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Segmenting the Consumption of Video on Tablet Devices in South Africa

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Segmenting the Consumption of Video on Tablet Devices in South Africa

Bradley Daniels

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

Johannesburg, 2012

ABSTRACT

The introduction of portable tablet devices and wireless distribution technologies enables the consumption of video in many other settings than just TV in the home. Consumers have increased portability, with options to consume video in a manner that gives them more control over what, where and when they watch. The emergence of technology poses a challenge and opportunity for existing TV providers and anyone involved in the ecosystem of portable devices and wireless distribution. The challenges exist in understanding the consumption of video on tablet devices and how it will change current TV consumption. The opportunity is the ability to adapt and capture the evolution of these developments.

A standard structured questionnaire was designed to determine the consumption motives, the context of consumption, the content consumed, consumer behaviour and the consumer experience when consuming video on a tablet device. These characteristics were then analysed using a quantitative research methodology.

Seven clusters were identified in the data set. Multiple motives for consumption were in some cases combined in single clusters, while the need for portability and the need for an alternate viewing environment were the two highest motives of consumption. Movies and entertainment proved to be the most popularly consumed by recorded/ downloaded/ on-demand method of consumption using Wifi as the technology connection, while sport and news were consumed live using Drifta (broadcast) and 3G technology connections. Content providers should aim to establish content environments that support the consumption of video on tablet devices, without compromising their revenue streams in the medium to long term. The frequency of consumption was largely weekly and was correlated to the perceived sufficiency of content which can be improved through search and discovery of content to be consumed on tablets made simple through the use of tablet applications and improved personalised user

experience employing recommendation engines and improved direct marketing communication.

The demographics are not representative of South Africa with respondents being mostly older men in a higher income bracket. It is recommended that the data networks' low traffic periods are better utilised to deliver content to consumers at lower tariffs. Regulators should mandate the inclusion of standards that are adopted by South Africa to optimize the frequency utilisation and the lower the cost of ownership.

DECLARATION

I, Bradley Warren Daniels, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Bradley Warren Daniels

Signed at Parktown

On the 29th day of June 2012

DEDICATION

To my wife Halima and son Cohan
for their
love, support and patience.

ACKNOWLEDGEMENTS

I express my sincere thanks to:

- God for his Grace.
- Mark Peters my supervisor for his patience, guidance, encouragement and support.
- Professor Anthony Stacey for his assistance with the data analysis.
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INTRODUCTION

1.1 Purpose of the study

The purpose of this research study is to segment the consumption of video on tablet devices.

1.2 Context of the study

South Africans officially experienced video on television (TV) in August 1975, the broadcast of TV was one channel limited to a few hours of viewing per day (Bevan, 2008). Much has evolved since; today South Africans have many more choices of TV channels. These choices vary the free-to-air TV channels

including the SABC 1, 2 and 3 (SABC, 2012) and e-TV (eTV, 2012). While DStv and Top TV provide in excess of 120 pay-TV channels with various packages of channels at difference price points (Multichoice, 2012; TopTV, 2012). The video quality in TV has also evolved with the addition of high definition TV (Multichoice, 2012). These new and evolved viewing options are because of developments in multiple areas: the volume of content available for consumption has grown with many more programmes to watch and an increased volume of niche channels.

Consumers have also changed the way that they watch TV. The introduction of the personal video recorder (PVR) gives viewers the option to schedule multiple recordings of TV content across multiple channels through a simple interface, and then view the recorded content at their convenience (Multichoice, 2012).

Viewers can also receive content through various technologies on the internet, using fixed line and wireless connections (Breet, 2010). There are also developments in the broadcast standards that support mobility, enabling users to receive broadcast video while mobile (DVBH, 2012).

Cisco VNI Forecast predicted that almost 66 per cent of the world's mobile data traffic will be on video by 2014. Mobile video will grow at a Compound Annual Growth Rate (CAGR) of 131 per cent between 2009 and 2014. Mobile video has the highest growth rate of any application category measured within the mobile data (Index, 2010).

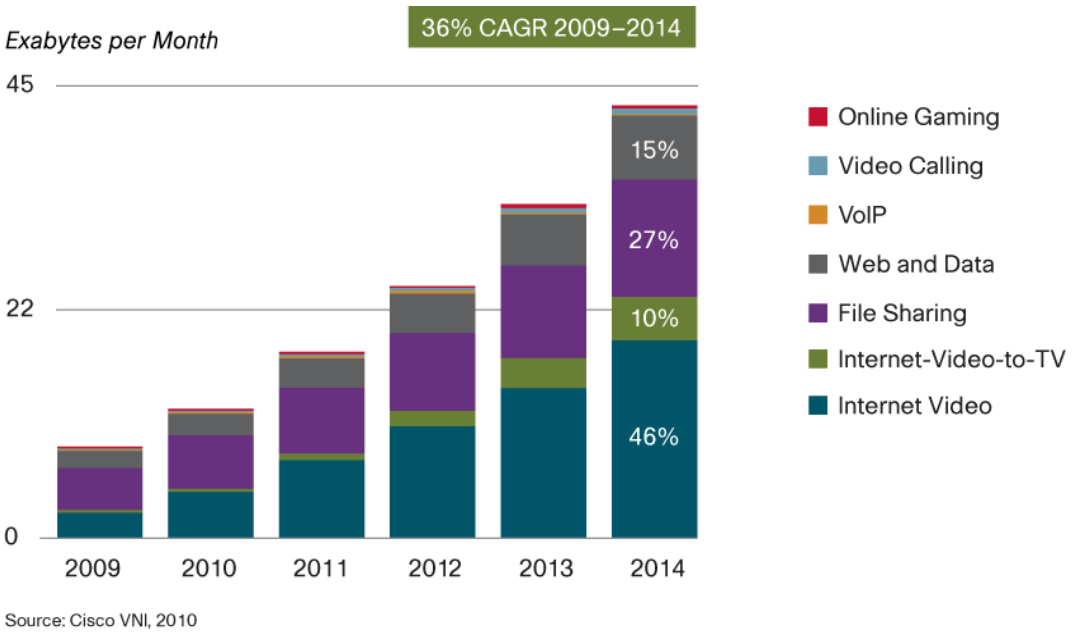


Figure 1: Hyper connectivity and the Approaching Settabyte Era
(Index, 2010)

To complement the development in distribution technology of wireless internet and broadcast mobility there are new devices that viewers can watch video on, these device's screens are larger, the screen resolution is better, the devices have large volumes of memory for storing content and they are capable of being connected to the internet or digital broadcast streams (DVBH, 2012). Although selected devices are best suited for in-home viewing, most of these devices are portable enough to carry all the time.

With more video content to watch, more ways to receive this content, better devices that are suited to watch the content on the go, users have lots more choices of when, where and how they watch video. The study aims to develop a better understanding of the consumers who adopt the behaviour of consuming video on tablet devices. The business problem that the research addresses is gaining an understanding of the opportunities and/or challenges for businesses that are or could be a part of the value chain.

1.3 Problem Statement

The purpose of this research study is to segment the consumption of video on tablet devices in Gauteng, South Africa.

1.4 Significance of the study

The study fills a gap in South Africa's research on the consumption of video. This area has insufficient published literature and requires further studies to develop a body of knowledge on video and TV consumption as the medium evolves. This should be a limitation as well.

Grouping consumers into relatively homogeneous groups is useful to an organisation, thus enabling a customised development of product experiences and marketing strategies to better satisfy these consumers. The importance of this exercise for an emerging product provides an opportunity to capture the antecedence of the service for multiple organisations in the value chain.

South Africa's digital migration (Migration Policy, 2012) will yield a 'digital spectrum dividend' that will enable increased digital wireless experiences. This development will facilitate new and innovative ways to connect consumers to information and entertainment. Video has the potential to inform and educate all levels of literacy spanning basic to advanced topics. Government, Educators and the media industry will benefit from this research, by being better informed when planning, designing and executing the proposition of digital media in the various opportunities.

The results of the research will add value to academia in South Africa. TV in South Africa has not been examined by national academics. This research may result in a base understanding of consumption of video on tablet devices in Gauteng, South Africa and may provide the basis for further academic research.

1.5 Delimitations of the study

1.5.1 *Delimitations*

The delimitations of the study are as follows:

- This study is focused on consumers who have consumed video content on tablet devices in Gauteng.
- The research study will be conducted from a customer's perspective only and not any of the companies represented in the value chain. For this reason, only consumers will be surveyed.
- The study focuses on the behaviour related to the consumption of video on tablet devices.
- The video content researched is limited to that which is traditionally viewed on TV, but also includes user generated content, and excludes pornographic video content.
- The regulatory environment in this sector and its possible effects has been excluded from the study.
- The economic forces relevant to SA and their effects on consumer behaviour and attitudes have been excluded from the study.
- Video or TV companies' competitive factors have been excluded from the study.

1.6 Definition of terms

- **3G** – the third generation of mobile cellular telephony technology.
- **CMMB** – China Mobile Multimedia Broadcasting (CMMB) is a mobile television and multimedia standard developed and specified in China by the State Administration of Radio, Film, and Television (SARFT).

- **Digital spectrum dividend** – the transmission frequency spectrum that is made available as a result of the country's migration from analogue to digital.
- **DMB** – Digital Multimedia Broadcasting (DMB) is a digital radio transmission technology developed in South Korea for sending multimedia such as TV, radio and data casting to mobile devices such as mobile phones.
- **DVBH** – Digital Video Broadcast Handheld: A digital video broadcast standard optimised for smaller portable devices.
- **Fixed line and wireless connections** – internet connectivity provided over a fixed telecommunications line, while wireless connectivity is provided over wireless technology a mobile operators network.
- **HDTV** – High-definition television provides a resolution that is substantially higher than that of standard-definition television. The resolution is typically 1080p. (progressive scan).
- **IP** – Internet Protocol TV delivery of video content using internet protocol and the internet to deliver it.
- **ISDBT** – a Japanese digital terrestrial broadcasting standard that can also be used to broadcast to mobile devices.
- **Live TV** – Peer-to-peer TV and live television streaming over the Internet.
- **Long form** - Video content generally greater than seven minutes in length.
- **PVR** – Recording live TV content for later viewing.
- **Short form** – User-generated video and other video clips generally less than seven minutes in length.

1.7 Assumptions

- Respondents are representative of the South African population who own tablet devices, to understand the motives and reasoning at a local level.

- Respondents are literate in English and were able to understand and answer the questions adequately.
- Respondents have consumed video on a tablet device more than once and have sufficient knowledge and experience to provide feedback, to ensure that the answers were based on experience.
- Video will continue to be consumed on tablet devices in the future, to ensure that the study results are applicable as a reference going forward.

2 LITERATURE REVIEW

2.1 Introduction

This chapter provides an overview of the literature reviewed to formulate ideas and derive research propositions forming the basis of the research report.

