

‘AN EXPLORATORY STUDY ON CONSUMER BEHAVIOUR IN RESPONSE TO THE WATER CRISIS WITHIN FRESNAYE, CAPE TOWN’.

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RESM8419 RESEARCH REPORT

BA HONOURS IN STRATEGIC BRAND COMMUNICATION

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Re: Approval of BA Honours qualification Proposal and Ethics Clearance

Your research proposal and the ethical implications of your proposed research topic were reviewed by your supervisor and the campus research panel, a subcommittee of The Independent Institute of Education's Research and Postgraduate Studies Committee.



- Your research proposal posed no significant ethical concerns and we hereby provide you with ethical clearance to proceed with your data collection.
- There may be some aspects that you still need to address in your proposal. If this is the case, feedback will be provided to you in writing. You will need to address these aspects in consultation with your supervisor.



In the event of you deciding to change your research topic or methodology in any way, kindly consult your supervisor to ensure that all ethical considerations are adhered to and pose no risk to any participant or party involved. A revised ethical clearance letter will be issued in such instances.

We wish you all the best with your research!

Yours sincerely,



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I hereby declare that the Research Report submitted for the BA Honours in Strategic Brand Communication degree to The Independent Institute of Education is my own work and has not previously been submitted to another University or Higher Education Institution for degree purposes.

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ABSTRACT

The water drought within Cape Town, South Africa is a crisis which many did not see coming. In 2015, citizens within the Mother city were informed of the impending water crisis and the possibility of having to ration water usage, which has now, three years later, become a reality. Within this study, the researcher selected the Fresnaye neighbourhood within Cape Town to review, examine and analyse for an eight month duration. During this eight-month period the researcher conducted a literature review correlating to the research question, an online digital survey as well as in-depth interviews. This was done in order to better understand how the increased level of water restrictions within Cape Town have affected the decision making and consumer behaviour patterns of water consumers within the chosen neighbourhood. Initially, the researchers perception of the Fresnaye neighbourhood was the complete opposite of what she found when analysing the research methodology. Below, readers will be exposed to how an affluent neighbourhood has embraced the water crisis and its restrictions by adapting their households water consumer behaviour.

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CHAPTER ONE: INTRODUCTION

1.1 TITLE:

'An exploratory study on consumer behaviour in response to the water crisis within Fresnaye, Cape Town'.

1.2 BACKGROUND AND CONTEXT:

Within this research, an exploratory study on consumer behaviour in response to the water crisis within Fresnaye, Cape Town will be conducted in order to better understand how the increased level of water restrictions within Cape Town have affected the decision making and consumer behaviour patterns of water consumers.

The drought in the Western Cape first started in 2015 which stemmed from a severe water shortage across the entire Western province, mainly distressing the city of Cape Town. With the increased level of water restrictions due to decreased dam levels and lower rainfall patterns, the municipality announced plans for 'Day Zero.' Meaning, the supply of municipality water would be shut off and citizens of Cape Town would have to collect water at specific and designated water collection points around the city. Cape Town would be named the first major city in the entire world to have run out of water if day Zero does ever get implemented. According to Piotr Wolski (2018), this has resulted in the city facing its worst ever water shortage in eighty-five years.

Water restrictions have been implemented across the whole region which all consumers have been requested to and should abide to, in order to diminish the problem at hand. Consumers have had to change their household routines in order to make this lifestyle the new norm. This research study aims to gain insight on the residents of Fresnaye, an affluent suburb of Cape Town, and how they have been effected by the water shortages within their households. Consumer behaviour patterns play a major role in the assembly of the start of the drought as well as the redemption in order to stop 'Day Zero' fast approaching by saving water and following the implemented water restrictions. These patterns will be highlighted in order to view how they have had to change as well as the disregard of many consumers.

1.3 RATIONALE:

The most current topic in the Western Cape is the water shortage and crisis they are facing. The new norm of its population is constantly ensuring that they are sticking within the restrictions guidelines and are doing all they can to help reduce water usage. This topic is very relevant, as being a resident in Cape Town, it is of vital importance to be aware and educated on the situation. The researcher has changed the way she lives by adapting her water usage and wants to further investigate if her neighbours are doing the same.

Although the following research proposal will focus on the water crisis in Cape Town South Africa, it is of vital importance for consumers worldwide to be conscious of their water consumption and behaviour patterns. Countries worldwide are currently ramping up their research capacity when it comes to water resources. These various countries have faced rapid industrialisation and population growth which has created unsustainable water resources practises. Interestingly, according to Elsevier (2011) since the year 2011, the number of published water sustainability research studies have increased by a high number of 30%, annually. This ensures the researcher that the topic of water sustainability with regards to consumer behaviour is current and extremely relevant worldwide.

The researcher will be conducting an exploratory study on consumer behaviour patterns in order to evaluate whether or not the residents of Fresnaye have applied strategies within their households to help diminish the dire crisis the area faces. As this crisis is current, the researcher wants to instil the relevance on how important it is to not disregard the water shortage crisis. A study such as this can help investigate whether or not the population of Fresnaye are doing all that they can in identifying their attitudes and implementations towards the situation.

1.4 RESEARCH PROBLEM:

With the increased level of water restrictions due to decreased dam levels and lower rainfall patterns, Cape Town, South Africa is currently facing its worst drought in eighty-five years. (Piotr Wolski, 2018) The Municipality of Cape Town has warned citizens of day zero shortly approaching. Water restrictions have been implemented and households all over Cape Town have had to change their daily routines in order to suit the new norm. This study aims to gain insight on the residents of Fresnaye, a suburb in Cape Town, and how they have been effected by the water shortages within their households, with regards to their consumer behaviour patterns.

1.5 RESEARCH PURPOSE:

The aim of this study is to investigate the correlations between consumer behaviour patterns, pre and post water crisis within Cape Town, South Africa. The researcher will be investigating residents of Fresnaye, a neighbourhood in Cape Town, in order to highlight their consumer behaviour patterns, innovations and / or disregard and contempt of the requirements in line with the current level of water restrictions and associated limitations of usage.

1.6 RESEARCH QUESTION:

Have residents of the suburb of Fresnaye changed their consumer behaviour patterns in respect of adjusting their lifestyles and consumptions patterns for potable water to assist the City of Cape Town with the water crisis we currently face?

1.6.1 SUB QUESTIONS:

- Are you aware of the current water crisis Cape Town and the Western Cape are currently facing?
- What have you done in your household to diminish the amount of water usage on a daily basis, if anything?
- With the increase in levels of water restrictions from the City of Cape Town, have you invested in available innovations and technology to help reduce your household water consumption?

1.7 OBJECTIVES:

- To understand the consumer behaviour patterns and trends amongst the population of Fresnaye with regards to the water crisis.
- To identify what the average household in Fresnaye has implemented, if anything, to assist in reducing their water consumption as a whole.
- To identify what innovative solutions and/or installations residents of Fresnaye have applied in their households.

1.8 CONCEPTUALISATION:

I. Water Shortage Crisis:

The lack of adequate, potable, accessible water resources large enough for a region. Currently, Cape Town, South Africa does not have enough water resources to provide for its citizens.

II. Day Zero:

The chosen day that the Municipality of Cape Town will turn off the taps in order to control the amount of water the citizen's use. In turn, little or no municipal water at all will be released to households and industries. Instead, there will be designated 'water areas' where the citizens will need to go to collect a specific amount of water per person.

III. Innovations:

The practice and accomplishment of producing a new method, product, idea etc. in order to benefit a specific issue.

IV. Impact:

The marked effect the water shortage crisis that Cape Town, South Africa is currently facing has on its citizens.

V. Water Restrictions:

The limitations of water usage implemented by the South African Municipality. These provide its citizens with information on how much water they are able to consume on a daily basis. Currently, the population is supposed to be using a maximum of 50 litres, each, per day.

VI. Municipal Water:

In the majority of developed countries, processed and preserved water, meeting drinking water standards, is provided to households and industries who use underground pipes. The Municipality of the City controls the water usage and can stop it at any given time.

VII. Potable Water:

This is water which is safe to use for cooking purposes as well as drinking purposes. Potable water is free of any contamination which may harm the user but does not contain enough saline in it in order to be mineral water. This can also be referred to as drinking water.

VIII. Consumer Behaviour:

The study the researcher will conduct on individuals who live in the Fresnaye area with access to water resources. This includes the consumer's mental, behavioural and emotional responses that precede or follow the usage of water.

I. City Water Maps:

A website where one is able to punch in any street name or area within Cape Town and all the houses will appear. On each house a coloured dot appears and the colour correlates with how much water the household currently uses on a monthly basis.

1.9 LIMITATIONS:

1.9.1 QUANTITATIVE LIMITATIONS:

The most predominant limitation, whilst this research study was being conducted, was the time constraint. The researcher was given a specific due date as to when the study had to be completed. Due to the research proposal commencement being in February 2018, which

is the Summer season in Cape Town, the water restrictions were at its worst, with day zero being indicated for implementation in April 2018. As time went on though, Cape Town fortunately received more rainfall and day zero was postponed to early 2019. Throughout the eight months in which the research study was conducted, data changed due to the unforeseen weather patterns. The more rainfall Cape Town faced, the less daunting the water crisis became. In turn, this meant that the findings from the interviews and online surveys were consistent to the current water crisis situation, rather than those of the past.

The findings of consumer behaviour patterns of the households in the Suburbia area, Fresnaye were not anticipated as they did not represent water consumers in the whole of Cape Town. These findings were relevant to the Fresnaye area, and this area only. These will help to improve the water consumption in the area, as the household owners became more aware of what their neighbours were doing differently in respect of their water consumption behaviours. This limitation was prevalent, as the researcher did not generalise her findings to other suburbia areas.

Another limitation which the researcher faced was using extra resources to analyse the data. In order to analyse the data pulled from the in-depth interviews and online survey questionnaires, the researcher needed to utilise graphs to represent the findings. This required that the researcher spent extra time when analysing the findings to ensure precision.

