An Analysis of Consumers' Perceptions and Attitudes Towards Pay-As-You-Go Electricity Plans

By Campbell Grieve, 2011

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Abstract

Pay in arrears electricity has been the traditional and most common method for purchasing power in New Zealand for a long time. As a result, both retailers and consumers are subjected to a number of problematic issues. These include bad debt exposure for retailers and lack of information and control for consumers. Pay-as-you-go electricity plans have the potential to overcome these issues. Therefore, Mercury Energy are interested in exploring its viability within the mass market of New Zealand. In order to do this successfully, the project utilised a mixed methodology to uncover factors that would potentially limit or enhance the diffusion of modern pay-as-you-go electricity plans. The qualitative component employed Mercury Energy's recent trial product "Advance", allowing a realistic examination of participants' behaviours and perceptions. The quantitative component employed a survey that was intended to gain insight into the broader issues of introducing an alternative electricity plan.

The findings of the research uncovered five key barriers that seemingly limit the diffusion of pay-as-you-go electricity plans. These barriers were mainly consistent with consumers' apathetic treatment of new alternatives, association with undesirable electricity plans, social risk, and the discontinuity of attributes. The conclusions suggested that most of the barriers could be overcome, in time, with an extensive marketing *push strategy*. However, the discontinuity of paying in advance was considered detrimental to the likely success of any new alternative. It was thus recommended that paying for usage in advance should not be the central offering of any new alternative. Instead it should be kept as an optional feature initially where it can be introduced in a continuous fashion over a relatively long period of time.

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Chapter One: Background to the Research Project

1.1 Introduction to the Current Project

This research project is being conducted on behalf of Mercury Energy, a subsidiary of Mighty River Power. The primary focus of this research is to provide Mercury Energy a detailed understanding of the issues and opportunities regarding the diffusion of modern pay-as-you-go electricity plans. This will coincide with the recent release of their trial pay-as-you-go product, "Advance", and will offer insight into its potential success within New Zealand.

This project will begin by developing a background to the current research. This will include a detailed description of the business problems faced by retailers such as Mercury Energy and the subsequent marketing issues. Following on from this, the context of the current research will be defined. The background to this project will form a basis for the interpretation of the later components of the research, in particular, the development of the literature review and the research question.

A review of the pertinent literature will then be undertaken in order to develop a theoretical foundation for the research. This will cover topics relevant to the introduction of a new innovation within the electricity market. The review of the literature will consist of energy consumption behaviour, diffusion of innovations, consumer resistance to innovations, and product positioning. Using the key theoretical foundations of this review, both a set of propositions and a research question will be developed in order to guide the research and the subsequent analysis.

The final components of this project will include a presentation of the key results and their interpretations in the current context. With reference to these results, a discussion that concisely summarises the various components of the research will be produced

allowing Mercury Energy to better understand pay-as-you-go electricity plans. Finally, the discussion will consider the limitations faced by the project as well as any future research that may be beneficial for Mercury Energy.

1.2 Description of the Business Problem

The marketing issue that this research project aims to address arises from a very prevalent business problem faced by Mercury Energy and other electricity retailers in New Zealand. This business problem, and the subsequent marketing issues, stem from the use of various pay in arrears power packages. Pay in arrears electricity plans have become the traditional and most common method for purchasing electricity in New Zealand. More specifically, approximately 95% of residential electricity consumers served by Mercury Energy are on various pay in arrears power packages. This creates a number of issues for Mercury Energy, electricity consumers, and other businesses included in the electricity market. The main issues are outlined below:

- As the majority of customers pay for their electricity in arrears, Mercury Energy is subject to high levels of bad debt exposure. Bad debt exposure is problematic for businesses in terms of cost and social responsibility. The high costs as a result of bad debt arise from customer account management, follow-up phone calls, mailing, and accounting complications. The social responsibility problems refer to the difficulty of discontinuing service to customers with outstanding debt.
- Account management costs are high even with customers who do not have outstanding bad debts. These costs include billing (in particular mailing) and administration.
- With standard pay in arrears power packages, Mercury Energy faces significant cost-to-serve impacts. These costs stem from high volumes of bill query phone calls and follow-up phone communications.
- Customers potentially face ‘bill shock’. This usually occurs after a month of higher electricity usage which generally takes place at the beginning of winter. Bill shock

is a serious issue as it may place unduly stress on the customer. As a result, the customer may seek alternative electricity providers or even become bad debtors.

- Customers must settle their electricity bill in specific time frames, even if it does not suit them.
- There is an inadequate level of information provided to the customer regarding their electricity usage, even with frequent monthly meter readings. Therefore, customers do not have enough information to gain insight into their household running costs which makes it difficult for them to reduce their electricity usage.

1.3 Description of the Marketing Issue

Mercury Energy has recently developed a product named "Advance", which is designed to overcome all of the issues outlined in Section 1.2. Advance is a pay-as-you-go power package that will ideally be targeted at all Mercury Energy customers. However, there are several marketing aspects that need to be properly understood before any pay-as-you-go electricity plan can become an appealing format by the mass market of New Zealand. In particular, pay-as-you-go electricity plans have been, and still are, commonly used by retailers for high risk customers. These customers are generally low income consumers, or beneficiaries, who regularly fail to pay their electricity bills. As a result, pay-as-you-go electricity plans have become stigmatised as a last resort for undesirable customers. Therefore, any negative perceptions held by consumers will potentially limit the success of Advance.

Pay-as-you-go electricity plans also represent an alternative way for purchasing electricity. Paying for electricity in arrears is the common method used by electricity consumers and has been for many decades. It is likely that consumers have become accustomed to this method of payment over a long period of time. As mentioned above, 95% of Mercury Energy's customers are on various pay in arrears type electricity plans. Thus the movement to pay-as-you-go electricity plans by the mass market will result in a fundamental change in the way consumers behave.

This marketing issue therefore resonates with the introduction of a new innovation that requires a fundamental change in consumer behaviour. According to Rogers (2003) an innovation is something perceived as new by an individual. Therefore, even though pay-as-you-go power packages are already being used by some consumers, they will be considered new by much of the mass market. Using this definition, Advance can be considered an innovation in this situation. The current research project thus seeks to explore the marketing issues that arise with the introduction of new innovations. In particular, this includes factors that may limit the uptake rate of Mercury Energy's new power package as well as factors that may positively influence its diffusion process.

As mentioned in Section 1.2, negative stigmas may surround pay-as-you-go electricity plans. With the introduction of a new product and innovation, a firm must consider how they should be positioned in regards to the target market. In this case, Advance must be positioned in a way that overcomes negative perceptions that are already held by consumers. To address this marketing issue, consumer perceptions of pay-as-you-go electricity plans must be explored in order to overcome potential negative stigma. This also involves determining the differences between the innovation's desired attributes and the way in which consumers perceive the innovation's attributes.

1.4 Research Context

1.4.1 The Client Organisation

Mercury Energy is a subsidiary of Mighty River Power, a state owned enterprise (SOE), responsible for the retail aspects of the company's operations. Mighty River Power is the third largest electricity company in New Zealand in terms of market share, retailing to approximately 22% of the market according to The Ministry of Economic Development (MED) (2010). In 2010, this equated for approximately 412,000 customers. Mighty River Power is considered a "Gentailer", in that it provides both generation and retailing, with 91% of its electricity generated from renewable sources (Mighty River Power 2010). According to MED (2010), 34.3% of electricity consumption occurs in the residential

sector which is a significant proportion of total electricity consumption in New Zealand. The residential sector is considered to be an expensive market to serve and is responsible for a large proportion of the expenses incurred by Mercury Energy. Mighty River Power has reached their desired target portfolio and is not looking to increase their market share. Instead Mighty River Power intends to improve their operational expenditures and reduce their cost to serve (Mighty River Power 2010).

1.4.1(A) Competitive Environment

New Zealand's electricity market was altered significantly in 1999 when government policy divided the New Zealand Electricity commission into three SOEs (Hodgson 2006; MED 2010). These included Mighty River Power, Meridian Energy, and Genesis Power (MED 2010). Contact Energy, a publically listed gentailer, also emerged around this time and is now the second largest, in terms of retailing, in the industry (MED 2010). The transmission company, Transpower, responsible for transmitting the electricity across New Zealand is a state owned natural monopoly (Hodgson 2006). This, and many other factors, creates a complicated and complex characterisation of the electricity market, further discussed in Section 1.4.2.

The electricity industry in New Zealand is very competitive, with a very high volume of customers switching retailers every year (approximately 14%) (MED 2010). The industry, in particular the wholesale market for electricity, is tightly monitored by the Electricity Authority. The main objective of this monitoring is to encourage healthy competition amongst market players, ensure the reliable supply of electricity, and ensure the industry operates efficiently. Mighty River Power has four main competitors, listed from largest to smallest in terms of retail market share: Genesis Energy and subsidiary Energy Online (SOE) is the largest; Contact Energy and subsidiary Empower is the second largest; Meridian Energy and subsidiary Powershop (SOE) is the fourth largest, the same size as TrustPower which is also the fourth largest (MED 2010). These companies, as well as Mighty River Power, can be characterised as oligopolies, in that they compete on both electricity prices and differentiated offerings.

1.4.2 The Current Electricity Market

Over the past 10 years, electricity prices have been steadily increasing at a relatively rapid rate. Residential electricity prices grew 6.2% per annum from 2005 to 2009, this equates to a real price increase of 3.2% per annum (MED 2010). Prices have continued to rise after these figures were published with a 7.8% increase in the year to the June quarter of 2011 (Statistics NZ 2011). The increase in electricity prices can be attributed to a number of factors. In particular, an increase in present electricity demand as well as increased investment into infrastructure in order to meet predicted future demand (Genesis 2010). Other common products and services, namely produce foods and transport petroleum, have also become more expensive in real terms over the past five years (Statistics New Zealand 2011). With the higher prices faced by consumers in these areas, the risk of bad debtors faced by electricity retailers is likely to become more of an issue.

The on-going increase in electricity prices has led to some changes in the market. More specifically, several independent companies that are operating via the internet allow customers to easily compare different electricity plans offered by all of the New Zealand electricity providers. They also provide a platform allowing consumers to readily switch electricity providers in order to receive the cheapest overall electricity prices. Some of these companies, such as 'WhatsMyNumber" and "Consumer.powerswitch", have undertaken extensive advertising campaigns in an attempt to raise consumer awareness. The success of these independent companies has improved the transparency of the electricity industry which offsets any confusion pricing tactics that may be practiced by some retailers in New Zealand.

Cultural factors have also had influential effects on the electricity industry in New Zealand. In much of the western world, including New Zealand, electricity consumption is considered a necessity. This creates a lot of difficulty for electricity retailers in regards to dealing with bad debtor or high risk customers. Retailers can no longer simply disconnect customers' electricity when they fail to pay their bills. Such actions can potentially result in public disputes, protests, and negative corporate image. It has become common practice for retailers to check customers' dependencies on electricity as well as offer

alternative solutions to disconnection, such as payment instalments and pay-as-you-go electricity plans (Mighty River Power 2010).

Approximately 75% of electricity in New Zealand is generated from renewable sources (MED 2010). While this has positive implications for the level of CO^2 emissions, it also explains some of the volatile nature of the New Zealand electricity market (Genesis 2010). More specifically, the majority of electricity generation comes from hydro sources with relatively low levels (around six weeks) of storage capacity (Genesis 2010). The nature of electricity generation in New Zealand causes issues that are costly to the electricity providers. In particular; fluctuations in electricity supply and thus price makes financial forecasting difficult; and specific electricity plants, "peakers", with high variable costs are needed during peak times to meet the subsequent high levels of demand. This is because the output from hydroelectricity plants cannot be varied enough to follow daily demand fluctuations between peak and off-peak times. The geographical landscape of New Zealand also creates some unique issues faced by the electricity industry (Genesis 2010). New Zealand is a narrow country with a low population density. Therefore, electricity must be transmitted relatively long distances between generation plants and end users. These long distances in which electricity is transmitted means that the industry faces a high level of "Transmission Loss". In 2009 this accounted for 7.6% of New Zealand's total electricity output (MED 2010).

1.4.3 The Context of the Current Project

Taking into account the aforementioned, in particular the highly competitive and complex nature of the industry, reducing the operating costs by any electricity company in New Zealand is a primary objective. Introducing modern pay-as-you-go electricity plans to the mass market is just one of the potential ways electricity retailers can achieve this.

In 2004, it was evident that pay-as-you-go cell phone plans (better known as prepaid) were becoming very successful in New Zealand. Approximately 70% of all 2,959,000 mobile subscribers in New Zealand were using prepaid cell phone plans at the time

(Dholakia, N, Rask and Dholakia, RR 2006). It can be speculated that this high level of market penetration can be attributed to the extensive marketing efforts undertaken by Mobile Companies as well as the introduction of 'low user costs' available to prepaid customers (Dholakia, N, Rask and Dholakia, RR 2006). Similarly, there is a growing uptake rate of debit cards in New Zealand, slowly replacing traditional post-pay credit cards (Reserve Bank of New Zealand 2008). The success of prepaid cell phones and debit cards in New Zealand would imply that pay-as-you-go electricity plans have the potential to become a common alternative for New Zealanders. However, this may be hindered by negative stigmas associated with pay-as-you-go plans, or even the commoditised and indispensable nature of electricity. The current research, commissioned by Mercury Energy, has been conducted to either prove or disprove that pay-as-you-go electricity plans can work in the mass market of New Zealand.

The research conducted by this project is only a component of a larger research initiative currently being undertaken in conjunction with Mercury Energy. Details of the wider research project cannot be discussed much further here due to confidentiality agreements. However, it can be specified that it includes a wide range of initiatives aimed at reducing the cost of electricity bills for consumers.

Chapter Two: A Review of the Pertinent Literature

This review will attempt to cover the relevant literature that is pertinent to the marketing issues that resonate with the introduction of an alternative electricity plan. This will enable a more in depth understanding of the key subject areas related to this project and will ultimately result in the development of a set of propositions. The main focus of the literature search will be to detail the development of the ideas, concepts, and assumptions that have been presented by academic scholars. The understanding gained in the process will provide an insight into consumers' behaviours and attitudes towards pay-as-you-go electricity plans, and the current marketing issue. This will aid the construction of the research approach as well as the findings, conclusions, and recommendations that will follow.

The review of the pertinent literature will cover four main subject areas relevant to this research project. A rationale as to why each subject area will be covered is set out below.

Energy Consumption Behaviour: The purpose of reviewing the literature in this section is to create a context for the research project. There is a need to understand consumer response to electricity as a product. Ideally this will help provide better insight into consumers' attitudes and perceptions towards pay-as-you-go electricity plans. This section is particularly important as consumer response towards an electricity payment plan may differ from other forms of innovation. It is thus necessary to explore energy consumption behaviour to understand the likely involvement, attitudes, and perceptions relevant to the current research project.

Diffusion of Innovations: As the marketing issue resonates with the introduction of a new innovation, it is important to review the pertinent Diffusion of Innovations literature. The purpose of this section is to understand the different elements of diffusion. In particular, the potential factors that will limit the speed that pay-as-you-go electricity plans may diffuse, as well as the potential factors that will accelerate diffusion. It will also provide

insight into the behaviours and characteristics of consumers who will initially adopt pay-as-you-go electricity plans.

Consumer Resistance to Innovation: There is limited benefit to exploring the characteristics of innovators and the reasons they adopted an innovation. Instead understanding the non-adoption of an innovation, and the resistance offered by consumers, provides more insight into attitudes and behaviours towards an innovation (see Section 2.2).

Product Positioning: The purpose of exploring the Product Positioning literature is to provide a conceptual understanding of consumer perceptions towards pay-as-you-go electricity plans. There is a particular need to explore the different components of product attributes and the development of consumers' perceptions towards them. This will help analyse consumer perceptions as well as the positioning opportunities for pay-as-you-go electricity plans.

2.1 Energy Consumption Behaviour

2.1.1 Introduction to Energy Consumption Behaviour

The context of this literature review, and this research, is constructed surrounding energy consumption behaviour. While much of the focus of this literature review will be on product positioning, diffusion of innovations, and consumer resistance to innovation, discussed in the following two sections, energy consumption behaviour will form a basis for the interpretation of this research.

This section exploring energy consumption behaviour will cover aspects of consumers' perceptions and attitudes towards electricity as a product and habitual behaviour. This is consistent with the formulation of behaviour set out in Macey and Brown (1983) as "Behaviour is a function of behavioural intention, habit, and facilitating conditions" (p. 126). This section attempts to detail how the electricity market is perceived by consumers

and the attitudes held towards electricity as a product. Then habitual behaviour in relation to energy consumption is defined and explored.

2.1.2 Defining Electricity as a Product

The way in which a consumer behaves and makes decisions depends, generally, on whether the respective product is classified as low involvement or high involvement (Antil 1984). While there is no agreed upon definition in the literature regarding consumer involvement, it is traditionally assumed that the level of interest and stimulus are the main differing factors between the two types of products (Antil 1984; Kassarjian 1981). When classifying a product as either low involvement or high involvement, there does seem to be consensus in the literature that it depends on the nature of the context (Antil 1984). For instance, the level of involvement for a particular good may differ between consumers or even situations. It is the consumer's response to a particular good that determines the level of involvement. Therefore, it is difficult to determine whether, in general, electricity is a high involvement or a low involvement product.

Little has been written in the literature directly relating to consumers' perceptions and attitudes towards electricity. The most predominant literature addressing consumers' behaviour surrounding electricity are various energy analyses that have been commonly approached with a neoclassical way of thinking (Biggart and Lutzenhiser 2007). In particular, much of this work concludes that the demand for electricity is inelastic (Alberini and Filippini 2010: Kirshen 2003). However, there is doubt in the literature regarding reasons as to why the demand for electricity is inelastic (Kirshen 2003) and the assumptions that neoclassical analyses conform to limits its interpretation (Biggart and Lutzenhiser 2007). It is unlikely that consumers have the information required, or even the motivation, to carry out a cost/benefit analysis each time they consume electricity (Fischer 2008: Kirshen 2003).

The nature of electricity as a product also gives insight into how consumers behave in respect to electricity consumption. For instance, Fischer (2008) argues that "Electricity

differs in significant ways from other consumer goods. It is abstract, invisible, and untouchable. It is not consumed directly but indirectly via various energy services" (p. 80). This suggests that unlike a typical consumer product, the intangible nature of electricity coupled with its endless supply implies that a consumer has very little control over their consumption (Fischer 2008). This is reiterated by the idea that electricity has been a readily available and convenient commodity for over a century, thus it is unlikely that many consumers repeat a cost/benefit analysis every time they use an electrical appliance (Kirshen 2003). Instead consumers have traditionally only ever gained an insight into their electricity usage approximately once per month when they are billed (Fischer 2008). This alone, for most consumers, does not provide the information needed to become highly involved in their electricity usage (Kempton and Layne 1994; Fischer 2008). The work of Kempton and Layne (1994) would suggest that consumers do not pay much attention to their electricity bill unless it seems unusually high. It is acknowledged that a large percentage will look at the dollar amount, which is needed in order to pay the bill, however significantly less look at finer details such as 'average kWh per day' or 'Energy used this month (kWh)' (Kempton and Layne 1994, pp. 859-860). When taking these points into consideration it is likely that for most consumers, electricity is not a highly involved product even though it is deemed important and mostly non-discretionary (Sheram 2003).

2.1.3 Habitual Behaviour in Electricity Consumption

Habitual behaviour is defined by Heijs (2006) as "the manifestation of a habit in repeated, overt (non)behaviour" (p. 151). This is different to habit which is subsequently defined by Heijs (2006) as "a mental structure, composed of a situation or domain, a related goal, a behavioral disposition to reach this goal and a cue (a stimulus triggering the structure and thus the behavior), that is learned through reinforced repetition of the behavior in that particular situation and in response to that particular cue" (pp. 150-151). While these terms are often used somewhat interchangeably in the literature (Aarts, Verplanken and Knippenberg (1998), there are some distinguishing differences. Aarts, Verplanken and Knippenberg (1998) summarises the difference in terms of frequency. In particular, when

a mentally represented and goal directed automatic behaviour (habit) becomes more frequent, it potentially becomes habitual (1998). This happens when "once established, habitual behaviors no longer require a process of reasoning or planning to occur" (Aarts, Verplanken and Knippenberg 1998, p. 1360).

In Aarts and Dijksterhuis (2000) it was hypothesised and successfully tested that "habits are mentally represented and that they can be activated automatically" (p. 54). The idea of automaticity of higher mental processes has been largely explored within the experimental psychology discipline throughout the 20th century with contrasting opinions between the 'behaviourists' and 'cognitive scientists' schools of thought (Bargh and Ferguson 2000). There is consensus in the literature that higher mental and automatic processes such as habit, can proceed non-consciously in a deterministic fashion (Bargh and Ferguson 2000). Traditionally this has been interpreted by 'behaviourists' as unintentional in nature, however overwhelming evidence in the area suggests that unconscious actions proceed some level of reflection (Bargh and Fergusen 2000). Therefore, habit and habitual behaviour should not be interpreted as mindless action without awareness even though it occurs automatically and sub-consciously (Aarts, Verplanken and Knippenberg 1998; Bargh and Fergusen 2000).

