A COMPARATIVE ANALYSIS OF SOCIAL MEDIA BRAND IMAGE OF INSURANCE COMPANIES IN SOUTH AFRICA: A LONGITUDINAL STUDY

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by

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ABSTRACT

Social media is changing the way business is conducted. Almost five billion videos are watched on YouTube every single day. Social media has an extensive worldwide presence. Out of the total global population of over 7,5 billion people, over 4 billion are internet users. Of these, over 3 billion are active on social media. Social media is very influential in today's decision-making processes. Businesses must integrate social media into their strategies. The purpose of this research was to investigate the use of a novel method, Chernoff Faces, to assess and compare the social media brand images of six insurance companies in South Africa based on social conversation measurement. The intention of research was towards observing existing situations at hand and pointing out the game changers that can provide the industry with a new leap.

Social media are multidimensional and understanding them requires tracking different measures simultaneously. Integrating social media into a communication strategy leads to a problem in finding the best way to portray and communicate multivariate data. It is essential to find the best way to represent and transmit the data so that marketing executives can quickly and easily monitor changes in brand images.

Previous studies have successfully proved the possibility of using this method to gauge a "snapshot in time." This study took the concept further by closely monitoring the results for a set of brands over a period to account for the dynamic nature of social media.

Accordingly, the study was a longitudinal study of 30 days. Data on the insurance companies was collected from Social Mention, a social media search and analysis platform that aggregates user-generated content into a single stream of information. A tool in the statistical software Stata, Chernoff's faces, was used to analyse the results by generating facial expressions to the metrics associated with the social mentions of each of the insurance companies. The resulting facial expressions were then analysed to recognise the more favourable and stable brands and those that need appropriate risk management. Managing Social Media is challenging as managers must always keep it as positive as possible. Brand managers, therefore, need a better tool to gauge the mood in social media conversations due to the fast-changing nature of social media and the importance of social media to business especially insurance.

KEYWORDS; Brand image, Social media, Insurance, Dynamic Capabilities, Chernoff faces, Marketing strategy.

Declaration

I declare that the dissertation entitled, **A COMPARATIVE ANALYSIS OF SOCIAL MEDIA BRAND IMAGES OF INSURANCE COMPANIES IN SOUTH AFRICA: A LONGITUDINAL STUDY**, which I hereby submit for the Master of Business Administration degree, at Rhodes University, is my own work. I also declare that this dissertation has not previously been submitted by me for a degree at this or any other tertiary institution and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

Daniel Gudu

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I am forever indebted to many people on this journey. It would not be possible to list all of them individually, but the following deserve special mention;

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Table of Contents

List of Figures

List of Tables

CHAPTER 1
Introduction and project overview

1.1   Introduction and background

In November 2018, a Momentum Insurance Company (Momentum) client was hi-jacked in his driveway and tragically shot dead by the hijackers. He had taken out life insurance cover, but unfortunately, at the time of taking the policy, he inadvertently omitted to disclose that he has a high blood pressure problem. The surviving widow, Mrs Gana, submitted a claim for the death. Momentum, after due considerations, correctly decided to repudiate the claim for non-disclosure of the pre-existing medical condition. The Long-Term Insurance Ombudsman reviewed the case and upheld Momentum's decision (Qukula, 2018). The decision was also confirmed by the Life Offices Association of South Africa. When the case was picked up by social media, a severe backlash occurred as social media was awash with negative sentiments for Momentum. The company ended up reversing their decision and offering to pay R2.4 million as settlement of the claim. Paying out was technically and legally wrong under the circumstances (Shange, 2018). It was a direct result of the social media outcry. Commenting on this, the News24 noted that Momentum paid out more not initially paying the widow. It was bleeding goodwill and having its reputation damaged (Nkosi, 2018).

The case demonstrates the influential power of social media in today's business landscape (Markham, 2018; Daniels, 2018). Social Media has become increasingly important to both academics and business practitioners. The concept is at the top of the agenda for many business executives (Kaplan and Haenlein, 2010). Farshid, Chan and Nel (2012) quoting Qualman (2009) also confirmed that social media is changing the way consumers go about everyday life and how business is conducted.

Despite its largescale use, Kaplan and Haenlein (2010) lament the limited understanding and management of social media. They recommend the identification of ways in which companies can make profitable use of social media.

1.2   Problem statement and research question

The main focus of this study, and therefore, the problem statement, is how to leverage social media and work with it so that insurance companies can build positive brand images in real-time. How are insurance companies in South Africa performing on social media?

Insurance Companies are struggling to attract young customers (Schreiber, 2017). Insurance has had low growth and meagre penetration rates globally. In South Africa, only 12% of the population has insurance policies according to the FinScope (2017) survey of consumers. The high uptake of funeral covers due to cultural reasons embellishes this figure (FinScope, 2017). Funeral cover is micro-insurance limited to the costs of funerals and burials, which are important cultural events in sub-Saharan Africa (Kessler et al., 2017). FinScope (2014) noted that medical and assets insurance penetration rates have remained stagnant from 2004 to 2014 as per Figure 1.1: Asset and Medical Insurance over ten years, below:
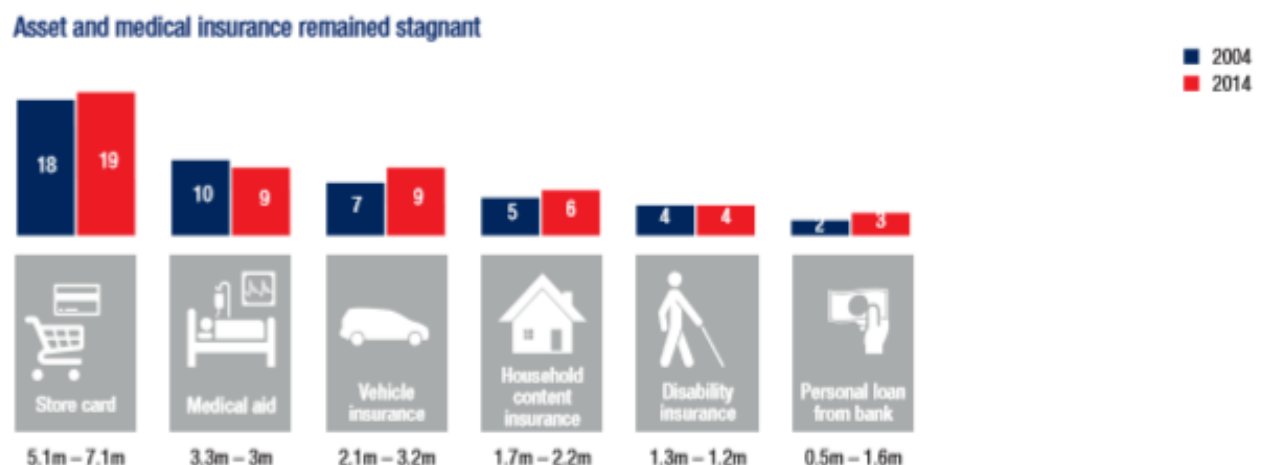
Figure 1:1 Asset and Medical Insurance for ten years (from FinScope, 2017)

This scenario calls for an urgent need to improve insurance penetration and consumption. One way of doing this would be by having a better understanding of the customer segments and map appropriate strategies to attract young clients. This research aims to assist insurers in improving their relevance in the digital era.

Social media user statistics show that young persons are active on social media (KPMG, 2017). As illustrated in the highlighted figures in Figure 1.2: Facebook's South African Audience, below, a total of 7.2 million active users of Facebook in South Africa are between the ages of 25 and 44 according to QWERTY (2017).

FACEBOOK'S SOUTH AFRICAN AUDIENCE 2016-2017

	18-24	25-34	35-44	45-54	55-64
Male	2 200 000	2 500 000	1 200 000	500 000	300 000
Female	2 200 000	2 400 000	1 100 000	600 000	400 000
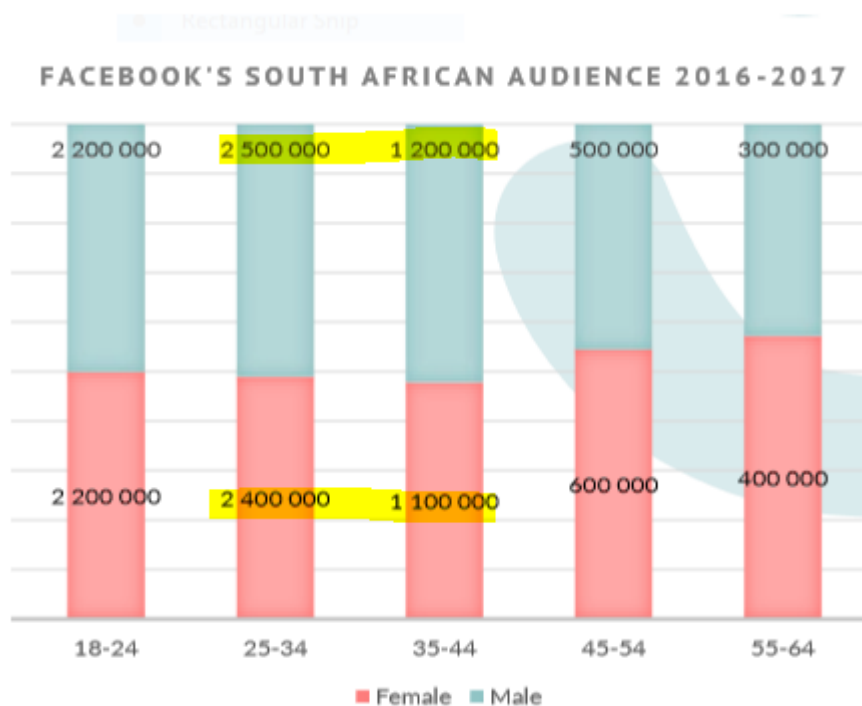
Figure 1.2: Facebook's South African Audience 2016-2017 (from QWERTY Digital, 2017)

Insurance companies must be able to assess their brand image in social media and manage it to maintain a positive image to attract young clients. Insurance companies are faced with the conundrum of how to better adapt their services to support an optimal go-to-market strategy for this customer segment to increase uptake and gain a competitive advantage (KPMG, 2018).

The sub-problems in this study are the following:

- What is being said about the company and what image does it give to the stakeholders?
- How can an insurance company monitor its social media profile visibility relative to competitor brands to maintain a competitive advantage?
- What is being said about competitor brands, and how does this compare with what is being said about the company's brand?
- What positioning strategies can be adopted by the insurance company to differentiate itself to   increase its competitiveness?
- How can a company attain dynamic capabilities to manage a brand image deteriorating in   social media?

The solutions to these problems provide the basis for developing the positioning and differentiation strategies of the insurance company. The task is to manage a positive discourse between consumer-to-consumer conversations and craft influence over consumer buying behaviour in real-time (Platon, 2010).

1.3 Purpose statement

Insurance companies need to focus on being competitive, profitable, and sustainable to survive. As noted, the insurance industry is failing to attract young customers, and insurance remains a "grudge purchase" with meagre penetration rates both in South Africa and globally (Schreiber, 2017; KPMG, 2018). The young customers' early experiences with technology which facilitates access to large amounts of real-time information, as well as being shaped by convenience, has influenced their behaviours, opinions, and choices regarding which products and services to use (KPMG, 2018).

There has been an enormous upsurge in the availability and use of digital technology, which has had a profound impact on everyday life and business (Aitken, 2014; Gupta Tyagi and Sharma, 2013). Social media platforms have become essential tools for developing digital marketing strategies for all businesses. Understanding social media brand images is vital for insurance companies and is the basis for establishing brand equity, which ultimately leads to company performance as noted by Wang and Sengupta (2016).

This research will contribute to the understanding of social media brand images and the use of the images in developing a marketing strategy to improve the company as well as industry performance. Insurance companies will be able to understand their customers in ways that were not previously possible. They can now engage with those customers on a breadth, scale, and level of detail that will allow them to become more responsive to their customer needs and to deliver more compelling customer experiences (KPMG, 2018).

1.3.1   Objectives:

1.3.1.1   Exploring the changing social media profile by generating social media faces over a longitudinal time. The research aims to develop a framework for assessing the social media brand image of insurance companies in South Africa. A tool is needed to promptly assess the shifting perceptions of a brand over time to take corrective action (Urde, 2016).

1.3.1.2   Developing an alternative mechanism for a continuous assessment and comparison of insurance company brand images in social media. A greater understanding of managing the brand image will result from this development.

1.3.1.3.   Giving impetus to the movement towards the development of an improved instrument to assess brand image in social media. Brand image is not unilaterally built by an organization but is interpreted negotiated and co-created by a vast network of stakeholders (Igleslas and Bonet, 2012).

1.3.1.4   Obtaining a better understanding of the shifting focus from tangibles towards intangibles and toward interactivity, connectivity, and ongoing relationships. The positioning has shifted from the producer to the consumer (Vargo and Lusch, 2004).

1.3.1.5   Enabling insurance companies to map their social media brand image and to be able to track the changes in the image in a dynamic environment. This will equip the companies with a tool to assess their brand image in real-time.

1.4   Conceptual Framework

1.4.1 Resource-Based Theory (RBT)

According to Kozlenkova et al., (2014), brands are company resources that enable the company to compete and succeed in their industry. In the resource-based theory (RBT), resources have four empirical indicators, namely: value, rarity, imperfect imitability, and organized to achieve value within the organization (VRIO). Such resources result in a sustainable competitive advantage (SCA) as suggested by Barney, (1991).

Brand image should be examined within the RBT for two main reasons. Firstly, brands are imperfectly imitable and socially complex company resources (Barney, 1991). Brand image is also an intangible asset that is both an input and output of business activity (Itami, 1987). A good reputation arising from a positive brand image is a resource that can enhance the buyer's expectation regarding the company's offering (Schmalensee, 1978; Shapiro, 1983; Eunsang, 1993).

Secondly, the research applies a dynamic capabilities perspective (Barrales-Mollina et al., 2014; Maklan and Knox, (2009). Dynamic capabilities were defined by Teece et al. (1997) as the company's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments. Social media is providing the rapidly changing

environment described by Teece, (2014). A company has a competitive advantage when it can interact with stakeholders and manage stakeholder knowledge better than competitors (Teece, 2007). Proper brand management would achieve this interaction. Wang and Sengupta (2016) further emphasize that a company's relationship with multiple stakeholders drive brand equity, which then leads to improved company performance.

Companies can learn to create increased brand meaning in the process of managing consumer experiences (Iglesias et al., 2013; Payne et al.,2009) and brand managers need a better tool to gauge the changing mood in social media conversations (Farshid, Chan and Nel, 2012). Companies should also develop the ability to listen actively and adapt brand strategies (Hoyer et al., 2010; Iglesias et al., 2013) by managing and implementing customer co-creation and interaction activities (Wang and Sengupta, 2016). Companies that can absorb and manage new market knowledge are likely to use the knowledge to reconfigure organizational resources and change operating processes as noted by Wang and Sengupta, (2016). The importance of social media in insurance cannot be overemphasized (Dwibhashi, 2015). The prevailing perceptions and the factors affecting the positive or negative trends are crucial elements to monitor in insurance.

1.4.2 Brand image

Zhang (2015) notes that there is currently no agreement on one definition of brand image. Researchers define brand image mainly from four perspectives: blanket definitions, meanings, and messages, personification, cognitive, or psychological element (Zhang, 2015). Smith (2015) sums up the brand image as primarily a mental creation helping consumers to understand one company over another. Brand image management is necessary for very competitive markets, and insurance in South Africa has become very competitive. According to Ruzicka (2010), insurers are competing fiercely to convince the public to buy their products. The fierce competition is affirmed in the PricewaterhouseCoopers (PwC) Insurance industry report (2018).

The research will take the perspective that brand image is the critical driver of brand equity (Zhang, 2015). Brand equity will be considered as the consumer's general perception and feeling about a brand (Zhang, 2015). The research will also accept Kapferer's (1994) assertion that brand image involves the consumers' association with the brand features. This research will work with the view that brand image is the first stage in the establishment of brand equity.

Brand image leads to brand identity, awareness, association, loyalty and leads eventually to customer perception.

Wood (2000) asserts that brand equity is a result of the relationship between the customer and the brand. This association starts with the customer having an image of the brand. From the image, the customer then develops an awareness of the brand identity leading to an association with the brand eventually leading to loyalty with the brand. The consumers then use the brand as means of self-expression (Aaker, 1996) resulting in companies increasingly focussing on brand loyalty when considering the use of social media (Pütter, 2017). The totality of these is brand equity, as illustrated in Figure 1.3: Brand Equity illustration below.

Figure 1.3: Brand Equity illustration (from https://www.mbaskool.com/)

Brand image influences consumer behaviour and ultimately has an impact on company performance because, as Zhang (2015) noted, consumption decisions are influenced by brand features and attributes. Consumer decisions are determined by consumers' perception of the brand in a more profound sense (Kapferer, 1994).

According to Park et al., (1986), the construction and maintenance of the brand image is a prerequisite to brand management. The research will consider a novel way to construct a brand image in social media. As noted by Sirgy (1985), the image of the brand resembles human personality, and Dichter (1985) asserted that brand image is the most potent influence in the way people perceive companies.

Barney (2014) stresses that a brand is a source of competitive advantage as it enables a company to create economic value. Kozlenkova et al. (2014) confirm that brands are VRIO compliant company resources. This position was fortified by Silva, Gerwe and Becerra (2017) who agreed that brands are strategic resources that can improve company performance. These definitions of brand image put it as a scarce resource within the RBT hence the need to establish ways to assess brand image in social media.

The primary focus of the research will be on brand image of insurance companies in social media from the perspective of customers' discussions about the company, as per the highlighting in Figure 1.4: Traditional Service Branding Model, below.
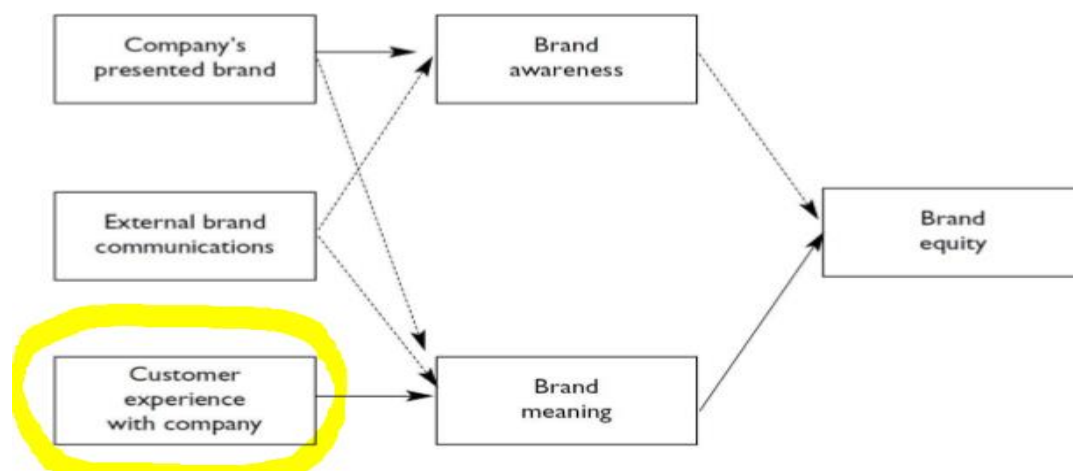
Figure 1.4: Traditional Service Branding model (from Brodie, 2006)

1.4.3 Dynamic Capabilities

Teece (2014) proposed that higher-level activities enabling a company to recognize opportunity, reconfigure resources, and adapt to changing markets and environment be considered as Dynamic capabilities. Maklan and Knox (2009) argued that a core dynamic capability pertains to building brands and considers the process of customer relationship management. As observed by Wang and Sengupta (2016), RBT presents a sound argument connecting stakeholder relations to competitive advantage through capabilities.

