Aalto University
School of Economics

E-reading Devices as a New Medium for Newspaper Reading

Marketing

Master's thesis

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ABSTRACT

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This research looks at how the Finnish newspaper readers accept e-reading technology and what benefits precede their intention to start using e-reading technology. The first part of the research focuses on the literature around the subject also presenting the theoretical approach of the research. The theoretical framework is based on the Technology Acceptance Model TAM by Davis (1989) and modified with some newer findings from the field. After the literature based theory part the empirical part of the research will be discussed.

The empirical part of the research is based on the results retrieved from a web questionnaire conducted in fall 2010. The sample group of the questionnaire was formed of Hufvudstadsbladet's subscribers of which 4899 received the link to the questionnaire. Of them, 1084 people responded thus resulting in a response rate of 22, 1%. The objective of the questionnaire was to find out how the Finnish newspaper readers think of e-reading devices and their services and what they consider important regarding the benefits in them.

The findings of the study reveal that perceived enjoyment and usefulness of using an e-reading device correlate strongest with intention to use e-reading technology. Six different broader segments were revealed in the analysis that focus around the following appreciations; perceived usefulness, eco-consciousness, social value, perceived enjoyment, perceived ease-of-use and diverse services. Derived from the segments four different user profiles regarding e-reading devices and their services were also identified. These profiles include useful services' seekers, social value seekers, easy-to-use technology seekers and ecology seekers. The services that were rated highest by the respondents were the possibility to watch news videos, get more picture material, get more information by clicking key words of an article and saving interesting articles into an article bank.

The research provides a general view on how the Finnish newspaper readers view e-reading devices and their services and what benefits they appreciate the most. Preliminary guidelines for newspaper providers for planning the content for e-reading devices are created.

KEY WORDS: e-reading, technology acceptance, e-book / e-newspaper, digital reading, tablet computer

Aalto-yliopiston kauppakorkeakoulu TIIVISTELMÄ
Pro Gradu –tutkielma
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Sähköiset lukulaitteet uutena jakelukanavana sanomalehdille

Tämä tutkimus käsittelee suomalaisten sanomalehdenlukijoiden näkemyksiä ja arvostuksia sähköisiä lukulaitteita ja niiden palveluita kohtaan. Tutkimuksen ensimmäisessä osassa keskitytään ilmiötä käsittelevään kirjallisuuteen sekä esitetään tutkimuksen teoreettinen lähestymistapa. Tutkimuksen teoreettinen viitekehys perustuu Davisin (1989) luomaan malliin nimeltä Technology Acceptance Model TAM. Alkuperäiseen malliin on tässä tutkimuksessa lisätty kolme uutta rakennetta, joiden selitysvoimasta teknologioiden omaksumisessa on useita tutkimustuloksia. Kirjallisuus-, ja teoriaosuuden jälkeen tutkimus keskittyy empiriaosuuteen.

Tämän tutkimuksen empiriaosuus toteutettiin kvantitatiivisen kyselytutkimuksen avulla. Kysely toteutettiin syksyllä 2010 Hufvudstadsbladetin tilaajien keskuudessa lähettämällä 4899 tilaajalle linkki kyselyyn. Yhteensä 1084 henkilöä vastasivat kyselyyn, jonka seurauksena vastausprosentti oli 22,1. Kyselyssä kartoitettiin lukijoiden näkemyksiä ja arvostuksia sähköisiä lukulaitteita ja niiden palveluita kohtaan.

Kyselyn tuloksina saatiin, että sähköisten lukulaitteiden käytöstä saatu koettu hyöty sekä koettu nautinto korreloivat kaikkein vahvimmin sähköisten lukulaitteiden käyttöaikomuksen kanssa. Tuloksista löytyi myös kuusi laajempaa käyttäjäsegmenttiä, joiden arvostukset liittyivät koettuun hyötyyn, ekologisuuteen, sosiaaliseen arvoon, koettuun nautintoon, koettuun helppokäyttöisyyteen sekä monipuolisiin palveluihin. Segmenttien analyysissä muodostui vielä neljä erilaista käyttäjäprofiilia, jotka nimettiin tutkimuksessa seuraavasti: hyödyllisten palvelujen etsijät, sosiaalisen arvon etsijät, helppokäyttöisyyden etsijät, sekä ekologisuuden etsijät.

Tämä tutkimus tarjoaa yleisen viitekehyksen suomalaisten sanomalehden lukijoiden näkemyksistä sähköisiä lukulaitteita ja niiden palveluita kohtaan näyttäen motiivit, jotka vaikuttavat sähköisten lukulaitteiden käyttöönottoon. Tutkimus tarjoaa myös alustavat ohjenuorat liikkeenjohdolle koskien palveluiden suunnittelua sähköisissä lukulaitteissa.

AVAINSANAT: sähköinen lukeminen, teknologian omaksuminen, sähkökirja /sähköinen sanomalehti, tablet –tietokone

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1 Introduction

1.1 Background

Although the history of digital reading is long dating back to the year 1971 when the oldest digital library, Project Gutenberg, was founded followed by the first portable e-book readers the Soft Book reader and the Rocket eBook in 1998 (Cummings 2009), has e-reading as a phenomenon peaked not until the last few years. In 2008 e-book technology started to increase its sales and reach the mass market (International Digital Publishing Forum 2009). For many years e-books lacked interest among its potential users until a new generation of portable reading devices started to generate an interest in the digital content. Reading devices such as Amazon's Kindle have enhanced access with quick downloads of electronic content (Pattuelli & Rabina 2010). Reasons for the increased sales include falling device prices, more content availability, better retail distribution, and lots of media buzz (Dougherty 2010). Practical advantages followed by using e-reading devices are among other things readers' possibilities to change the size of the font, read conveniently on a bus and buy new content without having to go to a physical store.

The first electronic newspapers appeared on the Internet in the 1970s but the actual emergence of their online delivery took place in the 1990s (Greer & Mensing 2006). Since that publishers have felt pressured to have a web presence to be competitive on the market (Krumsvik 2006). Today newspapers are created online and might not have a print version available at all. This development has paved the way for e-reading devices, in which newspapers are in an electronic format too. To demonstrate the phenomenon of electronic reading the newest statistics tell that at Christmas 2009 more e-books were bought from Amazon.com than printed books (Tietoviikko).

There are many advantages in switching the content into an electronic format; online versions offer fast access and more updates compared to the print versions (Li 2006). It is also possible to utilize different technologies such as audio, graphics, video and interactive elements that are not possible to implement in a print version or at least they aren't that common yet. According to Bucy (2004) e-newspapers can get a competitive advantage when engaging in interactive elements because by them it is possible to invite readers to the site, keep them there for a longer period of time and make them revisit the site later. For readers, on the other hand, interactive elements mean freedom to filter

news according to their own preferences and the opportunity to give feedback on the articles, which creates a feeling of empowerment (Spyridou & Veglis 2008). However, there has also been a concern regarding the interactive elements of the e-newspapers; it has been considered that the massive investments in interactive elements and technological abilities have been made at the expense of content quality lowering the editing standards and credibility (Salaverria 2005).

Earlier the content of the e-newspapers was solely text-based and a replica of the print version, but obviously it wasn't a long lasting strategy in a competitive market field. Also the concern regarding readers' readiness to pay for the content online is groundless. According to Aitamurto (2009) many readers already pay for the content and even more would be willing to pay if the content was chargeable.

Understanding the history of e-newspapers, the shift from a print version to an electronic newspaper to be read on a reading device's screen might not be that radical after all given that readers have already been familiarized with electronic newspapers earlier. However, it is crucial for the newspapers to know their readers' preferences in terms of the devices and the content in them to be able to serve them in the best possible way.

1.2 Research problem and Research Gap

Changes in consumers' media behavior have been drastic during the last years. Several newspapers have turned partly or solely into online papers and started to offer chargeable content on the Internet. A good example of this is the Finnish newspaper Keskisuomalainen that has created a wide digital business around the actual newspaper. Digital newspapers have been around for a few decades already, whereas first e-reading devices came to the market in the 1998 (Cummings 2009). However, the phenomenon of e-reading hasn't landed concretely in Finland until 2010 when the first portable reading devices could be rented at libraries and now a few book stores have started to sell a narrow selection of e-reading devices. Several Finnish newspapers are facing pressures to react to this phenomenon and turn it into an advantage. It is becoming crucial to newspapers to know their readers' preferences and their readiness to start using new medium to read newspapers. If newspapers want to use this new media provided by e-reading devices in an efficient way, they need to understand how the newspaper readers perceive, adopt and value portable e-reading devices and their services because it won't be a long-lasting strategy to keep the content unchanged when

switching the distribution media. There is a clear demand for a research that examines the newspaper readers' preferences in terms of the e-reading devices and their content as a new media of delivering newspapers.

However, new technology such as e-reading doesn't profit anyone until people actually adopt it and start using it. Understanding the drivers of adoption helps service providers create such a product that is accepted and used by customers. According to Davis (1989) it is crucial to understand what lies behind the intentions to use technology, because it helps service providers to assess the user demand for new ideas. Studying technology adoption also helps to constantly develop new and more sophisticated information technology devices (Nysveen et al. 2005). Research in social psychology has shown that behaviour is predicted by an individual's attitude towards the behaviour (such as using an e-reading device), rather than his or her attitude towards objects involved in the behaviour (such as e-reading devices) (Fishbein & Ajzen 1975).

Several theoretical models have been used to study users' acceptance behaviour. The most used ones, which will be discussed in more detail later, include Fishbein's & Aijzens (1975) Theory of Reasoned Action, Ajzens (1991) Theory of Planned Behaviour and the Technology Acceptance Model by Davis (1989).

Several studies have been conducted regarding e.g. user experience of portable reading devices (Pattuelli et al. 2010; Clark et al. 2008) and reading processes (Schcolnik 2001). However, there haven't been any studies regarding newspaper readers' preferences on e-reading devices and their services. In addition, Finland can be seen to be quite behind in the development in terms of the e-reading devices even compared to the other Nordic countries where e.g. in Norway and Denmark it has been possible to rent e-reading devices at libraries ten years ago (Schcolnik 2001). Therefore it is interesting to study the phenomenon in the Finnish market.

This thesis aims to provide understanding of the Finnish newspaper readers' views on e-reading devices and their preferences regarding services in e-reading devices so that service providers can respond to the new challenge set by the reading devices. The case company in this thesis is Hufvudstadsbladet (HBL), to whom the transition of the media content from paper form into the e-reading device is a current challenge. This thesis provides data on readers' preferences regarding e-reading devices' services and sheds light on readers' acceptance behavior towards e-reading technology. The main research problem can be defined as "How do the Finnish newspaper readers

accept e-reading technology?" Following sub questions are based on the main question and will also be covered in this thesis:

- Which benefits of e-reading devices have the strongest connection with starting to use e-reading technology?
- What kinds of services are perceived to be the most critical ones in a reading device?
- Will the information on the users' preferences regarding the e-reading devices and their services create different user segments or profiles?

The main research question aims to outline the needs that Hufvudstadsbladet (HBL) should consider in the future when developing the content for e-reading devices to better respond to the needs of their readers and contribute to the intention to use e-reading devices. The purpose of the first sub question is to identify the benefits, based on which the readers intend to start using e-reading technology. The second sub question refers to the features that newspaper readers perceive the most critical ones when imagining using e-reading devices. With the answers to this question information will be acquired regarding the services that should be realized in the e-reading devices in order to increase the customer satisfaction. The purpose of the third sub question is to look at different user segments and profiles among the newspaper readers based on their preferences regarding the e-reading devices and their services. Because the current segmentation system at Hufvudstadsbladet (HBL) is only based on demographic features, a segmentation based on service preferences would bring new valuable information about the newspaper readers to understand them better.

1.3 Research objectives

The objective of this thesis is to form better understanding of the Finnish newspaper readers' preferences in terms of the e-reading devices and their services. By investigating the newspaper readers' most desired services in an e-reading device in order to be considered equal with the print version, it is also possible to recognize different user segments. Readers' views on the services will be examined with a survey method. The objectives of the thesis are:

1) to get understanding of the theories and models behind technology acceptance, (here, e-reading technology acceptance) and draw conclusions on factors influencing the adoption process.

2) to provide understanding of the services that are the most desired ones in an e-reading device in terms of reading newspapers with them, and draw conclusions on the different user segments and profiles that might appear following the survey.

1.4 Scope and limitations

Due to the limited resources available for this study, the questionnaire was only sent to the subscribers of Hufvudstadsbladet (HBL) and thus HBL's subscribers form the survey sample of the study. In addition, the results apply only for the Finnish newspaper readers and therefore they might not be valid on an international scale.

In this research the focus is on newspaper readers and their views and acceptance of e-reading devices and possible services in them. Therefore this research leaves out all the other user groups, such as e-book readers. This thesis is also limited to cover only newspaper readers' images regarding e-reading devices; the actual user experience will not be discussed in this study. This is because the target group might not have used e-reading devices before and thus the results derived from the empirical part are mostly based on images. The part where Hufvudstadsbladet provides a certain amount of subscribers with e-reading devices in order to study the user experience will be conducted later and will not be part of this research. Thus this research examines the expectations and images of the Finnish newspaper subscribers on the matter of e-reading devices and later on it can be then studied what the relation of the expectations and actual user experience is.

Considering the subscribers of Hufvudstadsbladet (HBL) it is notable that most of their mother tongue is Swedish. This might have influence on how they consume different media and thus also have an effect on their way of estimating their own media usage behaviour.

It is also important to consider the special characteristics of Finland as a market for e-reading devices. Finland can be seen to be clearly behind in development even compared to the other Nordic countries in terms of the e-reading devices and thus it may be hard for the Finnish newspaper readers to assess something they are not yet fully knowledgeable about. This on the

other hand makes the results of this study even more interesting and relevant because as soon as the e-reading devices come more common it is possible to see how the expectations and presumptions of the Finnish people towards e-reading devices actually match with the true user experience. What makes the results regarding people's attitudes and presumptions towards e-reading devices at this point also very useful and appealing is that now that the e-reading devices are becoming more common in the Finnish market it is crucial for the newspaper providers (here, Hufvudstadsbladet) to know how the newspaper readers receive the devices and what factors lead to the intention to use them.

1.5 Case company

As a case company for this research has been chosen the Swedish –language daily newspaper Hufvudstadsbladet (HBL) because it is a current challenge for them to take e-reading devices in use and therefore also examine their customers' preferences regarding them. Hufvudstadsbladet (HBL) is the highest-circulation Swedish-language newspaper in Finland founded by August Schauman in 1864. In 2004 Hufvudstadsbladet, called HBL in the spoken language, went from a broadsheet to a tabloid format. Switching into a tabloid format hasn't, however, been the only change at Hufvudstadsbladet (HBL) because the newspaper is being developed further all the time. The development process is based on the same values as newspaper's strategy: quality, proximity, utility and pleasure (Hufvudstadsbladet).

Due to Hufvudstadsbladet's (HBL) readiness to change and actively develop their services further it is very interesting to examine the potential of e-reading devices from their perspective considering that e-reading also represents development in its newness and inventiveness as a phenomenon.

1.6 Methods

The empirical part of this research is based on the data collected in a survey conducted in fall 2010. An online questionnaire was sent to 4899 Hufvudstadsbladet's (HBL) subscribers of which 1084 filled out the questionnaire. Thus the individual response rate was 22,1%. The data collected in the questionnaire covers widely the way the Finnish newspaper readers think of e-reading devices and what kind of services they consider important to have in them.