1.9.2 QUALITATIVE LIMITATIONS:

All in-depth interviews and online surveys were asked and answered in the English language. A limitation which arose in this, was language barriers. Although the Fresnaye area is predominately English, the researcher only understood this language. Although, if the interviewee did not understand English, this could have resulted in miscommunication, or worse, a lost sample. Due to the in-depth interviews being conducted as one on one, it allowed the researcher to gain an abundance of information. Whilst the interview took place, the researcher utilized audio recordings of the interviewee's answers on her cellular device. The researcher then transcribed these answers onto a document, word for word. This was extremely labour intensive due to the length of the answers being mostly extensive. This was due to the individuals tending to speak more as there was no effort on their part with respect having to write their actual answers on paper.

1.10 ETHICAL CONSIDERATIONS:

Ethical concerns within a research study are extremely prevalent. Their implications could reach further than the individual if not dealt with cautiously. The researcher's data collection methods included an anonymous online questionnaire survey which had less ethical concerns to the personal in-depth interviews which were being conducted. Below are the following ethical concerns which were focused on throughout the data collection process as well as the research document as a whole.

Before conducting the interview, the researcher explained to the interviewees what the research study was about and how they would be contributing to it in order to ensure honesty and integrity. They were well informed before the process began which allowed them to decide whether or not they wanted to participate or not.

It was of vital importance that the interviewees were satisfied with the location they were interviewed in. If not, the researcher then proceeded to offer them an alternative location such as a coffee shop in the area. Due to the water crisis being a sensitive topic with regards to water consumption, the interviewees were assured that their persona would remain anonymous, unless stated otherwise, to guarantee confidentiality.

Any recorded information obtained from the interviewees, in written form, video and audio recordings were in agreement with the requests of the interviewee. Due to the research study being publicly shared the researcher provided all interviewees with letters confirming their permission. This assured that they were fully aware that their answers shared would be published anonymously. This falls under responsible publication. (Maree, 2016)

This study will benefit both the researcher as well as the household owners as it would give them an overall idea of what other households were doing and could help provide them with information on how to further their water saving schemes and better their consumer behaviour patterns.

Throughout the research study the researcher did not share her personal feelings or beliefs on the topic when communicating with respondents. This created less chance of bias and created a more comfortable environment. On conclusion, the researcher ensured all hard copy information obtained during the research phase was destroyed to ensure confidentiality and safety. (Maree, 2016)

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION:

Within this chapter the researcher will explain the two types of theoretical foundation she has chosen to be the groundwork of the research study. This theoretical foundation will be the guideline to how the rest of the research study will be conducted and based upon. The researcher will also explore and examine past and current articles and journal entries which correlate to the research question. Within this review it describes, summaries, assess and clarifies five different but similar literature. A relationship between the five different literature papers will be recognised and communicated in relation to this research study.

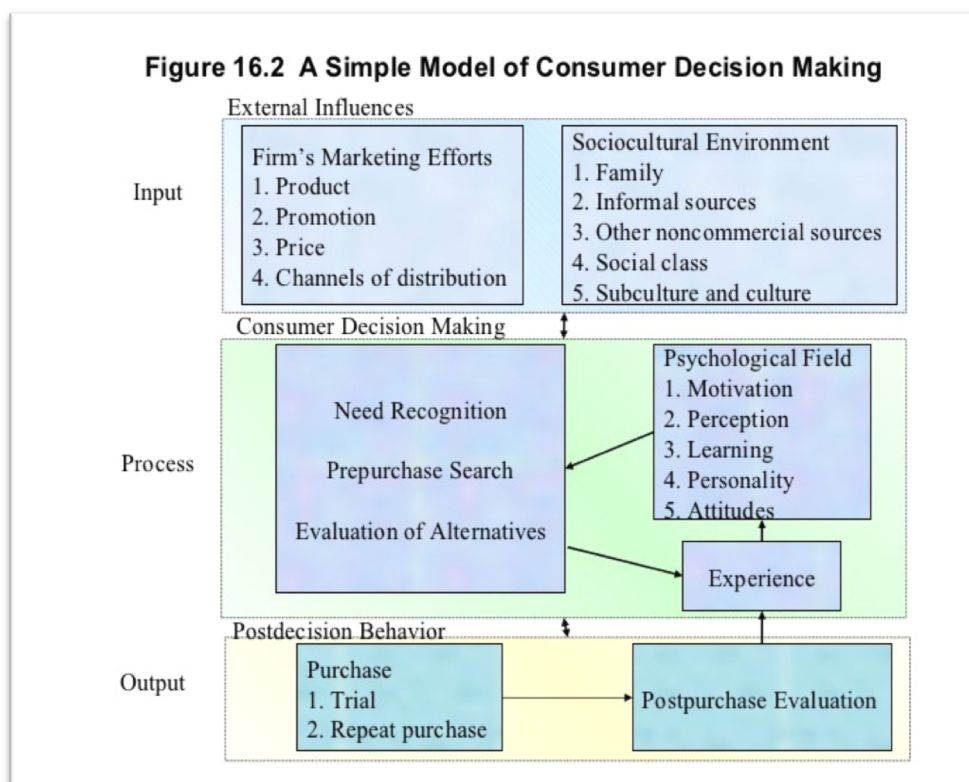
2.2 THEORETICAL FOUNDATION:

Within this research study there will be two theories which the researcher will base her proposal on. The first will be based on 'the theory of reasoned action'. This was first created in the late 1960's by Martin Fishbein and Icek Aizen. This theory focuses its study on the importance of the prior attitudes in the consumer's decision making process. The fundamental core of the theory suggests that the consumer's behaviour is built on the intention to generate or obtain a specific outcome. This theory also suggests that the consumers exemplify rational behaviour whom choose to act in their preeminent interest. According to Martin Fishbein and Icek Aizen (2008), the consumer will only take a particular action when there is going to be a definite result. In turn, from the time the consumer decides to act and behave a certain way, to the time the action is completed, the consumer will be able to recall the action as they will have the ability to change it and decide on a dissimilar way of action.

This theory is aligned to the research study as consumers must be made aware of the positive outcome they will receive when acting a certain way in order to conform to the regulated water restriction guidelines in their households. With every reasoned action comes an outcome, whether it be positive or negative and with every action comes a reaction. By basing this research proposal on this theory, it allows the researcher to understand the certain behavioural patterns the various consumers in the Fresno Suburb.

The researcher's theory on consumer behaviour patterns with regard to the current water crisis is extremely relevant. The second theory used will be based on Schiffmans consumer decision making model, as seen below.

The researcher will utilise this model as it is relevant to the research topic as it highlights the input stage which are all the external influences, the process stage which are all the consumer decision making processes and lastly the output stage which are all the post-decision behaviour process. The researcher feels the theory is based on the sociocultural environment factors 'family and social class' in the input stage. This is due to the water consumer behaviour patterns are based in the suburb, Fresnaye which they reside. This results in their social class being middle to upper class meaning they are able to afford luxuries, hence possibly not changing their behavioural patterns. Once primary research is conducted, the researcher will refer back to the consumer decision making model below to figure out why certain consumers whom reside in the Fresnaye suburb follow specific consumer behaviour patterns and how they could possibly change them in order to be more positive for the current water crisis that the city is facing.



Model from: (Consumer Behaviour, Eighth Edition by Schiffman & Kanuk)

2.3 EXISTING LITERATURE ON RESEARCH TOPIC:

Within this literature review, the researcher has searched, read and summarised five separate articles which correlate with the topic on consumer behaviour which links to the current water crisis within the city of Cape Town and the suburbia area, Fresnaye. The first academic article is; 'Understanding residential water-use behaviour in urban South Africa,' published in 2018 by: Inga Jacobs-Mata, Benita de Wet, Ismail Banoo, Richard Meissner, Willem de Lange and Wilma Strydom. The second journal article is; 'Water Curbs: A Tale of Rich and Poor', published in March 2018 by: Maxwell Roeland. The third journal article is; 'Cape Town's map of water usage has residents seeing red' published in January 2018. The fourth journal article is; 'Groundhog day for Cape Town as dam levels reach 30%', published in June 2018 by: Nora Shelly and the fifth article from 'Cape Town Etc' online Newspaper is; 'Cape Town recognised for water saving efforts' published in August 2018 by: Lucinda Dordley.

In the current water crisis, the South African government, municipalities, initiatives, brands and their businesses as well as citizens have created and implemented various solutions in order to save water by reducing or reusing water. Across the world, there is no shortage of advised technological solutions for droughts by increasing water supply on a macro scale through the construction of more dams, recycling industrial water waste, desalination plants as well as finding underground water supplies. On the micro scale, individuals have installed water tanks and are saving 'grey water' through the utilisation of household adaptations. Although these innovations and implementations are all grand, they will not be of any use if changes in water usage with regards consumer behaviour patterns do not also change.

Inga Jacobs-Mata, Benita de Wet, Ismail Banoo, Richard Meissner, Willem de Lange and Wilma Strydom state that within South Africa there has been little research with regards to water usage and consumer behaviour amongst households and residential areas. Both the 1997 National Water Services Act (RSA, 1997) and the National Water Act of 1998 (RSA, 1998) implemented and outlined the goal of water supply within South Africa. These acts were implemented in order to ensure the right of access to a basic water supply which means every South African citizen should receive a minimum of 25 litres per day within accessibility of 200m of the household the individual resides. In July 2001, it became a national policy that basic water became free. This has been monitored since via a revised water tariff structure which includes 6 000 litres of free water, per person, per month. Nevertheless, the

South African citizens use much more water than the designated, free, 6 000 litres. Within the study, 'Understanding residential water-use behaviour in urban South Africa, it states that research was conducted in 2015 to work out how much water the average South African suburbia family of 4 utilises. The results showed that an average of 300 litres were used a day, per person. In turn this equates to: $300 \text{ litres} \times 4 \text{ people} = 1200 \text{ litres per day}$. $1200 \text{ per day} \times 30 \text{ days} = 36,000 \text{ litres per month}$ and lastly $36,000 \text{ litres per month} \times 12 \text{ months} =$ a shockingly high number of 432,000 litres per year.

With this revelation, it can be seen that the average South African citizen utilises 12 times more water than the stipulated guidelines of the South African legislation. Despite the severe drought Cape Town is currently facing as well as the implemented water restrictions, many citizens still tend to consume more water than they should be. This relates to the study as it highlights how important consumer behaviour changes within a household are, with regards to minimising water consumption. Within this article it will focus on how much water people are actually using per day, and how dramatic domestic household changes need to be made across the whole of South Africa in order to minimise the drought.