The research will explore stakeholder relations and allow for the co-exploration of new modes and representation of the brand image. The research also aims to equip companies with dynamic capabilities in brand risk management (Wang and Sengupta, 2016). Managing stakeholders' relations leads to dynamic capabilities which boost brand equity. As confirmed by Payne et al. (2009) and Iglesias et al. (2013), companies can create increased brand meaning

in the process of managing customer experiences. Customer experiences and responses to it have now moved to the social media (QWERTY, 2017), making it essential to enable the quick assessment of the brand movement in social media. The quick assessment will then enable the development of the ability to actively listen and adapt brand strategies (Wang and Sengupta, 2016 quoting Iglesias, et al., 2013).

1.4.4 Impact of Electronic Word of Mouth in Social Media.

Electronic word-of-mouth (eWOM) has become a key driver of brand recommendation among consumers (Liu and Lopez, 2016). Social media has resulted in an increasing number of companies promoting their products and services through social media, as observed by Liu and Lopez (2016) because most eWOM happens in social media. The social media promotions stimulate consumer conversations, increase consumer loyalty, and drive the acquisition of new customers (Hoffman and Fodor 2010; Financial Times Special 2012).

According to Liu and Lopez (2016), understanding how social media eWOM affects consumer valuation of brand characteristics can help in the strategy formulation as empirical results show that eWOM about brands has a significant impact on consumers' choices. This impact of eWOM is still considerable even though social media consumer-to-consumer exchange is a new type of online eWOM. Liu and Lopez (2016) further pointed out that there would be a substantial decrease in market shares without social media conversations of the brand. The study aims to assist companies in determining any possible decrease in the conversations, and thus help company strategy in preserving value.

1.5   Social media

Social Media has been defined as media designed to be disseminated through social interaction between individuals and organizations (Botha and Pitt, 2011). It is created using highly accessible and scalable publishing techniques (Brogan, 2010; Zarella, 2010). Botha and Pitt (2011) highlighted social media's use of the internet and web-based technologies to transform broadcast media monologues (one-to-many) into social media dialogues (many-to-many).

Social media comprises websites that facilitate relationship forming between users from diverse backgrounds. A vibrant social structure results from the relationships, according to Kapoor et al., (2018). The generated content encourages inquiry and decision-making, thus making it an essential area of research for business. Social media is essentially a digital space that provides a conducive environment for interactions and networking to occur at all levels

including personal, professional, business, marketing, political, and societal (Kapoor et al., 2018).

Social media has an extensive worldwide presence. Kemp (2018) observed that out of the total global population of over 7,5 billion people, over 4 billion are internet users with over 3 billion of them active on social media. Widmer et al. (2016) also noted that Social Media is the focus of one in every four minutes spent online. Social media has changed almost all aspects of life and business as noted by Kaplan and Haenlein (2010) and Kapoor, et al., (2018).

In South Africa, social media has also pervaded all aspects of business and social life. As per Figure 1.5: South Africa's vital digital statistics, below, over 52% of the entire South African population is active on the internet, and 27% is on social media. Social media constitutes a large market segment.

Figure 1.5: South Africa's vital digital statistical indicators (from Hootsuite, 2017 taken in 2018)

The South Africa trend mirrors the global situation as the most effective social media platform is Facebook. Figure 1.6: South Africa's most active social media platforms, below, confirms that YouTube and WhatsApp also enjoy widespread usage in South Africa.
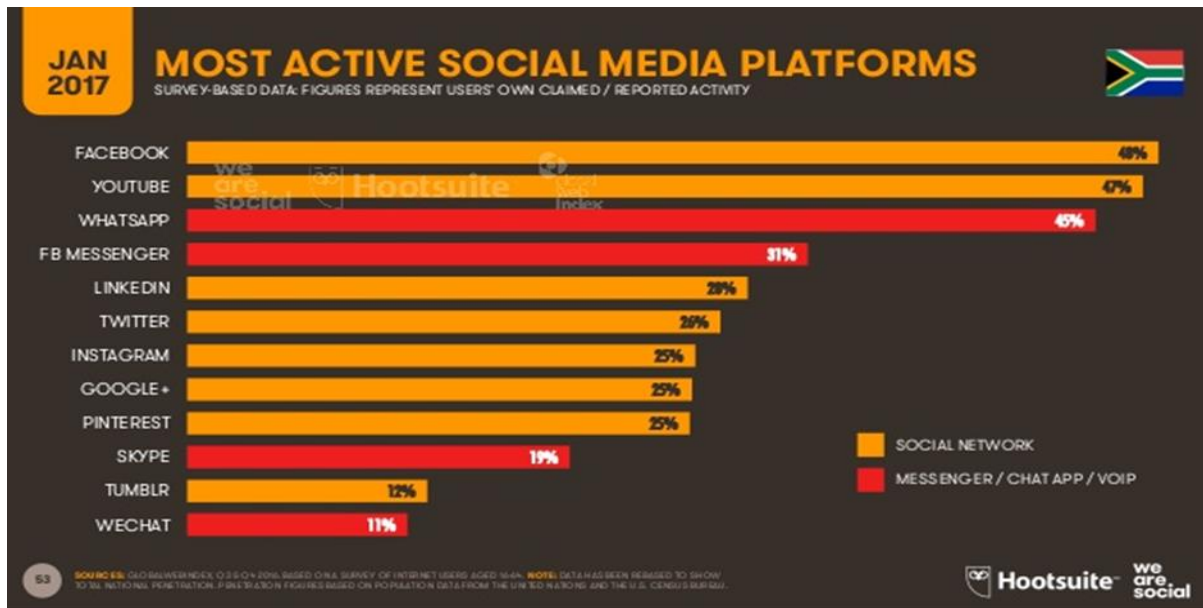
Figure 1.6: South Africa's active social media platforms (from Hootsuite, 2017 taken in 2018)

Farshid, Chan and Nel, (2012) noted the rise of social media usage and the resultant impact on brand management as a critical factor in guarding the company's reputation. This extensive usage of social media lends it to increasingly being used as a branding and engagement tool by companies (Sihi and Lawson, 2018). Social media leads to massive exposure due to its worldwide access, sharing capabilities, and a considerable number of daily users (Angelova, 2013). Notwithstanding this widespread usage, most companies are not sufficiently monitoring or leveraging social media adequately even though it has a huge potential to have adverse impacts on the brand image (Platon, 2014).

1.6   The Insurance Industry

1.6.1 Background and Insurance Business Model.

Insurance, in the economic sense, is a method of creating financial security in the face of risk among many persons all exposed to the same risk (Reinecke, van der Merwe, van Niekerk and Havenga, 2002). In simpler terms, it is a promise, by a company, to pay the client on the occurrence of certain pre-defined events. It involves a formal contract between an insurer and a client whereby the insurer undertakes, in return for the payment of a premium, to indemnify the insured for losses incurred as a result of an insured peril subject to pre-defined terms and conditions (Reinecke, van der Merwe, van Niekerk and Havenga, 2002).

Schreiber (2017) asserts that Insurance started as the ultimate social good with a community coming together to assist one of their unfortunate members. Insurance was a social good in a profound sense of the word and took many forms including burial societies, and provident societies which were all community-based. Insurance started as a social function and consumer protection providing service to members in distress. It played an important social role as it sold safety, thus providing peace of mind (Reinecke, van der Merwe, van Niekerk and Havenga, 2002). The adverse effects of any risk that may affect a community were neutralized by insurance. The nature of insurance is that it compensates the policyholder when bad things happen but does not stop the bad things from happening (KPMG, 2017). The modern insurance business is a giant corporation with massive corporate structures (Schreiber, 2017).

Insurance can be classified into two broad groupings; short-term and long-term insurance as defined in The Insurance Act No. 52 of 1998, part V11 (Reinecke, van der Merwe, van Niekerk and Havenga, 2002; Davies,1993). Short-Term insurance has been defined as contracts of indemnity while Long-Term insurance is classified as contracts of non-indemnity or capital insurance (Reinecke, van der Merwe, van Niekerk and Havenga, 2002). Indemnity implies re-instating the insured to the same financial position they had enjoyed before the loss. Capital insurance is when the insured takes out insurance based on a capital sum rather than the financial value of the life to be covered (Davies, 1993). Long-Term insurance typically includes Life Insurance, Funeral Policies, Credit Life covers, and Mortgage protection policies. These are not subject to annual renewals, as is the case with Short-Term insurance (Davies, 1993).

Brand image is more dynamic in short-term insurance than long term because of the varying frequencies of transactions. Long-term insurance contracts are for extended periods making the brand image more static than in short-term insurance (Malherbe, 2016). Long-term insurance has limited interactions between client and Insurer. Typically, they engage with each other at policy initiation stage then at claims stage when death occurs, or the policy matures after several years. Long-Term insurance typically includes Life Insurance, Funeral Policies, Credit Life covers, and Mortgage protection policies. These are not subject to annual renewals as is the case with Short-Term insurance (Davies, 1993). In short-term insurance, client and insurer engage with each other multiple times over a short period. For this reason, the study will focus on short-term insurance.

Dwibhashi (2015), noted that modern insurance practice is a demanding, service-based industry which depends on perception and therefore needs more emphasis on brand building and

recognition. Implicit in this view of insurance is trust. Because it is about selling a promise, the parties must have trust in each other (Reinecke, van der Merwe, van Niekerk and Havenga, 2002). Contracts of Insurance are contracts of utmost good faith or "*uberrimae fidei*" (Parkington, Legh-Jones, Longmore and Birds, 1988) because of the critical role played by reputation in insurance. The business model is predicated on trust, and this is underscored by one of the core principles of insurance being the doctrine of utmost good faith (Abuzaid, 2018). The relationship between a client and their insurance company is typified by a relationship of close trust between the contracting parties (Davies, 1993).

For an insurance company, brand management is critical, and according to Dwibhashi, (2015), insurance needs a more significant emphasis on brand building and recognition as it is about intangibles. It is critical to understand an insurance company's brand image in the social media as the customers themselves determine this. As Jolly (2001) asserts, how a company is perceived and the image their audience has is a product of conversations taking place online.

Another important reason why the brand image is critical in insurance companies is that client perceptions hugely influence insurance purchase decisions. The highlighting in Figure 1.7: Reasons for choosing or leaving an insurance company, below, shows that as much as 40% of the surveyed clients would choose one insurance company over another simply because of the brand and their associations with it. A significant proportion (30%) would also leave a company because of brand perceptions. Brand image in social media must also be considered relevant as Dwibhashi (2015) notes that social media has been beneficial in connecting with the insured, engaging and communicating with them, as well as getting feedback on sales. Social media will be a significant source of insurance business shortly, as Dwibhashi (2015) stated.
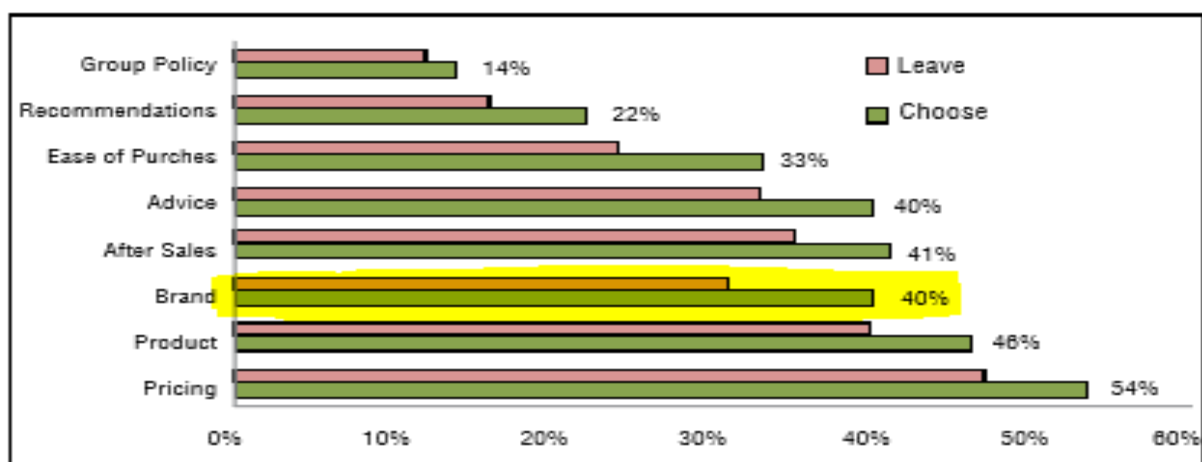
Figure 1.7: Reasons for choosing or leaving an insurance company (from Capgemini, 2012)

1.6.2 Insurance from a Customer's Perspective.

Ariely (2009), the internationally renowned Professor of Behavioural Economics, described the perception of the current insurance model as close to the model one would build if one wanted to bring out the worst in human beings. The 21st century crowd-sourced Urban Dictionary (2018) goes further to describe insurance as a business that involves selling to people promises to pay later that the insurers never fulfil. It gives customer perspectives of insurance as a way to get free money and states that people believe they can cause an accident deliberately to get insurance money. These sentiments indicate that insurance has evolved from being the welfare concept (Schreiber, 2017) to one of the biggest scams (Urban Dictionary, 2018). Schreiber (2017) further states that while insurance has never been an "impulse purchase," it has since become a "grudge purchase." People take insurance reluctantly and do not believe their insurance company will pay them in the event of a claim (The South African Insurance Industry Survey, 2017). There is a trust deficit gap. People do not buy insurance because they do not trust the providers. Claims are not paid quickly, fairly or correctly. It is a point of pain across the continent (The Financial Times Limited, 2019)

The result has been a negative perception of insurance with fraud being acceptable. Figure 1.8: Fraud in Insurance, below, shows the alarming levels of people who find no ethical issues in defrauding claims. In the survey conducted on this issue, 38% of insurance clients believed that there would be no losers if people defrauded insurance companies (The South African Insurance Industry Survey, 2017).
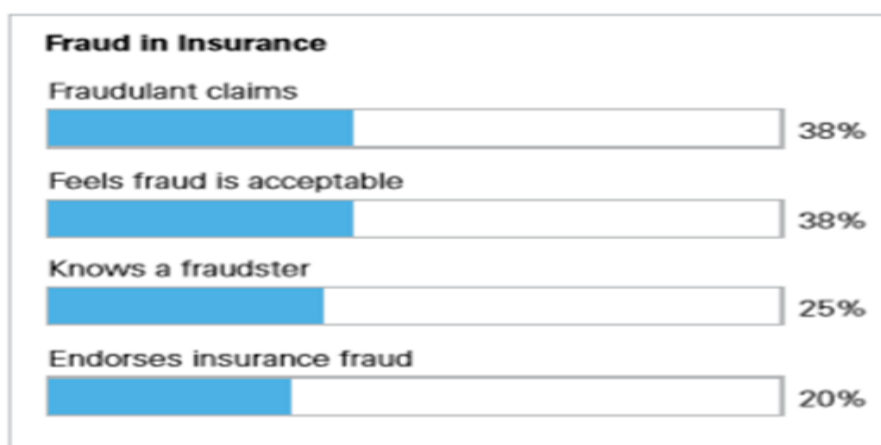
Figure 1.8: Fraud in insurance (from KPMG, 2017)

Exaggeration of claims quantum is so commonplace that KPMG (2017) estimates that premiums in South Africa would be 20% lower if it were not for fraud. Part of the reason for the fraud is insurance companies' failure to innovate in controlling costs and most importantly, failure to know their customers (Accenture 2018). The insurance industry is suffering from antiquated customer experiences (Schreiber, 2017). There is massive ill will towards insurance. In South Africa, only 35% of cars have insurance according to the Automobile Association of South Africa (2018). Insurance companies today are struggling to develop new ways to reach younger customers (Schreiber, 2017).

This research will enable Insurance companies to know their customers by providing a quick tool to assess the brand image and to monitor and manage any adverse movements before they get to the state of negativity demonstrated in Momentum case.

The research will note the importance of social media in insurance, the perception that is prevailing at present, and the factors affecting the positive or negative trend. Dwibhashi (2015), observed that insurance clients check the online image of the brand before making a decision. This observation makes it essential for insurance companies to establish what is being said about their brand on social media and how it compares against what is being said about competitor brands (Farshid, Chan and Nel, 2012).

The primary insurance business dilemma is falling trust and increasing fraud. As much as 20% of the costs in insurance go directly into fighting fraud (Schreiber, 2017). The secondary problem is the deficient uptake of insurance by the young clients. Insurance also has a poor record of product development. According to the KPMG (2017) report, insurance is failing to incorporate changing customer demands, changing lifestyles, and habits into their products and services. The research will assist in the understanding of the customer experiences as expressed in social media and thus help in resolving part of the dilemma. Insurers are responsible for meeting their customers where they are, which is increasingly on their phone, tablet, or computer.

1.7   Impact of the fourth industrial revolution on Insurance

Insurance companies, worldwide, are operating in a new and more complex environment; one where customers experience and interaction with an insurer is being challenged and redefined (KPMG, 2017). The changing expectations and digital experiences brought about by the fourth industrial revolution (FIR) are posing a challenge to the insurance business models. FIR is being driven by the rapid introduction of diverse and disruptive technologies and while this is

creating enormous opportunities for businesses, it brings questions as to how an insurance company should evolve, to remain relevant in the FIR (KPMG, 2017).

According to KPMG (2018), the convergence of robotics, machine learning, and advanced analytics offers excellent opportunities for dealing with the challenge of big-data that many insurance companies in South Africa are grappling with. A PwC survey in 2014 showed that technological changes were the second most significant risk facing the local insurance industry behind regulation. By 2017, a follow-up survey showed that FIR had overtaken regulation to become the most significant risk likely to impact the industry as per Figure 1.9: Global trends that will impact South Africa's Insurance industry, below;
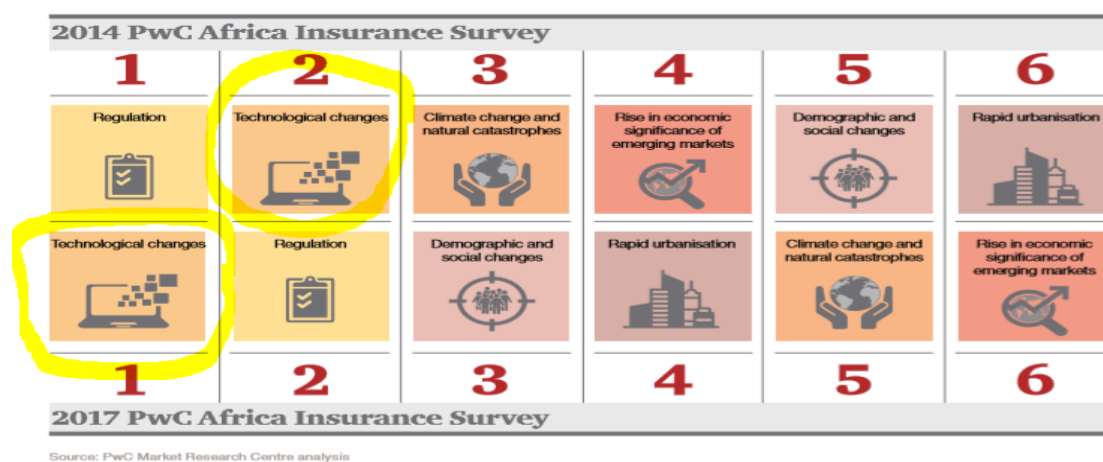
Figure 1.9: Global trends that will impact South Africa's insurance industry (from PwC, 2017)

The insurance industry is faced with severe challenges when it comes to the FIR. Firstly, they must be concerned with how technology disrupts their operations. Secondly, they must be able to cover their clients for cyber risks that they are not familiar with (KPMG, 2018). Thirdly, the FIR is altering the risk profile of insurance subject matter as technology is considerably reducing the likelihood of occurrence (Steenkamp, 2017). A report by KPMG in 2015 highlighted the possibility of motor insurance premiums shrinking by up to 40% by 2040 due to technology making cars safer. Driverless cars are also adding to the insurance's conundrum. Tesla is reported to have pressurized insurance companies to reduce premiums as their cars are considered to be safe (KPMG, 2017).