Habitual behaviour is a big factor in energy consumption behaviour (Heijs 2006), namely because by analysing an individual's previous habitual behaviour, one can usually predict their future behaviour (Ouellette and Wood 1998). For instance, if an individual turns on all the lights in the evening, they are likely to do the same in the future (Heijs 2006). Habitual behaviour with negative consequences, such as wasteful energy use, is difficult to prevent or alter (Heijs 2006). In the context of purchasing electricity, the action of paying the bill each month for a number of years, without paying significant attention to usage details (Kempton and Layne 1994), can potentially become habitual for the consumer. Heijs (2006) sets out four general possibilities where intervention can overcome habitual behaviour. The first is "the alteration of the mental habit itself" (p. 153) which is done by using information to change the behaviour in the first place (2006). The second way is "is to block the activation of the habit" (p. 153) in order to stop the behaviour from taking place, for instance preventing the environmental cue that triggers

the behaviour (2006). The third way is once the behaviour has been triggered, the "activity can be hindered by situational, psychological or social barriers, thus forcing a transition to planned behaviour" (2006, p. 153). The fourth way is the mitigation of habitual behaviour with the use of technology, e.g. installing a sensor that automatically turns the lights on and off (2006). The latter is the preferred way of behaviour modification because in many cases it can be designed to be compatible with an individual's way of life (Heijs 2006).

Intervening in an individual's habitual behaviour using Heijs (2006) fourth and preferred method can have adverse effects depending on the nature of the behaviour. Behavioural intervention must "conform, among other things, to present knowledge, the feasibility of alternative action and constraints posed by existing behavioural patterns, goals, values, costs and benefits" (Heijs 2006, p. 154). With habitual behaviour in particular, any intervention must also acknowledge the kind of habitual activity (Heijs 2006). For instance, a light sensor that automatically turns lights on or off will work if the individual's habitual behaviour stems from the relative ease of simply leaving the lights on (Heijs 2006). However, if the habitual behaviour stems from the individual's belief that it is cheaper to leave the lights on, the intervention will instead have adverse reactions (Heijs 2006).

2.1.4 Implications

This section has provided a context in which the focus of the literature review and the research approach can be guided. It has explored aspects of electricity as a consumer product in an attempt to better understand the way in which consumers make decisions and behave within the market. While acknowledging that the nature of a product, either low involvement or high involvement, is somewhat subjective (Antil and Delaware 1984; Kassarjian 1981), it has been determined that for most consumers electricity is most likely not a highly involved product even though it is deemed as a necessity.

Aspects of habitual behaviour were also explored in this section as it is a big factor in energy consumption behaviour (Heijs 2006). Habitual Behaviour is "the manifestation of a habit in repeated, overt (non)behaviour" (Heijs 2006, p. 151) where "once established, habitual behaviors no longer require a process of reasoning or planning to occur" (Aarts, Verplanken and Knippenberg 1998, p. 1360). It was determined that an individual's habitual behaviour is likely to continue in the future and can be somewhat difficult to overcome. This is especially true if the methods used to overcome habitual behaviour are not compatible with the individual's perceptions or past experiences. This could be problematic for the current business problem that this research aims to address. A consumer who has been making monthly bill payments in a repeated fashion for several years could have potentially developed a habitual behaviour in regards to their electricity plan.

2.2 Diffusion of Innovations

2.2.1 Introduction to Diffusion of Innovations

This section aims to explore the pertinent literature regarding the diffusion of innovations. Diffusion of Innovations is the process in which an idea, practice, or object spreads throughout a social system (Rogers 2003; Spence 1994). The diffusion of an innovation represents a change in the state of a social system (Spence 1994). Therefore, the study of the diffusion of Innovations has been of high interest across many disciplines, in particular social science disciplines (Wejnert 2002). The model of diffusion was arguably popularised by Everett Rogers in 1962 (Rogers et al. 2005). Rogers (2003) is the 5th edition in his Diffusion of Innovation series and revises the work of prior instalments plus the work of many other scholars. Thus Rogers (2003) is referred to on several occasions in this section.

2.2.2 Diffusion

Everett Rogers (2003) defines diffusion as "the process in which an innovation is communicated through certain channels over time among members of a social system" (p. 5). This definition has been popularised in the literature ever since Rogers was accredited the Diffusion of Innovations model in 1962 (Rogers et al. 2005). Similar definitions that have been adapted from Roger's definition include: "the diffusion of innovations is the process by which a few members of a social system initially adopt an innovation, then over time more individuals adopt until all (or most) members adopt the new idea" (Valente 1995, p. 70). These definitions imply that unlike adoption, diffusion is distinguished as the uptake rate of an innovation on an aggregate scale (Rogers 2003; Spence 1994), whereas adoption refers to the uptake rate of an innovation on an individual scale (Spence 1994). More specifically, diffusion is the process of cumulative adoption of an innovation within a social system (Spence 1994). However, Spence (1994) argues that there is merit in focusing on adoption and diffusion simultaneously when looking at innovation. Commonly, diffusion is broken down into four main elements; innovation, communication channels, time, and the social system (Rogers 2003; Spence 1994; Valente 1996).

2.2.2(A) Innovation

Innovation is a very broad term that has no distinct meaning, making it a difficult construct to objectively specify (Johnson 2001; Rogers 2003). Moreover, innovation is a subjective term that may differ between contexts (Rogers 2003; Spence 1994). This is incorporated in Rogers (2003) definition which states "an innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p. 12). This implies that prepaid electricity plans can be considered as an innovation by some consumers, even though they have been offered to other consumers in the past. Spence (1994) also adds that an innovation is perceived as an improvement to the existing format which is based on an individual's perception. For instance, something that is

perceived as an improvement by one individual may be considered a step backwards by another depending on their past experiences and value judgements (Spence 1994).

Roger's (2003) definition of innovation suggests that an innovation is something that is new, as perceived by an individual (p. 12). The newness of an innovation is not objectively measured by the amount of time since it was developed or released (Rogers 2003). The newness of an innovation is instead a subjective measure of an individual's own attitude towards it (Rogers 2003). Thus an individual can be aware of an innovation for a long period of time, however it is only perceived as new by them once they develop an attitude towards it that may or may not result in their decision to adopt (Rogers 2003; Spence 1994).

The ideas presented in this sub-section imply that an innovation, perceived as new, can diffuse throughout several groups of individuals at different times (Rogers 2003; Spence 1994). This is commonly characterised by the Bass model which is often accompanied by the S-shape curve outlining the different adopter categories (Bass 1994; Rogers 2003; Spence 1994). The Bass model has been empirically generalised to depict the diffusion process of many, diverse, innovations (Mahajan, Muller, and Bass 1990). This suggests that a product that has been in the market for some time can be re-positioned and perceived as new by a different group of individuals, thus making it an innovation (Valente 1996).

2.2.2(B) Communication Channels

With reference to the Diffusion of Innovations, communication is the transfer of information regarding a particular new idea (Rogers 2003; Spence 1994). Rogers (2003) specifies that "the essence of the diffusion process is the information exchange through which one individual communicates a new idea to one or several others" (Rogers 2003, p. 18). Communication channels are the means in which information is exchanged (Rogers 2003; Spence 1994). This may refer to the elements of communication such as the

relationship between the interacting parties, the context of the communication, proximately, and actor characteristics (Rogers 2003; Wejnert 2002).

Traditionally it has been assumed that mass media, business to consumer, communication channels are the fastest and most effective way of informing potential adopters about an innovation (Rogers 2003; Spence 1994; Wejnert 2002). This may still be the case with electricity plans given the nature of the product. However, there is a growing body of literature that suggests that the smaller scale interpersonal consumer-to-consumer communications are equally, if not more, effective than mass media (Gueseo and Guidolin 2009; Valente 1996; Wejnert 2002). This idea stems from social network theory popularised by Granovetter (1973) (Valente 1996). "A social network is the pattern, friendship, advice, communication or support which exists among the members of a social system" (Valente 1996). It is believed by scholars that the higher the proportion of adopters in one's personal network, the greater the likelihood of that individual adopting the innovation themselves (Gueseo and Guidolin 2009; Valente 1996). This theory suggests that if one's personal network has a high proportion of consumers using prepaid electricity plans, they will be more likely to adopt it themselves.

2.2.2(C) Time

In diffusion of innovations, the time dimension relates to the innovation-decision process, the innovativeness category of an individual, and the rate of adoption (Rogers 2003, p. 20). As diffusion is a process, time is a necessary aspect for the concept to hold any meaningful value (Spence 1994). In particular, Spence (1994) discusses time as a necessary dimension for three factors (p. 73): the amount of time elapsed between awareness and either adoption or rejection is required to understand the characteristics of an individual's decision process (1994); the relative stage that an individual adopts an innovation within a social system, stipulates their respective adopter category (1994); and the amount of people who adopt an innovation within a given time frame is used to measure the rate of adoption in a particular social system (1994).

2.2.2(D) Social System

Rogers (2003) defines a social system as "a set of interrelated units that are engaged in joint problem solving to accomplish a common goal" (p 23). Thus members can include "individuals, informal groups, organisations, and/or subsystems" (Rogers 2003: p 23). A social system is an important factor in the diffusion of an innovation as it forms the context in which diffusion takes place (Rogers 2003; Scheuing 1974; Spence 1994). A social system establishes the boundary in which an innovation diffuses where its structure affects the process (Rogers 2003; Spence 1994). Wejnert (2002) argues that the structure of a social system, including spatial relationships between members, is an important factor to consider in the diffusion process of an innovation. This idea is related to social network theory (Wejnert 2002), that was introduced in Section 2.2.2(B).

An individual's innovativeness is not only affected by their personal characteristics, it is also affected by the nature of their respective social systems (Rogers 2003; Valente 1996). For instance, social norms dictate an individual's expected behaviour where norms "are the established behaviour patterns for the members of a social system" (Rogers 2003" p. 26). If an innovation opposes a social system's normative behaviour, the likelihood of a high rate of adoption within that system is diminished (Rogers 2003; Spence 1994).

'Opinion Leaders' are members of a social system that are traditionally thought by scholars to have a high level of influence in the process of diffusion (Rogers 2003; Spence 1994; Valente 1996). 'Opinion Leaders' are members who have the ability to influence others' behaviours towards an innovation (Rogers 2003; Spence 1994). In network theory, opinion leaders have a high degree of connectivity with other members of the social system (Valente 1996). However, the work of Granovetter (1973; 1982) suggests that loosely connected members of a social system (weak ties) are required in order for an innovation to diffuse across groups within the system.

Similar to 'Opinion Leaders', 'Change Agents' are also high influencers of adoption within a social system (Rogers 2003; Spence 1994). A 'Change Agent' is "an individual who

influences clients' innovation-decisions in a direction deemed desirable by a change agency" (Rogers 2003, p. 27). 'Change Agents' do not necessarily influence adoption because they believe it will benefit the members of the social system, instead they influence adoption as necessary for their agency (Spence 1994). A 'Change Agent' is often highly qualified and thus holds high social status among members of a social system (Rogers; Spence 1994). They are well informed of the respective innovation and are willing and able to effectively communicate ideas to clients (Rogers 2003; Spence 1994).

Within a social system, there are four types of innovation-decisions that result in the rejection or adoption of an innovation (Rogers 2003; Spence 1994). 'Optional Innovation-Decisions' are "the choices to adopt an innovation made by an individual independent of the decision of other members of a social system" (Spence 1994, p. 197). Even though the individuals' decisions are independent in this case, they can still be influenced by communications and factors such as social norms (Rogers 2003). This type of innovation decision has traditionally received the most attention in marketing research (Ram and Sheth 1993; Rogers 2003). 'Collective Innovation-Decisions' are described by Spence (1994) as "the choices to adopt or reject an innovation in this case is made by consensus among members of a systems" (p. 197). 'Authority Innovation-Decisions' are when "choices to adopt or reject an innovation are made by relatively few individuals in a system who possess power, status, or technical expertise" (Rogers 2003, pp. 28-29). These decisions are usually made for the better of the social systems as a whole (Rogers 2003). For instance, it is a requirement in the United States that all new cars include seat belts (Rogers 2003). Finally 'Contingent Innovation-Decisions' are a combination of any two or more types of decisions listed above (Rogers 2003; Spence 1994).

2.2.3 The Process of Diffusion

The decision to adopt an innovation by members of a social system has been recognised by scholars as a process, not a one of action (Rogers 2003; Spence 1994; Valente 1996). Figure 2.1 displays Roger's (2003) innovation-decision process that is undertaken

members of a social system. The process is concluded by the confirmation of the decision to either adopt or reject an innovation (Rogers 2003).

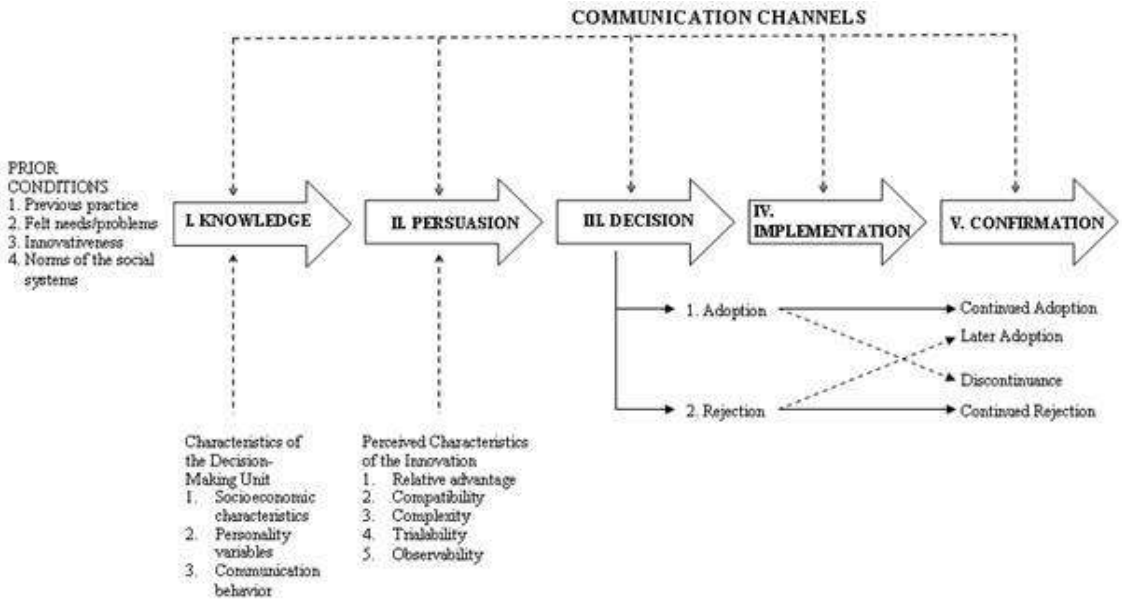

Figure 2.1- A Model of Five Stages in the Innovation-Decision Process

Rogers 2003: p. 170

Figure 2.1 consists of five stages that occur in the innovation-decision process; knowledge, Persuasion, Decision, Implementation, and Confirmation (Rogers 2003). Bagozzi and Lee (1999) argue that an innovation faces significant consumer resistance within the prior conditions and the knowledge stage of the innovation-decision process. These aspects will be discussed in more detail in the section below.

2.2.4 Rate of Adoption

The rate of adoption is affected by five characteristics (influencers of adoption) consistent with the persuasion stage of the innovation-decision process (Rogers 2003). The persuasion stage is where an individual develops an attitude towards an innovation based on their perception of its characteristics which are listed by Rogers (2003). 'Relative Advantage' "is the degree to which an innovation is perceived as better than the idea it supersedes "(p. 15). 'Compatibility' "is the degree to which an innovation is perceived as

being consistent with the existing values, past experiences, and needs of potential adopters" (p. 15). 'Complexity' "is the degree to which an innovation is perceived as difficult to understand and use" (p. 15). 'Trialability' "is the degree to which an innovation can be experimented with on a limited basis" (p. 16). Finally 'Observability' "is the degree to which the results of an innovation are visible to others" (p. 16). The first three characteristics ('Relative Advantage', 'Compatibility', and 'Complexity') of an innovation are considered the most significant factors that influence the rate of adoption (Tornatzky and Klein 1982). Therefore, in order for a pay-as-you-go electricity plan to become widely adopted it must be perceived as an improvement to pay in arrears, consistent with the values and past experiences set by pay in arrears, and perceived as simple to use.

2.2.5 Adopter Categories

The categorisation of adopters has played a major part in the research into the diffusion of innovations (Valente 1996). Adopter categories were created as a means for audience segmentation where characteristics of each can be determined and compared (Valente 1996). Adopter categories are based on 'innovativeness' which is a function of time-of-adoption (Rogers 2003; Valente 1996). Innovativeness is defined by Rogers (2003) as "the degree to which an individual (or other unit of adoption) is relatively earlier in adopting new ideas than other members of a system" (p. 267). The work of Chatterjee and Eliashberg (1990) suggests that an individual's innovativeness is a function of both consumer characteristics and innovation characteristics, in which affect the rate of adoption. Therefore, as discussed by Chatterjee and Elisashberg (1990), "lower risk aversion, higher initial expectation of performance, greater confidence in initial beliefs (given favourable initial perception), a lower price hurdle, or greater perceived reliability of information implies a lower γ-value and thus earlier expected adoption" (p. 1066) where γ = a composite measure of innovativeness (lower the γ-value, higher the innovativeness).

One of the main ideas central to diffusion of innovations research, particularly adopter categories, is the Bass model (Mahajan, Muller and Bass 1990; Wejnert 2002). The Bass

model assumes that there are two main groups of adopters (Mahajan, Muller and Bass 1990). The first group, termed 'innovators', are only influenced by external mass-media communications (1990). The second group, termed 'imitators', are only influenced by internal word-of-mouth communications (1990). Rogers (2003) categorises adopters of an innovation into five groups which follows a classic normative distribution (Wright and Charlett 1995). These include Innovators, Early Adopters, Early Majority, Late Majority, and Laggards (Rogers 2003). The innovativeness of each category are determined by "laying off standard deviations (sd) from the average time of adoption (x)" (Rogers 2003: p. 281) shown in figure 2.2 below.

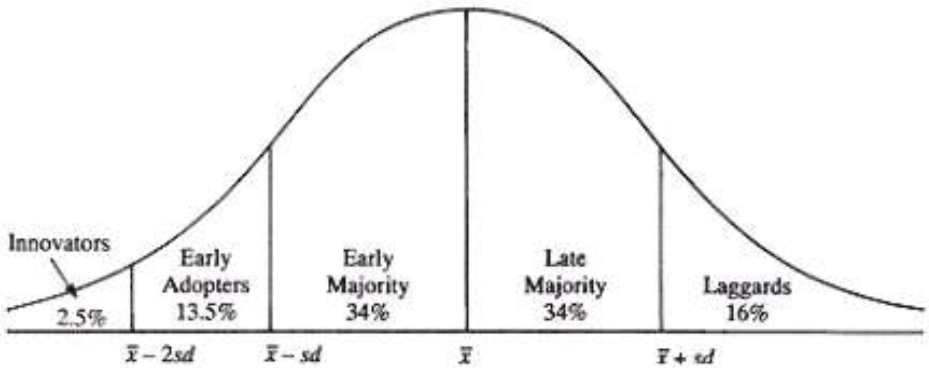

Figure 2.2- Adopter Categorisation on the Basis of Innovativeness

Rogers 2003, p. 281

In the past, there has been a significant amount of research into the characteristics of each adopter category (Wright and Charlett 1995). For instance, Rogers (2003) outlines "Adopter Categories as Ideal Types (p. 282). For example Rogers (2003) classes innovators as 'venturesome', early adopters as 'respect' and so on (pp. 282-285). However, Wright and Charlett (1995) argue that determining common characteristics possessed by each adopter category is limited because evidence suggests that the link between innovativeness and personality is not consistent. It is also argued by Wright and Charlett (1995) that the adopter categories set out in Rogers (2003) are determined by percentage difference from the mean, not personality characteristics. This means that adopter categories cannot be determined until the entire innovation diffusion process is completed which provides limited managerial value (Sinha and Chandrashekaran 1992; Wright and Charlett 1995). The classification of adopter categories also provides limited

value as it does not take into consideration non-adopters (Wright and Charlett 1995). Arguably, in this current project regarding Advance, customers who adopted the trial product will be innovators in contrast to the customers who rejected it. As mentioned above, there is a recognised need to focus on non-adopters who resist an innovation (Ram and Sheth 1989).

2.2.6 Conclusion to Diffusion of Innovations

This section has explored the pertinent literature regarding the diffusion of innovations that is relevant to this review. In particular, the elements of diffusion were broken down into four distinct categories: innovation, communication channels, time, and the social system. The diffusion of innovation discussed showed that there are certain criteria that must be met before a consumer adopts an innovation. Consumer resistance was introduced, which will be considered in more detail in Section 2.3. The rate of adoption was explored, particularly as a function of certain characteristics of innovations. These included relative advantage, compatibility, complexity, trialability, and observability. Finally, adopter categories were discussed, which were found to be closely influenced by the rate of adoption. More specifically, adopter categories are based solely on the time of adoption which was found to hold limited value as a segmentation technique.