There have been studies conducted which have investigated the relationship between water consumer behaviour, attitudes towards water usage and socio-demographic factors such as income, politics, education, household family size and type of household. (Researchspace, 2018) Results showed that there is a positive relationship between income and water conservation but the opposite for income and education levels and conservation. It states that water conservation actions are typically linked with higher income groups and all the studies show, that people who are open-minded in their political opinion, save more water than others. This is because they are more educated, have smaller properties, smaller families and own their own households. It has been proven that higher-income earners consume more water than lower income groups with restricted water access within the region of Cape Town, following suit with consumption patterns of an affluent suburb such as Fresnaye. The research study aims to foresee how consumption patterns have changed, if they have changed and how they continue to change. However, even though these finding might be true, they are also context-specific.

According to the article; 'Understanding residential water-use behaviour in urban South Africa,' change in water consumption behaviour is most probable to happen when:

- There is appropriate water pricing and policy consistency, which will encourage appropriate consumer behaviour. This will then lead to people having formed a convincing and affirmative approach towards saving water.
- Individuals have the capacity to reduce consumption due to technology means we are exposed to in today's time. An example of this is low flow shower heads or water substitutes which are readily available and are not constrained by the incapacity to purchase or install.
- Individuals also believe that the advantages or positive outcomes outweigh the disadvantages or negative outcomes of saving water.
- Individuals perceive more social pressure to conserve water than to not to conserve water. This is due to the information of individual households being published online by the municipality with regards to water consumption. This will add to the person's emotional reaction to performing the positive consumer behaviour due to the pattern being more positive than negative.
- Individuals perceive that their water conservation is more consistent with their self-image and social identification than inconsistent with it.

Moving onto the second and third journal articles; 'Curbs: A Tale of Rich and Poor' and 'Cape Town's map of water usage has residents seeing red,' the researcher aims to highlight the affiliation between income and consumer behaviour patterns in affluent suburbs in comparison to lower income areas with Cape Town, South Africa. Recently, 250 000 water management devices have been installed on specific properties in order to limit household water usage. It's been found that at least 64% of these installations were in the poorer communities of Cape Town and none whatsoever in the more affluent areas and households where water restrictions are being disobeyed, according to the GrounndUp Report in the 'Curbs: A Tale of Rich and Poor' article. (News24, 2018) These devices have been installed in place of the traditional water meter and can be programmed to shut off water supply after the daily limit is reached within the household.

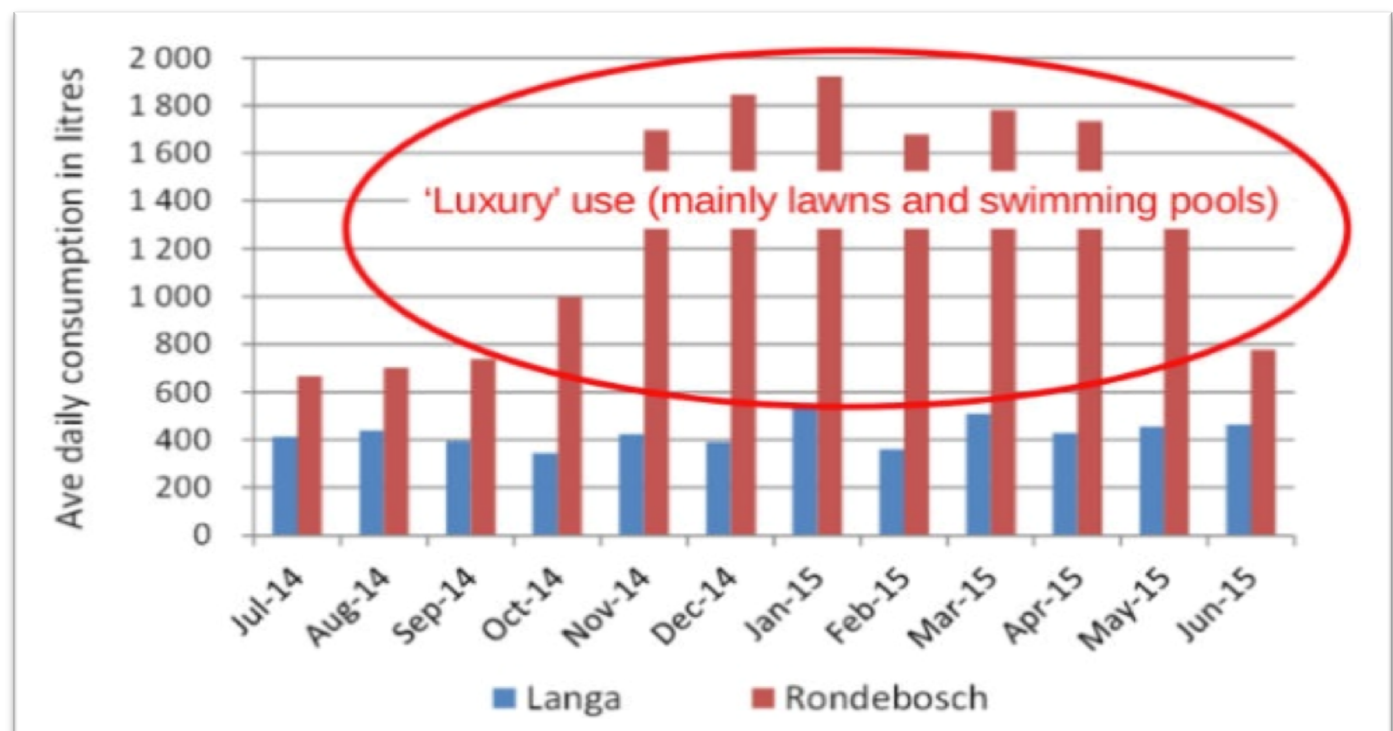
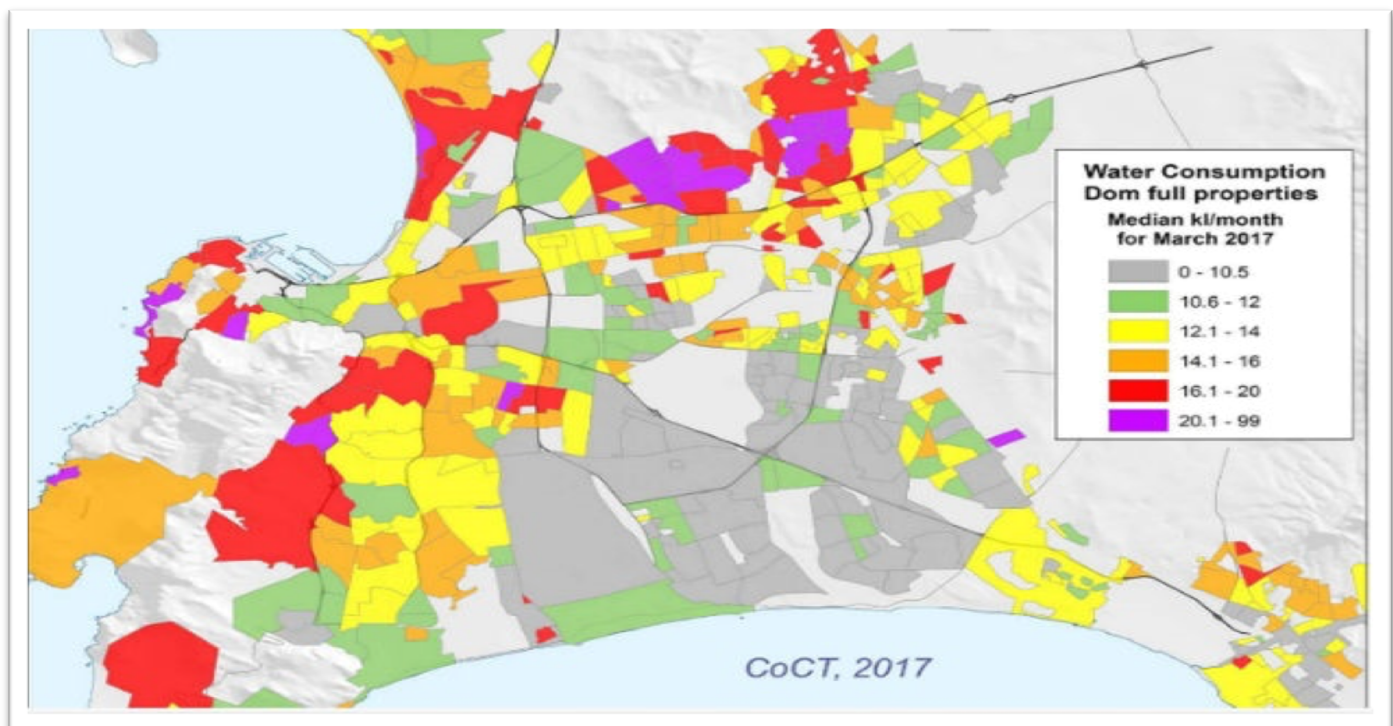
According to water and waste services councillor Xanthea Limberg, devices are being installed by the City of Cape Town under three different type of programmes:

- The "indigent water leaks project";
- A programme targeting high-consumption households that was launched in 2017;
- Water meter replacement. The City's policy is to eventually replace all water meters in Cape Town with these devices. (News24, 2018)

At the start of the water crisis in 2015, a list of street names which used the most water in the Cape Town was published in order to name and shame who the 'greedier consumers' were. As time has progressed and the drought has worsened over the last two years, a website was formulated called City Maps. (<https://citymaps.capetown.gov.za/waterviewer/>).

On this website one is able to punch in any street name or area within Cape Town and all the houses will appear. On each house a coloured dot appears correlating with the amount of water the households use on a monthly basis. The red dot shows the households whom way over the limit being the worst at over 10 500 litres per month, light green being below the red using between 6 000 to 10 500 litres per month, dark green being those households using 6 000 or less litres per month and clear with no water used/no data/no meter reading/group housing. (News24, 2018) Instead of just the street name being named and shamed, the municipality now shows which homes, specifically, use the most or least water.