The explosion of data and analytics resources that can replace traditional underwriting methods is fuelling a massive shift toward operational efficiency, and insurers need to be equipped with appropriate resources to handle this industry race toward efficiency. Technology offers the opportunity for data analytics, to better understand the changing behaviour and needs of

customers and tailor products that are more appropriate (PwC, 2017). Insurance companies also need to capitalize on technology to improve their customer experience. With the available data and profiles, insurance companies can tailor products to the individual's risk profile. At the same time, strategies need to shift from being inward-looking to focus on customers, their changing behaviours, and new needs (PwC, 2018).

Despite these apparent advantages of the FIR, the highlighting in Figure 1.10: Changes in Business models' percentage of respondents prepared for change, below, shows that, as of 2017, few insurance companies in South Africa are ready to change their business models to incorporate the FIR (PwC, 2017). In the vital area of marketing and branding highlighted, 79% are only somewhat prepared. In Sales and Customer service, 64% are somewhat prepared, and 7% of insurance companies are still not prepared at all.
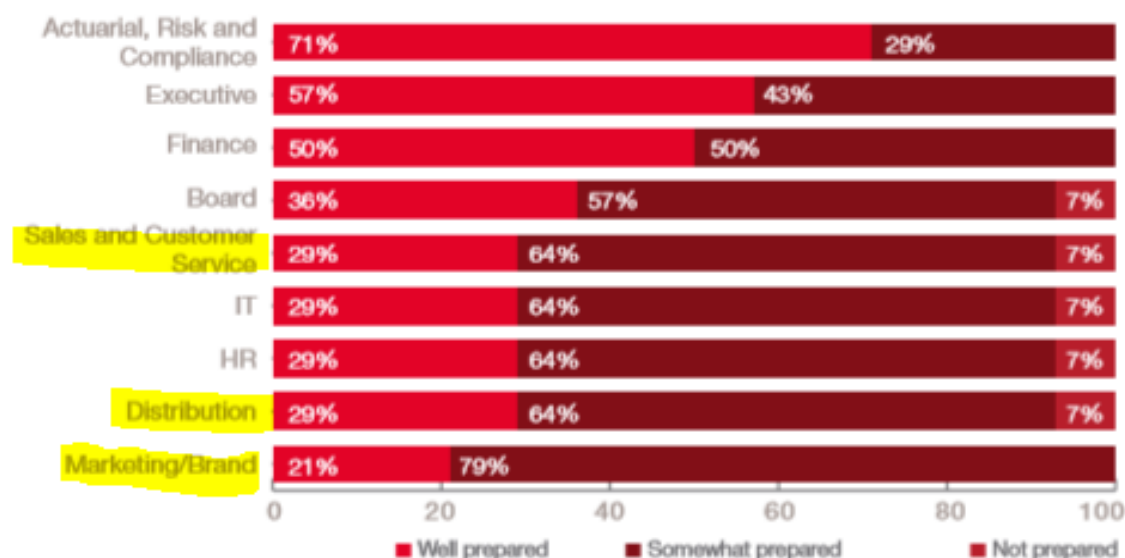
Figure 1.10: Changes in business models' percentage of respondents prepared for change (from PwC, 2017)

The question is, how will insurance companies respond to this emerging technological threat and exploit the opportunities it brings? According to PwC (2017), the industry is too used to big decisions, big system implementations, and significant product launches. However, with FIR and social media, by the time the big decisions and big implementation cycles have run their course, the market would have moved on. A McKinsey (2018) research shows that nearly 70 per cent of customers in the information-gathering stage of insurance purchase is learning about coverages through channels such as social media. As noted by KPMG (2017) the insurance industry faces an exciting future and should embrace technology as a strategic imperative and exploit the opportunities it presents, or it may risk losing significant market

share and, ultimately, relevance in the market. PwC (2017) also rightly emphasizes that insurers need to move fast and introduce real innovation.

This study will assist in the branding and marketing area by providing a tool to assess the brand image in real-time and take corrective measures timeously. As the McKinsey (2018) report points out, that successful insurance companies will be those that empower the carrier–agent relationship with data and analytics while remaining adaptable to the multiple channels that customers choose for interaction.

1.8 Overview of the methodological approach

1.8.1 Brief methodology

A sample of 6 insurance companies was taken from a population of 40 major short-term insurance companies in South Africa (South African Reserve Bank, 2018). From the population of 40 insurance companies, more than 10 are "boutique" insurers specializing in one or two product lines only. This leaves less than 30 full range general insurers (Business Tech Report, 2016.) As the study focussed on the full range insurance companies, a sample of 6 was considered adequate as it represents over 25% of the target population. The sample will comprise two from the large insurance companies, two from the medium insurance companies and two from the smaller insurance companies using Gross Written Premium as the determinant of size (KPMG, 2017). The research will then conduct a longitudinal study from Social Mention, of how the strength, sentiment, reach and passion of the mentions can be utilized for brand perception mapping (Dwibhashi, 2015; Kemp 2018). A function, Chernoff faces, in the statistical software tool, Stata14, will be used to map the human facial features to be analysed and discussed (StataCorp, 2009).

Chernoff's faces should lead to a better understanding of the shifting focus from tangibles towards intangibles and toward interactivity, connectivity, and ongoing relationships as observed by Vargo and Lusch (2004).

1.8.2 Outline of the dissertation

Chapter one, this chapter, provides an overview of the research, the significance of the study, goals, research questions, and objectives.

Chapter two explores and reviews the literature on Social Media, Brand Image, RBT, Dynamic Capabilities, and Social Media eWOM perspective.

Chapter three details the methodology. The chapter also deals with Social Mention, Stata and the novel use of Chernoff faces generating human facial expressions from the metrics associated with social mentions as according to Farshid, Chan and Nel, (2012), a table can be quite challenging to interpret.

Chapter four will give an analysis and a qualitative interpretation of the results.

Chapter five will provide a conclusion of the study recommendations that meet the aim of this study as well as highlight limitations of the study while also making suggestions for further study.

1.9   Conclusion

The marketing strategy for organizations is to create compelling branded content, much like businesses used to do in traditional media. As the digital technology has been on a colossal upsurge with a profound impact on all aspects of everyday life and business (Aitken, 2014; Gupta Tyagi and Sharma, 2013), social media platforms have become essential tools for developing digital marketing strategies. Understanding social media perceptions of brand images is vital for insurance companies as Wang and Sengupta (2016), asserted that social media images are the basis for brand equity, which ultimately leads to company performance.

The widespread use of social media has necessitated the assessment and management of brand image in real-time, and the use of Chernoff faces in Stata is one way of satisfying this need.

CHAPTER 2
Review of Literature

2.1   Introduction and research Context

The research aims to investigate the changing social media brand image perception by generating social media faces over a longitudinal period. Branding has emerged as a high-level management priority in the last decade (Keller and Lehmann, 2004). Reynolds and Phillips (2005) observed that brand equity has become essential in understanding the objectives, mechanisms, and impact of marketing. This chapter will, therefore, review the literature on brand image within the RBT perspective as it applies to insurance companies in South Africa. The chapter will also outline how successful brand management in social media equips companies with dynamic capabilities to optimize performance and how eWOM conversations can affect brand image perception.

According to Keller and Lehmann (2004), the reason for the emergence of branding as a management priority is because of the growing realization that brands are one of the most valuable intangible assets of a company. Research works by Madden, Fehle and Fournier (2006) and Simon and Sullivan (1993) affirm that companies are increasingly recognizing that brands are among their most valuable assets. This realization justifies the examination of brand image within the RBT perspective as brands have the attributes of resources that can generate a SCA (Barney, 2013). Having a successful brand can contribute significantly to the company's success, according to De Chernatony and Cottam (2006).

As early as 2010, PwC noted that technology had changed the rules of the game. The report predicted that technology would play a significant role in new applications for actuarial systems, real-time data mining, and various types of business modelling. Both PwC (2016) and KPMG (2017) highlight that technology is the biggest disruptor facing the South African insurance industry. According to PwC (2010), one of the weaknesses of the industry and a critical concern is the capture and use of data. The absence of appropriate customer relationship management systems at most companies is a cause for significant concern. KPMG (2017), states that the disruptive technologies, which are social media, mobile analytics, data, and cloud, are maturing and have been joined by newer ones like the Internet of Things. Social Media has changed the way business is done (Kaplan and Haenlein, 2010; Kapoor et al., 2018).

The research aims to obtain an alternative method of brand management within social media to improve the company understanding of the customer relationship.

Schreiber (2017) noted a massive ill will towards insurance and attributed this to antiquated business models coupled with poor customer understanding. The industry is also struggling to attract younger clients (Schreiber, 2017) and faces high levels of fraud (KPMG, 2017). Insurance is not an easy sell to millennials as it lacks the element of instant gratification and adds to their financial responsibilities (KPMG 2017). This scenario necessitates a review of the current insurance business model. This research will help in improving customer relationships through better understanding and tackles the problems identified by both Scheriber (2017) and KPMG (2017).

This chapter will also review how better branding methods will lead to dynamic capabilities to manage and influence eWOM conversations to maintain a positive spin.

2.2   Resource-Based Theory (RBT)

The Resource-Based Theory evolved from the Resource-Based View and attempted to explain the basis of a company's competitive advantage and performance (Barney et al. 2011; Slotegraaf et al. 2003). The theory was developed in strategic management during the mid-1980s when the resource-based view of the company began to take shape (Kozlenkova, Samaha and Palmatier, 2014; Barney, 2014). Modification continues to increase its applicability and extension into marketing because of its generalizability and increased explanatory power (Kozlenkova, Samaha and Palmatier, 2014). As noted by Wang and Sengupta (2016), marketing strategy literature applies RBT logic to investigate the effect of marketing resources and capabilities in areas such as brand management and customer-company relationships on performance. Barney (2014) also observed this and stated that marketing might have important implications for the theory. According to Barney (2014), efforts to apply a theory developed in one context to an entirely different context may lead to confusion and misunderstanding. This confusion may be more so in these days of Social Media, which has disrupted most businesses (Vollmer and Precourt, 2008; Dwibhashi, 2015).

RBT suggests that the optimal strategy for a company depends on its constellation of resources. A central tenet of the theory is that the return potential of a company's strategies depends on the attributes of that company's resources (Barney, 2014). This narrative means that, at its core, RBT rejects the idea of external factors as the reason why some companies perform better than

others (Hsu and Ziedonis, 2013). While RBT is the most powerful framework for understanding strategic management according to Barney, (2001), social media appears to have a more significant impact of a business than what a company can control (Silva, Gerwe and Becerra, 2017).

RBT propounds that a company must have the right resources to have good results. Specifically, RBT argues that companies that have resources which are valuable, rare, imperfectly imitable, and if the company's organization enables exploitation of the resources' potential, then the company generates a sustained competitive advantage (SCA) (Barney and Hesterly, 2012; Kozlenkova, Samaha and Palmatier, 2014). Resources, in this context, are something that an organization can draw upon to accomplish its goals (Barney and Hesterly, 2012) and the four main resource categories are physical, financial, human, and organizational (Kozlenkova, Samaha and Palmatier, 2014). SCA refers to when a company is creating more economic value than its competitors in its industry and when the competitors are unable to duplicate the benefits of this strategy (Kozlenkova, Samaha and Palmatier, 2014 quoting Barney and Clark 2007,).

Value in a resource is apparent when the resource decreases costs or increases revenues in ways that would not be possible without this resource. According to Cook et al. (2008), valuable resources should exhibit systematic performance effects within and across companies. The rarity of a resource comes when only a few companies possess that resource (Makadok, 1999). The level of the resource should also vary among companies within an industry with many companies not possessing the resource or having only shallow levels of it (Kozlenkova, Samaha and Palmatier, 2014). If competitors are unable to imitate a resource at a reasonable cost, then the effects of the resource should persist overtime for the company, and the resource will be said to be imperfectly imitable (Makadok, 1999). A resource can be protected from being imitated by historical conditions or if it is socially complex as is the case with a strong brand and relational resources which require the interaction of many stakeholders (Kozlenkova, Samaha and Palmatier, 2014).

Resources that meet all three conditions of value, rarity and inimitability, still need to be organized so that the company can exploit the resources to achieve its objective (Crook et al. 2008). A VRIO resource that is supported by organizational structure and processes leads to a SCA (Kozlenkova, Samaha and Palmatier, 2014). Building brands requires external and internal marketing and may include appropriate staff training as recommended by Kotler and Keller (2011). Brands satisfy the VRIO framework of the RBT and must be assessed in the

social media since marketing now has to be integrated to leverage traditional, online and real-time social media platforms (Macy and Thomson, 2011).

The applicability of RBT in social media has challenges due to its static nature, as observed by Lovallo and Mendonca (2007). In addition to being static, the failure to address the impact of challenges RBT cannot determine the locus of success in a world that's changing very quickly (Lovallo and Mendonca, 2007). The ability to quickly assess and manage brands in social media would, therefore, validate the applicability of RBT in turbulent and fast-changing environments. Rumelt (2007) argues that competencies arise from the activity and that internalizing activities results in a company being good at the activity, thereby attaining a SCA over competitors in that activity. Brand management in social media could be one area where an insurance company can gain a SCA.

2.3   RBT perspective in brand management

While the RBT originates at the company level, questions arise about its applicability at the exchange level of analysis where brand management resides. Is it valid to apply RBT at the exchange level and does it need to be adapted for use at this level (Kozlenkova, Samaha and Palmatier, 2014)?

According to the RBT, a brand is a source of competitive advantage because it enables a company to create value that it would otherwise have (Barney, 2014). Kozlenkova, Samaha and Palmatier (2014) also noted that brands and relationships are the two most studied resources and that they also satisfy the VRIO framework of the RBT. The intangible nature of brands makes them hard to imitate (Srivastava et al., 1998). Brand image meaning is both problematic and costly to build or change (Aaker and Joachimsthaler, 2000). Gupta et al. (2004) observed that the financial value of a company depends on its intangible assets across customers. This view was reinforced by Ambler (1992) who defined brand image from a consumer-oriented approach as the promise of the bundles of attributes that someone buys and derive satisfaction (Wood, 2000 quoting Ambler, 1992). The position of brand image as a driver of value was further affirmed by Wood (2000) who described brands as a mechanism for achieving a SCA through differentiation. This definition places brand management within the RBT perspective.

Barney (2014) argues that a brand is a socially complex resource that generates a SCA. The advantage of studying branding is that it is in the self-interest of companies to keep information

about the emergence of their resources in-house to avoid imitation. Paradoxically, in order to create value, information about a company's brand must be public (Barney, 2014). How a company developed a brand and managed external stakeholders to build a brand, gives insights into building a heterogeneous and costly-to-imitate resource within the RBTaccording to Barney (2014).

Brand management is traditionally grounded in product and company-centric perspectives. Consumers were considered passive recipients of brand meaning (Inglesias and Bonnet, 2012). The democratization of information brought about by social media, as observed by Dwibhashi (2015) magnifies the consumers' ability to communicate with one another. The information symmetry questions the applicability of the RBT in marketing communications, as noted by Silva, Gerweand Becerra (2017). The study aims to assess brand image in social media. The study also explores the suggestion that a theoretical adaptation might be necessary to apply RBT to marketing (Kozlenkova, Samaha and Palmatier, 2014). Establishing an additional tool for brand management within the Fourth Industrial Revolution will provide guidance and direction for the future use of RBT in marketing research, as suggested by Kozlenkova, Samaha and Palmatier (2014).

According to deChernatony and Cottam (2006), having an integrated, prosperous, and coherent can provide a SCA. This study aims to identify internal factors contributing to insurance brands image to facilitate better-informed branding activities and improve brand equity. In their study, deChernatony and Cottam (2006) note the need to look at services branding with a balanced perspective to include both brand identity and brand image. In other words, while an insurance company brand may have a specific identity, what image does the brand have in social media? The argument is that having an integrated and unified brand is a worthwhile alternative to differentiation in a homogenous market where companies do not wish to compete on price alone (Berry, 2000). Insurance is a homogenous market, as the products offered are similar across all the companies (KPMG, 2017). Brands can also reduce the perceived risk and overcome low trust levels as observed by deChernatony and Cottam (2006). This view is particularly important in insurance as the trust, and good faith is embedded in the insurance business model (Reinecke et al.,).

The study also examines how a brand will be responsive to change. The degree to which a brand is dynamic and responsive to change was noted to be one of the differentiating factors between successful and unsuccessful brands by deChertnatony and Cottam (2006). Rohan

(2000) also added that today's societies are dynamic, and values held by customers are continually evolving. This continuous evolvement necessitates effective brand management and monitoring in social media so that business models can also evolve together with the evolving customer expectations. Customer expectations are also evolving concerning the speed of service delivery. Kapferer (2004) confirmed that successful brands are not static but rather to respond and uniquely adapt to the changing environment. Davidson (2002) notes that the adaptation of company values and business models should be over time.

2.4   RBT perspective in dynamic capabilities

The concept of dynamic capabilities was introduced by Teece et al., (1997) in response to the concerns about RBT's applicability in turbulent environments (Kozlenkova, Samaha and Palmatier, 2014). The static nature of the RBT as a strategy meant that the applicability of the theory could not be established in a fast-changing environment, as noted by Lovallo and Mendonca (2007). Social media is fast-changing hence the need to examine the role of RBT within the social media space. Dynamic capabilities could continuously create, extend, upgrade, protect, and maintain the relevance of the company's resources in a changing environment (Makadok, 2001). Dynamic capabilities are a unique subset of a company's resources whose purpose is to improve the productivity of other resources possessed by the company (Makadok, 2001).

Dynamic capabilities are organizationally embedded and non-transferrable company-specific resources improving the utilization of other resources possessed by the company (Kozlenkova, Samaha and Palmatier, 2014). This definition entails that dynamic capabilities processes are information-based and enable a company to deploy its other resources efficiently. The processes can either be tangible or intangible. In the context of this research, the ability to quickly assess brand image in the social media will result in an intangible resource enabling an insurance company to manage branding more efficiently than others.

Applying a dynamic capabilities' perspective Barrales-Mollina et al., (2014); Maklan & Knox, (2009); Teece, (2014) argue that a company has a competitive advantage when it can interact with stakeholders and manage stakeholder knowledge better than competitors. Wang and Sengupta (2015) also argue that because dynamic capabilities use higher-level activities, they enable a company to recognize opportunities, reconfigure resources, and adapt to changing markets such as social media.

The distinct nature of dynamic capabilities has led to some researchers arguing that they should be considered as a separate theory (Teece 2007; Teece at al., 1997). Peteraf and Barney (2003) however, propose that dynamic capabilities are entirely consistent with RBT and are an extension of the RBT in dynamic environments. Dynamic capabilities are a type of resource to be evaluated within the RBT framework as noted by Kozlenkova, Samaha and Palmatier (2014). This approach will then provide the adaptation required for the applicability of RBT in social media.

A dynamic capabilities approach conceptualizes the role of stakeholder relationships in creating brand value (Wang and Sengupta, 2014). The concept proposes the development of new practices and processes which can then contribute to company performance. By being able to assess brand images in social media, the stakeholder interactions allow for the co-exploration and co-creation of the brand in social media, as Maklan and Knox (2009) noted. A core dynamic capability in marketing pertains to building brands. Companies obtain a competitive advantage if they can interact and manage stakeholder knowledge and expectations better than the competition. Stakeholder relationships, like those in social media, give rise to dynamic capabilities, which, in turn, lead to brand equity (Wang and Sengupta, 2014). By managing and implementing customer co-creation and interaction activities, a company can improve the listening and innovation skills that it has (Iglesias at al., 2013). From this, the company can then actively listen and adapt brand strategies accordingly.

