extended periods of sensory deprivation of participants, by placing them in a
cave with no natural light for 48 hours. Not long into the experiment, participants struggle to keep their sanity, with some even breaking down in tears. As the human brain relies so much on visuals to make sense of the environment, the absence of light reflecting off the eyes creates feelings of uncertainty, which activate the fear response and can cause a state of panic. This explains the natural response in humans to fear the dark and see the black of darkness as possible danger, or breeding place for evil. This natural reaction to the colour black (or rather the absence of light) directly influences the reaction of participants even when they are only faced with the colour black in visuals. The colour black also causes boredom because the colour does not visually stimulate the brain. This leaves room for the imagination to kick in and when the fear response is triggered it creates the illusion of seeing fearful things in the dark that are not real (Wilson, 2017).

Past studies have found that athletes in combat sports such as boxing, MMA, Maui Thai, etc. wearing red kit, had an increased chance of defeating a fighter wearing a blue kit. This is because red increased the feeling of aggression and power, and increased testosterone in the fighter wearing red. Red also had a negative effect on the opponent facing the red fighter, by triggering the fear response more often and as a result damaged opponents’ performance (Dena, 2016e).

The colour red is deeply rooted in man’s evolutionary history. Mammals, such as dogs, do not have the ability to differentiate between red and green, but research shows that early primate ancestors of humans are able to. Adapting to life in the wild, a cell evolved inside the retina that allowed primates to identify bright red fruit hanging between green leaves on trees (Robson, 2014).

The ability that humans have to differentiate between red and other colours has adapted into forms of social signalling. When blood pumps close to the surface of skin, it creates a red effect on the surface that research has shown to be a sign of dominance for many primates. One of the best examples of this is the mandrill monkeys that use vivid red markings on their face and buttocks to signal positions in group hierarchy. The more dominant a mandrill monkey is, the redder the markings appear. This method is used to read a competitor in the group’s fitness, and prevents lower ranking monkeys from trying to seek conflict with monkeys they are likely to lose to. This evolutionary trait of social signalling can also be seen in human behaviour, as some humans become red in the face when in aggressive situations. It
is possible for other humans to read this as a sign of dominance, which will either provoke retaliation or a quick retreat. This could also be an explanation of why red is seen as a dominant colour; wearing red increases a sense of dominance in the wearer, and why others facing individuals or teams wearing red perceive them as being more dominant. Red in essence gives humans the “I am alpha psychological effect”. In 2004, two psychologists, Russell Hill and Robert Barton from the University of Durham, set out to prove that humans react similar to the colour red compared to our primate ancestors. The theory was that red clothes could perhaps carry associations with aggression and dominance (Robson, 2014).

The 2004 Olympics presented Hill and Barton with the perfect opportunity to test the theory. The two psychologists used the sports boxing and taekwondo to randomly assign fighters either red or blue kits. This allowed the psychologists to assess athletes’ performance when wearing both colours at different times. The results showed that athletes who were assigned red kits were 5% more likely to win the bout than when wearing blue. The results were not able to show that wearing red guaranteed a victory, but suggested it could tip the balance when competitors are evenly matched. The results were later also replicated in other sports, such as soccer, suggesting that players were less likely to score if the goalie was wearing red than other colours (Robson, 2014).

Andrew Elliot from the University of Rochester in New York State examined this study and referred the results to studies showing that people who wear red feel more dominant themselves, triggering an increased hear rate and increasing testosterone levels that led to increased performance. On the other side, he quoted studies that explained that red might be able to intimidate other human competitors in the same way that alphas in mandrill monkeys use the colour to intimidate lower status monkeys. Research has shown being intimidated results in a decrease in testosterone levels, and leads to a decrease in performance (Robson, 2014).

Warning colours are not a new part of life; nature has its own way of warning animals and humans of potential threats such as poison. Studies have shown that, in nature, vivid colours, particularly red, are often a warning of poison in animals. Animals know instinctively that it is wise to stay away from animals or insects that have bright colours. Examples of this are the wasp’s bright yellow and black stripes, warning of a nasty sting, or the colourful zig-zag pattern on snakes that hint at their venom. Insects, such as ladybirds, are venomous and will
ward off birds with its red and black colours when under attack. A study in Holland found that a bird species, called starlings, had taken 16 484 insects to their nest to feed nestlings. Out of the insects caught to feed the nestlings, only two were ladybirds, even though ladybirds are clearly colourful and easy to spot. This showed that the ladybirds’ colouring really could be protecting them. Another example of this is the crimson red beetle, known to be very distasteful to birds. Most moths also have colours that help them camouflage in their environment, but certain poisonous species, when disturbed, reveal their bright red underwings, which serve as an instant alarm to predators. An example of this is the garden tiger, which is a common moth in Britain. Glands in the tiger moth’s thorax secrete poison, and most birds know to avoid this species. Some animal species, such as the warty newt, have a bright orange, or reddish orange belly, which serves as a warning sign to predators regarding the poisonous warts the newt has on its back. This is also the case with animals such as the coral snake, the black widow spider, and the arrow poison frog (Anon, 2016a).

A.2 Increasing energy

Red has a direct connection to speed and power. A study published by Andrew Elliot, professor of psychology at the University of Rochester and a leading research expert on colour psychology, suggested that it is possible when humans see red that their reactions become faster and more forceful. This is because the colour red can physically be providing humans a temporary energy boost. A study done by Andrew Elliot tested 46 students’ hand pressure when being exposed to the colours red and grey. The results suggested the same students were able to exert more pressure after seeing the colour red compared to grey, indicating a short-lived boost in energy (Elliot, 2011). Yellow is another colour that has an increased perception of intensity, and a can temporarily boost energy when a subject is exposed to it. Yellow and red can suggest speed and power in a single object such as an automobile (Johnson, 2017). Yellow as a colour can over-stimulate the human brain as it has a direct effect on analytical thinking and this can quickly lead to mental exhaustion. A short stimulant of yellow will theoretically increase the energy of the subject, but will quickly lead to the reverse result when the subject is subjected to the colour for too long (Dena, 2016g).
A.3 Love and passion

Red has always been strongly linked to aspects such as life, passion, romance and familiar love. An example of this is the dominant use of red on Valentine’s Day to express love with red cards, hearts and roses \((Dena, 2016e)\). The colour red is also strongly linked to sexuality and desire. A study suggested waitresses wearing red received significantly more tips compared to waitresses wearing other coloured uniforms \((Dena, 2016e)\). The study focused on 272 restaurant customers suggesting that male patrons gave an increase of 14.6 to 26% more tips to female waiters wearing red, as opposed to those wearing other colours. The colour red had no effect on how women tipped female waiters according to the results of this study. These results build on previous research suggesting that red increases the physical and sexual attractiveness of women \((Guéguen, Jacob, 2012)\).

Previous studies have suggested women wearing red increases sexual desires in men. The reason for this might be rooted in the primal part of the human mind. In non-human primates, females trying to attract a mate display red on their bodies, including face, chest or genitalia. Studies by psychologist Adam Pazda and his colleagues from the University of Rochester in 2012, suggested that men perceived women wearing red as more receptive to sexual advances. This strongly relates to the notion of primates using red to show sexual availability \((Whitbourne, 2012)\). Studies showed that women also perceive men wearing red as having higher status and physical fitness, increasing their attraction. However, the colour red had no effect on how attractive males rated each other \((Augustin, 2016)\).

B. Decreasing physical reaction

This category of response includes provoking decreased reactions from individuals that are rooted in the physical. The reactions are known to dampen the fight-or-flight response and can cause physical symptoms such as reduced heart rate, slow breathing, a clear mind, etc. The effects can be both positive and negative and will most likely include an adrenalin decrease.

**Keywords:** Calmness, balance, trust.
B.1 Increasing calmness and balance

Studies suggest that the colour green increases calmness and harmony in those who are subjected to it. A good example of the calming effect of green is humans retreating into nature to relax and recharge their proverbial batteries. The reason why green increases feelings of calmness is that green is the most natural and non-threatening of all colours (Dena, 2016c). From a mental and physical point of view, green can relieve the body from stress, nervousness and anxiety by helping the individual to regain balance and inner calm (Dena, 2016c). This notion is supported by a study conducted by the University of Wisconsin School of Medicine and Public Health, which found that a natural environment made it easier for people to de-stress, refocus their minds and relax their bodies (Dennis, 2017). The colour green has a stimulating effect on the human pituitary glands, which cause the muscles to relax and the levels of histamine in blood to increase. This causes dilated blood vessels, creating smoother muscle contractions – this has a calming and stress relieving effect on the human body (Smith, 2013). Green almost always suggests growth, hope and the organic (Johnson, 2017). That is why green is almost always used in campaigns aimed at recycling and being eco-friendly (Dena, 2016c).

The colour white creates a feeling of peace and pureness as it is perceived as the most complete of all colours. White is a strong representation of perfection and a new beginning and creates a feeling of erasing all traces of past actions. A good example of this is the symbolic gesture of a white paper that has nothing written on – it leaves the mind open to possibility and detaches one from the past (Dena, 2016f). White is considered one of the most neutral colours as it is impartial, independent and absorbs no other colours, making it easy for colours to stand out in front of a white background (Dena, 2016f). The colour white provokes feelings of calmness, comfort and hope – in the world of colour, white can almost be seen as medicine that can be used to soothe a hurt soul. When people experience the grief of death, white is usually seen as the best colour flower to present as a symbol of sympathy, as it expresses hope in a dark situation and a new start away from grief and sorrow, especially for those believing in life after death (Dena, 2016f). White is also associated with aspects such as cleanliness and a sterile environment. An example of this is the use of white in hospitals and restaurant kitchens – this is because of the connotation with perfection and purity (Dena, 2016f).
White can also be a symbol for a new start, the end of a cycle in life, and the start of a new one (Dena, 2016f).

Blue is the colour of a calm sea and clear sky. All these concepts are linked to inner serenity, calm and clarity. Blue has the opposite effect of red, because it decreases heart- and breathing rates. Blue is a popular colour used in meditation and relaxation (Dena, 2016b). Studies have shown that blue improves concentration, stimulates thinking and can provide mental clarity. It has also been proven to increase productivity in the workplace. Blue is a good colour for study and work, as it offers relaxation and mental stimulation at the same time (Dena, 2016b). A big characteristic of blue is that it is not a very emotional colour; blue is often described as reserved or even snobbish. The reason for blue being perceived as snobbish is because blue gives the feeling of cold and rational thinking, to a point of showing little to no emotion (Dena, 2016b).

**B.2 Trust and authority**

Blue is also associated with aspects such as intelligence, and creates a feeling of calm authority. This is because blue inspires feelings of trust, is non-threatening and shows persistence, making it a better colour for management and people in authority positions to wear. Creating a blue company identity can also create a feeling of trust in the company, making it a good colour for companies in the finance, investment and law industries (Dena, 2016b).

**C. Increasing psychological reactions**

This category of effects includes intense reactions from individuals that are rooted in the psychological. The reactions are known to include an increase in positivity, energy and mental activity.

**Keywords used in this category:** Friendly, playful, happy, kind, social, welcoming, emotional, supportive, caring, creativity
C.1 Happiness and optimism

Yellow and orange are colours that can psychologically trigger feelings of high energy, enthusiasm, hope, fun and cheerfulness (Dena, 2016g).

A study done by the University Hospital South Manchester that focused on 105 healthy and happy participants suggested that the majority of participants chose yellow when asked to match a colour to their day-to-day emotional experience (Pappas, 2010).

C.2 Creativity

Yellow and orange are often associated with the shining sun, bright light and creativity. Yellow is believed to have a direct influence on the left side of the human brain, where aspects such as deep thinking and perception are located. Yellow has the ability to unlock the human thinking process, helping people become more creative and helping to find logical solutions (Dena, 2016g).

D. Decreasing psychological reactions

This category of effects includes slowed reactions from individuals that are rooted in the psychological. The reactions are known to include an increase in negativity, low energy and slowed mental activity.

Keywords used in this category: Sad, morbid, depressed, emptiness and isolation.

D.1 Sad, depressed and morbid reactions

In the Western culture, there is a strong relation between the colour black and mourning. Black can be perceived as grim and can reflect aspects such as loss and pain. Black is a very prominent colour when expressing grief (Dena, 2016a).

Dark purple can also provoke feelings of sadness and frustration, as too much purple can make a person irritable and even arrogant and impatient with people (Dena, 2016d).
A study done by the University Hospital of South Manchester that focused on 218 anxious and depressed participants, suggested that the majority of participants chose grey and black when asked to match a colour to their day-to-day emotional experience (Pappas, 2010).

**D.2 Emptiness and isolation**

Overuse of the colour white and blue can provoke feelings of emptiness and isolation. This is because these colours create the absence of emotions and give a feeling of emptiness. This can cause individuals to feel increased feelings of emptiness and abandonment (Dena, 2016f).

2.4.1.6 Colour and quality-status perception

Purple triggers a psychological feeling of pride as it represents richness, royalty and status. Christian Catholic priests also wear the colour purple as a sign of religious pride, and history often depicts the most influential royalties wearing purple robes (Dena, 2016d).

Black is also considered quite elegant and simple at the same time. Black outfits and cars are often seen as fancier than a colourful one – this increases the feeling of quality and dominance when black is used (Dena, 2016a).

2.4.1.7 Colour reactions in food and drink

The use of colour in the visual marketing of food is one of the most important product-intrinsic cues when managing the expectations of a target audience regarding the likely taste of edible products. Research has shown that changes in the hue or intensity of the colours of food and drink dramatically influenced the expectations of consumers. If the colour used to market the food does not match the taste, the results could be negatively perceived. The human brain starts to associate certain colours with certain tastes from birth. Examples are the association of red with a sweet taste such as cherry, or association of the colour green with a sour flavour such as lime (Spence, 2015). Paring colour and food is a very powerful tool because it gives the advertiser the ability to leverage the emotional connection to taste (Connolly, 2013).
According to research, some colours are good at stimulating the human appetite such as the colour red, which is not only eye catching, but also makes food look more appetising. The reason for red’s appetising effect might be that the primitive brain associates red with sweet fruits found in nature, such as berries (Davis, 2015). Other colours that have an appetising effect on food are yellow and orange. Because yellow is perceived as a happy colour, it is widely used in visual marketing material relating to food, with the idea of evoking feelings of optimism and a general good feeling. The colour orange has much of the same effect as yellow, but also enforces the notion that the food is healthy and nutritious (Connolly, 2013). Studies have shown that red increases appetite in consumers. A massive amount of chain restaurants have capitalised on this effect by using red in their company’s corporate identity (Connolly, 2013).

**Figure 2.7**

![Image of McDonald's burger](image)

*Figure 2.7: ZygjapZfYDrKKap-800x450-noPad.jpg?1423818128 (Spartanburg, 2017)*

In Figure 2.7 above, red and yellow are used for a specific reason. While red emanates excitement (and can even increase your heart rate), yellow communicates happiness and optimism. These warm colours are main colours when it comes to food because they evoke the taste buds and stimulate the appetite. The fast food industry has laid claim to these colours for this specific purpose and has seen a massive return on investment on the use of red and yellow (Connolly, 2013).
Another colour that has a positive effect on the marketing of food is the colour green. With a new trend in the market towards sustainability and organic substitutes, green is very popularly used to create a feeling of naturalness and healthy options (Davis, 2015). The colour green has a strong relationship with the terms eco-friendly and healthy (think vegetables), but can quickly become unappetising when used improperly (Connolly, 2013).

Certain shades of green can be considered creepy, gross, slimy and off-putting. Some examples of this are the rotten effect of green in food and the slimy green ooze used in horror movies. This is why it is important for marketers to be aware of the shade of green used, especially in relation to food (Dena, 2016c).

On the other side of the spectrum, the colour blue is known as an appetite suppressant. Some might argue that fruits such as blueberries are blue and very tasteful, but research has shown that blueberries are actually a shade of purple rather than blue. Blue is not often found in nature and this might be why the primitive brain does not register blue edibles as food and rejects the premise of eating blue (Davis, 2015). Some diets have even gone so far as to suggest eating food off a blue plate to make the individual eat less. This makes blue an undesirable choice for food advertisements (Dena, 2016b). Cool tones are not known to stimulate the appetite as much; therefore, it is important to carefully consider the context when used in correlation with food (Connolly, 2013).