2.3 Consumer Resistance to Innovation

2.3.1 Introduction to Consumer Resistance to Innovation

This section will explore the pertinent literature surrounding consumer resistance to innovation that is relevant to this review. Consumer resistance to innovations (consumer resistance; innovation resistance) has received very little attention in the literature despite the early and popularised work of Sheth (1981) (Kleijnen, Lee and Wetzels 2009). Scholars such as Sheth (1981) and Szmigin & Foxall (1998) argue that instead of focusing research efforts on innovators, there is a need to understand the motivations and

psychology of consumers who resist innovations. By utilising the knowledge gained from understanding why consumers resist change, scientific and marketing resources can be better channelled in order to become more productive (Garcia, Bardhi and Friedrich 2007; Sheth 1981). Despite the advantages of focusing on consumer resistance to innovations, it is unfortunate that it has received very little attention in the literature (Kleijnen, Lee and Wetzels 2009).

The work of Kleijnen, Lee and Wetzels (2009) develops a systematic review of consumer resistance using a conceptual framework. This framework categorises three types of resistance: rejection, postponement, and opposition (2009). It also considers two main groups of antecedents: degree of change, and belief structure (2009). This review will indirectly follow this framework as a means of exploring consumer resistance to innovation.

2.3.2 The Importance of a Consumer Resistance Focus

Diffusion of innovations research has traditionally assumed all innovations to be good thus they should be widely adopted (Rogers 2003; Sheth 1981). However, due to the resistance of consumers, most business corporations face a very high level of new product failure (Ram and Sheth 1989). Furthermore, many new products that do succeed often have a very slow take off time which can result in delayed returns or even negative paybacks (Garcia, Bardhi and Friedrich 2007). Evidence suggests that innovators, see Section 2.2.5, are "more likely to be social deviants, abnormal in their epistemic drive, and adopt innovations indiscriminately rather than based on rational choice calculus" (Sheth 1981, p. 274). Therefore, there is limited value in understanding the behaviours of innovators in order to influence other individuals to adopt innovations (Bagozzi and Lee 1999; Garcia, Bardhi and Friedrich 2007; Sheth 1981).

2.3.3 Elements of Consumer Resistance

Consumer resistance to innovation (innovation resistance) is defined by Ram and Sheth (1989) as "the resistance offered by consumers to an innovation, either because it poses potential changes from a satisfactory status quo or because it conflicts with belief structure" (p. 6). This definition suggests that there are two main components, or causes, of innovation resistance (Kleijnen, Lee and Wetzels 2009; Ram and Sheth 1989). The first is the degree of change from the status quo required by an individual adopting the innovation (2009; 1989). The second is the level of conflict towards an individual's belief structure caused by an innovation (2009; 1989). These two factors closely relate to the introduction of Advance. As pay in arrears is the traditional format for purchasing electricity, it has the potential to act as the status quo for many consumers. Pay-as-you-go electricity plans may also conflict with individuals' belief structures as a result of any negative stigmas that may exist.

To further characterise the two components of consumer resistance, Garcia, Bardhi and Friedrich (2007) classify innovations as either receptive or resistant. A consumer does not have to adjust "existing belief structures, attitudes, traditions, or entrenched routines significantly" (p. 83) when adopting a receptive innovation thus they are more likely to be embraced by a social system (Garcia, Bardhi and Friedrich 2007). Contrary to this, resistant innovations require a consumer to move from their comfort zones because they either "conflict with consumer belief structures or require potentially large behavioural changes from a status quo that the consumer finds satisfactory" (Garcia, Bardhi and Friedrich 2007, p. 83). Therefore, resistant innovations incur psychological costs on consumers as they are required to learn new habits, routines, traditions, and values (Gourville 2003).

2.3.4 The Status Quo Bias

The status quo bias is a phenomenon observed in individual choice behaviour theory (Masatlioglu and Ok 2005). It has been observed that "relative to other alternatives, a

current choice or a default option is often evaluated markedly positively by the individuals" (Masatlioglu and Ok 2005, p. 2). This phenomenon goes against the fundamentals of the rational choice model, which assumes that individuals choose an alternative solely based on the expected utility gained from the respective attributes (Chernev 2004; Masatlioglu and Ok 2005). Traditionally, this phenomenon has been attributed to Kahneman and Tversky's (1979) loss-aversion principle (Chernev 2004). This principle assumes that an individual will place more weight on a (potential) loss and less weight on an equal (potential) gain (Kahneman and Tversky 1979). Therefore, when an individual is making a decision between two options, with one being their current solution, potential advantages and disadvantages of the alternative option will most likely be perceived asymmetrically (Chernev 2004; Masatlioglu and Ok 2005).

Sheth (1981) outlines the link between the status quo and both the habit towards existing practice as well as perceived risk associated with innovations. These will be discussed in the subsections below. The work of Chernev (2004) suggests that goal orientation plays a role in the status quo bias phenomenon as well which will be discussed in further detail below.

2.3.4(A) Habit and the Status Quo

Sheth (1981) argues that habit (discussed in detail in Section 2.1.3) is "the single most powerful determinant in generating resistance to change" (p. 275). It is unlikely that a consumer will actively pay attention to, or seek information regarding new innovations without any motivational incentive (Bagozzi and Lee 1999; Sheth 1981). Furthermore, it is typical behavioural tendency possessed by consumers to "strive for consistency and status quo" (Sheth 1981, p. 275). The famous case of the failure of 'New Coke' in 1985 is an example of how consumers are attached to existing products (Szmigin and Foxall 1998). That is because innovativeness is not as prevalent in consumer behaviour as habit (Sheth 1981).

With respect to these assumptions, Sheth (1981) developed three propositions regarding the relationship between habit and innovations. The first is that the stronger the habit a consumer possesses towards existing behaviour, the stronger their level of resistance towards an innovation associated with change (1981). As discussed in Section 2.1.3, strong habit is difficult to overcome by intervention and consumers are likely to continue with the associated past behaviour in the future (Heijs 2006). The second proposition is that if an innovation requires consumers to change their total behavioural stream, instead of a single behaviour in isolation, it is likely to generate stronger consumer resistance (1981). This is because a habit encompasses a consumer's behaviour as a system, not one single action (Sheth 1981). Finally, habit is not the only cause of innovation resistance (1981).

Taking these propositions into account, the type of innovation is likely to influence the level of consumer resistance. More specifically, whether an innovation is continuous or discontinuous will influence consumer resistance (Ram and Sheth 1989). A discontinuous innovation is a radically new idea, practice, or object that is initially unfamiliar to consumers (Veryzer 1998). Therefore, the adoption of a discontinuous innovation is likely to require a greater level of change by the consumer (Ram and Sheth 1989; Veryzer 1998). This suggests, as aforementioned, a greater level of change required by an innovation results in a higher level of consumer resistance. Similarly, a continuous innovation is a relatively small and systematic improvement on an existing product class (Veryzer 1998). Therefore, the adoption of a continuous innovation requires a relatively smaller level of change by the consumer which results in less innovation resistance (Ram and Sheth 1989). Technically, Advance is likely to fall into this category as it is an improvement on existing prepaid electricity plans. However, for consumers using pay in arrears electricity plans, Advance is likely to be perceived as a discontinuous innovation because it represents an unfamiliar and fundamental change.

2.3.4(B) Perceived Risk

Perceived risk is a significantly different concept to risk on its own (Dowling 1986). Risk has traditionally been defined by decision theorists as "the situation where a decision maker has a priori knowledge of both consequences of alternatives and their probabilities of occurrence" (Dowling 1986, p. 194). However, in consumer behaviour theory, decision makers are unlikely to have the information and ability to assess such factors (Biggart 2007; Dowling 1986). This is reflected in the development of the perceived risk construct by consumer behaviour theorists (Dowling 1986). The work of Dowling (1986) specified perceived risk as a "fuzzy concept" (p. 194). Largely because there was no consensus in the literature at the time partly due to the number of factors affecting the perceived risk construct (1986).

Uncertainty is one of the major components of perceived risk (Dowling 1986). Referring back to the definition of risk, the decision maker is assumed to have perfect information of alternatives regarding the probabilities of occurrence (Dowling 1986). This definition is consistent with classical theory regarding decision under risk where uncertainty relates to partial ignorance, or bounded rationality (Fox and Tversky 1995). However, in marketing it is generally believed that consumers rarely know the exact probabilities and do not have perfect information (Biggart 2007; Mitchell 1999). Thus the development of perceived risk largely incorporated elements of uncertainty within it (Dowling 1986; Mitchell 1999). More specifically, consumer researchers' use of perceived risk is closely related to, and more accepting of, classical concepts of partial ignorance and bounded rationality (Mitchell 1999).

The work of Concar, et al. (2004) conceptualise perceived risk as a subjective, multidimensional, and contextual construct. Particularly researchers outline that the perceived risk construct should involve "personality traits and situation-related variables" (Concar et al. 2004, p. 430) This is incorporated in their definition of perceived risk: "a decision maker's importance-weighted subjective assessment of the expected value of inherent risk in each of the possible choice alternatives for a given decision goal" (Concar et al. 2004, p 431). Contrasting this definition with the fundamental influences prospect

theory has on consumer resistance perceived risk is an important factor to consider in regard to consumer resistance (Chernev 2004; Concar, et al. 2004).

Following on from habit, Sheth (1981) also argues that perceived risk is another major factor influencing consumer resistance to innovations. Specifically, Sheth (1981) describes three major forms of risk associated with innovations: "(i) adverse physical, social or economic consequences; (ii) performance uncertainty; and (iii) perceived side effects associated with the innovation" (p. 276). Researchers have further categorised these factors, for instance Lim (2003) outlined nine dimensions of perceived risk (p. 219). However, they are very similar to the three categories provided by Sheth (1981) and not as specifically related to associated innovations. Moreover, it is important for businesses to consider the effects of the different types of perceived risks on consumers if they wish to successfully overcome it (Lim 2003).

In line with the relationship between perceive risk and consumer resistance to innovations, Sheth (1981) develops three propositions. The first suggests that the higher the level of perceived risk, the higher the consumer resistance to the associated innovation (1981). The second suggests that discontinuous innovations (see Section 2.4.1) will generate a relatively high level of resistance as they include all three forms of perceived risks (1981). Finally, the third suggests that although perceived risk is a major influencer of resistance, it is not the only influencer (1981).

2.3.5 Consumer Belief Structures

There is consensus in the literature that consumers may display resistance to an innovation when it conflicts with their prior belief structures (Chernev 2004; kleijnen 2009; Ram and Sheth 1989). In line with the two components of consumer resistance, Ram and Sheth (1989) developed functional and psychological barriers that cause innovation resistance. Functional barriers arise from elements of the status quo bias, Section 2.3.4 (1989). Psychological barriers are usually developed when an innovation conflicts with prior belief structures (1989). Psychological barriers can be further

categorised into two factors: tradition barriers and image barriers (1989) which will be discussed below.

2.3.5(A) Tradition Barriers

"When an innovation requires a customer to deviate from established traditions, it is resisted. The greater the deviation, the greater the resistance" (Ram and Sheth 1989, p. 9). This is similar to compatibility presented by Rogers (2003), as one of the five characteristics of innovations that influence the rate of adoption. An example of an innovation that is resisted due to a tradition barrier is that of electronic baking, where the new method is not consistent with customers' traditional way of paying their bills (Sinkkonen et al. N.D).

2.3.5(B) Image Barriers

Image barriers arise because "innovations acquire a certain identity from their origins: the product class or industry to which they belong, or the country in which they are manufactured" (Ram and Sheth 1989, p. 9). The image barrier can be characterised as a consumer perceptual problem that arises from negative stigmas, or stereotypical links (Ram and Sheth 1989). If an innovation becomes associated with any of the above unfavourably, the consumer may resist the innovation due to the negative perceived image surrounding it (Ram and Sheth 1989)

2.3.6 A Typology of Consumer Resistance to Innovations

It is important to understand the type of innovation resistance offered by consumers when an organisation is releasing an innovation (Szmigin and Foxall 1998). Sheth (1981) presents a typology on innovation resistance, consisting of four categories, using habit and perceived risk. 'Dual Resistance Innovations' include high level of perceived risk and high levels of habit, these are the most likely to fail (1981). Examples include social

programs that require the development of specific innovation programs to help them succeed (1981). 'Habit Resistance Innovations' have low levels of perceived risk and high levels of habit (1981). These often include continuous or replacement innovations (1981) and generally offer little relative advantage (Rogers 2003). 'Risk Resistance Innovations' involves high levels of perceived risk and low levels of habit (1981). These are usually discontinuous innovations that are radically new thus perceived as risky, whilst at the same time generate new habits that do not conflict with existing habits (1981). Finally 'No-Resistance Innovations' have low levels of both perceived risk and existing habits (1981). Identifying the nature of an innovation constant with this typology allows those concerned to design programs that address perceived risk, existing habits, a combination of both, or neither of the two (Sheth 1981).

Similar to the typology of innovation presented by Sheth (1981), Smzigin and Foxall (1998) discuss three forms of innovation resistance: rejection, postponement, and opposition which were initially recognised in the work of Ram and Sheth (1989). These forms of resistance relate to the way in which an innovation is received by consumers (Smzigin and Foxall 1998), and the way in which the consumer behaves as a result (Kleijnen, Lee and Wetzels 2009). Thus this typology is based on three different types of consumer behaviour in relation to the way in which an innovation is resisted (Kleijnen, Lee and Wetzels 2009). Rejection, postponement, and opposition will now be discussed in further detail below.

2.3.6(A) Rejection

Rejection is an extreme case of resistance where the innovation is *rejected* by the masses (Smzigin and Foxall 1998). This does not occur simply because consumers do not try an innovation, or due to a general lack of awareness towards an innovation (Kleijnen, Lee and Wetzels 2009). Instead, rejection occurs when consumers are disinclined to accept the innovation after some level of evaluation and perceptual development on their part (Kleijnen, Lee and Wetzels 2009; Rogers 2003). Kleijnen, Lee and Wetzels (2009) argue that this can occur for two broad reasons. The first is because consumers do not perceive

an adequate relative advantage over existing alternatives (2009). The second is because consumers are reluctant to move from their desired state, the status quo (2009). A famous example of the latter point is the mass rejection of the DVORAK keyboard layout, where arguably it is far superior to the common QWERTY layout (Rogers 2003).

The work of Kleijnen, Lee and Wetzels (2009) also suggests that "as the variety of risk dimensions increases, consumers appear to be more likely to outright reject the innovation" (p. 354). This is consistent to the perceived risk propositions presented by Sheth (1981) outlined in Section 2.3.4(B). Furthermore, the perceived risk is not specifically limited to economic risk; it also includes dimensions of functional and social risk such as image (Kleijnen, Lee and Wetzels 2009). When rejection occurs due to negative perceptions of relative advantage, the innovation needs to be appropriately modified or removed from the market (Smzigin and Foxall 1998). When rejection occurs due to high levels of perceived functional or social risk, aspects of the marketing effort must be manipulated instead (Kleijnen, Lee and Wetzels 2009). For instance, to overcome perceived social risks, it is implied that "educating the consumer's environment (rather than the actual consumer) is most important" (p. 354).

2.3.6(B) Postponement

Postponement resistance occurs when a consumer delays the adoption of an innovation (Smzigin and Foxall 1998). Thus the consumer is not rejecting an innovation, however is not yet adopting the innovation even though they may find it acceptable (1998). Postponement is considered the weakest form of resistance (Smzigin and Foxall 1998). This is because it is generally driven by situational factors, temporary in nature (Kleijnen, Lee and Wetzels 2009). Such factors often include economic risk perceived as temporary by the consumer, which is considered by Kleijnen, Lee and Wetzels (2009) as one of the major influencers of postponement. An example of this form of resistance was found in Lawson, Henry, and Grieve (2011), where consumers did not "reject" alternative water heating systems but instead postponed there adoption due to situational factors. For appropriate courses of action, it is important for organisations or change agents to

recognise when an innovation is resisted due to postponement and not confused with rejection (Smzigin and Foxall 1998).

4.3.6(C) Opposition

Opposition is the final form of resistance and occurs when consumer become "convinced that the innovation is unsuitable and decide to launch an attack – for example negative word-of-mouth – against its launch" (Kleijnen, Lee and Wetzels 200,: p. 345). This was characterised by Davidson and Walley (1985) to describe situations where consumers actively employ tactics to limit the adoption of an innovation. New Zealand becoming nuclear free came arguably from this form resistance; this is also represented as "active rebellion" which can disrupt the natural workings of the market (Kleijnen, Lee and Wetzels 2009). This is most likely to occur with discontinuous innovations as opposed to continuous innovations (Daneels 2004)

The main drivers of this form of resistance are "factors strongly embedded in the consumers' personal and societal environment" thus acts as the strongest form of innovation resistance (Kleijnen, Lee and Wetzels 2009, pp. 353-354). Similar to rejection, elements of functional and social risk play an important role in opposition resistance (Kleijnen, Lee and Wetzels 2009). However, one fundamental difference between opposition and rejection is the absence of economic risk evident within this form of resistance (Kleijnen, Lee and Wetzels 2009). Thus policies based on monetary incentives in order to remedy opposition resistance are strategically inadequate (2009).

2.3.7 Goal Orientation

Goal orientation is related to consumers' preference for the status quo; particularly this preference is a function of goal orientation (Chernev 2004). Bagozzi and Lee (1999) argued that in relation to consumer resistance to innovations, "goals are important to study because they summarize a consumer's desires and become the basis for planning, action initiation, action control, and goal achievement" (p. 218). Bagozzi and Lee (1999)

developed the idea of purposive behaviour which is a necessary element for the adoption of an innovation, without it consumers display innovation resistance. More specifically, a consumer must possess elements of internal impetus in order to carry out a decision making process (Bagozzi and Lee 1999). That is, without recognition of a problem with current circumstances or situations, consumers will not begin any processes of adoption (Bagozzi and Lee 1999). In order to discuss this idea, Bagozzi and Lee (1999) divided the process of adoption into two separate segments: goal setting and goal striving.

The goal setting phase is a five stage process that ultimately concludes with the consumer's decision to adopt an innovation or not (Bagozzi and Lee 1999). The goal setting process "comprises various appraisal and related information processing activities directed at the innovation and ends with a decision to adopt or not" (p. 218). This incorporates a consumer's initial response to an innovation, their evaluations and perceptions of the attributes, their emotional (positive or negative) response to the innovation and the way in which they cope, and the adoption decision (Bagozzi and Lee 1999; Kleijnen, Lee and Wetzels 2009). The goal striving process occurs after goal setting and is concerned with the way in which the decision is implemented (Bagozzi and Lee 1999). "Goal striving consists of volitional processes transforming goals into goal attainment (e.g., planning and implementation activities) and ends with actual adoption or not" (Bagozzi and Lee 1999, p 218).

While the components of the goal setting and goal striving processes are useful to consider in understanding innovation resistance (Bagozzi and Lee 1999), the work of, and argument presented by, Kleijnen, Lee and Wetzels (2009) suggests that consumer resistance to innovations should be conceptualised based on the different forms of behaviours, not "a process model where consumers are considered to 'move through' the various forms of resistance" (p. 353). Thus this review will not consider the process models presented by Bagozzi and Lee (1999) in further detail.

2.3.8 Implications of Consumer Resistance

This section formed an in-depth analysis of consumer resistance to innovations and holds significant relevance to this research project. Consumer resistance is an important factor when considering the success or failure of a new innovation. In particular, it is important to understand the motivations and psychology of consumers who resist innovations. This section found that there are two main causes of consumer resistance. The first is the degree of change required by the consumer affects resistance. The status quo bias was presented here as a function of habit and perceived risk. It was found that the higher the associated habit and perceived risk, the higher the resistance to change. The second was the degree to which an innovation was consistent with a consumer's current belief structure. After which three forms of consumer behaviour were presented to represent differing types of consumer resistance. These included rejection, postponement, and opposition. Finally a goal orientated view of consumer resistance was presented where it was found that; (1) consumers need to be internally motivated before they will consider an innovation; and (2) the decision to adopt an innovation goes beyond initial purchase or trial.

2.4 Product Positioning

2.4.1 Introduction to Product Positioning

This section explores the literature surrounding product positioning that is pertinent to this research project. An organisation's decision on the positioning of a new or existing product should primarily be concerned with the changes in the way consumers perceive the product, and its alternatives, based on the attributes of each (Kaul and Rao 1995). According to Dillon, Domzal and Madden (1986) positioning strategies should be based on consumers' perceptual images and characteristics which "may or may not reflect the objective functional characteristics of the product" (p. 29). Furthermore, the model developed by Urban (1975) suggests that an important characteristic of product positioning is the "perception, preference, and purchase process underlying the product

positioning decision" (p. 859). Taking the above factors into consideration, consumers' perceptions of respective products is an important characteristic for product positioning and will thus be the primary focus of this review.

2.4.2 Defining Product Positioning

In Trout and Rivkin (1997) it was stressed that positioning is a marketing concept that is designed to influence the mind, not the objective characteristics of a product. This has been incorporated in the popularised work of Ries and Trout (1982) where it was conceptualised that positioning theory advocates that "products should occupy a favorable position in the mind of customers from the object (customers) of communication perspective and from the outside of customers to inside in-depth" (Chen and Zhu 2009, p. 376). From this, positioning was further developed by Kotler (2001) where it was defined as: "Positioning means that company designed products so that the action they do could occupy a unique and valuable location in the minds of target customers" (Chen and Zhu 2009, p. 376).