In fast-moving business environments, Teece (2007) acknowledges that having VRIO compliant resources is not enough. In order to attain a sustainable competitive advantage, a company also requires unique and difficult-to-replicate dynamic capabilities. Teece advocates for a disaggregation of the dynamic capabilities by their capacity to;

- sense and shape opportunities and threats
- seize opportunities, and
- maintain competitiveness through enhancing, combining, protecting and reconfiguring the company's assets.

The relevance of dynamic capabilities in achieving a sustained competitive advantage for the company over time is what sets them apart. Teece (2000) notes that economies have become more open and faster hence the need to apply dynamic capabilities. Lin and Wu (2014) conclude their study by the observation that a sustained competitive advantage is not only a

result of having VRIO compliant resources but also the development of dynamic learning capabilities.

Learning capabilities are a pre-requisite if companies are to integrate social media in their strategies successfully. It is necessary to integrate social media because the market has moved to social media as confirmed by Figure 2.1: South Africa's digital growth 2016-2017, below.
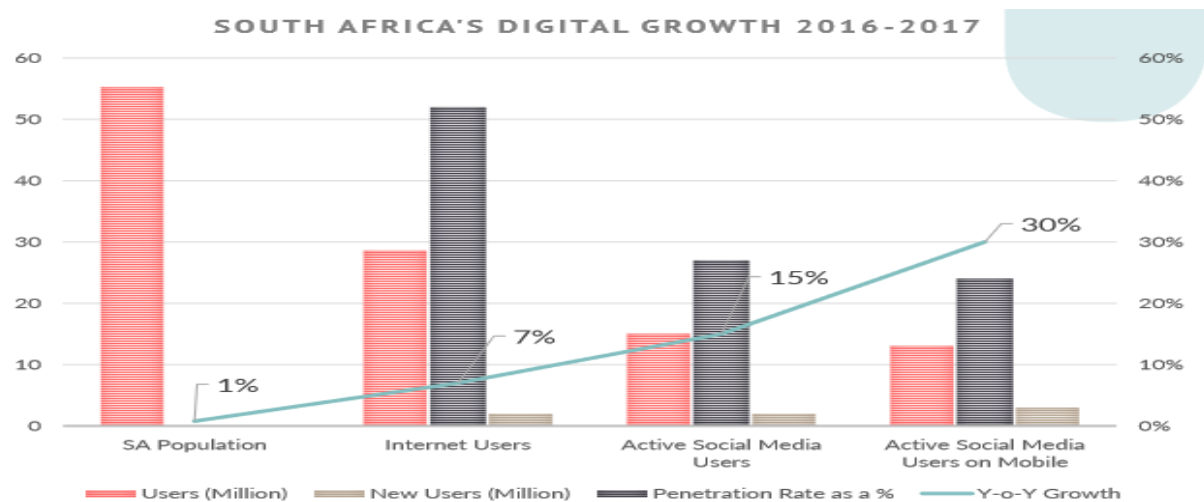
Figure 2.1: South Africa's digital growth 2016-217 (from QWERTY Digital, 2017)

2.5   Social media: a quick overview

While the Internet has represented a society of communicators from its onset, social media derives from a paradigm shift during the web 2.0 evolutional phase of the Internet (Judson, Devasagayam and Buff, 2012). Web 2.0 has been noted to be a series of web progressions over Web 1.0 (Botha, Farshid and Pitt, 2010). Jones, Temperley and Lima (2009) called Web 2.0 democratic as it is open to all and creates an environment in which freedom reigns. Evans (2008) defines social media as the democratization of information that transformed people from content readers to content publishers. Botha, Farshid and Pitt, (2011) refer to social media as media designed for dissemination through social interactions between individuals and organizations. Kaplan and Haenlein (2010) add that social media is a group of internet-based applications building on technological foundations of Web 2.0. The democratization of information by social media means that business reputation is no longer solely in the hands of company management.

Social media is created using highly accessible and scalable publishing techniques (Brogan, 2010; Zarella, 2010). It has more to do with what people are doing with the technology rather than the technology itself. Instead of merely being consumers of information, people are now both creators and consumers. As noted by Tapscott and Williams (2007), social media depends on mass collaboration, with information democracy as an outcome. It is essentially a digital space that provides a conducive environment for interactions and networking to occur at all levels including personal, professional, business, marketing, political, and societal as observed by Kapoor et al., (2018). The websites provide a rich context to users, utilizing user-friendly interfaces that encourage and simplify participation.

Kaplan and Haenlein (2010) have used three parameters to distinguish social media noting these as; capacity to;

- Concept (art, information or meme)
- Media (physical, electronic or verbal)
- Social (intimate, direct, community, engagement or social viral electronic broadcast)

Social media has not only changed the way organizations and their brands interact with their customers but has also changed the way business gets done (Botha, Farshid and Pitt, 2011). Social media is arguably more influential than conventional media and has a massive impact on brands as observed in the Momentum/Gana's claim case.

As social media is a relatively new media format, there is no universally accepted classification and categorization to distinguish them. The present distinction is between blogs, micro-blogs social networking sites, picture sharing, video sharing site, and social news websites (Botha, Farshid and Pitt, 2011). The study focuses on social networking sites. Social networking sites have been described by Botha, Farshid and Pitt (2011) as services on which users can find and add friends and contacts, and send them messages, and notify all their friends and contacts about anything.

The extensive use of social media leads to its use as a branding and engagement tool by individuals and organizations increasingly (Sihi and Lawson, 2018). Social media gives massive exposure due to its worldwide access, sharing capabilities, and a considerable number of daily users (Angelova, 2013). Kemp (2018) observed that out of the total global population of over 7,5 billion people, over 4 billion are internet users with over 3 billion being active on social media. The South African social media use generally follows the global trends of double-

digit year-on-year growth. Globally, social media is the focus of one in every four minutes spent online (Widmer et al., 2016).

Figure 2.2: South Africa's consumption of media, below, shows where the people are and what they are spending their time on.
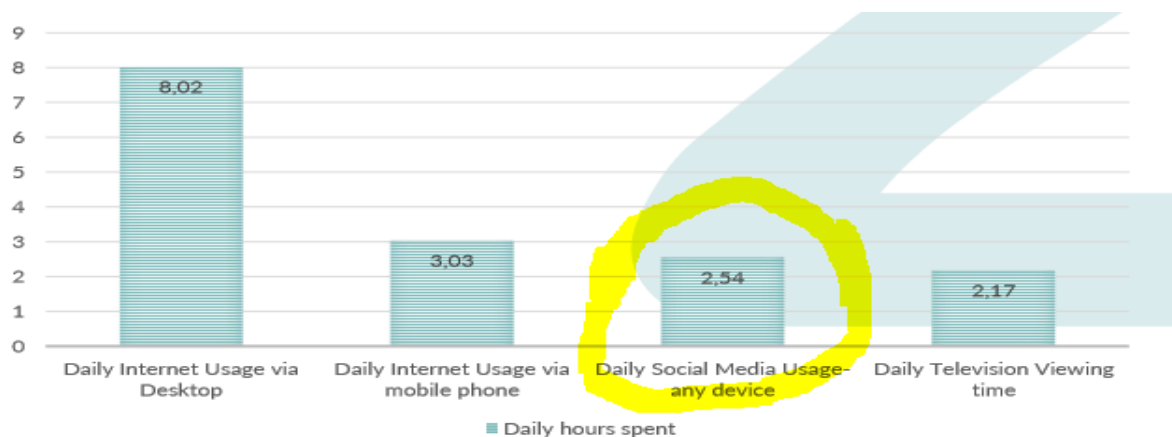
Figure 2.2: South Africa's consumption of media (from QWERTY, 2017)

The data reveals that people are spending more time on social media alone than on traditional television watching. If all digital platforms are added up, South Africans are typically spending at least 14 hours per day on the digital platforms and just over 2 hours watching Television. The Digital Statistics Report-South Africa (2017) also found that a staggering 70% of South Africans spend weekly activities on Social Media platforms alone. This widespread use highlights the importance of social media marketing and makes it essential for businesses to understand that their audience is no longer accessible through traditional methods.

When trying to get a brand in front of people, companies need to ensure that they meet their audience where they are (QWERTY, 2017). There must be a component of social networking in the marketing communications strategy. Platon (2014) laments the fact that most companies are not thoroughly monitoring or leveraging social media adequately even though it has a huge potential to have adverse impacts on the brand image. Importantly, companies need to measure their visibility in the most popular social media relative to that of their competitors.

The QWERTY Report (2017) highlighted an interesting phenomenon. It noted that older generations use Search Engine Marketing when looking for brand and product information on the internet. The younger generation is doing the same on social media. As one of the issues is the declining uptake of insurance by the younger generation, it makes it imperative for South

African insurance companies to focus on branding in social media. This research will focus on brand management in social media. The research articulates a method for assessing brand image perception by observing the visibility of various South African insurance companies' brands from a social media perspective (Botha, Farshid and Pitt, 2011)

2.6   Word of mouth broadcasts on social media

Studies have shown that consumer exposure to electronic Word of Mouth (eWOM) can be a significant driver of consumer purchasing behaviour, as confirmed by Liu and Lopez (2014). This confirmation means that eWOM has become a key driver of brand recommendation among consumers; hence, an increasing number of companies want to promote their brands through social media (Hoffman and Fodor, 2010). People talking about a brand in social media stimulates conversations, increases consumer loyalty, and leads to the acquisition of new customers (Financial Times Special, 2012). This argument is reinforced by Liu and Lopez (2014), who noted that brands suffer a considerable decrease in market share if they do not have social media conversations. An understanding of how social media eWOM affects consumer valuation of brand characteristics and choices can then help inform company strategy. Liu and Lopez (2014) also observed that conversations about specific brands in the social media raise consumer awareness of those brands resulting in a significant positive valuation of the brands.

Liu and Lopez (2014) conclude by advising companies to make use of social media eWOM about their brands and actively monitoring conversations about their brands on various social media sites. The conversations increase the exposure and awareness of a brand and create more buzz on social media sites. The increased buzz leads to a higher probability of consumers choosing the product. As Liu and Lopez (2014) further noted, it is the volume of the eWOM rather than the sentiment that matters the most.

The social media images assessed in this study are the aggregation of eWOM in social media for the insurance company brands. According to Dwibhashi (2015), social media magnifies consumers' ability to communicate with each other. This increased ability by consumers to communicate limits the control that companies have over content and dissemination of information (Vollmer and Precourt, 2008). The results of the study will, therefore, be authentic and independent of company influence. Edelman (2017) noted that when making purchase decisions, people often turn to a familiar source, and that is usually each other. The importance

of this observation is that it confirms that the brand image obtained in social media is free from the company's influence. How a company is perceived, and the image their audience have is a product of eWOM conversations taking place online in social media (Jolly, 2001).

Social media eWOM conversations are about users sharing things they either value or seem valuable to other people in their network, according to Zhang and Xu (2013). The importance of eWOM conversations was underscored by Delcea, Bradea and Paun (2014) who observed that 65% of users rely on online reviews for product purchase decision-making. As much as 86% consider other customers' reviews to be critical when making a purchase decision. eWOM has, therefore, become a perfect environment for sharing information and knowledge with people from all around the world (Delcea, Bradea and Paun, 2014). The result of eWOM prevalence is that the companies' image is affected by the information passing through the online environment according to Delcea, Bradea and Paun (2014). The image is strongly related to what is happening in the online environment.

Social media serves as an impromptu method of mining data ranging from interests to demographics. When done correctly, it can put a face on a faceless brand (Coon, 2017). Organizations can observe other companies within their industry and measure their performance against the competition using social media as further observed by Coon (2017). By nature, social media is alive, organic, and fluid. This attribute of social media makes it attractive to companies as they can take advantage of its real-time nature. Traditional methods of collecting data for assessing brand performance may be inaccurate at gauging brand image in customer-to-customer conversations as they have significant time lag (Pournarakis, Sotiropoulos and Giaglis, 2017). To further emphasize this argument, Colicev, Malsh and Pauwels (2018) point out that companies continue to focus on one-directional communications with obsolete communication tools like emails and flyers.

The rapid growth of networking sites means that social media has become the glue that holds together an organization's marketing campaign because it touches across each promotional medium (Judson, Devasagayam and Buff, 2012). Social media delivers a high level of brand relevance and is critical in resolving the ambiguity. It also reduces uncertainty in the brand image according to Judson, Devasagavam and Buff (2012). Some of the benefits of implementing social network tools have been noted by Blakeman and Brown, (2010) to be;

- acquiring new customers
- gathering feedback from consumers

- raising awareness of community efforts and connections

- building a community network, and

- fund raising

Dwibhashi (2015) referred to social media as a "huge perception warehouse" that has utility in various aspects of insurance. This observation makes eWOM conversations crucial in brand management, as Dwibhashi (2015) also suggested the utilization of social media for the betterment of brand perception and mapping. Valor (2009) noted that

"when used effectively, the internet is the best tool for improving reputation." (p.9) Effective online reputation management can, with a high degree of certainty, be asserted to be about community eWOM conversations, participation, and collaboration (Jones, Temperley and Lima, 2009).

Before the advent of social media, consumer's eWOM complaints were isolated, leaving the unhappy client as a single and ineffectual voice (Becker and Nobre, 2014). With the aid of viral networks, these single voices now can quickly garner the attention of a lot of other clients as happened in the Momentum case. Becker and Nobre (2014) also note that the concept of social interactions as a powerful marketing force is not new since Ryan and Gross (1943) had observed that conversations among buyers were more critical than marketing communications. However, companies have been struggling to understand how to influence social networks to their advantage. The importance of including social networks in an overall business strategy is crucial. In 2008, 61% of businesses considered the emergence of social media as having changed the way their organizations communicated. By 2009, this figure had risen to 73% (Wright and Hinson, 2009). Enabling the companies to assess brand image in social media will give them the capability to manage branding and actively monitor the communications.

Consumers' ability to communicate with each other has had a limiting effect on the control companies have over the content and dissemination of information. Vollmer and Precourt (2008) underscored this as when they concluded that in the era of social media

"consumers are in control; they have greater access to information and greater command over media consumption than ever before" (Always On, 2008, p. 5).

Social media eWOM networks can be dangerous as they can quickly engage thousands of members/viewers. It becomes clear that companies must be proactive with social media

communities establishing and maintaining strong communication ties. Being proactive requires appropriate tools to enable companies to assess and manage their brand image efficiently.

Foux (2006), noted that social media is a more trustworthy source of information regarding products and services than corporate-sponsored communications. This has been further confirmed by Bruhn, Schoenmueller and Schäfer (2012) as well as Kol, Levy and Nebenzahl (2017). As social network communities can significantly influence the company's brand image, it is crucial that companies monitor social sites in search of potential threats (Becker and Nobre, 2014). Consumer-to-consumer interactions reduce the high level of control over company-to-consumer messages that managers had become accustomed to making it necessary for them to move away from the old models of understanding relationship-building. They must influence the discussions taking place in social media (Kol, Levy and Nebenzahl, 2017) and this underscores the need for a better understanding of the social media phenomenon in business. In 2018, a survey by Spencer Stuart and Weber, a global public relations company, found that 34% of companies had experienced a social-media based reputation damage like the Momentum case. Surprisingly, 33% of the companies are unprepared for managing social network reputational threats.

This research investigates the social media mentions of six different size insurance companies in South Africa and how the company's brand image perception can be maintained online. While businesses are aware of the power that social networks can yield, companies remain unprepared to maintain fully interactive consumer relationships. Jones, Temperley and Lima (2009) noted that firms need to have well-developed online social media strategies. This has been confirmed by Schulze-Horn et al (2015) and more recently by Becker and Lee (2019). The researches by these authors highlight the need for businesses to update their knowledge on using the social media as part of their marketing toolbox. Strategies for social media management should collaborate between a company and the social media community to shape and protect their image as suggested by Becker and Nobre (2014).

2.7   Conclusion

The advent of consumer-generated content has taken most of the control of eWOM consumer-to-consumer conversations away from marketers. Consumers can now create and distribute advertising about brands (Deighton and Kornfeld, 2007). The result is that the management of brands in the era of social media is not only more difficult than before but also more critical.

While brand managers are unable to have full control of social media conversations, they should, ideally, still be part of it. If possible, managers should direct the conversations around their brand.

One challenging aspect of managing social media conversations is protecting the brand by keeping the eWOM as positive as possible (Litvin, Goldsmith and Pan, 2008). To achieve this objective, managers will need to use every tool at their disposal. This study aims to add one such tool in the manager's arsenal.

The next chapter, Chapter Three, defines and outlines the methodology. The chapter will also discuss and Social Mention, Chernoff faces, and data collection methods appropriate for the study.

CHAPTER 3
Research Methodology

3.1   Introduction

There is a considerable array of image measurement and analysis techniques ranging from quantitative multivariate to qualitative data collection, including information-theoretic analysis for scaled image data (Golden and Sirdesai,1992). Despite this broad range and irrespective of the analytical approach used, the capable display of multidimensional findings is often cumbersome and difficult to present.

Brand image is multidimensional (Golden, Albaum and Zimmer, 1987) and companies want to compare their image results with their competitors. However, evaluating consumer responses across multiple attribute dimensions to develop a comparative assessment of brand image consumer perceptions has serious challenges. The informational analysis may not bring out the intended interpretation and meaning (Jacoby and Mazursky, 1984). As was observed by Farshid, Chad and Nel (2012), interpreting a complex table can be difficult if the researcher wishes to assess brand performance and to determine how it fares against competitors' brands.

This study explored Chernoff's Faces in making readily visible the consumers' comparative image perceptions across insurance brands. Chernoff's faces are a cartoon-like caricature of the human faces developed through a series of mathematical and geometrical relationships (Golden and Sirdesai, 1992). The faces provide a method of visualization of brand image results in an easily understandable manner which helps brand managers, analysts and strategists to interpret the results of image data. The Chernoff's faces results can facilitate an immediate visual comparison across alternative image objects such as brands. The faces can also be used as the sole method of analysis or combined with other statistical techniques to assess the statistical effects, depending on the needs (Golden and Sirdesa,1992).

This chapter will discuss the sampling, data collection and construction of the Chernoff faces.

The chapter will also review the secondary data source, Social Mention, used in this study.

3.2   Research design

3.2.1 Research paradigm

The research was conducted within the positivist paradigm (Gubba and Lincoln, 1994:7). The positivist approach uses verified data received from senses and is based on the empiricism as narrated by Lincoln and Gubba (1985). In a positivist paradigm, the researcher uses observations to build an abstraction to describe the phenomenon under study as described by Lodico, Spauliding and Voegtle (2010). Positivism generates meanings from a dataset collected to identify patterns to build a theory or conclusion (Dudovsky, 2018).

3.2.2 Methodological approach

The research was a longitudinal study for 30 days from 22 March to 20 April 2019. As described by Zeger and Liang (1986), longitudinal data sets comprise repeated observations of the same outcome variables. Longitudinal studies are observational studies and the researcher conducts observations of the same subjects over a period. This view of longitudinal studies means that the researcher only records information about their subjects without manipulating the study environment (Ohly, et al., 2010). With longitudinal studies, the sample for the research is studied on several occasions to determine a difference or change.

Longitudinal studies go beyond a single moment in time and are ideal in establishing strings of events and are more likely to suggest cause-and-effect relationships (Ohly, et al., 2010). For this reason, longitudinal studies are conducted to analyse the evolving features or characteristics in a population.

In this research, the study was on the evolving social media brand images of insurance companies. Data was collected from Social Mention and used in Stata14 to construct the Chernoff's faces representation of the brand images.

3.3   Data Categories and sources of data

The study used secondary quantitative data from a website called Social Mention (www.socialmention.com). Social Mention is a social media search and analysis program that aggregates user-generated content from different social media platforms into a single stream of information (Kemp 2018). It regularly searches through social media electronically and calculates a brand's visibility through several metrics of the brand attributes. As noted by Farshid, Chan and Nel (2012), Social Mention allows the user to easily track and measure what

and how much people are saying about a brand in the social media landscape in real-time. It keeps track of what people are saying about specific issues and measures the frequencies of comments made (Chan, Pitt and Nel, 2014).