The colour white has a positive attribute to food as it can provoke feelings of cleanliness and pureness, which is always important in a culinary environment with regard to hygiene. On the other hand, the overuse of white can easily make food seem stark, plain and sterile, and therefore the colour should be used with care (Connolly, 2013).

The fact that black can signify elegance, sleek and high-end quality, is somehow overshadowed, when it comes to food, by the colour brown. When it comes to food, brown has been found to be more effective in making food look appetising than black. Browns, together with earthy tones, are considered warm, appetising, wholesome and natural. The colour brown also has a strong connection to eco-friendliness and health, as it is seen as being directly from the earth (Connolly, 2013).
Colours that are bright connote pops of flavour in foods, such as sweets and desserts. These colours are also used in candy to make it look fun and flavourful (Connolly, 2013). Colours that are subdued or muted can help signify deep, rich and complex flavours. These colours work well for savoury flavours, but are also very suitable to use in rich, sweet flavours such as chocolate (Connolly, 2013).

2.4.1.8 The colour vs weight perception

Research conducted at the turn of the 20th century inspired the idea that geometrical figures possess specific energy, which had an effect on their perceived weight. A psychologist by the name of Edward Bullough found the aspect of colour to have a profound influence on the weight perception of objects. Bullough not only believed that dark colours are perceived as heavier than light colours, but also believed that each different colour had a variable perceived weight (Chris, 2006). In order to prove his theory, Bullough split a 10-feet-high wall horizontally in half and gave his participants two buckets of paint. The one bucket contained red paint and the other, pink. The participants were asked to paint each part of the wall one of these colours. The results showed that the vast majority of the participants decided to paint the bottom part of the wall red with the top part pink. Asking the participants why they chose to paint the wall the way they did, the participants all said that it felt like the most comfortable choice. The participants were asked why it would be less comfortable to paint the top of the wall red and all of the answers were that the wall would feel top-heavy. The participants seemed to apply gravitational forces to these specific colours even though a logical argument would easily disprove this notion. Participants could not logically explain why they felt this way, only that this was instinctively how they felt (Niki, 2012).

Bullough replicated these results in another study by creating images similar to Figure 2.8 below. The images showed triangles split into two halves horizontally. The top and bottom were painted red or pink and participants were asked to choose their favourite. The results again showed that participants overwhelmingly chose the image with the colour red at the bottom and the colour pink at the top as their favourite (Chris, 2006).
Several researchers built on the study conducted by Bullough and found that the results suggested a gravitational connection to colour. The studies overwhelmingly found that, overall, red was seen as the heaviest colour, followed by blue, green and the lightest being yellow. Brighter colours were always perceived as weighing less than dark colours and increases in the saturation of colours make colours appear to weigh less. Brighter backgrounds make dark colours look lighter and dark backgrounds make bright colours look heavier (Chris, 2006).

A more sophisticated study done by Pinkerton and Humphrey found that when using the different colours with the exact same hues, red was always perceived as the heaviest colour, followed by blue, green, orange and yellow. The study also confirmed that darker colours are perceived as heavier than brighter colours. The study concluded that the perceived colour weight perception is independent of brightness, as coloured shapes, equal in brightness, still have a significant difference in the perception of weight. The results of Pinkerton and Humphrey’s study can be seen in Figure 2.9, below (Chris, 2006).
Currently, no hypothesis could confirmatively explain why the human brain connects a gravitational aspect to colour (Niki, 2012). The most sophisticated study done so far on the topic remains the research done by Pinker and Humphrey, which concludes that colour has a weight perception. The literature suggests that it is possible to use colour to influence the perception of weight in visual marketing material and as a general guide, red is perceived as the heaviest colour and yellow as the lightest (Chris, 2006).

2.4.1.9 Most and least popular colours in the world

In a survey by Dulux Paints, the finding was made that 42% of males and 30% of females have the same favourite colour. The colour that was found to be the most popular in both males and females is blue. The world population’s second favourite colours are red and green, followed by orange, brown and purple. The colour yellow was suggested to be the least favourite with only 5% of individuals preferring this colour. Another survey found that both men and women increase their dislike of orange as they get older (Grad, 2011).

A YouGov worldwide survey that focused on 10 countries, which included China, Thailand, USA, Indonesia, Singapore, Germany, Britain, Hong Kong, Malaysia and Australia, found that across the four continents, blue is the most popular, with participants putting blue ahead by eight of 18 points of any other colour (Jordan, 2015).
The survey found that the second most popular colours varied, based on location, but were always one of three colours: green (Thailand, China and US), red (Indonesia, Singapore, Germany and Britain) or purple (Hong Kong). In Malaysia and Australia, purple and red were tied for second place. An interesting fact was that even in locations such as China, where the colours red, yellow and green have always been seen as auspicious or lucky, blue still outweighed any other colour significantly (Jordan, 2015). Figure 2.10 below shows how colours performed in the 10 countries.

**Figure 2.10**

![Colors International 3-01.png](attachment:Colors%20International%203-01.png) (Jordan, 2015)

When the study focused on different demographics, the colour blue still filtered through as the favourite colour within all the countries surveyed (Jordan, 2015).

The research showed that the colour blue seemed to be more popular with men than with women, with the US scoring 40% for men and 24% for women, while Britain scored 40% for men and 27% for women. Even though women preferred blue less than men did, they still picked blue more often than any other colour (Jordan, 2015).

Unsurprisingly, pink was chosen a lot more frequently by women than men, but was still only preferred by 10 to 13% of women and was not nearly as popular as red, purple or green (Jordan, 2015).
Blue outperformed all colours across all age groups and in the United States the study was even broken down into racial subgroups, showing that blue is preferred by equal numbers of whites (30%), blacks (35%) and Hispanics (35%) (Jordan, 2015).

2.4.2 Body language in marketing material

When using a human representative in marketing material, body language plays an essential role in communicating the correct message. Body language is a non-verbal form of communication (Currin, 2017). The research done in 1971 by Albert Mehrabian, a professor in psychology, suggested that 55% of face-to-face communication is done through body language. The rest is broken up between 38% tone of voice and 7% of the actual words spoken (Debenham, 2017). Visual marketing does not necessarily include any audio, and therefore body language plays an even bigger role in setting the tone of the messages. For this reason, it is of utmost importance that marketing specialists understand exactly how the body language of their representatives influences their messages (Currin, 2017).

The skilful use of gestures, stances, facial expressions and movement creates certain emotional responses in consumers that marketers can use to influence purchasing behaviour (Lasquite, 2015). An image of people with certain types of body language can help people feel confident in making a purchase. If you want to project happiness, show people happy; if you want to project confidence, show images of confident people (Lasquite, 2015).

2.4.2.1 Types of body language

A. Facial expressions

Studies have shown that there are six basic emotions that the brain can easily identify through facial expressions. These emotions are sadness, scare, surprise and disgust. These emotions are universally recognisable and all races, cultures and nationalities interpret these expressions the same. As language is not always universally identifiable, the brain uses facial expressions as one of the main methods of filling the communicational blanks (Cohen, 2016). Using the correct facial expressions in visual marketing is an important part of making sure that the message that the representative is conveying does not get lost due to cultural or other differences.
B. Posture and stance

When using a representative in visual marketing material, posture is an important part of non-verbal communication. Being aware of the posture used in marketing material can help get the message across more effectively and, like facial expressions, posture also helps to fill the gap where the verbal message is lost in interpretation (Giles, 2014).

The most common differences in posture are between open and closed postures. Open posture is, as the name suggests, an open position with the feet spread wide and the hands facing outwards. To replicate an open posture, the representative should be sitting or standing up straight with the head raised, the chest and abdomen should be pressed out and the posture should be combined with a relaxed facial expression and adequate eye contact. An open posture is often perceived as being friendly and positive. A study conducted by the University of Northern Iowa’s College of Business Administration suggests that individuals who use an open posture are often more persuasive. An open posture is also perceived as being confident and in control (Giles, 2014).

A closed posture is achieved when the body is in a closed position. This is achieved by crossing the arms across the chest, crossing the legs, sitting or standing in a hunched forward position and showing the back of your hands or clenching the fists. A study done by the University of Northern Iowa’s College of Business Administration suggests that closed posture is perceived as boredom, hostility or detachment (Giles, 2014).

C. Gestures

Gestures are also a very important part of the non-verbal communication process. Gestures contain useful information that the human brain can use to interpret a specific emotion that the representative is expressing. Gestures can indicate all kinds of emotions and are universally understandable by all cultures, races and nationalities. It is important for marketing specialists to take into consideration how gestures are perceived when trying to communicate a message to a general audience (Munoz, 2017).
D. Eye contact

When using a representative in visual marketing material, the first form of communication the brain notices is eye contact. Eye contact conveys essential social and emotional information. Direct eye contact is seen as an expression of attentiveness, confidence, sincerity and a form of respect, especially in the Western culture. When avoiding eye contact, it can be interpreted as being elusive, dishonest and having a lack of confidence (Currin, 2017).

A great tool to use with visual marketing is images with eyes looking right at the audience. This is not the easiest technique to use successfully, as the character used in the marketing material needs to stare with confidence. The human brain is very good at picking up subtle visual cues, especially when it comes to facial expressions. If the character used in the visual aspects shows any form of doubt, hesitation or fear, it can subconsciously be picked up by your audience and lead to doubt in the character’s integrity (Lasquite, 2015).

In day-to-day life, if a person can look you in the eyes when interacting with you, it is a silent social cue of communication that implies a demand or a request, as well as the idea that someone is expecting a response. The same principle applies to a still image (Lasquite, 2015). Humans are also conditioned to perceive straight eye contact as honesty. Showing imagery with eyes looking at the audience helps develop trust, and can help the audience make the choice to buy.

2.4.3 Image placement

2.4.3.1 Image time, speed and movement perception

Research done by the University of British Columbia suggests that aspects such as placement of objects on an image canvas have a dramatic effect on the perception of the total image. In cultures that read from left to right, the perception is that things on the left side are in the past, while things that are on the right are in the future. This shows that people connect a ‘time’ component to images based on object placement. The study also showed that participants found objects moving from left to right more aesthetically pleasing than when the object moved right to left. The opposite was found to be true in cultures that read from right to left (Carvalho, 2012).
2.4.3.2 The rule of thirds as visual technique

The rule of thirds is a guideline used in the arts, such as photography, videography and graphic design. The rule is very popular because of its simplicity and the dramatic positive effect it has on images’ aesthetic perception. The rule is used to assist as guideline when placing an object in an image to make the final product more pleasing to the viewers (Thurston, 2017).

This rule is based on a system where the visual material gets split up into thirds, creating a vertical and horizontal grid of nine blocks in total. The idea of this technique is that important visual elements should be placed at the crossings of these horizontal and vertical lines (Lasquite, 2015). The guidelines when using the rule of thirds are that when placing people in images, the representative should be aligned with one of the vertical lines of the grid. The rule does not require exact accuracy, but suggests that the closer the subject is placed to the line the better. The representative’s eyes should be aligned with one of the horizontal lines. If the subject is not looking directly at the viewer, the eyes should be looking at the biggest open space in the image. When creating a landscape, the best practice is to align the horizon with one of the horizontal lines, best being the bottom line. Avoid placing the horizon in the centre of the image, as this will cut the image in half (Thurston, 2017). Ideally, the rule suggests that placing the focus point of the image as close as possible to where the vertical lines cross the horizontal lines will deliver the best results (Thurston, 2017). Figure 2.11 on the next page is a visual representation of the rule of thirds.
2.4.4 Symbolism as visual technique

Because of limited exposure to marketing material and to fight the information overload, many marketing experts are using symbolism in material to create a deeper more complex understanding of certain emotional aspects of brands, products and services. This increases the selling power of a product or service by substituting large amounts of information with easy to digest visual representations (Lasquite, 2015).

An example of symbolism is crystals, gems or diamonds often used together with water. Both visual aspects have the capability to represent clarity and purity. Some commonly used symbols include an open road suggesting freedom and exploration, or a lion symbolising strength, superiority and royalty (Lasquite, 2015).

The background or space of the marketing material can also serve as symbolism, as space is the most comprehensive of the visual elements. The space referred to is not empty space, but
rather the perceived space that an object is placed in to create a perceived environment. An example of this might be a truck with the focus of strength and utility being placed in a construction site, while a fuel saver, economically-driven car might be placed in an urban environment. The space these objects find themselves in serves as a clear symbol of their attributes (Johnson, 2017).

Another aspect that is very important when it comes to using space is how things are laid out. This is as important as the images on the advertisements, where your eye is forced to look, as well as the balance of the piece, are important elements in space-related visual aspects. For example, you can use negative space to elicit a great deal of emotion from your audience. The texture portrayed in certain visual aspects is also used as symbols of brand, product or service attributes. Smooth services can suggest refined taste and luxury, while a rough surface can suggest toughness and ruggedness (Johnson, 2017).

Shapes are also symbols that can be used in visual aspects. Examples are curves that can suggest feminine voluptuousness, while angles suggest masculine practicality. A circle can imply eternity and virtue, while a line, like a road leading to a horizon, suggests freedom. Triangles, squares and parallel lines all suggest different concepts and emotions. Triangles focus the mind upward, while squares often suggest practicality and usefulness (Johnson, 2017).

2.4.5 Using fonts in visual marketing material

Fonts serve as an important visual marketing tool to add emotion to the text used in visuals. The font used in visual marketing material directly connects to the message and enforces key aspects of the message by contributing to the non-verbal communication.

A survey conducted by the Wichita State University determined that variations in fonts conveyed different emotions. The survey concentrated on 500 participants and exposed them to 20 fonts. The participants were asked to assign emotions to each font and the results were grouped according to the answers given. The results from the study showed that certain patterns appeared in the grouping of fonts when comparing physical attributes. The results showed that aggressive emotions were associated with bold fonts such as Impact and Rockwell Xbold. Positive emotions were associated with informal fonts with wavy patterns.
such as Kristen and Gigi. Negative emotions have been associated with more printed formal fonts such as Courier New and Agency FB (Chaparro et al., 2006).

Reasons for the emotional connection of fonts were explored by a 2014 study done on medical patients. The same home care instructions printed in variable fonts were provided, and the results showed that when patients were provided with instructions in hard to read fonts, they felt that the actual instructions would be harder to follow, whereas those who were provided with instructions in an easy to read font were more optimistic about following them (Lavender et al., 2015). This shows that font has a definitive effect on how humans perceive what they read.

The brain’s long-term memory also has a direct effect on how emotions are perceived. An example of this is that the United States Tax and Internal Revenue Service uses the font Helvetica on tax return forms. How individuals experience their dealings with the US-IRS will have a direct influence on how these individuals perceive the font Helvetica (Bernazzani, 2017).

The biggest influence of fonts on emotions comes down to their physical attributes. Light fonts convey beauty and femininity, medium fonts are most readable, and bold fonts convey power and masculinity. Rounded fonts convey comfort, softness and femininity, while angular fonts are more formal, durable and masculine. Structured fonts convey seriousness and directness, while unstructured fonts convey playfulness and uniqueness. Fonts that have alone standing letters convey formality and structure, while connected letters convey style and elegance (Kolenda, 2017).

2.4.6 Age connection in marketing

A study published in the Iranian Journal of Public Health suggested that the overall perception of 140 participants was that young individuals lack the experience in life that older individuals have. In the reverse, the study found that individuals who are older lack the physical energy to be involved in more active aspects of life (Cybulski et al., 2013).

A study conducted in 1995 by Nancy W Denny on 155 men and 233 women aged between 20 and 79, asking each to name the wisest person they personally know, showed that men and
women overwhelmingly chose older individuals. The difference between the age of the participants and the age of the individual decreased as the participant’s age increased. The results also showed that both genders chose wise individuals who were male more often than female, and this tendency increased with participants’ age. An interesting aspect was that women were nominated more as being wise with interpersonal aspects with an exception of older women. Skills that male individuals were reported to be wise at were aspects such as business and science, while females were seen as wise in interpersonal skills such as listening and social advice (Denney et al., 1995).