2.4.3 A Product Positioning Framework

Kaul and Rao (1995) developed a general framework that is used for studying what they call "the product positioning and design problem" (p. 295). This problem is based on 'product policy decisions' that focuses on the products that an organisation should be offering to customers based on the various perceptual attributes that should exist (1995). The general framework of Kaul and Rao (1995) consists of four main aspects related to the positioning problem. These include: "(1) defining the set of alternatives to be studies (i.e. the product market definition); (2) identifying the important product attributes; (3) modelling the consumer decision process; and (4) using the firm's criteria to position and design products (1995, p. 295). The first three aspects of this framework are considered beneficial to this review.

Punj and Moon (2002) developed a conceptual framework that is similar to the one above. However, the work of Punj and Moon (2002) differs from that of Kaul and Rao (1995) as it is designed to compare different product positioning strategies (exemplar-based and abstraction-based positioning). It also places more emphasis on the nature of the competitive environment. In particular, it includes three product market factors that are considered important in the positioning literature (Punj and Moon 2002). These include: (1) the product market definition (similar to the former framework presented by Kaul and Rao 1995); (2) the market/competitive structure; and (3) the product category's life cycle (2002). The first three aspects of the former framework of Kaul and Rao (1995), incorporating elements of the latter framework of Punj and Moon (2002), will be discussed in further detail below.

2.4.3(A) Product Market Definition

A product market is defined by Srivastava, Alpert and Shocker (1984) as "the set of products judged to be substitutes within those usage situations in which similar patterns of benefits are sought by groups of customers" (p. 32). Defining a brand's product market is important for a firm as it establishes both their potential customer base and the makeup of their submarket (Kaul and Rao 1995). A product market definition may also go beyond the basic product category in which it belongs (Punj and Moon 2002). For instance, the product market definition of a particular soft drink may include brands outside the soft drink product category, such as coffee (Punj and Moon 2002). This is consistent with the two approaches to market definition discussed by Urban and Hauser (1980). The first approach is the traditional product-orientated approach (1980). This is based on the generic product category, the objective and physical characteristics of the product, and even the way in which the product is distributed (1980). The second approach, and arguably more effective approach (Punj and Moon 2002), is the consumer-orientated approach (1980). This approach includes subsets of competitors' products based on "customer-perceived inter product competition or substitution, measured in terms of cross-elasticities or similarity of use" (Kaul and Rao 1995, p. 296).

2.4.3(B) Product Attributes

Product attributes are an important aspect of product positioning as they allow firms to define the marketing and technological characteristics of a product decision (Kaul and Rao 1995). Product attributes are not referred to in positioning literature as physical and objective characteristics such as length and colour (Kaul and Rao 1995). Instead product attributes are "the dimensions that define consumer perceptions and these generally tend to be abstract and fewer in number than product characteristics" (1995, p. 296). For example the characteristics of an electricity plan, such as Advance, may include paying as you go, paying online, and paying when you choose. A perceived attribute which may result as a consequence of these characteristics may be control. Therefore, in order to find a favourable position in the minds of a firm's customers (considering the popularised definition of product positioning presented by Ries and Trout (1982) discussed in section 2.2) it is the product attributes that determines consumer perceptions (Dillon, Domzal and Madden 1986). And although firms cannot manipulate or formulate product attributes directly, this can be done indirectly by altering the characteristics of a product (Kaul and Rao 1995).

2.4.3(C) Consumer Decision Process

According to Bettman (1970), a decision process is thought of as "a net through which an array of cues passes" (p. 370). The cues referred to here by Bettman (1970) can be categorised as choice objective attributes, external environmental attributes, or internal cues or cognitive variables. This process is summarised within the framework of Kaul and Rao (1995). Based on various product characteristics, consumers abstract pieces of information which is concentrated into a smaller amount of perceptual attributes (1995). With these perceptual product attributes, the consumer preferences are developed subject to environmental or situational factors, for instance money and time (1995). Finally internal cues or cognitive variables affect the way in which consumers develop the perceptual attributes and preferences (Bettman 1970; Kaul and Rao 1995). This creates

heterogeneity in a product's perceived attributes as consumers have differing past experiences and individual characteristics (Kaul and Rao 1995).

In the product positioning literature, multiattributed perceptual models are a common approach taken in order to operationalize consumers' perceptions of products (Chen and Zhu 2009; Kaul and Rao 1995). This is where consumers are individually represented by their ideal combination of product attributes; their ideal point (Carrol 1972). This is then aggregated to represent multiple consumers, taken by the average values of the individual consumers' preferred combination of product attributes (Kaul and Rao 1995).

2.4.4 Implications of the Framework

Considering the aforementioned, the favourable position of a product in the mind of the consumer is based on several aspects. First, the product market affects the way in which consumers perceive alternatives, particularly in regard to its potential substitutes. Thus the product market definition needs to be defined appropriately. Secondly, consumers' perception and preferences towards a product are based on various attributes. These attributes are derived from the physical and objective characteristics of a product and marketing mix which can be formulated by a firm to indirectly influence perceptions. Finally, the way in which perceptions and preferences are developed affects consumer decisions. This is based on the information they extract from a product which in turn forms perceptual attributes, the situational and environmental factors, and the past experiences of each consumer all result in differing perceptual attributes for the same product.

2.5 How the Literature Guides the Project

2.5.1 Key Issues

This literature review has covered subject areas pertinent to this research project and essentially explored the resistance offered by electricity consumers towards an innovation. A summary of the key issues will now be set out below:

1. It is difficult to determine whether electricity is a high or low involvement service as it is determined by each individual consumer's response to it. However, it is generally agreed upon by scholars that electricity is both inelastic and unique. More specifically, the intangible nature and endless supply of electricity implies consumers take little control over their consumption. It is unlikely that a consumer performs a cost/benefit analysis every time they use an electrical appliance.

2. When a goal directed behaviour is frequently repeated for a long period of time, such as paying the monthly electricity bill, it can potentially become habitual. When behaviour becomes habitual it is difficult to alter without some kind of intervention. Habitual behaviour is also a fundamental factor in the resistance that a consumer offers towards an innovation.

3. Although pay-as-you-go electricity plans have been used by retailers in the past, they can still be considered a new innovation by consumers who have not developed an attitude towards them. This is because the newness of an innovation is not an objective measure of the time since it was developed or released.

4. The diffusion of an innovation is "the process in which an innovation is communicated through certain channels over time among members of a social system" (Rogers 2003). The speed in which this occurs can be characterised as the

rate of adoption. The relative stage that an individual adopts an innovation determines their respective adopter category. Although this is difficult, individuals who adopt Advance in the trial stages are likely to be innovative in comparison to the non-adopters.

5. The 'Relative Advantage', 'Compatibility', and 'Complexity' of an innovation are considered the most significant influences of its rate of adoption.

6. Consumer resistance is important to understand when considering a new innovation. This is because there is more insight to be gained from understanding non-adopters than there is from understanding innovators who may be social deviants, or abnormal in their epistemic drive.

7. The status quo bias, which includes habit and perceived risk, is the single most powerful determinant of consumer resistance. This is because consumers strive for consistency and will evaluate their current alternative markedly positively in a decision process.

8. Consumer belief structures, including tradition and image barriers, also have the potential to influence consumer resistance to an innovation. Factors such as negative stigmas and stereotypical links associated with an innovation can cause consumer resistance. As discussed in Chapter One, there may be negative stigmas attached to pay-as-you-go electricity plans. Therefore, consumer resistance caused by image barriers may negatively influence the rate of adoption.

9. Product attributes are based on the perceptions a consumer develops towards a product. This can be based on the objective characteristics of a product as well as the consumer's past experiences.

2.5.2 Propositions

Using the key issues presented in the literature review, a set of propositions can be developed in order to guide this project:

1. The status quo bias will prevent many consumers from changing their electricity payment plan: Many consumers will not possess any purposive behaviour, or willingness to change, as their existing format for purchasing electricity represents the status quo. Consumers who do consider changing will evaluate their current alternative markedly favourably despite any objective advantages that pay-as-you-go electricity plans may offer.

2. Consumers who have been purchasing electricity in arrears for long periods of time will offer a greater level of resistance towards prepaid electricity plans: The on-going repetition of monthly bill payments for some consumers will develop into habitual behaviour which reinforces the idea of the status quo bias (proposition one).

3. Negative stigmas and undesirable social images will limit the rate of adoption for pay-as-you-go electricity plans: Because pay-as-you-go electricity plans have traditionally been targeted towards high risk and low income customers, consumers may resist Advance due to negative perceived social images surrounding it. Consumers who are unaware of existing pay-as-you-go electricity plans and their intended purposes will not offer this form of resistance.

4. Some consumers will be willing to adopt pay-as-you-go electricity plans due to specific internal motivations/ purposive behaviour (Section 2.3.7), or dissatisfaction with their current alternatives: Consumers who adopt Advance may have already been searching for alternative electricity payment plans or are not completely satisfied with their current format.

5. Some consumers will be willing to adopt pay-as-you-go electricity plans for no apparent reasons: In particular, these consumers will be variety seeking, or simply adopting Advance out of interest. They will be relatively innovative and will not display elements of purposive behaviour (Section 2.3.7).

Chapter Three: The Research Approach

3.1 Research Question

The set of propositions, outlined in Section 2.5.2, and the components of the marketing issues were used to define and develop the research question below:

> Are pay-as-you-go power packages capable of becoming a preferred and appealing format for purchasing electricity by the mass market in New Zealand?
>
> *This involves addressing the following sub questions:*
>
> 1. Why did existing Mercury Energy customers—sub question (a) and (b)—reject the offer to switch from pay in arrears electricity to Advance?
> a. Why did customers reject the offer after consideration?
> b. Why did customers reject the offer without any consideration?
> 2. Why did existing Mercury Energy customers accept the offer to switch from pay in arrears electricity to Advance?
> 3. Are consumers on standard pay in arrears electricity packages willing to change their existing format for purchasing electricity?
> 4. How are pay-as-you-go electricity packages perceived by customers on standard pay in arrears electricity plans?

Sub-questions 1 and 2 utilise Mercury Energy's trial pay-as-you-go electricity plan Advance. This allowed the research to explore the actual behaviours of consumers who were involved in the trial. Instead of relying on hypothetical situations and hypothetical electricity plans, Advance created a more realistic foundation for the research to be carried out which has significant benefits for the external validity of the project. Sub-questions 3 and 4 were developed in line with the propositions associated with the status quo bias presented in the literature and the marketing issue that resonates with negative

stigmas. The rationale behind sub-question 3 is that in order for pay-as-you-go to become the preferred and appealing format for purchasing electricity by the mass market in New Zealand, consumers must be willing to change their existing format in the first place. Thus the research must explore consumers' likelihood of changing their electricity plans. The rationale behind sub-question 4 is that if pay-as-you-go electricity plans are perceived negatively, or contain undesirable attributes, they are less likely to become the preferred and appealing format. It is recognised that some of the interpretation generated from sub-questions 1 and 2 can be related to sub-questions 3 and 4.

3.2 Justification for the Research Approach

In order to address the research question and the marketing issue, this project utilised a mixed methodology. The qualitative approach formed an exploratory component of the research and the quantitative approach formed a more descriptive component. This approach was considered appropriate for addressing the research question, the marketing issue, and phenomena first presented in the literature review. In particular, a mixed methodology was predominantly chosen for this research project in order to develop a fuller picture, and greater understanding, of the marketing issue (Hammond 2005). First, it allowed the project to gain an in-depth understanding of consumer resistance and consumer attitudes towards pay-as-you-go electricity plans; and secondly it allowed the project to then gain an insight into the degree of consumer resistance offered towards pay-as-you-go electricity plans in a quantitative way. The qualitative and the quantitative approaches were designed to be complimentary of one another. These are detailed in the following two sub-sections.

3.3 Qualitative Component

Semi-structured interviews were conducted to form the qualitative component of this research. This was designed to explore phenomena in relation to Mercury Energy's trial pay-as-you-go electricity plan named Advance. More specifically, the qualitative component of the research was used to address sub-question 1 and 2 of the research

question. This component was primarily utilised to gain an in-depth understanding of consumers' willingness to switch to a pay-as-you-go electricity plan and explore the nature of consumer resistance faced by electricity companies. The exploratory approach was used to understand the purposive behaviour that may have lead consumers to adopt Advance, potential drivers necessary for adoption, barriers that limited the adoption, consumers' attitudes towards pay-as-you-go electricity plans, and other unknown factors that resulted in consumer resistance offered towards Advance. The qualitative component of the research also provided insight into the development of the quantitative survey discussed below.

3.3.1 Justification for the Qualitative Method

As mentioned above, semi-structured qualitative interviews were conducted for the exploratory component of the research. This approach was chosen over other qualitative methods for two main reasons: First, some of the topics covered by the qualitative component of the research may not have been appropriate to cover in group settings. For example some participants may have felt uncomfortable discussing the idea of bill shock or bill management in a focus group setting. Secondly, the investigation sought to explore detailed information about individuals' actual behaviours which is best suited to qualitative interviews (Boyce and Neale 2006). The questions were mostly predetermined prior to each interview, although the line of questioning was kept somewhat flexible to explore participants' answers when necessary, or new topics as they emerged. Due to geographic and accessibility limitations interviews were conducted via telephone.

3.3.2 Interview Sampling

The sample population for the interviews consisted of Mercury Energy customers who were invited to trial their electricity plan Advance. In total 500 customers who fit the criteria of residing in the wider Auckland Area , were using a pay in arrears electricity plan at the time, had internet access, lived in dwellings fitted with smart meter technology were selected at random by Mercury Energy and sent mail-outs inviting them to sign up

for Advance. For the purposes of this research, the customers were then categorised in to three groups of participants. The first group, group 1a, were customers who rejected the offer to sign up for Advance after some consideration. The second group, group 1b, were customers who rejected the offer to sign up for Advance without any consideration at all. Group 1a and group 1b could only be distinguished apart during the interviews. Mercury Energy also had web analytic capabilities that could identify, prior to the interviews, which participants began the signup process before withdrawing. The final group, group 2, were customers who signed up for Advance approximately two months prior to the commencement of the interviews.

Interviews for each group continued until there was convergence in the responses. This was limited for group 2 as there were only eight potential participants in total, six were able to be contacted and interviewed. It was found that group 1a did not seem to exist in any great proportion. More specifically, only one participant was able to be successfully identified (through web analytics) in group 1a. This was deemed to be a non-result, discussed in the next chapter. 12 participants were interviewed in Group 1b which meant there was a total of 19 participants across all groups.

3.3.3 Exploratory Open Question

As discussed in Chapter One, prepaid cell phone plans have become very successful in the New Zealand market. As a secondary component to this research, an optional qualitative question was included at the end of the survey. This allowed participants to discuss any distinguishing factors between pay-as-you-go electricity and cell phone plans. The purpose of this question was to provide a comparison, if any, between attributes of the successful of prepaid cell phone plans and attributes of pay-as-you-go electricity plans. This will potentially offer insight into any fundamental differences or similarities between cell phone plans and electricity plans. This question was entirely exploratory and remained a secondary component to the primary research method.

3.3.4 Analysis of Qualitative Data

After the qualitative interviews were completed, a thematic content analysis was performed on the transcripts. This method was chosen for its many advantages and features including the accessibility by investigators who have limited experience with qualitative studies (Braun and Clarke 2006). In particular, a thematic content analysis can "usefully summarise key features of a large body of data, and/or offer a "thick description" of the data set" (Braun and Clarke 2006, p. 27). This provided a meaningful summary of the participants' behaviours, such as the type of resistance offered, and attitudes towards Advance.

The interviews were conducted and transcribed by the same investigator in order to ensure familiarity with the data. Each comment was then coded by the same investigator several times. The codes were then narrowed into several categories, then further categorised into two sets of five overall themes. The first set of themes related to participants who adopted Advance and the second set of themes related to participants who did not adopt Advance. The process undertaken in the current thematic content analysis was based on the diagram below, adapted from the work of Braun and Clarke (2006).

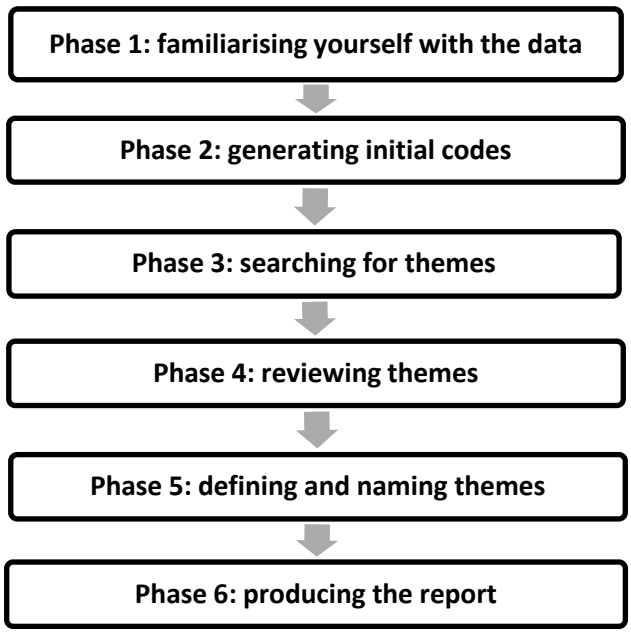

Figure 3.1 Thematic Content Analysis Process

3.4 Quantitative Component

As mentioned in Section 3.2, the quantitative component was relatively descriptive; it directly addressed sub-questions 3 and 4 of the research question. The primary focus of the quantitative component was to determine the extent to which consumer resistance is offered towards pay-as-you-go plans, the negative stigmas surrounding pay-as-you-go plans, and the way consumers perceive different product attributes associated with pay-as-you-go plans. This was done by establishing relationships between a number of variables using a series of dimension reducing techniques, correlations, relative frequencies, and variation across means (Hopkins 2000). The data was collected using a survey discussed below.

3.4.1 Survey Design

The survey (Appendix C) consisted of five parts, each with specific purposes. The questions were developed systematically and emphasis was placed on both the wording and the ordering of each. After the survey was designed by the investigator, it was checked over by two other parties. It was then trialled on five consumers before it was finally finessed by the investigator.

Part one served as a foundation for the survey; question one ensured participants understood the meaning of the term “Electricity Plan” used throughout the survey and question two ensured they understood the term “Pay in Arrears”. The section also allowed the investigator to determine if any of the participants signed up for the recent fixed term contract with Mercury Energy as they may not have been able to appropriately answer some of the questions.

Part two was designed to address the likelihood of switching, in particular to quantify the status quo bias irrespective of any particular alternative. A Juster scale was presented in this section as it is a useful measure of future intended consumer behaviour on a

continuous scale (Brennan and Esslemont 1994). A series of hypothetical scenarios were also presented to determine how motivated consumers are to switching electricity plans.

Part three was designed to test the participants' perceptions and attitudes towards attributes included in some certain electricity plans. More specifically, pay-as-you-go and standard pay in arrears plans. The questions were designed to gather both consumer preferences and ratings data for the different product attributes presented. The attributes were predominantly provided by Mercury Energy's product design team. The investigator also included some attributes based on the insight gained during the collection of the qualitative data.

Part four directly addressed pay-as-you-go electricity plans. In particular, how well known they are by participants, the extent to which negative stigmas associated with them exist, and how desirable certain attributes of a modern pay-as-you-go electricity plan, such as Advance, are. This is in line with the marketing issue (Chapter One) regarding negative stigmas associated with pay-as-you-go electricity plans as well as the concept of image barriers, a form of consumer resistance presented by Sheth (1981).

Finally part five was dedicated to collecting demographic information needed for the analysis. The demographic data was used to compare the variations of responses across the sample population using several demographic variables.

3.4.2 Quantitative Sampling Method

To best address the marketing issue faced by Mercury Energy the sampling method utilised in this research project was somewhat unique, and did not conform to a predefined technique such as simple random sampling. The method used here is best characterised as a combination of stratification and random sampling. However, despite the non-probability nature of the former sampling techniques, the method used here can be considered as a form of probability sampling. The sampling process will now be discussed below.

Given the time constraints faced by this research project, the surveys were distributed electronically via email. Therefore, for practicality reasons the sample population was made up of Mercury Energy customers who had specified email addresses. This raises potential selection bias issues as approximately 18% of New Zealanders do not have internet access (Miniwatts Marketing Group 2011). However, given the nature of the research question, this bias will not distort the findings in a negative way. More specifically, the research question addresses the mass market of New Zealand where pay-as-you-go electricity plans are considered a new innovation. The 18% of consumers who do not have internet access are likely to include low income consumers with budgetary issues that this project has purposefully avoided by its sampling methods.

To accurately address the research question, selection criteria were necessary when recruiting participants. First, the participants needed to be on traditional pay in arrears electricity plans. This criterion was not considered detrimental to the validity of the results as 95% of electricity consumers in New Zealand currently fall in to this category. Secondly it was decided that the participants should be Mercury Energy customers who reside in the wider Auckland area, similar to the qualitative sampling method. This ensured that both components of this project remained consistent with the context of the research. Although this reflects negatively on the generalisability of the survey results, Mercury Energy has the largest market share in Auckland; approximately 350,000 residential customers. Therefore, the range of potential participants was still considered representative of the mass market.

Finally, participants who met the criteria, as discussed above, were chosen at random and invited to complete the survey.

3.4.3 Sample Size and Data Collection

Given the difficulties of accurately estimating the population variance in the current research project, due to the subjective and broad nature of the questionnaire, it was

considered more appropriate to determine the sample size on the basis of judgment. In Sernhed, Pyrko and Abara (2003), quantitative surveys looking at customer preferences regarding electricity bills were discussed. Although conducted in Sweden, the nature of the study was similar to the quantitative component of this research. In their study groups, 1000 participants were invited to complete surveys with a response rate of 35%; this was considered adequate for generalising the results in to the respective populations (Sernhed, Pyrko, and Abara 2003). A sample size of 350 was therefore set as a target for the current project.