2.2 The relevance of understanding consumption

Change is constant in business. Understanding the change in the customer's value system is critical to managing the erosion of distinctive competencies in a changing environment (Ryan, Nolan, Reid & Enderby, 2008).

The value to a consumer is defined by the intersection of the customer's needs and the seller's offerings. In order to create sustainable value, we need to understand, manage and plan for change in consumer needs. This can be achieved through making sense of or understanding the changing environment, taking appropriate action and adapting.

Hoebeke (2000) describes management at three distinct levels, normative, strategic and operational, as seen in Figure 2.

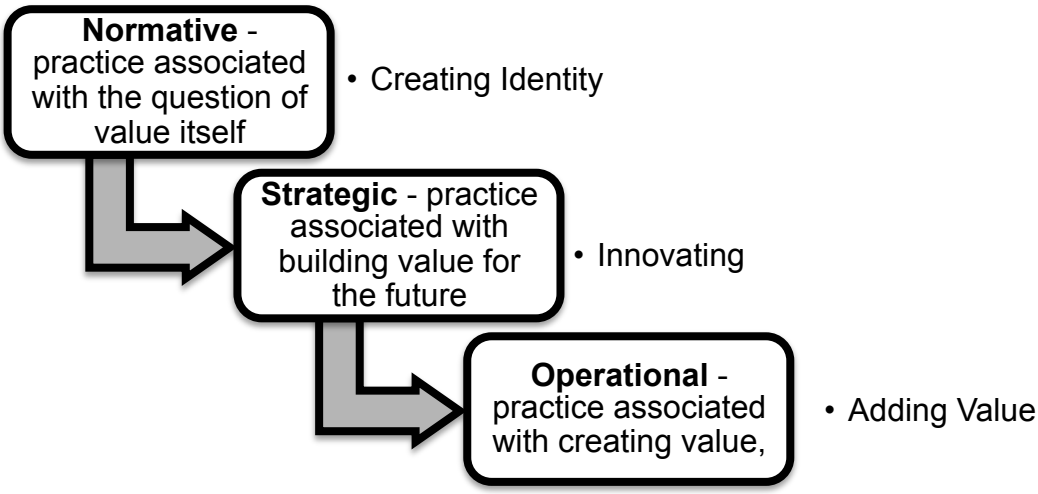


Figure 2: Levels of Management
(Hoebeke, 2000)

Each level connects with its preceding level, creating an output and the conditions or input for the next level. The context is complex with several elements that could influence consumer consumption including, technological, behavioural, psychological and environmental (Hoebeke, 2000).

2.3 Market segmentation

Market segmentation is the practice of grouping customers in order to develop strategies that better meet consumer needs at the highest expected profit for the organization (Kamakura & Wedel, 2002).

Strategies to segment markets widely used are (a) segmentation by demographics, i.e., gender, age, income, and geographic spread of consumers; (b) psychographics, e.g., consumer values, consumer lifestyle, etc.; and (c) by benefits required by consumers, e.g., reliability, fashion credibility, saving time or money, etc. (Wells, Chang, Oliveira-Castro & Pallister, 2010).

Demographic segmentation is popularly adopted however; it is not without its shortcomings. (Wells et al., 2010) asserts that demographic and lifestyle segmentation lacks consistent proven results for all segmentation applications. Incorporating behavioural segmentation with demographic segmentation provides a more complex function of segmentation.

A closer look at consumer behaviour in its generic form can be described as the acquisition, consumption and disposition of a product, service, experience or idea of a decision maker over time (Hoyer & Macinnis, 2009). This study is particularly focused on the *consumption* of the service (video on tablets). To understand behavioural segmentation an examination of the Behavioural Perspective Model (BPM) is required (Foxall, 1990).

2.4 Consumer Behaviour

The BPM (Foxall, 2010) suggests that the most important determinant of behaviour is the consequences it produces. BPM is when a stimulus creates a particular response that is likely to be rewarded or reinforced, through an increase in frequency, or punished through a decrease in frequency of use (Foxall, 2010).

These decision-making processes may provide a unique predictive ability to explain market segment responsiveness over demographic variables, which are often perceived as the starting point of market identification (Flynn & Goldsmith, 1993). Figure 3 contains the Behavioural Homogeneity Evaluation Framework: Multi-level evaluations of consumer involvement in International segmentation.

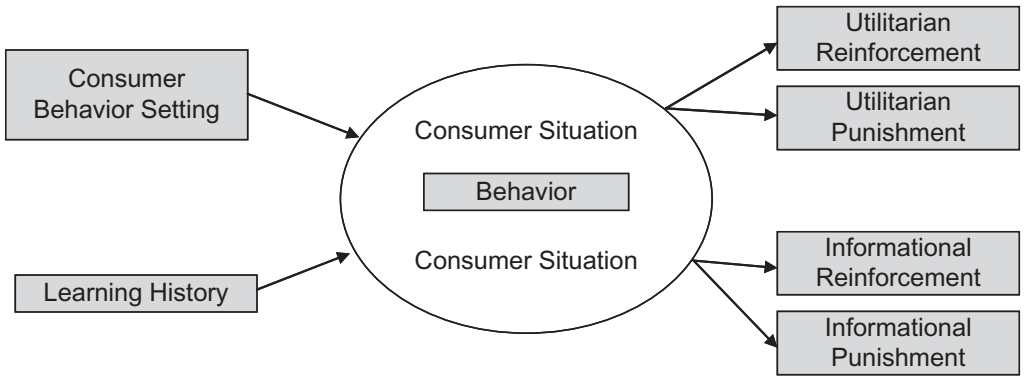


Figure 3: The Behavioural Homogeneity Evaluation Framework
(Flynn & Goldsmith, 1993)

(Foxall, 2010) cites *consumers learning history*, as consumers past choices and experiences of reinforcing or punishing consequences. While these can be neutral stimuli initially, they are transformed into the discriminative stimuli that set the background for the current choice. The *consumer behaviour setting* is the background stimulus of that behaviour, the key elements that have been present during earlier consumption experiences. The *consumer situation* is the point of intersection of consumer's learning history and the current situation where the consumer is faced with a new opportunity to consume, resulting in indulgence or avoidance of the behaviour. The resulting consequence of

behaviour is the reinforcement or *punishment of utilitarian or informational behaviour*. Utilitarian reinforcement is the direct tangible benefit of owning and consuming a product or service. Informational reinforcement benefits of ownership and consumption are social in nature of the reputation or status as well as the self-confidence of ownership and consumption.

Table 1: Utilitarian and information value levels
(Foxall, 2010)

	High utilitarian reinforcement	Low utilitarian reinforcement
High informational reinforcement	ACCOMPLISHMENT	ACCUMULATION
Low informational reinforcement	HEDONISM	MAINTENANCE

The products and services have different reinforcement levels of utilitarian and information value (Foxall, 2010) as described in Table 1. Foxall (2010) cites the following consequences of behaviour while using the framework: *Accomplishment* is achieved through consumer behaviour exhibiting high social and economic attainment, where the acquiring status products or services are coupled with its exhibitionist consumption. *Hedonism* includes the consumption of the activities of high personal satisfaction, an example is popular entertainment. *Accumulation* includes the behaviours of collecting value over time, an example: the downloading of a TV series from the internet over time. *Maintenance* refers to those activities perceived necessary for the consumer's survival and welfare, for example: watching the news or the weather.

These consumption instances described above also occur in open or closed settings providing different consequences to its consumption (Foxall, 2010). Open consumption provides the user with multiple options of consumption from focused products or services to a variety of unrelated products, while closed

settings limit the options of focused and unrelated products. Consuming video while in transit on public transport has limited alternate media for consumption, which is characteristic of a closed setting.

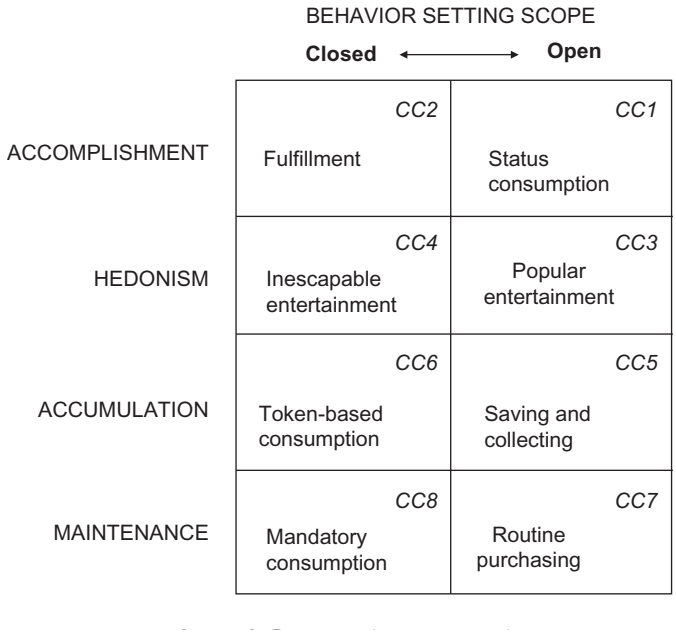


Figure 4: Reinforcement types
(Foxall, 2010)

A distinction is made in the model between two types of reinforcement, hedonic support and informational stimulation, both having an influence on consumer choices. Hedonic stimulation is the more practical nature of products or services, the economic or material consequences, or the satisfaction of acquiring, owning, and using a product. Informational stimulation is the branding of a product and its differences from other products.

Products as well as brand names are capable of contributing to several types of benefit to the consumer. The major difference between product and brand exists in that a product is ‘something that offers a functional benefit supporting a hedonic perspective, while the brand is ‘a name, symbol, design or mark that enhances the value of a product beyond its functional value’ supporting an informational perspective (Orth, McDaniel, Shellhammer & Lopetcharat, 2004). The informational value extends to the perception that is created by the use of a product, e.g. the use of a cell phone, extends beyond the function of making

and receiving call, but is also an indicator of status and is a personal extension of one's personal brand.

2.5 Understanding the usefulness of video consumption on portable devices

Scrutiny of the motives for using a technology provides an insight into the usefulness of the technology (Venkatesh & Davis, 2000).

It has been established, through the use of video on various technologies, that video consumed on portable devices is for the following reasons:

- Personal benefit – consumption of media on portable devices is for personal benefit, where individuals are able to consume video content of preference anywhere, at any time. This consumption is in contrast to traditional television where consumption is often with other members in the family and the decision of what to consume is made on a group basis, often not satisfying all consumers (O'Hara, Slayden & Vorbau, 2007).
- Time – the mobility of portable devices enables the consumption of video on portable devices at any time. This portability facilitates the consumption of video on portable devices during spare moments as a time-filler, this is often unplanned and with no particular intended outcome. The uses include travelling and commuting, unoccupied time slots during the day such as lunch breaks or waiting situations such as queues (Orgad, 2009). In contrast, consuming video on portable devices is also used as a time-saver, where the use of one's time to consume video on a portable device is planned to free-up time for other activities. An example is watching the news live on a portable device while in transit so you don't need to when you get home (O'Hara et al., 2007).
- Staying informed – with the increasing availability of video content that is information based being delivered to portable devices, the need to be and stay informed is growing (Cagenuis, Fasbender, Hjelm, Horn, Ivars, & Selberg, 2006). Consuming this content on a portable device enables

the consumption anywhere and anytime, in particular content of a time sensitive nature. Live sport and news content overshadow this area; however the need to know first is also a key motive here.