The answer to whether age increases wisdom was tested by a professor of psychology, Frank Durgin. The study focused on 100 individuals aged between 18 and 72. The results suggested that older individuals were better at determining the correct slope of a hill than the younger participants. The results suggested the main reason for the results to be that age brings greater life experience. Even though the hill used was no more than 5 degrees, younger participants often used their perception to judge the hill to be more than 20 degrees; older individuals were shown to use more calculated methods of coming to a conclusion and were significantly more accurate. This showed that older participants used previously gained knowledge to solve the problem, while the youth had to rely on pure perception (Li, Durgin, 2016).

Youth has a strong connection to innovation and technology. Even though all advances in technology are not aimed at the youth, the common perception is that they embrace the changes first. The perception is that youth are much more enthusiastic about technology (Nickson, 2016).
CHAPTER 3: EMPIRICAL STUDY

3.1 Demographics of the study

The study consisted of 135 participants divided into gender, race, language, education level and age.

3.1.1 Gender

Out of 135 participants, 54 identified themselves as male, and 81 identified themselves as female. The number of participants who did not identify with any gender was 0.

3.1.2 Race

Out of 135 participants, 34 identified their race as African, 93 identified their race as Caucasian, four identified their race as coloured, three identified their race as Asian, and one identified his/her race as other.

3.1.3 Language

Out of 135 participants, 23 identified their home language as English, 87 identified their home language as Afrikaans, four identified their home language as isiZulu, eight identified their home language as Setswana, four identified their home language as Sesotho, and nine identified their home language as other.

3.1.4 Education level

Out of 135 participants, one identified his/her education level as none, 17 identified their education level as having grade 9, 66 identified their education level as having matric, three identified their education level as having a higher certificate, 15 identified their education level as having a diploma, 13 identified their education level as having a bachelor’s degree, six identified their education level as having a post-graduate qualification, eight identified their education level as having an honours degree, five identified their education level as having a master’s degree, and one identified his/her education level as having a PhD.
3.1.5 Age

Out of 135 participants, 89 were aged 18 to 30, 11 were aged 31 to 40, 14 were aged 41 to 50, 11 were aged 51 to 60, three were aged 61 to 70 and seven were aged older than 71.

3.2 Identifying participants’ favourite colour

During the questionnaire (see page 2 of questionnaire), participants were instructed to write down their favourite colour. Answers of 134 out of 135 participants are illustrated in Table 3.1 and Figure 3.1 below.

<table>
<thead>
<tr>
<th>Favourite colour of participants</th>
<th>Count of colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>12</td>
</tr>
<tr>
<td>Blue</td>
<td>64</td>
</tr>
<tr>
<td>Brown</td>
<td>2</td>
</tr>
<tr>
<td>Green</td>
<td>11</td>
</tr>
<tr>
<td>Grey</td>
<td>1</td>
</tr>
<tr>
<td>Orange</td>
<td>5</td>
</tr>
<tr>
<td>Pink</td>
<td>3</td>
</tr>
<tr>
<td>Purple</td>
<td>13</td>
</tr>
<tr>
<td>Red</td>
<td>14</td>
</tr>
<tr>
<td>White</td>
<td>2</td>
</tr>
<tr>
<td>Yellow</td>
<td>7</td>
</tr>
<tr>
<td>Grand Total</td>
<td>134</td>
</tr>
</tbody>
</table>

Table 3.1 and Figure 3.1 suggest that blue was participants’ favourite colour with a majority of 48%. Other colours commonly chosen are red (14%), purple (13%), black (12%) and green (11%). The least popular colours are yellow (7%), orange (5%) and white (2%).

Table 3.1 and Figure 3.1 show a strong resemblance to the findings of the Dulux Paints study (Grad, 2011) and YouGov study (Jordan, 2015) that blue is the most popular colour in the world. Table 3.1 and Figure 3.1 also show a strong resemblance to the Dulux Paint study (Grad, 2011) and the YouGov study (Jordan, 2015) suggesting that red, green and purple are the most popular colours after blue. Table 3.1 and Figure 3.1 did, however, suggest that black was popularly chosen, which is not suggested by the Dulux Paint (Grad, 2011) and YouGov
(Jordan, 2015) studies. Table 3.1 and Figure 3.1 correspond with the Dulux Paint study’s suggestion that yellow is not overall a popular colour in the world (Grad, 2011).

3.2.1 Favourite colour by race

Table 3.2 below captures the data gathered from 134 out of 135 participants split into race.

Table 3.2

<table>
<thead>
<tr>
<th>Colour</th>
<th>African</th>
<th>Asian</th>
<th>Caucasian</th>
<th>Coloured</th>
<th>Other</th>
<th>Grand total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Blue</td>
<td>11</td>
<td>2</td>
<td>50</td>
<td>1</td>
<td></td>
<td>64</td>
</tr>
<tr>
<td>Brown</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Gold</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Green</td>
<td>2</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Grey</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Orange</td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Pink</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Purple</td>
<td>2</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Red</td>
<td>4</td>
<td>7</td>
<td>3</td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>White</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Yellow</td>
<td>2</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Grand Total</td>
<td>34</td>
<td>3</td>
<td>93</td>
<td>4</td>
<td>1</td>
<td>135</td>
</tr>
</tbody>
</table>

Table 3.2 suggests the most popular colour over all races to be blue, followed by red, green, purple and black. The colour black is suggested to be popular among African races when compared to other races, with an average of 24% choosing black. The sample might be too small and unbalanced to give an accurate conclusion on favourite colours for races, however, some patterns are visible when examining the data.

Table 3.2 corresponds with the suggestions from the YouGov study (Grad, 2011) that race has little to no effect on the favourite colour of the general world population. A small anomaly from the findings of the YouGov study (Grad, 2011) is the popularity of black among the African race.
3.2.2 Favourite colour by gender

Table 3.3 and Figure 3.2 below capture the data gathered from 134 out of 135 participants split into gender.

### Table 3.3

<table>
<thead>
<tr>
<th>Colour</th>
<th>Female</th>
<th>Male</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>12.35%</td>
<td>3.70%</td>
<td>8.89%</td>
</tr>
<tr>
<td>Blue</td>
<td>41.98%</td>
<td>55.56%</td>
<td>47.41%</td>
</tr>
<tr>
<td>Brown</td>
<td>1.23%</td>
<td>1.85%</td>
<td>1.48%</td>
</tr>
<tr>
<td>Green</td>
<td>7.41%</td>
<td>9.26%</td>
<td>8.15%</td>
</tr>
<tr>
<td>Grey</td>
<td>0.00%</td>
<td>1.85%</td>
<td>0.74%</td>
</tr>
<tr>
<td>Orange</td>
<td>4.94%</td>
<td>1.85%</td>
<td>3.70%</td>
</tr>
<tr>
<td>Pink</td>
<td>2.47%</td>
<td>1.85%</td>
<td>2.22%</td>
</tr>
<tr>
<td>Purple</td>
<td>12.35%</td>
<td>5.56%</td>
<td>9.63%</td>
</tr>
<tr>
<td>Red</td>
<td>8.64%</td>
<td>12.96%</td>
<td>10.37%</td>
</tr>
<tr>
<td>White</td>
<td>1.23%</td>
<td>1.85%</td>
<td>1.48%</td>
</tr>
<tr>
<td>Yellow</td>
<td>6.17%</td>
<td>3.70%</td>
<td>5.19%</td>
</tr>
<tr>
<td>Orange</td>
<td>1.23%</td>
<td>0.00%</td>
<td>0.74%</td>
</tr>
</tbody>
</table>

### Figure 3.2

![Favourite colour by gender chart](chart.png)
Table 3.3 and Figure 3.2 suggest that blue is the most chosen colour for both genders, followed by red, green, purple and black. Table 3.3 and Figure 3.2 suggest that males prefer the colour blue 15% more often than females do, and females chose purple 7% more often than males did. Females also chose the colour black 9% more than men did. Orange, yellow and white are once again some of the least chosen colours in both genders.

Table 3.3 and Figure 3.2 correspond to suggestions by the YouGov study (Grad, 2011) that blue is the favourite of both genders. Table 3.3 and Figure 3.2 also suggest that the YouGov study (Grad, 2011) is accurate in the finding that males have a bigger preference for blue, and that females have a bigger preference for purple than males.

3.2.3 Favourite colour by education level

Table 3.4 below captures the data gathered from 134 out of 135 participants split into education level.

### Table 3.4

<table>
<thead>
<tr>
<th>Colours</th>
<th>None</th>
<th>Grade 9</th>
<th>Matric</th>
<th>Diploma</th>
<th>Higher diploma</th>
<th>Bachelors</th>
<th>Post-graduate</th>
<th>Honours</th>
<th>Master's</th>
<th>PhD</th>
<th>Grand total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Blue</td>
<td>6</td>
<td>31</td>
<td>10</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td>64</td>
</tr>
<tr>
<td>Brown</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Gold</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Green</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Grey</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Orange</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Pink</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Purple</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>13</td>
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<td>Red</td>
<td>2</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>White</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Yellow</td>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Grand Total</td>
<td>1</td>
<td>17</td>
<td>66</td>
<td>15</td>
<td>3</td>
<td>13</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>1</td>
<td>135</td>
</tr>
</tbody>
</table>

Table 3.4 suggests that blue is the colour most chosen over all education levels. The sample size limits the results when trying to identify other patterns in colours chosen relating to education levels.
Table 3.4 corresponds to the YouGov study’s (Grad, 2011) suggestion that blue is the favourite colour of the general world population with no significant influence from demographic factors.

3.2.4 Favourite colour by age

Table 3.5

<table>
<thead>
<tr>
<th>Colour</th>
<th>Age</th>
<th>18-30</th>
<th>31-40</th>
<th>41-50</th>
<th>51-60</th>
<th>61-70</th>
<th>71+</th>
<th>Grand total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>12</td>
<td>11</td>
<td>1</td>
<td>1</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td>64</td>
<td>40</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>64</td>
</tr>
<tr>
<td>Brown</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td>11</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grey</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pink</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purple</td>
<td>13</td>
<td>10</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td>14</td>
<td>12</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>135</td>
<td></td>
</tr>
</tbody>
</table>

The results in Table 3.5 above suggest that blue was the favourite colour of all age groups. The samples size limits the results when trying to identify other patterns in favourite colours relating to age groups.

The results correspond to the YouGov study’s (Grad, 2011) suggestion that blue is the favourite colour of the general world population, with no significant influence from demographic factors.

3.3 Testing participants’ perception of danger, and characteristics relating to colour

Question 1, on page 3 of the questionnaire, created a scenario for the participants wherein a pet shop receives animal stock in different coloured boxes, namely red, blue, yellow and green. The participant then had to match each colour box with a poisonous snake, a friendly
puppy, a lazy lizard, or a playful kitten. The participants were limited to one answer per box. The results are as per Table 3.6 and Figure 3.3 below.

**Table 3.6**

<table>
<thead>
<tr>
<th>Animals and coloured boxes</th>
<th>Poisonous snake</th>
<th>Friendly puppy</th>
<th>Playful kitten</th>
<th>Lazy lizard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Red</strong></td>
<td>113</td>
<td>6</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td><strong>Blue</strong></td>
<td>4</td>
<td>64</td>
<td>37</td>
<td>28</td>
</tr>
<tr>
<td><strong>Yellow</strong></td>
<td>7</td>
<td>38</td>
<td>56</td>
<td>32</td>
</tr>
<tr>
<td><strong>Green</strong></td>
<td>9</td>
<td>25</td>
<td>32</td>
<td>67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>133</td>
<td>133</td>
<td>133</td>
<td>133</td>
</tr>
</tbody>
</table>

**Figure 3.3**

Table 3.6 and Figure 3.3 suggest that most participants matched the poisonous snake to the red box. Interviews identified that participants associated the colour red with danger and because participants perceived a poisonous snake as being dangerous, decided to match it with red. Another reason given for placing the snake in the red box was that participants associated the colour red with poisonous snakes, saying that snakes that are poisonous are usually red in colour.
Table 3.6 and Figure 3.3 correspond with the literature’s (Anon, 2016a) suggestions that red has a direct connection with aspects of danger, and that animals use the colour red to ward off predators as a sign that the animal might be poisonous.

Table 3.6 and Figure 3.3 suggest that the majority of participants chose to connect either the blue or yellow box with the friendly puppy and the playful kitten. In interviews, participants suggested that they made the connection between blue and the puppy because of the perception of loyalty and trust they experienced from dogs in the past. The reason for connecting yellow was because of the energy associated with puppies and kittens. Dogs and kittens were also often connected to blue with the reason that blue is the participants’ favourite colour and dogs and cats the favourite animal.

Table 3.6 and Figure 3.3 correspond with the suggestions by the literature that blue is often associated with trust and loyalty (Dena, 2016b), and that yellow is associated with friendliness and high energy (Dena, 2016g). The results also show a preference for the colour blue by its association with participants’ favourite animals.

The colour green was connected with the lazy lizard by the majority of participants. The main reason identified for this was that the lizard had a strong connection to nature, and participants felt a strong connection to the colour green and nature.

Table 3.6 and Figure 3 correspond with the suggestion by the literature that green has a strong connection with nature (Dena, 2016c).

### 3.4 Testing participants’ perception of aggression and danger in relation to colour

Question 2 of the questionnaire created a scenario for participants where five robbers are in a gang where the colour of their balaclavas, namely red, blue, black, green and white, symbolised their aggression and tendency for violence. The participants were asked to rank the robbers in the order that they perceived them being aggressive, with 1 being the most aggressive and 5 being the least. The results of question 2 are captured in Table 3.7 and Figure 3.4 on the next page.
Table 3.7 and Figure 3.4 suggest that participants chose the colours black and red as the most aggressive colours. Participants suggested that black and red provoked feelings of aggression and danger, and that the robbers wearing these balaclavas “just seemed more serious”. Table 3.7 and Figure 3.4 suggest that participants perceived blue, green and white as non-aggressive colours and reasons identified for this during interviews were participants suggesting these colours looked less aggressive and more playful rather than serious.

Table 3.7 and Figure 3.4 correspond with the suggestions from the literature that red (Robson, 2014) and black (Adam, Galinsky, 2012) are perceived as more aggressive and serious colours, while blue (Dena, 2016b), green (Dena, 2016c) and white (Dena, 2016f) provoke feelings of calmness and low threat.

3.5 Testing participants’ perception of sportiness, speed, luxury, status and connection to nature, in relation to colour

Question 3 of the questionnaire created a scenario for participants where a car manufacturer decides to create a new car line, with four different models. The car manufacturer then painted each model a different colour, namely black, purple, red and green. The participants were asked to match the sporty and fast model, extreme luxury model, off-road 4x4 models, and model for rich businessmen and -women with one of the four colours. The participants were instructed to only use each colour and model once. The results are illustrated in Table 3.8 and Figure 3.5 on the next page.
Table 3.8

<table>
<thead>
<tr>
<th></th>
<th>Sporty &amp; fast</th>
<th>Extreme luxury</th>
<th>Off-road</th>
<th>Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>13</td>
<td>46</td>
<td>11</td>
<td>65</td>
</tr>
<tr>
<td>Purple</td>
<td>22</td>
<td>55</td>
<td>16</td>
<td>42</td>
</tr>
<tr>
<td>Red</td>
<td>89</td>
<td>23</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>Green</td>
<td>11</td>
<td>11</td>
<td>98</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>135</strong></td>
<td><strong>135</strong></td>
<td><strong>135</strong></td>
<td><strong>135</strong></td>
</tr>
</tbody>
</table>

Figure 3.5

Table 3.8 and Figure 3.5 suggest that the majority of participants chose to match the colour red with sporty and fast. The reasons identified were that sports cars are usually popular in red, that red looks more aggressive and energetic, and that “red just looks fast for some unexplainable reason”. Table 3.8 and Figure 3.5 suggest that participants showed a strong preference for purple and black in relation to luxury. The reasons were that purple looks rich and royal, and that purple is a luxury colour. Black was associated with status and power, and people who have these attributes enjoy luxury vehicles. Green was associated with the off-road 4x4 model. The strongest reason for this association was the suggestion that green had a strong connection with nature and the army that operates in nature. The business model was associated with black and purple; the reasons were similar to those of the luxury model with participants saying that these two colours had a connection with authority, power, royalty and wealth.