With an expected response rate of approximately 15%, the surveys were deployed to 2500 customers. After eight days, a response rate of only 5% (140) had been achieved. Therefore, a follow-up invitation was sent to the same customers resulting in an increased response rate of just over 10% (265).

Chapter Four: Results

4.1 Introduction to the Results

Given the mixed methodology approach to this research, it is logical to provide a systematic and descriptive interpretation of both the qualitative and quantitative results before any discussion is presented. As mentioned in Chapter Three, both of the components of this research are designed to be complementary, therefore cannot be discussed irrespectively or in isolation of one another. The purpose of this chapter is to thus provide both an overview of the qualitative and quantitative results as well as a concise foundation for the discussion of the project.

4.2 Qualitative Results

As mentioned in Chapter Three, the interview participants were categorised into three separate groups: customers who rejected the offer to sign up for Advance after consideration (Group 1a); customers who rejected the offer to sign up for Advance without any consideration (Group 1b); and customers who signed up for Advance (group 2). However, as only one participant could be identified in group 1a, it was considered a non-result. Therefore, group 1a and 1b became group one, characterised as participants who did not sign up for Advance. Similarly group two can be characterised as participants who did sign up for Advance. In total, 19 Mercury Energy customers participated in the qualitative component of this research.

The results of the thematic content analysis consisted of seven semantic themes with several further sub-categories. Themes one through four were derived from the interviews with participants who did not sign up for Advance. Themes five through seven were derived from the participants who signed up for Advance. An overview of the themes, and the subsequent categories, are depicted in table 4.1 below.

Table 4.1 Overview of Themes

Number	Theme Name	Sub-Category
Group 1 (Did Not Sign Up for Advance)		
Theme 1	**Consumer Inaction**	A: Consumer Inertia B: Resistance to Change
Theme 2	**Existing Beliefs**	C: Product Association D: Product Image E: Positive Perception
Theme 3	**Financial Incentives**	-
Theme 4	**Uncertainty**	-
Group 2 (Did Sign Up for Advance)		
Theme 5	**Adoptive Behaviour**	F: Innovative Behaviour G: Electricity Rates H: Other Product Attributes
Theme 6	**Satisfaction with Previous Method**	-
Theme 7	**Product Perceptions**	I: Frustration/ Dissatisfaction J: Satisfaction/ Desirable

4.3 Themes One through Four

4.3.1 Theme One: Consumer Inaction

The first theme, Consumer Inaction, was the most prevalent theme where it consistently emerged from each of the interview participants' transcripts. The fundamental elements of Consumer Inaction can be closely related to the status quo bias phenomenon which was first presented in Section 2.3.4. This theme was labelled Consumer Inaction as it represents the absence of any purposive behaviour or internal impetus that seemed to prevail within the sample population. Moreover, Consumer Inaction appropriately summarises the participants' overall level of non-behaviour that existed when they were presented with an invitation to sign up for Advance. This consumer inaction stemmed from two underlining sub-categories which will now be presented below.

A: Consumer Inertia: The emergence of consumer inertia relates to the theoretical development of habitual behaviour. It was evident that the minimal involvement required by the participants' current electricity plans caused elements of consumer inertia. Factors such as convenient bill payments, prompt payment discounts, and elongated timeframes using pay-in-arrears electricity plans seemed to minimise the participants' likelihood of signing up for Advance. However, the idea behind consumer inertia is representative of the habitual, or "autopilot", nature of the behavioural response that many of the participants displayed. Moreover, participants who displayed consumer inertia did not necessarily make a conscious decision to reject Advance. Instead they ignored, missed, or were not willing to pay attention to the marketing communication presented by Mercury Energy. For instance, when participant two and five were asked if they could remember anything about Advance, they quoted:

> *[2]- "No because I pay mine when it comes, and I pay by the internet"*
>
> *[5]-"Not that I recall, not that I paid attention."*

Furthermore, when the participants were asked how they feel about their current electricity plan some of the responses included:

> *[3] -"it's fine for me because it goes through direct payment and stuff so it suits and it's not a problem at all"*
>
> *[5] -"it's very convenient, especially being able to pay online. I just pay a lump sum and not even pay attention to what is on the bill"… "I don't know any better and haven't tried anything else."*
>
> *[7] -"I like the discount"*

B: Resistance to Change: This sub-category represents the participants' top of mind, or conscious, unwillingness to change their current electricity plan. While it was less frequent amongst the sample population, the consumer inaction that resulted from this sub-category represents a potentially difficult barrier to overcome. These participants

were not at all interested in alternatives, in particular pay-as-you-go, and displayed a conscious rebellion against the idea of changing. Five of the 13 participants who did not sign up for Advance displayed some level of conscious resistance to change.

> *[9] "To be honest I didn't read it very clearly because I just kind of made a snap decision of oh I can't be bothered. I just don't want to change.*

> *[10] "I mean I'm not really interested in pre-payment for electricity"*

> *[4] "I couldn't see the good of having to prepay prior to getting my electricity that's all"*

4.3.2 Theme Two: Existing Beliefs

Theme two predominantly stemmed from the participants' thoughts, perceptions, knowledge, and attitudes towards pay-as-you-go power packages. Consumers' existing beliefs can have a significant impact on the uptake rate of an innovation (see Section 2.3.5). This theme will represent the underlying barriers that potentially arise when new pay-as-you-go electricity plans are introduced into the market. Theme two, existing beliefs, consisted of three sub-categories presented below.

C: Product Association: Eight of the 13 participants who did not sign up for Advance associated pay-as-you-go electricity plans with undesirable attributes or characteristics. Even though Advance was designed to overcome some of the undesirable characteristics attributed to traditional pay-as-you-go plans, such as the removal of top-up cards and the risk of disconnection, participants still associated Advance with these. In particular, this group of participants automatically thought of top-up cards, coin operated appliances, or other variations of existing pay-as-you-go electricity plans such as 'PowerShop'. Some examples of participants displaying the idea of product association are provided below:

> *[3] "I mean a few friends of mine have got this, they have just changed over to pay-as-you-go, like it has a machine and you have got to go get*

like a card to top it up. And quite a few people are messed off a bit, some of the people I have spoken to."

[4] "I just remember in Europe having to put money in meters really and I suppose that kind of rings bells with prepaid electricity."

[9] "Um the reason I remember is because I was talking to someone who's gone with a company that has quite an extensive billboard advertising about buying block amounts of electricity and it is that kind of prepaid thing. But I said oh no they are doing it now... and I'm not interested, absolutely not interested." (Referring to 'PowerShop')

[9] "I prefer the freedom of being able to, I think most of them will probably be similar. You will be buying 12 months' worth of electricity or 6 months or something and I don't know too much to think about."

[6] "if I am using a lot of electricity and I have about 10 bucks credit left on my prepaid, I am not going to want to have to shoot out to have to credit more money on to it."

D: Product Image: This sub-category coincides with the idea of negative stigma and social risk first presented in Chapter Two. Product Image is similar to sub-category C, Product Association. However, in this case participants associate pay-as-you-go with undesirable social status, not its characteristics or attributes. In particular, the negative product image displayed towards pay-as-you-go electricity plans here is based on the participants' perceptions of the customers who traditionally use the product. It has been labelled Product Image as it refers to participants' negative perceptions towards pay-as-you-go electricity plans and the stigmas that arise as a result. The idea of product image was not as prevalent in the data compared to Product Association. Only three of the 13 participants displayed any significant levels of negative product image when their thoughts about pay-as-you-go electricity plans were explored in the interviews:

[2] "It also depends on the socioeconomic that you are dealing with. I mean it might be ok for the lower socioeconomic group but I am not in that demographic."

[3] "I work at Auckland hospital and we have people who (and I don't mean to sound horrible) but we have people that are cleaners staff and obviously they cannot meet their bill. So they have picked up this plan where they have to go down the road and pick up credit and pop it into a machine at home or whatever it is"

[5] "I would have thought that they would be for high risk customers. For people who have lost their power for some reason"

E: Positive Perceptions: Contrary to the negative existing beliefs that arise from participants' product association and product image, this sub-category relates to any positive thoughts surrounding pay-as-you-go electricity plans. It is recognised that participants who displayed positive perceptions also associated Advance with traditional pay-as-you-go electricity plans. This sub-category provides insight into some of the potential influences that may result in adoption.

Two examples of positive perceptions that emerged from the data were displayed by participant 11 and eight. Participant 11 discussed budgetary advantages of pay-as-you-go electricity plans:

[11] "I think it helps people on, low income or have budgetary issues with their electricity."

Participant eight described Mercury Energy's existing pay-as-you-go electricity plan 'Glo-Bug' positively. Specifically the simplistic nature of 'Glo-Bug' was appealing to this participant.

[8] "Glo-Bug is the one that I know because my daughter used that when she was flatting. So you had to go down to the local dairy and buy a top-up or something and whack that into the Glo-Bug and there is x amount of power. Which I thought was great... that actually is quite a good concept."

4.3.3 Theme Three: Financial Incentives

The third theme, Financial Incentives', itemises financial factors that emerged from the data. As suggested by the title, this theme represents the financial incentives that would lead to the adoption of Advance as specified by participants. The emergence of this theme is not a particularly astonishing result. However, not all of the financial incentives presented below were directly related to cheaper electricity rates or discounts.

Four of the 13 participants who did not sign up for Advance did in fact specify that they had recently signed up for Mercury Energy's three year fixed rate plan. While this was not explored in significant detail by this research project, these participants were motivated enough to alter their previous electricity plans. However, it can be speculated that these participants were seeking financial security by fixing their electricity rates. The financial incentives evident in this research were of a similar nature. For instance, participant four specified that if they were worried about their budget, Advance would be viable option for them to remedy the potential situation:

> *[4] "I think if I was on a really tight budget I would definitely look at it. You know if I was really worried about my electricity cost i think that would be a main one for me to move to something like that"*

Financial incentives that were irrespective of participants' current circumstances were also evident. For instance, participant eight switched electricity providers, twice, for a monetary gain. This demonstrates how a financial incentive can spark purposive behaviour, or internal impetus:

> *[8] "So I went to Meridian, joined them, um Mercury got back to me and said hey we noticed you changed power supplier, and I said yep well this is what they offered me, I forget the amount now. But they said don't worry about that we can double that on your first power bill or we can double that rebate. So I said that's ok and basically it was just switch to Meridian and a switch back to Mercury within a month I think it was."*

4.3.4 Theme Four: Uncertainty

The final theme derived from the participants who did not sign up for Advance has been labelled Uncertainty. Uncertainty was the least prevalent theme to emerge from the qualitative data set. This theme is closely related to the theoretical foundations of perceived risk, presented in Section 2.3.4(B), which is also a component of the status quo bias. The participant who considered Advance in detail (participant eight) decided to reject the electricity plan based on the uncertainties held. Moreover, participant eight's uncertainty was derived from relatively minor factors. As discussed in Section 2.3.4(B), even the most inconsequential uncertainties can act as a major barrier for new innovations. For instance:

> *[8] "does it cut- do you get your statement and then it starts from there? There was no starting point, it seemed to be effective immediately so I couldn't see, I like things sort of cut and dried so ok this bill is paid with a ten percent, and also how do they factor on your ten percent on the amounts that are coming out... that is not clear... is it in built into your direct debit? I have no idea."*

4.3.5 How the Themes Interconnect

Themes one through four presented above should not be considered in isolation. This is because multiple themes and sub-categories emerged from each of the participants. As a result, each of the themes and sub-categories interrelate in various ways. The thematic map, figure 4.1 below, depicts the interrelationships of each sub-category and theme.

Of particular interest, figure 4.1 shows how the themes Consumer Inaction and Existing Beliefs are closely related. For instance, participants who associated pay-as-you-go electricity plans with undesirable characteristics, Section 4.3.2, developed a resistance to change. Similarly, negative perceptions towards pay-as-you-go electricity plans based on social status leads to an active resistance to change. The relationship between Resistance to Change and Uncertainty is also depicted and represents consumers' treatment of alternatives as a result of the status quo bias. The significance of this relationship is

consistent with the introduction of relatively discontinuous innovations, Section 2.3.4(A). In particular, the participants ultimately rejected Advance because it was perceived as fundamentally different from their current alternatives.

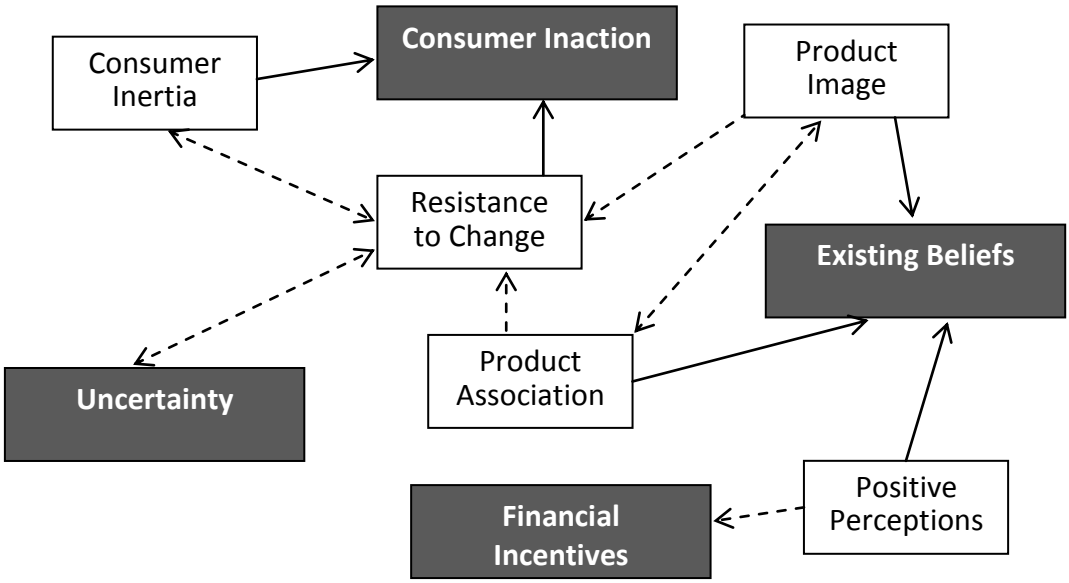

Figure 4.1: Thematic Map (Did Not Sign up)

4.4 Themes Five through Seven

4.4.1 Theme Five: Adoptive Behaviour

Theme five, Adoptive Behaviour, was the first theme to emerge from the participants who completed the signup process for Advance. The theme encapsulates the fundamental motives that led each of the six participants to adopt Advance. Theme five consists of three sub-categories, considered below, which illustrate the different forms of adoptive behaviours that prevailed in the current research. It was recognised that some of the participants displayed elements of multiple forms of adoptive behaviours. However, each participant could be grouped into one of the three sub-categories based on their respective behaviours, as understood by the investigator. This suggests that each participant had one key driver that led them to the signup process for Advance.

F: Innovative Behaviour: One of the six participants who signed up for Advance was not considered to possess any specific drivers or motivations. Instead, this participant signed up for Advance merely out of curiosity and interest. More specifically, they did not put much thought into, or undertake a conscious decision making process when they signed up for the pay-as-you-go electricity plan. Conceptually this is closely linked to the idea of innovativeness which was discussed throughout the literature review (Section 2.2.5):

> *[18] "I thought that it was something new so the reason why I gave it a go is just to try something new."*

G: Electricity Rates: The second sub-category, and significant driver to emerge from this data set, was that of competitive electricity rates. Two of the six participants who signed up for Advance were motivated by the corresponding electricity rates offered by Mercury Energy. For instance, participant 17 was motivated to sign up for Advance because the mail-out invitation implied that customers would receive the best electricity prices on the market:

> *[17] "Prices, they said that it was the best prices on the market and I did a little bit of research about how much we are paying right now and how much, I can't remember exactly how much the difference."*

Participant 16 also signed up for Advance because of the corresponding electricity rates. However, in this circumstance, participant 16 perceived possible future price reductions as a result of prepaying electricity:

> *[16] "What caught my eye obviously was that they said that if you pay up front then you can, in theory, they will control the market and get some better rates for us... because we are paying in advance."* [It should be noted here that Mercury Energy's correspondence with participant 16 did not include a statement to this affect]

> *[16] "I just look at power well you need power, we are going to use what we are going to use, we have a family of five. So it's just necessary to have it. Some days you are going to use more and other days you are going to use less. The only why I look at it, I just look at it if I could save some*

money by paying it in advance then yes great, go for it, I will definitely be involved with it."

H: Other Product Attributes: The final sub-category, or fundamental driver, was the product attributes regarding 'Advance.' While electricity rates are technically a product attribute, it was separated for the purposes of analysis. Three of the six participants who signed up for Advance were motivated by certain characteristics of the electricity plan they believed would be beneficial. A common characteristic that was evident among these three participants was the conscious decision process undertaken. In particular, dissimilar to participant 18 who was variety seeking, these participants "thought over" their decision to adopt Advance.

Participant 15 signed up for Advance for two reasons. The first was the ability to control the timing of the electricity payments:

> *[15] "You could see, basically you could pay a minimum amount and the amount I am paying is roughly over a week's usage so it would meant that it spread the size of the bill over the month"*

The second was the ability to make automatic payments which was considered convenient by participant 15, especially when they were away:

> *[15] "And the other thing is, first of all I am going to be away for a month or more later in the year. It was just one less account that I was going to have to worry about paying before and during our trip."*

Similarly, participant 19 signed up for Advance, partly, for the same latter reason:

> *[19] "Partly because I was heading overseas and may not be back for payment of the bill and that was sort of the automated system, they would automatically deduct... that was part of it. The other one, I was sort of interested to see the consumption, well suppose the system shows the consumption on a more detailed level. But I haven't really utilise it to see how it works."*

As indicated by the quote, participant 19 was also motivated to sign up for Advance for the detailed usage information that is readily available. The usage information provided to customers via Advance's interface was also a driver for participant 14:

> *[14] "I always have different people coming in the house and I wanted to know how much would it cost, were my estimates sort of close, and really it was just like a trial thing... I wanted to know for myself really."*

4.4.2 Theme Six: Satisfaction with Previous Method

This theme is similar to the first theme presented; for the participants who did not sign up. A key result of the current research project was that the participants' behaviours were very similar between the two groups. More specifically, the participants who signed up for Advance (collectively) were not dissatisfied or unhappy with their previous electricity plans. They also did not display elements of purposive behaviour, such as searching for alternative plans or providers which is contradictory to proposition four. Below are a series of questions and answers that were consistent amongst the participants who signed up for Advance:

> *[Q] "Before you signed up to Advance had you searched for any alternative plans?" [19] "No I hadn't" [Q] "Electricity companies?" [19] "No i haven't really, I think Mercury had some other system that they were advertising a few months ago which I sort of vaguely looked at but I didn't go for it but I can't remember what it was now."*

Furthermore, in line with proposition four, the idea of bill shock was explored with each of the participants who signed up for Advance. However, they all claimed they could predict the approximate dollar value of their monthly electricity bills:

> *[18] "I had a good gauge of what my expected electricity bills were during the summer and the winter months. I was 5 or 10 percent up or down."*

4.4.3 Theme Seven: Product Perceptions

The final theme, product perceptions, relates to the participants' perceptions and attitudes towards Advance after they had gained experience using it. This theme consists of two, fairly apparent, sub-categories which characterise the participants' product perceptions.

I: Frustration/ Dissatisfaction: This sub-category itemises the negative perceptions displayed towards Advance after the participants' signed up for the electricity plan. There seemed to be some frustration when participants first signed up for Advance. This is understandable as Advance is considered a discontinuous innovation and the frustration occurred when the participants were getting a "feel" for the product. Moreover, the adoption of a discontinuous innovation requires a fundamental change in a consumer's previous behaviour which can be frustrating or even adversary for them.

> *[14] "I got a bit frustrated with it initially. First of all I couldn't remember when I am supposed to be topping up and, I suppose I didn't read the instructions properly which may have been a bit more beneficial."*

A more problematic issue for the success of the Advance was fundamental dissatisfaction towards the product. Only one participant displayed enough dissatisfaction towards Advance to state that they would not continue with the trial product. In particular, participant 18 recognised that the ability to monitor usage online was interesting for the first few days but after that considered it too inconvenient. The main problem for this participant, however, was the absence of any monthly bill or statement:

> *[18] "it is more a disadvantage for me then an advantage because I have been tracking my electricity bill on a monthly basis quite regularly for a number of years so my expectation of my bill was there and there about so I could budget really well. But now I just don't have any visibility of it other than when I go on the internet."*

Participant 14 displayed a similar concern regarding the absence monthly bill statements. However, in this case it was not considered a fundamental dissatisfaction as participant

14 was unsure whether or not they would stay with Advance, they were neither satisfied nor dissatisfied:

> *[14] "I actually run a business and I need my statement and that is one thing that i have found. If I get audited I have to come up with this sort of paper work. So i don't know how far back Advance will allow me to run. Will it be sort of on-going, say I get audited in three years' time will I be able to go back and say this is how much power I used."*

J: Satisfaction/ Desirable: In contrast to the previous sub-category, this sub-category itemises the participants' positive perceptions towards Advance. Five of the participants were either satisfied with Advance or found certain product attributes to be desirable. For instance, participant 15 and 17 both found the daily usage information desirable:

> *[15] "I have enjoyed having the daily, being able to review the daily usage. It has demonstrated to me exactly how much I would save when I run the log fire rather than a heater. It is easier to actually monitor usage... you can say well on that day we did this or that and understand its effect on the power bill."*

> *[17] "I can see daily how much we spent for electricity and I can see, let's say we forget something like a light or a switch on then we can actually see it on the website… it gives us information on how much we pay and how much we used per day and that is very convenient for us"*

Participant 16 implied that although they have not been using the online interface, the usage information will be desirable if they needed to monitor it for whatever reason:

> *[16] "I suppose, because I have got a direct payment plan and the just send me a text or an email saying the account is just about to be topped up, I don't have to think about paying them it is all done and dusted and it's easy, I can monitor it if I need to."*

Participant 16 also displayed, in the quote above, that the convenient automatic electricity payments was desirable.