In order to qualify the suitability and validity of the questions in the questionnaire, a test questionnaire was sent to 200 subscribers of HBL. 47 people replied to the test questionnaire resulting in a response rate of 23,5. Based on the results of the test questionnaire some of the questions were modified to avoid non-sampling errors consequent on non-responses, which were especially significant around the question regarding household's yearly income. It was also decided to add an open question where the respondents can share their general views either on the matter of e-reading devices or on the questionnaire itself.

1.7 Structure of the thesis

The introduction section of this research sheds light on the background of e-reading as a phenomenon as well as the need for studying it in the Finnish market context. The current nature of the theme and objectives of the study are also presented. The case company of the research will also be briefly discussed.

Chapter two looks at the characteristics of digital reading and discusses e-reading technology in more detail. Chapter two also outlines the theories that can be found behind the research problem focusing on the Technology Acceptance Model by Davis (1989).

Chapter 3 presents the research model and the hypothesis set to conduct the empirical study to find out newspaper readers' views on e-reading devices and their services. Also the sampling methodology is discussed.

Chapter 4 introduces the findings of the study and analyzes them in regard to the theory presented earlier. Chapter 5 concludes the empirical findings and presents the managerial suggestions as well as implications for the future research.

1.8 Definitions

E-reading device:

A portable electronic device that is designed primarily for the purpose of reading digital books and newspapers and uses e-ink technology to display content to readers. The main advantages of the

devices include customizing abilities (filtering news, changing font type and size, taking notes), quick downloads and updates, search functions and great storage abilities (Burk 2001).

E-book / E-newspaper:

A digital object with textual and/or other content, which arises as a result of integrating the familiar concept of a book / a newspaper with in-use features such as search and cross reference functions, hypertext links, bookmarks, annotations, highlights, multimedia objects and interactive tool (Rowley & Vassiliou 2008).

Technology adoption:

Refers to peoples' tendency to accept certain technologies and start to use them. Investigating technology acceptance and adoption has become one of the most prominent research streams within the IS discipline. Several different models have been presented to demonstrate peoples' adoption behaviour towards different technologies. The models include among others the Theory of Reasoned Action (Fishbein's and Ajzens 1972), Theory of Planned Behaviour (Ajzen 1991) and Technology Acceptance Model by Davis (1989).

2 Literature review

In the following section the characteristics of digital reading and e-reading are discussed in more detail as well as the devices through which e-reading occurs. Theoretical background of the technology adoption behaviour is also discussed presenting different theoretical models and their features. The usage of the Technology Acceptance Model TAM as the main theoretical model is justified.

2.1 E-reading as a phenomenon

Today's reading experience differs quite a lot from the times when there was only printed text. Readers in the twenty-first century use an increasing amount of electronic text – e-mails, web pages, text-messages, online catalogues and databases, e-newspapers and e-books. Now that the e-reading devices have grown in number readers are facing again a new presentation of electronic text changing the venues of their reading experiences (Brown 2001).

2.1.1 Digital reading

The process of reading has been the focus of research for many years. Reading can be studied from several different angles such as looking at the role of the reader, at the purposes of reading and at the media utilized for reading. A popular topic in the literature has been the effects of digital reading on our mode of reading (Schcolnik 2001). It has been the object of empirical and theoretical exploration by researchers representing a wide array of different disciplines notably psychology, computer science, education, literacy studies and library and information science (Liu 2005). Several different views have been presented around this topic. Levy (1997) has suggested that there's a general trend toward shallower, more fragmented, and less concentrated reading. Landow (1996) again points out the advantages of electronic text and explores the changes that occur along with the new digital information technologies affecting our ways of reading and writing. A significant characteristic of digital text is that it is capable of being processed, duplicated, and

moved about. It can also be combined with multimedia elements, thus going much beyond the printed text.

There's no doubt that the arrival of digital media and the growing number of digital documents have had a profound effect on reading and people's reading behaviour. When comparing digital and printed media it is obvious that they both have their own advantages and limitations. The challenge is to decide which media to use in which context and process and thus benefit from the right advantages. For example, as Liu (2005) points out, electronic media tends to be more useful for searching, while paper-based media are preferred for actual consumption of information. This, however, will surely change along with the e-reading devices, which are designed to be applicable for both of the processes. As Liu (2005) states, reading is still the most efficient method for communicating words and a more complex society will demand increased rather than decreased reading. Question to be asked is which media to use at each moment.

Drawing on these, it can be noted that e-reading devices can be considered to offer more choices in terms of reading media, not limiting the reading alternatives. What is important is to understand how readers actually engage different media and what are the reasons behind choosing one format over another and the advantages with each format.

Based on the research by Ramirez (2003) nearly 80 percents of students prefer to read a digital text in print in order to understand the text with clarity. Nearly 68% of the respondents also reported that they understand and retain more information when they read printed media. However, only 4 percent reported the opposite. One of the major reasons for people to rather print out digital documents than read them on a screen is the lower resolution on a computer monitor. This, however, is one issue that e-reading devices are tackling with a great success. Based on the e-ink technology reading is much less straining for eyes from an e-reading device screen than from a computer screen (Mobileread 2010).

2.1.2 Changes in reading behaviour

Liu (2005) has investigated changes in people's reading behavior in the digital environment over the past ten years. As a result he found out that people actually spend more time on reading. It was noted that two major changes can influence the increased reading; information explosion and digital technology. This is due to that digital documents are easy to search and access and they offer plenty

of information. Given that a web document has an average of nine links it means that when a user accesses a document, he/she has at the same time the opportunity to access nine other documents. In Liu's (2005) research 78% of the respondents also reported that they read nowadays more selectively. It is obvious that attention has become a scarce resource in today's information loaded world.

Having looked at Liu's study on changes in people's reading behavior in the digital environment over the past then years it is also interesting to look a way back in time to get understanding on the earlier reading patterns. Darnton (1989) has written about the evolution of reading. He points at a radical change in 1750 regarding the way people read documents. Before 1750 people were reading intensively due to the fact that there were only few books available that time, which people then read over and over again. By the early 1800s, however, people started to read especially newspapers extensively reading texts only once before rushing on to the next item. Based on this evolution it's easy to notice that the scanning reading pattern has come to stay in our nowadays heavily information-intensive environment.

Along with the increased amount of time spent on reading digital documents today also screen-based reading is growing. Screen-based reading is characterized by more time spent on keyword spotting, browsing and scanning, non-linear and one-time reading whereas less time is spent on in-depth reading and concentrated reading (Liu 2005). These strategies help people to filter through the great amount of information available today.

According to Liu's (2005) study over 80 percent of the participants reported that they print out electronic documents either "always" or "frequently" for reading. This might have something to do with the tradition of holding a book in the hand while reading. According to Strassmann (1985) the human nervous system has a special control mechanism for the coordination of the hand with the focusing muscles of the eye. Thus it actually is easier to read something that is held in hand than something that simply lies on a table. This is indeed one point where e-reading devices can surely encourage people to read electronic documents without having to print them out due to the fact that the devices are portable and can easily be held in hand while reading. In addition, e-reading devices can also be considered as an environmentally friendly option since by reading documents from the screens of e-reading devices lots of paper will be saved.

2.1.3 Different e-reading devices and their advantages

E-reader is an electronic device that is designed primarily for the purpose of reading digital books and newspapers and uses e-ink technology to display the content to readers. The main advantages of the devices include customizing abilities (filtering news, changing font type and size), quick downloads and updates, search functions and great storage abilities (Burk 2001).

Buying content into an e-reading device is immediate; the product moves immediately to the device and the readers get to use the content straight away. Newspapers on an e-reading device are also less expensive than printed versions and thus readers can save money (Lahtinen 2010). Considering that a great part of the costs to the provider come from the delivery process of the newspapers, especially to the sparsely inhabited areas, transferring the content into an electronic format represents huge savings to the newspaper providers. The devices using e-ink are eye-friendly and enable a similar reading experience than reading a printed-paper in terms of the text. Also the possibility to customize fonts and their sizes makes the reading process pleasant. In several e-reading devices there already is a function that reads any text aloud in English (Lahtinen 2010). As the devices become more common it will surely be possible to hear news read aloud also in e.g. Finnish and Swedish.

Having looked at the advantages of e-reading devices the actual usage of e-reading devices will be discussed next. To understand the processes behind getting an electronic newspaper on an e-reading device the way Amazon.com sells newspapers to its own e-reader device, Kindle, can be considered as a good example. It is possible to buy newspapers to Kindle separately or subscribe periodically. Mostly newspapers are sold by longer subscriptions starting from one month. For example, New York Times and Financial Times, cost 27,99$ a month. Altogether, 118 different newspapers can be bought from Amazon.com (Amazon). The subscription numbers haven't been revealed but the most subscribed newspaper to Kindle is Wall Street Journal and the second most subscribed is New York Times (Aitamurto 2010).

However, Kindle is not the only e-reading device into which electronic newspapers can be bought. There are several different e-reading devices available at the moment, though only few of them can be bought in Finland. Of course when purchasing online anyone can buy any e-reading device also in Finland. The first e-reading devices sold in Finland came to the stores in fall 2010. These e-reading devices are Cybook Opus and iRiver Story. They both are based on e-ink technology and are designed mainly for reading texts. Cybook Opus is provided by a French company and some of

its special features include a colourful design and a convenient size that allows the device to be carried in a jacket pocket or a bag. iRiver Story again is produced by a South Korean company iRiver and some of its specialties include among others a diary and calendar features with a design that resembles astoundingly much the one of the market leader Kindle. A bit later a third device came to the Finnish market called "The ECO Reader".

At the moment the internationally dominating devices that use e-ink in the market are Barnes & Noble Nook and Amazon's Kindle plus its newer version Kindle DX (Digitimes). The most convenient devices for reading newspapers are the ones with big screens such as Apple's iPad, Skiff reader and LG's upcoming e-reader specially designed for reading newspapers. There will be several launches of similar kinds of devices with big screens during this year. According to estimates, e-reading devices have over 100 000 newspaper subscriptions in the United States (Aitamurto 2010), which illustrates well the suitability of e-reading devices for newspaper reading.

All the e-reading devices compete with a bit different features; they accept different formats of content, some of them have touch screens, some have wireless connections and some note-taking abilities. New reading devices are coming out to the market all the time and also the range of services and available features in them increases. There are also devices that mainly function as mobile phones but that can also be considered e-reading devices such as Apple's iPhone and Blackberry's Storm2 (Miettunen 2010).

2.1.4 E-ink technology

The newest e-reading devices exploit a new display technology called "e-ink", such as Amazon's Kindle. While most screen technology uses back lightning, it does not make e-ink visible. Instead, e-ink is a thin film with tiny capsules that change from white to black when exposed to an electric field (Coyle 2008). E-ink is eye friendly allowing users to read text from a screen longer than from a LCD screen. It makes the newspaper reading experience feel more like reading a printed version because e-ink doesn't strain eyes (Mobileread 2010). In addition, e-ink only uses power when e.g. turning a digital page changing the text. Thus devices with e-ink can last in active use from seven till ten days with one charge whereas devices with LCD screens only last less than ten hours with one charge (Educause 2010). Therefore it is possible to take an e-reading device with e-ink e.g. for a week's holiday without having to worry about charging the device. However, e-ink isn't suitable for watching videos or pictures because its resolution, colours and speed aren't enough for playing

them. Devices with LCD screens are very versatile and can be considered computers. Some devices such as Barnes & Noble Nook and Spring Design's Alex utilize both, e-ink and LCD screens in the device (Mobileread 2010). As a special feature that Plastic Logic has managed to create to its QUE e-reading device is the flexible plastic screen that makes the reading experience to truly resemble the one of reading a printed newspaper. However, the flexibility of the screen wasn't valued by everyone when the device was first launched.

Below three popular but different e-reading devices are presented in more detail. The two first devices, Amazon's Kindle and Barnes & Nobles' Nook present more traditional e-reading devices utilizing e-ink technology whereas the third device, Apple's iPad is a tablet computer that can also be used as an e-reading device.

2.1.4.1 Kindle DX

Amazon's Kindle's newest version, Kindle DX is 26 cm tall and 18 cm wide with the width of only one centimeter and weight of 535g. It uses e-ink in its screen, which enables a pleasant reading experience and a long battery life. The device has a large 140 × 203mm screen that makes e.g. newspaper reading easy. Formats that the device accepts are Kindle (AZW and TOPAZ), PRC/MOBI (non DRM), PDF (non DRM), TXT, Audible (format 4, Audible Enhanced (AAX)) and MP3. There's a free wireless network available in the device, which makes the Internet usage convenient. Kindle DX costs $379 in the United States (Mobileread 2010).

When looking at the services available in Kindle DX, it can be noted that several features have been added into the device that the previous versions of Kindle lack. The screen of Kindle DX rotates automatically from portrait to landscape when turning the device. This feature is especially convenient for e.g. reading maps and web pages. There is also a full zoom in the device and a built in PDF file reader. The battery of Kindle DX can run up to two weeks without recharging and the device doesn't get warm after long usage periods. There is a "read to me" service available also, which means that almost anything can be turned into an audio book and thus users can listen to e.g. the news read aloud while driving a car (E-reading guide).

Kindle has been the market leader for long but this might be changing in the near future as more and more devices are being launched in the market and the price war continues to drop the prices of e-reading devices.

2.1.4.2 Barnes & Noble Nook

Barnes & Noble is the biggest bookstore chain in the United States. Their own e-reading device, Nook, is a 20 cm tall and 13 cm wide weighing 343 g. Where the market leader Kindle has only an e-ink screen, Nook also has a small LCD touch screen for navigation and writing purposes. Formats that Nook accepts are PDF, EPUB, eReader, PDB, JPEG, GIF, PNG, BMP and MP3. With 3G network the device costs $199 and with the Wi-Fi $149 (Mobileread 2010).

Barnes & Noble made a big step towards a common reading platform across devices in May 2010 when launching an eReader for iPad application. The application allows all the Nook users to download most of their content to the iPad. Though all the books work, some newspapers like the New York Times and Wall Street Journal are not available yet. In addition there's something in the application that Kindle application and iBooks don't have, which is a bookshelf view with jacket art and a library search function. This development is hopefully something we will see more in the future; the more flexible the e-reader platforms become the more attractive the whole e-reading device market becomes.

When looking at the services available in Nook it can be seen that some features lack in the Nook that can be accessed in Kindle DX such as the read aloud –service. The Nook's battery life is also much shorter allowing users to only use it up to ten days without recharging. A unique feature of the Nook on the other hand is the 3.5-inch color touch screen that is located below the E-Ink display. The Nook also has a Wi-Fi network available in it unlike several of its competitors. As a small detail lacking in Kindle DX the Nook allows its users to customize the screensaver mode scene to make the device more personal (PCworld).

2.1.4.3 iPad

Apple launched its first tablet called iPad in April 2010. In 78 days three million iPads were sold, which is nearly as much as what Kindle has sold in three years' period. According to the estimates of Forrester Research about 200 000 iPad devices are sold every week in the United States.

However, iPad isn't officially an e-reading device but something between a computer and a smart phone though it can also be considered as an e-reading device because of its reading properties.

With its bright, 9.7-inch screen the device is mainly designed for Internet browsing and media consumption. Compared to the other devices iPad might feel quite heavy when e.g. holding it in hand while reading a newspaper, it weighs 680g (Apple).