- Fashion and status were found to be strong motivators to adopt mobile media (Wei, 2008), where mobile devices and the media and communication are adopted as an extension of oneself, a fashion accessory that is changed often and a status symbol that is established through trends and brands (Vishwanath & Chen, 2008).
- Place shifting is achieved through the portability of media, being able to consume video content in environments of convenience. Consuming video content in private or public, at work and / or at home, in transit or stationary (Gib, 2009; Kaasinen, Kulju, Kivinen, & Oksman, 2009; O'Hara et al., 2007; Orgad, 2006).

2.6 Profile of the consumer

2.6.1 *Demographic profiles*

Consumers adopt technology based on various consumer attributes, attitudes, exposure and experiences (Venkatesh & Davis, 2000).

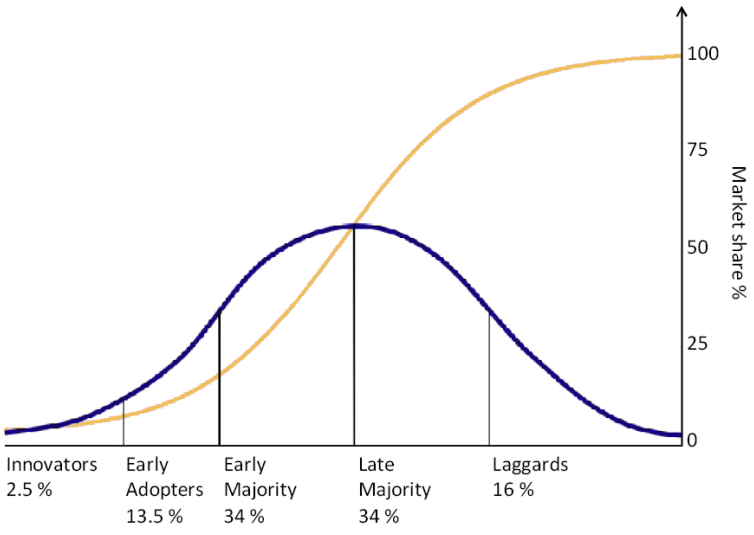


Figure 5: Technology Adoption Life cycle

(Rogers, 1995)

Rogers (1995) categorised the adoption and consumption of technology into five distinct segments: innovators, early adopters, early majority, late majority and laggards. The adoption by each segment is supported by its preceding segment's adoption, through creating the conditions that supports the adoption characteristics required in subsequent segments (Rogers, 1995). The motives, beliefs and profiles of the segments differ.

It has been established that video content preferences differ by market segment, with demographic components of age, gender and income forming the basis of segmentation (Greenberg, 2000). Motives for consuming video on portable devices differ by segment and are influenced by values, gender and age (Miyauchi & Oda, 2008). Age and gender are also key determinants in consumer's propensities to adopt technology (Lin, 2002). Lastly, consumer television viewing-behaviour has shown to have significant relationships with demographic variables such as age, income and gender (Hawkins & Pingree 1982; Swanson 1967). Gender age and income form key variables that influence the consumption of video.

2.7 Video content

Content preference is a significant predictor of responses in end-user computing (Doll & Torkzadeh, 1988). Content attributes that motivate a higher utility level include, *relevance of content* (the extent to which this content is applicable to consumers), *the timeliness of content* (the extent to which the content is updated and refreshed), and *sufficiency of content* (the extent to which the content meets consumer expectations on a quality and volume dimension (Jung, Perez-Mira & Wiley-Patton, 2009).

Jung et al. (2009) cite video as the primary utility in the experience of consumption of video on portable devices. The video is expected to have the most influence on consumer's consumption of video on portable devices. While an irrelevant, repeated and limited variety of content may make consumers perceive a low level of utility for the service, content having all the attributes to

motivate a higher utility level of video on portable devices, provides greater satisfaction as it is seen to be relevant, timely and sufficient (Jung et al., 2009).

The genres of content consumed on portable devices varies from live sport, live news entertainment, movies, music and general entertainment to kids programmes, however, content genres popularity on portable devices vary (Miyauchi & Oda 2008; Kaasinen et al., 2009).

The personal nature of portable video consumption suggests a local content focus (Orgad, 2006). User-generated content; content created and shared by amateurs; is regarded as one of the content types for mobile TV, and has proved to be of public interest.

Tammela et al. (2008) proposes that the motive to always be informed and have access to live events such as sports, news and any other live events including outcome based programmes, such as live reality competition shows, is a source of information as much as it is entertainment.

Content types including the form (length) of content is a direct determinant of the consumption of video on portable devices (Cagenuis et al., 2006). Consumers not only wanted to watch familiar programme offerings, but they would also welcome mobile TV content that is suitable for short and occasional viewing (Carlsson & Walden, 2007).

The duration that video is consumed for and the frequency of consumption of video on a portable device are two indicators of the need being fulfilled by video consumption on portable devices (Shim, Park & Shim, 2008).

2.8 The consumer experience

The ease of use is a key element in the adoption of technology (Venkatesh & Davis, 2000). The degree to which a technology is familiar or represents a previous experience supports the adoption of a technology (Rogers, 1995).

Consumer's current knowledge of a similar service or product is the primary base used to learn about and develop a representation of the new product. This

knowledge transfer model is often used in studies of experiential learning and provides a strong reference for describing how current knowledge influences a person's adoption (Moreau, Lehmann & Markman, 2001).

The use of knowledge from a familiar domain (current video consumption) to a new product (video consumption on portable devices), means that consumers can easily learn about new products (Moreau et al., 2001). Knowledge transfer and analogical reasoning suggests that this learning occurs through a series of stages: access, mapping, and transfer (Gentner & Markman, 1997).

During the access stage, a similar or familiar product or service in a person's memory can serve as a source of information about the innovation or new product. This occurs especially when the new product shares several perceived similarities (i.e., physical, visual or naming) with similar existing products, access is likely to occur spontaneously. Access can also be externally stimulated by marketing communications (Moreau et al., 2001).

When an existing product has been accessed, consumers can compare the content and structure of the existing product with the new product. The optimum solution during the mapping stage is to achieve a comparison between existing and new products. This serves as a connection on which additional knowledge can transfer (Gregan-Paxton & John, 1997). The perceived similarities between the existing products and the new products form the basis of the ease at which these mappings can be created (Rogers, 1995).

The types of mappings constructed will influence the type and amount of knowledge that will transfer, the inferences that can be made about the product, and the extent to which consumers comprehend the new product.

The mapping occurs on a relational or attribute basis, consumers prefer relational mapping as this allows the consumer to draw inferences between the two products. This can however be difficult for novices (Gentner & Markman, 1997).

A closer look at the technologies that support the consumption of video on portable devices; broadcast mobile TV through the use of DVBH, ISDBT, DMB

mobile broadcast terrestrial networks to mobile portable devices (Tammela et al., 2008), provide a similar experience to traditional TV of a consistent video quality experience, unaffected by concurrent usage, provided consumers are within the broadcast coverage. This technology has its short-comings with respect to efficient channel changes and a simple and easy start up and use (Orgad, 2006).

On-demand consumption of video over Internet Protocol (IP) networks is another way of accessing and delivering content to portable devices. The GSM network 3G, HSPA networks, or Wifi networks can be used to distribute content to portable devices (Orgad, 2006; Wei, 2008; Tammela et al., 2008; Orgad, 2009). These networks have multiple links in their architecture and have the potential to be negatively affected by concurrent usage. This however can happen at one or various links in the delivery chain. If the delivery chain achieves an optimum level of performance, the quality of video can be superior to the broadcast quality using the technologies above.

The viewing device's screen size is a determinant of the consumption of video on tablet devices along with other product attributes, which include content, the form of content (long or short) and the quality of the video when viewing (Shim et al., 2008).

2.9 Conclusion of Literature Review

Markets can be segmented by multiple attributes; while demographic segmentation is widely used, it has its limitations. Consumer behaviour is a more reliable mechanism with which to segment markets.

Consumer behaviour's most important influencer is the consequences it produces (Foxall, 1990). The consequences can be summarised into high or low in hedonic and or information reinforcement, consumer behaviour can also be of an open or closed nature providing further insight into the motives for consumption (Foxall, 2010).

Motives for consumption of video on tablet devices correlate with the consumer behaviour model cited by Foxall (2010); personal benefit, time saving or wasting, fashion statements, consumption mobility and extending video consumption into less conventional areas of conventional living.

Consumer's technology adoption life cycle and the demographic differences in the consumption of TV exhibit the differences in consumer's demographic profiles.

Consumer's content preference is seen as a predictor of satisfaction levels of electronic media. The *relevance of content*, *the timeliness of content*, *familiarity and sufficiency* are cited as important attributes influencing satisfaction. In the context of this study, these attributes are critical.

Consumer's experience when using the product is cited as an important component in the adoption of a service. Consumers go through a three-stage process of access, mapping and transfer when adopting new technology. Forming these similarities in the mind of the consumer and allowing them to map and transfer their learning across products and services perceived to be similar, assists in the adoption. Creating an experience as close as possible to TV, makes for easy adoption of the technology and behaviour. The screen size, live TV and similarities in experience form the basis of the TV experience.

These elements lead to the following proposition:

The consumption of video on tablet devices can be segmented by motives for consumption, the context, consumer behaviour, content preferences and the consumer experience.

3 RESEARCH METHODOLOGY

This chapter describes the methodology used to address the research proposition posed in the previous sections. This chapter describes the research methodology, the research design, the sample population, and the research instrument used to collect the data including the analysis and interpretation.

3.1 Research methodology / paradigm

Based on findings from the literature review, consumers who consume video on tablet devices can be segmented by a list of attributes. These attributes are grouped into five main themes and translated into a set of questions and statements that were used for the questionnaire survey.

Attributes included motives for consumption, consumer behaviour, consumer profiles, the content consumed and the consumer experience. The survey questionnaire was pre-tested by 10 selected respondents.

3.2 Research Design

Through the following main attributes, a series of questions was compiled:

Consumer profiles

Consumer profiles are an influencing factor in the determinant of consumer behaviour related to TV consumption (Rogers, 1995; Frank & Greenberg, 2000; Lin, 2002). Consumer characteristics of age, gender and income were used to build profiles of consumers.