This has helped prove that the wealthier and more affluent suburbs, such as Fresnaye, use much more water than the poorer ones. This can be seen on the two images below, specifically the bar graph as it compares an affluent suburb, Rondebosch to the lower income area, Langa.



Images from: (News24, 2018)

Going back to the latest naming and shaming innovation, the 'City Water Maps' website was launched in an attempt to make a dent on the approximate 200 000 homes which exceed the designated water limits which have been imposed by the municipality. This website is so precise that it allows the user to zoom into any individual's property, revealing the street name, household number as well as the monthly water usage. Although it highlights all the households whom are not conforming to the water consumer behaviour changes, it also shows all the household which are conforming. By emphasising these households, it aims to motivate others to perform in the same way. (The Conversation, 2018) However, much controversy has arisen as many people view these maps to be a violation of privacy which could provoke harassment of property owners who are not conforming to the water restriction guidelines. This will influence consumer behaviour patterns as consumers in their households will drastically reduce their water usage when realising they are the odd one out in a water saving city as social pressure is applied which has an influential effect and shapes behaviour.

A negative aspect with this strategy is that it can create a divide within communities as it creates a sense of "us and them." Water savers being the more prominent figures, bashing water wasters. The mayor of Cape Town, Patricia De Lille, is aware of this possible consequence as she explained: "*high consumers are often unaware of their consumption but are willing to change their behaviour once approached.*" (The Conversation, 2018). Patricia De Lille also added that the aim was to make the map as green as possible showing how consumer behaviour patterns have changed as consumers are fulfilling the water restrictions. An example of this map can be seen below as well as in Addendum B.



Image from: (Citymaps.capetown.gov.za, 2018)

The fourth journal article; 'Groundhog day for Cape Town as dams reach 30%', written by Nora Shelly has a slightly more positive outlook on the water shortage crisis. According to Nora Shelly (2018), she states that the Cape Town dam levels in June 2018 are currently sitting on the exact same percentage as two years ago. After the city of Cape Town was informed that day zero was quickly approaching, the citizens were given strict water restriction guidelines which they needed to follow. With this implementation being a success, day zero was pushed forward to the year 2019. Although this was a positive aspect, Cape Town is still currently facing a water crisis.

As Autumn started in South Africa in March 2018, Cape Town's citizens were hoping the rainfall would do the city justice by filling up the dams and increase the water supply. Unfortunately, the months of March and April 2018 did not have much rainfall. The positive rise in dam levels can be recognised by the 216.3 millimetres of rainfall the city of Cape Town experienced in the month of May 2018. According to the city this was close to the long-term average amount of water (Shelly, 2018).

The deputy mayor of Cape Town, Ian Neilson stated that the positive rise in dam levels could very much be contributed to the city's pressure management program, which in turn decreases the water pressure of households and industries. This assures the risk of leaks or bursts would be at a minimum. Nora Shelly (2018), states that the implementation of this program has saved the large amount of 62 million litres of water per day on average according to the deputy mayor of Cape Town, Ian Neilson.

According to Nora Shelly (2018), she also stated that the deputy mayor of Cape Town, Ian Neilson stated that he knows the pressure management system has led to discomfort in households, but he assures the citizens of Cape Town that this is a vital initiative in order to save as much water possible. This statement alludes that consumer behaviour patterns need to change in order to welcome this initiative and understand that the water restrictions in place are not the only way which citizens can save water. Consumer behaviour plays a major role in the spike in rising dam levels Cape Town is currently experiencing due to the water saving techniques coming into play. This can be highlighted in the 'theory reasoned action' as it shows consumers that their efforts are paying off and are being recognised by the City.

Lastly, the fifth article from 'Cape (Town) Etc' online Newspaper is; 'Cape Town recognised for water saving efforts' published in August 2018 by: Lucinda Dordley. This article highlights how the Cape Town water consumers have adjusted their water consumption patterns which has left the city of Cape Town in a more than positive light to the rest of the world.

According to Lucinda Dordley from Cape (Town) Etc, the various water saving innovations and techniques adopted have paid off. The City of Cape Town prepares to accept a certificate by the International Water Association, acknowledging the city to be the first in the world to reduce its water consumption by 50% in the short amount of just three years. Melbourne, Australia was the previous city to hold this title. They were able to reduce their water intake also by 50%, but, it took them twelve years to achieve this. This is four times the amount of time as it has taken Cape Town to achieve the same accolade.

Since the implementation of the water shortage in 2015, the City of Cape Town has urged citizens to adjust their lifestyles and abide by the provided water restrictions. These restrictions were implemented in order to act as a guideline to reduce the amount of water which was being consumed within the city. Higher water tariffs were also implemented, highlighting the stress of the situation. If consumers were not going to reduce their water consumption they were just going to have to pay more. It has been noted that many residents have formed communities that act as water management watchdogs. These residents have embraced and shared water-saving techniques and innovations in order to further educate and help one another save as much water possible. These restrictions were an adjustment for water consumers but in the long term it was worth it. Currently, the City of Cape Town's water resource dams are sitting at an average of 58,8% when this time last year they were sitting at a small amount of 29%. This is an increase of 29,8% resulting in the dams being 100% fuller than the previous year.

Although the City of Cape Town is yet to eradicate the water shortage crisis altogether, the winter season has assisted to alleviate the stress slightly due to torrential winter rains. This has given the National Department of Water and Sanitation a foundation to help the concerns of the current water restrictions. It has been said that if the dams levels reach a provincial average of 85% by the end of the winter season, the water restrictions will be lifted all together. Lucinda Dordley states: "to all those who actively saved water and still continue to do so, the City of Cape Town thanks you!"

In conclusion, all five articles are different, but parallel at the same time. Each emphasising how consumer behaviour is the main component to change and how the citizens of Cape Town can save the municipal water supply by changing the way in which they behave. The aim of all five articles is to advance the poor understanding of household water usage amongst suburbs across Cape Town as well as current water behaviour, both positively and negatively. By gaining a better understanding of household water usage, it will help guide this research study in obtaining the consumer behaviour patterns pre, during and post the water crisis within Cape Town, South Africa. It will guide the researcher to gather individual's perceptions and opinions of the most successful water wise behaviour, as well as the which main drivers are swaying their consumer behavioural changes.

As stated in the first and last academic article, it has been proven that the reduction in water consumption in households is the most effective way in which to conserve water. Due to the average South African citizen utilising 12 times more water than the stipulated guidelines of South African legislation, despite the severe drought that Cape Town is currently facing, it is of vital importance that these numbers reduce immediately and that greater measures are needed in order to sway consumer behaviour patterns across all households. By consumers changing their behaviour patterns and implementing strategies to conserve water, they have the ability to implement greater impact on the redemption of the drought with greater influence on the rest of the city. The Fresnaye households which the researcher will be focusing on will be evaluated with these numbers in mind.

The water shortage, droughts and restrictions should receive the attention it deserves, not only in the city of Cape Town, but all over the world. Water is at the front line when it comes to human needs, more so than electricity. Unless consumers recognize that the city of Cape Town's water supply is diminishing and with this in mind, change their consumer behaviour, it will unfortunately only become apparent one day when we turn on our taps and no water flows out like it did before.

3.1 INTRODUCTION:

Within this chapter the research design will be defined and explained in further detail.

According to BusinessDictionary (2018), the research design is the chosen type of method and system which will be utilised in the collected and analysis phase of the research study. This will measure consumer behaviour with water consumption within Fresnaye, specified in the research problem. The research design is the framework that has been produced in order to find answers to the research question.

3.2 RESEARCH PARADIGM:

A paradigm is a set of beliefs about how evident things work in this world. This research study adopted an interpretivist paradigm as it involves knowing the world as a whole as it is from personal experiences from specific people. This set of paradigm uses meaning orientated methodologies such as interviewing or observing a set of individuals in order to attain and draw true data (Prabash, 2018). An interpretivist paradigm relies on a personal relationship between the researcher and the subjects at hand. This paradigm is appropriate and correlates with the study as a whole as the researcher conducted a mixed methodology approach when conducting her research. This depended on the researcher conducting personal interviews, observation as well as secondary research in order to attain results which are true to its meaning.

To further this paradigm, the research followed an epistemological position of interpretivism as it challenges that common sense guides people in daily living. Therefore, due to the researcher wanting to understand human behaviour, she had to grasp what people view as common sense (Prabash, 2018). This was an essential source of information and exploring consumer behaviour patterns through this paradigm helped the researcher interpret, understand and gain insight into the consumers of Fresnaye. The more factual information that was obtained allowed the researcher to gain an understanding of the meaning system.

Interpretivists believe that facts are not objective nor neutral and can change at any time of the research study. Instead, what is factual is how the researcher interpreted the information obtained from the participants. The research found from the Fresnaye household participants was never generalised to the whole of South Africa. This allowed the researcher to study certain phenomenon as it aided her to better understand and explain causal

relationships in an attempt to predict consumer behaviour when experiencing the water shortage in Cape Town. This research study proceeded to utilise an interpretivist paradigm with mixed methods using both quantitative and qualitative methods. By mixing the two methods, the researcher gained a comprehensive understanding and corroboration with the possibility of triangulation.

3.3 RESEARCH DESIGN:

This research study used an interpretivist paradigm with mixed methods using both quantitative and qualitative methods. By mixing the two methods, the researcher gained a comprehensive understanding and corroboration with the possibility of triangulation, while offsetting the weakness inherent to using each approach itself. (Ltd, 2018)

In turn, the researcher gained information being data and literature driven. A mixed method helped the researcher explain findings and insights when analysing the chosen data collection methods. The purpose of this chosen method was to explore, gain insight and understand the effect of the water shortage crisis within Cape Town and specifically on the suburb of Fresnaye.

3.4 POPULATION AND SAMPLING:

The population for this research study was resident owners within Fresnaye, Cape Town. These consumers have the characteristics of a typical home owner who uses water on a daily basis to conduct their normal lifestyle. The majority of residents fall into the white ethnic group and most are family units. They generally fall into the age group of 35 years plus and are in a high income bracket group.

In order to draw the sample which represented the suburb, probability sampling was used in order to ensure each unit in the population had an equal opportunity to be a part of it. The procedure was totally random and systematic which removed human bias and provided fair and true research information.