When looking at the services available in iPad it is clear that the device is more a computer than an actual e-reading device. When comparing iPad's features as an e-reading device to the other players in the market it can be seen that iPad is more expensive, its e-book selection is more limited, battery life is shorter and the LCD screen strains eyes more than the e-ink screens (Forbes). However, services such as music, calendar, contacts, notes, Internet, e-mail and maps are easily accessible through iPad not to mention the broad application store where thousands of different applications can be downloaded for iPad.

2.1.5 Tablets as e-reading devices

It is important to understand the difference between the actual e-reading devices such as Kinde and tablet computers, which e.g. iPad represents. Though the tablets are often referred as e-reading devices because of their developed reading properties they are more computers than e-reading devices. Tablets can be used for a variety of activities instead of only reading texts such as for Internet browsing, e-mail access, photo gallery, calendar and music. Because of their large LCD – screens also newspapers are easy to read from a tablet's screen.

Though Apple's iPad has been the most talked about and visible tablet device in the market for the last months it is far from being the first tablet device. The history of tablet devices dates back to the 60's when the first tablet interfaces appeared; the Styalator and the RAND tablet. They both allowed for handwriting recognition using an electronic tablet slate and a specialized pen. In the 80's more and more companies were stepping on into the tablet market. The first company to offer an actual portable table-based computer was GRiD Systems in 1989 as they launched the GRiDPad. After the launch of the GriDPad several different actors introduced their versions of the tablet computers in the market such as Go Corporation, Microsoft and IBM. However, not until the year 2001 did the tablet computer come into its own. Namely that year Bill Gates announced Windows XP Tablet Edition at the Comdex trade show. Until that tablets had relied on simpler and less graphics intensive operating systems, which was now about to change along with the advent of

Windows XP Table Edition. The XP Table Edition had all the looks and functionalities of Windows in a format better suited to a touch screen interface (Gear 2010).

The tablet computer has had an interesting history and it will be seen what kinds of devices will be presented in the future. It is clear, however, that tablet computers still have a lot of room for growth in the coming years and the battlefield will get only more heated as more and more actors start to launch their tablets (Gear 2010).

The information technology research company Gartner has estimated that the worldwide sales of tablet devices will reach 54,8 million units in 2011, up 181% from 2010 (Gartner 2010). This way it can be thought that the tablet devices would soon cannibalize the sales of the e-reading devices but it is good to remember that for solely the purpose of reading e-reading devices are still well ahead of the tablets in their functionality.

2.1.6 Services in e-readers

To understand what kinds of services newspaper readers would consider important to have in their e-reading devices it's important to look at what services are already available in e-reading devices worldwide.

Since e-reading devices are only just entering the Finnish market the focus was in the internationally launched services. Basically the more the e-reading devices come to resemble computers the more services will be available in them. The devices that use Wi-Fi network can basically utilize all the services available on the Internet such as information services Google and Wikipedia, blogs, quick messages, games and other entertainment applications. Other more essential services in regard to e-reading devices are among others bookmarking, font sizing, full text search, note taking possibilities and library services.

The range of services available depends on device; those with LCD screen can be used as computers and utilize the varied services of the Internet including several different entertainment possibilities. Devices using e-ink aren't made for watching pictures and videos but for reading

different kinds of texts. Newspapers and e-books can naturally be read on all e-readers (Miettunen 2010).

In several foreign online news sites it is already possible to customize the content according to own interests after registration to the site. For example, if a user is interested in politics and sports, he/she gets those kinds of news on the front page. The most important news isn't naturally ever hidden but the order of the smaller news can be changed according to readers' own preferences (Miettunen 2010). These kinds of services will undoubtedly become popular also in Finland saving busy people's time allowing them to focus on the most attracting information.

2.1.7 Readers' readiness to pay for the content

When talking about e-reading devices a commonly put question relates to the pricing model of the electronic media content. It is often stated that consumers don't want to pay for electronic content because there is always a way to find the same information for free on the Internet. This, however, seems to be changing. According to BCG's report on users' readiness to pay for the media content (Arnould 2009) 16% of the sample group (4899 persons located internationally) would be strongly interested in reading news on an e-reading device. According to the same report, Finnish people would be willing to pay approximately four dollars (around three euro) with the upper limit of ten dollars (around 7,5 euro) a month for online news. When taking into account that people would be willing to pay for online news solely, they might be willing to pay even more if they could get some extra services to make the news reading experience even more enjoyable.

The subscribers of New York Times' online version get the newspaper in their e-reading device the same day the paper version comes out. This way they can conveniently read e.g. while commuting without having to carry the wide paper version with. 68% of the newspaper readers in the United States would be willing to pay as much for the web journalism as for the printed version. Many already pay for the online content (Aitamurto 2010). In e-reading devices newspapers can be either read as files ordered to the device or as online papers through the web browser of an e-reading device (Miettunen 2010).

The most common model for chargeable content on the Internet is the "freemium" model, which means combining the chargeable and free content. Part of the content is free in order to attract as many readers as possible. Therefore advertisers want to buy advertising space. However, readers

have to pay for the premium services. Premium services can in a newspaper be for example deeper analyses regarding the background of the news, newsletters or information service. The flagship of the freemium model in the United States is the business newspaper Wall Street Journal whose web site is mostly filled with chargeable content with only a minor part of it being free of charge. Wall Street Journal's number of subscribers increased in 2009 compared to the previous year thanks to the online subscribers (Aitamurto 2010).

Wall Street Journal's former publisher Gordon Crovitz is the one who turned the newspaper profitable and has stated that making the online content chargeable brings, against the common presuppositions, more advertisers to the site. According to Crovitz, advertisers are ready to pay even more for advertising space in the chargeable section of the site. This is based on the assumption that readers are more loyal when paying for the content. He also states that charging the online content increases earnings from printed version because price of the printed version can be hiked faster since there can't be found any completely free alternative on the Internet (Aitamurto 2010).

However, not all the newspapers have been successful when trying the freemium model. Charging for the online content can in the end benefit readers; the content will become more and more important because nobody is willing to pay for something that they can also get for free. The more newspapers invest in the content and extra services in their electronic version, the better the reading experience will be for the readers.

Also in Finland several newspapers have used the freemium model and improved their online strategies. Kauppalehti, for instance, has defined an own role for the online version as digging deeper into the daily news items while the printed-paper focuses more on the future. The number of visitors to the online service Kauppalehti.fi grew remarkably during the year 2009 (Almamedia). Also Helsingin Sanomat, the largest subscription newspaper in Finland, has been actively developing its online version and succeeded in reaching more visitors to the site, for example in April 2010 the number of different visitors to the online paper was 1 330 000 a week (Medianetti).

2.2 Theories of technology adoption

E-reading devices can be considered a relatively new field of study and several different methodologies have been used to study e-books and their users. Still, there hasn't been consensus

regarding the research methodologies or agreement on as to what constitutes an e-book (Pattuelli & Rabina 2010). In this study it has been chosen to use Rowley's and Vassiliou's (2008) definition of an e-book based on their extensive study focusing on an analysis of the existing definitions. According to Rowley and Vassiliou, an e-book constitutes an e-service and can be described as a digital object with textual and/or other content, which arises as a result of integrating the familiar concept of a book with in-use features such as search and cross reference functions, hypertext links, bookmarks, annotations, highlights, multimedia objects and interactive tools. Since the same features and characteristics also apply for an e-newspaper, the definition of an e-book is also valid for e-newspapers.

Increased usage of different information systems is a significant reason for looking at the adoption of them. To understand why and how consumers adopt certain information systems is not only useful information for the service providers but also for consumers (Vatanparast 2009). Knowing what drives people to adopt certain technologies helps providers to deliver better services that more people use. This leads also to more tailored and customized services that meet better the expectations of consumers and thus results in an increased satisfaction. Besides enabling better and more targeted service, understanding the drivers of technology adoption also helps customers to know their own motives better and thus choose the right technologies or services from the wide range to fill their needs at each time (Vatanparast 2010). Davis (1989) has highlighted the importance of knowing what lies behind people's intention to use technologies because this helps service providers to assess the demand for their new offerings. As Nysveen et al. (2005) have noted it is also important to study technology adoption due to the continuous development of new and more sophisticated information technology devices, as e-reading devices in this research.

Several different technology and service adoption models have been used to understand the central issues in the information technology domain, where also e-reading technology can be located. All the models focus on explaining factors that affect consumers' intention to use and adopt information system technologies and services (Vatanparast 2010).

Behavior prediction has been one of the major purposes of psychological theories (Huang et. al 2007). Among the first researchers to develop expectancy model connecting user attitudes (or perceptions) with system use was Daniel Robey (1979). Later Fishbein's (1967) multi-attribute model proposed that attitudes are the sum of cognitive beliefs, where attitudes can be determined by relevant cognitive beliefs and the evaluation of those beliefs. Then again Nobert Schwartz (1997)

has investigated that other feelings such as moods can actually also serve as sources of information that are evaluated just as beliefs in Fishbein's model.

2.2.1 Theory of Reasoned Action

Fishbein and Ajzen (1975) developed an adaptive behavioural theory and model called the Theory of Reasoned Action (TRA). The theory is constructed based on three core constructs: behavioural intention, attitude toward behaviour and subjective norm. The model considers user's behaviour as determined by the user's behavioural intention, where behavioural intention is a function of attitude toward the behaviour and the subjective norm (Hansen et al. 2004). The behavioural intention then again directly affects and predicts the person's behaviour. The person's attitude toward the behaviour can be described as his or her beliefs of the behaviour. These can be both positive and negative. The term subjective norm refers to the person's belief of what other people expect from him or her (Fishbein and Ajzen 1975).

2.2.2 Theory of Planned Behaviour

However, TRA has been widely criticized for its assumption that the target behaviour is completely under user's control. This has been taken into consideration in the Theory of Planned Behaviour (TPB) where perceived behavioural control (PBC) has been added as a determinant of behavioural intention (Hansen et al. 2004). According to the Theory of Planned Behaviour (TPB), behaviour is determined by the intention to perform the behaviour. The behaviour itself is determined by three factors: attitude toward the behaviour, subjective norm, and perceived behavioural control (Mathieson 1991). Theory of Planned Behaviour is an extension of the Theory of Reasoned Action accounting for TRA's limitations in assuming that all behaviour is volitional (Ajzen 1991).

2.2.3 Innovation Diffusion Theory

According to Rogers (2005), the process of innovation diffusion starts with an individual passing from an early point of essential knowledge of innovation creating a decision to either adopt or reject it by forming a favourable of unfavourable attitude toward it. The process contains five different

phases of adoption: knowledge, persuasion, decision, implementation and confirmation. Along with the process, the individual reduces uncertainty as to whether the innovation will be superior to the existing solutions in the market. In the implementation phase the individual puts the innovation into use and starts the evaluation. In the last stage he/she makes a decision on whether to continue using the innovation or not. Though the Innovation Diffusion Theory has been popular and a cited theory in technology adoption field, it is not suitable for this research. The time span of the theory is too long for the purposes of this study and the sample group of this study won't be able to use the e-reading devices but only form images of them and thus the implementation phase of the theory could not be conducted.

Next one of the most popular theories regarding technology adoption, the Technology Acceptance Model, will be discussed. It can also be considered that this model is the most suitable theoretical model for the purposes and context of this research. The suitability of the model for this research will be reasoned below.

2.3 Technology Acceptance Model

The technology acceptance model TAM by Davis (1989) is widely known in the information systems literature (IS) and has the widest acceptance. TAM was built on (TRA) and Ajzens (1991) Theory of Planned Behaviour. TAM is based upon intentions to use technology and defines two key factors; "perceived usefulness" and "perceived ease-of-use" (Davis 1989). Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her performance". This has been derived from the definition of the word useful: "capable of being used advantageously" (Davis 1989). Perceived ease of use, again, refers to "the degree to which a person believes that using a particular system would be free of effort". This follows from the definition of "ease": "freedom from difficulty or great effort" (Davis 1989). In TAM, according to Davis and Venkatesh (2000), IT usage is determined by behavioural intention. Behavioural intention is affected by attitude toward usage, as well as the direct and indirect effects of perceived usefulness and perceived ease of use. Both perceived usefulness and perceived ease of use jointly affect attitude, whereas perceived ease of use has a direct impact on perceived usefulness as illustrated in the Figure 1 below (Davis et al. 1989).

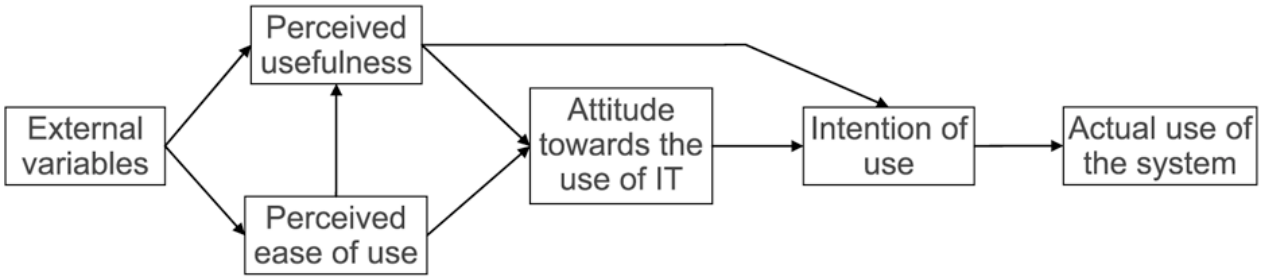

Figure 1 The original Technology Acceptance Model TAM (Davis et al., 1989)

TAM is a popular model in studies focusing on users (Vatanparast 2010), on which this study also focuses. There have been several studies (see, for example, Davis, 1989; Davis et al., 1989; Mathieson, 1991; Adams et al., 1992; Davis, 1993; Segars and Grover, 1993; Taylor and Todd, 1995) that have tested TAM model and found out that its ability to explain attitude toward using an information system is better than TRA's and TPB's (Pikkarainen et al. 2004). The Theory of Planned Behaviour, for example, is a more difficult model to apply across diverse user groups, what also the Hufvudstadsbladet's (HBL) readers represent. Whereas TAM's constructs are measured in the same way in every situation, those of TPB's would have to be tailored to each group. TPB requires a pilot study to identify relevant outcomes, referent groups, and control variables in every context in which it is used (Mathieson 1991). This would be a complicated process given that HBL readers constitute a heterogeneous group of people.

Later in 2000 Venkatesh and Davis extended the original TAM by introducing the second generation of the model labeled TAM2 to explain how social influence processes and cognitive instrumental processes affect perceived usefulness and intentions. The social influence processes encompass subjective norm, voluntariness, and image whereas the cognitive instrumental processes include job relevance, output quality, result demonstrability, and perceived ease of use. Although the above-mentioned determinants have been supported (Venkatesh & David 2000) the TAM2 model can't be considered to be a suitable model for this study because some of its assumptions don't fit in the context of this research. For example the result demonstrability, which theorizes that the tangible results of using the innovation will directly influence perceived usefulness, isn't relevant for this study since the target group's views on e-reading devices are based on images. They might never have used an e-reading device.

Although TAM is applicable to several different technologies it has been criticized for not providing adequate information on individuals' opinions of novel technologies (Mathieson 1991). Even the developer of the model, Davis (1989) observed that external variables enhance the ability of TAM to predict technology adoption. In other words, the determinants of TAM need to be extended by incorporating additional factors. Choosing additional factors depends on the target technology, main users and context (Moon and Kim 2001). Empirical research has found strong relationships between individual differences and technology acceptance (Venkatesh 2000). To understand newspaper readers' readiness to adopt e-reading devices better, this research integrated two individual difference variables, namely "personal innovativeness" and "perceived enjoyment" into the original TAM model. The third construct this research has incorporated into the original TAM is social value. These three constructs are discussed in more detail below.