Consumer motives

The BPM suggests that the most important determinant of behaviour is the consequences it produces, a consequence that reinforces or penalises a particular behaviour.

The following generic motives from Foxall et al., (2010) in conjunction with established motives of literature were used to design the related motives.

- Place shifting (portability) is achieved through enabling the consumption of media, in environments and during times of convenience. (Gib, 2009; Kaasinen et al., 2009; O'Hara et al., 2007; Orgad, 2006). This was presented as Motive 1.
- Accumulation is seen as a motive that is high in utilitarian value (Foxall, 2010), the application of this motive to the consumption of video on tablets is largely driven by the usefulness of having your accumulated videos on one device that is portable, but also the high informational value where the consumption of video in public environments creates a status positioning of the consumer. This was presented as Motive 2.
- Staying informed is also viewed as an important motive since it has both utilitarian and informational value. The utilitarian value can vary from the need to know the score of a sports match or important business developments available on the news. The informational value is being is built on the notion of always being informed, and being able to share your knowledge or being able to participate in topics of discussion (Cagenius et al., 2006). This was presented as Motive 3.
- Hedonism of video content would be the consumption of popular video content or inescapable video consumption. This application is of hedonistic value, where the user needs to consume content that they have a preference for (Foxall, 2010) in open or closed context. This was presented as Motive 4.
- According to Vishwanath and Chen (2008) and Wei (2008), technology and the consumption of media are akin to a fashion statement and present the consumer as being of a particular status. This was presented as Motive 5.
- The mobility of portable devices enables the consumption of video on portable devices at any time (Orgad, 2006), for the purposes of passing time and being entertained and can also be considered hedonistic. In contrast, consuming video on portable devices is also used as a time-saver, where the use of the consumer's time to consume video on a

portable device is planned, in order to free-up time for other activities. (O'Hara et al., 2007). This was presented as Motives 6 and 7.

- O'Hara et al. (2007), view *personal benefit* as a consequence of behaviour. The consequence of portability enables consumers to experience their content preference by creating personalised viewing environments, overcoming the conflicts of single TV environments with multiple viewers. This was presented as Motive 8.
- Maintenance is described as being low in utilitarian and informational value, in the context of consuming video on tablet routinely where this content is widely available (Foxall, 2010). This was presented as Motive 9.

Context

These motives were also conducted in open and closed contexts (Foxall, 2010), and provide a clearer understanding of consumers intended motives. The context of consumption was included in the survey, differentiated by public and private places and environments that have alternate consumption options. These environments are either open or closed, and the consumer has either many other options to satisfy their motive, or limited or non-existent alternatives to satisfy their motive. This area was addressed in Question 2.

Content

Content in many respects is the essence of the experience of consumption of video on tablet devices. This made up a significant contribution to the segmentation of the consumption of video on tablets.

Four areas were assessed under content:

The type of content

Live or recorded consumption of video on tablets served as an indication of the motive of consumption. Consuming live content satisfies the need to watch ***what*** (a selection of live content), and ***where*** consumers want to watch it. In the case of live content, the time is established by the broadcaster and the

consumer adjusts his/her schedule around the live broadcast. Recorded, downloaded or on-demand consumption provides consumers with the option to completely control, ***what*** they watch, ***where*** they want to watch it and ***when*** they want to watch it. This area was addressed with Question 3.

Content genre

Consumers have a different genre preferences and consume content genres differently (Kaasinen et al.,, 2009). The differences in genre preferences provide an environment that facilitates the segmentation of consumption. This area was addressed with Question 4.

Content sufficiency and familiarity

The sufficiency, quality and familiarity of content are indicators of content satisfaction. Consuming familiar content is a quality filter that lifts the satisfaction levels of the content consumed. These areas were addressed with Questions 5 and 6.

Consumer behaviour

The value of the service is directly related to its ability to reinforce behaviour positively or negatively (Foxall, 2010). A consumer using the service more frequently indicates a positively reinforced behaviour or the converse being true for less frequent use. This was addressed with Question 7.

Consumer experience

Consumer experience is cited as an influencer that reinforces consumer behaviour positively or negatively (Rogers, 1995). The video consumption experience is aligned with the consumer's preceding related experience. In the context of the video consumption on portable devices, typical preceding experiences would be, TV viewing or watching video content on a personal computer through the internet. The device, in the case of consumption of video on tablet devices, shares very similar characteristics. While the type of content (Question 2) and the means by which the consumer receives the content may

differ, the benefits and shortcomings of the devices and distribution technologies that affect the consumer experience noted in the literature review were addressed in the survey with Questions 8 and 9.

3.2.1 *Population*

For the purposes of this study, the population comprised individuals who have watched video on tablet devices in Gauteng.

Personal details of the respondents were not recorded in accordance with SAMRA's (South Africa Market Research Institute) code of conduct. This code is required to protect the anonymity of the respondent and ensure anonymous data reports.

3.2.2 *Sample*

A random sample will be used (Leedy, 1980), meaning that not all consumers of the population have an equal chance of being included in the sample.

Business travellers and part-time MBA students were chosen as a preferable sample for intercept interviews:

- *Business travellers* have the potential to have the highest accessibility (that they replace laptop devices for transit) to tablet devices and the related technologies. Business travellers were also more accessible to interview as they congregate at business class lounges.
- *Part-time MBA students* have a similar profile to business travellers as they have higher accessibility to tablet devices and the various technologies to receive content on these tablet devices. They were also easily accessible through their congregation at the business school.

A random sample of tablet owners was used as a sample base. Access to this sub-sample is achieved through retail store and OEM databases of consumers with tablet devices.

Respondents must have consumed video on a tablet in order to complete the survey.

The sample size was 129 respondents from the total population of 170 people approached to complete the questionnaire.

3.3 The research instrument

3.3.1 *Surveys*

The survey questionnaire aimed to collect data on the proposition raised in the literature review.

The principal advantage of a survey is the vast volume of data that can be gathered with one interaction with the respondent.

Surveys are also well suited to many versatile research objectives. It is easily executed and can be physically distributed without difficulty through face to face interviews, and electronically distributed via email and/or on the internet.

The survey construct followed allowed the users to evaluate all the options available before make a selection.

The questionnaire could be completed either electronically using Microsoft Excel or manually.

The disadvantages of this research method is that the response is on a claimed basis where the respondent relies on their memory (Mattila, 2003), and thus has the potential to be inaccurate or partially inaccurate.

The answers to the questions are limited to the options suggested and do not capture further detail or allow respondents to express themselves on the matter further (Mattila, 2003).

3.4 Procedure for data collection

- The randomly selected sample completed the questionnaire through an intercept interview and an email distributed with the excel spreadsheet questionnaire. The intercept interviews were conducted at airport

business class lounges and business schools. The intercept interviews were completed by filling in a written questionnaire. Usable responses were obtained from 129 responses.

- Respondents filled in the questionnaire in a self-administered manner. Questions were presented in a grid format. The rows of the grid consisted of nine motives for consuming video on tablets which were adapted from previous studies and attributes related to the consumption of video on devices of a portable nature. There were intercept interviewers that assisted the interviewees and captured their responses if required. Respondents who completed the questionnaire electronically had the option of emailing it back to the researcher or delivering a hard copy of it by hand.

3.5 Data analysis and interpretation

The research methodology applied to the study was a quantitative method called clustering. Consumers, and other product attributes that are similar in key variables, often form together, these clusters are discovered using cluster analysis (Malhotra, 2008).

Cluster analysis is a technique used to group objects into a specified number of mutually exclusive groups such that the groups are relatively homogenous (Kotler, 2003).

The variables that the clusters are built on can be based on past research, existing theory, or the judgment of the researcher. The number of clusters is theoretical, conceptual and may have practical considerations. The size of the clusters should be meaningful and each cluster should be interpreted in terms of cluster centroids (Malhotra, 2008).

The responses were captured in a Microsoft Excel spreadsheet. These were then analysed using the following cluster analysis approaches in order to segment the consumption into homogenous groups.

- Establish optimum number of clusters, by identifying common clusters through configuring multiple clusters from two to 19, evaluation of each cluster to maintain an acceptable sample size per cluster.
- Configure the volume of clusters required.
- Conduct a k-means cluster analysis.

To simplify and remove redundant fields in the data structure, changes were made to enable easier interpretation of the data. The following categories were coded. The tables below provide an overview of the coding.

Gender categories were coded as follows:

Table 2: Gender Coding

Category	Code
Male	1
Female	0

Age categories were coded as follows:

Table 3: Age Coding

Category	Code
19 - 24	1
25 - 34	2
35 - 49	3
50+	4

Income categories were coded as follows:

Table 4: Income Coding

Category	Code
<R7000	1
R7 000 - R15 000	2
R15 001 - R30 000	3
R30 001 - R50 000	4
R50 000 +	5
Refused	Removed

Sufficiency of content categories was coded as follows:

Table 5: Sufficiency of Content Coding

Category	Code
Agree	1
Disagree	0
Don’t know	Removed

Familiarity of content categories was coded as follows:

Table 6: Familiarity of Content Coding Table

Category	Code
Agree	1
Disagree	0
Don’t know	Removed

The software programme used to process the data was IBM SPSS.

Results of the cluster analysis from the software programme is presented and discussed in Chapters 4 and 5. Profiles of the market segments were developed on the variables in each segment. Each segment was given a name that summarised it's most dominant characteristics (Du Plessis, 1990).

Segments change over time, to maintain and advance an understanding of markets, it is important that a segmentation exercise is conducted periodically (Du Plessis, 1990) to ensure that the approaches and strategies of different segments remain relevant and effective.

3.6 Limitations of the study

3.6.1 *Limitations*

The limitations of the methodology selected, were as follows:

- The study was limited to the geographic region of Gauteng in South Africa.
- A newly designed measuring survey was used.
- The sample was randomly selected; and therefore the respondents did not represent all sectors of tablet consumers in Gauteng.
- During the survey the respondent's judgements and responses were motivated by deficit or surplus experiences of a perceived prior standard, and are subject to a spot memory-based judgement of the entire service from prior evaluations made, along with the fact that that consumers don't necessarily update the service unless required to do so. (Mattila, 2003). This had the potential of the respondents either underscoring or over scoring when completing the questionnaire.

3.7 Validity and reliability

In the context of the study, the external validity of the study is critical to ensure that the study does in fact have the ability to be generalised across the broader consumer base in South Africa.

3.7.1 *External validity*

To ensure that the study is externally valid, the selection of the population, the sample and maintenance of the profile of the population was considered.

3.7.2 *Internal validity*

- *Content and face validity* – the subsets of the factors that could affect the consumption of video on portable devices were considered. The areas that were not covered were more circumstantial than an oversight.
- *Predictive validity* – the study does have the ability to quantify future behaviour, as long as the current variables remain constant.
- *Concurrent validity* – the concept of concurrent validity is applied to the context of services evaluation. Service is inseparable from the brand and customer and as such, an evaluation of the service can also be used as a brand image evaluation.