Social Mention falls into a category called listening tools and offers a free and paid service. The study will use the free service to obtain an authentic picture from broader usage. The paid service has fewer users compared to the free service. As the study was mainly focussing on the number of mentions rather than what was being said about each company, the free service gives more authentic results. The study also recorded social media user sentiments under the respective metrics for each of the sample companies.

3.4   Data sampling and participants

South Africa has about 40 active major short-term Insurance companies (Reserve Bank of South Africa Report; KPMG 2017; PwC, 2016). Out of the total population of 40 companies, more than 10 are specialized units offering one or two products and trading as a separate business unit. The business units may have a different name from the holding company. This then leaves about 24 full-range major insurance companies, according to Business Tech Report (2016).

The 24 full range-insurance companies will be considered as the population for the purposes of this research. As these companies vary in sizes from small to very large companies, the companies will be grouped into three segments of large, medium and small according to levels of Gross Written Premium using the South African Reserve Bank figures. Two companies will be randomly selected from each of the three segments to give a sample of six companies for the purposes of this research. This methodology ensures that the sample is representative of the full-range insurance companies operating in South Africa. The sample of six companies across the board is representative enough as it is about 25 percent of the population.

The selected insurance companies were allocated label identifiers A to F at random to avoid negative portrayal of any company.

3.5 Data collection method

3.5.1 Field procedures.

Daily mentions were recorded for the six insurance companies over 30 days from 22 March to 20 April 2019. The 30-day period was considered adequate for the study as the dynamic nature of social media is such that the image changes several times in 30 days. The time selection from the middle of one month to the middle of the next month meant that biases that could have been brought about by using a specific month were eliminated. The data on the insurance companies was collected by entering their brand names into the Social Mention website. The website calculates the mentions according to several metrics in all the social media sites. The study recorded strength, passion, reach and sentiment for each company. It also recorded positive and negative mentions.

A contingency table was created for each company with the variables as columns. Each day of the study was a separate row. A sample of the tables to be used is as illustrated in Table 3.1: Data table for Chernoff faces, below:

Table 3.1: Data table for Chornoff' faces

SOCIAL MENTIONS OF INSURANCE COMPANY A						
DATE	STRENTH	PASSION	REACH	SENTIMENT RATIO	POSITIVE SENTIMENTS	NEUTRAL SENTIMENTS	NEGATIVE SENTIMENTS
22-Mar	2	23	14	10.1	20	4	2
23-Mar	10	15	22	5.1	21	13	4
24-Mar	9	14	21	4.1	21	23	5
25-Mar	13	18	27	4.1	22	37	6
26-Mar	8	20	49	4.1	22	35	5
27-Mar	5	29	32	5.1	60	59	13
28-Mar	2	29	34	1.4	61	62	14
29-Mar	1	43	18	4.1	52	14	13
30-Mar	3	27	45	7.1	64	59	9
31-Mar	1	43	18	5.1	56	14	11
01-Apr	3	24	40	5.1	70	68	13
02-Apr	1	39	19	4.1	52	16	12
03-Apr	1	25	39	6.1	51	63	9
04-Apr	1	37	19	5.1	54	15	11
05-Apr	2	23	34	6.1	64	52	11
06-Apr	4	22	36	6.1	68	53	12
07-Apr	2	38	25	9.1	53	9	6
08-Apr	3	43	17	7.1	59	12	9
09-Apr	1	41	18	6.1	56	12	9
10-Apr	2	28	31	7.1	64	43	9
11-Apr	3	27	32	9.1	61	50	7
12-Apr	0	27	29	9.1	60	44	7
13-Apr	5	25	33	5.1	59	59	11
14-Apr	1	45	16	7.1	53	19	8
15-Apr	2	23	39	6.1	63	74	10
16-Apr	4	0	0	1	1	10	0
17-Apr	39	22	51	13.1	58	88	4
18-Apr	11	23	47	12.1	49	82	4
19-Apr	0	0	0	1.3	2	13	6
20-Apr	43	13.1	50	75	4	7	26
21-Apr	44	10.1	51	74	5	5	25

The tables were then used as data input for the creation of Chernoff's faces using Stata14. Chernoff's faces are part of data visualization techniques that present data in ways that accurately communicate information with minimal effort for comprehension (Lee and Reilly, 2003). They are part of glyph visualizations that assist in analysing and comprehending large volumes of multivariate data sets. Examining glyphs may help to uncover specific clusters of both simple relations and interactions between variables (Chernoff, 1973). Chernoff's faces are the creation of caricatures of human faces to illustrate different quantitative variables. The faces consist of two-dimensional line drawings that contain a variety of facial features with each variable representing a specific facial feature. The idea is to display multiple variables at once by positioning parts of the human face, such as ears, hair, eyes and nose, based on numbers in a dataset (Yau, 2010). A typical Chernoff face is as illustrated in Figure 3.1: Chernoff facial variations, below;
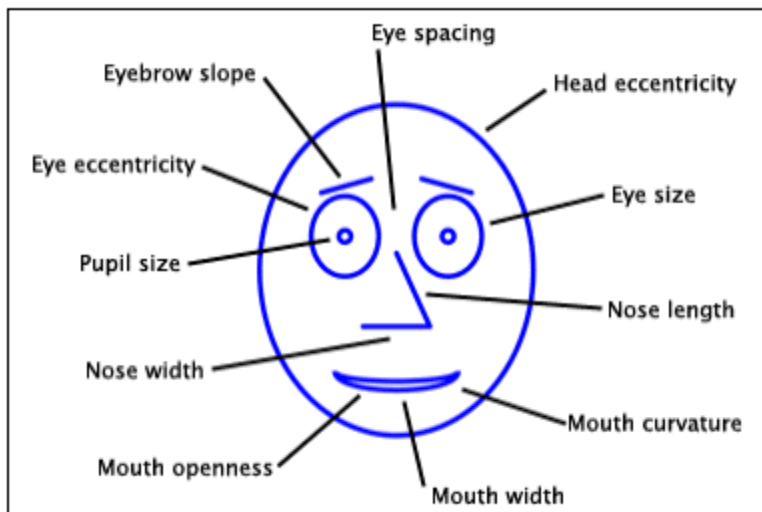

Figure 3.1: Chernoff's facial variations (from Spinelli and Zhou, 2004)

Each of the variables tracked in the study was assigned to a facial characteristic. Stata generated a face for each set of social mentions. Definitions and computations of each of the variables are as per Table 3.2: Variables for Chernoff facial features, on the next page:

Table 3.2: Variables for Chernoff's facial features

Metric	Definition	How Calculated/Meaning
Strength (% score)	The likelihood of brand discussions on social media	mention counts within preceding 24hours divided by the number of total possible mentions
Sentiment (Ratio)	The ratio of generally positive mentions to the number of generally negative mentions	The number of positive mentions divided by numbers of negative mentions into absolute terms. The study does not factor the neutral mentions
Passion (% score)	A measure of the likelihood that individuals are talking about the brand in social media will do so repeatedly.	A small number of individuals repeatedly talking about a brand will give a high passion score.
Reach (% score)	A measure of the range of influence	The ratio of the number of unique individuals talking about a brand as a percentage of the number of total possible mentions

According to Chan, Pitt and Nel (2014), generating Chernoff's faces is possible using up to eighteen distinct facial parameters. The parameters include the length of the nose, size of eyes, the radius of the face and peculiarity of the lower face, among others. Chernoff's faces make the clustering of multivariate data more natural to interpret. Comparing the images is also achieved quickly.

Controlling the facial features enables drawing detailed facial expressions. This feature allows for a greater variety of different looking faces, as illustrated in Figure 3.2: Chernoff faces minimum, average and maximum value illustrations, below.

Figure 3.2: Chernoff's face minimum, average and maximum values (from Leea, et al., 2013)

The image on the left depicts minimum values. The face looks sickly and thin with a pronounced eye slant, almost no hair, thin eyebrows and a thin nose. Average values come out as the middle image and all maximum values have a full crop of hair, big round eyes, chubby round face, smiley mouth, lovely fat nose and thick eyebrows as depicted in the right image.

3.5.2 Data collection instrument

The study was internet-based. Brand names of the insurance companies were entered in the Social Mention website at the same time each day for 30 days. The website then calculated the metrics for each brand and gave a summary of the percentage scores for the strength, passion reach and sentiment ratios for the insurance companies. A record of the totals of the sentiments constituted a table for the data, as shown in Table 3.1.

Data input for the creation of Chernoff faces using Stata14 used the tables created. Interpreting a complex table can be difficult for comparison purposes, but a human face depiction of the brand images makes interpretation and comparisons much easier (Farshid, Chad and Nel, 2012). The human faces provide a simple but powerful means of understanding and comparing the brand images. According to Raciborski (2009), the faces enhance the user's ability to detect and comprehend critical phenomena while also serving as a mnemonic for remembering significant conclusions. With the faces, it becomes easy to identify critical differentiating dimensions and detect longitudinal trends because people grow up reacting to faces all the time. In doing the Chernoff's faces, the assumption is that people can read people's faces easily in real life and so should be able to recognize small differences when they represent data (Yau, 2010). As pointed out by Mitra (2013), people are hard-wired from birth to read facial expressions.

3.6   Data Analysis

A statistical software tool, Stata, used the Chernoff's faces function to generate facial expressions from the metrics associated with the social mentions of the insurance companies. Stata is a statistical analysis software program that produces Chernoff faces to detect patterns, clusters, outliers and temporal trend (Stata Corp, 2009).

Researchers have long been exploring ways of displaying multivariate data and Chernoff (1973) investigated the use of human faces (Everitt, 1978; Cleveland, 1985). The purpose of this novel glyph visualization technique was a clustering of multidimensional statistical data (Jacob, 1983). As the brand image is a multi-dimensional concept, it necessitates the analysis and depiction of results across multiple objects for multiple image dimensions (Golden and Sirdesai, 1992).

Several other areas besides brand image in social media make use of Chernoff's faces. They have verifiable use in the political, psychological and medical areas (Wang, 1978). A published paper also records the use of the faces as a visual indicator of financial performance and a predictor of future results in various types of business. The use includes utilising the Chernoff faces as a visual indicator of past performance and current status (Huff, Mahajan and Black 1981). Most of the work with Chernoff faces has been conducted in statistics where the technique is used as a method of clustering multi-dimensional data (Jacob, 1983; Jacob, et al., 1976).

Consumer image perceptions of two mass-merchandise retail store chains, Sears and K-Mart in the United States of America (USA), have been mapped using Chernoff faces (Golden and Sirdesai, 1992). Dr Eugene Turner successfully captured the living conditions in the Los Angeles area in the USA by using Chernoff faces as its symbolism as confirmed by Tyner (1992).

In these other researches, the methodology involved gathering the data on the subject and then assigning a variable to specific facial features as recommended by Raciborski (2009). The difference with the approach in this study is that while the other studies were mainly for a point-in-time image, this study was a longitudinal study over a 30-day period. Images were shown relative to what the image was the previous day or days for the quick visualisation of any changes.

As in the other studies, the statistical score for each variable is assigned to represent a face feature (Raciborski, 2009). In this study, the strength of the mentions represented the face line. The score for the passion of the mentions determined the size of the eye. Reach determined the size of the mouth while sentiment ratio determined the nose line. The number of positive mentions gave the mouth curvature while negative mentions were used to determine the pupil size. The number of neutral mentions represented hair density. Table 3.3: Social mentions and facial features they represented, on the next page; clarifies the syntax.

Table 3.3: Social mentions facial features they will represent

Variable	Facial Feature
Strength	Face line
Passion	Eye size
Reach	Mouth size
Sentiment ratio	Nose line
Positive mentions	Mouth curvature
Neutral mentions	Hair darkness
Negative mentions	Pupil size

3.7   Research limitations

The focus of this study was on the quick visualization advantage of the image result and the longitudinal effects of social media on brand image. It was not an attribute-by-attribute comparison and does not give a micro-analysis of the resultant images but rather a quick technique for the depiction of comparative image data to highlight changes.

Chernoff faces, like other glyph-based methods, might not have value for detailed analysis, but are excellent for a brief overview (Yau, 2010).

3.8   Ethical clearance procedures

The research was purely observational, non-invasive and non-interactive. The data was reported on, only in a collated form and cannot be attributable to any individual as Social Mentions does not record the actual social media posts but the aggregated form of the posts.

Accordingly, an ethics application form for data only was submitted to the Rhodes Business School Ethics Sub-Committee for approval before the research was carried out.

3.9   Conclusion

A table of figures is not only hard to interpret and understand but also time-consuming. Chernoff faces can provide a quick and accurate technique for the depiction of comparative image data. They provide an easy to use tool for analysis and representation of relationships between brand images. While the underpinnings of Chernoff's faces are highly mathematical, the results allow for immediate visual comparisons across images. Brands must measure their visibility in the most popular social media relative to that of competitors.

The adoption of Chernoff's faces would be useful to insurance companies attempting to utilize social media to reach existing customers, gain new ones and build or maintain credibility and reputation.

Chapter 4 discusses the results of the study.

CHAPTER 4
Data analysis and results

4.1 Introduction

This chapter details the methodological steps followed in this research as described in Chapter 3. The chapter will lay out the chronology of the research from the sample selection, to the data collection and treatment and analysis of the results. In the process, the chapter will demonstrate that the correct methodology was applied rigorously and sufficiently to answer the research questions and therefore, offer viable solutions to the problem question.

In answering the problem questions, the research needed to have enough factual and reliable data. It also needed to apply the best practices identified from readings. While glyphs visualizations, including Chernoff's faces, have been used successfully for the presentation of multivariate data sets in other fields, a longitudinal study of social media brand images has not yet been applied to insurance companies in South Africa. The research, therefore, contributes a new and novel method of social media brand image mapping in turbulent markets.

This study provides a set of results for the possibility of assessing and managing brand image in social media using Chernoff faces over a period using longitudinal data thus confirming that RBT maybe still relevant in the fourth industrial revolution.

4.2 Sample size and selection

According to the PwC (2018) report, the South African insurance market continues to be dominated by large, competitive and well-capitalised local players. The four or five major insurance groups own, between them, almost 40 active short-term insurance companies. Of the 40, about 12 are boutique insurers offering specialized product lines. South Africa has around 28 full range insurance companies and this is the population of the insurance companies for this study.

The companies were classified into three segments of large, medium and small based on gross written premium. Two companies were randomly selected from each segment resulting in a sample of six insurance companies. This sample was considered representative of the population of 28 as it is just under 25%. The selected companies were then labelled A to F to avoid unintentional damage to the reputation of any company.

4.3   Data collection

Data was collected from Social Mention. Social Mention is a search and analysis platform that aggregates user-generated content into a single stream of information (Kemp, 2018). Social Mention is a freely available open-source site. Anyone can access the data. There is also a pay premium package service for more detailed analysis, but the study used the free service to benefit from broader usage.

As this was a longitudinal study, 30 days was considered enough to assess the longitudinal changes. The study recorded daily social mentions of the companies on the selected variables as advocated by Zeger and Liang (1986). Balanced longitudinal studies should have repeated observations of an outcome variable at the same time for all companies as stressed by Fitzmaurice (2017). The readings were, therefore, taken between 1900hrs and 1915hrs each day for 30 days. The metrics recorded were strength, sentiment ratio, positive mentions, negative mentions, passion and reach as recommended by Kemp (2018).

One challenge with daily readings at set times was that sometimes, at the time intended to readings, the website would be down. A specific listening tool was being for consistency. When the site was down, all the researcher could do was wait until it was working again. The spreadsheet of the daily readings forms the input data for generating the faces.

4.4   Data analysis.

Stata can now generate human facial features from the data and the study used the Chernoff command in Stata14 to link the facial expressions to the metrics associated with the companies.

As described by Raciborski (2009), Stata is a statistical software program that produces Chernoff faces to detect patterns, clusters and temporal trends. According to StataCorp (2009), the faces provide valuable information on subjective experiences.

4.5   Use of Stata

This study used Stata14. Stata, a blend word from Statistics and Data, is a high-end statistical and data analysis software package by StataCorp (2009). Raciborski (2009) published syntax for easy use with Stata to alleviate the difficulty of generating Chernoff faces that had been highlighted by Nel, Pitt and Webb (1994). Few user-friendly software packages offered control over the drawing and interpretation of cartoon faces before Raciborski's paper.

This study used criteria of strength, passion, reach, sentiment ratio, positive mentions and negative mentions to determine the most compelling images produced with a Stata implementation of a face-generating algorithmic analysis (Raciborski, 2009). Stata provides a relatively flexible environment for composing the Chernoff's faces. The Chernoff command, introduced by Raciborski (2009), is straightforward to use and does not require any statistical or computing skill. The faces were generated using Stata14 with default settings except where the seven variables determine certain facial features. All features were present on the Chernoff faces function of Stata14 even if the corresponding feature was not present in the data. Extremes in the different levels of mentions of a variable in the data represent the extremes in the feature corresponding to that variable in Stata14's default values (Lee and Reilly, 2003). This method means that similar social mentions data will share the same corresponding facial features and the faces may look alike.

4.6   Chernoff's Faces of social media images of South Africa Insurance companies.

While the focus of the research was the development of a brand image analysis over time, the results demonstrate that comparisons both within and between brands are quickly achieved using Chernoff's faces. Inter-brand comparisons allow immediate visualizations of different image attributes over time. They give a complete and quick analysis and understanding of the relationships between image perceptions in social media. The results indicate a promising approach to detecting substantial changes in the brand image in social media in time series. From the results, as shown in Figure 4.1 below; company A Full-face analysis, the changes in the brand image are evident after only a brief look. These can then be analysed to detect changes so that appropriate brand risk management tools can be applied.

Chernoff's faces are a visualization tool that helps decision makers understand rich databases, in this case, of customer conversations for marketing decision-making. The faces were a result of conversations about each brand and are therefore a close depiction of the brand image of each company. As observed by Chernoff (1973), the ability to relate faces to brand image carries a mnemonic advantage for the company. Chernoff's faces provide a quick and lucid image analysis compared to processing numerical results making Chernoff's faces very useful for image analysis (Golden and Sirdesai, 1992). Chernoff faces provides a valuable tool for the simultaneous portrayals of brands in multidimensional space and as observed by Farshid, Chad and Nel (2012), they have the potential to graphically explain differences between brands.
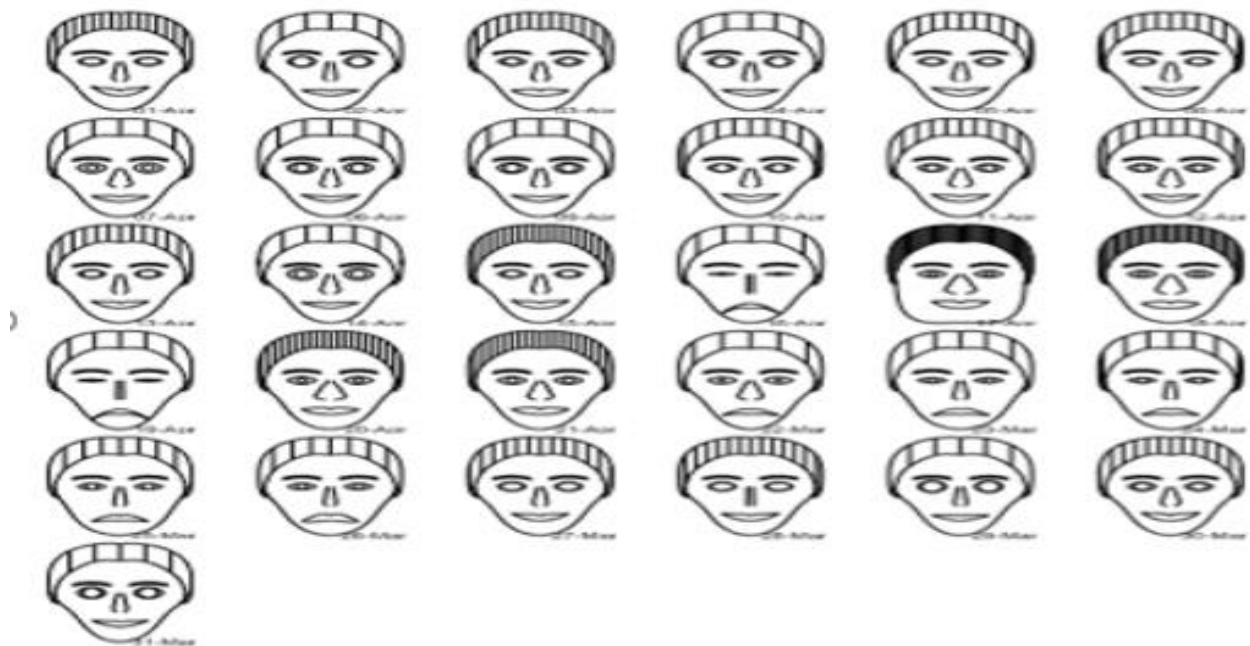
4.6.1 Company A

Figure 4.1: Company A-Full faces (own construct from Stata14)

For an insurance company, the aim should be to maintain a positive brand image to gain trust. In this respect, the results for company A for the period of the study show that except for the period 17- 21 April, where the company achieved near full value facial images, the rest of the time they only achieved a sickly look which would not instil confidence in clients. Even during the positive image days, the company still had near minimum value image results in between especially on 19 April. Company A did not come out as having a well-managed brand in social media although the brand could have been managed better in other traditional media.