2.3.1 Personal innovativeness

According to Rogers (1995) innovativeness means the extent to which an individual is relatively faster in adopting innovations compared to the other people. Rogers (1995) defines innovations as ideas, practices or objects that are perceived as new by individuals. It has been observed in general innovation diffusion research that highly innovative individuals are active information seekers regarding new ideas. They are also able to manage high levels of uncertainty and develop more positive intentions towards acceptance (Rogers 1995).

Drawing on Rogers' theory, Agarwal and Prasad (1998) discussed that individuals develop beliefs about news technologies by combining information from several different media. Those individuals who have higher personal innovativeness are expected to develop more positive beliefs about the target technology. Agarwal and Prasad (1998) described personal innovativeness as symbolizing the risk-taking tendency that exists in certain individuals and not in others. They named this construct Personal Innovativeness in Information Technology (PIIT), which means the willingness of an individual to try out any new information technologies such as e-reading technology in this research.

2.3.2 Perceived enjoyment

According to Davis et al. (1992) perceived enjoyment is defined as "the extent to which the activity of using a technology is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated". In this study perceived enjoyment refers to the extent to which an individual finds using an e-reading device for going through the content of HBL enjoyable or interesting.

The enjoyment construct was added to TAM to explain the role of intrinsic motivation in the adoption of a new technology and refers to the extent to which the activity of using a computer (here, an e-reading device) is perceived to be enjoyable (Davis et al. 1992). There have been several studies investigating (e.g. Heijden 2000; Igbaria et al. 1995) the relationship between enjoyment and technology adoption that result in that perceived enjoyment significantly affects intention to use computers (here, e-reading devices). According to self-efficacy theories also perceived ease of use can be seen to influence intrinsic motivation such as enjoyment (Lee et al. 2005).

2.3.3 Social value

Although most empirical examinations of social norm's role in technology acceptance have focused on the workplace, there is reason to expect that social norms could play an even more important role in consumer adoption of technology. Influences can come from several different sources such as neighbors, relatives, family members, and friends as well as inspirational figures in the media (Kulviwat et al. 2009).

As Kulviwat (2009) describes, use of an innovation is sometimes perceived to enhance self-image or social status of individuals. This in turn, can lead to intentions. Apple, for example, has utilized social influence well when launching iPad making it a desirable device to have among the target users. Among other researchers Skog (2002) has found that some consumers adopt mobile technology merely to show off or enhance their social identities when studying mobile communications. Even if newspaper readers wouldn't engage in e-reading devices solely for social

reasons they surely have an influence on readers' adoption behaviour. That is why social value has been added into the original model.

2.4 Summary

This chapter focused on explaining the e-reading phenomenon in more detail also looking at the advent of digital text and how people's reading behaviour has changed along with the digital text over the last years. It was noted that people actually spend more time on reading today due to the great amount of information available and the digital technology.

The advantages and main features of e-reading devices were covered bringing also out the differences between e-ink based devices and LCD –screen devices. The role of the tablets as reading devices was briefly discussed. It was noted that readers are ready to pay for the digital media content and they do pay for it now already. However, when making the content chargeable the quality of the content starts to play a crucially important role and becomes the factor that makes readers in the end decide on to which media provider to pay.

In this chapter the theoretical background for the research was also established. Some of the most relevant models within technology adoption were discussed in more detail. In order to study the opinions of the Finnish newspaper readers towards e-reading devices a robust and reliable framework is required. The Technology Acceptance Model (TAM) is well suited for this requirement. The original TAM model was complemented with three additional determinants, namely personal innovativeness, perceived enjoyment and social value. Reasoning for adding these elements into the original model was also presented in this chapter.

The TAM model has been used in many similar studies such as Arning and Ziefle 2006 and Huang et al. 2007. It has been concluded in several models that the Technology Acceptance Model (TAM) has stronger explanatory power than Theory of Reasoned Action or Theory of Planned Behavior. Those studies include Mathieson (1991), Davis (1989) and Davis et al., (1989). Among other researchers Mathieson (1991) has also found that TAM is easier to apply than the Theory of Planned Behaviour, where all the constructs have to be tailored to each group differently. In TAM the constructs can be measured in the same way in every situation, which fits well with the heterogeneous target group of this research.

Because the questionnaire results of this research are based on peoples' images instead of actual e-reading experience TAM is also suitable model in this sense. Unlike e.g. the Innovation Diffusion Theory, it doesn't require the actual usage phase in order to explain the adoption behavior, which can be explained through intention and other determinants leading to that in TAM.

TAM model has been widely used in context of studies focusing on users (Vatanparast 2010), on which this study also focuses. Finally, TAM is a model for explaining the user acceptance of novel technologies, what e-reading technology also represents, and therefore it is an appropriate model to be used in this research.

3 Methodology

Next the research model and the research hypothesis based on the original Technology Acceptance Model will be presented with the additional determinants that were justified above. The research approach and sampling methodology are also explained. Following that the research's data collection method will be discussed.

3.1 The research model

There have been several studies regarding users' attitudes towards personal digital assistants, small electronic organizers, where TAM model has been used (e.g. Arning & Ziefle 2006; Huang et al. 2007). PDA devices represent several similar characteristics as e-reading devices and therefore the TAM model is applied also in this research. In addition, it has been utilized in many online contexts to investigate user perceptions of system use, and the probability of adopting an online system (Teo et al. 1999; Gefen and Straub 2000; Moon and Kim 2001; Pavlou 2001). Even though e-reading devices aren't online systems in themselves their service features can often represent them.

TAM is a model for explaining the user acceptance of novel technology and e-reading technology can be perceived novel and is therefore appropriate to be examined using the TAM model. However, TAM doesn't cover technology users' individual characteristics and proposes that all the external variables on adoption operate through perceived usefulness and ease of use (Davis et al. 1989). Therefore, the TAM model has been extended with hypothesis developed with some individual characteristics regarding the role of innovativeness in adopting technology and with the determinant of perceived enjoyment. Also social value is added into the model to demonstrate the effects of social influence in the process of adopting e-reading technology. The hypotheses are discussed in more detail in the next section. The research model in this research is based on the assumptions of the original TAM model (Davis 1989) discussed in the previous section complemented with the new theoretical findings. Figure 2 displays the revised model.

As presented in the hypothesis, innovativeness can be proposed to lead to perceived ease of use and to perceived usefulness and with a straight impact on the intention to use e-reading technology. Perceived ease of use again can be considered to lead to perceived usefulness because when readers perceive e-reading devices easy to use the usefulness of the devices to users increases. Perceived ease of use thus also refers to the perceived enjoyment. Perceived usefulness has a straight relation to intention to use technology because of its concrete benefits to users. Also perceived enjoyment links to the intention to use e-reading technology. As demonstrated in the original Technology Acceptance Model, intention to use e-reading technology has a straight impact on adoption.

For many new products and services, not only adoption but also subsequent usage is very important. Increased usage leads to customer expansion, which is a key driver of customer lifetime value and customer equity, which in turn are linked to the shareholder value (Prins et al. 2009). That's why services play an important role in adoption; besides being a part of the e-reading devices and thus when users adopt e-reading devices they also adapt the services in them, they also represent an incentive for subsequent usage. When users start to discover new possibilities to use and benefit from an e-reading device it's easier for them to continue the usage after the adoption. According to Prins (2009) achieving a high level of new service usage is not an easy task for companies as there might be a trade-off between the rapid adoption of a new service and its subsequent usage. If services are created in a way that serves readers' needs they will most likely continue their usage, which in turn benefits the supplier, here Hufvudstadsbladet (HBL). Therefore, services constitute an important part of the adoption.

When looking at the revised TAM model in Figure 2 below, it can be seen that it differs quite a lot from the original Technology Acceptance Model. First of all, there are three new determinants that are missing from the original model namely Innovativeness, Social Value and Perceived Enjoyment. These determinants have been added into the model following the empirical evidence that each of these constructs can assist in understanding the usage intention better. Secondly, the construct of "the attitude towards the use" has been removed from the revised model based on the empirical evidence that the construct does not meaningfully mediate the relationships between the beliefs and intention (Davis et al. 1989). Also the construct of "the external variables" having an effect on Perceived Usefulness and Ease of Use has been removed because this research doesn't go into other external variables at all. All in all, the whole context of the model has been transformed into the e-reading technology context.

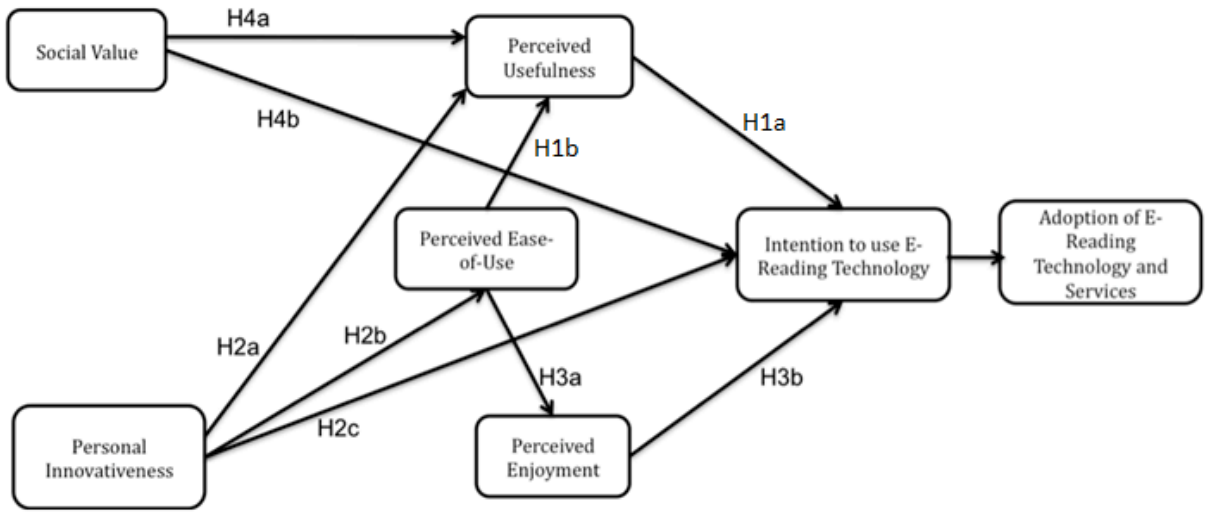

Figure 2 A revised version of TAM to explain the e-reading technology adoption

3.2 Hypotheses

TAM model explains that an individual's acceptance of computer technology is based on perceived usefulness and perceived ease of use that both relate to intention and finally to adoption. The theory also suggests that perceived ease of use influences perceived usefulness because technologies that are easy to use can be more useful (Davis et al. 1989). Drawing on these assumptions,

H1a. Perceived usefulness correlates positively with user's intention to use e-reading technology.
H1b. Perceived ease of use has an indirect effect on a user's intention to use e-reading technology via perceived usefulness.

Schillewaert et al. (2005) have proposed a direct relationship from innovativeness to adoption based on the assumptions that individuals who are highly innovative in the area of information technology will hold more positive beliefs about using a certain technology, in this context e-reading devices, and that behaviour is also influenced by habits over and above attitudes. As a summary,

technologically oriented individuals will be more habituated to using computer technology, be handier in using it and better realize the usefulness of the technology (Schillewaert et al. 2005). Thus,

H2a. Personal innovativeness for information technology correlates positively with a user's perceived usefulness of the e-reading technology.
H2b. Personal innovativeness for information technology correlates positively with a user's perceived ease of use of the e-reading technology.
H2c. Personal innovativeness for information technology correlates positively with intention to use e-reading technology.

The concept of enjoyment means that users feel enjoyable from the value of using e-reading devices. New technologies that are considered enjoyable are less likely to be difficult to use (Huang et al. 2007). Therefore,

H3a. Perceived ease-of-use correlates positively with perceived enjoyment.
H3b. Perceived enjoyment correlates positively with a user's intention to use e-reading technology.

Based on the fact that we people tend to be quite often influenced by our friends or colleagues, the social value can be seen to also have an effect on adopting e-reading technology. Social value in this study refers to perceived pressures from social networks to make or not to make a certain behavioral decision. Individuals adapt their attitudes, behaviors and beliefs to their social context and therefore support from others who are considered influential has an important impact on what action a potential adopter chooses to take (June et al. 2005).

H4a. Social value correlates positively with perceived usefulness
H4b. Social value correlates positively with a user's intention to use e-reading technology.

3.3 Research approach and sampling methodology

For the implementation of the empirical research it has been chosen to use a quantitative study approach. Quantitative method is the most suitable approach for studies where the target group is large as in the case of HBL subscribers. Quantitative approach is also suitable for studies where

statistical generalizations are needed instead of focusing on describing a specific phenomenon within a small target group. In this research the objective is to get a broad understanding of the preferences of the Finnish newspaper readers on e-reading devices and what kinds of benefits make them intend to start using e-reading devices. Therefore answers from a large target group are needed. Given also the amount of questions through which the issue is studied a survey is by far the best approach to implement the empirical research. Drawing on these arguments the quantitative data collection method is presented in more detail below.

As the data collection method it was chosen to use a questionnaire. Questionnaires can be used in several different contexts such as in mail surveys, telephone interviews, formal, structured interviews and in surveys carried out using computers and other forms of IT (Webb 2000). Questionnaires can be conducted on the Internet in two different ways: either as e-mail questionnaires or as web page questionnaires. In the e-mail questionnaires the questionnaire is sent to recipients' e-mail address and answers sent back to the researcher by e-mail. In web questionnaires the invitation to the questionnaire can be sent through e-mail with a link to the web page where the questionnaire can be found.

In this research it was chosen to use the web page questionnaire. It is easier for the respondents to answer to a web page questionnaire and also the data is more easily available in that form for the analysis phase. Except being more easily available the data is also clearer in terms of the open questions. In addition the influence of the interviewer is removed in web questionnaires and it is possible to reach geographically scattered people easier and faster than with a personal interview. Also, since there were one and half week's time to answer the respondents could answer at a time that suited them best. Drawing on these reasons a web questionnaire was selected as the survey method in this research (Malhotra and Birks 2007, p. 273-274).

The questions in the questionnaire were designed to measure the structures of the theoretical research framework. The questions were derived from earlier studies where they were proven to successfully measure the needed structures. The part in the questionnaire where respondents were asked to rate different services according to their considered importance was created based on Hufvudstadsbladet's interest of knowing how certain services would be received. As a pre-data for the survey design there were also used results from focus group interviews that can be found from the Appendix 1. The focus group interviews were held in spring 2010 on a train trip from Finland to Shanghai world Expo 2010. The participants were mainly students and they were given different e-

reading devices for testing and for giving future ideas how they could be utilized and developed further.

3.4 Data collection and research data

Due to the great amount of data needed for the purposes of this research and the reasons presented above, the best method to acquire data was to conduct a survey in the form of a questionnaire. The questionnaire could be accessed online through a link that was sent to Hufvudstadsbladet's (HBL) subscribers in the form of a covering letter. The research data was collected in fall 2010. In order to confirm the validity of the questions a test questionnaire was sent to 200 Hufvudstadsbladet's (HBL) subscribers before the actual questionnaire. The response rate in the test questionnaire was 23,5%. The test questionnaire gave significant information and some questions were modified based on the results and comments from the respondents in the test questionnaire. The question regarding people's income level resulted in several non-responses. This led to that the response process was interrupted because the software wouldn't allow empty answers. An open comment field was also added so that people could share their thoughts either regarding e-reading devices or the questionnaire itself.