3.7.3 *Reliability*

- The structured questionnaire is an appropriate measuring instrument and it is deemed to be reliable. The same questions were presented to all respondents in the sample.
- *Accuracy and precision* – the questions were of a very personal nature and the accuracy and precision of the answers were at best a subjective evaluation of perceptions within the study. Once the respondent moved onto the next question in the survey, the previous recorded response was not changeable, thus maintaining the records integrity.
- *Internal consistency* – the items of the scale in all questions were designed homogenously.

4 PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the results following the application of the cluster analysis instrument. This is the presentation of the results; the discussion of the results will follow in Chapter 5.

4.2 Demographic profile of respondents

The purpose of this chapter is to describe the sample. Of the 170 people approached to complete the survey a total sample size of 129 was achieved. The expected sample size of 120 respondents was exceeded. More than 220 unique records were completed. Seventy-four respondents completed the questionnaire electronically, while the rest of the respondents completed the physical questionnaire. Below is the presentation of the demographics of the respondents.

4.2.1 *Gender*

Figure 6 provides an overview of the gender distribution of the sample (n=129).

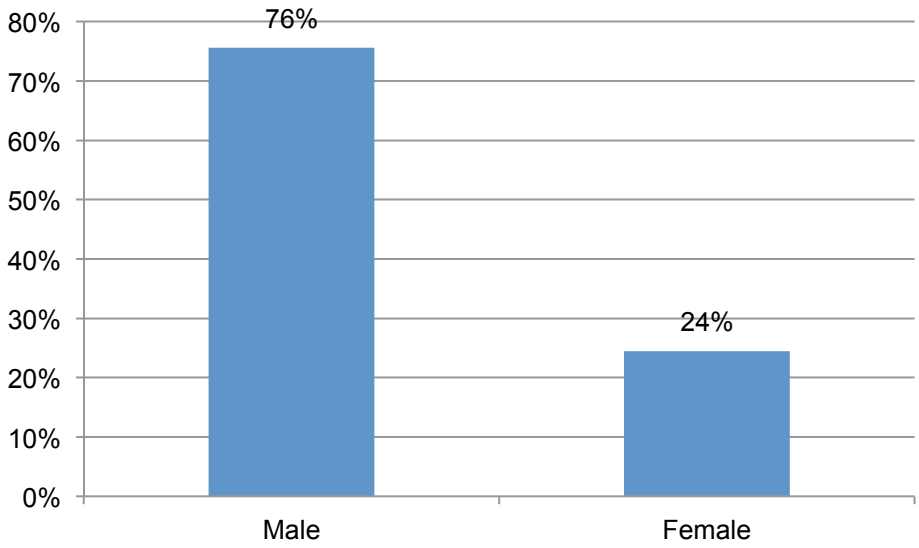


Figure 6: Gender Distribution

The data indicates that males (76%) are the highest volume of respondents to the survey.

Figure 7 provides an overview of the income distribution of the sample by gender (n=129).

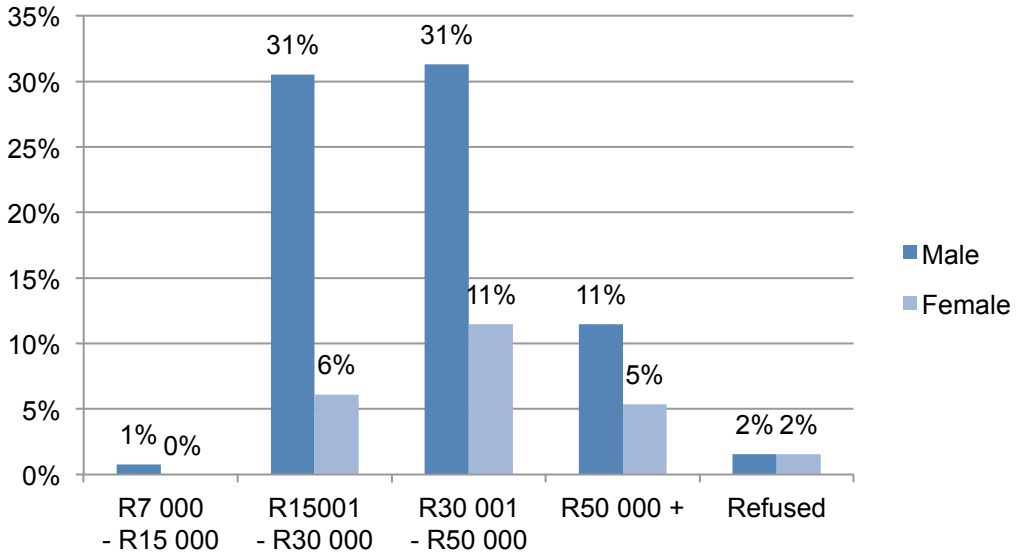


Figure 7: Income Distribution by Gender

The data indicates that males, who are better represented in the survey, are high income earners. However, females are over represented in the upper income range of R50 000+.

4.2.2 *Age*

Figure 8 provides an overview of the age distribution of the sample (n=129).

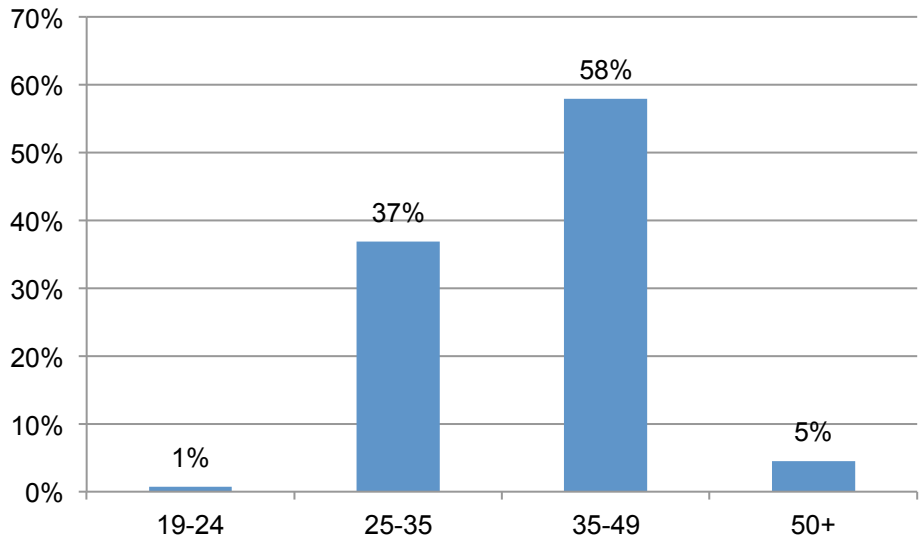


Figure 8: Age Distribution

The age groups 25 to 34 years old and 35 to 49 years old are the highest contributors of respondents to the study. Ninety five per cent of respondents fall within these age groups while the highest contributions come from the age group of 35 to 49 years of age.

Figure 9 provides an overview of the combination of age and gender distribution (n=129).

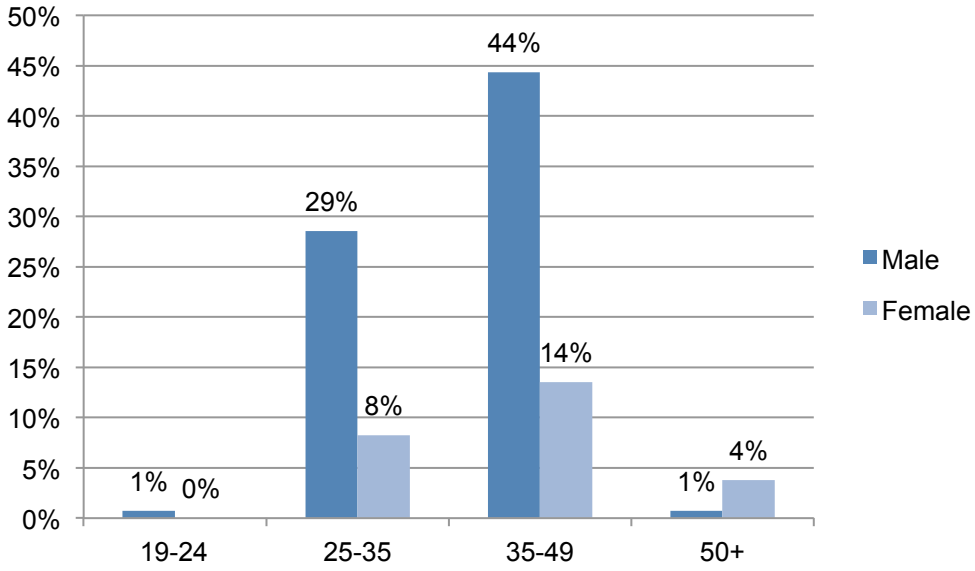


Figure 9: Age and Gender Distribution

The data indicates that males are well represented in the 25 to 35 and 35 to 49 year age groups, while females are better represented in the 50+ year age group.

4.2.3 *Income*

Figure 10 provides an overview of the income distribution of the sample (n=129).

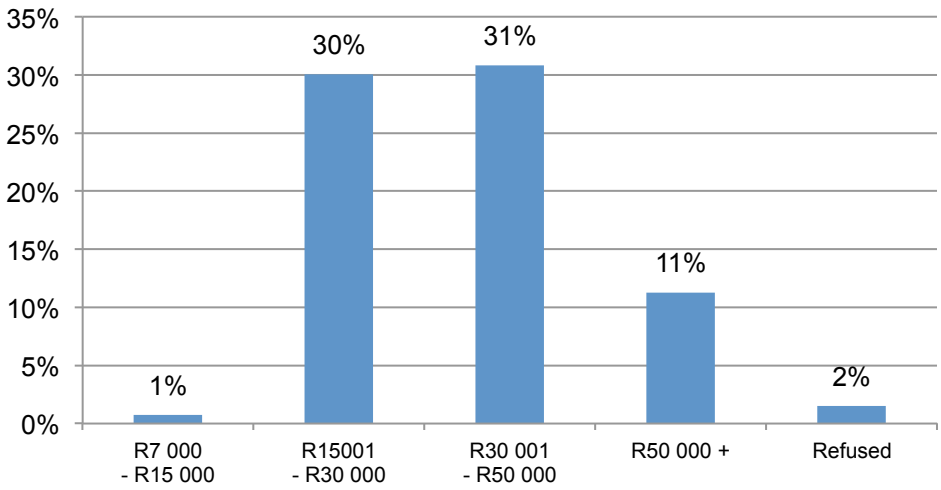


Figure 10: Income Distribution

The income of tablet owners are predominantly between R15 000 and R50 000 per month. The income range R30 001 – R50 000 (42%) is the largest contributor to this attribute. While the lower income ranges are poorly represented in the sample. A R50 000+ is also a contributing segment albeit lower than the main two income ranges.

