

## THESIS ABSTRACT

Master of Business Administration  
Emphasis on Management Information Systems

Adventist University of Africa

School of Postgraduate Studies

**TITLE: THE IMPACT OF ELECTRONIC FORMAT ON PURCHASE AND USE OF ELLEN G. WHITE PRINT RESOURCES AMONG SEVENTH-DAY ADVENTIST CHURCHES IN NAIROBI COUNTY, KENYA**

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Knowledge is important in current society, and that is why this is called the information age. There is so much information in different forms. Information materials are now available in print and in electronic formats. The Ellen G. White (EGW) writings are also available in both print and electronic formats. It has not, however, been empirically established whether the electronic format is affecting the print format in any way. The aim of this study was to find out whether the electronic format of EGW writings has had an impact on the purchase and use of print materials.

The study was a cross-sectional causal design, conducted in a non-contrived setting. Seventh-day Adventist Church members, 196 in total, selected from five randomly English churches located in Nairobi CBD participated in the research. From this number, 184 were used for this research. Eighty percent of those who participated in the study were aged 40 and below. Fifty-one percent of all respondents were male,

while 49% were female. More than 70% of the respondents had a Bachelor's Degree and above. In terms of the level of income, the highest category, 43.8%, was that of people who earn more than Ksh 50,000, on the other hand, the second-highest category, 23.1%, was of those who earn less than Ksh 10,000.

The data collection instrument for the study was a survey questionnaire that underwent several tests to ensure its reliability and validity. The data collected was then analyzed using descriptive statistics and regression analysis to generate results for the study.

The findings revealed that readers in Nairobi County prefer to read EGW writings in both print and electronic formats. It was also found that individual characteristics of age and level of income have an impact on the purchase and use of EGW print materials, while the level of education and gender have no impact. Four other factors were tested: accessibility, readability, belief in authenticity and cost. Of these factors, three of them: accessibility, readability and belief in authenticity showed an impact, while cost came out as having no impact on the purchase and use of EGW print resources.

Based on the findings, this research concluded that we cannot confidently say that the electronic format of EGW materials has come to phase out the print format. It is true there is an impact, but it is not big enough to replace the print books entirely. The same study can be done in different settings to compare the results and produce a wider perspective on this matter.

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THE IMPACT OF ELECTRONIC FORMAT ON PURCHASE  
AND USE OF ELLEN G. WHITE PRINT RESOURCES  
AMONG SEVENTH-DAY ADVENTIST CHURCHES  
IN NAIROBI COUNTY, KENYA

A thesis

presented in partial fulfillment  
of the requirements for the degree  
Master of Business Administration

by

RoseMercy Chebichiy

May 2020



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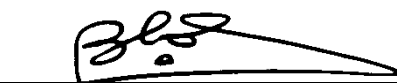
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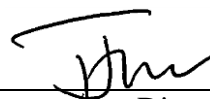
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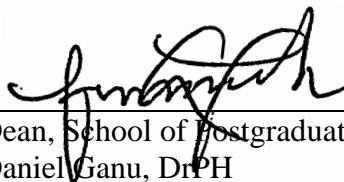
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To my beloved parents Tom and Jane Birgen; and to Eriks and Anna Galenieks

## TABLE OF CONTENTS

LIST OF TABLES .....	vii
LIST OF ABBREVIATIONS .....	viii
ACKNOWLEDGMENTS .....	ix
CHAPTER	
1. INTRODUCTION .....	1
Background to the Study .....	1
Statement of the Problem .....	4
Research Questions .....	4
Hypotheses .....	5
Conceptual Framework .....	5
Significance of the Study .....	7
Scope and Limitations of the Study .....	8
Operational Definition of Terms .....	9
2. LITERATURE REVIEW .....	10
Electronic Publishing .....	10
Implications of Electronic Publishing .....	11
E-Books, Libraries and the Publishing Industry .....	12
E-books and E-Learning in Africa .....	13
The Future of the Print Book .....	14
The Print Book versus the Electronic Book .....	15
Level of Comprehension .....	18
Accessibility .....	20
Cost .....	20
Summary .....	21
Theoretical Framework .....	23
3. RESEARCH METHODOLOGY .....	25
Research Design .....	25
Population and Sampling Procedure .....	25
Instrument for Data Collection .....	27
Instrument Validity and Reliability .....	28
Instrument Validity .....	28
Instrument Reliability .....	29
Data Collection Procedure .....	29