The actual questionnaire with the modifications based on the test questionnaire was sent to 4899 Hufvudstadsbladet's subscribers on 10th October with one and half weeks time allowed for answering. A reminder was sent four days before the deadline to the people who had not answered by that. 1084 out of 4899 people replied to the questionnaire and therefore the response rate was 22, 1%.

Because it had been taken into account that at least some of the respondents might not have any idea what the newspaper would look like on an e-reading device's screen, a screenshot of the Hufvudstadsbladet's (HBL) content on the e-reading device's screen was attached in the covering letter of the mail. This way the respondents could see how the newspaper would look like in the new format before entering the questionnaire. The survey structure was designed to measure the constructs in the research framework and also find out how the respondents rate different possible services in e-reading devices.

The data collected included 1084 responses further described in the Table 1 in terms of gender and prior use of e-reading devices. As Table 1 demonstrates, the gender distribution of the research was

quite even, which gives extensive and unbiased results. There were altogether 561 male respondents and 523 female respondents. This is a very significant result considering that often technology related questionnaires result in a skewed respondent profile mostly consisting of male responds. However, it can be seen that in this case the subject concerns people regardless of their gender and thus the results can be considered highly significant.

As it was assumed in the beginning of the research only a minor part (35/1084 = 3,2%) of the respondents had used or uses regularly an e-reading device. 904 people out of 1084 have never used an e-reading device, which naturally has affected their way of answering the questions. What is notable, however, is that even 13,4% of all the respondents have had an opportunity to try an e-reading device and thus they can be expected to know the main functionalities of the devices.

Gender * Prior use of an e-reading device

			Have you used an e-reading device, e.g. Kindle or iPad, before?			
			I have used an e-reading device / I use an e-reading device regularly	**I have had an opportunity to try an e-reading device**	**I have never used an e-reading device**	Total
Gender	**Female**	Count	16	57	450	523
		% Have you used an e-reading device, e.g. Kindle or iPad, before?	45,7 %	39,3 %	49,8 %	48,2 %
	Male	Count	19	88	454	561
		% Have you used an e-reading device, e.g. Kindle or iPad, before?	54,3 %	60,7 %	50,2 %	51,8 %
Total		Count	35	145	904	1084
		% within Have you used an e-reading device, e.g. Kindle or iPad, before?	100,0 %	100,0 %	100,0 %	100,0 %

Table 1 Respondents by their gender and prior use of e-reading devices

3.5 Statistical Analysis Methods

For analyzing the data three different techniques were used in this research. With the first method the correlations between different variables were tested according to the research hypothesis. The strength of the correlation between two variables can be measured by a commonly used figure of Pearson's coefficient. The strength of the correlation can get any values between +1(perfect correlation) and -1 (no correlation). Positive correlation means that when looking at the values of investigated variables the values increase in line with each other. With large data the results often are statistically significant and thus it is recommended to use also other methods to explore the dependence of variables (Karjaluoto 2007).

After having received preliminary results from the correlation analysis the data was analyzed using the factor analysis. The main purpose of the factor analysis is to decrease the amount of data; it aims at describing the total variance by a smaller amount of variables. There are two conditions to be met before the factor analysis can be used. The first condition is that the variables have to be at least ordinal and secondly the amount of observations has to be at least 100 (Karjaluoto 2007). In this research both of the conditions are met and thus factor analysis could be conducted. Through factor analysis it is also possible to find underlying patterns of relationships in the total amount of observations and to determine if it is possible to summarize the information in a smaller amount of variables (Hair et al. 1998, p. 90). In the focus of the present research is to see what kind of patterns can be seen to have an influence on explaining people's intention to start using e-reading technology. The basic idea behind the analysis is to look at the relationships between variables and form groups of them based on the underlying patterns. Groups are formed of variables that correlate strongly with each other but weakly with the variables in the other groups (Malhotra and Birks 2007, p. 647).

When looking at the minimum required number of cases in a factor analysis it can be considered as a general rule that there should be at least four or five times as many observations as there are variables (Malhotra and Birks 2007, p. 649). In the present research the research data consists of 1084 cases and in the factor analysis there were used 30 variables thus resulting in a ratio of 36,1 highly exceeding the limit of 4 – 5. Drawing on this, the findings of the factor analysis conducted in this research can be considered to be trustworthy.

There are two basic approaches available for a factor analysis; the ones of principal components analysis and common factor analysis. The first approach is recommended when the primary goal is

to figure out the minimum number of factors accounting for the maximum variance. The latter approach is suitable when the goal is to find underlying dimensions and the common variance is of interest (Malhotra and Birks 2007, p. 652). In the present research it was chosen to use the common factor analysis for determining the underlying factors for readers' intention to start using e-reading technology.

Factor loadings represent the correlations between the variables and the factors. The higher a variable, the more representative of the factor it is. Factor loadings can get values between -1 and 1 (Karjaluoto 2007). According to Hair (Hair et al. 1998, p. 111) the minimum acceptable factor loadings are ±0.30 in cases where the sample size is less than hundred. Loadings of ±0.40 are considered more important but only loadings ±0.50 or greater are considered practically significant. In the present research all the factor loadings were at least 0,7 and thus all of them can be considered extremely significant. Communalities (h^2) indicate the extent to which the factors can explain the variance. The smaller the value of communalities, the less explanatory power the factors have in regard to the variable. If the communality of a single variable is less than 0,3 it is worth considering if that variable should be included in the analysis at all. In the present research all the communalities were above 0, 7 and thus the factors can be seen to explain the variance to a great extent. The most commonly used measure to define the reliability of two or more construct indicators in a factor analysis is called Cronbach's alpha. It ranges from 0 to 1, with values of 0,60 to 0,70 deemed the lower limit of acceptability (Hair et al. 1998 p. 88, 118, 579). Cronbach's alpha was also used in the present research to define reliability. In this research all the values were at least 0,7 and thus they can be considered reliable.

In order to define the reliability of the results of factor analysis in terms of sampling adequacy the appropriateness of the method for the purposes of this study was investigated. A good reliability test for this is the Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) that compares the magnitudes of the observed correlation coefficients with the magnitudes of the partial correlation coefficients (Malhotra and Birks 2007, p. 651). The results of the Kaiser-Mayer-Olkin test can be interpreted in the following way: results above 0,90 provide excellent foundation for the analysis and thus factor analysis can be used. Results between 0,70 and 0,80 can be considered average and results less than 0,60 are too weak and thus it is not recommended to use factor analysis with Kaiser-Meyer-Olkin test resulting in values less than 0,60 (Karjaluoto 2007). In the present research the Kaiser-Meyer-Olkin test gave a result of 0,922, which is an extremely good value and thus the factor analysis can be accepted as a method for analyzing the data of this research.

To define the number of factors to extract, the latent root criterion was chosen because it is the most commonly used technique. The latent root criterion is also known as eigenvalue criterion. The rationale of this criterion is that any individual factor should account for the variance of at least a single variable if it is to be retained for interpretation. Each variable contributes a value of 1 to the total eigenvalue. Therefore only the factors having their eigenvalues greater than 1 can be considered significant and the factors with eigenvalues less than 1 are insignificant. The usage of eigenvalue is most reliable when the number of variables is between 20 and 50 (Hair et al. 1998, p. 103). In the present research the number of variables is 30 and thus the usage of eigenvalue is justified in defining the number of factors to extract.

After having analyzed the data with factor analysis the same variables were used in a cluster analysis. In other words the cluster analysis was conducted on the basis of the factors that were formed in the previous analysis. The idea of the cluster analysis is to classify objects into homogeneous groups called clusters. Objects in each cluster tend to be similar to each other and different to the objects in another cluster. Cluster analyses have been used among others for understanding buyer behaviors, identifying new product opportunities and for reducing data. In the present research cluster analysis was conducted for looking at the factors based on the factor analysis in more detail and identifying patterns within the factors.

In this research as the clustering procedure was chosen the non-hierarchical clustering, also referred to as k-means clustering. This approach was chosen because the amount of observations in this research is large, over 1000 cases (Malhotra and Birks 2007, p. 671-678). However, as a disadvantage of the non-hierarchical procedures can be considered that the number of cluster must be pre-specified. Because the relative size of the clusters should be meaningful (Malhotra and Birks 2007, p. 681), it was chosen to have 4 clusters because if a fewer or a larger number of clusters had been chosen, the relative size of each cluster would not have been rational or the results theoretically meaningful.

The objective of clustering is to group similar objects together and thus it is important to define how similar or dissimilar the objects are. The most often used method for this is to measure the similarity in terms of distance between pairs of objects. This means that the objects whose distance is small are more similar to each other than the ones whose distance is larger. The most often used measure of similarity is the one of Euclidean distance. The Euclidean distance is the square root of the sum of the squared differences in values for each variable (Malhotra and Birks 2007, p. 675). The goal is to minimize the variance within each cluster (Punj and Stewart 1983).

4 Survey results

4.1 The importance of different services on an e-reading device

There were presented 15 different service possibilities in the questionnaire, which the respondents could rate according to their view on each service's importance. Most of these services are already implemented in some e-reading devices, but what is interesting is how the Finnish newspaper readers consider these as an added value to their traditional newspaper reading.

As it can be seen from the Table 2 the respondents rated the possibility of watching news videos from an e-reading device's screen highly. Most of the respondents consider this service to be important (35,1%) and 20% consider it to be even very important. This demonstrates well that this kind of service clearly brings added value to newspaper readers and can be considered as one way for newspaper providers to increase their customers' satisfaction when starting to provide content in e-reading devices.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	150	13,8	13,8	13,8
	2	136	12,5	12,5	26,4
	3	199	18,4	18,4	44,7
	4	381	35,1	35,1	79,9
	Very important	218	20,1	20,1	100,0
	Total	1084	100,0	100,0	

Table 2 Possibility to watch news videos

As the Table 3 demonstrates, the possibility to solve crosswords on an e-reading device wasn't generally considered that important. However, 128 people (11,8%) think that it is still important to have this feature also on an e-reading device.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	530	48,9	48,9	48,9
	2	203	18,7	18,7	67,6
	3	165	15,2	15,2	82,8
	4	128	11,8	11,8	94,6
	Very important	58	5,4	5,4	100,0
	Total	1084	100,0	100,0	

Table 3 Possibility to solve crosswords

The Table 4 below shows newspaper readers' opinion on how important a possibility to take part in online quizzes is. As it can be seen from the Table 4, this service was considered not at all important by almost half of the respondents. This implies that a service like a quiz doesn't bring a significant added value to newspaper readers.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	533	49,2	49,2	49,2
	2	229	21,1	21,1	70,3
	3	185	17,1	17,1	87,4
	4	103	9,5	9,5	96,9
	Very important	34	3,1	3,1	100,0
	Total	1084	100,0	100,0	

Table 4 Possibility to take part e.g. in online quizzes?

The Table 5 below demonstrates that neither the possibility of receiving tailored location –based offers into an e-reading device was considered that important. Again almost half of the respondents rated this possible as not at all important to have. This implies that at least for now, this service wouldn't bring any added value to newspaper readers.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	523	48,2	48,2	48,2
	2	266	24,5	24,5	72,8
	3	186	17,2	17,2	89,9
	4	94	8,7	8,7	98,6
	Very important	15	1,4	1,4	100,0
	Total	1084	100,0	100,0	

Table 5 Receive tailored offers into an e-reading device based on your current location?

As the Table 6 below shows, the service of receiving tailored location-based information on different local events was rated higher than the one of receiving tailored offers. Though almost 37% of the respondents consider this service as "not at all important" even 16% think it is important. This implies that a service like this can bring added value to consumers at least to some extent.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	399	36,8	36,8	36,8
	2	220	20,3	20,3	57,1
	3	251	23,2	23,2	80,3
	4	175	16,1	16,1	96,4
	Very important	39	3,6	3,6	100,0
	Total	1084	100,0	100,0	

Table 6 Receive tailored information regarding local events into an e-reading device based on your current location?

The Table 7 below demonstrates how newspaper readers react to a possibility of getting more information on certain factors in a news article by clicking the words. This service is clearly significant in the minds of readers since 40% of the respondents think it is important to have this kind of a service in an e-reading device. Even 23,3% also find this possibility very important. It can be stated that this service would clearly bring added value to consumers and it is thus worth considering.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	118	10,9	10,9	10,9
	2	81	7,5	7,5	18,4
	3	198	18,3	18,3	36,6
	4	434	40,0	40,0	76,7
	Very important	253	23,3	23,3	100,0
	Total	1084	100,0	100,0	

Table 7 Get more information on certain factors in a news article by clicking the words?

The Table 8 below shows readers' views on the importance of a possibility of accessing more picture material of certain news articles. It can be clearly seen from the results that people value a service like this highly since 39,2% of the respondents answered that it is important and even 23,3% considered it very important. Drawing on these, it can be stated that also this service is worth considering and would bring added value to newspaper readers.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	135	12,5	12,5	12,5
	2	99	9,1	9,1	21,6
	3	244	22,5	22,5	44,1
	4	425	39,2	39,2	83,3
	Very important	181	16,7	16,7	100,0
	Total	1084	100,0	100,0	

Table 8 Possibility to see more picture material of certain news?

The Table 9 below shows how important newspaper readers consider the possibility to know how much they have read of the newspaper at each time in terms of pages. As it can be seen, this service clearly divided opinions. However, there is interest towards this kind of information at least to some extent and it shouldn't be forgotten that still 15,5% of the respondents consider this service important.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	401	37,0	37,0	37,0
	2	233	21,5	21,5	58,5
	3	205	18,9	18,9	77,4
	4	168	15,5	15,5	92,9
	Very important	77	7,1	7,1	100,0
	Total	1084	100,0	100,0	

Table 9 Knowing how much you have read of the e-newspaper at each time in terms of pages?

Table 10 shows how newspaper readers react to a possibility of sending a link of interesting articles to social medium such as Facebook or Twitter. Though only 6,7% consider this service as very important the other alternatives divided opinions much more evenly. Drawing on these, it can be seen that though quite careful, there still is interest towards this service.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	457	42,2	42,2	42,2
	2	222	20,5	20,5	62,6
	3	178	16,4	16,4	79,1
	4	154	14,2	14,2	93,3
	Very important	73	6,7	6,7	100,0
	Total	1084	100,0	100,0	

Table 10 Possibility to send a link of interesting articles to social medium such as Facebook and Twitter?

Table 11 shows how important the possibility to comment on articles is in the minds of newspaper readers. Here can be seen the same pattern as in the Table 10. Though only 4,9% of the respondents consider the commenting possibility as very important the rest of the alternatives have divided opinions much more evenly and thus also this service can be seen to attract readers at least to some extent.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	294	27,1	27,1	27,1
	2	283	26,1	26,1	53,2
	3	248	22,9	22,9	76,1
	4	206	19,0	19,0	95,1
	Very important	53	4,9	4,9	100,0
	Total	1084	100,0	100,0	

Table 11 Possibility to comment on articles?