Table 3.8 and Figure 3.5 suggest a strong relation to the literature’s suggestion that red is associated with high energy, sportiness and speed (Elliot, 2011). It also related to the suggestion that black (Dena, 2016a) and purple (Dena, 2016d) are colours that suggest
authority, luxury, royalty and power. The results also show a strong connection to the literature’s suggestion that green is connected to nature (Dena, 2016c).

3.6 Testing participants’ perception of aggression and energy in relation to colour

Question 4 of the questionnaire created a scenario for participants where four identical looking brothers are trained by their father in boxing. Each brother has a different level of skill in the sport with the best being a world-class fighter and the worst never winning a fight in his life time. The father then gives each boxer a pair of coloured gloves to represent their skill level. The participants were asked to rank the boxers based on skill level with 1 being the best and 4 being the worst. The results are illustrated in Table 3.9 and Figure 3.6 below.

<table>
<thead>
<tr>
<th>Table 3.9</th>
<th>Figure 3.6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aggression perception scale</strong></td>
<td><strong>Glove colour</strong></td>
</tr>
<tr>
<td><strong>Aggression scale</strong></td>
<td><strong>Red</strong></td>
</tr>
<tr>
<td><strong>Blue</strong></td>
<td><strong>Blue</strong></td>
</tr>
<tr>
<td><strong>Green</strong></td>
<td><strong>Green</strong></td>
</tr>
<tr>
<td><strong>Yellow</strong></td>
<td><strong>Yellow</strong></td>
</tr>
<tr>
<td>Red</td>
<td>90.37</td>
</tr>
<tr>
<td>Blue</td>
<td>67.78</td>
</tr>
<tr>
<td>Green</td>
<td>49.07</td>
</tr>
<tr>
<td>Yellow</td>
<td>42.41</td>
</tr>
</tbody>
</table>

Table 3.9 and Figure 3.6 suggest that participants ranked the red fighter significantly higher than the other fighters. The reasons identified from participants in interviews were that the red fighter looked more dominant and energetic. The participants also ranked the fighter with the blue gloves significantly higher than the green and yellow fighters. Reasons identified are that the blue boxer looked calm and collected, with some participants suggesting that the blue fighter would be more precise and calculated in his movements when fighting, and even though he would throw fewer punches, he would be more accurate. The majority of participants perceived the yellow fighter as being the least talented, the reasons being that he did not look serious enough and had too much energy.

Table 3.9 and Figure 3.6 correspond with the suggestions made by the literature that red increases energy and the dominating effects in sports (Robson, 2014). Table 3.9 and Figure 3.6 correspond with the theory that blue creates a feeling of calmness and competency (Dena,
Table 3.10 and Figure 3.6 also correspond with the literature suggesting that yellow is very high in energy and provokes feelings of friendliness and playfulness (Pappas, 2010).

3.7 Testing the appetising effects of colours

Question 5 of the questionnaire created a scenario for participants where a food truck company sells four types of burgers. The participants are asked to rank the advertisements of the four burgers with different coloured backgrounds, namely red, blue, yellow and green, from the burger participants perceive as looking the tastiest to the least tasty. The results are illustrated in Table 3.10 and Figure 3.7 below.

<table>
<thead>
<tr>
<th>Colour</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>74.81</td>
</tr>
<tr>
<td>Blue</td>
<td>64.62</td>
</tr>
<tr>
<td>Green</td>
<td>55.55</td>
</tr>
<tr>
<td>Yellow</td>
<td>55.18</td>
</tr>
</tbody>
</table>

Table 3.10 and Figure 3.7 suggest that participants perceived the burger with the red background as the most appetising. Reasons identified for this result in interviews are that red creates a feeling of warmth for the burger, red makes the burger look tastier and that participants cannot explain their decision, but are sure that the burger looks better than the others. Participants also chose blue as an appetising colour in the majority of instances. The reasons were that the blue background made the burger stand out more. The least popular colours were green and yellow. Reasons for this are that these colours made the burgers look rotten, unappetising and old.

Table 3.10 and Figure 3.7 correspond with the suggestion from the literature that red makes food look more appetising (Connolly, 2013). However, Table 3.10 and Figure 3.7 show the opposite effect when yellow is used, as the literature suggests yellow makes food seem more appetising (Connolly, 2013). Blue also contradicts the literature with participants feeling that blue makes the food stand out and the literature suggesting that blue is an unappetising colour (Dena, 2016b).
3.8 Testing the perception of colour and emotion

Question 6 of the questionnaire created a scenario for participants where they were given eight different colours, which included black, red, blue, green, white, yellow, orange and purple. The participants were then asked to match each of the colours with emotions, namely angry, scared, happy, calm, sad, kind and peaceful. The participants were given the option of using colours more than once. Table 3.11 and Figure 3.8 below captured the results.

Table 3.11

<table>
<thead>
<tr>
<th>Colour and emotion</th>
<th>19%</th>
<th>56%</th>
<th>2%</th>
<th>0%</th>
<th>20%</th>
<th>1%</th>
<th>3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>19%</td>
<td>56%</td>
<td>2%</td>
<td>0%</td>
<td>20%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Red</td>
<td>76%</td>
<td>15%</td>
<td>3%</td>
<td>0%</td>
<td>6%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Blue</td>
<td>1%</td>
<td>6%</td>
<td>20%</td>
<td>32%</td>
<td>23%</td>
<td>12%</td>
<td>19%</td>
</tr>
<tr>
<td>Green</td>
<td>1%</td>
<td>2%</td>
<td>17%</td>
<td>21%</td>
<td>5%</td>
<td>25%</td>
<td>15%</td>
</tr>
<tr>
<td>White</td>
<td>1%</td>
<td>7%</td>
<td>4%</td>
<td>26%</td>
<td>8%</td>
<td>13%</td>
<td>42%</td>
</tr>
<tr>
<td>Yellow</td>
<td>0%</td>
<td>3%</td>
<td>38%</td>
<td>7%</td>
<td>10%</td>
<td>16%</td>
<td>6%</td>
</tr>
<tr>
<td>Orange</td>
<td>1%</td>
<td>3%</td>
<td>4%</td>
<td>5%</td>
<td>9%</td>
<td>15%</td>
<td>4%</td>
</tr>
<tr>
<td>Purple</td>
<td>2%</td>
<td>8%</td>
<td>12%</td>
<td>10%</td>
<td>20%</td>
<td>16%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Figure 3.8

Table 3.11 and Figure 3.8 suggest that red was associated with anger by the majority of participants. Reasons identified by participants during interviews are that red is the colour of danger, blood and aggression. Table 3.11 and Figure 3.8 suggest that the colour black was associated with the emotion scared. Reasons identified was that black is the colour of the night, evil and the unknown. The colour most associated with happiness was yellow, with participants connecting yellow with aspects such as sunshine and flowers. The colours blue, green and white had strong connections with feelings of calmness and peacefulness.
Participants’ reasons were that blue, green and white created a relaxing and soothing feeling when exposed to. A large connection was made to natural aspects such as the sky, clouds, the ocean and plants in nature. The colours most associated with sadness were black, blue and purple. Reasons for this were that these colours are seen as cold and emotionless.

Table 3.11 and Figure 3.8 have a strong connection with the suggestions made by the literature, especially the suggestions made in colour psychology that colours have a significant psychological effect on the human brain (Johnson, 2017). Participants showed a direct similarity to all the suggestions made in the literature (Scott-Kemmis, 2013f).

### 3.9 Testing taste colour perception

Question 7 of the questionnaire created a scenario for participants where a farmer genetically engineered a new type of fruit with four variations in colours, namely blue, red, green and yellow. The fruits all had one of four attributes, namely tasting sweet, tasting sour, tasting bitter and being poisonous. The participants were asked to match the perceived attributes with the colour fruit they find most fitting. The participants were instructed to only use each fruit and attribute once. Table 3.12 and Figure 3.9 below captured the results.

**Table 3.12**

<table>
<thead>
<tr>
<th>Taste colour perception</th>
<th>Sweet</th>
<th>Sour</th>
<th>Bitter</th>
<th>Poisonous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>19%</td>
<td>12%</td>
<td>19%</td>
<td>50%</td>
</tr>
<tr>
<td>Red</td>
<td>61%</td>
<td>6%</td>
<td>5%</td>
<td>28%</td>
</tr>
<tr>
<td>Green</td>
<td>10%</td>
<td>36%</td>
<td>45%</td>
<td>9%</td>
</tr>
<tr>
<td>Yellow</td>
<td>11%</td>
<td>45%</td>
<td>31%</td>
<td>13%</td>
</tr>
</tbody>
</table>
Table 3.12 and Figure 3.9 suggest that the majority of participants matched the red fruit with the attribute of sweet. The reasons for the results are a connection with other sweet fruit such as apples, strawberries and raspberries. Other reasons are that participants felt red makes the fruit look more appetising and tasty than the other and that red makes the fruit seem ripe and ready to eat. Table 3.12 and Figure 3.9 suggest that the majority of participants chose green and yellow for either sour or bitter. The main reason for this was the association with other fruits that have these specific attributes and the fact that green does not make the fruit look ripe. The majority of participants chose the colour blue and red for the attribute poisonous. The reasons for this is that participants felt that blue was an unnatural colour for a fruit and that they would feel sceptical of eating blue fruit if they would come across such in nature. The reason for associating red with poisonous is that red is the colour of danger, and participants felt that they might feel worried about eating red fruit that they do not know much about.

Table 3.12 and Figure 3.9 have a strong connection with the suggestions made in the literature about colours of fruit in nature. Red fruit is seen as sweet, tasty and ripe (Davis, 2015), while blue is an unnatural colour not found in nature (Davis, 2015). The results support the literature in the suggestion that blue food looks unitising (Dena, 2016b).
3.10 Testing perception of death and colour

Question 8 of the questionnaire created a scenario for participants who were faced with their last will and testimony, and had to choose whether they wanted their caskets to be transported in a white or black hearse. These were the only two options provided to participants. Table 3.13 and Figure 3.10 below captured the results.

<table>
<thead>
<tr>
<th>Colour hearse chosen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
</tr>
</tbody>
</table>

Table 3.13 and Figure 3.10 suggest that the majority of participants chose the white hearse over the black. The reason for this was that participants felt that white was a more soothing colour and represented a more positive outlook on death than black. The other participants who chose the black hearse over the white suggested that black is a colour that represents death, and is therefore appropriate for a funeral. According to all participants, using black would intensify the emotional feelings associated with death, while white would suppress these feelings.

Table 3.13 and Figure 3.10 suggest that the literature’s suggestions that black is directly associated with death (Dena, 2016a) and that white suppresses the emotions associated with death are accurate (Dena, 2016f).

3.11 Testing perceptions of personality traits in relation to colour

Question 9 of the questionnaire created a scenario for participants who were asked to match the personality of four identical brothers, which included aggressive, rude and mean; calm, quiet and relaxed; friendly, social and welcoming; and emotional, supportive and caring, to
the colour shirts they wear to work, namely green, red, blue, yellow. Table 3.14 and Figure 3.11 below captured the results.

**Table 3.14**

<table>
<thead>
<tr>
<th>Personality traits in relation to colour</th>
<th>Aggressive, rude &amp; mean</th>
<th>Calm, quiet &amp; relaxed</th>
<th>Friendly, social &amp; welcoming</th>
<th>Emotional, supportive &amp; caring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>2%</td>
<td>33%</td>
<td>30%</td>
<td>35%</td>
</tr>
<tr>
<td>Red</td>
<td>80%</td>
<td>2%</td>
<td>8%</td>
<td>10%</td>
</tr>
<tr>
<td>Blue</td>
<td>7%</td>
<td>44%</td>
<td>21%</td>
<td>28%</td>
</tr>
<tr>
<td>Yellow</td>
<td>10%</td>
<td>21%</td>
<td>41%</td>
<td>27%</td>
</tr>
</tbody>
</table>

**Figure 3.11**

Table 3.14 and Figure 3.11 suggest that the overwhelming majority of participants associated the colour red with aspects such as aggression, rudeness and unpleasantness. The results from the interviews suggest that participants felt the colour red came across as arrogant, dominant and aggressive because it provoked feelings of danger. The results also suggest that the colours most associated with aspects such as calmness and relaxation, are blue and green. Participants suggest that blue and green provoke feelings of calmness and relaxation because of their connection to aspects such as the sky, ocean and plants in nature. Participants also suggested that the colour blue looked more professional than other colours and that the brother wearing blue provoked a feeling of confidence. Table 3.14 and Figure 3.11 suggest that the colours yellow and green were most chosen for aspects such as friendly, social and welcoming. The participants suggested that yellow seems cheerful and playful, making the man wearing yellow seem open and friendly. The participants also suggested that green seemed open and social as the colour makes the man seem calm and relaxed, but also playful.

Table 3.14 and Figure 3.11 suggest that the overwhelming majority of participants associated the colour red with aspects such as aggression, rudeness and unpleasantness. The results from the interviews suggest that participants felt the colour red came across as arrogant, dominant and aggressive because it provoked feelings of danger. The results also suggest that the colours most associated with aspects such as calmness and relaxation, are blue and green. Participants suggest that blue and green provoke feelings of calmness and relaxation because of their connection to aspects such as the sky, ocean and plants in nature. Participants also suggested that the colour blue looked more professional than other colours and that the brother wearing blue provoked a feeling of confidence. Table 3.14 and Figure 3.11 suggest that the colours yellow and green were most chosen for aspects such as friendly, social and welcoming. The participants suggested that yellow seems cheerful and playful, making the man wearing yellow seem open and friendly. The participants also suggested that green seemed open and social as the colour makes the man seem calm and relaxed, but also playful.

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The colours most associated with emotional, supportive and caring are green, yellow and blue.

Table 3.14 and Figure 3.11 suggest that the literature is accurate as all the results correspond with the colour psychology theory that colours unlock certain emotional responses in those who are exposed to them. Red was associated with aggressive, rude and unfriendly (Scott-Kemmis, 2013f), yellow was associated with friendly, social and welcoming (Scott-Kemmis, 2013h), blue was associated with calm, quiet and relaxed (Scott-Kemmis, 2013b), and green was associated with emotional, supportive and caring (Scott-Kemmis, 2013c).

3.12 Testing the perception of participants regarding speed relating to colour

Question 10 of the questionnaire created a scenario for participants where four similar sports cars were lining up for a drag race at the starting line. The participants were asked to use their perceptions of the colour of the sports cars, namely green, red, blue, yellow and black, to indicate in what order the sports cars would arrive at the finish line. Table 3.15 and Figure 3.12 below captured the results.

Table 3.15

<table>
<thead>
<tr>
<th>Colour</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>81.19</td>
</tr>
<tr>
<td>Black</td>
<td>66.57</td>
</tr>
<tr>
<td>Yellow</td>
<td>56.87</td>
</tr>
<tr>
<td>Blue</td>
<td>53.88</td>
</tr>
<tr>
<td>Green</td>
<td>41.64</td>
</tr>
</tbody>
</table>

Table 3.15 and Figure 3.12 suggest that the majority of participants chose the colour red as the fastest. Other colours chosen often were black and yellow. The colours least chosen were green and blue.
The participants suggested that red was seen as energetic and action oriented, which made it seem faster than other colours. The colour black looked serious and dangerous, which made it seem likely to be fast. Yellow was suggested to be an energetic colour, making it seem like a strong contender, but yellow often seemed to be less serious making colours such as red and black more popular.

Table 3.15 and Figure 3.12 correspond with suggestions made by the literature that the colours red and yellow make cars look faster (Elliot, 2011). The anomaly is that black was perceived as a fast colour, as the literature did not suggest this.

### 3.13 Testing participants’ perceptions of favourite colour

Question 11 of the questionnaire created a scenario for participants where the task was given to rank six colours from the perceived most favourite to least favourite. The colours were blue, yellow, green, white, black and red. Table 3.16 and Figure 3.13 below captured the results.