Method of Data Analysis .....	30
Ethical Considerations .....	30
4. RESULTS AND DISCUSSION .....	32
Response Rate .....	32
Demographic Characteristics of Respondents .....	32
Results and Discussions Based on the Research Questions.....	34
RQ1: Preferred Reading Format for Ellen G. White Books among Readers in Nairobi, Kenya.....	34
RQ2: The Extent that the Reading Format of the Readers Impacted their Purchasing and Use of EGW Print Materials .....	36
RQ3: Impact of Individual Characteristics on the Purchasing and Use of EGW Print Materials .....	38
RQ4: Impact of Other Factors on the Purchasing Behavior and Use of EGW Print Materials .....	40
5. SUMMARY, CONCLUSION AND RECOMMENDATIONS.....	46
Summary .....	46
Findings.....	47
Conclusion .....	47
Recommendations.....	48
Suggestions for Future Research .....	49
APPENDICES .....	50
A. QUESTIONNAIRE .....	51
B. CORRESPONDENCE.....	55
REFERENCES .....	58
VITA.....	62



## LIST OF TABLES

1. Reasons for Preferring Print or Electronic Format .....	22
2. Population and Sampling .....	27
3. Likert Scale Interpretation .....	28
4. Reliability Test Results .....	29
5. Response Rate .....	32
6. Age Distribution of Respondents .....	33
7. Gender of Respondents .....	33
8. Level of Education of Respondents .....	33
9. Level on Income .....	34
10. Preferred Reading Format.....	35
11. Money Spent before Access to Electronic Format .....	36
12. Money Spent after Access to Electronic Format .....	36
13. Chi Square Test on the Impact of Electronic format of EGW Resources on Readers' Purchasing Behavior .....	37
14. Regression Model Summary .....	38
15. ANOVA of the Regression .....	39
16. Regression Table.....	39
17. Model Fitting Information .....	41
18. Goodness-of-Fit .....	41
19. Regression Table.....	42
20. Summary of other Factors that Influence the Choice of Reading Format .....	43

## LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
AUA	Adventist University of Africa
CD	Compact Disc
CD-ROM	Compact Disc Read-Only Memory
EGW	Ellen G. White
EGWEBO	Ellen G. White Estate Branch Office

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## CHAPTER 1

### INTRODUCTION

#### **Background of the Study**

Information materials such as books, magazines, journals, etc. are important information resources necessary to increase knowledge.

The earliest history of books actually predates what would conventionally be called “books” today and begins with tablets, scrolls, and sheets of Papyrus. Then hand-bound, expensive, and elaborate books, called codices, appeared. These gave way to press-printed volumes and eventually led to the mass-printed tomes prevalent today. Contemporary books may even have no physical presence with the advent of the e-book (Wikipedia, 2017).

This has become common now in the world over.

With the current technological advancements, these materials have become available in hard and soft copies all around the world. Contemporary readers are able to access various resources from their computers, tablets, iPads and other handheld electronic devices. From these devices, users are able to access full-text magazines, books among others through the internet which enables information to travel from one computer to another (Igun, 2005).

Ellen G. White, one of the cofounders of the Seventh-day Adventist Church, was an American author. Seventh-day Adventists believe that she was used by God as His messenger to deliver messages to His church (Ministerial Association of Seventh-day Adventists, 2006). During her lifetime she wrote more than 5,000 periodical articles and 40 books; but today, including compilations from her 50,000 pages of manuscript, more than 100 titles only are available in English. She is the most

translated woman writer in the entire history of literature, and the most translated American author of either gender (White, 1930).

Ellen G. White Resources are available in both electronic and print versions. The Ellen G. White Estate, created in accordance with the last will and testament of Ellen White, is mandated to be the custodian of these materials and is also involved in the promotion of the readership of Ellen G. White and church heritage materials in all formats (Douglass, 2009). This office, in the aim to reach the whole world in its mission, has created branch offices in various parts of the world. One such office is found at the Adventist University of Africa. It is strategically placed there to serve the whole continent of Africa just like the University does.