4.4.4 How Themes Five through Seven Interconnect

As stated in Section 4.3.5, themes one through four are all interconnected. Similarly, themes five through seven are also interconnected as depicted in figure 4.2 below.

The relationship between the themes Adoptive Behaviour and Satisfaction with Previous Method is important to understand in regards to the success of Advance. The diagram shows how Innovative Behaviour and Electricity Rates can both overcome elements of consumer inertia, which arguably stems from product satisfaction. As participants were satisfied with their previous electricity plans, they did not display elements of purposive behaviour. However, electricity rates and innovative behaviour led to adoptive behaviour that ultimately overcame the various elements of the status quo bias.

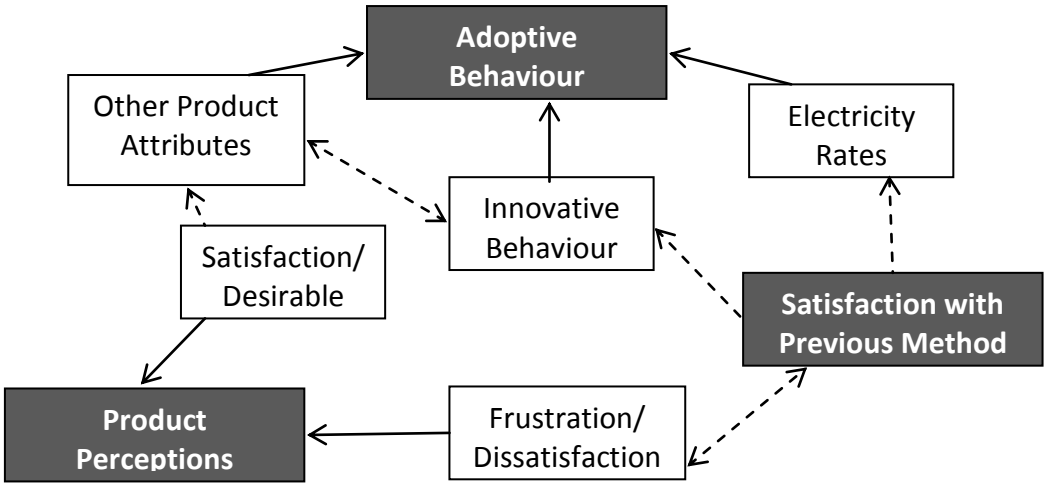

Figure 4.2: Thematic Map (Did Sign Up)

4.5 Comparison between Cell Phones and Electricity

In total 82 comments were made by participants in response to the qualitative question asked at the end of the survey. The question asked "Do you believe prepaid cell phone plans are different to prepaid electricity plans?" 10 comments were irrelevant to the question, 21 simply said no without any justification, and 16 simply said yes without

justification. The remaining 35 comments all converged upon two main themes that emerged from the data. These will be covered briefly in the following two sections.

4.5.1 Theme Eight: Electricity is a Necessity

The first theme to emerge from this data set (referred to as theme eight for practicality reasons) contrasts the essential nature of electricity use to the relatively less essential nature of cell phone communication. Overwhelmingly 28 of the 35 comments converged upon this theme, some examples are provided below:

> *[8] "yes... you don't NEED to use the phone...you can live without...you cannot live without power. That's a HUGE difference..."*
>
> *[22] "Yes; I have a choice to use my phone or not but have little choice in using electricity for my home."*
>
> *[34] "On the face of it they sound the same but I wouldn't fancy running low on my credit for power and freezing to death if I couldn't do the prepay topup for power!!"*
>
> *[56] "A prepaid phone is optional. Living without power is not an option"*
>
> *[62] "Yes - you do not need to use a cellphone every day; you could borrow someone else's for emergencies; or use a landline. Electricity is required on an uninterrupted basis (usually)."*

This suggests that there is a general perception among the sample population that there is no benefit from paying for electricity in advance given its essential nature. Moreover, one can get by without credit on their cell phone plan with relative ease. However, one cannot get by without credit on their pay-as-you-go electricity plan. This should be taken into account when promoting a pay-as-you-go electricity plan such as Advance as the side-effects of running out of credit seems to have an immense impact on consumers' perception.

4.5.2 Theme Nine: Usage

The second theme to emerge from this data set, theme nine, contrasts the way cell phones are used to the way electricity is used. The main difference that emerged was that a consumer has control over their cell phone usage but has little control over their electricity usage.

> *[30] "Yes. I can control the use of my cell phone. Electricity is far more difficult to control and estimate in advance."*

> *[61] "Yes. Whole new concept all together. You can elect to make a phone call; but you have to use electricity for hot water; fridge; stove... in other words; you don't have a choice when or how you use electricity 90% of the time."*

Similarly, the level of cell phone usage was also contrasted with electricity usage by participants. The general consensus amongst comments was that prepaid cell phone plans are beneficial for low levels of usage. However, with electricity there is no benefit to prepayment, as one still uses the same amount of electricity and pays the same rate irrespective of the bill timing. This suggests that consumers can determine a direct advantage that prepaid cell phone plans have in comparison to post-pay plans. However, they cannot see the same advantage in the context of prepaying electricity:

> *[4] "yes because I hardly use my phone - a prepay plan allows me to keep my phone active for very little cost; but my electricity use is at an average level; so I do not see a benefit."*

> *[62] "yes having a plan cell phone if you are a low user of the phone means you often pay more than you would use ie the plan comes with 100 mins you may only use 10. With electricity you still only pay for what you use"*

4.6 Quantitative Results

4.6.1 The Sample Population

As discussed in Chapter Three, 265 participants responded to the survey. However, for unknown reasons 33 participants withdrew from the survey before answering the first question. The effective sample size thus consisted of 232 participants. Table 4.2 and 4.3, below, summarise a series of nominal and interval data respectively. These data represent the demographic and electricity user characteristics of the sample population. For reliability purposes, the Electricity Plan frequencies were cross-checked with an employee from Mercury Energy where it was confirmed that the sample population seem representative of their customer base in that respect.

Table 4.2 Characteristics (Interval Data)

Characteristics (Interval Data)		**Median**	**Mode**	**Std. Deviation**	**Skewness**
Length of Time Purchasing Electricity (Arrears)	Value:	11	11	3.696	-1.037
	Label:	10 or more years	10 or more years	-	-
Time in Current Residence	Value:	5	11	3.828	0.193
	Label:	Four years	10 or more years	-	-
Household Income before Tax	Value:	9	12	3.578	-0.471
	Label:	$90,000-$99,999	$120,000>	-	-
Age	Value:	7	7	2.439	0.111
	Label:	45 - 49	45 - 49	-	-

Table 4.3 Characteristics (Nominal Data)

Characteristics (Nominal Data)	**Category**	**Valid Percentage**	**Frequency**
Electricity Plan	Low User Plan	34.80%	79
	Standard User Plan	52%	118
	High User Plan	9.30%	21
	3 Year Fixed Contract	4%	9
Living Status	Live Alone	9.30%	20
	Partner, No Children	26.60%	57
	Partner, With Child(ren)	48.10%	103
	Flatting	3.70%	8
	Boarding	0.90%	2
	Other	11.20%	24
Work Status	Full Time	54.20%	116
	Part Time	7.50%	16
	Self-Employed	16.40%	35
	Unemployed	2.80%	6
	Retired	6.50%	14
	Student	4.20%	9
	Full Time Homemaker	7.50%	16
	Sickness/ Disability	0.90%	2
Same Provider- Whilst at Current Residence	No	14.50%	31
	Yes	85.50%	183
Same Provider- Before Current Residence	No	31.80%	68
	Yes	68.20%	146

One noteworthy statistic that will potentially influence the outcome of this research project is that of Household Income before Tax. In particular, the sample population is generally made up of participants who live in higher income households shown in figure 4.3 below. The median household income before tax was reported to be "$90,000 - $99,999" indicating an extreme bias. The online medium utilised for the distribution of the survey may explain some of this. However, as New Zealand has a high (83.2%) internet penetration rate (Miniwatts Marketing Group 2011), it may be likely that this bias was the result of other unobservable factors.

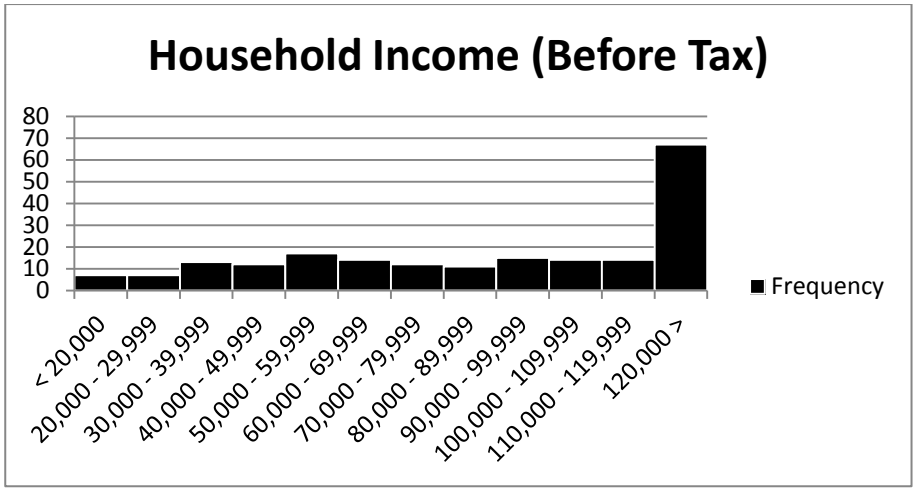

Figure 4.3 Household Incomes (Before Tax)

It is recognised that the Length of Time Purchasing Electricity (Arrears) is also heavily skewed. The median and the mode for this statistic are both reported to be "10 or more years".

4.6.2 Willingness to Switch

On an 11 point Juster scale presented at the beginning of the survey, each of the respondents was asked to report the chances that they would change their current electricity plan within the next 12 months. This variable was labelled Likelihood of Switching. The eight participants who had recently signed up for a three year fixed price contract, and answered not applicable, were removed from the analysis. Figure 4.4 below shows the downward sloping distribution of data indicating that the sample population are less likely to change their electricity plans within the next 12 months. The distribution is positively skewed, 0.701, with a standard error of 0.166.

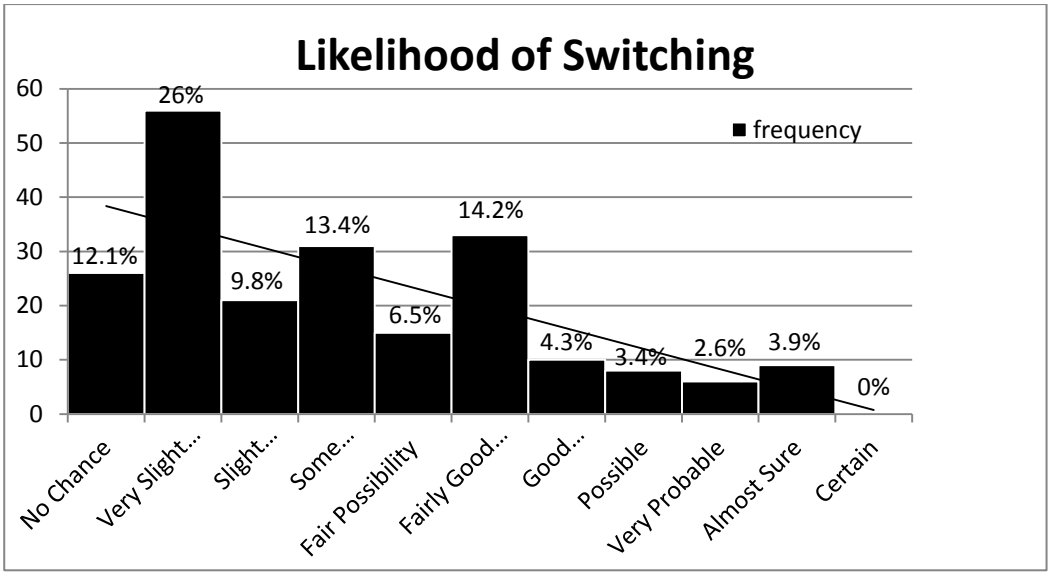

Figure 4.4 Likelihood of Switching

A series of correlations was carried out in order to explore relationships between Likelihood of Switching and the variables Age, Household Income (Before Tax), Length of Time Purchasing Electricity (In Arrears), and Time in Current Residence. Each of these variables were considered continuous, however Spearman's Rank Order Correlation was used instead of Pearson Product-Moment Correlation because it is more robust against the violated assumptions of normality, linearity, and homoscedasticity.

Table 4.4 below shows that there was no significant correlation between the Likelihood of Switching and Household Income (Before Tax), Time in Current Residence, and Time Purchasing Electricity in Arrears. There was a very weak inverse relationship, at the 10% level of significance, between Likelihood of Switching and Age. According to these results it would seem that older consumers are less inclined to alter their current electricity plan which is expected. However, as mentioned above, the test showed a very weak correlation (coefficient = -0.120) between the two variables and was only significant at the 10% level.

Table 4.4 Relationship among Variables

Spearman's Rho		Likelihood of Switching
Age	Correlation Coefficient	-0.120
	Sig. (2-tailed)	0.087
Household Income (Before Tax)	Correlation Coefficient	-0.025
	Sig. (2-tailed)	0.731
Time in Current Residence	Correlation Coefficient	0.029
	Sig. (2-tailed)	0.683
Time Purchasing Electricity in Arrears	Correlation Coefficient	-0.043
	Sig. (2-tailed)	0.532

The non-significant correlation between Household Income (Before Tax) and the likelihood of Switching may have been a spurious result. More specifically, the heavily skewed distribution for the variable Household Income (Before Tax), as mentioned above, may have influenced this result. Therefore, the variable was recoded into two income groups for further analysis; below $59,999 and $120,000 or more. The participants who reported incomes that did not fall into these two groups were disregarded from the analysis. An independent samples t-test was carried out with Likelihood of Switching being the dependent variable and the relatively high and low income groups being the independent, grouping, variables. The two groups had a roughly equal sample size and the Levene's test showed that equal variances could be assumed. The t-test for the equality of means showed there was no significant difference between groups (P value = 0.442) and the null hypothesis was accepted.

For the same reason, the variable Time Purchasing Electricity in Arrears was also recoded in to two groups. The first group were participants who had been purchasing electricity in arrears for three years or less and the second group were participants who had been purchasing electricity in arrears for 10 or more years. An independent samples t-test was carried out which showed there was no significant difference between groups (P value = 0.621) and the null hypothesis was accepted.

To further explore the sample population's likelihood of switching, a one way ANOVA test was carried out. The independent variable was Electricity Plan which was recoded to include three groups; Low User, Standard User, and High User. The assumption of normality was violated due to the positively skewed distribution which may have supressed the F statistic. In turn, this may have lowered the probability of rejecting the Null hypothesis and thus was interpreted with caution. The Levene's Statistic showed that homogeneity of variances was assumed and the ANOVA test could be interpreted. The F statistic equalled 1.520 with a P value of 0.221, thus the null hypothesis was accepted. This implies that there is no difference in the intended likelihood of changing plans between low, medium, and high electricity users.

As a final output of this section, the participants were asked to select a series of scenarios, one or more, that would motivate them to change their electricity plan within the next 12 months (figure 4.5). Predictably, a 30% discount offer by another electricity provider was the most common option selected by the sample population. This option was selected almost three times more frequently than an opposing 30% increase in participant's current electricity bill. Furthermore, A 30% Increase in Current Bill and A 10% Increase in Current Bill were both selected roughly the same amount of time, 46 as opposed to 40. An intuitive interpretation of the asymmetry that seems to exist between a discount offer and an increase in electricity cost would suggest that the two options were considered substantially different by the participants. Particularly, a 30% discount offer will result in a 30% decrease in a participant's total electricity bill. However, a 30% increase in the participant's electricity bill is likely to be perceived as a result of an increase in their electricity usage. While the latter may encourage some participants to go in search of cheaper electricity rates, others may not see any advantages of changing. This could also be attributed to some aspects of Kahneman and Tversky's loss-aversion principle (1979), presented in Section 2.3.4.

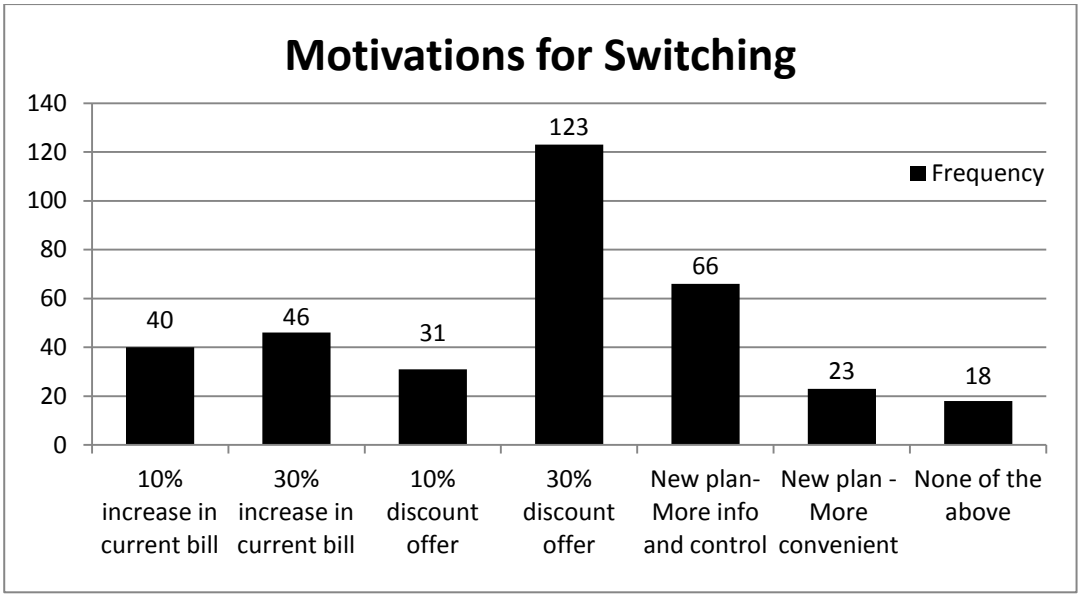

Figure 4.5 Motivations for Switching

A particularly positive result for the success of Advance was the relatively high selection of New Plan - More Info and Control. This implies that, for approximately 30% of the sample population, information and control is an appealing attribute that may encourage a change in participants' current electricity plans.

4.6.3 Product Attributes

Questions five to 11 of the survey were designed to investigate the participants' preferences towards differing characteristics of various electricity plans on a nominal scale, shown in table 4.5. For each of the questions, the respondents were asked to indicate which answer they believe would be the best when choosing an electricity plan.

Table 4.5 Preferred Product Characteristic

Product Characteristics	**Category**	**Valid Percentage**	**Frequency**
Timing of Payments	After Usage	66.7%	146
	Before Usage	1.4%	3
	Combination of Both	32.0%	70
Payment Methods	Direct Debit from Bank	43.4%	95
	Online Bill Payment	48.9%	107
	Bill Payment (Post Office/ Bank)	3.7%	8
	Cheque via Mail	2.7%	6
	Prepaying Online	1.4%	3
	Electricity Top-Up Cards	0.0%	0
Frequency of Payments	When you Choose	4.6%	10
	Daily	0.5%	1
	Weekly	1.8%	4
	Fortnightly	6.4%	14
	Monthly	85.4%	187
	Quarterly	1.4%	3
	Yearly	0.0%	0
Frequency of Meter Reads	Real Time	13.7%	30
	Half Hourly	0.5%	1
	Daily	2.3%	5
	Weekly	1.7%	4
	Fortnightly	4.7%	11
	Monthly	68.5%	159
	Less than Monthly	3.9%	9
Quantity of Usage Information	Real Time	29.2%	64
	Half Hourly	5.5%	12
	Daily	17.4%	38
	Weekly	9.1%	20
	Fortnightly	3.7%	8
	Monthly	33.8%	74
	Quarterly	1.4%	3
	Yearly	0.0%	0
Prompt Payment	20% Discount	49.8%	109
	10% Discount	28.8%	63
	No Discount	3.7%	8
	10% Penalty (Late Payment)	0.5%	1
	20% Penalty (Late Payment)	0.0%	0
	20% Discount and 20% Penalty	8.7%	19
	10% Discount and 10% Penalty	8.7%	19
Availability of a Call Centre	No Call Centre	4.6%	10
	Call Centre (Fee to Use)	1.8%	4
	Call Centre (Some Issues Only)	18.3%	40
	Call Centre Free to Use	75.3%	165

To explore the association between these categorical variables and potentially uncover any underlining dimensions that exist in the data, a Multiple Correspondence Analysis was carried out (Abdi and Valentin 2007). For analytical purposes, the variables were reduced to two dimensions where Cronbach's Alpha equalled 0.641 and 0.547 for dimension one and two respectively. Reducing the data to three dimensions was trialled however this yielded lower Cronbach's Alpha scores as well as complex and uninterpretable results. Table 4.6 shows the two dimensions and the discrimination measures for each variable.