Stata allows the generation of Chernoff half-faces as an option. The half-faces are generated in the same manner and using the same data as the full faces. The difference is that instead of the full face being depicted, a lateral half is used to display the resultant image. The half-faces are used to aid cluster analysis over time and can be particularly useful for comparisons. The analysis of the half faces for company A as per Figure 4.2; Company A-Half faces, below, show that the company needs to manage the brand more effectively in social media as the brand is not consistent. There is a need to influence conversations taking place in social media to attain consistency and a more positive image.

Figure 4.2: Company A-Half faces (own construct from Stata14)

The half-faces have added value in longitudinal studies, primarily where the study focuses on the characterisation of the changes over time are being studied. The proximity of the half-faces brings the outcome variables closer for ease of comparison without the distraction of integrating the whole facial image. Half-faces lead to a quick establishment of the factors that influence the change. The feature representing those factors are next to each other; hence, the changes are easy to detect. This easy detection makes half-faces a straightforward way to study change over time to bring out the longitudinal effects.

4.6.2 Company B

A desirable facial image has a full lock of hair on a chubby face with big round eyes and a smiling face. Company B did not achieve any of these as per Figure 4.3; Company B-Full faces, below. While there is consistency in the brand, the results show that the company needs to work at its social media communication strategy to improve the brand. The company achieved the desired image for only a few sporadic days on 30 and 31 March but had a poor brand image over the rest of the days. The favourable faces on the few good days may be spurious results. Disregarding them is an option. The changes in the brand image perceptions are, however, easy to track and observe throughout the study.
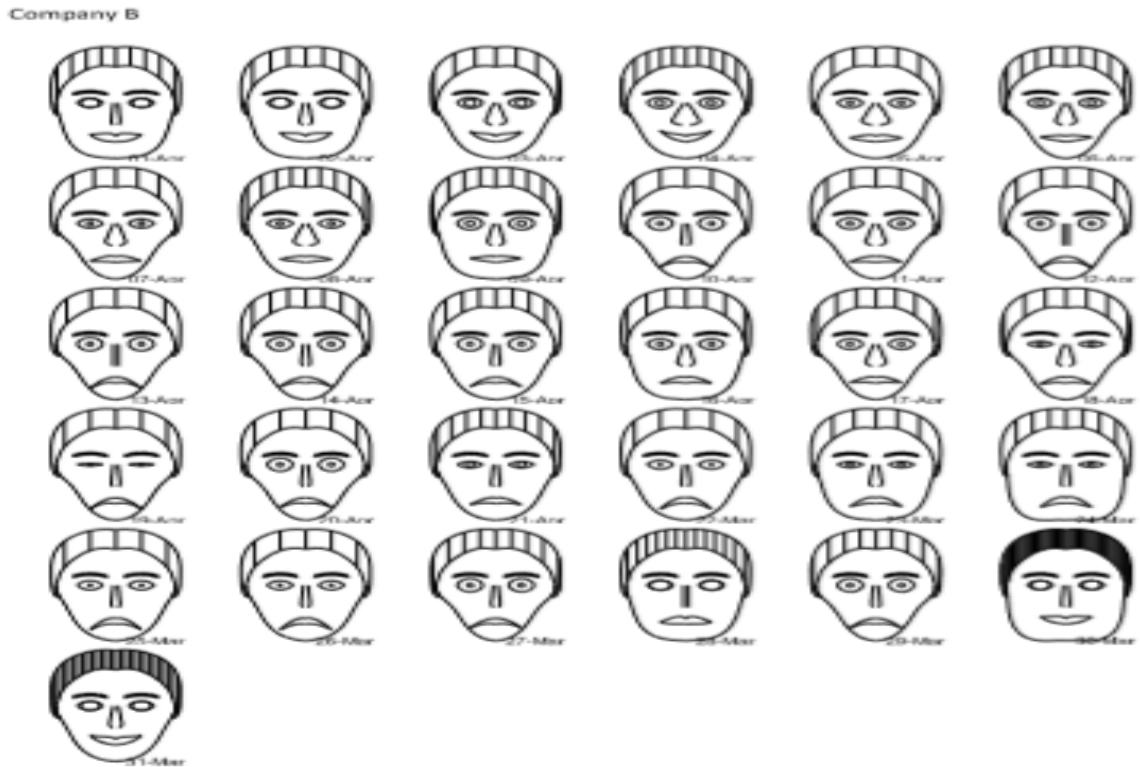
Figure 4.3: Company B-Full faces (own construct from Stata14)

An analysis of the half faces for the same company as per Figure 4.4; Company B-Half faces, below, reveal how unfavourable the brand image is in social media for the company. The density of the hair and the shape of the face are stand out features for easy recognition of the general health of the brand in social media. The hair density and shape of the face make analysis easy and immediate. Company B's brand shows an unappealing image with sparse hair and a generally thin face throughout.

While the research methodology was balanced with readings taken off Social Mentions at the same time every day (Fitzmaurice, 2017), the data collected was however not as balanced as seen in the differences in the resultant faces. The different faces can be an indicator of the dynamic and unstable nature of the social media environment. Brand image depends on what is being said about a brand daily with low correlation to what was said about the same brand previously. The images from data collected on 28, 29 and 30 March are all remarkably different from each other, yet these were consecutive days. The differences confirm the low correlation of the daily data and highlight the within brand changes. The results highlight the turbulent nature of the social media environment.
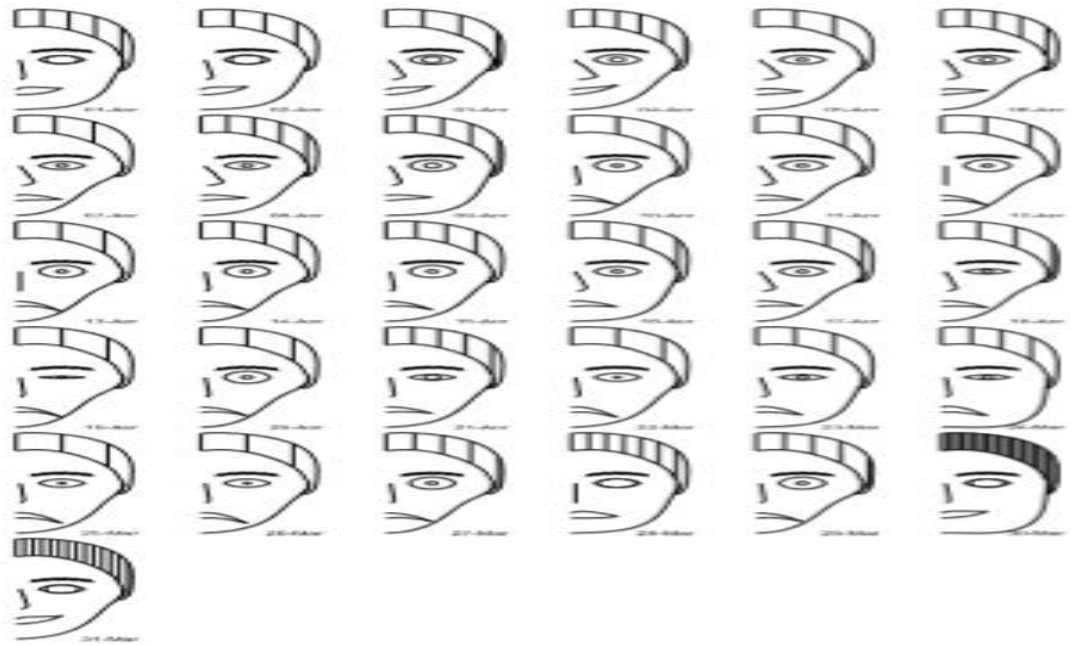
Figure 4.4: Company B-Half faces (own construct from Stata14)

4.6.3 Company C

Full Faces analysis

The stand-out issue on the brand images of company C as per Figure 4.5; Company C-Full faces, below, is the multiple-image results. The images show that the brand is very inconsistent has different image results almost daily. While the brand image generally looks healthier than company B, the level of inconsistencies means that the brand must be created and maintained in the social media if the company is to capitalize on the marketing opportunities in social media. According to Zhang (2015), brand image is the critical driver of brand equity. An inconsistent brand image has a negative influence on consumer behaviour. Insurance clients generally value consistency and the implied guarantee that a claim will be paid when a loss happens (Shreiber, 2017). The social media profile managed by a professional strategic marketing strategy with an integrated social media component should remain stable and happy. Company C has much work to do from the results of this research because the construction and maintenance of the brand image is prerequisite to brand management; according to Park, et al. (1986).
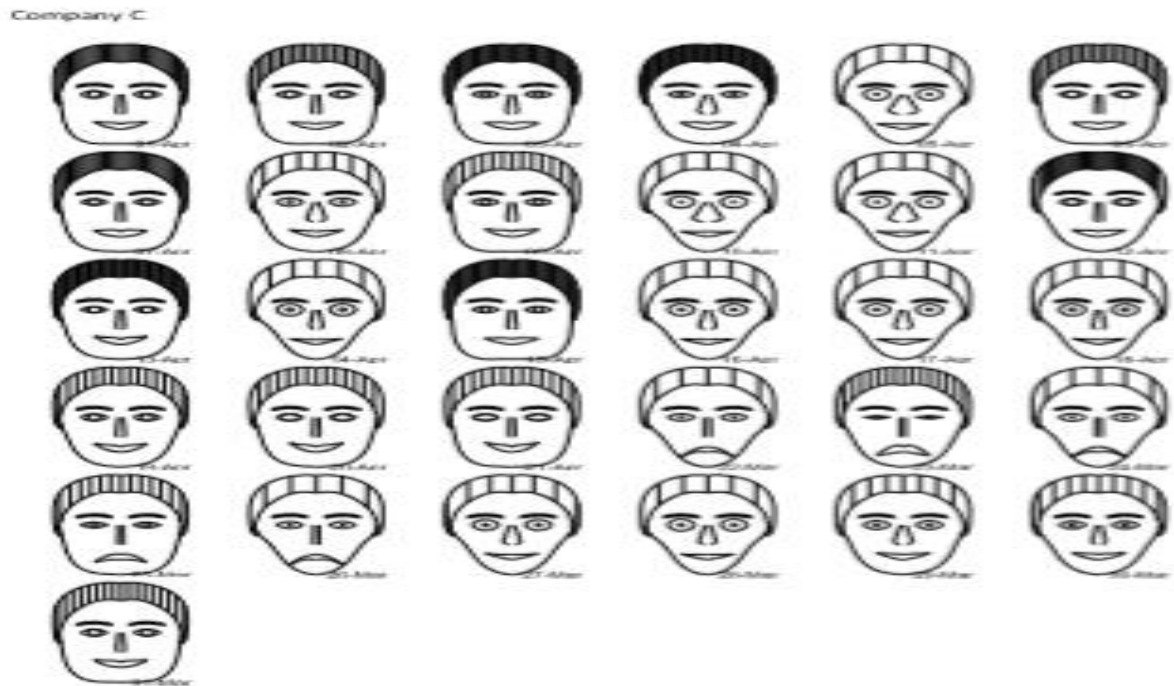
Figure 4.5: Company C-Full faces (own construct from Stata14)

Half-faces analysis.

The half-faces as per Figure 4.6; Company C-Half faces, below, also highlight the instability of company C brand. While looking happy and healthy, the images look like a comparison of different brands rather than same brand longitudinally. The images flip-flop from a maximum value image one day to a minimum value image the next day. Again, the idea is to maintain a brand image that influences customer loyalty directly. In this regard and particularly for insurance companies, stability is vital. Interventions to recover the problematic situation resulting in the instability is required expeditiously.

Figure 4.6: Company B-Half faces (own construct from Stata14)

4.6.4 Company D

The results show that company D maintained a stable brand for the period 1-15 April as per Figure 4.7; Company D-Full faces, below. The brand image was not only stable but also moderately healthy with median values in all the critical variables. Something negative may have happened around 15 April as the image took a knock and then remained consistently weak for the rest of the period of the study. Such a scenario would resemble the Momentum brand image following the Gana claim and the negative backlash resulting from their decision not to pay the claim.

The challenge for insurance companies is to maintain positive discussions about their brand in social media and not just high visibility. According to Litvin, et al. (2008); Schmallegger and Carson, (2008), one of the most challenging aspects of managing social media is to protect the brand and reputation by managing the role of electronic word-of-mouth and keeping it as positive as possible. The company should efficiently monitor social sites in search of potential threats as a brand management strategy.
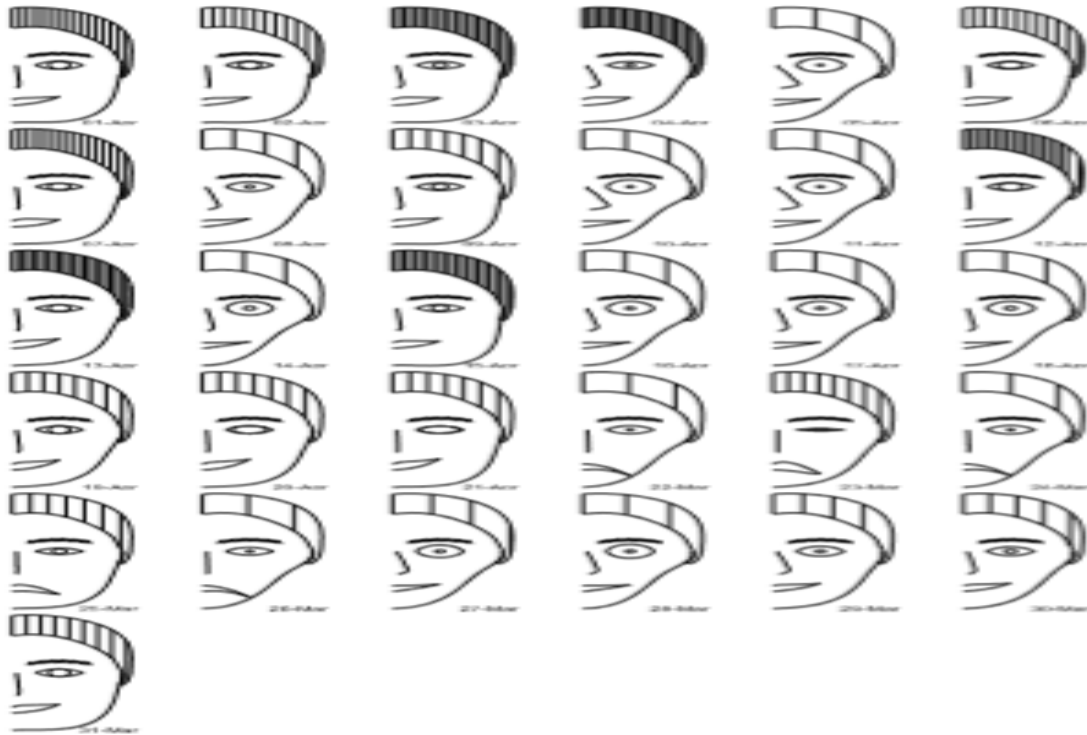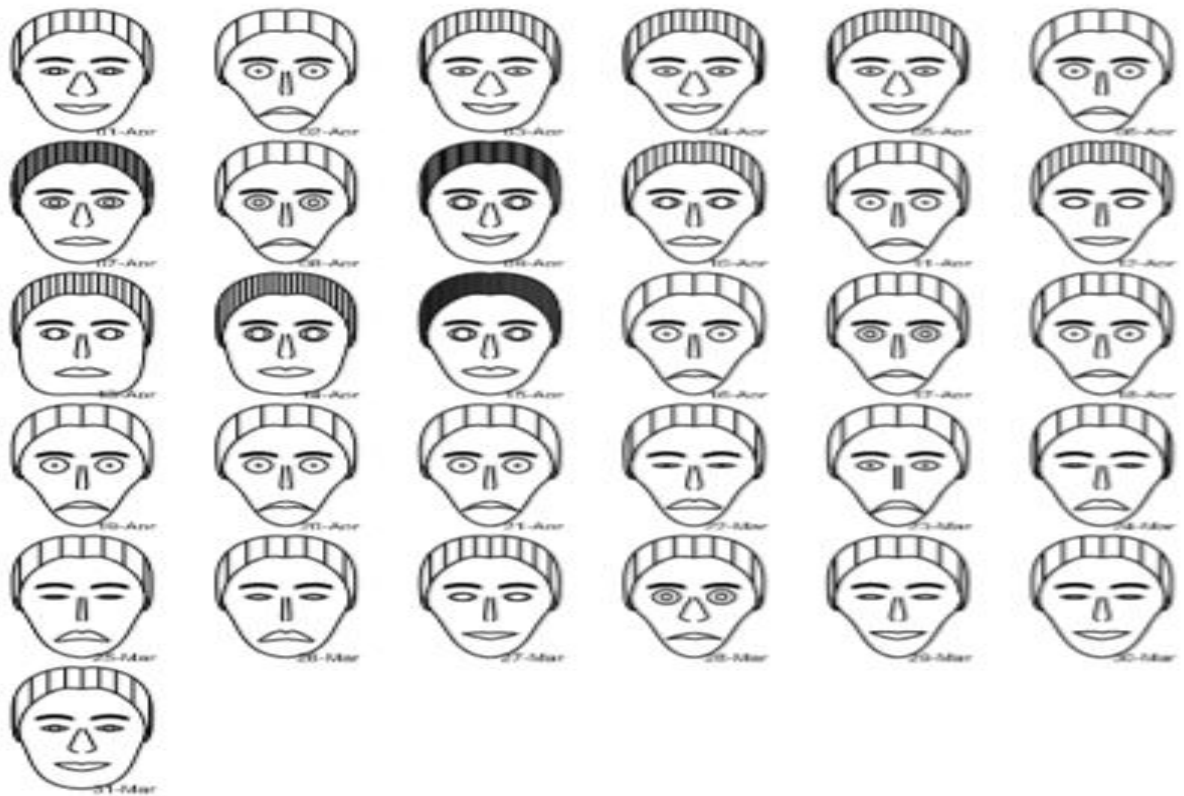
Company D

Figure 4.7: Company D-Full faces (own construct from Stata14)

4.6.5 Company E

Company E

Figure 4.8: Company E-Full faces (own construct from Stata14)

The Chernoff faces of the social media brand image of company E, as per Figure 4.8; Company E-Full faces, above, show that the company has a reasonably stable brand. It does not appear remarkably healthy or robust but does not swing between the minimum and maximum values as the other brands. The faces look reasonably happy and the brand image looks more likeable in the social media compared to the other brands under study. An absence of dense hair in the images indicate the absence of neutral mentions and this is a consistent theme throughout except for four days only during the study. These four days could be regarded as spurious results and disregarded. The company stakeholders are therefore split between positives and negatives with very few if any, neutrals. It is possible to convert neutrals as a market segment into promoters. Usually, neutrals have already been in contact with the brand and it is good to have a lot of them. The neutrals do not yet have any positive or negative opinion of the brand.