Figure 11 provides an overview of the combination of income and age distribution of the (n=129).

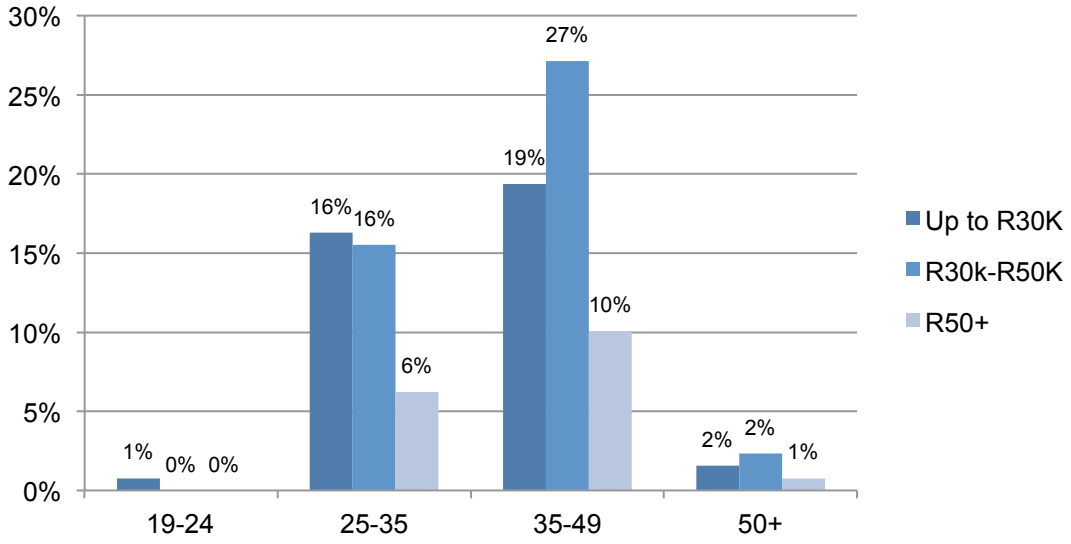


Figure 11: Income and Age Distribution

The income category R30 001 to R50 000 is well represented in three of the four age groups. Even though age category 25 to 35 years of age has an almost equal representation in terms of volume of respondents to category 35 to 49 years of age, it does have a bias to the lower income category of 'up to R30 000'.

4.3 Results pertaining to the Hypothesis

The purpose of this section is to describe the results pertaining to the hypothesis, 'The consumption of video on tablet devices can be segmented by motives for consumption, the context, consumer behaviour, content preferences and the consumer experience'.

4.3.1 *The Cluster Analysis Output from SPSS*

Table 7 represents the cluster analysis output of the SPSS programme.

The key findings of the output found in table 7 can be summarised in the points below.

- Eight clusters of consumers of video on tablets were identified.
- Most clusters had more than one motive for the consumption of video on tablet devices. The motives of 'It gives me the portability to watch video whenever and wherever' and 'It gives me another viewing environment

when others are watching something different on TV' had the highest occurrences of all the motives among the clusters.

- The context of consumption varied among the clusters but 'at home' and 'in transit' consumption had the higher representation among all the clusters.
- Recorded/ downloaded/ on-demand were highly represented as a content type, although live content consumption was evident in selected clusters.
- The content genres that had the highest representation were sport and news for live content. Movies and entertainment were the most popular content types among recorded/ downloaded/ on-demand.
- The frequency of consumption was largely weekly among most clusters, while the iPad was by far the dominant tablet device of choice.
- Wifi was also the most prevalent technology connection among clusters although Drifta and 3G connections were most used among live clusters.

Table 7: Cluster Analysis

	Variables	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8
Motives	It gives me the the portablilty to watch video whenever and wherever.	,818	,214	,550	,000	,200	,700	,250	,867
	It stores my videos in one device that I can carry with me	,000	,000	,250	,000	,600	,000	,396	,133
	It keeps me informed by giving me access to news and information on-the-go.	,000	,214	,250	,000	,000	,000	,000	,000
	It gives me access to popular content when I am away from a TV set	,000	,357	,200	,000	,200	,200	,271	,200
	It's fashionable and gives me status	,000	,071	,000	,000	,000	,200	,000	,067
	I save time by watching videos on my tablet	,000	,000	,000	1,000	,000	,000	,000	,067
	I pass time, by watching videos on my tablet	,364	,143	,750	,000	,000	,700	,188	,333
	It gives me another viewing environment when others are watching something different on TV	,818	,143	,150	,000	1,000	,100	,458	,467
	It lets me consume video that is routinely watched, like weather and news on my tablet	,000	,071	,000	,000	,000	,000	,000	,000
Context	at home	,303	,000	,125	1,000	,900	,200	,458	,467
	in transit	,242	,500	,542	,000	,200	,350	,410	,544
	at work	,606	,786	,533	,000	,350	,100	,198	,033
	in public	,197	,536	,500	,000	,050	,600	,313	,400
Content Types	live	,818	1,000	,083	,000	,350	,650	,010	,089
	recorded/ downloaded/ on-demand	,364	,000	,917	1,000	,500	,450	,979	,911
Content Genres	sport	,970	,714	,000	,000	,300	,400	,063	,067
	news	,788	,964	,158	1,000	,050	,400	,073	,000
	entertainment	,333	,214	,475	,000	,550	,250	,802	,767
	movies	,182	,107	,508	,000	,750	,050	,729	,911
	music	,000	,071	,383	1,000	,150	,550	,240	,367
	documentaries	,000	,250	,150	,000	,050	,200	,198	,122
	children's programmes	,000	,036	,342	,000	,200	,000	,194	,300
	information	,242	,321	,108	,000	,050	,200	,052	,000
	education	,000	,000	,083	,000	,450	,050	,125	,067
Sufficiency of Content	Is there sufficient video content available for consumption on tablet devices?	,727	1,000	,817	,000	1,000	,400	,563	,844
Familiararirlty of Content	Are you familiar with the video watched on your tablet (are they familiar content brands)	,636	1,000	,700	,000	1,000	,900	,882	1,000
Frequency of use	How OFTEN you consume video on your tablet	2,455	2,357	1,850	4,000	2,300	1,200	2,375	2,333
Device	iPad	,545	,500	,733	1,000	,800	,400	,510	,600
	Galaxy Tab 7"	,091	,143	,067	,000	,100	,300	,271	,311
	Galaxy Tab 10"	,182	,357	,250	,000	,100	,100	,167	,089
	other Tablet	,091	,000	,000	,000	,000	,200	,042	,000
Technology Connection	3G	,000	,286	,575	1,000	,550	,450	,021	,000
	Wifi	,091	,214	,425	,000	,250	,400	,979	1,000
	Drifta(broadcast)	,909	,500	,000	,000	,200	,150	,000	,000

An initial examination of the final cluster centres provided the following insights for each cluster.

Cluster 1 scored highest for the following variables:

- The following motives were well represented in this cluster :
    - It gives me the portability to watch video whenever and wherever.
    - It gives me another viewing environment when others are watching something different on TV.
- The preferred context for consumption was;
    - At home, at work.
- The content types of preference;
    - Live.
- The content genres most associated with this cluster were:
    - Sport, news, entertainment.
- The content was perceived to be sufficient.
- The content was perceived to be familiar.
- Frequency of consumption of video on tablets was weekly.
- The tablet device preferred by this cluster was iPad.
- Drifta Technology Connection was most prevalent in this cluster.

Cluster 2 scored highest for the following variables:

- The following motives were well represented in this cluster:
    - It gives me access to popular content when I am away from a TV set.
- The preferred context for consumption was:
    - In transit, at work, in public.
- The content types of preference:
    - Live.
- The content genres most associated with this cluster were:
    - News, sport.
- The content was perceived to be sufficient.
- The content was perceived to be familiar.
- Frequency of consumption of video on tablets was weekly.
- The tablet device preferred by this cluster was iPad and Galaxy Tablet 10".

- Drifta and 3G technology connections were most prevalent in this cluster.

Cluster 3 scored highest for the following variables:

- The following motives were well represented in this cluster:
    - I pass time, by watching videos on my tablet.
    - It gives me the portability to watch video whenever and wherever.
- The preferred context for consumption was:
    - In transit, at work, in public.
- The content types of preference:

  Recorded/ downloaded/ on-demand.
- The content genres most associated with this cluster were:
    - Movies and entertainment, music.
- The content was perceived to be sufficient.
- The content was perceived to be familiar.
- Frequency of consumption of video on tablets was weekly.
- The tablet device preferred by this cluster was iPad.
- 3G and Wifi technology connections were most prevalent in this cluster.

Cluster 4 was excluded due to size. Refer to 4.3.2 for the details on the size of this cluster.

Cluster 5 scored highest for the following variables:

- The following motives were well represented in this cluster:
    - It gives me another viewing environment when others are watching something different on TV.
    - It stores my videos in one device that I can carry with me.
- The preferred context for consumption was:
    - At home.
- The content types of preference :

  Recorded/ downloaded/ on-demand.

- The content genres most associated with this cluster were:
    - Movies, entertainment, education.
- The content was perceived to be sufficient.
- The content was perceived to be familiar.
- Frequency of consumption of video on tablets was weekly.
- The tablet device preferred by this cluster was iPad.
- 3G and Wifi technology connections were most prevalent in this cluster.

Cluster 6 scored highest for the following variables:

- The following motives were well represented in this cluster:
    - It gives me the portability to watch video whenever and wherever.
    - I pass time, by watching videos on my tablet.
- The preferred context for consumption was:
    - In transit, in public.
- The content types of preference:
    - Live.
- The content genres most associated with this cluster were:
    - Sport, news, music.
- The content was perceived not to be sufficient
- The content was perceived to be familiar
- Frequency of consumption of video on tablets was monthly.
- The tablet device preferred by this cluster was iPad and Galaxy Tablet 7".
- 3G and Wifi technology connections were most prevalent in this cluster.

Cluster 7 scored highest for the following variables:

- The following motives were well represented in this cluster:
    - It gives me another viewing environment when others are watching something different on TV.
    - It stores my videos in one device that I can carry with me.
- The preferred context for consumption was:
    - At home, in transit.
- The content types of preference:

Recorded/ downloaded/ on-demand.

- The content genres most associated with this cluster were:
  - Entertainment, movies.
- The content was perceived to be partially sufficient.
- The content was perceived to be familiar.
- Frequency of consumption of video on tablets was weekly.
- The tablet device preferred by this cluster was iPad and Samsung Galaxy Tablet 7".
- Wifi technology connection was most prevalent in this cluster.