From this, the researcher then finalised the sample size by utilising simple random sampling which is the most basic type of sampling method. This was used due to each element of the population having the same and equal chance of being selected. The municipality have published a document showing all the streets in Cape Town and those properties which consume the most water. The researcher then proceed to gather all the street names within the suburb of Fresnaye who are on the list and proceed to randomly select a house to

approach and interview its owner. The sample size will be five different households within the Fresnaye suburb.

3.5 DATA COLLECTION METHODS:

The researcher's main source of quantitative research was gained via surveys using questionnaires which were posted online. More specifically, on the researchers personal Facebook page. All questions within the survey were close-ended questions as well as pared-comparison questions. Due to the researcher living in the Fresnaye area, her Facebook followers consisted of consumers living within the area. The questions were attained via data driven research through the website tool Google Forms provided by Google Docs. The maximum amount of surveys the researcher analysed was sixty. It was beneficial to utilise a questionnaire survey as it was able to reach a large amount of consumers in the Fresnaye suburb relatively quickly, at no cost and the data was analysed easily. (Please see online digital survey in Addendum C)

Surveys using questionnaires were chosen due to the simplification of the quantifiable answers which were received. The participants responded better to this method as it was not time consuming, and all of the answers reached by simply selecting the chosen response. This was due to the questions being closed-ended and pared-comparison questions. This means the survey contained a fixed number of answers, from which the responded had to select one and the respondents had the option to choose between two different choices.

The qualitative research was obtained via in-depth interviews through standardised, open-ended interviews. This ensured all participants were asked the same set of questions. The In-depth interviews offered high benefits which allowed the researcher to interpret and understand the meaning of the participant's answers to the specific questions being asked. This form of research also allowed clarification of an answer being asked with a detailed explanation. When asking the participant questions, their response was not verbal but non-verbal too. This was obtained through physical body language and facial expressions. The audio recorder connected to the researcher's iPhone tracked the participant's answers in order to analyse the answers as needed. The researcher then transcribed the answers and summarised them for the research study. (Please see interview questions and transcripts in Addendum E).

3.6 DATA ANALYSIS METHODS:

The qualitative in-depth interviews were analysed using thematic content analysis. This is the most commonly used type of analysis for this type of research. The researcher was able to familiarise herself with the data by reading and re-reading the information obtained from the participants. The researcher labelled the whole text and searched for themes in order to interpret patterns of meaning. Reviewing and defining the themes allowed the final write up to take place in order to interpret the participant's answers. This was a more in-depth and personal analysis process and approach.

Data Set for quantitative method is a collection of data which consists of separate units which make up an entire unit. This is the most appropriate method as collection of all the data from the answered online questioners was combined together in order to create a data set. Analysing this allowed certain predictions to be made due to the information obtained being accurate and precise. Following this, appropriate graphs such as pie charts and bar graphs were created to view and analyse the data sets with ease. A pie chart is a circle which is divided into sections which each section signifies percentages of a specific answer which displays multiple classes of data. This allowed the data to be seen visually and simply. A bar graph is a diagram in which the numerical values of variables are represented by the height or length of lines or rectangles of equal width. (Dictionary.com 2018) This type of graph was used in order to associate the consumer behaviour patterns between the different populations to track changes and trends over time. (Please see graphs in Addendum D).

3.7 VALIDITY, RELIABILITY AND TRUSTWORTHINESS:

Due to this research study using mixed methods for the research design, validity, reliability and trustworthiness applied. Both validity and reliability was used with the digital online surveys which the researcher posted on the social media platform, Facebook. This is due to the data received being quantitative. Reliability, similar to validity, is a way of assessing if the chosen research methods and instruments were reliable. The questions asked on the online survey aligned with the research topic in order for the answers and data found being credible due to consistency throughout the research study holistically.

Inter-coder reliability was utilised due to participants all being different but each experiencing the same method, tool and instrument when viewing and answering the online survey questionnaire. This was administered in order for all participants to have an equal chance

to answer the provided questions, ensuring no bias. Internal validity was also used as the answers were not generalised to the whole of Cape Town, but only the suburbia area of Fresnaye. This type of validity also ensured no errors in the design of the research. The research methodology was also able to assist the researcher in answering the research question.

Trustworthiness was utilised within the in-depth interviews which was conducted on the 10 selected household samples, within the Fresnaye areas. This was conveyed through the sample size which was selected using simple random sampling. This ensured no bias as the samples were selected at complete random, with each having an equal chance. This was also used to ensure the study was trustworthy as the selected samples were drawn from the document published by the municipality. This document shows all the streets in Cape Town and the specific properties which consume the most amount of water. The street names in Fresnaye were chosen in accordance to this document. This certifies that the information within the research study is trustworthy and honest as the findings were obtained from consumers whom have households within Fresnaye.

3.8 ANTICIPATED CONTRIBUTION:

The most important anticipated contribution is to gain a better understanding of the water consumer behaviour patterns amongst household owners within the Suburbia area, Fresnaye. Irresponsible consumer behaviour practises of water usage abuse in the past have had a huge impact on why the city of Cape Town is currently facing its worst drought in eighty-five years. The careless act of not sustaining water when the city had an abundance of it is certainly a major factor and cause as to why we are taking such strain currently. This research study aims to contribute a positive outlook on how changing consumer behaviour patterns within households and daily lifestyles, will not only have a major impact on how we can assist the city during the drought, but also assist to help solve it now and into the future too. New water saving innovations will also be highlighted for other water consumers to learn from.

3.9 ANTICIPATED FINDINGS:

- The researcher expects to find majority of the households in the Fresnaye suburb to be following the water restriction guidelines.
- The researcher expects to find differing consumer behaviour trends throughout the eight months of the research study. This is due to weather changes in the City of Cape Town.
- Lastly, the researcher expects to find new water saving innovations, which in turn can highlight these findings in order to other water consumers to product or purchase and utilise.

CHAPTER FOUR: FINDINGS AND INTERPRETATION

4.1 INTRODUCTION:

Within this chapter the researcher will analyse the data collected from both the online digital survey as well as the in-depth interviews in order to uncover and articulate various themes. These findings were gained from sixty online digital surveys being completed as well as five in-depth interviews. The questions asked within the online digital survey aligned with the in-depth interview questions and both were only completed by respondents whom reside within the Fresnaye area. From these findings, recommendations will also be made in order to further educate a household resident on how to save water using various inexpensive techniques and innovations.

4.2 FINDINGS:

4.2.1 ONLINE DIGITAL SURVEY:

In order to gain a general understanding on the water consumer behavior patterns amongst Fresnaye households, the researcher utilised an online digital survey to ask questions which correlate to the research study. It was indicated that respondents must reside within the Fresnaye area in order to be part of the sample. The researcher allowed for sixty respondents to answer the online digital survey over a week's period, which allowed respondents to answer in their own time and at their own pace. Once the survey was completed, the researcher closed the survey, not allowing any more responses. These answers were then turned into graphs with the data gathered from the survey. (Please see attached in Addendum D) This was done in order for the researcher to have a visual representation of the data in order to gather findings and insights depicted below.

Personal:

100% of the respondents gave their consent and were willing to answer the questions within the survey. They are all aware of the current water crisis facing the City of Cape Town and the Western Cape. The majority of these respondents live in stand-alone residential homes which has between one to four bedrooms. The second highest responses stated that they live within an apartment. 60% of respondents reside with three to five people within their household, highlighting that Fresnaye is a suburbia area.

Indoor and Outdoor Usage:

The researcher wanted to figure out the most common supply of water which Fresnaye residents are utilising and it was found that 75% of the homes are still being supplied by the Cape Town Municipalities potable water supply system. Initially, the researcher had thought that bore hole water supply would have been a major water supply for many households within Fresnaye, but instead, a relatively low amount of fifteen out of the sixty respondents said that they have a bore hole or natural spring system within their household, but that they use both these as well as the Cape Town Municipalities supply.

The following questions intend figuring out how what types of water-using amenities the residents of Fresnaye utilise. The first question asked examined whether the residents still utilise single flush system toilets. These toilets are the old-style cistern toilets which hold between 9 to 12 litres of water used for each flush. I allowed respondents the option of ignoring this question if they do not have these types of toilets within their household. They would then proceed to the following question which asked whether they have the newer dual style flushing system toilets, which allow users the option of a smaller flush or a larger flush. These toilets only hold about six litres of water, which is already three litres less than the single flushing system toilets.

The respondents were able to select both answers, stating they have both old-style single flushing system toilets as well as the modern dual style flushing system toilets. Thirty-three respondents stated that they have the old-style single flushing system toilets. Majority stated that they have between one to three of these types of toilets within their household. Forty-one respondents stated that they have the modern dual style flushing system toilets stating that they have between two to five or more of these types of toilets within their household. It was found that fourteen of the sixty respondents had both types of toilets within their household. This indicates there are modern style households which still utilise older style amenities. It was also found that majority of Fresnaye households have both baths and showers which are utilised.

Respondents were asked to select four different water-using appliances which they have within their household. It was found that 27,3% of respondents have top-loading washing machines with 81,8% of respondents stating they have front-loading washing machines. There is a major difference between the two products, even though it has the same use. A

top-loading washing machine uses 75,7 litres of water more than a front-loading washing machine. This is a vast difference and highlights how majority of Fresnaye homeowners utilise the eco-friendlier machines. 90,9% of respondents also have dishwashers within their household as well as 40,9% have ice machines.

The researcher proceeded to ask whether they still utilise all of these appliances if they have them within their household. It was found that all respondents still utilise their washing machines. Although, respondents dropped, stating that they do not use the dishwashing machine nor their ice machine during the water crisis, Dishwashing machine users dropped from 90.9% to 81.8% and ice machine users dropped from 40,9% to 22,7%, half. When asking on average how many times a day is a load of dishes hand washed within the household, a large number of respondents selected between one to four times day, with 8,3% responding they never hand wash their dishes.

Due to Fresnaye houses being on larger size plots of land, an assumption was made that the majority of households have gardens and domestic outdoor infrastructure. The researcher asked respondents if they have garden on their property. 55% of respondents stated they do have a garden and the majority utilise grey water saved from household usage to water their garden. Other respondents stated that they use bore hold or natural spring water to water their garden. Only three respondents said they that still use municipality water through a garden hose pipe.