Insurance brands must carefully manage any negative sentiment expressed in social media. The task is to manage a positive discourse between consumer-to-consumer conversations and craft influence over consumer buying behaviour in real-time. The research has shown that facial representations provide a useful mechanism for portraying results of image analysis as the relevance of image perception for choice behaviour increases in social media.

4.6.6 Company F

While the resultant image for Company F is not the ideal social media brand image of a South African insurance company, it stands out as having the most favourable images of the companies in the study as per Figure 4.9; Company F-Full faces, below. The full hair density and the lean looking faces give the impression of a fit and agile organisation. This impression is vital in these days of health consciousness. Having a chubby face may be misconstrued as unfit as the research is about brand image perceptions. Having sparse hair also may have negative connotations as this is now generally regarded as a sign of poor health.

The shape of the face indicates that the company is not being mentioned strongly in social media. The shape of the face suggests that the company communications strategists should intervene to improve the strength of the mentions. The consistent dense hair in the images indicates a high volume of neutral mentions. These neutral mentions are desirable as the marketing strategists can focus on turning them into positive mentions. The brand is already well known, although clients do not have an opinion of it yet.

Figure 4.9: Company F-Full faces (own construct from Stata14)

The faces show a favourable brand image, except for the inconsistent eyes. As the eyes represent the passion of the brand, it indicates that there is no consistency in the passion for the brand. The company must work at improving the passion of the brand and try to keep it consistent. Schmallegger and Carson (2008) noted that the challenge is to keep eWOM communications as positive as possible and maintain passion high levels.

The purpose of a longitudinal study, as in this case, is to establish the dynamic nature of the brand image in social media and to bring out how it would evolve. In this regard, the study brought out the changes of the faces with the representations shifting from an almost full value face (on 5 April) to a minimum value face (between 22 and 26 March). There is, however, less uncertainty as the brand remained relatively stable during the study. It is, clearly, the same brand compared to the other companies in the study.

4.7   Discussion of the results.

The results of the study show that while a meaningful inter-brand comparison is possible, it would not be as useful as an analysis of the same brand showing the evolvement over time. A longitudinal comparison of brand images across six brands might not have value for detail analysis but could be excellent for a brief overview. A quick comparison across critical variables becomes possible by focusing on the specific facial feature represented by that variable.

A detailed analysis entails looking at each facial feature and associating it with the variable it represents. This approach can be time-consuming. There could be better solutions most of the times, as suggested by Yau (2010). As Lee and Reilly (2003), stated, glyph visualizations may lead to slow and inaccurate answers with low confidence. Mitra and Mitra (2013), however, still recommended the use of glyph visualization and particularly Chernoff's faces.

The strength of the faces visualizations is that while they may not explain issues, they suggest where to start looking for an explanation. The usefulness of Chernoff's faces is for the reader to interpret the corresponding images. Chernoff's faces provide a quick and articulate image analysis when compared to the process of analysing numerical results across each attribute (Golden and Sirdesai, 1992). As Mitra and Mitra (2013) observed, Chernoff's faces visualize a complex data set in a way that increases understanding of the data.

This study has shown that Chernoff's faces are also useful in longitudinal data sets. The rationale for conducting a longitudinal study is to characterise the change in an outcome variable of interest over time (Fitzmaurice, 2017). Chernoff's faces offer a convenient way of understanding the changing patterns. In longitudinal studies, the main goal is the characterization of the changes in the response variable as well as establishing factors that influence the change (Basu, 2015; Fitzmaurice, 2017). Chernoff's faces are ideal for this, as Lott and Durbridge (1990) observed, one of the best uses of the faces is in illustrating trends in the data.

The study focussed on social media mentions and sought to establish if the mentions can influence the brand image perception of the insurance companies. Understanding social media is vital for insurance companies, as the user-generated content can assist in making critical strategic decisions (Mukhopadhyay, 2018). By using Chernoff's faces, the study confirmed that social media mentions influence brand image perception of insurance companies. The results show different faces within and across brands. The different faces can be considered empirical evidence of a correlation between social mentions and brand image.

Chernoff's faces are also useful for making comparisons. A graphical representation of data is understood faster than columns of numbers in Table 3-1 above. Only a few seconds are required to establish the changes in the pattern compared to the time needed to read and comprehend columns of figures (Lott and Durbridge, 1990). The study tracked changes in the brand image as a result of the varying levels of social mentions. The results show that Chernoff's faces can easily display any changes within the brand as well as a comparison of the changes across

brands. In this regard, the faces are superior to the traditional numerical representation of data although numerical data may still be necessary as a secondary source of data for more detailed analysis (Lott and Durbridge, 1990).

Insurance companies in South Africa are now competing fiercely to convince the public to buy their products resulting in an "ad war" as described by Rizicka (2011). This study should assist insurance companies in gauging their competitiveness in the social media by tracking their brand image performance in real-time. They can then target their social media messages towards improving their image whenever it appears to be getting bad. Chernoff's faces provide a quick and lucid image analysis compared to processing numerical results making Chernoff's faces very useful in this regard (Golden and Sirdesai, 1992). As observed by Chernoff (1973), the ability to relate faces to brand image carries a mnemonic advantage for the company.

The South African short-term insurance sector's slow move to digital has curtailed its growth considerably according to Accenture (2018). Remedying this presents a significant opportunity to maximise existing business. Tools like Social Mention allow brand managers to keep track of the characteristics of the dimensions which insurance companies deem as critical to their company's success. Since social media is a dynamic stream of information, communication strategies need to continuously evolve to maintain relevance and effectiveness (Chan, Pitt and Nel, 2014).

This study provides a tool for insurance companies to understand their customers and move towards digital to improve customer expectations. It also enables the effective management of the shifting perspectives of a brand over time and the continuous assessment of a company brand (Urde, 2016). Insurance is about the provision of intangible services. This classification means that insurance companies must put more emphasis on branding because a strong company brand ensures trust in their services (McDonald and Payne, 2006).

4.8   Conclusion

It is possible that a hierarchy of features exists as Morris, et al. (1999) stated. The eye size and eyebrow slant are the easiest to perceive and to compare. These are useful in establishing the sentiments that can be associated with a brand. Hair density also makes it easy and quick to compare the general health of an image brand. The most critical variables must be used to map the facial features that are easy to perceive as well as those that align closely with the variable. Allocating the strength syntax to the hair density of the brand establishes the strength of the

brand quickly. Alternatively, the shape of the face, or facial line, may also be used to depict the strength of the brand.

The research proves the possibility of doing a longitudinal comparative analysis of a brand image in social media using Social Mentions subject to the careful allocation of syntax to critical variables. The resultant Chernoff faces are useful for gauging how a brand is performing against competitor brands. The faces are not only useful for a quick and a brief overview where decision making is required, but they are also fun and can be delightful to work with, according to Yau (2010).

A better comparative analysis was achieved for the assessment of the same brand over time than for the inter-brand analysis. It was easy to detect where the brand image took a drastic turn for the worse and by linking this to the happenings in the insurance company, it can be easy to establish the company actions causing reputational damage to the brand. Conversely, a brand image suddenly improving can indicate activities that the company is performing well.

Insurance companies must change their antiquated business models as pointed out by Schreiber (2017). The findings of this research have important implications for how insurance managers can make sense of the evolving communications environment in which they operate. Online eWOM is gaining importance and more emphasis must be given to online communications as social media sites continue to grow (Hewett, et al., 2016). For an insurance company, the idea must be to go where the market is. They need to attract young clients, and these are moving to social media. The study provides a tool for a quick assessment of how the brand image is performing in social media. It has also shown that the use of Chernoff faces presenting multivariate data mined in social media is a viable option as Pournarakis, Sotiropoulos and Giaglis (2017) emphasized the need to introduce a new method for producing influential factors that govern brand equity assessment, by mining and analysing consumer perceptions from online social media.

The result enables insurance companies to use this method to monitor, integrate and leverage social media. They can now understand social media communication feedback loops by using this method. The results of the study also make for a better understanding of the nature of the modern brand communications environment, learn what drives the brand image in social media and discover what strategies work best (Cespedes, 2015).

CHAPTER 5
Conclusions and contributions

5.1 Introduction

Online eWOM amplify communications in social media and have now joined traditional brand communications vehicles such as advertising, press releases and news stories. This new addition requires managers to rethink brand communication strategies as online communications are becoming increasingly central due to the explosive growth of social media (Hewett at al, 2016). Brand communication strategies must now incorporate the social media environment and adapt to this disruption.

Companies need a better understanding of brand-related communication in social media and consumers' perception of their brand image. As customer-brand engagement progressively shifts to digital domains, understanding social media effects in branding has become a vital issue (Colicev, Malshe and Pauwels., 2018). A better understanding of a company's brand image perceptions in social media will equip the company with dynamic capabilities, which, in turn, will result in a sustainable competitive advantage within the RBT.

The RBT considers a company brand as a strategic resource and one of the most valuable assets that a company possesses (Lee and Fayrene, 2011). The theory takes a company-centric approach in explaining company performance and marketers focused on influencing consumer sentiment through advertising. Social media has shifted the control from marketers to consumers. Jones, Temperly and Lima (2009) observed that with the advance of the social web, business reputation is no longer only in the hands of the management team.

Insurance is a demanding service-based industry that depends on perception and therefore needs to underscore brand management (Dwibhashi, 2015). As insurance companies in South Africa have the dual challenges of a lack of growth and low uptake by young clients (KPMG, 2018) it is critical for insurance companies to be able to assess how their brand is performing in social media where their market is. This assessment must be done in real-time because social media is a fast-moving business environment and the content evolves continuously.

The novel approach of using Social Mention on a longitudinal study and then Chernoff faces to display the multivariate data provides a tool to assist in resolving these challenges. This

method provides an efficient and quick analysis of a brand over time as this study has showed. The faces make it easy to establish how people perceive a brand in comparison with the competitors' brands

Previous studies in this respect had focused on a point in time assessment of a brand image. This longitudinal study extends the usefulness of previous studies by giving a time series analysis, which is more appropriate in the fast-moving business environments like social media.

5.2   Recommendations

Representing data through visual features means that some data will be much more visible than others. It is recommended that a careful selection of the syntax for the variables be made for the faces to be representative of the company mentions. It is critical to allocate critical variables to crucial features like eyes, eye-brow slant, the shape of the face and hair density. Such syntax results in the resultant faces having more relevance.

Lott and Durbridge (1990) highlight that people are trained to look at eyes from childhood. This means that eyes have the most significant visual impact. The mouth also has a profound impact because of its emotional content for the viewer. Whether the mouth curvature turns up or down has significant relevance. The outcome variables deemed most important should, therefore, be assigned to the eyes and shape of the mouth to obtain a meaningful result. According to Lott and Durbridge (1990), changes in most of the other features have much less impact than the eyes and the mouth.

Brands whose names are common usage names like Discovery and Momentum may have the number of their mentions distorted by mentions aimed at the other associations with the name and not necessarily the insurance company. Social mention aggregates all mentions relating to Discovery, yet some may refer to the TV channel or Medical Aid when the study is on insurance companies. The same applies to companies with several operating divisions under a single group name. Mentions relating to other divisions may distort a study on a specific division. Old Mutual is an example of such a generic brand name that can make studying a specific unit inaccurate. In such cases, it is recommended to use the full name of the operating unit in Social Mention to avoid these distortions.

Some brands have global operations and it was not established in the study if the mentions were only from South African social media users or were from a global audience. The internet

is borderless. As the study focused on South Africa, social media mentions from the global audience could have distorted the resultant images. A comparative analysis would, therefore, be inaccurate where some companies have global operations while others are local. For comparative purposes, companies should operate in the same geographical areas to achieve meaningful comparisons. The same applies to companies operating locally but with a different reach. Some companies operate nationally while others are only regional or provincial. It is recommended that such differences be considered when comparing brand images of different companies.

Some insurance products require more internet use than others. Such products will naturally have more mentions as clients go online to transact on them. Funeral insurance, for example, does not need much interaction on social media. The typical funeral insurance customer is unlikely to be active on social media. This explains why insurance companies still advertise funeral insurance a lot in the traditional media. Comparisons between companies should, therefore, also consider the insurance services offered by the companies.

For an understanding of the changes within the brand, a longitudinal study with Chernoff's faces serves the purpose. For comparison across brands, the parameters must be refined more than was done in this study if the results are to be reliable.

 The study had a sample of six insurance companies and tracked changes in their brand image longitudinally. It may not be easy to, meaningfully, track changes across such a high number of companies. This may lead to inaccurate comparisons. It would be recommended to limit the sample size to two or three to make a meaningful comparison.

5.3   Key contributions

The theoretical key contribution is in developing and refining a model for assessing brand image in social media to show the longitudinal effects. The findings have important implications for how insurance managers can make sense of the evolving communications environment in which they operate. Social media eWOM is gaining prominence and more emphasis should be given to online communications. The study contributes significantly to the insurance companies' ability to manage their brand images in social media. Brand communication strategies can now incorporate social media into the traditional channels because the traditional consumer sentiment measures are becoming less predictive of business outcomes due to the market shift towards social media.

The study also underscores the relevance of social media for the highly competitive insurance industry in South Africa. Creating and sustaining the right brand image is currently a significant and costly challenge for insurance companies in South Africa. While Chernoff's faces have been used to establish a static brand image in several sectors, this longitudinal study contributes to studying the change over time and understanding the factors that are influencing the change. The study also enables the companies to quickly and accurately compare their brand image to those of their competitors. The company brand image is a critical market-based asset that must be managed carefully.

5.4   Limitations and weaknesses of the study

The study used data mined from social mention. The study will have limitations as it is challenging to verify the authenticity of the mentions. In social media, the measure is simply the engagement via the number of reads, retweets, likes or shares. False information spreads rapidly in social media as there is an average 12-hour delay between the start of the spread and that of its debunking information (Kumar and Shah, 2018). An unverified and not yet debunked rumour has a high potential of becoming viral. This development will continue to reduce the reliability of using social media data as it is becoming increasingly difficult to distinguish between false and real information. This failure to screen the information adds to the limitations on the study.

The study also considered the total mentions in social media without adjusting for natural biases. Satisfied people are not as inclined to share their positive experiences compared the disgruntled ones who tend to voice their negative experiences on social media (Rachna and Khajuria, 2017). There will, naturally, be more negative mentions than positive ones. The result is that the images may reflect this negativity with a fatal effect on brand equity.

Another constraint of the study is that it does not breakdown the data. Demographic variables in the data, such as gender, age, income, education and occupation, are not considered reducing the results of the study to quick comparative purposes only and not useful for impact analysis.

 The study used secondary data from Social Mention. If there is a weakness in the methods used by Social Mention, then the weaknesses will also be transmitted to the results.

Chernoff's faces are useful for brief overview only and not for any objective indicators. They will be of limited use where detailed analysis and comparisons are required. Kosara (2007) remarked that differentiating between and comparing features is difficult. Yau (2010) also

pointed out that converting facial features to unrelated variables is cognitively impossible, even though recognizing emotions in facial features is inbred. This means that while Chernoff's faces are suitable for infographics, they may not be as useful for exploratory work as observed by Oldford (2017).

Lurie and Mason (2007) noted that Chernoff faces may result in biased decisions by focusing attention on a limited set of variables, thereby increasing the salience and evaluability of less diagnostic information. Biased decisions may encourage inaccurate comparisons. Insights from Chernoff's faces suggest a more formal analysis and further analysis of the numerical data (Lott and Durbridge, 1990; Lurie and Mason, 2007).

The best use of Chernoff's face appears to be in detecting the changes by making comparisons with previous faces (Lott and Durbridge, 1990). It would be more meaningful if there were a benchmark or a reference face. The resultant faces would then be compared against the benchmark. Lott and Durbridge (1990) also remarked that isolated faces are of limited value as one needs to establish what the face features represent beforehand.

The Chernoff's faces technique does not currently allow an audience to read values attributed to certain features based on multivariate data. The conclusion is that there is more research on face perception needed to understand better the relative contribution of perceptual and cognitive factors in determining the effectiveness of a visualization (Lee and Reilly, 2003). This conclusion adds to the limitations of the study as there is a possibility of individual differences having an impact on the semantic perception of facial features as there is no universally likeable face.

5.5   **Areas for further study**.

More research could be done to analyse the text of the interactions that users have concerning their brands in social media. The results of secondary data research such as this combine with primary data collection in the target markets of the brands concerned as a way of confirming the reliability and validity of data gathered by services such as Social Mention.

Changes in the socialising and buying behaviour of people due to social media are among the most intriguing aspects in the contemporary marketing and with insurance companies engaging more and more in social media marketing further studies are needed to better understand the involvement and engagement of people in brand communication on social media. User-generated content on social media has a significant impact on brand equity. Marketers need to

ensure that they manage social media communication well and that the target population always receives the right communications.

5.6   Conclusion

The study set out to establish how to leverage social media and work with it for insurance companies in South Africa to build a positive image in real-time. The challenge was to establish what is being said about the insurance company and the image the stakeholders have of the company. It was also necessary for an insurance company to gauge its social media profile and establish its social media visibility relative competitor brands.

With poor sales figures over the past ten years and aging clients, the problem for insurance companies in South Africa is to attract younger clients. Studies indicate that these younger clients are active on social media. Social media is also becoming an integral part of business hence the need for companies to incorporate social media into their communications strategies.

The study provided a useful tool for insurance companies to assess their brand image by taking social mentions and then using Stata to generate Chernoff's faces which give a quick and easy way of detecting any changes in the brand image. Chernoff's faces method of displaying multivariate data had been used in other fields for a point-in-time analysis. This novel method of a longitudinal study adds to the usefulness of the method making it ideal in a field as fast changing as social media.

REFERENCES LIST;

Aaker, D. and Joachimsthaler, E., 2000. The brand relationship spectrum: The key to the brand architecture challenge. California Management Review, 42(4), pp8–23.

Accenture, 2018. South African Short-Term insurance going didhttps://www.accenture.com/za-en/insight-south-african-short-term-insurance-going-digital.

Amit, R. and Schoemaker, P.J.H., 1993. Strategic assets and organizational rent. *Strategic Management Journal.*

Barney, J., 1991. Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), pp.99–120.

Barney, J.B., 1986a. Organizational Culture: Can It Be a Source of Sustained Competitive Advantage? *Academy of Management Review*, 11(3), pp.656–665.

Barney, J.B., 1986b. Strategic Factor Markets: Expectations, Luck and Business Strategy. *Management Science*, 32(10), pp.1231–1241.

Barney, J.B., 1986c. Types of Competition and the Theory of Strategy: Toward an Integrative Framework. *Academy of Management Review*, 11(4), pp.791–800.

Barney, J.B., 1995. Looking inside for competitive advantage. *Academy of Management Perspectives.*

Basu, A., 2015. Longitudinal Data Analysis. Published 9 December 2015 by Vidya-Mitra [online] Available at: https://www.youtube.com/watch?v=ooMM0CYSxA4 Accessed 10 July 2019.

Becker, K and Lee, J W., (2019). National Culture Characteristics for Managing Corporate Reputation and Brand Image Using Social Media. [online] Available at: 10.1108/S1064-485720190000018006. Accessed 10 October 2019.

Berry, L.L., 2000. "Cultivating service brand equity," Journal of the Academy of Marketing Science, Vol. 28 No. 1, pp. 128-37.

Bharadwaj, A.S., 2000. A Resource-Based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation. *MIS Quarterly*.