As it can be seen from the Table 12 below, the possibility to save interesting articles into an article bank on an e-reading device was rated highly. 34,6% of the respondents find this service important and 27,3% very important. This clearly implies that this service brings added value to readers and should be considered.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	138	12,7	12,7	12,7
	2	91	8,4	8,4	21,1
	3	184	17,0	17,0	38,1
	4	375	34,6	34,6	72,7
	Very important	296	27,3	27,3	100,0
	Total	1084	100,0	100,0	

Table 12 Possibility to save interesting articles into an article bank on an e-reading device?

Table 13 shows that readers don't think that it is that important to hear news from an e-reading device read aloud. Only 3,7% find this service very important and even 43,5% not at all important. This implies that this service isn't that appealing for readers.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	472	43,5	43,5	43,5
	2	231	21,3	21,3	64,9
	3	212	19,6	19,6	84,4
	4	129	11,9	11,9	96,3
	Very important	40	3,7	3,7	100,0
	Total	1084	100,0	100,0	

Table 13 Possibility to hear news from an e-reading device read aloud?

Table 14 shows how important newspaper readers consider the possibility to buy an e-reading device from a newspaper's provider. As it can be seen, this service really divided opinions. Almost same amount of respondents consider it somewhat important as not important.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	309	28,5	28,5	28,5
	2	187	17,3	17,3	45,8
	3	302	27,9	27,9	73,6
	4	200	18,5	18,5	92,1
	Very important	86	7,9	7,9	100,0
	Total	1084	100,0	100,0	

Table 14 Possibility to buy an e-reading device from a newspaper's provider?

Table 15 shows how important newspaper readers find a possibility of playing games on an e-reading device. As it can be seen from the table this service didn't attract the respondents since only 3% find it very important and over half (51,6%) not at all important. This implies that at least for now, games hardly bring any added value for newspaper readers.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	559	51,6	51,6	51,6
	2	230	21,2	21,2	72,8
	3	155	14,3	14,3	87,1
	4	108	10,0	10,0	97,0
	Very important	32	3,0	3,0	100,0
	Total	1084	100,0	100,0	

Table 15 Possibility to play different games on an e-reading device?

Table 16 demonstrates the importance of instant messaging for newspaper readers. Also this service divided quite a lot opinions but it can still be seen that there is at least some interest towards this kind of service though 31% finds it not at all important.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	336	31,0	31,0	31,0
	2	185	17,1	17,1	48,1
	3	217	20,0	20,0	68,1
	4	244	22,5	22,5	90,6
	Very important	102	9,4	9,4	100,0
	Total	1084	100,0	100,0	

Table 16 Possibility to send instant messages to friends from an e-reading device?

4.1.1 Conclusion of the importance of the services

As a conclusion it can be said that a few services stood out from the rest in that the respondents clearly rated them higher than others. These services are the following: news videos, possibility to get more information on certain factors in a news article by clicking the words, more picture material for certain news and possibility to save interesting articles in an article bank on an e-reading device. In all of these services the total percentage of answers 4 (important) and 5 (very important) was over 55%.

Drawing on these figures, it can be noted that the above-mentioned services clearly are important to newspaper readers and can deliver added value to them. Thus they are worth considering when starting to offer the newspaper content in a new format.

When looking at the services that were rated lowest it can be seen that most of them can be considered as entertainment applications. The possibility to play different games on an e-reading device was rated as "not at all important" by 51,6% of the respondents. Also the possibility of participating in e.g. online quizzes was considered as "not at all important" by almost half of the respondents, 49,2% while only 3,1% rated is as "very important". The third lowest rated service is solving crosswords, which 48,9% of the respondents considered not at all important. However, even 5,4% found it still very important to have so it seems that crosswords have their own established supporters regardless of the medium through which newspaper is delivered.

As a conclusion it can be noted that the respondents clearly appreciate e-reading devices more based on their capabilities to improve the reading experience than based on their entertainment value. This is important information when starting to create newspaper content for e-reading devices.

4.2 Testing of the hypotheses

The hypotheses presented in the chapter 3.2 were tested using PASW (Predictive Analytics Software), which is better known by its former name, SPSS. By analyzing the correlation between different variables it was possible to see if the presented hypotheses are correct. Pearson correlation coefficient refers to the strength of association between different variables.

When the level of significance is 0,05 or less it can be noted that the results are statistically significant. The results in the Table 16 can be considered highly significant due to that they are significant at the level of 0,01. The level of 0,01 means that the probability of rejecting the null hypothesis when it is actually true is 0, 01. Null hypothesis refers to that there is no relationship between the measured phenomena.

H0: No association between Perceived Usefulness and Intention to use e-reading technology

H1a: There is a systematic association between Perceived Usefulness and Intention to use e-reading technology

The hypothesis 1a suggests that Perceived Usefulness has an influence on Intention to use e-reading technology. When testing the correlation it can be seen from the Table 16 below that the correlation is as high as 0,747 between these two variables. The result is statistically significant at the level of 0,01 with a P value of 0,000. Drawing on this, null hypothesis can be rejected and state that there is a positive association between perceived usefulness and intention to use e-reading technology. Therefore it can be concluded that users that perceive e-reading devices useful also intend to use them and the hypothesis H1a is thus correct.

H0: No association between Perceived Ease of Use and Perceived Usefulness

H1b: There is a systematic association between Perceived Ease of Use and Perceived Usefulness

The hypothesis 1b suggests that there is a positive correlation between perceived ease of use and perceived usefulness. When looking at the test results in the Table 16 below it can be seen that the correlation is 0,405 and thus not as strong as in the previous hypothesis. However, there is a correlation and also this result is significant at the level of 0,01. Thus the null hypothesis can be rejected and state that the hypothesis 1b (H1b) is correct even though the strength of association isn't as high as in the hypothesis 1a.

H0: No association between Personal Innovativeness and Perceived Usefulness

H2a: There is a systematic association between Personal Innovativeness and Perceived Usefulness

The hypothesis 2a suggests that personal innovativeness has an influence on perceived usefulness. As it can be seen from the Table 16 below the correlation between these two variables is 0,456. Because also this result is significant at the significance level of 0,01 we can see it to support our hypothesis that there is a positive relationship between personal innovativeness and perceived usefulness.

H0: No association between Personal Innovativeness and Perceived Ease of Use

H2b. There is a systematic association between Personal innovativeness and Perceived Ease of Use

The hypothesis 2b suggests that personal innovativeness and perceived ease of use are positively correlated. When looking at the test results it can be seen that the strength of the correlation is 0,420. Because also this result is significant at the significance level 0,01 the hypothesis can be accepted and state that there is a positive correlation between these two variables.

H0: No association between Personal Innovativeness and Intention to use e-reading technology.
H2c. There is a systematic association between Personal innovativeness and Intention to use e-reading technology.

The hypothesis 2c states that there is a correlation between personal innovativeness and intention to use e-reading technology. The test results support the hypothesis with a correlation of 0,465. The result is significant at the significance level of 0,01 and thus also this hypothesis can be accepted.

H0: No association between Perceived ease-of-use and Perceived enjoyment.
H3a. There is a systematic association between Perceived ease-of-use and Perceived enjoyment.

The hypothesis 3a suggests that perceived ease of use and perceived enjoyment are positively correlated. When looking at the results from the Table 16 below it can be seen that the correlation between those variables is 0,363. This result is significant at the significance level of 0,01 and thus the null hypothesis can be rejected also here. However, this correlation isn't as strong as in the other hypotheses but still significant.

H0: No association between Perceived enjoyment and Intention to use e-reading technology.
H3b. There is a systematic association between Perceived enjoyment and Intention to use e-reading technology.

The hypothesis 3b states that there is a positive correlation between perceived enjoyment and Intention to use e-reading technology. The test result indicates an extremely high and significant correlation between these two variables. The correlation is 0,807 and significant at the significance level of 0,01. This is the highest correlation in this study, and strongly supports the hypothesis that there is a positive relationship between the two constructs.

H0: No association between Social value and Perceived Usefulness

H4a. There is a systematic association between Social value and Perceived Usefulness

The hypothesis 4a suggests that social value and perceived usefulness correlate positively. The test result shows a correlation of 0,257. This result is significant at the significance level of 0,01 and thus the null hypothesis can be rejected though neither here is the correlation that strong.

H0: No association between Social value and intention to use e-reading technology
H4b. There is a systematic association between Social value and intention to use e-reading technology

The last hypothesis, 4b, suggests that there is a positive correlation between social value and intention to use e-reading technology. The test result shows a correlation of 0,226 between these two constructs. Though the correlation is lowest from all the hypotheses presented before, the result is still significant and thus the null hypothesis can be rejected even though the correlation isn't that strong.

		PU	Intention	PEOU	PE	Social Value	PI
Perceived Usefulness	Pearson Correlation	1	**,747****	,405**	,730**	**,257****	,456**
	Sig. (2-tailed)		,000	,000	,000	,000	,000
	N	1084	1084	1084	1084	1084	1084
Intention to use E-reading technology	Pearson Correlation	,747**	1	,367**	,807**	,226**	,465**
	Sig. (2-tailed)	,000		,000	,000	,000	,000
	N	1084	1084	1084	1084	1084	1084
Perceived ease of use	Pearson Correlation	**,405****	,367**	1	**,363****	-,019	,420**
	Sig. (2-tailed)	,000	,000		,000	,522	,000
	N	1084	1084	1084	1084	1084	1084
Perceived Enjoyment	Pearson Correlation	,730**	**,807****	,363**	1	,359**	,438**
	Sig. (2-tailed)	,000	,000	,000		,000	,000
	N	1084	1084	1084	1084	1084	1084
Social Value	Pearson Correlation	,257**	**,226****	-,019	,359**	1	,129**
	Sig. (2-tailed)	,000	,000	,522	,000		,000
	N	1084	1084	1084	1084	1084	1084
Personal Innovativeness	Pearson Correlation	**,456****	**,465****	**,420****	,438**	,129**	1
	Sig. (2-tailed)	,000	,000	,000	,000	,000	
	N	1084	1084	1084	1084	1084	1084

**. Correlation is significant at the 0.01 level (2-tailed).

Table 17 Findings from the hypothesis testing

4.2.1 Conclusion of the hypotheses testing

The Table 17 above presents the correlations between different variables that were before suggested to be positively correlated and having an effect on newspaper readers' e-reading technology adoption behavior. The empirical findings support all the presented hypotheses about the relationships between technology adoption's different antecedents and thus all the null hypotheses were rejected. All the correlations are statistically significant at the significance level of 0,01. Given that the hypothesis can be accepted as long as they're significant at the significance level of 0,05 it can be noted that the results in this study are highly significant.

The weakest but still significant correlation was found between social value and intention to use e-reading technology. Here the correlation was 0,226. The second weakest correlation, 0,257 was between social value and perceived usefulness. Drawing on these, it can be noted that social value isn't a strong incentive for people to use e-reading technology but still it can be considered to have some influence.

The strongest positive correlation was found between perceived enjoyment and intention to use e-reading technology with a correlation of 0,807. This strongly implies that perceived enjoyment is one of the key drivers for people to adopt e-reading technology. This result is in line with the research results of Davis et al. (1992), where the researchers found out that enjoyment had a significant effect on intentions. This can be understood well especially in terms of e-reading technology, which is strongly based on creating a pleasant experience for users engaging in it.

The second strongest correlation, 0,747, was found between perceived usefulness and intention to use e-reading technology. This result is in line with the original TAM model where the developer of the model Davis (1989) has noted that "perceived usefulness is a strong correlate of user acceptance and should not be ignored by those attempting to design or implement successful systems". Davis has also justified the relevance of perceived usefulness as an antecedent of intention to use technologies in that it makes sense for the users to adopt a technology based on its ability to perform for them.

4.3 Factor analysis

The factor analysis conducted in this research revealed six different factors that can be identified as motives for Finnish newspaper readers for starting to use e-reading technology. These motives, however, are based on the features of the e-reading devices in themselves to benefit readers, thus the personal characteristics of readers such as innovativeness have been left out. This is because in order for the factor analysis to produce significant results all the investigated variables have to measure the same phenomenon. The findings from the factor analysis can be seen from the Table 17 below.

Factor	Variables	Factor loading	h^2	Cronbach's alpha
1	Using an e-reading device would fit the way I want to read newspapers.	0,861	0,858	0,921
	Using an e-reading device would be compatible with all aspects of my style of reading newspapers.	0,85	0,841	
	An e-reading device would increase my effectiveness in reading newspapers.	0,8	0,73	
	Using an e-reading device would fit well the way I like to access information.	0,731	0,781	
2	I believe that using an e-reading device would be an eco-conscious choice.	0,95	0,944	0.979
	I believe that using an e-reading device is a good thing for the environment.	0,948	0,935	
	I believe that using an e-reading device would help to preserve natural resources.	0,941	0,919	
	By using an e-reading device, I believe I could help the environment.	0,938	0,913	
3	Using an e-reading device would improve the way I am perceived	0,91	0,84	0,925
	The use of an e-reading device would give its owner social approval	0,9	0,827	
	Using an e-reading device would make a good impression on other people	0,871	0,803	
	Using an e-reading device would help me feel acceptable	0,877	0,785	

4	I would have fun using an e-reading device	0,828	0,844	0,911
	Using an e-reading device would be interesting	0,81	0,799	
	The use of an e-reading device would give me pleasure	0,687	0,768	
	I would feel relaxed about using an e-reading device.	0,663	0,695	
5	I believe it is easy to get an e-reading device to do what I want it to do	0,895	0,857	0,923
	I believe an e-reading device is easy to use	0,891	0,842	
	I believe my interaction with an e-reading device would be clear and understandable	0,886	0,848	
	I believe that using an e-reading device does not require a lot of my mental effort	0,817	0,704	
6	Get more information on certain factors in a news article by clicking the words?	0,805	0,729	0,749
	Possibility to watch news videos?	0,734	0,608	
	Possibility to see more picture material of certain news?	0,826	0,774	
	Possibility to save interesting articles into an article bank on an e-reading device?	0,706	0,577	

Table 19 Factors representing the device-based antecedents of the Finnish newspaper readers' for starting to use e-reading technology

When looking at the different factors it can be noticed that most of them form the same constructs as presented in the research framework. The variables forming the factor 1 clearly refer to the usefulness of the device. Variables in the factor 3 on the other hand present clearly the aspects of social value of e-reading devices. Factor 4 shows the entertaining side and thus refers to the perceived enjoyment whereas factor 5 is constructed based on perceived ease of use. The final factor 6 shows the importance of services. In addition to these there is one factor, factor 2, where all the variables implying the ecological side of e-reading devices load very highly.

As the factor loadings reveal the correlation between the variables and the factors it can be seen in the first factor that "Using an e-reading device would fit the way I want to read newspapers" explains most of the perceived usefulness. When looking at the second factor, the one where the ecological features of e-reading devices were emphasized it can be seen that the variable that

correlates most with the factor is "I believe that using an e-reading device would be an eco-conscious choice". The variable "Using an e-reading device would improve the way I am perceived" can be seen to explain most of the social value in the Table 17 above. The variable of "I would have fun using an e-reading device" is the most commanding feature when looking at of what perceived enjoyment is constructed. Perceived ease of use can be explained to the greatest extent by the following variable "I believe it is easy to get an e-reading device to do what I want it to do". When looking at which service explains most of the total service factor it can be seen that the following variable "Possibility to see more picture material of certain news" correlates most with the factor. Table 18 below summarizes the findings from the factor analysis.