Respondents were asked if they have domestic outdoor infrastructure such as a swimming pool, jacuzzi, greenhouse, fountain or none of the above. It was much to the researcher's surprise when thirty out of the sixty respondents stated they have swimming pools, with the other thirty respondents stating they don't have any of the four domestic outdoor infrastructures. A small amount of three respondents said they have a jacuzzi and six respondents has fountains. None of the respondents selected that they have a greenhouse. The researcher then proceeded to ask the question whether or not the still utilise any of the selected domestic outdoor infrastructure. 16 of the 30 respondents said they do not utilise their pool anymore since the water crisis first started. None of the respondents utilise their Jacuzzi's and only 2 of the 6 respondents still utilise their water fountains.

Water Usage Habits:

The final two questions asked, seek to understand how the respondents save water within their households and what innovations and/or technologies they are utilising. The researcher asked if they have installed any available innovations and/or technologies to do so. There were various different types of answers, but majority stated that they use buckets within their showers to store grey water as well as taking shorter showers. Respondents also stated that they have installed AstroTurf, JoJo tanks as well as bore holes.

Once the online digital surveys were completed, the researcher wanted to gain a deeper understanding of the questions asked. In order to do this, the researcher conducted five-in-depth interviews in person with individuals who fit within the sample selection. This is further elaborated below.

4.2.2 IN-DEPTH INTERVIEWS:

The following in-depth interviews followed the same questions as the above online digital survey. This allowed for alignment to take place, with findings being able to be generalised. Even though the same questions were asked, the researcher was able to gain a more comprehensive understanding of the respondents answers. This is due to the interview being in-depth and more communicative as it is in person. The findings from these interviews are described below in profiles representing each respondent.

All interviewee's will remain anonymous. Please note, the names used below are facades and represent the five Fresnaye household residents whom were used in the sample.

Profile A 😊😊😊😊😊😊

Donald is male resident within Fresnaye, Cape Town. He is fully aware of the water crisis facing Cape Town and believes people who are not aware are crazy. He resides in a residential free standing home which has four bedrooms as well as a domestic quarters which has one bedroom on the outside of the house. Donald lives with his four immediate family members, his wife and three children aged between 15-22 years. His domestic worker also lives in. Their household is an older style home and only gets supplied with municipality water. Within his household he has four single flush system toilets, three showers and two baths. Donald stated: “ Yes, we still utilise both baths and showers daily. Although I do try and persuade my two girls, son and wife to shower once a day instead of using the bath in order to store the water in the buckets and use less of it. But you know, woman don’t listen to anyone.” Within the household the family utilises one front-loader washing machine and one dish washer. Both water-using appliances still gets used every day but the family has cut down on the amount of times they are switched on. All dishes get loaded in the dishwasher in order to load it to its full capacity. By doing this it has cut down on the amount of times dishes have to be hand washed.

Within his household, he has both a water-demanding fountain as well as a swimming pool. When the water crisis was first implemented, Donald stopped using municipality water to utilise the fountain and fill his swimming pool . Instead, he has hired a small business to fill his swimming pool with water bought in from farms outside of Cape Town. He has an AstroTurf garden in place of grass but still has plants and tree’s which need to be watered. Donald’s wife and gardener do still use the garden hose pipe, but for short periods of time and not that often.

In order to save water, Donald has invested in man-made innovations within his household. He has attached pipes to his gutters which connect to the pool. This allows the rain water to fill the pool, instead of flowing away into the municipal storm water system. His family have implemented the bucket system within all their showers in order to collect grey water. This is then used to flush toilets, clean cars etc. Donald has purchased a toilet spray product. This allows the user to spray the toilets in order to get rid of any odors, instead of flushing it. Donald’s household does all they can to save water through the duration of the water crisis within Cape Town.

Profile B 😊😊😊😊😊

Tanya is an active social media follower who was first made aware of the water crisis through posts on her social media platforms. She was also exposed to signage surrounding the area's within Cape Town, such as: restaurants and shopping centres. Tanya resides in a free standing home which has four bedrooms inside, with a fifth domestic quarters, outside. She lives with her husband, two children and the lady who has worked for them for 24 years. When the water crisis was first implemented, Tanya's family installed small JoJo tanks at the back of their house which has become their main water source. Municipality supply is only used once the water in the JoJo tanks have run out. She has six dual style flush toilets, six showers and four baths within the household. Herself and her family only utilise four of the six showers and none of the baths.

They have a dishwashing machine, two front-loading washing machines and a water filtration system throughout the household which all get used every day. Tanya tried to take the laundry to the laundromat once a week initially but it became too expensive as she was spending over R1000 each time. The family chooses not to hand wash the dishes at all, instead they fill the dish washer to its full capacity and try keep it to one cycle a day. All water-using appliances get used on the eco-friendly mode which utilises less water and shorter cycles.

Tanya does have a swimming pool which has only been filled once since the water crisis first started. They paid an external company to fill the pool with grey water and they also keep a pool cover on it constantly. Tanya decided to eliminate all water-demanding plants within their garden and replaced the grass with AstroTurf. Their garden is situated in the front entrance of their house which is the reason she wanted it to be in its best condition. "We didn't want everyone to have to walk past a muddy area, so we decided to just change it to the plastic version and now we don't worry about a thing! Our garden is always green no matter what season it is." In order to save water, Tanya has installed the JoJo tanks, as mentioned above. They take shorter showers and no baths whatsoever. She has placed hand sanitizers by all the sinks, allowing individuals to wash their hands without water. They also use the bucket system in order to store grey water which is then used to flush the toilets and mop the floors.

Profile C 😊😊😊😊😊😊😊😊

Sally is an educated woman whom is a wife and mother. She is fully aware of the water crisis at hand due to media she has been exposed too as well as the increase in water tariffs. Sally lives in a large, stand-alone residential household with her husband, four children and two domestic workers. Her household has five bedrooms all en-suite as well as two domestic quarters outside with a shared bathroom. The household utilised municipality water, although, they did dig for a bore hole but unfortunately found no water on their property. This led them to lose a lot of money, but they were fully aware that it was a high-risk task to attempt. There are seven toilets within the household. They are all new dual style flushing toilets as the house was only built a couple years ago allowing the fixtures and finishes to be modern.

Luckily, everyone in Sally's household enjoys taking showers and rarely takes baths. This made it easier for each family member to stick to one short shower a day. They have 10 sinks within the household, a front-loading washing machine and one dish washer. They also have an automatic irrigation system across the entire front and back garden which used to water their plants and grass daily. This has now been switched off in the interim of the water crisis. On average, Sally's family used to hand wash dishes around 5 times a day. This has now been limited, with most dishes being put into the dish washer. If they do hand wash though, it is done within a bucket and the water is saved as grey water.

The household has a swimming pool as well as a jacuzzi in the back garden. The swimming pool has a pool cover which remains on at all times and the jacuzzi has only been used a handful of times since the water crisis first started. Both do not get used as much as they used too. The property has a small garden in the front and a large one in the back. Both are filled with grass, flowers and plants. Sally stated: "My favourite Saturday ritual used to be waking up in the morning and watering the garden in my pajamas. Obviously, I've had to stop that." They also use grey water as well as bottled water in order to keep their garden alive. Sally's family have adopted the water bucket system within their showers and sinks around the house. She also uses recycled water bottles and fills them with water to use at the sinks, instead of turning the faucet on. She installed mist nozzles on a few of their faucets in order to test them. This minimizes the water pressure in order to save more water.

Profile D 😊😊😊😊

Alison is a young mother who is part of the millennial generation. She is fully aware of the water crisis due to public broadcasting via news outlets, radio and newspaper articles as well as social media posts on her Facebook and Instagram page by friends and family. Alison resides within a townhouse complex in Fresnaye. Within the complex there are fifty three semi-detached townhouses. Within the household there is Alison, her husband and two young children whom are permanent residents as well as two domestic workers who are there during a 5-day work week. As mentioned above, the complex consists of semi-detached townhouses, which in turn only allows the complex to be provided with Municipality water. This is due to the complex sharing one water connection and residents having to pay a monthly levy contributing to the overall consumption charges monthly. Each week, each household receives a WhatsApp message indicating how much water they are utilising. By saving water, it is a joint effort between all residents within the complex.

Alison has three single-flushing system toilets which are still all in use. There are two baths and two showers within the household, but, only one shower and one bath gets utilised. Alison states: “The kids don’t like the shower, so we have to bath them every night. Most of the time though they bath together so it uses less water”. She also uses buckets within the shower to collect grey water. Alison has both a washing machine and dish washing machine. Both rarely get used due to the laundry being taken to the laundromat as well as the residents utilising paper plates as much as they can. In turn, the dish washing machine only gets switched on every two to three days with seldom hand-washing having to take place.

There is a small splash pool in the garden, but this only gets filled with grey water outsourced from a supplier. The garden at the back has no maintenance whatsoever due to the grass being artificial, called AstroTurf. There are only a few plants situated by the front door which require water. These get watered with grey water collected in the buckets. Alison and her family utilise buckets within their shower and kitchen sink in order to store grey water. This is then used to flush the toilets and water the few plants by the front door. Alison also purchased the flushless spray from Spar which allows the user to not have to flush the toilet constantly. This spray gets rid of odors and bacteria within the toilet bowl.

Profile E 😊😊😊😊

Emily first became aware of the water crisis through the news, radio and word of mouth from family and friends. She was not fully aware of the seriousness of it from the start but soon after, started to educate herself and became more conscious of her consumer behaviour. Emily resides within a three-bedroom stand-alone household within Fresnoy. She lives with her four family members being her husband and two older daughters. She has also employed two domestics and a gardener to work for her 5 days a week. Emily's house utilises Municipality water due to it being of a very old age. She stated: "It's on the older systems and it's very hard to change but we are doing everything we can to be very cautious".

Within the household there are a total of seven single-flush system toilets. Of these toilets, only two to three maximum gets used. Emily has three showers, two baths and one shower and bath combined. Of these, none of the baths get used and only short showers are taken daily by each family member. There is a front-loader washing machine, a dish washing machine and an ice-machine. Of these water-using appliances, the washing machine gets used the most often. The dishwasher only gets used when it's of full capacity and the ice machine does not get utilised anymore. The family tries to keep hand-washing of dishes to the bare minimum and chooses to load the dishwasher. Emily stated: "Remember, my girls are older, so they do eat out a lot. There are not many people at home during the day to dirty an exuberant number of dishes".