In the year 1990, the Ellen G. White Estate produced the Ellen White CD-ROM. This was the first electronic product of the E. G. White writings. Before this production, however, in 1983 two laymen had produced a concordance on laser-discs that displayed images of indexed words within a single line entry. But that was produced privately, not by the White Estate. Due to the rapid advancement in technology, the laserdiscs never became established before CDs took their place.

In February 1988 a group of people met at Andrews University, Michigan, USA, to discuss the feasibility of putting the E. G. White books on CD-ROM. The meeting was chaired by the director of the E. G. White Estate Branch Office at Andrews University then. The White Estate found support for the project from the General Conference of Seventh-day Adventists, which advanced the funds to pay for the digitization of the materials (although they never expected to recoup the investment). The CD-ROM was then developed (T. Poirier, personal communication, August 30, 2017).

The first CD-ROM was developed in 1990, two years later, a Macintosh version was released. In 1994, the CD-ROMs were updated to enhance compatibility with upcoming operating systems. As technology advanced, another edition was released in 1998 that used Folio Views. “This software provided more sophisticated search capabilities, easier browsing and additional options for printing and exporting text” (Crews, 2013, p. 697).

It also added the *Comprehensive Index to the Writings of Ellen G. White*. The text was also for the first time available in two versions: the research edition, which contained all EGW published writings, and the standard edition which contained 77 of her most popular books. Apart from the English versions, CDs of translated writings of Ellen White have since been produced in other languages including Spanish in 1997, Korean in 1999, Portuguese in 2000, among others (Crews, 2013). Further updates were done on the English version in 2005, 2007 and 2009 (Crews, 2013). A 2016 edition is the most current of the CD-ROMs and it can be used in either Windows or Macintosh platforms.

The main purpose for the development of the CD-ROM was so as to enable readers to easily search through the writings of Ellen G. White and to retrieve exactly what they needed. So researchers were the main people that were to benefit from this move. However, over time e-books and electronic reading devices came into use, and it expanded the one CD-ROM project to greater usefulness as a means to expand the access to the materials themselves (T. Poirier, personal communication, August 30, 2017).

Currently, the Ellen G. White Estate produces the EGW Writings software for Windows and macOS. Mobile phone Apps are also available for Android, Windows, and iOS. Apart from these, they also manage a free website, [www.egwwritings.org](http://www.egwwritings.org),

which contains all the writings of Ellen G. White in English and other languages. The Estate also manages a digital resource center, [www.drc.whiteestate.org](http://www.drc.whiteestate.org), which contains thousands of questions and answers that have been compiled throughout the years.

The presence of the applications, software, and websites containing EGW Writings have made these materials available online. In spite of having all these, the book versions of the materials are still available and can be purchased. Although the E. G. White Estate is the custodian of the books, meaning they own the copyrights, the publishers of these materials are in business and they have to make money from the sale of these information materials to meet their costs.

### **Statement of the Problem**

Technological advancement has given rise to electronic resources alongside already existing print resources. The Ellen G. White Estate Branch Office (EGWEBO) at the Adventist University of Africa promotes the use of E. G. White resources in both print and electronic formats. Preliminary investigation by the researcher, that involved consultation with the Ellen G. White Estate, revealed that there is inadequate information on how this has impacted the purchasing and use of the print versions considering that the electronic versions are available for free to the customer. This, therefore, created a need for research to find out whether the electronic copies have come to phase out the print ones.

### **Research Questions**

1. What is the preferred reading format for Ellen G. White books among readers in Nairobi, Kenya?
2. To what extent has the reading format of the readers impacted their purchasing and use of EGW print materials?

3. Do the individual characteristics of Age, Gender, Level of Education, and Level of Income have an impact on the purchasing of EGW print materials?
4. To what extent have other factors impacted the purchasing behavior and use of EGW print materials?

### **Hypotheses**

In this study, 3 hypotheses related to the research questions were tested. They are as follows

**H<sub>0</sub> 1.** The reading format of the readers has no impact on their purchase and use of EGW print materials

**H<sub>0</sub> 2.** The demographic characteristics of the readers of EGW in Nairobi have no impact on the purchase and use of EGW print materials.

**H<sub>0</sub> 3.** The following factors have no impact on the purchasing behavior and use of EGW print materials

1. Accessibility
2. Readability
3. Belief in Authenticity
4. Cost

### **Conceptual Framework**

The research seeks to determine the relationship between various variables stated in the objectives. This is shown in the conceptual framework in Figure 1 below.