Factor	**Variable that correlates most with the factor**
Perceived Usefulness	Using an e-reading device would fit the way I want to read newspapers.
Eco-consciousness	I believe that using an e-reading device would be an eco-conscious choice.
Social value	Using an e-reading device would improve the way I am perceived
Perceived Enjoyment	I would have fun using an e-reading device
Perceived Ease of Use	I believe it is easy to get an e-reading device to do what I want it to do
Diverse services	Possibility to see more picture material of certain news

Table 20 Summary of the findings from the factor analysis

4.4 Cluster Analysis

After having conducted the factor analysis the same variables were used for a cluster analysis to get a deeper insight to the factors and their features. Four different clusters with distinct characteristics resulted from the cluster analysis. The idea of conducting a cluster analysis based on the factors acquired from the factor analysis is to go deeper into the factors and find out distinct patterns within the factors and identify new user profiles. The final cluster centers on which the cluster analysis should be based can be seen below in the Table 16.

Final Cluster Centers

Factor	Cluster			
	1 (n=432)	2 (n=177)	3 (n=239)	4 (n=236)
Perceived Usefulness	,06169	,07069	-,21714	,05396
Eco-consciousness	-,48184	,09906	-,50735	1,32152
Social value	-,33999	1,86905	-,32037	-,45500
Perceived Enjoyment	-,17119	,13601	-,19230	,40611
Perceived Ease of Use	-,11532	-,00081	,01484	,19668
Diverse services	,69972	,04769	-1,31556	,01568

Table 21 Final Cluster Centers

Cluster centers work as the basis for the cluster analysis (Malhotra and Birks 2007, p. 673). In each cluster there was a meaningful amount of observations thus making the results significant. It can be seen that 4 distinct clusters were formed based on the readers' considered benefits of e-reading devices. The benefits were identified in the factor analysis conducted earlier. When looking at the first cluster it can be seen that all the other values are quite low except the one of diverse services (0,69972). Also perceived usefulness (0,06169) gets a positive value in this cluster. In the cluster 2 the highest value belongs to social value (1,86905). Also perceived enjoyment has an average value in this cluster. In the third cluster all the other constructs get negative values except the one of perceived ease of use. In this cluster the diverse services have the lowest value, which tells that respondents belonging to this cluster have rated the services very low. In the final cluster 4 the construct of eco-consciousness gets the highest value (1,32152) and also perceived enjoyment gets an above-average value of 0,40611. When conducting a cross tabulation analysis (Table 19) looking at the different clusters in terms of their age structure and prior usage of e-reading devices further information can be obtained. In order to confirm the validity of the cross-tabulation a chi-square test was conducted. The chi-square is used to test the statistical significance of the observed association in a cross-tabulation (Malhotra and Birks 2007, p. 521). Based on the results of the chi-square test it could be confirmed that there is a systematic association between the two variables in the cross-tabulation making it thus valid. Drawing on this information, the following classification of the clusters was created as presented in the Table 20 below.

Cluster name	Characteristics	Age structure	Prior Usage
1. Useful services' seekers **40% of the respondents**	Appreciate diverse services that improve their performance.	Majority of the respondents are between 44-72 years. The proportion of people below 44 years old was quite large in this cluster (31, 5%)	Majority of the respondents have never used an e-reading device. 13, 2%, however, have tried them.
2. Social value seekers **16% of the respondents**	Social value seekers appreciate the way they're perceived due to e-reading use and also value enjoyment of using e-reading devices.	Majority of the respondents between are 44-72 years.	Majority of the respondents have never used an e-reading device. 15, 3%, however, have tried them.
3. Easy-to-use technology seekers **22% of the respondents**	For the easy-to-use technology users nothing but the ease of use of e-reading devices is important.	Majority of the respondents are between 44-72 years. However, the proportion of people below 44 is smallest in this cluster (18,8%).	Majority of the respondents have never used an e-reading device
4. Ecology seekers **22% of the respondents**	For the ecology seekers the ecology of e-reading usage is important. They also value enjoyment of using e-reading devices.	Majority of the respondents are between are 44-72 years. However, the proportion of people below 44 is greatest in this cluster (34, 3%).	Majority of the respondents have never used an e-reading device. However, the proportion of people having used e-reading device was largest in this cluster (8,05%).

Table 22 Summary of the findings from the cluster analysis

			Prior use (Kindle, iPad etc.)			
			I have used an e-reading device / I use an e-reading device regularly	I have had an opportunity to try an e-reader device	I have never used an e-reading device	Total
Cluster Number of Case	1	Count	5	57	370	432
		% within Prior use (Kindle, iPad etc.)	14,3%	39,3%	40,9%	39,9%
	2	Count	6	27	144	177
		% within Prior use (Kindle, iPad etc.)	17,1%	18,6%	15,9%	16,3%
	3	Count	5	24	210	239
		% within Prior use (Kindle, iPad etc.)	14,3%	16,6%	23,2%	22,0%
	4	Count	19	37	180	236
		% within Prior use (Kindle, iPad etc.)	54,3%	25,5%	19,9%	21,8%
Total		Count	35	145	904	1084
		% within Prior use (Kindle, iPad etc.)	100,0%	100,0%	100,0%	100,0%

Table 23 Prior usage of e-reading devices in each cluster

Cluster Number of Case * Rough Age Estimate Crosstabulation

			Rough Age Estimate			
			18–43v	44-72v	73–100v	Total
Cluster Number of Case	1	Count	136	275	21	432
		% within Rough Age Estimate	43,3%	38,2%	41,2%	39,9%
	2	Count	52	113	12	177
		% within Rough Age Estimate	16,6%	15,7%	23,5%	16,3%
	3	Count	45	179	15	239
		% within Rough Age Estimate	14,3%	24,9%	29,4%	22,0%
	4	Count	81	152	3	236
		% within Rough Age Estimate	25,8%	21,1%	5,9%	21,8%
Total		Count	314	719	51	1084
		% within Rough Age Estimate	100,0%	100,0%	100,0%	100,0%

Table 24 Age structure in each cluster

4.5 Summary of the findings

The research data was analyzed in order to find out the benefits, on which the Finnish newspaper readers base their intention to start using e-reading technology. In the first part of the analysis the correlations between different variables were measured and the strongest and lowest relations were determined. The variables that correlate strongest with the intention to start using e-reading technology were perceived enjoyment and perceived usefulness. All suggested hypothesis could be supported and the relations presented in the theoretical framework confirmed.

The correlation analysis was followed by a factor analysis showing the variables that best represent the device-based motives for the Finnish newspaper readers for intending to start using e-reading technology. Different user segments were also determined based on readers' preferences regarding e-reading devices and their services. The user segments were studied further by conducting a cluster analysis where also the age structure and prior usage of e-reading devices were taken into account. The cluster analysis resulted in four different clusters that were named as Useful services' seekers,

Social value seekers, Easy-to-use technology seekers and Ecology seekers based on each cluster's characteristics and appreciations. The largest cluster was the one of Useful services' seekers to which 40% of the respondents belong.

The analysis regarding the considered importance of different services on an e-reading device resulted in four services that clearly stood out as being rated very highly. They were the following services: news videos, possibility to get more information on certain factors in a news article by clicking the words, more picture material for certain news and possibility to save interesting articles in an article bank on an e-reading device. In all of these services the total percentage of answers 4 (important) and 5 (very important) was over 55%.

As a conclusion it can be noted that the results support the hypothesis presented and the theoretical framework to a great extent as presented in the Figure 3 below. A totally new structure that emerged from the data was the newspaper readers' appreciation of e-reading devices based on their ecological benefits. Having the highest correlation with intention to use e-reading technology perceived enjoyment was also strongly present in the preferences of different profiles.

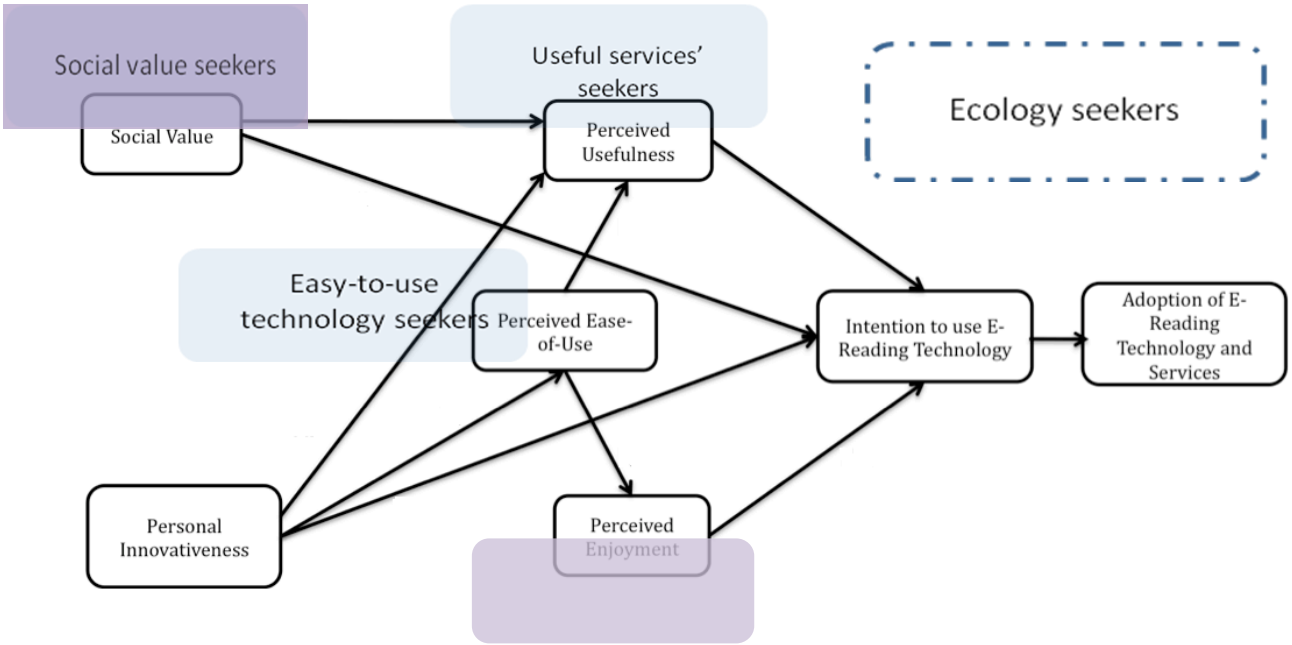

Figure 3: Antecedents for the Finnish newspaper readers to start using e-reading technology

5 Discussion and Conclusion

The first part of this research concentrated on e-reading devices as a phenomenon and discussed the different technology adoption models that have been used in the field of marketing. It was noted that no matter how great a new technology is it is of no value as long as people don't adopt and start using it. That is why the technology adoption was chosen as the theoretical approach. Of all the different models a model by Davis (1989) was chosen. The model is called Technology Acceptance Model TAM and its usage was justified by its suitability for the special characteristics of this research as well as by its better explanatory power in regard to the other, similar theoretical models. The original TAM model was modified to fit better in the context of this study and three new variables were added into the model namely personal innovativeness, social value and perceived enjoyment. Hypotheses were presented in order to test the correlations between different variables and determine which variables have the strongest correlation with intention to start using e-reading technology.

The second part of the research constitutes the methodological and empirical part. As the research method in the empirical part it was chosen to use a quantitative method due to the great amount of needed answers. Of the quantitative method a survey was chosen as the best way to obtain data. A survey questionnaire was sent to 4899 Hufvudstadsbladet's subscribers resulting in 1084 responds and a response rate of 22,1%. Based on the survey all the presented hypotheses could be accepted.

The highest correlations were found between perceived enjoyment and intention to use e-reading technology as well as with perceived usefulness and intention to use e-reading technology. Based on the factor analysis 6 different dimensions were found that motivate people to start using e-reading technology; perceived usefulness, eco-consciousness, social value, perceived enjoyment, perceived ease-of-use and diverse services. When analyzing the factors further with a cluster analysis four specific profiles could be formed; useful services' seekers, social value seekers, easy-to-use technology seekers and ecology seekers. All these profiles have their own characteristics in terms of appreciations, age structure and prior usage of e-reading devices. All the other profiles are in line with the research framework but the one of ecology seekers. Even though the correlation between social value and intention to use e-reading technology wasn't that strong in the first analysis it could still be seen as a significant issue for readers when thinking of e-reading devices.

When looking at the services the most important services were found to be the ones of watching news videos, seeing more picture material, getting more information by clicking key words of an article and finally saving interesting articles into an article bank. The answers for the research questions presented in the beginning can be found below.

How do the Finnish newspaper readers accept e-reading technology?

Based on the conducted survey and its findings it can be said that there are six different areas, on which readers base their acceptance on e-reading technology. These areas are perceived usefulness, eco-consciousness, social value, perceived enjoyment, perceived ease-of-use and diverse services. For perceived usefulness the strongest argument is that using an e-reading device would fit the way people want to read newspapers. For eco-consciousness the strongest argument is that people believe that using an e-reading device would be an eco-conscious choice. When looking at social value it was found that using an e-reading device would improve the way people are perceived. Perceived enjoyment on the other hand has to do with that people would think they have fun when using an e-reading device. The strongest argument for perceived ease-of-use is that people believe it is easy to get an e-reading device to do what they want it to do. Finally the strongest argument for appreciating diverse services on an e-reading device is the possibility to see more picture material of certain news.

Which benefits of e-reading devices have the strongest connection with starting to use e-reading technology?

When looking at the research framework there were altogether five different determinants suggested to influence on the intention to use e-reading technology. According to the Technology Acceptance Model TAM again the intention to start using a certain technology precedes the actual adoption. The determinants presented in the framework are perceived usefulness, perceived ease-of-use and the added structures of personal innovativeness, perceived enjoyment and social value. Of these the highest correlation with intention to start using e-technology belongs to perceived enjoyment, which is in line with several other studies that indicate the important role of perceived enjoyment for people to start using certain technologies (e.g. Heijden 2000; Igbaria et al. 1995). As also in line with the original Technology Acceptance Model TAM, the second highest correlation with intention to start using e-reading technology belongs to perceived usefulness.

What kinds of services are perceived to be the most critical ones in a reading device?

The services listed in the questionnaire were based on the results from the focus group interviews held in spring 2010 (Appendix 1). In addition some of the questions were created based on Hufvudstadsbladet's interest in knowing how their readers regard certain services. Altogether there were listed 15 different services in the questionnaire and four of them clearly stood out in that they were rated higher than average. The total amount of answers 4 (important) and 5 (very important) was more than 55% in the following services; possibility to watch news videos, see more picture material, get more information by clicking key words of an article and finally save interesting articles into an article bank. These services were clearly valued by the Finnish newspaper readers and should be taken into account when planning the content for e-reading devices. What is notable is that all the highest rated services can be seen to improve readers' performance and reading experience whereas the lowest rated services could be categorized as entertainment applications. Therefore it can be stated that newspaper readers prefer the actual reading features to entertainment features on an e-reading device.

Will the information on the users' preferences regarding the e-reading devices and their services create different user segments?