<table>
<thead>
<tr>
<th>Participants’ favourite colour</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>81.09</td>
</tr>
<tr>
<td>Red</td>
<td>62.31</td>
</tr>
<tr>
<td>Green</td>
<td>57.34</td>
</tr>
<tr>
<td>White</td>
<td>52.49</td>
</tr>
<tr>
<td>Black</td>
<td>51.12</td>
</tr>
<tr>
<td>Yellow</td>
<td>45.65</td>
</tr>
</tbody>
</table>

![Figure 3.13](image-url)
Table 3.16 and Figure 3.13 suggest that blue was ranked first by the highest number of participants. The results showed that red and green were closely ranked for second and third place. The results showed that white was ranked fourth by the highest number of participants. The results showed that black and yellow were closely ranked for fifth and sixth place.

Table 3.16 and Figure 3.13 correspond with the suggestions from the YouGov (Jordan, 2015) and Dulux Paint (Grad, 2011) studies that suggest that blue is the favourite colour overall. Table 3.15 and Figure 3.12 also correspond with the YouGov (Jordan, 2015) and Dulux Paint (Grad, 2011) studies that the second most popular colours are red and green. Yellow is also seen as the least favourite colour in the sample (Jordan, 2015).

3.14 Testing participants’ perceptions on industries and colour

Question 12 of the questionnaire created a scenario for participants where four identical brothers were in different law industries, namely criminal law, labour law, business law and environmental law. Each brother wears a different coloured suit to represent the industry he is in, namely blue, green, yellow or red. Participants were asked to match the colour of the brothers’ suits with the industry he is in. Participants were instructed to only use each colour once. Table 3.17 and Figure 3.14 below captured the results.

<table>
<thead>
<tr>
<th>Industries and colour</th>
<th>Criminal Law</th>
<th>Labour Law</th>
<th>Business Law</th>
<th>Environmental Law</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>18%</td>
<td>20%</td>
<td>56%</td>
<td>7%</td>
</tr>
<tr>
<td>Green</td>
<td>7%</td>
<td>14%</td>
<td>8%</td>
<td>71%</td>
</tr>
<tr>
<td>Yellow</td>
<td>11%</td>
<td>49%</td>
<td>24%</td>
<td>16%</td>
</tr>
<tr>
<td>Red</td>
<td>65%</td>
<td>16%</td>
<td>13%</td>
<td>6%</td>
</tr>
</tbody>
</table>
Table 3.17 and Figure 3.14 suggest that the colour red was chosen overwhelmingly by the majority of participants to represent criminal law. Reasons suggested for this are that criminal law is the most aggressive of all the law fields and that the colour red looks aggressive and dominating. Table 3.17 and Figure 3.14 suggest that the colour yellow was chosen overwhelmingly to represent the labour law field. The suggestion for this result is that yellow seems friendly and social, making it the ideal colour to work with people. The colour blue was the colour chosen by the majority of participants to represent the business law industry. Suggestions were that blue was perceived to be the calmest and most professional of the colours, showing trust and competency. The colour green was mostly associated with environmental law, because of the colour’s connection with nature and the “Go Green” environmental movement.

Table 3.17 and Figure 3.14 suggest that the literature is accurate as all the results correspond with the colour psychology theory that colours unlock certain emotional responses in those who are exposed to them. Red was associated with criminal law, which is seen as aggressive, dangerous and dominating (Scott-Kemmis, 2013f); yellow was associated with labour law, which is seen as friendly, social and people oriented (Scott-Kemmis, 2013h); blue is associated with business law, which is seen as calm, professional and trusting (Scott-Kemmis, 2013b); and green was associated with environmental law, which is seen as being focused on nature and environmental friendliness (Dena, 2016c).
3.15 Testing participants’ perceptions of functions relative to colour

Question 13 of the questionnaire created a scenario for participants where a company had four departments, namely marketing, human resources, operational management and finance. The departments each wear their own colour to represent their function, namely blue, green, yellow or red. Participants were asked to match each department with the perceived appropriate colour. Participants were limited to using one colour per function. Table 3.18 and Figure 3.15 below captured the results.

### Table 3.18

<table>
<thead>
<tr>
<th>Functions relative to colour</th>
<th>Marketing</th>
<th>Human resources</th>
<th>Operational management</th>
<th>Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>30%</td>
<td>19%</td>
<td>17%</td>
<td>34%</td>
</tr>
<tr>
<td>Green</td>
<td>18%</td>
<td>33%</td>
<td>26%</td>
<td>23%</td>
</tr>
<tr>
<td>Yellow</td>
<td>31%</td>
<td>26%</td>
<td>32%</td>
<td>11%</td>
</tr>
<tr>
<td>Red</td>
<td>21%</td>
<td>22%</td>
<td>25%</td>
<td>32%</td>
</tr>
</tbody>
</table>

### Figure 3.15

Table 3.18 and Figure 3.15 do not show a strong correlation to departments or functions in companies and colour. Some patterns are visible from the results such as blue and yellow being chosen for marketing, as yellow is seen as the colour of creativity and blue as the colour of professionalism and trust. Human resources were mostly associated with the colours green and yellow, which are seen as the nurturing colour (green) and the colour of friendliness and socialness (yellow). The colours red and blue were chosen by the majority of
participants for finance, which are the colour of trust and professionalism (blue) and the colour of aggression and dominance (red).

Table 3.18 and Figure 3.15 suggest a relation between the empirical study and the literature with blue being associated with professionalism and analytical thinking (Dena, 2016b), yellow being perceived as creative and energetic (Dena, 2016g), green associated with being nurturing and emotional (Scott-Kemmis, 2013c), and red (Elliot, 2011) and yellow (Dena, 2016g) being associated with energy.

3.16 The perception of social situations in relation to colours

Question 14 of the questionnaire created a scenario where participants needed to match the colour of flowers, namely orange, white, purple, yellow and red, with the appropriate social situation, namely: sorry someone passed away, feel better soon, happy birthday, I love you, congratulations on your new baby, thank you for helping me yesterday, or thank you for being my friend. The participants were given the freedom of using colours more than once. Table 3.19 and Figure 3.16 below captured the results.

Table 3.19

<table>
<thead>
<tr>
<th>Social situations in relation to colours</th>
<th>Orange</th>
<th>White</th>
<th>Purple/Pink</th>
<th>Yellow</th>
<th>Red</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death</td>
<td>6%</td>
<td>45%</td>
<td>4%</td>
<td>9%</td>
<td>5%</td>
</tr>
<tr>
<td>Illness</td>
<td>16%</td>
<td>12%</td>
<td>14%</td>
<td>27%</td>
<td>4%</td>
</tr>
<tr>
<td>Celebration</td>
<td>20%</td>
<td>4%</td>
<td>26%</td>
<td>11%</td>
<td>10%</td>
</tr>
<tr>
<td>Love</td>
<td>2%</td>
<td>1%</td>
<td>3%</td>
<td>2%</td>
<td>62%</td>
</tr>
<tr>
<td>Birth</td>
<td>15%</td>
<td>13%</td>
<td>25%</td>
<td>14%</td>
<td>4%</td>
</tr>
<tr>
<td>Gratitude</td>
<td>26%</td>
<td>10%</td>
<td>9%</td>
<td>25%</td>
<td>4%</td>
</tr>
<tr>
<td>Friendship</td>
<td>15%</td>
<td>14%</td>
<td>18%</td>
<td>13%</td>
<td>10%</td>
</tr>
</tbody>
</table>
Table 3.19 and Figure 3.16 suggest that the overwhelming majority of participants chose the white flower for the event of death. The suggestions made by participants were that the colour white has a soothing effect and helps to show sympathy. Table 3.19 and Figure 3.16 suggest that the majority of participants chose yellow flowers for someone with an illness. It was suggested that when someone is sick, the idea is to lift their spirits and that yellow is the most cheerful colour. For celebration and positive events, the colour most chosen was pink/purple. The colour red was chosen by the majority of participants for love. Reasons given was that red is warm and passionate and participants also made a direct connection to Valentine’s Day. To say thank you, most participants chose either yellow or orange. The reasons is that yellow and orange are friendly colours that show the person you are thanking them that they have made you happy or impacted your mood positively.

Table 3.19 and Figure 3.16 suggest a strong correlation with the literature’s view that white is a soothing colour for death as it has many anti-death qualities (Scott-Kemmis, 2013g). The results also connect the colours yellow (Scott-Kemmis, 2013h) and orange (Scott-Kemmis, 2013d) to aspects of happiness, friendliness and the ability to uplift spirits. The results for red support the connection with passion and aspects such as Valentine’s Day (Dena, 2016e).

3.17 Testing participants’ perception of authority in relation to colour

Question 15 of the questionnaire created a scenario where a company has five levels of management, namely CEO, top management, middle management, assistant managers and general workers. Each level wears a specific colour tie to show their level of authority,
namely red, yellow, black, green or blue. Participants were asked to match the colours with the perceived authority. Participants were limited to using each colour only once. Table 3.20 and Figure 3.17 below captured the results.

Table 3.20

<table>
<thead>
<tr>
<th>Colour</th>
<th>Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>84.44</td>
</tr>
<tr>
<td>Red</td>
<td>76.15</td>
</tr>
<tr>
<td>Blue</td>
<td>64.15</td>
</tr>
<tr>
<td>Green</td>
<td>39.85</td>
</tr>
<tr>
<td>Yellow</td>
<td>35.85</td>
</tr>
</tbody>
</table>

Figure 3.17

Table 3.20 and Figure 3.17 suggest that black and red are perceived as the colours with the most authority. Suggestions show that black is the colour of power and authority – the colour black creates a feeling of style and professionalism; the colour also increases feelings of seriousness and dominance, which shows that the person wearing black should not be taken lightly.

The colour red was suggested because of its aggressive and dominant attributes. This colour created feelings of high energy, and the person wearing red was seen as being flashy and confident.

Colours that were perceived as exuding low authority are the colours yellow and green. These colours were seen as submissive and playful and could not be taken serious enough to be in high authority positions. The colour blue was seen as somewhere in the middle, being able to
show authority on a calm and professional level. The person wearing blue was seen as a calculated and competent individual.

Table 3.20 and Figure 3.17 correspond with the suggestions made by the literature that black \((Dena, 2016a)\) and red \((Robson, 2014)\) are the most dominant and colours and are often seen as colours of power and authority. Table 3.20 and Figure 3.17 also correspond with the suggestion that the colour blue is seen as calm and collected and can be seen as less dominating \((Dena, 2016b)\). Table 3.20 and Figure 3.17 also correspond with the suggestion that yellow is seen as playful and less serious \((Scott-Kemmis, 2013h)\).

### 3.18 Testing participants’ perception of weight in relation to colour

Questions 16 of the questionnaire created a scenario where a gym has five weights, namely 50kg, 40kg, 30kg, 20kg, 10kg. The gym uses colours, namely red, yellow, black, green and blue to differentiate the weights for members. The colours are symbolic of the weight. Participants were asked to match the colour with the perceived appropriate weight. Participants were instructed to only use a colour once. Table 3.21 and Figure 3.18 below captured the results.

<table>
<thead>
<tr>
<th>Colour</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>86.42</td>
</tr>
<tr>
<td>Red</td>
<td>74.18</td>
</tr>
<tr>
<td>Blue</td>
<td>61.34</td>
</tr>
<tr>
<td>Green</td>
<td>44.48</td>
</tr>
<tr>
<td>Yellow</td>
<td>35.07</td>
</tr>
</tbody>
</table>

**Figure 3.18**
Table 3.21 and Figure 3.18 suggest that black was perceived as the heaviest colour by the majority of participants, followed by red, blue, green and lastly yellow. The participants suggested that they have no idea why certain colours are seen as heavier than others. The participants suggested that they perceived black as being of some sort of metal, while they see red and blue as some type of heavy rubber and green and especially yellow are perceived as some sort of light plastic.

Table 3.21 and Figure 3.18 correspond exactly with the suggestions made by the literature that colours are seen as having a weight connection, even though there is no logical reasoning behind it (Niki, 2012). As the study suggested, consumers are unable to explain this perception, but the results have shown that there might be a connection with certain materials (Niki, 2012). The literature suggested that dark colours are seen as heavier, but when all colours are of the same saturation, the order of heaviness will be red, blue, green and yellow (Niki, 2012). Table 3.21 and Figure 3.18 suggest this to be true.

### 3.19 Testing participants’ perception of facial expressions relating emotions

Questions 17 of the questionnaire created a scenario where participants were asked to match eight facial expressions with the appropriate emotions, namely anger, frustration, sadness, surprise, confusion, happiness, worried and lonely. Participants were instructed to use each emotion only once. Table 3.22 below and Figure 3.19 on the next page capture the results.

#### Table 3.22

<table>
<thead>
<tr>
<th>Facial expressions relating emotions</th>
<th>Image 1</th>
<th>Image 2</th>
<th>Image 3</th>
<th>Image 4</th>
<th>Image 5</th>
<th>Image 6</th>
<th>Image 7</th>
<th>Image 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anger</td>
<td>24%</td>
<td>1%</td>
<td>1%</td>
<td>8%</td>
<td>2%</td>
<td>63%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Frustration</td>
<td>18%</td>
<td>0%</td>
<td>2%</td>
<td>28%</td>
<td>12%</td>
<td>35%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Sadness</td>
<td>13%</td>
<td>0%</td>
<td>65%</td>
<td>7%</td>
<td>3%</td>
<td>1%</td>
<td>2%</td>
<td>6%</td>
</tr>
<tr>
<td>Surprise</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
<td>18%</td>
<td>0%</td>
<td>83%</td>
<td>0%</td>
</tr>
<tr>
<td>Confusion</td>
<td>13%</td>
<td>1%</td>
<td>8%</td>
<td>7%</td>
<td>38%</td>
<td>0%</td>
<td>0%</td>
<td>33%</td>
</tr>
<tr>
<td>Happiness</td>
<td>0%</td>
<td>96%</td>
<td>1%</td>
<td>0%</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Worried</td>
<td>8%</td>
<td>0%</td>
<td>6%</td>
<td>38%</td>
<td>19%</td>
<td>0%</td>
<td>12%</td>
<td>17%</td>
</tr>
<tr>
<td>Lonely</td>
<td>24%</td>
<td>1%</td>
<td>15%</td>
<td>12%</td>
<td>7%</td>
<td>1%</td>
<td>1%</td>
<td>40%</td>
</tr>
</tbody>
</table>
and Figure 3.1 suggest that certain emotions were easier for participants to identify than others, with the overwhelming majority matching these emotions with the same image. Some of these emotions are happiness, sadness, anger and surprise. Some of the emotions that were harder to identify for participants were frustration, confusion, worry and loneliness.

Table 3.22 and Figure 3.19 suggest that facial expression forms a large part in visuals when using humans in images (Cohen, 2016). Table 3.22 and Figure 3.19 suggest that some emotions are easier to identify for the general target audience than others (Cohen, 2016).

### 3.20 Testing participants’ perception of speed in relation to placement horizontally left to right

Question 18 of the questionnaire created a scenario where a small boat was moving across the horizon from left to right. It was suggested that the boat was moving at 80km/h, 60km/h, 40km/h, 20km/h and 0km/h (not moving). The participants needed to match the five images with the perceived appropriate speeds. The participants were instructed to only use each image once. Table 3.23 and Figure 3.20 on the next page captured the results.
Table 3.23

<table>
<thead>
<tr>
<th>Image</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image 3</td>
<td>80.60</td>
</tr>
<tr>
<td>Image 5</td>
<td>78.66</td>
</tr>
<tr>
<td>Image 1</td>
<td>52.99</td>
</tr>
<tr>
<td>Image 4</td>
<td>49.85</td>
</tr>
<tr>
<td>Image 2</td>
<td>37.91</td>
</tr>
</tbody>
</table>

Figure 3.20

Table 3.23 and Figure 3.20 suggested that the majority of participants perceived that the small boat moved faster when placed closer to the right on the canvas compared to the left. The results showed that participants perceived an increase in speed as the boat moved away further from the left to the right of the block. Table 3.23 and Figure 3.20 suggest that the placement of an object when trying to portray speed from the left to the right is important. Therefore, it is important that the placement of the object should be closer to the direction that the object is moving when trying to portray speed. The closer the object is to the opposite side of movement, the slower the object will appear; the further the object is to the opposite side of movement, the faster the object will appear.