The variables that are correlated with dimension one resonate with consumers' active involvement surrounding bill payments. More specifically, it includes the desired frequency in which consumers have to settle their electricity bill, the method in which their electricity bill is paid, and whether they pay at the start or end of a billing period. Dimension one was therefore labelled 'Payments/ Required Involvement'. Dimension two was labelled 'Incorporated Service' as the correlated variables include specific customer services that are provided to the consumer within an electricity plan. In particular a call centre, prompt payment discounts, and usage information are provided to the consumer by the electricity retailer.

Table 4.6 Dimension Loadings

Discrimination Measures		
	Dimension	
	1: Payments/ Required Involvement	2: Incorporated Service
Timing of Payments	.333	
Payment Methods	.346	
Payment Frequency	.544	
Meter Read Frequency	*.501*	*.496*
Usage Information		.538
Prompt Payments		.187
Call Centre		.233

Figure 4.6 below depicts how each of the variables are similar or dissimilar to one another based on the two dimensions. The length of the line denotes the strength of the correlation with each variable and the angle of the line denotes the nature of the correlation and the similarities between each variable. With the exception of Meter Read Frequency which is a complex variable correlated to both of the dimensions equally, two distinct clusters are evident in the diagram which closely reflect the two dimensions labelled above.

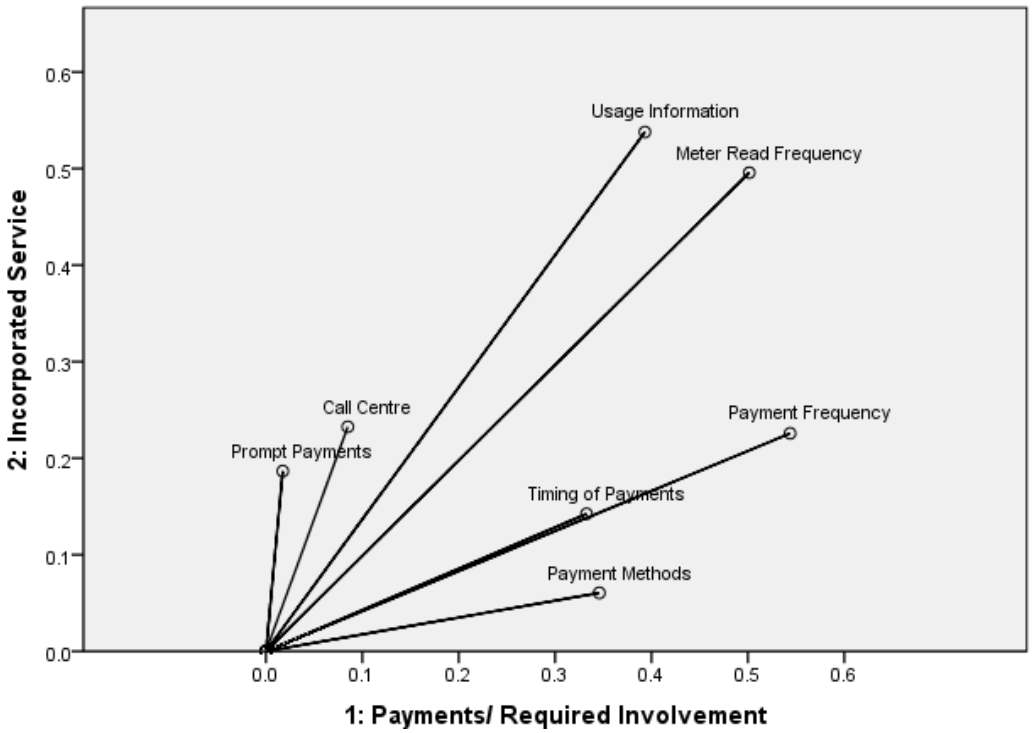

Figure 4.6 Dimension Relationship

It can be seen in Figure 4.6 that the variables Timing of Payments and Payment Frequency are very similar. When analysing the variable frequencies in order to help explain this relationship (table 4.5) it is evident that an overwhelming majority of respondents believed that payments should be made once per month (n= 85.4%). Similarly, the majority of respondents believed that payments should be made after usage (n= 66.7%) with a further 32% who believed it should be a combination of before and after usage. Both of these attributes are consistent with a typical pay in arrears electricity plan. Furthermore, the majority of answers given for the variable Payment Methods, which is also similar to Timing of Payments and Payment Frequency, are also consistent with a

typical pay in arrears electricity plan. This may suggest that traditional product attributes are favoured over alternative product attributes.

After the respondents were asked to indicate which product feature they would prefer, they were asked how important they considered each of the attributes when choosing an electricity plan. Table 4.7 displays an overview of the responses given by the sample population. Each of the variables are negatively skewed, some heavier than others. This implies that many of the participants rated all of the attributes as relatively important.

Table 4.7 Product Attributes Importance Ratings

Variable (1= Very Unimportant, 7= Very Important)	**Mean**	**Median**	**Skewness**
Paying before or after usage	5.39	6	-0.863
Frequency of meter reads	5.57	6	-1.059
Ability to choose when payments are made	5.27	6	-0.401
Ability to choose frequency of payments	5.35	6	-0.796
Prompt payment discounts	6.42	7	-2.983
Electricity usage information	6.26	7	-1.591
Convenient bill payments	6.38	7	-2.056
Customer service	6.46	7	-1.979

Similar to the above, the association between each of these variables was explored in order to uncover any underlining dimensions that exist in the data. As these variables are considered continuous in this case, a principal axis factor (PAF) analysis was undertaken. This was chosen over principal components analysis because the variables are conceptually similar and have a high level of shared variance. Once again the assumption of normality was violated. However, factor analysis is fairly robust to assumptions of normality and as this is considered exploratory, it is still appropriate to carry out a factor analysis to try and reveal further insight.

The correlation matrix showed that there were seven correlations above 0.3 indicating that PAF was the correct choice of analysis. The Barlett's Test of Sphericity was significant and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy equalled 0.692 > 0.6. Based

on the initial Eigenvalues, the variables were reduced to three factors (cumulative variance explained = 49.506%). An Oblique rotation was used and a clean Rotated Pattern Matrix (table 4.8), with relatively high loading scores, was produced.

Table 4.8 Pattern Matrix

Pattern Matrix			
	Factor		
	1: Control of Bill Payments	2: Service	3: Timing
Timing of Payments (Before or After Usage)			.617
Meter Read Frequency			.811
Ability to Choose When Payments are Made	.864		
Frequency of Payments	.854		
Prompt Payment Discounts		.358	
Electricity Usage Information		.566	
Convenient Bill Payments		.871	
Customer service		.383	

The factors were labelled Control of Bill Payments, Service, and Timing. Factor one and Factor two both seem very similar to the dimensions presented in table 4.6 above. In particular, factor one is based on variables surrounding bill payments. However, as the variable Convenient Bill Payment correlates with factor two, factor one resonates closer to the participants' ability to control when and how often their bills are paid. Factor two is based on the services and features included in an electricity plan that are provided by the retailer (not to be confused with electricity itself). The variables that correlate with factor two were considered the most important by the sample population, table 4.7, indicating that Service is an important attribute to consider in an electricity plan. Factor three is relatively difficult to interpret as the variables are not considered similar in many ways. However, the variables are considered similar in the respect that they both relate to timing. The variable Meter Read Frequency may have also been interpreted by the sample population inconsistently which casts doubt on the reliability of factor three. In particular, some participants may have considered smart meter technology in their responses while others may have considered manual meter reads.

As a final output for this section, the participants were presented with a series of attributes that are directly related to Advance. The participants were asked to rate how desirable or undesirable they considered each of the attributes (question 15 of the survey). The frequencies are presented in table 4.9 below. Similar to the analyses above, the association between each of these variables was explored in order to uncover any underlining dimensions that exist in the data.

Table 4.9 Product Attributes (Advance) Ratings

Variable (1= Very Undesirable, 5= Very desirable)	**Mean**	**Median**	**Skewness**
Keeping a Positive Credit Balance	3.77	4	-0.548
Choose When Payments Are Made	3.89	4	-0.343
Receiving Alerts When Balance is Low	4.18	5	-1.132
No Monthly Bills or Statements	2.83	3	0.034
No Prompt Payment Discount	2.11	2	0.948
10% Penalty for a Negative Balance	2.01	2	0.926
Best Electricity Price on the Market	4.68	5	-2.262

As this data may be ordinal, initially a Categorical Principal Analysis was carried out. However, this produced cluttered and uninterpretable results, possibly because this technique is best used for nominal data. Therefore, an exploratory Principal Components Analysis (PCA) was carried out in an attempt to reduce the variables. The analysis was carried out cautiously as it is recognised that the data may be ordinal. This also has implications for the generalisability of the results of this analysis which is why it will be treated as exploratory. A PCA was chosen over a PAF because there was only one correlation above 0.3 evident between the variables.

The Barlett's Test of Sphericity was significant and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy equalled 0.633 which is slightly larger than 0.6. Based on the initial Eigenvalues, the variables were reduced to two factors (cumulative variance explained = 46.251%). Given the low levels of correlation between the variables, a Varimax rotation was considered adequate and a clean Rotated Factor Matrix, with relatively high loading scores, was produced. Unfortunately, however, the analysis did not reduce the data in

any meaningful way (Appendix 7.2) nor did it provide any further insight than the frequency table above.

4.6.4 Negative Stigmas

The idea of negative stigma and adverse product perceptions towards pay-as-you-go electricity plans was predominantly explored within the qualitative component of this research. The purpose of the current analysis was to explore this idea quantitatively in an attempt to gain an understanding of the extent to which any negative stigma may exist in the market place.

The participants were initially asked if they were aware that prepaid electricity plans are offered by providers in New Zealand. Approximately 45% of the sample population responded with yes and 55% responded with no. The participants who responded with yes were then asked to select up to three statements that they believed accurately described prepaid electricity plans, table 4.10 below.

Statements three, five, and eight were designed to imply elements of negative social images and connotations surrounding pay-as-you-go electricity plans. Statements three and five had relatively low response rates of 1% and 13% respectively, but a higher percentage of respondents (27%) selected statement eight as an accurate description of pay-as-you-go electricity plans. The latter figure may deem problematic for the introduction of pay-as-you-go plans such as Advance. More specifically the inability, or even difficulty, to meet bill payments may represent an undesirable social image that approximately 27% of the respondents consider a reflection of pay-as-you-go electricity plans.

Statements two, four, and seven were primarily presented within the survey to provide a balanced set of alternatives for the respondents. An interesting result to emerge from these statements, however, was the 12% response rate for statement seven. This

statement predominantly relates to the idea of control which has emerged several times during the results of this research.

Table 4.10 Statement Response Rates

Statements	Response Total	% of Respondents
1: I do not know anything about prepaid electricity, I am simply only aware that they exist.	64	57%
2: Anyone can go on prepaid electricity plans, they just have to organise it with an electricity provider.	39	35%
3: The only way you can go on a prepaid electricity plan is if you are asked to by an electricity provider.	1	1%
4: Prepaid electricity plans are just like any other plan except you pay before, not after.	38	34%
5: Prepaid electricity plans are only for customers who are considered "high risk" by electricity providers.	15	13%
6: Only young people use prepaid electricity plans.	0	0%
7: Prepaid electricity plans are superior to normal electricity plans… they allow you to take control of your electricity usage.	13	12%
8: People only use prepaid electricity plans because they struggle to pay their bills.	31	27%

Chapter Five: Discussion

5.1 Introduction to the Discussion

The primary focus of this chapter is to develop a discussion of the propositions and research question using the results presented in the previous chapter. With the current research utilising a mixed methodology, the discussion will provide an opportunity to connect the results of both the qualitative and quantitative components. From this the key outcomes of the project can be developed in relation to the initial research question. Before the discussion is developed, a list of the key results from the previous chapter is presented below:

- Of the 13 participants who did not sign up for Advance, only one considered the product in any significant detail.
- Consumer inertia, similar to the status quo bias, meant that the participants who did not sign up for Advance may not have actively rejected the electricity plan.
- In addition to Consumer Inertia however, some participants were actively opposed to altering their current electricity plans despite any potential advantages.
- Many participants associated Advance with characteristics typical of traditional pay-as-you-go electricity plans, such as top-up cards.
- Some participants perceived pay-as-you-go electricity plans as an alternative for low socioeconomic users who uphold an undesirable social image.
- Relatively inconsequential uncertainties held by consumers can result in the non-adoption of a new electricity plan.
- Participants who signed up for Advance appeared to be just as satisfied with their previous electricity plans as the participants who did not sign up for the product.

- Most of the participants who signed up for Advance were motivated by perceived product attributes, including better electricity rates.
- In general the sample population indicated that they are unlikely to change their current electricity plan within the next 12 months. This did not differ between groups based on household income, length of time in current residence, and length of time purchasing electricity in arrears.
- A discount offer from another retailer will, reportedly, motivate more consumers to change their electricity plans in comparison to an equal increase in their electricity bills.
- Taking control of electricity bill payments consistently emerged from the data. Furthermore this attribute, as well as increased usage information, is seemingly considered to be desirable among the sample population.
- Electricity is considered a necessity by the majority of the sample population where usage cannot readily be altered. Thus participants suggested that they do not see any benefit from prepaying an electricity account.

5.2 Discussion of the Research Questions

The primary focus of the discussion presented here is to link the key findings of the current project back to the propositions, developed with reference to the literature review, and the original research question. The main outcomes of each of the sub questions are discussed in the following sections.

Are pay-as-you-go power packages capable of becoming a preferred and appealing format for purchasing electricity by the mass market in New Zealand?

This involves addressing the following sub questions:

1. Why did existing Mercury Energy customers—sub question (a) and (b)—reject the offer to switch from pay in arrears electricity to Advance?
    a. Why did customers reject the offer after consideration?
    b. Why did customers reject the offer without any consideration?
2. Why did existing Mercury Energy customers accept the offer to switch from pay in arrears electricity to Advance?
3. Are consumers on standard pay in arrears electricity packages willing to change their existing format for purchasing electricity?
4. How are pay-as-you-go electricity packages perceived by customers on standard pay in arrears electricity plans?

5.2.1 Sub-Question One

There were several factors that resulted in the non-adoption of Advance. Consumer inaction, however, was considered a predominant factor to emerge which is closely related to the status quo bias central to proposition one: "the status quo bias will prevent many consumers from changing their electricity payment plans". This proposition supposed that consumers would lack the required purposive behaviour to adopt Advance, would not be willing to change their current alternatives, and would evaluate their current alternative markedly favourably. In general, the findings of this research supported proposition one.

Seemingly much of the sample population did not initially display elements of purposive behaviour which entailed an apathetic treatment of Advance. In particular, the idea of consumer inertia showed the impact that the non-behaviour had on the resistance to Advance. The quantitative analysis indicated that the sample population were mostly unlikely to change their electricity plans within the next 12 months. This supposes that

consumer inertia exists in much of the sample population. The inability to identify more than one participant, who considered Advance before rejecting it, is a likely outcome of this. In reference to Section 2.3.6(A), rejection implies that some level of evaluation and perceptual development towards an innovation was undertaken by the consumer. Taking this into account, the participants who did not sign up for Advance due to consumer inertia did not fundamentally reject the product. Instead they were generally apathetic towards the marketing communication resulting in consumer resistance.

Another contributing factor to the status quo bias was some participants' conscious unwillingness to alter their current electricity plan in order to adopt Advance. While the idea of resistance to change was less frequent than consumer inertia, it arguably represents a more problematic barrier to overcome. This is because the conscious unwillingness to change that emerged from this research entailed an active rejection of any alternative, as opposed to the aforementioned simple lack of purposive behaviour.

As the final notion of proposition one, and additional element of the status quo bias, uncertainty emerged from the data which is typical of a discontinuous innovation. Although this barrier was somewhat overshadowed by consumer inaction, it provided insight into how consumers evaluate a pay-as-you-go electricity plan in a decision making process. It was shown that seemingly minor or inconsequential issues, as perceived by consumers who considered Advance, can have detrimental effects to the success of pay-as-you-go electricity plans.

Proposition two, "consumers who have been purchasing electricity in arrears for long periods of time will offer a greater level of resistance towards alternative electricity plans", originally supposed that the on-going repetition of monthly bill payments would reinforce the status quo bias fundamental to proposition one. The results showed there was no relationship between the length of time that consumers had been purchasing electricity in arrears and the likelihood of switching. And when explored further, the results also showed that the participants who had been purchasing electricity in arrears for three years or less were just as likely to change as participants who had been purchasing electricity in arrears for 10 or more years. The absence of any relationship

here may exist because consumers' management of their electricity payment plans develop into habitual behaviour relatively quickly. The current findings thus suggest that proposition two is not supported.

Proposition three, "negative stigmas and undesirable social images will limit the rate of adoption for pay-as-you-go electricity plans", essentially focused on any negative perceptions held towards the users of such electricity plans. In the literature, Section 2.3.5(B), image barriers are argued to be a powerful determinant of consumer resistance. Seemingly it did not emerge often in the results. However when it did, the participants were opposed to any form of pay-as-you-go electricity plan due to undesirable social images (social risk, Section 2.3.6(A)). This is fundamentally based on consumers existing beliefs towards pay-as-you-go and the negative perceptions that result. Moreover, without considering the information provided in the mail-out communication, or on the Advance website, these participants would simply judge the product based on their existing perceptions.

A more prevalent factor to emerge from the data was the negative perception towards certain attributes of traditional pay-as-you-go plans and its association with Advance, such as top-up cards. Given the nature of product association, coupled with consumer inertia, this barrier may be difficult to overcome. If consumers associate Advance with traditional pay-as-you-go electricity plans, information explaining the difference may not be heard.

5.2.2 Sub-Question Two

Proposition four supposed that "consumers who are willing to adopt Advance are likely to display elements of internal impetus". One of the more surprising findings of this research was that the adopters seemed to be just as satisfied with their previous pay in arrears electricity plans as the non-adopters. Furthermore, this group of participants were not initially searching for alternative electricity plans or providers before they received the mail-out communication. The internal motivations that led participants to

adopt Advance seemingly were not present until after they found out about the electricity plan. This indicates that participants were attracted by certain elements of Advance, resulting in its adoption.

The quantitative results are considered consistent with this finding. Respondents mostly reported that they were unlikely to change their electricity plan within the next 12 months suggesting a general absence of purposive behaviour. However, when presented with certain product attributes, such as more information and control, participants indicated they would consider switching. It is recognised that participants who signed up for Advance technically may have possessed elements of purposive behaviour for a short period of time. However, the proposition is not supported because participants were not initially searching for alternatives nor were they dissatisfied with their previous electricity plans.

Following on from this, proposition five supposed that "some consumers will be willing to adopt Advance for no apparent reason". As argued by Sheth (1981), Section 2.3.2, innovators often adopt a new innovation indiscriminately and do not undertake a rational decision making calculus. This suggests that many consumers will not contain elements of purposive behaviour and will simply sign up for Advance out of interest. As discussed above, the participants who adopted Advance seemingly did not initially display elements of purposive behaviour but many of them were motivated to by desirable product attributes which goes against proposition five. It was found, however, that one of the six participants who signed up for Advance did so out of nothing more than curiosity and interest. Therefore proposition five is somewhat supported by the findings of this research.

5.3.3 Sub-Question Three

In essence, this sub-question focuses on consumers' willingness to change their current alternatives irrespective of any particular electricity plan. It is recognised that not every consumer will conform to one group, either willing or unwilling to change. Instead this

sub-question is useful to determine if, in general, consumers are not willing to change in the first place.

Taking the aforementioned discussion into consideration, a fundamental difference is beginning to emerge between purposive behaviour and willingness to change. To better outline this distinction in the current context, the former reflects consumers' desire to change their current alternatives, as originally assumed. Whereas the latter construct is considered to better reflect consumers' openness to alter their current alternatives. The results presented in Section 4.6.2, suggested that participants did not see themselves altering their electricity plans within the next 12 months. In isolation this was initially assumed to reflect participants' likelihood of changing. However, when combining all of the research components together, the variable has become a better reflection of the lack of purposive behaviour, or behavioural intent, that was evident among the sample population.

The reoccurring theme of resistance to change showed that some participants were not willing to change their current alternatives despite any advantages they may hold. However, the survey results suggested that when incentives were presented, participants would be willing to change their current alternatives. For instance, discounted electricity rates, unsurprisingly, emerged as a common attribute that would motivate consumers to alter their electricity plans. When a relatively high 30% discount was offered, 55% of participants reported that they would be willing to switch. Moreover, when non-monetary incentives were offered, approximately a third of the participants still reported that they would be willing to change their current alternatives.