The household has a pool and three fountains on the property. Neither utilise any Municipality water as all fountains have been switched off and the pool only gets filled with rain water. Emily's husband created a man-made slide from the roof gutters to the pool. Each time the gutters fill with rain water, it slides immediately into the pool. Although the pool is green, it is full. Emily also has a small man-made greenhouse in the back garden which gets watered when the rest of the garden does. The garden gets watered with the grey water collected from the showers. Although, if there is not enough, Emily admits to 'lightly' watering the garden with the hose pipe. The lawn has also been replaced once due to the water crisis. The family stores grey water by using buckets in the showers in order to water and flush the toilets. Emily's husband also chooses to switch off the hot water geyser during the day.

4.2.3 THEMES:

Discussed below are the three major themes which were drawn from the above data analyses which was conducted.

Theme 1: Bucket System

The most reoccurring finding from the above collected data, was the utilisation of buckets within showers and sinks. This water saving technique became an innovation which household owners all over Cape Town instilled. Fresnaye homeowners in particular, predominantly utilised this innovation as a water saving technique throughout the water crisis. It has been found that the Fresnaye residents utilise this technique in order to store grey water for other usages around the house. Data collected from both the online digital survey as well as the five in-depth interviews indicated that this innovation was used for the following:

- Flush toilets:
Homeowners indicated that they utilise they grey water from the buckets to flush their toilets instead of using the single-flush or dual style flushing system. This technique saves an abundance of water due to the toilet being the highest water-demanding fixture within a household.
- To clean:
Residents utilise the grey water from the buckets to mop their floors as well as clean their cars. A faucet which runs for 1 minute utilises 5,68 litres of water. By utilising the grey water to clean it diminishes the amount of water wasted drastically.
- Water the garden:
Residents indicated they utilise grey water from the buckets to water their gardens and plants on their properties. According to Homeguides.com (2018) an average 7 meter, 1/2-inch diameter hose attached to a faucet has a flow rate of 90,85 litres per minute. By utilising the grey water to water the garden and plants, allows for the resident to be assured of water saving.

Please find attached imagery examples in Addendum G of how the bucket system works within households.

Theme 2: Grass Alternatives

The second most reoccurring theme found was the change from natural grass to an artificial grass product called AstroTurf. AstroTurf is a product made up of synthetic fibres in order to match natural grass. It was originally utilised for sport arenas but soon become used in households gardens in the replacement of natural grass. The main reason for this is due to maintenance being of minimal effort as well as the way it looks. By installing AstroTurf, the end user is assured to have lush green looking grass all year round, despite the climate change.

Throughout the drought, Cape Town households have had to make drastic changes with regards to the water consumer behaviour. In turn, this meant having to ration water usage and disregard unnecessary water practises such as watering the garden. From this it has been found that many households within the Fresnaye area have made the change from natural grass to an AstroTurf product.

According to Trigger Truniger, the national accounts manager for Easigrass South Africa (2017), drought-friendly landscaping within a households garden area is essential when it comes to water saving. He says, due to the City of Cape Town's Municipality still enforcing rigorous water restrictions, with penalties to those whom do not stick to them, it is of vital importance to shape water consumer behaviour.

According to the Department of Water Affairs, the majority of South Africa's water goes to irrigation (66%) followed by domestic use (27%). This fact alone indicates the use of water within South Africa has not been prioritised with regards to survival. Switching to the artificial grass product, AstroTurf, does mean one will have to utilise some disposable income but it is an upfront investment. In turn, not only does this minimise the amount of water used, it also lowers the water bill a resident receives at the end of the month. With an increase in water tariffs, this was deemed to be the better option for the majority of Fresnaye households. Switching to AstroTurf also indicates momentary savings due to garden services no longer being a requirement. Fresnaye residents have taken this in their stride and adapted to it to better suit the City's needs.

Please find attached imagery examples in Addendum H of AstroTurf grass products used within households.

Theme 3: JoJo Tanks

The third most reoccurring theme found was the use of rainwater tanks within Fresnaye households, more specifically, JoJo Tanks. These tanks sit outside of a household which have downpipes connected to the lid of the tank. This pipe is usually connect to the gutters on the roof of the house and are then fed into the tops of the JoJo tanks. This fills the tanks during times of rain. Throughout the winter season in Cape Town, rainwater was able to fill these tanks very quickly. This rainwater is then stored and pumped into the household, being the primary water source. The larger the JoJo tank, or amount of JoJo tanks owned, the more water can be stored and utilised.

These tanks, seen below, have been found to have been installed in many Fresnaye households. These are superior plastic water tanks which are of high quality and are affordable for the average consumer (Please see in Addendum I attached price list). According to Rainharvest, 2018, JoJo Tank South Africa have provided consumers the a wide choice range of JoJo tanks to suit the end-users needs. These tanks come as vertical or horizontal tanks and at different sizes. It has been found that this type of water saving technique has become an occurrent purchase for Fresnaye household residents throughout the water crisis within Cape Town, South Africa. A few advantages of these rainwater tanks are as follows:

- Helps reduce the demand of Municipality water within the household.
- Easy maintenance
- Reduction in water bills
- Great irrigation purposes
- Helps reduce the demand of Municipality water.



Image from: (Waterrhapsody.co.za, 2018)

It has been understood that Fresnaye household owners are extremely aware of the water crisis at hand which in turn has influenced their decision making process when utilising water. The residents within this neighbourhood have taken the water crisis seriously and have implemented various innovations and techniques within their households. This is due to the residents wanting to save as much municipal water as possible in order to assist the City with the crisis being faced. The innovations and techniques have only been utilised by these residents as they are assured that their actions have a definite results. This is proven by the fifth literature article 'Cape Town recognised for water saving efforts' published in August 2018 by: Lucinda Dordley. This supports that the 'theory of reasoned action' by Martin Fishbein and Icek Aizen plays a major role in the decision making process amongst these specific consumers.

The researcher also utilised Schiffmans consumer decision making model, highlighting sociocultural environment factors 'family and social class' as the foundation for this particular neighbourhood. Initially, the researcher thought that the residents within the Fresnaye neighbourhood did not change their water behaviour patterns due to affluency playing a major role. This was immediately proven false when the researcher started to analyse the online digital surveys and in-depth interviews. In fact, it was the complete opposite. It was found that all respondents have adapted their water consumer behaviour patterns as well as their household amenities and fixtures to be more water conscious. Each respondent clarified that their entire household have been educated with regards to the water crisis and due to their financial means they have also been able to implement various water saving innovations. These include: JoJo tanks and AstroTurf as mentioned within the themes.

The above findings and themes aligned with the five literature review pieces chosen. As mentioned, each literature piece chosen emphasised how imperative water consumer behaviour is in order to seek change amongst the citizens of Cape Town and their water usage. By gaining a better understanding of household water usage amongst the selected sample, it allowed the researcher to draw themes and patterns from the answered survey and interview. This guided the researcher to gather individual's perceptions and opinions of the most successful water wise behaviour, as well as which main drivers are swaying their consumer behavioural changes. By completing this, it has allowed the researcher to realise and understand how the City of Cape Town has become the first really successful water saving city in the world.

4.3 RECOMMENDATIONS AND CONCLUSION:

4.3.1 16 TIPS TO SAVING WATER WITH YOUR HOUSEHOLD:

Discussed below are 16 tips which the researcher has put together based on the findings and reoccurring themes as mentioned above.

1. Bucket, bucket, bucket!:

When utilising water with a drain below the faucet, rather put a bucket directly under the faucet in order to store grey water for other purposes instead of allowing perfectly good water literally going down the drain. This grey water can be used to wash the plants, mop the floors, flush the toilets, etc. Anything you can think of, put into play.

2. Don't leave the tap on when brushing your teeth or washing your hands!:

Water comes out of the average faucet at 5,68 litres per minute. To put it into perspective, this is more than two, 2 litre coca cola bottles. Rather wet your toothbrush and leave the tap off until it's time to for a short mouth rinse.

3. If its yellow, let it mellow. If its brown, flush it down!:

The toilet is one of the most water-demanding fixtures within a household. As stated before, old style single flushing toilets utilise between 9-12 litres of water with every flush and modern day dual system toilets utilise up to 6 litres per flush. By minimising the amount of times you flush the toilet, it can save your household a lot of water.

4. Always fix your leaks!:

Fixing leaking faucets can save a large amount of water. The longer you leave a leaking faucet, the worse it's going to get. Not only will you save water, but money too. Whether its DIY (Do it yourself) or hiring a professional, spending money equites to making money.

BONUS WATER FACT: The average water consumption within South Africa is 235 litres per person, per day. This is compared to the world average being 185 litres per person. (Africa Check, 2018)

5. Let a professional wash your car!:

Instead of washing your car at home utilising your household water, rather take your car to a car wash that recycles their water or uses grey water. In turn, you'll have a clean car feeling guilt free!

6. Use the shower song!:

A few of South Africa's top local artists such as; Jimmy Nevis, Mi Casa and Desmond and the Tutus have reworked a few of their top songs to two minutes long. This is the maximum amount of time you should spend in the shower. When the song is up, your shower should be too!

7. Change and choose efficient fixtures within your household!:

By using eco-friendly water saving setting options on your washing machines as well as dishwasher assures a shorter cycle and less water used. There are various fixtures which can be installed in order to adjust the water pressure coming out of faucets as well as efficient shower heads which are easily changeable. These few tips can aid in saving a couple more litres per day.

8. Is having a water demanding garden a real necessity today?:

As mentioned within the research study, there are alternatives to having water demanding grass and plant products. Instead of letting your garden die, replace the plants with succulents which thrive in drought conditions or your grass with grass alternatives such as AstroTurf. Another alternative is investing in a ground cover.

BONUS WATER FACT: Less than half (46.4%) of South African households are estimated to have water piped into their homes; 26.8% have access to water on their property while 13.3% need to share a communal tap. (Agriorbit, 2018)

9. If its full it is cool!:

Always ensure that both your washing machine and dishwashing machine is loaded to its full capacity before switching it on. The more half loads you do, the more water you waste.