Cluster 8 scored highest for the following variables:

- The following motives were well represented in this cluster:
  - It gives me the portability to watch video whenever and wherever.
  - It gives me another viewing environment when others are watching something different on TV.
- The preferred context for consumption was:
  - At home, in transit.
- The content types of preference:
  - Recorded/ downloaded/ on-demand.
- The content genres most associated with this cluster were:
  - Movies, entertainment, music, children's programmes.
- The content was perceived to be sufficient.
- The content was perceived to be familiar.
- Frequency of consumption of video on tablets was weekly.
- The tablet device preferred by this cluster was iPad and Samsung Galaxy tablet 7".
- Wifi technology connection was most prevalent in this cluster.

The combination of characteristics in each cluster provides an interesting insight into the consumers consumption of video on the tablet devices. Chapter 5 discusses the insights in further detail.

4.3.2 *The Size of the Clusters*

Table 8: Final Number of cases in each Cluster

		No of cases in each Cluster	Percentage of number of cases in each cluster
Cluster	1	11	9%
	2	14	11%
	3	20	16%
	4	1	1%
	5	10	8%
	6	10	8%
	7	48	37%
	8	15	12%
Valid		129	100%
Missing		0	0%

Table 8 describes the number of cases (respondents) in each cluster. All clusters, barring Cluster 4 have 10 cases or more. Cluster 4, has only one case in its cluster, this sample size is too small to draw any inferences from and thus is viewed as an outlier and not considered as part of the cluster analysis.

4.3.3 *Summary of additional comments from respondents*

The survey made provision for the respondents to provide additional comments related to each question, here are the main comments:

- Wifi is used to downloaded content when the preferred type of content is recorded/ downloaded/ on-demand.
- In transit often implies air travel.

The reference to entertainment was often series, where those episodes or seasons of the series were downloaded before it was broadcast on TV.

4.4 Results pertaining to the Demographics of the Clusters

The purpose of this section is to describe the results pertaining to the hypothesis: 'The consumption of video on tablet devices can be segmented by motives for consumption, behaviour, content and the consumer experience'.

Table 9: Demographic Results

	Variables	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8
Consumer Demographics	**Male**	1,000	,571	,850	,000	,200	,900	,854	,733
	Age	2,818	2,929	2,300	4,000	2,100	2,400	2,625	2,933
	Income	3,818	4,357	4,300	5,000	4,000	3,100	3,250	4,867

4.4.1 *Gender*

Clusters 1, 3, 6, 7 and 8 have an overwhelming representation of male respondents in them, while Cluster 2 has an almost equal representation of males and females. Cluster 5 has the majority of its respondents of the female gender.

4.4.2 *Age*

Clusters 1, 2, 7 and 8 contain higher representation of 35 to 49 year old respondents, while Clusters 3, 5 and 6 have a higher representation of 25 to 34 year old respondents.

4.4.3 *Income*

The income of the various clusters can be described as follows: clusters 1, 2, 3 and 5 have a higher representation of earning income of R30 001 to R50 000, while Clusters 6 and 7 have a higher earning income of R15 001 to R30 000. Lastly cluster 8 has a higher income representation of R 50 001+.

4.5 Summary of the results

The analysis produced eight clusters, the volume of cases in Cluster 4 was too low, and this cluster was considered an outlier and removed from the cluster analysis.

The clusters show unique combinations of characteristics, which include:

- Motives are shared among clusters while when combined with other motives they represent different clusters.
- The contexts of ‘at home’ and ‘in transit’ were the two highest contexts of consumption in the study.
- Recorded/ downloaded/ on-demand content types are highest among clusters 3, 5, 7 & 8.
- Sport and news were the two dominant content genres for live content. Recorded/ downloaded/ on-demand content was found most among the consumption of movies and entertainment.
- The iPad was found as the most dominant device of choice in all clusters. While weekly consumption was highest consumed frequency among almost all clusters.

The demographics of the sample base were as follows:

- Males dominate the gender category,
- The age group of 35 to 49 years of age provided the highest volume of users,
- The income range of R 30 001 to R 50 000 is most dominant with the range of R 15 000 to R30 000 following very closely.

The results of the clusters and their demographics were covered in sufficient detail to describe each cluster in the next chapter.

5 DISCUSSION OF THE RESULTS

5.1 Introduction

In this chapter the results of the analysis were interpreted in order to describe each cluster by its pertinent characteristics. The discussion for each segment cover the following areas: the motives for the consumption of video on tablet devices, the video content types, the content genre, the sufficiency of this content for the consumption on tablet devices, the familiarity of the content to the consumers, the frequency of consuming video on tablet devices, the experience of consumption and the data related to the device used and the connection type with the type of content consumed. Lastly the demographics of each cluster are discussed.

5.2 Cluster 1

5.2.1 *Motives, Context, Content and Experience*

This cluster's main reasons for consuming video on tablet devices was the provision of portability to watch video whenever and wherever, as well as another viewing environment when something different is being viewed on TV by other members of the household This cluster largely consumed live content, whether primarily at work, or secondarily at home.

This cluster's overriding consumption of content was live sport, while live news was of secondary interest. The consumption of live entertainment (in this context, live implies simulcast with a TV broadcast) was also of interest albeit at a substantially diminished level. This cluster reported that the content available was sufficient and also materially familiar.

The device used during consumption was the iPad in combination with a Drifta connection that delivers a live broadcast. Consumption was largely weekly, however the highest representation was the consumption a few times a week. This cluster makes up nine per cent of the sample.

5.2.2 *Demographic Detail*

Cluster 1 is mostly male, predominantly of the age group of 35 to 49 years of age and the majority have an income of R30 001 to R50 000 per month.

Cluster 1 can be described as: **Tablet TV consumers, who consume live sport and news via a Drifta technology connection device.**

5.3 Cluster 2

5.3.1 *Motives, Context, Content and Experience*

Cluster 2 consumed video on a tablet that substitutes as a TV when away from TV, by providing access to popular content. The main environment for consumption was at work, and secondarily in public and in transit.

Primarily live news, and secondarily live sport and information are consumed weekly. This cluster is in overwhelming agreement that the content is sufficient and familiar in nature.

This cluster's use of devices and connections include primarily the iPad, while the Galaxy Tablet 10" is also used. The Drifta technology connection is used primarily; however the 3G technology connection is also used. This segment comprised 11 per cent of the sample.

5.3.2 *Demographic Detail*

Cluster 2 is mostly male. The group is mainly in the age group 35 to 49 years of age. The income range is R30 001 to R50 000 per month, but also reflects a representation of higher income earners.

Cluster 2 can be described as: **Live news, and sport access users, who consume at work and on-the-go in public.**

5.4 Cluster 3

5.4.1 *Motives, Context, Content and Experience*

Passing time, by watching videos on a tablet is by far the primary motive among this cluster, while the benefits of its portability to watch video whenever and wherever is also well represented. These primary and secondary motives are

affirmed by the context of consumption almost equally being in transit, at work, and in public. This cluster is least likely to consume at home.

This cluster has an overwhelming preference for recorded/downloaded/on-demand and consuming movies as its primary content genre, while entertainment and music have a slightly diluted preference. Most consumers in this cluster agree that the content available is sufficient and that the content consumed is familiar. Although the majority of this cluster represents weekly consumers, there is a large secondary group that consume monthly. The iPad is very well represented as the device of choice while mostly connecting using 3G technology and to a lesser extent Wifi. This cluster comprised 16 per cent of the sample.

5.4.2 *Demographic Detail*

Males make up most of this cluster. The majority age group is 25 to 34 years of age. The income of this cluster is between R 30 001 and R50 000 per month.

Cluster 3 can be described as; **Movie downloaders who pass time at work, and in transit.**

5.5 Cluster 4

Cluster 4 is considered an outlier due to its low sample size, and is therefore not discussed.

5.6 Cluster 5

5.6.1 *Motives, Context, Content and Experience*

Cluster 5's main motives are having a single repository for videos that is portable, providing another viewing environment when something different is being watched on TV by other members of the household.

This consumption occurs at home, and is mostly a recorded/ downloaded/ on-demand, movies, entertainment and education, with some consumption occurring live. This cluster is accustomed to live and recorded/ downloaded/ on-

demand content. This cluster agrees that there is sufficient content for consumption on tablets and is familiar with the content consumed.

Weekly consumption is the most frequent occurrence which takes place overwhelmingly on iPads, mainly over 3G technology connection and to a lesser extent over Wifi. This cluster comprised eight per cent of the sample.

5.6.2 *Demographic Detail*

Cluster 5 is largely female in gender and mainly of the age group 25 to 34 years of age. Their income range is between R30 001 and R50 000 per month.

Cluster 5 can be described as; **Female home, movie and entertainment users, who watch stored content on-demand.**

5.7 Cluster 6

5.7.1 *Motives, Context, Content and Experience*

The portability to watch video on a tablet whenever and wherever and passing time are equal motives for this cluster. Consuming primarily live music, sport and news in public and in transit is important.

This cluster perceives an insufficiency in the content available for consumption on tablets and this is reflected in the rate of consumption being only monthly. The equipment is primarily the iPad, and to a lesser extent the Galaxy Tablet 7". 3G is the primary method of technology connection and, to some extent Wifi. This cluster comprised eight per cent of the sample.

5.7.2 *Demographic Detail*

Cluster 6 is mostly male in gender. The group is mainly of the age group 25 to 34 years of age. Their income range is between R30 001 and R50 000 per month.

Cluster 6 can be described as: **Portable music, and sport time-passers that need more content.**

5.8 Cluster 7

5.8.1 *Motives, Context, Content and Experience*

Cluster 7 has three key motives: create another viewing environment when something different is being watched on TV by other members of the household; storing videos in one device and having portability.

Cluster 7 consumes almost all its content on-demand. Entertainment and movies dominate the consumption which takes place primarily at home and to a lesser extent in transit. While the content is familiar and the consumption takes place weekly there is partial agreement that the content is sufficient.

The device used is primarily the iPad, while the Samsung Galaxy Tablet 7" is also well represented in this cluster. The use of Wifi technology to download content and consume it later is the primary technology connection among this cluster with the use of any other connection type least likely of all the clusters. This cluster comprised 37 per cent of the market.

5.8.2 *Demographic Detail*

The demographic profile of this cluster is mainly male, with an income range of between R15 001 and R30 000 per month. The age group of this cluster is primarily within the 35 to 49 years of age.

Cluster 7 can be described as**: Home on-demand movie watchers.**

5.9 Cluster 8

5.9.1 *Motives, Context, Content and Experience*

Cluster 8 is motivated by their need for portability and the provision of another viewing environment when something different on TV by other members of the household. The consumption of video is preferred, mostly in transit with home viewing also featuring as a context of consumption. The content type of choice is recorded/ downloaded/ on-demand. Consuming movies on a tablet device is the primary content of choice, while entertainment is consumed to a much lesser extent. Consumers found the content available to largely be sufficient and of a familiar nature. This content was consumed weekly using Wifi technology. Cluster 8 is also least likely to use any other connection. The

devices of choice are the iPad and the Samsung Galaxy tablet 7". This cluster comprised 12 per cent of the sample.