Blakeman, K. and Brown, S., 2010. Social media: essential for research, marketing and branding. The American Society for Information Science and Technology, 37(1), 47-50

Botha, E. and Pitt, L., 2011. How sociable ? An exploratory study of university brand visibility in social media. 42(2), pp.43–52.

Botha, E.; Farshid, M. and Pitt, L., 2011. South African Journal of Business Management, (42) 2

Braganza, A., Brooks, L., Nepelski, D., Ali, M. and Moro, R., 2017. Resource management in big data initiatives: Processes and dynamic capabilities. *Journal of Business Research*, 70, pp.328–337.

Brogan, C., 2010. Social media 101: tactics and tips to develop your business online. Hoboken: John Wiley and Sons.

Bruhn, M., Schoenmueller, V. and Schäfer, D., 2012, "Are social media replacing traditional media in terms of brand equity creation?", Management Research Review, Vol. 35(9) pp. 770-790. [online] Available at https://doi.org/10.1108/01409171211255948 Accessed 10 October 2019.

CapeTalk., 2019. *Widow Denise Ganas can either head to court or lodge appeal with insurance ombud.* [online] Available at: <http://www.capetalk.co.za/articles/327867/widow-denise-ganas-can-either-head-to-court-or-lodge-appeal-with-insurance-ombud> [Accessed 17 Feb. 2019].

Cespedes, F, V., 2015, "Is Social Media Actually Helping Your Company'sBottomLine? " HarvardBusiness Review,(March3), [online] availableathttps://hbr.org/2015/03/issocial-media-actually-helping-your-companys-bottom-line. Accessed 21 April 2019.

Chan, A., Pitt, L.F. and Nel, D., 2014. "Let's face it: Using Chernoff faces to portray social media brand image" Corporate Ownership and Control, (11)4 pp609-615

Chernoff, H., 1973. The use of faces to represent points in k-dimensional space graphically. Journal of American Statistical Association, 68, pp. 361-368.

Colicev, A, Malshe, A. and Pauwels, K., 2018. Social Media and Customer-Based Brand Equity: An Empirical Investigation in Retail Industry, Journal of Adm. Sci. (55) 8, [online] Available at https://www.researchgate.net/publication/327750793 Accessed 18 February 2019

Constantinides, E.E., 2006. The marketing mix revisited: towards 21st-century marketing. Journal of Marketing Management, 22(3/4), pp.407-438.

Coon, J., 2017. "Social Cues: How to strike the right tone with social media" Utah Business Magazine, November 2017 p44.

Daniels, L.-A., 2018. *#Momentum's decision to pay R2.4m claim illustrates the power of social media | IOL News.* [online] IOL. Available at: <https://www.iol.co.za/news/opinion/momentums-decision-to-pay-r24m-claim-illustrates-the-power-of-social-media-18207245?utm_source=email_share&utm_medium=email> [Accessed 17 Feb. 2019].

Davidson, H., 2002. The Committed Enterprise, Butterworth-Heinemann, Oxford

Davis, D M., Gordon and Getz on the South African Law of Insurance (1993), 4th edition, Juta: Cape Town

De Chernatony, L. and Cottam, S., 2006. Internal brand factors driving successful financial services brands. *European Journal of Marketing*, 40(5–6), pp.611–633.

Deighton, J. and Kornfeld, L., 2007. "Digital Interactivity: Unanticipated consequences for markets, marketing and consumers," Harvard Business School Working Paper, 08017

Dichter, E.,1992. What's in an image. Journal of Product & Brand Management 1(2):54-60 https://doi.org/10.1108/10610429210036799

Dierick, I. and Cool, K., 1989. Asset Stock Accumulation and Sustainability of Competitive Advantage. *Management Science*, 35(12), pp.1504–1511.

Doherty, N.F. and Terry, M., 2009. The role of IS capabilities in delivering sustainable improvements to competitive positioning. *Journal of Strategic Information Systems*.

Dwibhashi, V., 2015. Social Media Weds Indian Insurance. *Journal of the Insurance Institute of India*, [online] 3(2), pp.28–41. Available at: <http://esc-web.lib.cbs.dk/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=110872942&site=ehost-live&scope=site>.

Farshid, M., Chan, A. and Nel, D., 2012. A sweet face man: Using Chernoff faces to portray social media wine brand images. *International Journal of Wine Business Research*, 24(3), pp.183–195.

Fitzmaurice, G., 2017. Applied Longitudinal data analysis. O'Brien Institute for Public Health. Published on 19 January 2017, [online] Available at: https://www.youtube.com/watch?v=Iijbv3jPP_4. Accessed 10 July 2019

Foux, G., 2006. Consumer-generated media: Get your customers involved. Brand Strategy, (May 8) pp 38–39.

Golden, L.L. and Sirdesai, M., 1992. "Chernoff Faces: a Useful Technique For Comparative Image Analysis and Representation," Advances in Consumer Research 19 Association for Consumer Research, pp 123-128.

Golden, L.L., Albaum, G. and Zimmer, M.R., 1987.The numerical comparative scale: An economical format for retail image measurement. Journal of Retailing, 63(4) pp 393-410

Grant, R.M., 1991. The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation. *California Management Review*, 33(3), pp.114–135.

Grover, V., Chiang, R.H.L., Liang, T.P. and Zhang, D., 2018. Creating Strategic Business Value from Big Data Analytics: A Research Framework. *Journal of Management Information Systems*, 35(2).

Guba, E. and Lincoln, Y., Competing Paradigms in Qualitative Research, Handbook of qualitative research, pp. 105-117. Thousand Oaks, CA: Sage.

Gupta, M. and George, J.F., 2016. Toward the development of a big data analytics capability. *Information and Management*, 53(8), pp.1049–1064.

Gupta, S., Lehmann, D and Stuart, J., 2004. Valuing customers. Journal of Marketing Research, 41(2), 7–18

Hewett, K., Rand, R., Rust, R, T. and van Heerd, H, J., 2016, "Brand Buzz in the Echoverse" American Marketing Association Journal of Marketing, Vol. 80 (May 2016), pp1–24

Hsu, D.H. and Ziedonis, R.H., 2013. RESOURCES AS DUAL SOURCES OF ADVANTAGE : ENTREPRENEURIAL-FIRM PATENTS. 781(June 2011), pp.761–781.

Huff, D, L., Mahajan, V. and Black, W. C., 1981. Facial Representation of Multivariate Data. Journal of Marketing 45(Fall), pp 53-59

Jacob, R. J. K., 1983. "Investigating the space of Chernoff Faces" Recent Advances in Statistics. New York: Academic Press, pp449-468.

Jacob R, J. K., Egeth, H, E. and Bevan, W., 1976. The face as a data display, Human Factors.18 pp 189-200.

Jacoby, J. and Mazursky, D., 1984. "Linking Brand and Retail Images-Do the potential Risks Outweigh the Potential Benefits?" Journal of Retailing,69(summer), pp 105-122

Jolly, A., 2001. Managing Corporate Reputations, London: PRCA.

Jones, B., Temperley, J. and Lima, A., 2009. Experts say Verizon FiOS TV is the Future of TV Service. iFiberCompany. [online] available at http://www. ifibercompany.com/Verizon-FiOS- TV-Future.asp Accessed 8 May 2018.

Khajuria, D. and Khajuria, L., 2017. A Study of User-Generated Content on Social Networking Sites and its Impact on Consumer Based Brand Equity Constructs; Global Journal of Management and Business Research: E-Marketing (17)1

Kapferer, J-N., 1994 Strategic Brand Management: New Approaches to Creating and Evaluating Brand Equity. Free Press, New York.

Kapferer, J-N., 2004. The New Strategic Brand Management, Kogan Page, London.

Kaplan, A.M. and Haenlein, M., 2010. Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, 53(1), pp.59–68.

Kapoor, K.K., Tamilmani, K., Rana, N.P., Patil, P., Dwivedi, Y.K. and Nerur, S., 2018. Advances in Social Media Research: Past, Present and Future. *Information Systems Frontiers*.

Kemp, S., 2018. We are social, Digital in 2018: World's Internet users pass the 4billion mark. [online] Available at: https://wearesocial.com.blog/2018/01/global-digital-report-2018. Accessed 6 May 2018.

Kim, G., Shin, B., Kim, K. and Lee, H.G., 2011. IT Capabilities, Process-Oriented Dynamic Capabilities and Firm Financial Performance. *Journal of the Association for Information Systems*.

Kol, O., Levy, S. and Nebenzahl I, D,. 2017. Consumer Values as Mediators in Social Network Information Search. [online] Available at: DOI: 10.1007/978-3-658-15220-8_1 Accessed 10 October 2019.

Kotler, P. and Armstrong, G., 2010. Principles of Marketing: Global and Southern African perspectives. Cape Town: Pearson Education, South Africa.

Kosara, R., 2007. A Critique of Chernoff Faces[online] Available at https://eagereyes.org/criticism/chernoff-faces Accessed 19 April 2019.

Kozlenkova, I. V., Samaha, S.A. and Palmatier, R.W., 2014. Resource-based theory in marketing. *Journal of the Academy of Marketing Science*, 42(1), pp.1–21.

KPMG, 2018. *The South African Insurance Industry Survey*.

Kumar, S. and Shah, N., 2018. False Information on Web and Social Media: A Survey. (1)1 (April 2018), 35 pages. [Online] Available at: https://doi.org/10.1145/nnnnnnn.nnnnnnn Accessed on 14 July 2019.

Lee, M. D. and Reilly, R. E., 2003. An Empirical Evaluation of Chernoff Faces, Star Glyphs and Spatial Visualizations for Binary Data. Australasian Symposium on Information Visualisation, Adelaide, 2003. Conferences in Research and Practice in Information Technology, Vol 24.

Lee, J., Jeong, H., Kima, M., Kima, K. and Sona, Y, S., 2013. Good bank evaluations by Chernoff face analysis using SAS macro faces. The Korean Journal of Applied Statistics, 26(6), 959–975 [online] Available at: http://dx.doi.org/10.5351/KJAS.2013.26.6.959 Accessed 9 June 2019

Lin, Y. and Wu, L.Y., 2014. Exploring the role of dynamic capabilities in firm performance under the resource-based view framework. *Journal of Business Research*.

Lincoln, Y. and Guba, E., 1985 Naturalistic Inquiry. London; Sage.

Litvin, S.W., Goldsmith, R.E. and Pan, B., 2008. "Electronic word-of-mouth in hospitality and tourism management," Tourism Management, Vol. 29, pp. 458-68.

Liu, Y. and Lopez, R.A., 2016. The impact of social media conversations on consumer brand choices. *Marketing Letters*, 27(1), pp.1-13.

Lockett, A., O'Shea, R.P. and Wright, M., 2008. The development of the resource-based view: Reflections from birger wernerfelt 1. *Organization Studies*, 29(8–9), pp.1125–1141.

Lott, J.A. and Durbridge, T.C., 1990. Use of Chernoff Faces to Follow Trends in Laboratory Data. Journal of Clinical Laboratory Analysis 4, pp 59-63.

Lurie, N. H. and Mason, C. H., 2007. Visual Representation: Implications for Decision Making. Journal of Marketing, 71(1), 160–177. https://doi.org/10.1509/jmkg.71.1.160

Markhamt, J.W., n.d. *Regulating the 'Too Big to Jail' Financial Institutions*. [online] Available at: <https://perma.cc/H3CP-SSB4]>.Accessed 12 April 2019

Mata, B.F.J., Fuerst, W.L. and Barney, J.B., 1995. Information Technology and Sustained Competitive Advantage : A Analysis IT and Competitive Advantage : Previous Literature. *MIS*.

McDonald, M. and Payne, A., 2006. Marketing plans for service businesses.2nd ed. London: Elsevier

McKinsey & Company. 2014, "The Digital Tipping Point: McKinsey Global Survey Results," [online] available at http://www.mckinsey.com/business-functions/ business-technology/our-insights/the-digital-tipping-point-mckinseyglobal-survey-results.Accessed March 1, 2019.

Mitra, A. and Mitra S., 2013, Applied Multivariate Analysis. NPTEL [online] Available at https://www.youtube.com/watch?v=Ig2qF5BC8Fg   Accessed 22 April 2019.

Morris, C, J., Ebert, D, S. and Rheingans, P., 1999. An Experimental Analysis of the Pre-Attentiveness of Features in Chernoff Faces, Proceedings Applied Imagery Pattern Recognition, pp. 12–17,

Mukhopadhyay, S., 2018. Opinion mining in management research: the state of the art and the way forward. *OPSEARCH*.

Ohly, S., Sonnentag, S., Niessen, C. and Zap, D., 2010, Diary Studies in Organizational Research, Journal of Personnel Psychology 9 (2), pp. 79-93

Oldford, R, W., 2017. Non-Cartesian representations Beyond three dimensions. Published on 14 November 2017, [online] Available at: https://www.youtube.com/watch?v=ZIVk7stbrYg Accessed 10 July 2019

Pang, B. and Lee, L., 2008. Opinion {Mining} and {Sentiment} {Analysis}. *Found. Trends Inf. Retr.*

Park, C.W., Jaworski, B.J. and MacInnis, D.J., 1986. Strategic Brand Concept-Image Management. Journal of Marketing, 50, 135-145. http://dx.doi.org/10.2307/1251291

Parkington, M., Leigh-Jones, N., Longmore, A. and Birds, J., MacGillivray & Parkington on Insurance Law, 8th Edition, Sweet and Maxwell: London

Payne, A., Storbacka, K., Frow, P. and Knox, S., 2009. Co-creating brands: Diagnosing and designing the relationship experience. *Journal of Business Research*, [online] 62(3), pp.379–389. Available at: <http://dx.doi.org/10.1016/j.jbusres.2008.05.013>.

Platon, O., 2010. An Analysis of the Social Media Presence of the Brands. Thesis. pp.192–201.

Porter, M.E., 1980. *Competitive.Strategy.-Techniques for Analyzing Industries and Competitors: with a New Introduction.Techniques for Analyzing Industries and Competitors: with a New Introduction*.

Pournarakis, D.E., Sotiropoulos, D.N. and Giaglis, G.M., 2017. A computational model for mining consumer perceptions in social media. Decision Support Systems, [online] 93, pp.98–110. Available at: <http://dx.doi.org/10.1016/j.dss.2016.09.018>.

Pütter, M., 2017. The Impact of Social Media on Consumer Buying Intention. *Journal of International Business Research and Marketing 3(1)*. [online] Available at: http://dx.doi.org/10.18775/jibrm.1849-8558.2015.31.3001 Accessed on 10 October 2019.

PwC Africa Insurance Survey, 2017/2018.

Qukula, Q., 2018. *Widow Denise Ganas can either head to court or lodge appeal with insurance ombud*. [online] Capetalk567. Available at: <http://www.capetalk.co.za/articles/327867/widow-denise-ganas-can-either-head-to-court-or-lodge-appeal-with-insurance-ombud> [Accessed 18 Feb. 2019].

Raciborski, R., 2009. "Graphic representation of multivariate data using Chernoff faces" The Stata Journal 9(3) pp. 374–387

Reinecke, MFB., van der Merwe, S., van Niekerk J, P. and Havenga, P., General Principles of Insurance Law, 2002. LexisNexis: Durban

Ruzicka, A., 2011. Insurers are ad war. RiskSA: the intermediary publication, August. pp.104-06.

Rohan, M.J., 2000. "A rose by any name: the values construct," Personality and Social Psychology Review, Vol. 4 No. 3, pp. 255-77.

Rumelt, R, P., 2007, Interview with the McKinsey Quarterly 2007, "3 Questions for Professor Richard P Rumelt" Online available at https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/Strategys-strategist-An-interview-with-Richard-Rumelt?cid=other-eml-shl-mip-mck&hlkid=15a4e930feda4ca98a474af9f6345b92&hctky=11328805&hdpid=eaf2edfc-8faa-4840-81db-20fb6829c103.   Accessed 18 April 2019.

Schulze-Horn, I & T, Torben & Dirkes, Sven & Hüer, Lucas & Rose, Maximilian & Tietmeyer, Raphael & Constantinides, Efthymios., 2015. Business Reputation and Social Media: A Primer on Threats and Responses. Journal of Direct Data and Digital Marketing Practice. 16. 10.1057/dddmp.2015.1.

Shange, N., 2018. *Momentum will pay murder victim after social media outrage.* [online] Times Live. Available at: <https://www.timeslive.co.za/news/south-africa/2018-11-20-breaking--momentum-will-pay-murder-victim-after-social-media-outrage/> [Accessed 17 Feb. 2019].

Sirgy, M.J., 1985. Using Self-Congruity and Ideal Congruity to Predict Purchase Motivation. Journal of Business Research, 13, 195-206. http://dx.doi.org/10.1016/0148-2963(85)90026-8

Social Mention. Official Website, online available at: www.socialmention.com.

Spinelli, J, G. and Zhou, Y., 2004. Mapping Quality of Life with Chernoff Faces.

Srivastava, R., Shervani, T. and Fahey, L., 1998. Market-based assets and shareholder value: A framework for analysis. Journal of Marketing, 62(1), 2–18.

Steenkamp, B., 2017. *The South African Insurance Industry Survey 2017. p49.*

Tyner, J., 1992. Introduction to Thematic Cartography. Englewood Cliffs, NJ: Prentice-Hall.

Urde, M., 2016. The brand core & its management over time. Journal of Product and Brand management vol 25(1) pp 26-42 (online) available at: https://doi.org/10.1108.JPBM-05-2015-0875 Accessed on 13 February 2019

Vollmer, C. and Precourt, G., 2008. Always on: Advertising, marketing and media in an era of consumer control. New York, NY: McGraw-Hill.

Wang, H.M.D. and Sengupta, S., 2016. Stakeholder relationships, brand equity, firm performance: A resource-based perspective. *Journal of Business Research*, [online] 69(12), pp.5561–5568. Available at: <http://dx.doi.org/10.1016/j.jbusres.2016.05.009>.

Wang, P. C., 1978. Graphical Representation of Multi-Variate Data, New York; Academic Press

Wang, Y. and Hajli, N., 2017. Exploring the path to big data analytics success in healthcare. *Journal of Business Research*, 70, pp.287–299.

Wernerfelt, B., 1984. A resource-based view of the firm. *Strategic Management Journal*, 5(2), pp.171–180.

Wernerfelt, B., 1989. From critical resources to corporate strategy. *Journal of General Management*, 14, pp.4–12.

Wernerfelt, B., 2013. *Small forces and large firms: Foundations of the RBV. Strategic Management Journal,*

Wood, L., 2000. Management Decision Brands and brand equity: definition and management. *Management Decision Journal of Consumer Marketing Marketing Intelligence & Planning Journal of Services Marketing*, 38(5), pp.662–669

Xu, Y., Zhang, C. and Xue, L., 2013. 'Measuring product susceptibility in online product review social network,' Decision Support Systems, no. 33, pp. 156-166.

Yau, N., 2013. How to visualize data with cartoonish faces ala Chernoff, [Online] Available at https://flowingdata.com/2010/08/31/how-to-visualize-data-with-cartoonish-faces Accessed 20 April 2019

Zhang, Y., 2015. The Impact of Brand Image on Consumer Behavior: A Literature Review. *Open Journal of Business and Management*, 03(01), pp.58-62.

Appendices

Appendix A – Ethics clearance confirmation.

Ethics Application RBS 2018/09/84
1 message

Noel Pearse <N.Pearse@ru.ac.za>   Mon, Feb 18, 2019 at 11:54 AM
To: Daniel Gudu <danielm.gudu@gmail.com>

Dear Daniel

This is to confirm that your ethics application (RBS 2018/09/84) to the Business School Ethics Committee was received. As noted in the minutes of the meeting of 9th November 2018, "Any applications to use publically available and anonymised DATA ONLY, can be submitted to the Chair for screening, and to confirm that no further application is needed".

Your application met this requirement, and approval was thereby granted you to conduct your research.

Regards

Prof Noel Pearse: Chair: Rhodes Business School Ethics sub-Committee (2016-2018)