The final question regards the different segments resulting from readers' preferences on e-reading devices and their services. Based on the conducted factor analysis there were revealed six different user segments. When further examining these segments four different profiles were found. These profiles are useful services' seekers, social value seekers, easy-to-use technology seekers and ecology seekers. The people belonging to the first profile appreciate diverse service and their improved performance due to e-reading devices. 13,2% of the people of this profile have used an e-reading device. The age structure in the first profile is quite young since over 30% of the respondents are under 44 years old. The first profile is the largest and altogether 40% of the respondents belong to it. The second profile, social value seekers, appreciates the way they're perceived due to their e-reading usage. They also value enjoyment resulting from e-reading device usage. This profile accounts only for 16% of the respondents and is thus the smallest profile. The third profile is formed by the easy-to-use technology seekers. For them nothing else really matters as long as the device is easy to use. The proportion of people under 44 years old is smallest in this profile. The next profile is called ecology seekers. They appreciate the ecological aspects of e-reading usage. The proportion of people under 44 years old is largest in this profile. It can be stated that the ecological aspects of e-reading usage thus appeal especially to the user segments below 44 years.

As a conclusion it can be stated that there are different user segments and profiles based on readers' preferences regarding e-reading devices and their services. What is to be considered, however, is that from the formed profiles the one of social value seekers didn't in the first analysis correlate that strongly with the intention to use e-reading technology and it was also the smallest profile in terms of volume. Thus it may be useful to focus on the benefits of social value to some extent and for instance use them in advertising enhancing the general image of e-reading devices still bearing in mind that the social value may not correlate that strongly with intention to start using the e-reading technology.

5.1 Theoretical Implications

The main research question in this study is "How do the Finnish newspaper readers accept e-reading technology". To answer this question it was chosen to look at the matter from the perspective of the theories of technology adoption and find out the adoption patterns according to which the Finnish newspaper readers intend to start using a certain technology.

The theoretical framework (Figure2) is based on the original Technology Acceptance Model (Figure1) by Davis (1989). In the original Technology Acceptance Model TAM the two biggest precedents for intention to start using a certain technology were perceived ease of use and perceived usefulness. The relations between intention to start using technology (here, e-reading technology) and perceived usefulness and ease of use can also be confirmed in this study. Of these two determinants the one of perceived usefulness correlated significantly higher with usage intention (0,747) than the one of perceived ease of use (0,367). However, both of the results are highly significant and thus the null hypotheses could be rejected in both cases and the positive relations confirmed. These two determinants were also strongly visible when conducting the factor analysis and finally a cluster analysis. Perceived usefulness and ease of use could be seen to present strong reasons for the Finnish newspaper readers for starting to use e-reading technology.

However, there were also determinants derived from other theories in the theoretical framework of this study. The determinant of personal innovativeness (Agarwal and Prasad 1998) was added in the theoretical framework in order to demonstrate the effect of people's own readiness in being technology wise a forerunner for the usage intention. Based on the correlation analysis it can be stated that personal innovativeness has a positive relation with intention to start using technology and thus it is justified to have it in the theoretical framework. The second determinant derived from

outside the original TAM model is perceived enjoyment that has been used e.g. in the studies of Heijden (2000) and Igbaria et al. (1995). It could be seen from the correlation analysis that perceived enjoyment has the strongest correlation with starting to use e-reading technology (0,807) and it is also clearly important for the Finnish newspaper readers when looking at the results from the factor and cluster analyses. The final determinant added into the theoretical framework in addition to the original determinants is social value that has among others been used in the studies of Skog (2002). The results from the factor and cluster analyses show that social value is important for the Finnish newspaper readers. However, it still scored relatively low in the correlation analysis with the usage intention (0,226).

Based on these results it can be confirmed that all the variables in the theoretical framework can be accepted and seen to have an effect -some stronger than the others - in the adoption behavior of the Finnish newspaper readers. It can also be concluded that the variables of personal innovativeness, perceived enjoyment and social value are suitable determinants when using the technology acceptance model TAM.

5.2 Results for managers

The theoretical framework (Figure 2) presents the antecedents for Finnish newspaper readers' intention to use e-reading technology. These antecedents are personal innovativeness, perceived usefulness, perceived ease of use, perceived enjoyment and social value. Personal innovativeness stands for people's own willingness to be on top of the new things in the field of new technologies. The more interested a person is in new technologies the more likely he/she starts to use e-reading technology. Perceived usefulness tells that people are more likely to start using e-reading technology if they find it useful for them, in other words, if e-reading technology can somehow improve their reading experience. Perceived ease of use shows us that the easier a technology is, the more likely people start to use it. Thus e-reading devices and newspapers in them should be made as easy as possible to handle by all the people – not only the most advanced ones in terms of their technological skills. Finally it can be stated that the perceived enjoyment plays an important role for people to start using e-reading technology; it has to be fun to use an e-reading device. This can be taken into consideration when planning different services and visual elements on an e-reading device. The final antecedent for starting to use e-reading technology, though not as strong as the

previous antecedents, is the social value. It is important for people how they are perceived by other people and e-reading can be seen to contribute to that in a positive way at least to some extent.

These antecedents can work as preliminary guidelines for newspaper providers when they start to switch their newspaper distribution channel from a printed version into an e-reading device. The services presented in the chapter 4.1 show some important areas on which newspaper providers can improve their activities. These services represent the appreciations of Finnish newspaper readers and they should be taken into consideration when planning the services available for readers using e-reading devices. The survey also revealed that the Finnish newspaper readers tend to value higher the services with actual benefits and abilities to improve users' reading performance than the ones having purely an entertainment value. This information is clearly crucial for the newspaper providers as they start to plan the division between benefits and entertainment to be provided in e-reading devices.

The profiles created based on the data gathered from the survey and from the factor analysis can be considered as well when thinking of different user segments. These profiles can give preliminary information as for what kind of segments there might be within the Finnish newspaper readers and what kind of things are important to each segment. However, these profiles should be managed with caution and careful consideration.

As a conclusion it can be noted that all the determinants in the theoretical framework should be considered when creating content for an e-reading device. The created profiles can give tentative guidelines for a segmentation process. Due to the quantitative study approach used in this research the explanatory power of the results in regard to actual behavior of Finnish newspaper readers may be quite limited. Because the answers are based on images and assumptions they may also differ quite a lot from the real user behavior.

5.3 Limitations of the study and future research suggestions

Because the results of this study are based on newspaper readers' images on e-reading devices, a future research using the same sample but actual user experience would be highly interesting and significant. This way it would be possible to investigate the relation between presumptions and actual experience – how they differ from each other. It would naturally be challenging to get the

same amount of answers in a user experience test involving the actual usage phase of the devices but this would surely bring very interesting results.

In order to go deeper into the motives of Finnish newspaper readers it would also be interesting to conduct a qualitative study and interview different newspaper readers about their preferences regarding the e-reading devices. In a qualitative study it could be possible to choose the people to be interviewed based on the created user profiles in this study. This way it would also be possible to go deeper into the different profiles.

The results of this study apply only for the Finnish markets and as noted in the chapter 1, Finland can be seen to be behind in the development in terms of e-reading devices (Schcolnik 2001). Thus it might be interesting to study the phenomenon also outside Finland and possibly compare the results to see where Finland actually stands in the development of e-reading devices.

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Appendix 1: Results from the focus group interviews conducted in spring 2010

Panel discussion:

”Advertisements in e-readers would be better in colours”. ”E-reader should be able to be updated in the same way as the public transportation travel cards”. ”It would be fun to play games with an e-reader, such as Who Wants to Be a Millionaire, Sudoku or chess”. ”Touch screen would be the best”. ”Readers would be willing to pay for personalized and targeted advertising, which clearly is more valuable than general marketing”. ”Getting the newspaper on an e-reader abroad should be cheaper than buying a print version”. ”It should be possible not to watch ads if a reader wants so”.

Ville:

”It has to be possible to buy, transfer and update material easily. E-readers have to be able to technically manage all the material they offer. ”Updating stations” for e-readers could be located at train/bus stations and at airports and everywhere where queuing times are long and where the selection of newspapers is poor. When readers go shopping e-reader could show the relevant offerings from the store the user is at the moment. According to user’s profile he/she could get customized material to his/her e-reader. It should be possible to synchronize e-reader with a mobile phone”.

Petter:

"I want the eReader to provide the option of changing the font and zooming in and out. The eReader should have a touch screen. The device should give the option to highlight text, to improve recalling important parts and that can most easily be done with a touch screen. The device should have accessibility options for the disabled, e.g. the ability to read aloud. Preferably the page should be refreshed faster than in half a second, because I do not like waiting or blinking screens, as the eReader is supposed to replace paper reading by being as good or better. In particular I would like to read newspapers, schoolbooks and general literature. I would like the device to enable me to read text, download books from my online bookshelf, download and upload files to a computer and to order newspapers and books online. I got to know that the devices cost about 400€, which is much more than what I would be willing to pay for an ideal device. So in practice I will probably have to wait at least 3 years before the devices become truly ideal for me in every sense”

Riku:

"I would be willing to pay even more for a device that would enable me to make notes to the texts. Depending on the size, I would also take the device with me to a grocery store to see the latest offerings from the device"

Tapio:

"I appreciate the quality of produced content and would be willing to pay approximately half the price of a print version; it wouldn't have to be completely free. As compensation for the price I would be ready to watch ads too. For subscribers the price would naturally be even lower".

Antti:

"As technology now enables it, a really nice feature would be the possibility to search the book (for a phrase) or your library (for a phrase or a book). If books could be embedded with metadata, the search function could be made even more useful. Things (other than specific reading) that an eReader could be used are Simple game console, Simple web browser, Simple B&W camera, mp3-player and Notepad".

Joona:

"The absolute minimum requirements for e-readers on a short-term are touch screen, quick page turn and handling of heavy PDF –files. For my purposes the battery of an e-reader should last for 15-30 hours".

Appendix 2: Printouts from PASW (former SPSS)

Correlations

		PU_sum	Intention_sum	PEOU_Sum	PE_sum	SocialValue_Sum	PI_Sum
PU_sum	Pearson Correlation	1	,747**	,405**	,730**	,257**	,456**
	Sig. (2-tailed)		,000	,000	,000	,000	,000
	N	1084	1084	1084	1084	1084	1084
Intention_sum	Pearson Correlation	,747**	1	,367**	,807**	,226**	,465**
	Sig. (2-tailed)	,000		,000	,000	,000	,000
	N	1084	1084	1084	1084	1084	1084
PEOU_Sum	Pearson Correlation	,405**	,367**	1	,363**	-,019	,420**
	Sig. (2-tailed)	,000	,000		,000	,522	,000
	N	1084	1084	1084	1084	1084	1084
PE_sum	Pearson Correlation	,730**	,807**	,363**	1	,359**	,438**
	Sig. (2-tailed)	,000	,000	,000		,000	,000
	N	1084	1084	1084	1084	1084	1084
SocialValue_Sum	Pearson Correlation	,257**	,226**	-,019	,359**	1	,129**
	Sig. (2-tailed)	,000	,000	,522	,000		,000
	N	1084	1084	1084	1084	1084	1084
PI_Sum	Pearson Correlation	,456**	,465**	,420**	,438**	,129**	1
	Sig. (2-tailed)	,000	,000	,000	,000	,000	
	N	1084	1084	1084	1084	1084	1084

**. Correlation is significant at the 0.01 level (2-tailed).

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
I believe that using an e-reading device would be an eco-conscious choice.	,950					
I believe that using an e-reading device is a good thing for the environment.	,948					
I believe that using an e-reading device would help to preserve natural resources.	,941					
By using an e-reading device, I believe I could help the environment.	,938					
I believe that using an e-reading device would help to save nature by using less paper.	,876					
Using an e-reading device would fit the way I want to read newspapers.		,861				
Using an e-reading device would be compatible with all aspects of my style of reading newspapers.		,850				
An e-reading device would increase my effectiveness in reading newspapers.		,800				
Using an e-reading device would fit well the way I like to access information.		,731		,357		
I would find an e-reading device useful in reading newspapers.		,699		,354		
An e-reading device would help me to access information more quickly.		,573				
Using an e-reading device would improve the way I am perceived			,910			
The use of an e-reading device would give its owner social approval			,900			
Using an e-reading device would help me feel acceptable			,877			
Using an e-reading device would make a good impression on other people			,871			
Using an e-reading device would make me feel good			,655	,365		
I would have fun using an e-reading device				,828		
Using an e-reading device would be interesting				,810		
The use of an e-reading device would give me pleasure		,440		,687		
I would feel relaxed about using an e-reading device.		,401		,663		
Using an e-reading device would come in handy in spending time when waiting etc.		,350		,493		
Using an e-reading device would come in handy accessing information when I am on the go.				,490		
I believe it is easy to get an e-reading device to do what I want it to do					,895	
I believe an e-reading device is easy to use					,891	
I believe my interaction with an e-reading device would be clear and understandable					,886	
I believe that using an e-reading device does not require a lot of my mental effort					,817	
Possibility to see more picture material of certain news?						,826
Get more information on certain factors in a news article by clicking the words?						,805
Possibility to watch news videos?						,734
Possibility to save interesting articles into an article bank on an e-reading device?						,706

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Final Cluster Centers

	Cluster			
	1	2	3	4
REGR factor score 1 for analysis 1	,06169	,07069	-,21714	,05396
REGR factor score 2 for analysis 1	-,48184	,09906	-,50735	1,32152
REGR factor score 3 for analysis 1	-,33999	1,86905	-,32037	-,45500
REGR factor score 4 for analysis 1	-,17119	,13601	-,19230	,40611
REGR factor score 5 for analysis 1	-,11532	-,00081	,01484	,19668
REGR factor score 6 for analysis 1	,69972	,04769	-1,31556	,01568

Number of Cases in each Cluster

Cluster	1	432,000
	2	177,000
	3	239,000
	4	236,000
Valid		1084,000
Missing		,000

Cluster Number of Case * Prior Usage Cross-tabulation

			Prior use (Kindle, iPad etc.)			
			I have used an e-reading device I use an e-reading device regularly	I have had an opportunity to try an e-reader device	I have never used an e-reading device	Total
Cluster Number of Case	1	Count	5	57	370	432
		% within Prior use (Kindle, iPad etc.)	14,3%	39,3%	40,9%	39,9%
	2	Count	6	27	144	177
		% within Prior use (Kindle, iPad etc.)	17,1%	18,6%	15,9%	16,3%
	3	Count	5	24	210	239
		% within Prior use (Kindle, iPad etc.)	14,3%	16,6%	23,2%	22,0%
	4	Count	19	37	180	236
		% within Prior use (Kindle, iPad etc.)	54,3%	25,5%	19,9%	21,8%
Total		Count	35	145	904	1084
		% within Prior use (Kindle, iPad etc.)	100,0%	100,0%	100,0%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29,466[a]	6	,000
Likelihood Ratio	26,614	6	,000
Linear-by-Linear Association	11,010	1	,001
N of Valid Cases	1084		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 5,71.

Cluster Number of Case * Rough Age Estimate Cross-tabulation

			Rough Age Estimate			Total
			1,00	2,00	3,00	
Cluster Number of Case	1	Count	21	275	136	432
		% within Rough Age Estimate	41,2%	38,2%	43,3%	39,9%
	2	Count	12	113	52	177
		% within Rough Age Estimate	23,5%	15,7%	16,6%	16,3%
	3	Count	15	179	45	239
		% within Rough Age Estimate	29,4%	24,9%	14,3%	22,0%
	4	Count	3	152	81	236
		% within Rough Age Estimate	5,9%	21,1%	25,8%	21,8%
Total		Count	51	719	314	1084
		% within Rough Age Estimate	100,0%	100,0%	100,0%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23,987[a]	6	,001
Likelihood Ratio	27,066	6	,000
Linear-by-Linear Association	,026	1	,873
N of Valid Cases	1084		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 8,33.