Table 3.23 and Figure 3.20 correspond with the literature claiming that, in cultures that read from left to right, the perception exists that objects on the left side are in the past, while objects on the right are in the future. This shows that people connect a ‘time’ component to images based on object placement (Carvalho, 2012). Table 3.23 and Figure 3.20 also suggest that the direction of travel will have a significant impact on how an object’s speed or movement is perceived.
3.21 Testing participants’ perception of speed in relation to placement horizontally right to left

Question 19 of the questionnaire created a scenario where a plane was flying across the horizon from right to left. It was suggested that the plane was moving at 300km/h, 240km/h, 200km/h, 180km/h and 100 km/h. The participants needed to match the five images with the perceived appropriate speeds. The participants were instructed to only use each image once. Table 3.24 and Figure 3.21 below captured the results.

<table>
<thead>
<tr>
<th>Table 3.24</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Image 1</strong></td>
</tr>
<tr>
<td><strong>Image 4</strong></td>
</tr>
<tr>
<td><strong>Image 5</strong></td>
</tr>
<tr>
<td><strong>Image 2</strong></td>
</tr>
<tr>
<td><strong>Image 3</strong></td>
</tr>
</tbody>
</table>

Figure 3.21

Table 3.24 and Figure 3.21 suggest that the majority of participants perceived that the plane moved faster when placed closer to the left on the canvas compared to the right. The results showed that participants perceived an increase in speed the further the plane moved away from the right to the left. Table 3.24 and Figure 3.21 suggest that the placement of an object when trying to portray speed from the right to the left is important. They also suggest that the placement of the object should be further from the opposite direction than the direction the object is moving when trying to portray speed. The closer the object is to the opposite side of movement, the slower the object will appear; the further the object is to the opposite side of movement, the faster the object will appear.
Table 3.24 and Figure 3.21 show that the literature’s suggestion that cultures reading from left to right will perceive an object as moving faster the further right it is placed as incorrect (Carvalho, 2012). Table 3.24 and Figure 3.21 rather suggest that the direction of travel of the object has a significant effect on the speed or movement perception.

3.22 Testing participants’ perception of speed in relation to placement vertically bottom to top

Question 20 of the questionnaire created a scenario where different rockets take off vertically from the bottom at different speeds. It was suggested that the rockets were moving at 1 200km/h, 800km/h, 600km/h, 500km/h and 50 km/h. The participants needed to match the five images with the perceived appropriate speeds. The participants were instructed to use each image only once. Table 3.25 and Figure 3.22 below captured the results.

<table>
<thead>
<tr>
<th>Image 5</th>
<th>90.45</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image 4</td>
<td>75.97</td>
</tr>
<tr>
<td>Image 3</td>
<td>61.04</td>
</tr>
<tr>
<td>Image 1</td>
<td>41.49</td>
</tr>
<tr>
<td>Image 2</td>
<td>31.04</td>
</tr>
</tbody>
</table>

Table 3.25

Figure 3.22

Table 3.25 and Figure 3.22 suggest that the majority of participants perceived the rocket to move faster when placed closer to the top of the canvas than compared to the bottom. The results showed that participants perceived an increase in speed the further the rocket moved away from the bottom to the top. Table 3.25 and Figure 3.22 show that the placement of an object when trying to portray speed from the bottom to the top is important. They also
suggest that the placement of the object should be further from the opposite direction that the object is moving when trying to portray speed. The closer the object is to the opposite side of movement, the slower the object will appear; the further the object is to the opposite side of movement, the faster the object will appear.

Table 3.25 and Figure 3.22 suggest that the literature’s suggestion that cultures reading from left to right will perceive an object as moving faster the further right it is placed as having no effect on the speed or movement perception of an object moving vertically (Carvalho, 2012). Table 3.25 and Figure 3.22 rather suggest that the direction of travel of the object has a significant effect on the speed/movement perception.

3.23 Testing the participants’ perception of image placement in relation to it being aesthetically pleasing

Question 21 of the questionnaire created a scenario where an artist asked the advice of participants in order to find the most aesthetically pleasing art piece. He uses the same background on five canvases, but places an image of an alien space ship in five different locations on the canvas. The participants were asked to rank the five images from their favourite to least favourite. Table 3.26 and Figure 3.23 below captured the results.

Table 3.26

<table>
<thead>
<tr>
<th>Image</th>
<th>Average Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image 4</td>
<td>80.75</td>
</tr>
<tr>
<td>Image 1</td>
<td>61.79</td>
</tr>
<tr>
<td>Image 3</td>
<td>57.91</td>
</tr>
<tr>
<td>Image 2</td>
<td>57.16</td>
</tr>
<tr>
<td>Image 5</td>
<td>42.39</td>
</tr>
</tbody>
</table>

Figure 3.23
Table 3.2 and Figure 3.23 suggest that the majority of participants perceived the image centred in the middle to be the most aesthetically pleasing. Table 3.26 and Figure 3.23 suggest little to no difference in the perception of participants in placement of the object in the left bottom corner, left top corner, and right top corner, but a noticeable dislike for the image placed in the bottom right corner can be perceived with participants ranking the image 20% less than the other cornered images and 40% less than the image centred. Participants could not provide direct reasons for choosing certain images over others, other than suggesting that some images appeared more balanced than others.

Table 3.26 and Figure 3.23 suggest that when placing images on a canvas either in corners or in the middle, the object should rather be centred in the middle, and the lower right corner should be avoided.

3.24 Testing the participants’ perception of image size ratio in relation to it being aesthetically pleasing

Question 22 of the questionnaire created a scenario where an artist asked the advice of participants in order to find the most aesthetically pleasing art piece. He uses the same background on five canvases, but places an image of a Superman symbol in four different sizes on the canvas. The participants were asked to rank the four images from their favourite to least favourite. Table 3.27 and Figure 3.24 below captured the results.

<table>
<thead>
<tr>
<th>Image 2</th>
<th>81.34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image 1</td>
<td>71.83</td>
</tr>
<tr>
<td>Image 3</td>
<td>55.60</td>
</tr>
<tr>
<td>Image 4</td>
<td>41.23</td>
</tr>
</tbody>
</table>

**Figure 3.24**
Table 3.27 and Figure 3.24 suggest that the majority of participants liked image 2 with a 50/50 object to background ratio the best. The second most popular was image 1 with a 30/70 object to background ratio. The third most popular image was image 3 with an 80/20 object to background ratio and the least popular was image 4 with a 10/90 object to image ratio. Participants could not provide direct reasons for choosing certain images over others, other than suggesting that some images appeared more balanced than others.

Table 3.27 and Figure 3.24 suggest a preference for an object background balance in participants with the optimum balance at a 50/50 ratio. The more the balance of the object to background ratio is uneven, the less likely the total image will be perceived as aesthetically pleasing.

3.25 Testing participants’ perception of age relating to expertise (male)

Question 23 of the questionnaire created a scenario where participants needed to consult two male friends, one younger and one older, about several subjects, namely financial advice, advice about technology, advice about health, advice about a new car, advice about investment, advice about love, advice about further studies, and advice about exercise. The participants were instructed to only ask one person per subject. Table 3.28 below and Figure 3.25 on the next page captured the results.

**Table 3.28**

<table>
<thead>
<tr>
<th>Age relating to expertise (male)</th>
<th>Young</th>
<th>Old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td>11%</td>
<td>89%</td>
</tr>
<tr>
<td>Technology</td>
<td>92%</td>
<td>8%</td>
</tr>
<tr>
<td>Health</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>Cars</td>
<td>65%</td>
<td>35%</td>
</tr>
<tr>
<td>Investment</td>
<td>11%</td>
<td>89%</td>
</tr>
<tr>
<td>Love</td>
<td>47%</td>
<td>53%</td>
</tr>
<tr>
<td>Studies</td>
<td>23%</td>
<td>77%</td>
</tr>
<tr>
<td>Exercise</td>
<td>89%</td>
<td>11%</td>
</tr>
</tbody>
</table>
Figure 3.2

Table 3.2 and Figure 3.2 suggest that participants preferred to consult an older male on aspects where experience is an important factor such as finances, investment, health and studies. The study suggested that participants preferred to consult a younger male in aspects that involved current trends such as technology, cars and exercise. Table 3.2 and Figure 3.2 suggest that participants had no preference about age when consulting males about love.

Table 3.2 and Figure 3.2 correspond with the literature that suggests that older males are perceived as being more knowledgeable on aspects where experience plays a big factor such as finances, investment, health and studies (Denney, Dew, Kroupa, 1995). Table 3.2 and Figure 3.2 correspond with the literature that suggests that younger males are perceived as being more knowledgeable on aspects where current trends are involved such as technology, cars and exercise (Nickson, 2016). The results showed that participants had no preference about age when consulting males about love.

3.26 Testing participants’ perception about age relating to expertise (female)

Question 24 of the questionnaire created a scenario where participants needed to consult two female friends, one younger and one older, about several subjects, namely financial advice, advice about a new job opportunity, advice about health, advice about beauty, advice about investment, advice about love, advice about fashion, and advice about exercise. The participants were instructed to only ask one person per subject. Table 3.29 and Figure 3.26 on the next page captured the results.
Table 3.29

<table>
<thead>
<tr>
<th>Age relating to expertise (female)</th>
<th>Young</th>
<th>Old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td>16%</td>
<td>84%</td>
</tr>
<tr>
<td>Career</td>
<td>35%</td>
<td>65%</td>
</tr>
<tr>
<td>Health</td>
<td>53%</td>
<td>47%</td>
</tr>
<tr>
<td>Beauty</td>
<td>87%</td>
<td>13%</td>
</tr>
<tr>
<td>Investment</td>
<td>11%</td>
<td>89%</td>
</tr>
<tr>
<td>Love</td>
<td>49%</td>
<td>51%</td>
</tr>
<tr>
<td>Fashion</td>
<td>89%</td>
<td>11%</td>
</tr>
<tr>
<td>Exercise</td>
<td>84%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Figure 3.26

Table 3.29 and Figure 3.26 suggest that participants preferred to consult an older female on aspects where experience plays a bigger role such as finances, investment and careers. The study suggested that participants preferred to consult a younger female in aspects that involved current trends such as beauty, fashion and exercise. Table 3.29 and Figure 3.26 indicated that participants had a balanced preference when consulting females on health. The results showed that participants had no preference about age when consulting females about love.

Table 3.29 and Figure 3.26 correspond with the literature that suggests that older females are perceived as being more knowledgeable about aspects where experience plays a big factor such as finances, investment and careers (Denney, Dew, Kroupa, 1995). Table 3.29 and Figure 3.26 correspond with the literature that suggests younger males are perceived as being more knowledgeable about aspects where current trends are involved such as beauty, fashion.
and exercise (Nickson, 2016). Table 3.29 and Figure 3.26 suggest that participants had no preference about age when consulting females about love.

3.27 Testing the perception of age vs skill

Question 25 of the questionnaire created a scenario where participants had to choose the winner between a younger and an older individual in a range of activities including chess, video games, golf and arm wrestling. Participants were instructed to only choose one winner per activity. Table 3.30 and Figure 3.27 below captured the results.

Table 3.30

<table>
<thead>
<tr>
<th>Age vs skill</th>
<th>Young</th>
<th>Old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chess</td>
<td>31%</td>
<td>69%</td>
</tr>
<tr>
<td>Video Games</td>
<td>77%</td>
<td>23%</td>
</tr>
<tr>
<td>Golf</td>
<td>54%</td>
<td>46%</td>
</tr>
<tr>
<td>Arm Wrestle</td>
<td>81%</td>
<td>19%</td>
</tr>
</tbody>
</table>

Figure 3.27

Table 3.30 and Figure 3.27 suggest that participants perceived the older individual to be more skilled at chess as it is a game based on experience and logical thinking. Participants chose the younger individual as the most skilled with video games, because of a perception that younger individuals are more skilled with technological aspects than older individuals are. The participants had a balanced perception about the activity golf, where individuals felt that the younger individual would have an advantage in athletic capability, but that the older individual would balance this advantage out with experience and years of practise, as golf is
both an activity of the body and mind. Table 3.30 and Figure 3.27 suggest that the younger individual was chosen by the majority of participants as the most skilled with arm wrestling, as the activity is focused on athletic ability and brute force.

Table 3.30 and Figure 3.27 suggest that it is important to choose the correct age representative when attempting to portray a certain skill in an activity.

Table 3.30 and Figure 3.27 correspond with literature’s suggestion that younger individuals are perceived as lacking experience in life that older individuals have. In the reverse, individuals who are older lack the physical energy to be involved in more active aspects of life (Cybulski et al. 2013).

### 3.28 Testing participants’ perception of body language relating to personality attributes

Question 26 of the questionnaire created a scenario where participants were faced with two individuals showing opened and closed body language. Participants were asked to match each personality trait, namely friendly, shy, confident, welcoming, cold, talkative, quiet, and nice, with one of the individuals. Table 3.31 below and Figure 3.28 on the next page captured the results.

<table>
<thead>
<tr>
<th>Body language relating to personality attributes</th>
<th>Image 1</th>
<th>Image 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friendly</td>
<td>93%</td>
<td>7%</td>
</tr>
<tr>
<td>Shy</td>
<td>13%</td>
<td>87%</td>
</tr>
<tr>
<td>Confident</td>
<td>73%</td>
<td>27%</td>
</tr>
<tr>
<td>Welcoming</td>
<td>93%</td>
<td>7%</td>
</tr>
<tr>
<td>Cold</td>
<td>8%</td>
<td>92%</td>
</tr>
<tr>
<td>Talkative</td>
<td>88%</td>
<td>12%</td>
</tr>
<tr>
<td>Quiet</td>
<td>12%</td>
<td>88%</td>
</tr>
<tr>
<td>Nice</td>
<td>84%</td>
<td>16%</td>
</tr>
</tbody>
</table>
Figure 3.28

Table 3.31 and Figure 3.28 suggest that the overwhelming majority of participants read the body language of the two participants the same way. The majority of participants suggested that image 1 showed an individual who was friendly, confident, welcoming, talkative and nice. The majority of participants suggested that image 2 showed an individual who was shy, cold and quiet. Table 3.31 and Figure 3.28 suggest that the human brain uses body language as a second language to interpret other individuals’ actions, emotions and characteristics. Table 3.31 and Figure 3.28 suggest that when choosing a representative for visual marketing content, it is very important to make sure that the representative portrays the correct body language.

Table 3.31 and Figure 3.28 correspond with literature’s suggestion that body language is a form of nonverbal communication that is universally understandable (Giles, 2014). Table 3.31 and Figure 3.28 also indicate that open and closed body language could be identified by the overwhelming majority of participants and that they could connect certain characteristics to these forms of body language as the literature suggests (Giles, 2014).

3.29 Testing participants’ perception of eye contact in relation to character attributes

Questions 27 of the questionnaire created a scenario where participants were asked to look at two pairs of identical eyes. The first pair of eyes looked to the side, while the second pair looked directly at the participant. The participants were asked to match certain attributes such as “I trust this man more”, “This man is demanding”, “This man could be hiding something”, “this man respects people”, “this man is confident”, “this man is weak”, “this man is
“intimidating” and “I would rather buy something this man sells” to each pair of eyes. Table 3.32 and Figure 3.29 below captured the results.