10. Stay aware of the water bill!:

Always check your water bill each month thoroughly in order to remain on an average. If you suddenly see a spike in your water bill it can make you aware of any leakages or wasted water.

11. Reuse, reduce, recycle!:

Instead of wasting your saved grey water from the buckets in tip 1, reuse the grey water for various tasks around the house. This can include using the water to mop the floors, clean the windows, water the garden, flush your toilets, etc. This will reduce your water usage as you are recycling when utilising water.

12. Garden when the sun goes down!:

By watering your outside plants when the sun is down and the air is cooler equates to less water evaporation. This will ensure your garden gets a sufficient amount of 'food'.

BONUS WATER FACT: South Africa received its lowest rainfall between January and December 2015 since the national recording of rainfall began in 1904. (Agriorbit, 2018)

13. Fill before you spill!:

Are you handwashing a lot of dishes? If so, ensure that one sink is filled with soapy water and the other will clean with warm water. This saves an abundance of water as the tap is not continuously running.

14. Education is key!:

By educating all individuals living within your household about the current water crisis you can ensure each and every one is aware of the situation. The more educated a person is on the water crisis and how to save water, the less water will be used. If you have small kids within your household, make sure you keep an eye on them and their water consumption.

15. Your gutter will not stutter!:

By connecting your roof gutters to man-made pipes, you are able to store rain water within buckets or tanks. This can also be used to fill the pool or as extra grey water. Instead of wasting perfect water by flushing it away, let it drain instead of just rain.

16. The JoJo is your hero!:

Installing a rainwater tank, better known as the JoJo tank, will assist your household diminish the amount of Municipality water consumed due to rainwater being stored within tanks and possibly becoming the primary water source.

BONUS WATER FACT: 12-14 million South Africans do not have access to safe drinking water. (Waterrhapsody.co.za, 2018)

4.3.2 CONCLUSION:

In conclusion, this research study has proven to be efficient by providing the researcher and future readers with examples of innovations to help reduce water consumption within households. By initially highlighting, within the literature review, the importance of the current water crisis which Cape Town, South Africa is facing, it has helped the researcher understand the measures which need to be taken with regards to water consumer behaviour. By selecting an affluent neighbourhood within Cape Town, it has allowed the researcher to find the various ways residents are saving water within their households. The researcher feels that future readers will be able to grasp and understand the various affordable, easy water saving innovations and techniques which can be adapted in order to save and/or store water for future uses.

REFERENCE LIST

- Africa Check. (2018). *Does South Africa guzzle 235 litres of water per person daily?* | Africa Check. [online] Available at: <https://africacheck.org/reports/south-africans-guzzle-235-litres-water-per-day/> [Accessed 9 Jul. 2018].
- Agriorbit. (2018). *5 facts about water in South Africa - Agriorbit.* [online] Available at: <https://www.agriorbit.com/5-facts-water-south-africa/> [Accessed 13 Sep. 2018].
- Anon, (2018). [online] Available at: https://www.researchgate.net/figure/The-five-stage-model-in-consumer-behaviour-Kotler-2012_fig1_291691535 [Accessed 3 Mar. 2018].
- Anon, (2018). [online] Available at: https://www.researchgate.net/post/What_is_the_difference_between_epistemology_and_theoretical_perspective_and_between_Constructivism_and_Interpretivism_in_educational_research [Accessed 11 Apr. 2018].
- Anon, (2018). *SA faces a water crisis, MPs warned.* [online] Available at: <https://www.timeslive.co.za/news/south-africa/2018-08-30-sa-faces-a-water-crisis-mps-warned/> [Accessed 13 Aug. 2018].
- Anon, (n.d.). *Schiffman16.ppt best ppt, decision making1.* [online] Available at: <https://www.slideshare.net/gauravthareja9/schiffman16ppt-best-pptdecision-making1>. [Accessed 11 Apr. 2018].
- Anon, (n.d.). *schiffman consumer behaviour model - Google Search.* [online] Available at: https://www.google.co.za/search?q=schiffman%2Bconsumer%2Bbehaviour%2Bmodel&safe=strict&tbm=isch&source=iu&ictx=1&fir=MhPAvn2bxgZIMM%253A%252CV7u7xwg3iINvGM%252C_&usg=__FzKnsOWsD7wMX7A1MQPj2Qmg_cg%3D&sa=X&ved=0ahUKEwiqv4uvsbraAhXCA8AKHfafAz0Q9QEILzAA#imgsrc=MhPAvn2bxgZIMM: [Accessed 11 Apr. 2018].
- BusinessDictionary.com. (2018). *What comes after those ellipses?.* [online] Available at: <http://www.businessdictionary.com/definition/research-design.html> [Accessed 14 Jul. 2018].
- Dordley, L. and Dordley, L. (2018). *Cape Town recognised for water saving efforts* | CapeTown ETC. [online] CapeTown ETC. Available at: <http://www.capetownetc.com/water-crisis/cape-town-recognized-for-water-saving-efforts/> [Accessed 5 Sep. 2018].

- Du Plooy-Cilliers, F., Davis, C. and Bezuidenhout, R. (n.d.). *Research matters*. [Accessed 3 Mar. 2018].
- Ewn.co.za. (2018). *Cape town water crisis*. [online] Available at: <https://ewn.co.za/Topic/Cape-Town-water-crisis> [Accessed 13 Aug. 2018].
- Homeguides.sfgate.com. (2018). *What Is the Flow Rate of a Garden Hose?*. [online] Available at: <https://homeguides.sfgate.com/flow-rate-garden-hose-82928.html> [Accessed 14 Sep. 2018].
- Ltd, W. (2018). *Mixed methods research*. [online] Resourcecentre.foodrisc.org. Available at: http://resourcecentre.foodrisc.org/mixed-methods-research_185.html [Accessed 3 Mar. 2018].
- Managementstudyguide.com. (2018). *The Economic Impact of Cape Town's Water Crisis*. [online] Available at: <https://www.managementstudyguide.com/economic-impact-of-cape-town-water-crisis.htm> [Accessed 13 Aug. 2018].
- Maree, K. (n.d.). *First steps in research*. Schiffman, L. and Wisenblit, J. (2019). *Consumer behavior*. Upper Saddle River, New Jersey: Pearson Education. [Accessed 11 Apr. 2018].
- Narrandes, N. and Narrandes, N. (2018). *LEVEL 6B: Your guide to 50 litres a day | CapeTown ETC*. [online] CapeTown ETC. Available at: <http://www.capetownetc.com/water-crisis/cape-town-water-crisis-guide-50-litres/> [Accessed 16 Jul. 2018].
- News24. (2018). *Water curbs: A tale of rich and poor*. [online] Available at: <https://www.news24.com/SouthAfrica/News/water-curbs-a-tale-of-rich-and-poor-20180308> [Accessed 15 Apr. 2018].
- Piotr Wolski, U. and Piotr Wolski, U. (2018). *Cape Town's drought and water shortage has officially escalated to disaster levels*. [online] Quartz. Available at: <https://qz.com/1110143/cape-town-drought-and-water-shortage-in-south-africa-is-now-a-disaste/> [Accessed 3 Mar. 2018]
- Prabash78.wordpress.com. (2018). *Interpretivism and Positivism (Ontological and Epistemological Perspectives)*. [online] Available at: <https://prabash78.wordpress.com/2012/03/14/interpretivism-and-postivism-ontological-and-epistemological-perspectives/> [Accessed 11 Apr. 2018].

- Rainharvest.co.za. (2018). *Advantages and Disadvantages of Rain Water Tanks* | Rainharvest.co.za. [online] Available at:
<http://www.rainharvest.co.za/2014/04/advantages-and-disadvantages-of-rain-water-tanks/> [Accessed 14 Sep. 2018].
- Rainharvest.co.za. (2018). *Install a Water Tank to Save Money & Water* | Rainharvest.co.za. [online] Available at:
<http://www.rainharvest.co.za/2012/03/install-a-water-tank-to-save-money-water/> [Accessed 14 Sep. 2018].
- Researchspace.csir.co.za. (2018). [online] Available at:
http://researchspace.csir.co.za/dspace/bitstream/handle/10204/10139/Jacobs-Mata_20578_2018.pdf?sequence=1&isAllowed=y [Accessed 11 Apr. 2018].
- Shelly, N. (2018). *Groundhog day for Cape Town as dams reach 30%*. [online] timeslive. Available at: <https://www.timeslive.co.za/news/south-africa/2018-06-05-groundhog-day-for-cape-town-as-dams-reach-30/> [Accessed 6 Jun. 2018].
- The Conversation. (2018). *Cape Town's map of water usage has residents seeing red*. [online] Available at: <https://theconversation.com/cape-towns-map-of-water-usage-has-residents-seeing-red-90188> [Accessed 15 Apr. 2018].
- The South African. (2018). *Capetonians praised heavily by City as water consumption hits a new low*. [online] Available at:
<https://www.thesouthafrican.com/water-consumption-how-much-water-is-cape-town-using/> [Accessed 13 Aug. 2018].
- Waterrhapsody.co.za. (2018). *Cape Town Drought Cycle. Should Water Tanks be Mandatory?* | Water Rhapsody. [online] Available at:
<http://www.waterrhapsody.co.za/2010/06/23/cape-town-drought-cycle-should-water-tanks-be-mandatory/> [Accessed 14 Sep. 2018].
- Waterrhapsody.co.za. (2018). *Water Facts in South Africa* | Water Rhapsody. [online] Available at: <http://www.waterrhapsody.co.za/2009/09/18/water-facts-in-south-africa/> [Accessed 11 Sep. 2018].
- Web1.capetown.gov.za. (2018). *Open Data Portal*. [online] Available at:
<https://web1.capetown.gov.za/web1/opendataportal/DatasetDetail?DatasetName=Water%20consumption> [Accessed 13 Aug. 2018].
- Weddle, D. and Bettman, J. (2018). *Marketing Underground: an Investigation of Fishbein's Behavioral Intention Model*. [online] Acrwebsite.org. Available at:
<http://acrwebsite.org/volumes/5719/volumes/v01/NA-01> [Accessed 4 Jun. 2018].



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Assignment 4: Final Research Report (POE)

Casey Sher

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