By looking at the results critically, the qualitative findings did not take into account any incentives offered to participants. In addition to this the quantitative findings may have been somewhat abstract which could have potentially resulted in overinflated reported behaviours. When tying the components of this discussion together, the results suggest that consumers' willingness to change very much depends on the incentive offered. While there are some consumers who are seemingly not willing to change despite any incentives, this is not considered to represent the general market. However, on the other

hand very few consumers appear to be willing to change their alternatives with no incentive at all. Instead it is likely that most consumers are situated somewhere in between.

5.3.2 Sub-Question Four

Conceptually there are two elements to this sub-question. The first relates to stigmas and perceptions towards pay-as-you-go electricity, as a product class. The second relates to the way consumers perceive the various functional attributes of pay-as-you-go electricity plans. As negative stigma towards pay-as-you-go electricity was discussed under Section 5.2.1, the emphasis of the discussion presented here will be placed on consumer perceptions towards various functional attributes and whether they are considered desirable or undesirable.

The results indicated that only 1.4% of the sample population believed that paying for electricity before usage is the best option for them. As the participants were made up of pay in arrears customers, this result was not surprising. Furthermore, characteristics consistent with typical pay in arrears electricity plans were commonly favoured by the majority of the sample population (table 4.5). The two key categories to emerge from the dimension reducing analyses, presented in Section 4.6.3, were control over payments and service features.

As suggested by the results, service features were weighted as the most important attribute among the sample population. Seemingly when service features differed from typical pay in arrears plans, participants displayed adverse reactions. For instance, when respondents were presented with a series of characteristics for pay-as-you-go electricity plans, “no prompt payment discounts” was considered undesirable by the sample population. The absence of monthly bills or statements was another characteristic of pay-as-you-go electricity plans that resulted in negative reactions. Two of the six participants who signed up for Advance displayed an adverse reaction towards the absence of such bills or statements. And when followed up with the surveys, this characteristic was rated

relatively undesirable (table 4.9). This exemplifies the difficulties of introducing discontinuous innovations that are perceived to diverge from the current alternative.

The findings suggested that when characteristics of traditional pay in arrears plans are removed or altered, adverse reactions occur. However when new characteristics are included in an alternative, they are not necessarily received negatively. Moreover, it was found that modern pay-as-you-go electricity plans featured new characteristics that were considered favourable by much of the sample population. For instance, a large proportion of participants seemed to perceive the idea of more control over payments relatively positively (Section 4.6.3). Similarly, frequent access to usage information emerged consistently throughout both components of current research project. In particular, approximately 52% of the survey respondents believed that real time, half hourly, or daily usage information should be provided in an electricity plan.

5.4 Conclusions and Recommendations

Are pay-as-you-go power packages capable of becoming the preferred and appealing format for purchasing electricity by the mass market in New Zealand?

The research question above is the central component to this project and will be used to form a basis for the conclusions. The key findings presented in the previous sections all relate to the potential success of pay-as-you-go electricity plans such as Advance. Some imply relatively negative outcomes whilst others imply more positive outcomes. Table 5.1 below provides a summary of the main emergent barriers currently limiting the uptake rate of modern pay-as-you-go electricity plans. Each barrier was judged based on how prevailing they were among the sample population as well as how limiting they appeared to be.

Table 5.1 Barriers

Barriers	Prevalence	Strength
1: Consumer Inertia	High	Weak
2: Resistance/ Unwillingness to change	Low	Strong
3: Negative Social Images	Low – Medium	Strong
4: Product Association	Medium	Moderate
5: Discontinuity of Attributes	High	Moderate – Strong

Consumer inertia, and the lack of purposive behaviour that results, was discussed as a central element to this research project. As shown by the table, this barrier had a high prevalence among the sample population. However, as this barrier does not result in an ultimate rejection of pay-as-you-go electricity plans, it is not considered to be strong. Furthermore, consumer inertia is likely to limit the adoption of any alternative electricity plan and is not unique to the current marketing issue. The difficulty of overcoming consumer inertia primarily stems from its high prevalence. Therefore, for pay-as-you-go electricity plans to become successful, an extensive marketing *push strategy* is likely to be required.

Unlike consumer inertia, barriers two and three occurred relatively infrequently among the sample population. However when they did prevail, they were both considered very strong limiters to the adoption of pay-as-you-go electricity plans. Resistance to change is a barrier that stems from consumers' conscious unwillingness to adopt alternatives and is unlikely to be overcome in a short, or even medium, period of time. This conclusion was drawn, mainly, because overcoming it would require a major shift in the consumer's attitudinal behaviour. Negative social images is also considered a strong barrier for very similar reasons. The main difference between these two barriers, however, is that negative social images towards alternative electricity plans are likely to be somewhat isolated in this context. Moreover, as negative social images was found to have a low prevalence rate among the sample population, the attitudinal shift required to overcome the barrier could potentially occur naturally during the diffusion process. More

specifically, if pay-as-you-go electricity plans become more common throughout the general electricity market, consumers' negative perceptions may eventually be offset.

Product association, also based on consumers' existing beliefs, prevailed more often than negative social images and will need to be addressed before a diffusion process can take place. Product association was not considered a strong barrier because it mainly emerged from consumers' misinterpretation. Thus the difficulty of overcoming this barrier relates to the transmission of relevant information. This is problematic because consumers who displayed product association ignored the marketing communications as a result.

Finally, discontinuity of attributes was considered a high prevailing barrier emergent from this research. The consequence of this barrier is that consumers may hold undesirable perceptions towards, and become uncertain of, the functional attributes consistent with pay-as-you-go electricity plans. This will be difficult to overcome in the current context for two main reasons. First, the functional attribute central to pay-as-you-go electricity, paying before usage, is fundamentally different from the current alternative. Secondly, much of the sample population could not see any relative advantages of paying for electricity in advance. This was highlighted when prepaid cell phone plans were compared with pay-as-you-go electricity plans (Section 4.5). The nature of cell phone communication meant that consumers could benefit significantly from paying in advance. However, much of the sample population could not see any similar benefits to buying their electricity in advance.

In the current consumer environment, it is very unlikely pay-as-you-go electricity plans will become successful without an extensive marketing intervention. Even over a relatively long period of time, the findings suggest that the diffusion of pay-as-you-go electricity plans will not reach the desired tipping point required to become a mass market alternative. However, the current research question refers to the capability of pay-as-you-go electricity plans. Therefore, the overall conclusion is subject to the likelihood of overcoming the barriers to such an extent that pay-as-you-go electricity plans become a regular alternative in the mass market. Marketing communication designed to overcome consumer inertia and product association will be required so that

consumers consider adopting the alternative. From the current research, it is unsure how long this will take; arguably it is likely to take a substantial amount of time and investment. Nevertheless it implies that the barriers, specifically one through four, can be overcome in order for pay-as-you-go electricity plans to successfully diffuse throughout the market.

As suggested in the previous sections, it is the discontinuity of attributes (barrier five) that reflects negatively on the capability of pay-as-you-go electricity plans. Some attributes, such as more usage information and control over payments, were considered very desirable by a large proportion of the sample population. However, the central attribute of a pay-as-you-go electricity plan, paying before usage, was quite clearly considered undesirable by the vast majority of the sample population. Furthermore, as many consumers cannot see any specific relative advantage it has over paying in arrears, electricity plans primarily associated with paying in advance are not considered capable of becoming successful.

With reference to the findings of this research, there are potential possibilities for pay-as-you-go electricity plans. These mainly stem from the desired attributes surrounding user friendly usage information and control over bill payments. Arguably, both attributes may increase in importance if the price of electricity rises further. Therefore, modern alternatives, such as Advance, that have been disassociated with pay-as-you-go electricity plans may be received markedly positively within the current consumer environment. However, for modern pay-as-you-go electricity plans to become a common alternative within the mass market, paying before usage must not be considered the central attribute. Instead they should be initially introduced into the market as modern alternatives, where paying before usage is only an option for consumers. This introduces the potential for retailers to encourage paying before usage, effectively making it a continuous attribute rather than discontinuous as it is currently perceived.

5.5 Limitations and Future Research

This project has provided some meaningful insights regarding consumers' attitudes and behaviours surrounding alternative electricity payment plans. It was, however, subjected to a number limitations and there are potential advantages to exploring some issues further.

The qualitative component of this research utilised telephone interviews in order to overcome geographic limitations. The disadvantages of this were namely based around shortened interviews and the difficulty for the investigator to accurately gauge the participants' reactions. Any future studies conducted in this area would benefit from face to face interaction with consumers, especially when discussing negative perceptions and budgetary issues. The qualitative component was also limited by the number of participants who had signed up for Advance as well as the number of participants who considered the product in detail before deciding to reject it. This limitation mainly arose because Advance was still in the early stages of its trial and potential participant numbers were low. Future research with a greater number of participants, particularly customers who rejected an alternative after consideration, would provide a more detailed insight into why pay-as-you-go electricity plans are actively rejected.

The contrast between prepaid cell phones and pay-as-you-go electricity plans also provided some useful insight into the overall conclusions of the project. However, as this was addressed with an open question presented at the end of the survey, the consumers' statements were unable to be explored in further detail. If this contrast was generated during personal interviews or focus groups, the additional detail may have uncovered a greater understanding surrounding the topic.

The quantitative component of this study was subject to some biases. In particular, the level of household income before tax was considered very high among the sample population. This suggests that the sample population wasn't entirely random for unknown reasons. Every attempt was made to overcome this issue in order to produce reliable analyses. However, the generalisability of the findings, throughout the mass

market, may be limited as a result. The relatively high income level may have also suppressed some of the advantages that pay-as-you-go electricity plans have to offer. For instance, high income consumers are less likely to experience any significant “bill shock” which thus may have reduced the emergence of control over payments. Any future research would benefit from utilising a broad, and more representative, range of participants in order to overcome these uncertainties.

With a wider range, and greater overall number of participants, there would also be an opportunity to develop a reliable cluster analysis. This would potentially produce a more insightful understanding of any variation in consumers’ attitudes and behaviours towards alternative electricity plans. Furthermore, it may provide insight into how pay-as-you-go electricity plans will diffuse throughout the mass market of New Zealand.

Finally, there may have been validity issues concerning the variable “meter read frequency”. There was uncertainty regarding how the participants interpreted the respective question presented in the survey. In particular, the participants may not have realised the distinction between the automaticity of smart meter technology and traditional manual meter reads. This issue was realised during the interpretation and discussion of the results and was not considered detrimental to the overall conclusions.

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7.0 Appendices

Appendix A: Ethical Approval

HUMAN ETHICS APPLICATION: CATEGORY B
(Departmental Approval)

1. **University of Otago staff member responsible for project:** Prof Rob Lawson
2. **Department:** Department of Marketing
3. **Contact details of staff member responsible:** 64 3 479 8158
4. **Title of project:** An Analyses of Mercury Energy's Pay-As-You-Go Power Package as a Mass Market Alternative
5. **Indicate type of project and names of other investigators and students**:

Staff Research		**Names**	
Student Research	1	**Names**	Campbell Grieve
Level of Study (e.g. PhD, Masters, Hons)			Masters
External Research/ Collaboration	1	**Names**	Ben Harvey-Lovell
Institute/Company			Mighty River Power

6. **When will recruitment and data collection commence?** Both the recruitment of participants and the collection of data will commence on the 1st of June 2011.

When will data collection be completed? The collection of data will be completed by the 11th of July 2011.

7. **Brief description <u>in lay terms</u> of the aim of the project, and outline of research questions:** The aim of this research project it to assess the viability of 'pay-as-you-go' (prepaid) power packages becoming the preferred method for purchasing electricity by consumers in New Zealand. This research project will be conducted in conjunction with Mercury Energy, a major electricity retailer in New Zealand and subsidiary of Mighty River Power.

   The research question that will be addressed by this project is as follows: "Are pay-as-you-go power packages capable of becoming a preferred and appealing format for purchasing electricity by the mass market in New Zealand?"

8. **Brief description of the method:** The participants will consist of Mercury Energy customers who reside in the wider Auckland area. These participants will have either accepted or rejected the offer to switch their current format of purchasing electricity to Mercury Energy's product Advance (a pay-as-you-go power package currently being trialled in the market place). These participants will be recruited using records held by Mercury Energy which include the details of customers who have been offered Advance.

   A random selection of participants will be asked to take part in a qualitative telephone interview with the investigator which will be audio taped for transcription purposes.

   All participants will be asked to complete an online survey that will be sent via email. The data from the surveys will be transferred into a statistical software package. The questions asked in the survey will be formulated based on the results of the qualitative telephone interviews.

9. **Please disclose and discuss any potential problems**: As participants will be identified through records held by Mercury Energy, anonymity will be controlled by having multiple participants, excluding any personal information from the final write-ups, and destroying any copies made of the records on the completion of the recruitment process. Furthermore, participants will not be asked to disclose any identifiable information when completing the survey. Any identifiable information gathered during the interviews will remain

confidential and the raw data collected will be stored in a safe location after the conclusion of the research for a minimum of five years.

Interviews will take place via telephone, therefore informed consent will be ensured by asking participants to verbally agree to take part in the research after the investigator reads a statement regarding consent. As surveys will be completed online, the first page will include an information consent form with a statement specifying that by proceeding to the questionnaire the participant acknowledges and consents to participate. For both components of the research, it will be made clear that participation will be entirely voluntary and that they have the freedom to withdraw at any stage without penalty. The participants will also be given contact details of both the staff member responsible for the project and the student researcher in case they have any further questions.

All participants will be informed, prior to consent, that the research project is being completed on behalf of Mercury Energy and that any information presented to Mercury Energy will not contain any identifiable personal information. Only aggregated data used for analysis will be presented in the form of a final write-up.

To protect the client organisation, Mercury Energy, from public access to confidential information, the student researcher and the staff member responsible for the research project may apply for an 'Embargo' on the publication of the respective Master of Business Thesis at the University of Otago library. This will be done at the discretion of Mercury Energy.

An Analyses of Mercury Energy's Pay-As-You-Go Power Package as a Mass Market Alternative

INFORMATION PAGE FOR SURVEY PARTICIPANTS

The aim of this research project it to assess customer preferences for alternative ways of purchasing electricity in New Zealand. This research is being conducted by a student of the University of Otago as a Master of Business project. This research is also being conducted on behalf of Mercury Energy, a major electricity retailer in New Zealand.

For more information about this survey please click on the link below. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you and we thank you for considering our request, your participation in this research project is entirely voluntary.

Information provided to participants when they have clicked on the link: You, and approximately 1000 others, have been invited to complete this survey because you are a current customer of Mercury Energy and have recently been invited to switch to the new electricity package named Advance. Please be aware that you have been identified as a potential participant for this survey through records held by Mercury Energy. However details of any personal information required will be destroyed and every attempt will be made to preserve your anonymity.

Should you agree to take part in this project, you will be asked to complete a series of questions. This will take you approximately five minutes to complete (no less than three minutes). The data collected will be securely stored in such a way that only those mentioned below will be able to gain access to it. While no personal information will be gathered, any raw data on which the results of the project depend will be retained in secure storage for five years, as required by the University's research policy, after which it will be destroyed. The raw data collected will be used to develop an analysis which will be presented in the form of a Master of Business Thesis. The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand) but once again every attempt will be made to preserve your anonymity.

If you have any questions about our project, either now or in the future, please feel free to contact either:-

Campbell Grieve
Department of Marketing
campbell.grieve@otago.ac.nz

and/or

Rob Lawson
Department of Marketing
64 3 479 8158
rob.lawson@otago.ac.nz

By clicking "proceed to the survey" you agree to take part in this project, acknowledge the information presented on this page concerning this project, and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

This study has been approved by the Department of Marketing at the University of Otago. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph 03 479-8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.

[The option to proceed to the questionnaire will be placed at this bottom of the information page]

An Analyses of Mercury Energy's Pay-As-You-Go Power Package as a Mass Market Alternative

INFORMATION STATEMENTS READ TO INTERVIEW PARTICIPANTS

Before you decide whether or not you would like participate in this interview please allow me to read out some information about the research. Your participation in this interview is entirely voluntary and you can withdraw at any stage, if you decide not to take part you will not be disadvantaged in anyway.

The aim of this research project it to assess the viability of prepaid power packages becoming the preferred method for purchasing electricity by consumers in New Zealand. I am conducting this research for my Masters of Business at the University of Otago and on behalf of Mercury Energy.

You have been invited to participate in this interview because you are a current customer of Mercury Energy and have recently been invited to switch to the new electricity package named Advance. By the end of this research project I would have interviewed approximately 24 customers in total.

If you would like any verification of the legitimacy or authenticity of this research I am able to provide you my supervisor's, Professor Rob Lawson's, University of Otago telephone number or email address so you can contact him yourself, then we can continue at a later time.

This interview consists of a series of predetermined questions that will take anywhere between five and fifteen minutes to complete. The interview will also be audio taped so that I can transcribe it. The data collected, including the audio, will be securely stored in such a way that only myself and my supervisor will be able to gain access to it. The data collected will be aggregated and used to develop an analysis which will be presented in the form of a Master of Business Thesis. The results of the project may be published and will be available in the University of Otago Library. However this will not include any personal information about yourself and every attempt will be made to preserve your anonymity.

If you have any further questions, or would like to contact me at a later time, you can email me at campbell.grieve@otago.ac.nz or my supervisor at rob.lawson@otago.ac.nz. Alternatively you can ring my supervisor at 03 479 8158.
Do you wish to continue with the interview?

<u>Interview framework</u>: Some, if not all, of these questions will be asked.

Customers who accepted 'Advance'

-We are aware that you have recently signed up for a new electricity plan called Advance. Can you tell me about your previous electricity plan?

-How long were you using that electricity plan for?

-Did you experience any problems with it?

-Before you received your monthly electricity bills, could you roughly predict how much it was going to cost?

-At times would the cost of the monthly electricity bill be completely unexpected?

-On a scale of one to five, how satisfied were you with your previous electricity plan, with one being the least satisfied and five being the most?

- (if relatively dissatisfied) Can you tell me why you weren't very satisfied with it?

- Before you signed up for Advance, had you searched for any alternative electricity plans?

-Were these alternative plans offered by Mercury Energy, or were you looking at alternative electricity companies?

-How long have you been using Advance?

-How did you initially find out about Advance?

- If you can remember, what were some of the reasons that made you decide to sign up for Advance?

-Did you sign up for Advance because you believed it would be beneficial to you, or was it for another reason?

-Before you signed up to Advance, what did you think the main benefits for you would be?

-How long did it take you to decide to sign up for Advance after you first found out about it?

-What did you think of the signup process?

-From you own experience with Advance what do you think its main advantages are?

-From your own experience with Advance do you think there are any disadvantages?

-Do you see yourself staying with Advance in the foreseeable future?

Customers who rejected Advance

-Can you tell me a little bit about the current electricity plan you are using?

-How long have you been using that electricity plan for?

-Have you experienced any problems with it?

-Are you happy with the current method of purchasing electricity once a month via bill payment?

-On a scale of one to five, how satisfied were you with your previous electricity plan, with one being the least satisfied and five being the most?

- (if relatively dissatisfied) Can you tell me why you weren't very satisfied with it?

-While you have been on your current electricity plan have you looked into, or searched for any other plans?

- Were these alternative plans offered by Mercury Energy, or were you looking at alternative electricity companies?

-Do you remember receiving a mail out about a prepaid electricity plan called Advance?

-What can you tell me about Advance?

-Were there any aspects of Advance that you could see as beneficial to yourself?

-Were you able to determine what the advantages and disadvantages would be to you?

-Did you try to find more information about Advance?

-Overall, what did you think of Advance?

<u>For customers who started the signup process and did not complete it:</u>

-According to Mercury Energy's data base you began the signup process before abandoning it; can you tell me why you stopped the process before it was finished?

-Did you decide during the process that Advance wasn't for you?

-Would you agree that beginning the signup process was just an attempt to explore Advance further?

-Did you find that the signup process was complex or too timely?

-What made you decide to stick with your current electricity plan?

-Before you found out about Advance, were you aware that prepaid electricity plans existed?

-Could you see yourself using a prepaid electricity plan in the foreseeable future?

-What do you think the general purpose of other prepaid electricity plans are?

-Do you think Advance is different to other prepaid electricity plans? Why?

Appendix B: Further Output

7.1 Likelihood of Switching

		Frequency	%	Valid %	Cumulative %
Valid	No Chance	26	11.2	12.1	12.1
	Very Slight possibility	56	24.1	26.0	38.1
	Slight Possibility	21	9.1	9.8	47.9
	Some Possibility	31	13.4	14.4	62.3
	Fair Possibility	15	6.5	7.0	69.3
	Fairly Good Possibility	33	14.2	15.3	84.7
	Good Possibility	10	4.3	4.7	89.3
	Possible	8	3.4	3.7	93.0
	Very Probable	6	2.6	2.8	95.8
	Almost Sure	9	3.9	4.2	100.0
	Certain	0	.0	.0	100.0
	Total	215	92.7	100.0	
Missing	System	17	7.3		
Total		232	100.0		

7.2 Component Matrix

Rotated Component Matrix		
	Component	
	1: Control/ Desirable	2: Less Desirable
Keeping a Positive Credit Balance	.613	
Choose When Payments Are Made	.693	
Receiving Alerts When Balance is Low	.665	
No Monthly Bills or Statements		.584
No Prompt Payment Discount		.721
10% Penalty for Negative Balance		.713
Best Electricity Price on the Market	.543	-.339