5.9.2 *Demographic Detail*

Cluster 8 is mostly male in gender and is also largely of the age group 35 to 49 years of age. Their income range is R50 000+ per month. This is the highest income earning among the clusters.

Cluster 8 can be described as: **Transit, movie watchers with deep pockets.**

The conclusion of the hypothesis is confirmed that the consumption of video on tablet devices can be segmented by motives, context, content preferences, behaviour and experience.

5.10 Discussion summary

The main findings can be described as follows:

5.10.1 *Motives for consumption:*

The key motives of 'providing portability to watch video whenever and wherever' and 'providing another viewing environment when others are watching something different on TV', reflect the advantages of tablet devices namely, its portability and the personal nature of such devices. These motives also reflect the need for users to consume what, where and when they want to. The motive of providing another viewing environment when others are watching something different on TV and its main context of consumption suggests that traditional TV viewing is being substituted to some degree. The frequency of consumption on tablet devices is lower when compared to traditional TV. The risks of this type of consumption developing into a habit may have long reaching impacts on traditional TV consumption, especially if the users have little interest in live content like sport or are satisfied with local news through other media. While the storing of videos on devices for later consumption provides something to watch immediately.it does not satisfy the instant gratification of being able to choose *what* you want to watch when you want to watch it. This approach appears to be compensating for the deficiencies of the technology connections (also discussed in 5.10.3).

5.10.2 *Content Genres*

The content genres that received the highest popularity in the study were, by far movies, entertainment, sport and news. Sport and news appear to support the need to be informed, which can be achieved through short consumption durations, this is also reflected in the technology connection (3G and Drifta) used that typically supports shorter consumption durations and the context of consumption (at work and on-the-go). While the need to be entertained is achieved through movies and entertainment, here the consumption is supported through the downloading of content, (also addressed in 5.10.3) and the context that lends itself to longer consumption durations; home and in transit (transit here is often indicated as air travel). The content genres of music and children's programming indicate good potential for both long and short form content.

5.10.3 *Technology Connections:*

The technology connections, 3G, Wifi and Drifta (broadcast) all play significant roles in the consumption of video on tablets. 3G and Drifta (broadcast) showed the highest correlation with live video consumption on tablets. Wifi was correlated with the consumption of recorded/ downloaded/ on-demand and movies and entertainment. The consumption of movies and entertainment of your choice appear to be limited to the use of Drifta (broadcast) and 3G technology connections. The limitations of these technology platforms include a very limited entertainment offering and the lack of movies on the Drifta (broadcast) technology platform, while the high costs of data prohibits the use of 3G networks for long form content. On the 3G platform users are charged on a per megabit basis (the calculation of 2MB per min can be applied to the download of a satisfactory video quality resolution for the consumption on tablet devices). The combination of these constraints and limitations appear to limit the frequency of consumption.

5.10.4 *Sufficiency of Content:*

The correlation of content sufficiency and frequency of consumption found in cluster 6 is an indication of the importance of content sufficiency in creating an offering of value. This correlation suggests that the frequency of consumption can be increased through providing more content. In the provision of more

content it is important to note that this experience is compared consciously and unconsciously to the TV experience, which provides content in a single environment. Anything that is substantially dissimilar to the content discovery compared to TV may be perceived to inhibit the adoption and higher frequency of consumption of video on tablet devices.

5.10.5 *Demographics:*

The demographics of the respondents indicate a higher income, higher age group and large domination by males. This demographic profile correlates with early adopters of technology (Rogers, 1995). This suggests that this segmentation exercise needs to be conducted at regular intervals, as more affordable tablets come into the market and different profiles of users adopt the tablet devices. It is reasonable to expect that many of these segments and the consumer behaviour characteristics will change as different consumers adopt the consumption of video on tablet devices.

5.11 Conclusion

The study and analysis has produced seven clusters. This research supports Wells et al., (2010) in their views that segmentation on demographics alone does not provide the required insights for segmentation. The areas that had the highest contribution to the segmentation were, the motives for consumption, the type of content, the content genres, the sufficiency of content, the frequency of use and the technology connection. The differences in demographics did provide some insights although to a lesser extent. The variables in this segmentation exercise can be extended to provide deeper understanding of the consumption of video on tablets.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter discusses the conclusions of the study, while making recommendations to the different stakeholders and suggesting further research that can be conducted in this area.

6.2 Conclusions of the study

This research found that consumers of video on tablet devices could be differentiated on their motives, behaviour, content preferences and their experience of consumption. Through the research exercise these consumers were segmented into seven clusters.

The study aimed to develop a better understanding of the consumers who adopt the behaviour of consuming video on tablet devices. The study provides a better insight into the following areas:

- Not all the motives are represented in the seven segments however the motives and their combinations create good insight for the consumption of video on tablets. In some instances these motives were also combined to produce new motives. Motives also had different levels of importance when combined creating a deeper understanding of each segment.
- The context of consumption of ‘open and closed’ also revealed insight into the related motives of consumption in each setting. The research results of the contexts of consumption and the frequency of consumption suggest relatively ‘closed’ contexts of consumption. This lower consumption of video on tablet devices indicates that other media (TV, radio etc.) is able to satisfy the motives more frequently and the consumption of video on tablets is only considered when there is no other option. This area could benefit from further research.
- The type of content and the content genres exhibit relationships, where sport, news and information share a relationship with live consumption

(Tammela et al., 2008), and movies and entertainment share a relationship with recorded/ downloaded/ on-demand consumption.

- The frequency of consumption appears to be low considering that the device is of a personal nature, portable and often carried by the consumer. The low rating of content sufficiency and the frequency of consumption (monthly) in Cluster 6 suggests that an increase in the sufficiency of content could affect the frequency of consumption. A complete understanding of the reasons for overall weekly consumption of video on tablets needs to be researched further with the view to increasing the frequency.
- The relationship shared between the type of content (live or recorded/ downloaded/ on-demand), the content genres and the technology connection (3G, Wifi, Drifta broadcast) suggests that the content type and genre consumed could be impacted by the technology connection. In the case of the IP based connections (3G and Wifi) the high costs of data packages and general unreliability of the connections could be plausible reasons for this relationship. Further research is suggested to understand the effects of the South African technology connections on the consumption of video on tablet devices.

6.3 Recommendations

Based on the research findings a number of recommendations can be made to academics and companies in the business of video provision or selling tablets. These include content providers; handset manufacturers, distributions networks, government and various interested organisations.

6.3.1 *Motives and Content Genres*

The consumption of entertainment and movies among Clusters 3, 5, 7 and 8 affords an opportunity to the TV content providers in South Africa and other on-demand movie and entertainment providers. The substitution of traditional TV for on-demand TV provides an opportunity to package (Jung et al., 2009) movie and entertainment offerings of these providers to be consumed on an on-

demand basis on tablet devices through the user interface of tablet applications. While this may erode the TV audience size during a given timeslot and have knock-on effects on the advertising revenues during that time slot, providing the users with increased flexibility, allowing them to place-shift and time-shift their consumption, has the potential to increase (O'Hara, Slayden & Vorbau, 2007) the overall consumption of the entertainment offering and still maintain advertising revenues by including advertising before the programme and customizing the advertisements to the profile of consumer (Orgad, 2006). This improves the advertising experience and thereby enables the content provider to increase their advertising tariffs. This approach will require large volumes of tablet users in order for TV trade-offs to be realized in the tablet environment. Moving first on this platform provides an opportunity to create demand.

The relationship between, live tablet consumption and live sport, news and information service, exhibits an opportunity to introduce news and sports packages for consumption on tablets.

6.3.2 *Technology Connections*

The current technology distribution option available to South African tablet users are limited to 3G, Wifi or mobile broadcast in the case of DStv Mobile. These options carry one or multiple limitations (Tammela et al., 2008): data costs are expensive, unreliable with a poor quality of service and broadcast has limited coverage. In order to address these limitations the following recommendations are suggested:

- Mobile operators provide discounted or bundled rates for utilising their data network during the data network underutilized periods, for example between 00:00 and 06:00 daily. Consumers can use this time to download content without incurring the high data costs and the network providers monetize the network during a period that traditionally is not utilized.
- The experience of downloading or streaming content using Wifi or 3G networks will be enhanced as wireless and fixed-line bandwidth capabilities improve. While this will better the experience, it will have its

shortcomings as the demand for utilising the network grows (Wei, 2008). Therefore, it is recommended that the network and fixed-line operators adopt new and improved video compression technologies. This improved video compression technology will utilize less bandwidth on the network improving its reliability and enabling an increase in concurrent usage.

- Lastly to improve the coverage of wireless delivery networks in South Africa, it is recommended that the 'digital dividend' spectrum be used to provide connectivity on a utility basis. This approach has been adopted in other countries like Korea (Korean Government, 2012) and Japan. This spectrum has the potential to catapult tablet adoption and usage in South Africa.
- The slow regulation of wireless technology in South African has resulted in tablet manufacturers only including standards in devices that are widely adopted by America and Europe. It is recommended that South African regulators mandate the inclusion of all current standards in tablet devices to allow the complete utilisation of our national resources in the forms transmission frequencies. Other countries like Brazil (Brazil, 2012) and China (China, 2012) have adopted similar approaches to their mobile broadcast standards CMMB and ISDBT. The mandating of distribution standard inclusion in devices will enable the business case for further investment in network expansion.

6.3.3 *Content Sufficiency*

The current lower frequency of consumption and its relationship with content sufficiency can be improved through providing a single environment to search and discover preferred content. An active recommendation engine is necessary for understanding the consumers' profile and making recommendations for content of similar profiles (Doll & Torkzadeh, 1988). This can be done by evaluating the consumers' selection of content and finding content that has high correlation values with the content consumed. The discovery of content is important (O'Hara, Slayden & Vorbau, 2007) however the seamless hassle free consumer experience (Moreau et al., 2001) of simple

payment methods, reliable services and relevant consistent marketing cannot be underestimated in the exercise of creating the perception of sufficiency.

6.4 Suggestions for further research

- The research is limited to Gauteng only, and therefore should be confirmed by testing it nationally.
- The sample was mostly business travellers and business school students, as tablet devices become more prolific, the survey should be conducted on a broader representation of the South African tablet consumer base.
- In-depth research could allow for a better understanding of the reasons for consumption of the types of content (e.g. live vs. recorded, downloaded, on-demand).
- In-depth research could allow for a better understanding of the brands of content consumed and their drivers.
- Further research into the sources of video for consumption on tablets, and preferred payment methods.
- Research to better understand the frequency of consumption of video on tablets in relation to content sufficiency.
- Marketing strategies for the consumption of video on tablet devices.

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