### Table 3.32

<table>
<thead>
<tr>
<th>Eye contact in relation to character attributes</th>
<th>Image 1</th>
<th>Image 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trustworthy</td>
<td>17%</td>
<td>83%</td>
</tr>
<tr>
<td>Demanding</td>
<td>63%</td>
<td>37%</td>
</tr>
<tr>
<td>Secretive</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>Respectful</td>
<td>18%</td>
<td>82%</td>
</tr>
<tr>
<td>Confident</td>
<td>39%</td>
<td>61%</td>
</tr>
<tr>
<td>Weak</td>
<td>65%</td>
<td>35%</td>
</tr>
<tr>
<td>Intimidating</td>
<td>58%</td>
<td>42%</td>
</tr>
<tr>
<td>Buy From</td>
<td>24%</td>
<td>76%</td>
</tr>
</tbody>
</table>

### Figure 3.29

Table 3.32 and Figure 3.29 suggest that the majority of participants attributed positive aspects such as trust, respect and confidence towards the pair of eyes that directly stared at the participant. Participants consistently suggested that an individual who looks you in the eye has nothing to hide, respects you more and comes across as much more confident. Table 3.32 and Figure 3.29 suggest the opposite to be true when perceiving the eyes that look away. Participants consistently suggested that people who cannot look you in the eye would seem untrustworthy and might be hiding information, might have an attitude problem and seemed weak and would make the participant feel more dominant. The overwhelming majority suggested that they would rather do business with the person who looked directly at them than the person who looks away.
Table 3.32 and Figure 3.29 suggest that the direct stare technique as suggested by literature has merit and should be considered when using a human representative in visual marketing material (Currin, 2017). The direct stare technique created a perception of trust, respect and confidence as the literature suggested (Currin, 2017). Using a technique of no eye contact also had a negative impact on the participants’ perception of trust, respect and confidence as the literature proposed (Lasquite, 2015).

3.30 Testing the participants’ perception of the three-quarter rule in relation to designs being aesthetically pleasing (vertical)

Question 28 of the questionnaire created a scenario where three advertisements with the same background were created and a Heineken beer bottle was placed on three different locations. The first bottle was placed directly in the middle, the second bottle was placed close to the left of the canvas and the third bottle was placed to the left, directly on the line suggested by the three-quarter rule of design. Participants were asked to rank the adverts from their favourite to least favourite. Table 3.33 and Figure 3.30 below captured the results.

<table>
<thead>
<tr>
<th>Table 3.33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image 3</td>
</tr>
<tr>
<td>Image 1</td>
</tr>
<tr>
<td>Image 2</td>
</tr>
</tbody>
</table>

Figure 3.30

Three-quarter rule relation
Table 3.33 and Figure 3.30 suggest that the majority of participants chose image 1, which was placed vertically on the three-quarter line as the most aesthetically pleasing. Table 3.33 and Figure 3.30 indicated that the second most popular choice was image 1, which was centred in the middle. The results showed that the least popular image was image 2, which was placed at random without any merit.

Table 3.33 and Figure 3.30 correspond with the suggestion made by literature that using the three-quarter rule to place objects vertically within a canvas would have a positive effect on how the image is aesthetically perceived (Thurston, 2017).

3.31 Testing the participants’ perception of the three-quarter rule in relation to designs being aesthetically pleasing (horizontal)

Question 29 of the questionnaire created a scenario where 3 adverts with the same background were created and a model was placed in three locations. The first model was placed directly on the line suggested by the three-quarter rule of design at the bottom, the second model was placed directly in the middle and the third model was placed close to the bottom. Participants were asked to rank the adverts from their favourite to least favourite. Table 3.34 and Figure 3.31 below captured the results.

Table 3.34

<table>
<thead>
<tr>
<th>Image 1</th>
<th>67.90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image 3</td>
<td>66.17</td>
</tr>
<tr>
<td>Image 2</td>
<td>65.93</td>
</tr>
</tbody>
</table>
Figure 3.31

Table 3.34 and Figure 3.31 suggested that there was no significant difference in how the three images were perceived by participants when placed according to the three-quarter rule’s suggested line horizontally.

Table 3.34 and Figure 3.31 are inconclusive when compared to the suggestion made by the literature that placing objects on the lines suggested by the three quarter rule horizontally would increase the aesthetically pleasing effect of images. The results show little to no correlation between horizontal placements of objects with regard to an image’s aesthetic pleasantness (Thurston, 2017). Further research is needed in order to explain this anomaly sufficiently.

3.32 Testing participants’ perception of symbolism in marketing

Question 30 of the questionnaire created a scenario where participants were asked to match concepts, namely freedom, purity, perfection, power, high quality, no limits, royalty and possibility, to symbolic images, namely a lion, an open road and diamonds. Participants were instructed to only use one symbolic image per concept. Table 3.35 below and Figure 3.32 on the next page captured the results.
Table 3.35

<table>
<thead>
<tr>
<th>Fre</th>
<th>Pur</th>
<th>Per</th>
<th>Pow</th>
<th>Qual</th>
<th>No</th>
<th>Roy</th>
<th>Poss</th>
</tr>
</thead>
<tbody>
<tr>
<td>19%</td>
<td>17%</td>
<td>19%</td>
<td>96%</td>
<td>6%</td>
<td>7%</td>
<td>56%</td>
<td>13%</td>
</tr>
<tr>
<td>81%</td>
<td>4%</td>
<td>20%</td>
<td>1%</td>
<td>5%</td>
<td>91%</td>
<td>1%</td>
<td>78%</td>
</tr>
<tr>
<td>0%</td>
<td>79%</td>
<td>61%</td>
<td>3%</td>
<td>89%</td>
<td>1%</td>
<td>43%</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Figure 2.32**

Table 3.35 and Figure 3.32 suggest that participants were able to identify a common pattern in symbolism between the three images. Table 3.35 and Figure 3.32 suggest that participants connected the image of the lion with symbolism such as power and royalty, the image of the open road was connected with symbolism such as freedom, no limits and possibility, and the image of the diamonds was connected to symbolism such as purity, perfection, quality and royalty.

Table 3.35 and Figure 3.32 correspond with the suggestion made by literature that symbolism in the form of an alternative object could be used to increase a message’s effectiveness (*Lasquete, 2015*). As the literature suggested, participants were all able to connect the correct message to the appropriate symbolism used without much issues (*Lasquete, 2015*).
3.33 Testing participants’ perception of background in relation to symbolism

Question 31 of the questionnaire created a scenario where participants were asked to match three images of the same X Class Mercedes truck in different backgrounds, namely a city background, a beach background and a construction site background, to different marketing messages, namely “the X Class is tough and can handle any obstacle”, “the X Class is the workings man’s truck”, “the X Class is very fuel economic”, “the X Class is built for people seeking adventure”, “the X Class can take you anywhere”, “the X Class was built for comfort”, “the X Class can handle a busy lifestyle”, and “the X Class can handle any job”. Table 3.36 and Figure 3.33 below captured the results.

Table 3.36

<table>
<thead>
<tr>
<th>Background in relation to symbolism</th>
<th>Rugged</th>
<th>Practical</th>
<th>Fuel-economic</th>
<th>Adventurous</th>
<th>Mobility</th>
<th>Comfortable</th>
<th>Busy Lifestyle</th>
<th>Multi-purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image 1</td>
<td>2%</td>
<td>49%</td>
<td>67%</td>
<td>6%</td>
<td>10%</td>
<td>50%</td>
<td>81%</td>
<td>16%</td>
</tr>
<tr>
<td>Image 2</td>
<td>8%</td>
<td>7%</td>
<td>24%</td>
<td>69%</td>
<td>58%</td>
<td>44%</td>
<td>6%</td>
<td>9%</td>
</tr>
<tr>
<td>Image 3</td>
<td>90%</td>
<td>44%</td>
<td>8%</td>
<td>25%</td>
<td>31%</td>
<td>7%</td>
<td>13%</td>
<td>76%</td>
</tr>
</tbody>
</table>

Figure 3.33

Table 3.36 and Figure 3.33 suggest that it is possible for participants to find common varying messages when faced with one product on different backgrounds. Table 3.36 and Figure 3.33 suggest that the city background was connected to aspects such as practicality, fuel-economy, comfort, and a busy lifestyle. The beach background was connected with aspects such as adventure, mobility and comfort. The construction site background was connected to ruggedness, practicality and multi-purpose.
Table 3.36 and Figure 3.33 correspond with the literature’s suggestion that an image background or setting can be used as symbolism for product attributes in visual marketing content, and that a general target audience would be able to pick up on a common theme (Johnson, 2017).

### 3.34 Testing the perception of fonts and emotion

Questions 32 to 36 in the questionnaire focused on testing the perception of different fonts on emotions and asked participants to look at the same emotional word written in five different fonts. The participants were asked to rank these fonts on their perceived appropriateness for the emotion from 5 to 1. The following tables show the results.

**Table 3.37**

<table>
<thead>
<tr>
<th>Font</th>
<th>Score</th>
<th>Most popular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooper Black</td>
<td>75.76</td>
<td>Angry</td>
</tr>
<tr>
<td>Calibri (Body)</td>
<td>65.30</td>
<td></td>
</tr>
<tr>
<td>Font 4</td>
<td>58.79</td>
<td></td>
</tr>
<tr>
<td>Mistral</td>
<td>53.33</td>
<td></td>
</tr>
<tr>
<td>AR CARTER</td>
<td>47.88</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.37 suggests that the majority of participants chose the fonts Cooper Black and Calibri (Body) for the emotion angry. Participants suggested that these fonts looked very serious and this made them connect with anger more. Participants also suggested that the Cooper Black font being in Bold made the word seem more aggressive and intimidating.

**Table 3.38**

<table>
<thead>
<tr>
<th>Font</th>
<th>Score</th>
<th>Most popular</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR BLANCA</td>
<td>71.97</td>
<td>Friendly</td>
</tr>
<tr>
<td>AR CARTER</td>
<td>62.27</td>
<td></td>
</tr>
<tr>
<td>Cooper Black</td>
<td>58.33</td>
<td></td>
</tr>
<tr>
<td>Mistral</td>
<td>54.55</td>
<td></td>
</tr>
<tr>
<td>Calibri (Bold)</td>
<td>52.27</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.38
Table 3.38 suggests that the majority of participants chose the fonts AR BLANCA and AR CARTER for the emotion *friendly*. Participants suggested that these fonts looked very playful and this made them connect with friendliness more. Participants suggested that the curliness of the fonts attributed to the playful nature and the fact that AR CARTER seemed less structured also contributed to the fonts looking less serious.

**Table 3.39**

<table>
<thead>
<tr>
<th>The emotion: Happy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Font</strong></td>
</tr>
<tr>
<td>AR BLANCA</td>
</tr>
<tr>
<td>AR CARTER</td>
</tr>
<tr>
<td>Cooper Black</td>
</tr>
<tr>
<td>Mistral</td>
</tr>
<tr>
<td>Calibri (Bold)</td>
</tr>
</tbody>
</table>

Table 3.39 suggests that the majority of participants chose the fonts AR BLANCA and AR CARTER for the emotion *happiness*. Participants suggested that these fonts looked very playful and this made them connect with happiness more. Participants suggested that the curliness of the fonts attributed to the playful nature and the fact that AR CARTER seemed less structured also contributed to the fonts looking less serious.

**Table 3.40**

<table>
<thead>
<tr>
<th>The emotion: Sad</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Font</strong></td>
</tr>
<tr>
<td>AR BLANCA</td>
</tr>
<tr>
<td>Mistral</td>
</tr>
<tr>
<td>Cooper Black</td>
</tr>
<tr>
<td>Calibri (Bold)</td>
</tr>
<tr>
<td>AR CARTER</td>
</tr>
</tbody>
</table>

Table 3.40 suggested that the majority of participants chose the fonts AR BLANCA and Mistral for the emotion *sad*. Participants suggested that these fonts looked morbid and this made them connect with sadness more. Participants suggested that the sharpness of the fonts attributed to the morbid nature and compared it to the sharp knifelike stabbing feeling that sadness creates. The flowing words also created a feeling of flowing emotion, increasing the feeling of sadness.
Table 3.41

<table>
<thead>
<tr>
<th>Font</th>
<th>Score</th>
<th>Most popular</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR BLANCA</td>
<td>65.74</td>
<td>Scared</td>
</tr>
<tr>
<td>Cooper Black</td>
<td>65.41</td>
<td>Scared</td>
</tr>
<tr>
<td>Calibri (Bold)</td>
<td>57.70</td>
<td></td>
</tr>
<tr>
<td>Mistral</td>
<td>56.39</td>
<td></td>
</tr>
<tr>
<td>AR CARTER</td>
<td>54.59</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.41 suggests that the majority of participants chose the fonts AR BLANCA and Cooper Black for the emotion scared. Participants suggested that these fonts looked serious in nature, and this made them connect with fear more. Participants suggested that the sharpness of AR BLANCA attributed to the intimidating nature and compared it to text seen in horror movies, and also to a heartbeat going up and down. The boldness of Cooper Black made participants feel that it was aggressive in nature, creating a sense of fear.

The empirical study corresponds with the suggestions made from the literature that font has a definitive impact on the emotional perception of images (Chaparro et al., 2006). The empirical study and the literature both suggest that bold fonts might provoke feelings of aggression, seriousness and fear, and curly and unstructured fonts create feelings of light-hearted playfulness, which can be seen as happy and friendly (Kolenda, 2017). The results also indicate that sharp fonts are more prone to create feelings of fear and sadness as they resemble stabbing and heart pounding (Kolenda, 2017).
CHAPTER 4: CONCLUSION AND RECOMMENDATIONS

4.1 Introduction

After a review of the literature and the results gathered from the empirical study, a conclusion was reached as to how different visual variables in images affect the reaction of a general target market. The following section focuses on explaining the findings of the study, the final conclusion, as well as the recommendations for marketers to effectively implement the findings of this study in the field. The section also provides a summary of which research objectives were reached and provides advice and suggestions for further research on this topic. Finally, this section of the study provides a brief summery of the study and its findings.

4.2 Conclusion

After reviewing the literature and results of the study, a conclusion was reached on the possible problems marketing specialists face with regard to marketing efforts and the use of visuals in marketing material. The conclusion also takes into account the effects of different visual variables on the reaction of a general target audience. The results of the study made it possible to identify certain guidelines marketing specialists could follow in the design process of visual marketing material.

A study of the available literature suggests that a challenging problem that marketing specialists face on a daily basis is the overcoming of clutter created by the over-exposure of the human race to marketing material (Saxon, 2017). Another problem that marketing specialists face is the limited availability of concrete information regarding the effective design of visual marketing material for effective use (Johnson, 2017).

The findings of the study suggest that variations in visuals have the potential to significantly affect the physical and psychological reactions of humans (Lasquite, 2015). Aspects such as colour, image placement, visual symbolism, body language and font have been identified as possible visual influencers of audience reactions. From the findings, it is possible to suggest guidelines to assist marketing specialists when using visuals in marketing material. The use of these guidelines could significantly improve the success rate of marketing specialists attempting to provoke certain psychological and physical reactions from their audience and
can potentially assist in breaking through marketing clutter by increasing engagement in the targeted audience.

4.3 Recommendations

4.3.1 Using colours in marketing

4.3.1.1 Colour preferences

It has been suggested by the results of the study that individual behaviour is strongly influenced by colour preferences when faced with visuals in marketing material (Lasquite, 2015). Based on the information captured in Table 3.1 and Figure 3.1 and the studies conducted by Dulux Paint (Jordan, 2015) and YouGov (Grad, 2011), blue is possibly the most commonly preferred colour in the world and is therefore an important colour to use in marketing material overall. Other colours that are popular based on the captured information in Table 3.1 and Figure 3.1 as well the studies conducted by Dulux Paint (Jordan, 2015) and YouGov (Grad, 2011) are red, green, purple and black. Marketers should, however, not overuse any of these colours in marketing material, and should rather look at using colour psychology principles when deciding which colours to use in visuals (Lasquite, 2015). Consulting the information from Table 3.3 and Figure 3.2, enforced by the study conducted by YouGov (Grad, 2011), it should also be noted that men show a bigger preference for blue than women, and that women prefer purple more often than men. Use these popular colours in marketing material when the alternative colours available have the same psychological or physical effect, but are less popular.

4.3.1.2 Provoking feelings of danger or aggression

When trying to increase feelings of danger or aggression in visual marketing material, the best colours to use are red and black. Consulting Table 3.6 and Figure 3.3, the best use of red is when you would like to increase feelings of primal danger; these include aspects such as dangerous animals, accidents, anger and aggressive behaviour (Anon, 2016a). The best time to use black is when creating feelings of fear, evil and death. These include aspects such as villainising characters and situations showing death (Dena, 2016a). Another colour that is perceived as dangerous in relation to food is the colour blue, as this creates a perception of
poison or inedibility (*Figure 3.9*). It is, however, important to realise that using blue as a background to a meal does not necessarily have an off-putting effect, but can actually make it look appetising (*Figure 3.7*). Situations where marketing material would want to increase feelings of fear or aggression are arrive-alive campaigns, funeral cover adverts, anti-crime campaigns, campaigns for security companies, warning campaigns, etc.

### 4.3.1.3 Provoking feelings of dominance or energy

When trying to provoke feelings of dominance, the best colours to use are black, red or blue. The colour black will increase the perception of dominance in visual marketing material because of its increase in the perception of authority (*Figure 3.17*). The colour red creates a more primal effect of dominance (*Figure 3.6*). The colour red increases feelings of physical domination and creates an ‘alpha’ perception (*Robson, 2014*). The colour blue can also be used to increase feelings of domination, but the effects are much more subtle as blue creates a feeling of calm authority (*Figure 3.6*). The colour blue increases feelings of professionalism and competence and even if it does not directly create perceptions of dominance, these effects can be perceived as dominance in certain situations (*Dena, 2016b*). Situations where visuals in marketing would want to increase feelings of dominance are when selling exclusive products aimed at making the buyer feel superior, advertising for sports teams, automotive adverts for sporty cars, etc. (*Figure 3.12*). When trying to increase feelings of energy, the best colours to use are red, yellow and orange. The colour red can increase energy in visual marketing material, but usually comes across as more aggressive and dangerous (*Figure 3.6*). The colour yellow is best used when trying to increase positive energy such as creativity and optimism (*Figure 3.15*). The colour orange is a mix of red and yellow and can have a mixed effect on energy (*Scott-Kemmis, 2013d*). Situations where visual marketing would try to increase feelings of energy are adverts aimed at increasing impulsive behaviour, adverts showing happy, positive people creating a feeling of envy (I want to be like him/her/them), sports drink advertising, automotive adverts, etc.

### 4.3.1.4 Increasing feelings of happiness and positivity

When trying to provoke feelings of happiness and positivity, the best colours to use would be yellow and orange (*Scott-Kemmis, 2013d*). The colour yellow inspires feelings of happiness by increasing positivity and creativity. The colour yellow creates a short burst of energy that
can uplift spirits (Figure 3.15). The colour orange has similar effects to yellow, but the effects are not as strong. Both the colours yellow and orange increase feelings of playfulness and friendliness (Figure 3.11). Situations where visual marketing would want to increase feelings of happiness and positivity would be advertisements for health-related products, advertisements trying to promote fun activities, when promoting life enriching products, etc.

4.3.1.5 Increasing feelings of calmness and serenity

When trying to provoke feelings of calmness and serenity, the best colours are blue, green, and white (Figure 3.8). The colour blue has a calming effect on the mind and helps with gaining focus, which increases cognitive reasoning and is often used as the colour of logic because it is unemotional (Dena, 2016b). The colour green is seen as a colour of relaxation, and helps balance the body and mind. The colour green decreases stress and helps to regain mental balance. Other than blue, green is an emotional colour that decreases the subject’s logical response and increases the subject’s emotional response (Dena, 2016c). If blue calms the mind, then green calms the heart (Figure 3.8). The colour white is also a colour that helps with calmness. The colour white plays a big role in soothing feelings of grief. The colour white has both the characteristics of blue and green, but more diluted (Figure 3.10). Situations where marketing material would need to increase feelings of calmness and serenity are funeral adverts, adverts for locations focused on relaxation, marketing material for a health spa, etc.

4.3.1.6 Increasing feelings of trust and professionalism

When trying to increase feelings of trust and professionalism, the best colours to use are blue (Figure 3.14) and black (Figure 3.5). The colour blue creates a feeling of trust by showing competency. The calmness associated with blue creates a perception of confidence, which makes the person wearing the colour seem more trustworthy (Scott-Kemmis, 2013b). The colour black is also used to show professionalism (Dena, 2016a). The colour black shows authority and elegance, which, in turn, can be seen as confidence and trust (Dena, 2016a). Situations where marketing material would need to increase feelings of trust are adverts for law firms, auditing firms, government parties, etc.
4.3.1.7 Increasing feelings of luxury and exclusivity

When trying to increase feelings of luxury and exclusivity, the best colours to use are purple and black (Figure 3.5). Purple is associated with royalty and expensive silk. The colour portrays a richness that makes products look more luxurious (Dena, 2016d). The colour black shows authority and power, which can increase the feeling of exclusivity (these products are for those with authority and power) (Dena, 2016a). Situations where marketing material might need to show luxury and exclusivity are when advertising expensive clothes and jewellery, when advertising luxury vehicles, advertising expensive alcohol, etc.

4.3.1.8 Increasing feelings of nature and naturalism

When trying to increase feelings of nature and naturalism, the best colour to use is green (Figure 3.5). The colour green has the strongest connection with nature, as it is the most common natural colour. The colour green is perceived as organic and from the earth (Dena, 2016c). Situations where marketing material would try to increase feelings of nature and naturalism are environmental campaigns, camping gear, gardening equipment, green movements, etc.

4.3.1.9 Increasing feelings of passion and sexual desire

When trying to provoke feelings of passion and sexual desire, the best colour options are red and black (Figure 3.17). The colour red has been proven to make males and females more attractive to the opposite gender as it creates an effect of sexual availability in women and an alpha effect in men (Gueguen, Jacob, 2012). The colour black shows authority and power (Figure 3.17), which are both desirable qualities for both genders in sexual partners (Dena, 2016a). Situations where marketing material would want to increase passion and sexual desire are underwear adverts, body deodorant adverts, luxury cologne and perfume adverts, etc.

4.3.1.10 Use of colour in food

When trying to increase the appetising effect of food, the best colours to use are red, yellow, and blue (Figure 3.7). The colour red has a warming effect on food and makes food stand out
more (Connolly, 2013). The colour yellow is better used in small doses as overuse can have the opposite effect. The colour yellow has been shown to increase feelings of happiness and optimism, which makes food more enjoyable (Connolly, 2013). The colour blue was shown by the results to make food look more appetising because it made food stand out more, but should only be used in the background as blue food is unnatural and creates an unappetising effect, even being perceived as poisonous (Figure 3.9). Situations where marketing material would want to use colour in food are adverts for food, branding for restaurants and fast food chains, packaging of food, etc.

Colours also play an important part in the visual representation of food taste (Figure 3.9). The colour red is often associated with a sweet taste, while the colours green and yellow can be associated with tastes such as sourness and bitterness (Davis, 2015). It is important for marketing material to manage the use of colours in marketing material when visually representing food for the purpose of managing consumers’ expectations regarding tastes (Connolly, 2013).

4.3.1.11 Using colour in packaging material

The colour used in packaging material should be comparable to the product flavour when applicable. An example would be a blueberry flavoured product that looks unappetising when placed in orange coloured packaging (Figure 3.9). When seeing the product, it is important for the brain to automatically make the association between the packaging colour and the flavour, as there is only a two- to three-second window to attract the customer on the retail shelf. To reinforce flavour, visual imagery can also be a tool, when applicable, to trigger as many senses as possible, even subconsciously. An advantage that food offers is the fact that it has the ability to conjure taste, smell, memories and feelings, making it crucial when designing the packaging to take note of these aspects in the designs (Connolly, 2013).

4.3.1.12 Using colour to suggest weight

When trying to show a certain amount of weight in an advertisement, black, red and blue should be used to show heavier objects, while green and yellow should be used to show lighter objects (Figure 3.18). Situations where marketing material would use weight would be
adverts showing a dominant male lifting heavy weight, shoe adverts trying to show lightness, a pickup truck carrying a heavy weight to show capabilities, etc.

4.3.2 Object placement in visual marketing material

4.3.2.1 Placing objects in visual marketing material

When placing objects in marketing material at random, the best option is to centre the object in the middle of the image (Figure 3.23). This creates a balance that makes the final image look more aesthetically pleasing. For more advanced placement of objects, marketing specialists can use the three-quarter rule (Figure 3.30). To use the three-quarter rule, slit the canvas of the image into three, vertically and horizontally creating a grid. The idea is now that objects will be placed on the three-quarter lines of the image, and the main focus should be where the vertical and horizontal lines cross. This will increase the aesthetically pleasing effects of the marketing material (Thurston, 2017).

4.3.2.2 Object size in visual marketing material

When placing objects in marketing material, it is important to get the correct ratio of object to background (Figure 3.24). The results from the study suggest that the aim would be to get a balanced ratio of 50/50 between object and background or at least get as close as possible to this result to get the most aesthetically pleasing effect.

4.3.2.3 Placing moving objects in visual marketing material

When placing moving objects in stagnant visual marketing material, the relation of perceived speed of the placed object will be determined by its distance from the perceived direction of movement (Figure 3.22). When placing an object that is moving from left to right, the further right the object is placed the faster the object will be perceived as moving (Figure 3.20). The opposite is also true (Figure 3.21). Moving objects should be placed to show the amount of speed it is expected accommodate.
4.3.3 Using facial expressions and body language in visual marketing

4.3.3.1 Facial expressions in visual marketing material

When using human representatives in visual marketing material, it is important to choose images with the correct facial expression (Figure 3.19). The human brain uses facial expression as a way of collecting information about the emotions, tone and mood of the representative. Facial expressions that are easy for the brain to identify are happiness, sadness, anger and surprise. Some of the facial expressions that are harder to identify are frustration, confusion, worry and loneliness (Cohen, 2016). When trying to use facial expressions to express one of the more difficult emotions, marketers should use complementary visual content to enhance the effect.

4.3.3.2 Eye contact in visual marketing material

When using human representatives in visual marketing material, it is important to choose images with the correct form of eye contact (Figure 3.29). The human brain uses eye contact as a way of collecting information about the trustworthiness, confidence and authority of representatives (Currin, 2017). The human brain will associate direct eye contact with aspects such as trustworthiness, respect, confidence and authority. The human brain will associate little to no eye contact with a lack of sincerity, respect and confidence. Participants are more likely to buy into a representative that they trust and find authentic, so it is important to decide which situations require direct eye contact (Lasquute, 2015). If the representative is supposed to symbolise someone who the target audience should avoid or see as a villain, it could be suggested that direct eye contact should be avoided to increase the effect.

4.3.3.3 Body language in visual marketing material

When using human representatives in visual marketing material, it is important to choose images with the correct body language (Figure 3.28). The human brain uses body language as a way of collecting information about the attitude, mood and social openness of representatives. Some of the most common differences in body language are the open and closed positions. When a representative crosses arms and legs with a sideways stance, the message will be closed, suggesting social unavailability or aggression. When the
representative’s arms are open and the body is in a square stance, it will suggest openness to social interaction and a non-threatening attitude. Both open and closed body language can be used to show confidence, depending on the combination of facial expressions and eye contact used. The difference will be that closed body language will come across as a dominating and/or aggressive confidence, while open body language will come across as non-threatening. Marketing specialists should consider which message they would like to portray (Giles, 2014).

4.3.4 Symbolism in visual marketing material

4.3.4.1 Object symbolism in visual marketing material

Using objects that act as symbols for deeper meaning is a strong way of delivering complicated marketing messages more easily (Figure 3.32). When using object symbolism, it is important to understand your target audience’s perceptions in order to use the correct symbols. Factors that should be taken into consideration when using symbolism in objects are the target markets demographics, previous experiences and interests. Examples of common object symbolisms used are lions symbolising strength, royalty and power or diamonds symbolising purity, perfection or quality (Lasquite, 2015).

4.3.4.2 Background symbolism in visual marketing material

Using backgrounds as symbolism for product or service attributes is another powerful way of getting the marketing message across (Figure 3.33). Placement of products or services in certain landscapes or in a certain setting can indirectly convey to the consumer more about the product’s attributes. When using symbolism in backgrounds, it is important to understand your target audience’s perceptions in order to use the correct symbols. Factors that should be taken into consideration when using symbolism in backgrounds are the target market’s demographics, previous experiences and interests. Examples of symbolism in backgrounds are placing an off-road vehicle in a rugged dusty terrain, or placing expensive jewellery on purple silk (Johnson, 2017).
4.3.4.3 Using representatives in visual marketing material

When using a human representative in visual marketing material, it is important for the audience to connect with the character. In order for the target audience to connect with a certain representative, it is important that the audience sees the representative as authentic (Lasquite, 2015). Other factors, such as the representative’s reputation and expertise in certain fields, which can influence the authenticity of representatives, are age and gender. When trying to choose the correct representative, it is important to consider age (Figure 3.25). Older representatives may be more authentic where aspects such as experience and maturity play a role, while younger representatives might be more authentic when knowledge about current trends and physical capabilities play a role (Nickson, 2016). It is also important to consider gender when choosing a representative. Examples are using males as representatives for automotive campaigns and using women as representatives for beauty product or services campaigns (Figure 3.26).

4.3.4 Using font in visual marketing

Font has an impact on the emotions that visual marketing material provokes (Table 3.37). Bold fonts might provoke feelings of aggression, seriousness and fear more than others, and curly and unstructured fonts create feelings of light-hearted playfulness, which can be seen as happy and friendly. Sharp fonts are more prone to create feelings of fear and sadness as they resemble stabbing and heart pounding (Kolenda, 2017). When using font in marketing material, it is important to choose a font that contributes to the message in a positive and constructive way.

4.4 Achievements of the objectives of the study

Through the results of the study, it was possible to contribute to a solution for the research problem. The study achieved the creation of research-based guidelines for marketing specialists to overcome marketing clutter through the investigation of the effect that visual variables and images have on a general target market.

Through the extensive exploration of the literature available, the study was able to solve the secondary objective to identify some of the problems marketing specialists face when using
visual marketing material to provoke a certain reaction from a general target market. The study was also able to solve the secondary objective of identifying the role of visuals and their influence on the success of marketing campaigns, as well as the secondary objective of the perception of 135 participants on how variables in colours, image placement, visual symbolism, body language and font influence the reaction of a general target market.

4.5 Recommendation for future research

Some limitations faced by this study were a lack of time and budget. If the study was done over a longer period of time and had adequate funding, the possibility of using an increased sample with more diverse demographics would increase the accuracy of the results. The study also made use of the snowballing effect, which meant that control over the sample demographics was limited. It would be wise to conduct a study where the sample was preselected in order to include the proper percentage of gender, race, education and age representatives. The study was also very broad, focusing on multiple visual factors, which included colour, object placement, body language, symbolism and font. In order to increase the accuracy of the results, it could be recommended to study each of these factors individually in order to get more in-depth results on each factor.

As this study was conducted via questionnaires and interviews, a good alternative for more in-depth studies into visual factors might be to do a more practical study where theories are tested in practice to attempt to replicate results. A more practical study will require a larger timeframe and more funding in order to effectively provide accurate data.

4.6 Summary

The problems that marketing specialists face on a daily basis, such as marketing clutter and the unavailability of information on how to effectively design visual marketing content have been analysed and addressed by this mini-dissertation. Variables in visual marketing material have a significant effect on the physical and psychological reactions of a general target market and elements such as colour, object placement, body language, symbolism and font can be used to influence these reactions in order to increase target market engagement.
The study has identified possible guidelines for marketing specialists to effectively utilise these elements in order to provoke the desired reaction from a target market. These guidelines can be used as a possible solution to effectively use visual marketing content to overcome the clutter humanity faces on a daily basis as a result of excessive marketing efforts.
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Appendix A: Proof of editing

To whom it may concern

Dear Mr / Ms

Re: Language editing of mini-dissertation: (THE EFFECT OF DIFFERENT VISUAL VARIABLES AND IMAGES ON THE REACTION OF A GENERAL TARGET MARKET)

I hereby declare that I language edited the above-mentioned mini-dissertation by Mr Derick Turner (student number: 22767339).

Please feel free to contact me should you have any enquiries.

Kind regards

Cecile van Zyl
Language practitioner
BA (PU for CHE); BA honours (NWU); MA (NWU)
SATI number: 1002391