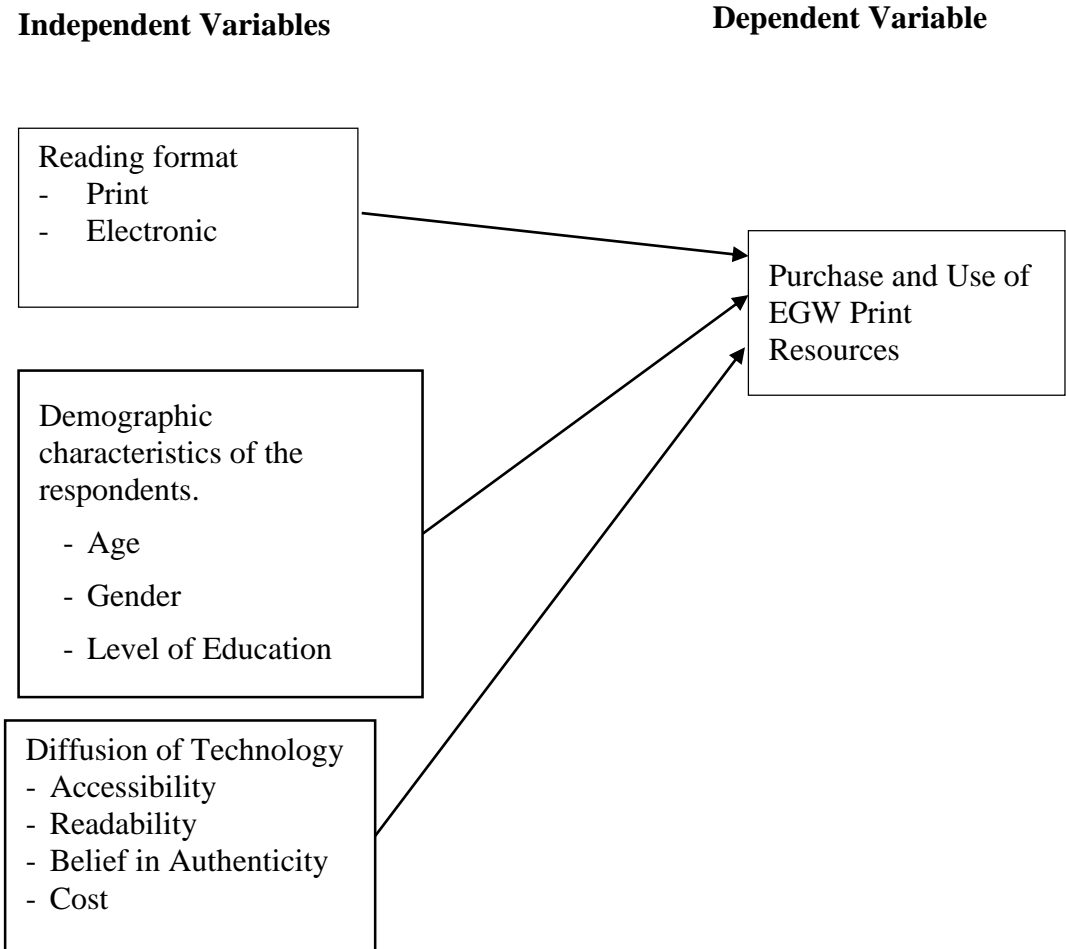


Figure 1. Conceptual Framework

The independent variables here are the reading format, print, or electronic. This will determine whether readers will purchase or use print resources, which is the dependent variable. If the users choose print, then they are more likely to buy a print book than when they prefer electronic. The other independent variable is the demographic characteristics of the readers. These include age, gender, level of education and purchasing power. Some research has shown that demographic characteristics such as age, level of education among others influence whether readers use the print version or not (Zhang & Kudva, 2014).

There is also another category of independent variables, under the category of diffusion of innovation, they are accessibility, readability, belief in authenticity, and

cost. Though this list may not be exhaustive, these are the ones that have been selected for the purposes of this research.

Accessibility of the EGW resources to the reader, either in print format or in electronic format or in both formats will determine whether they will buy the print. If the print is accessible, readers can buy, but if it is not accessible, then they may not buy because it's unavailable.

The level of comprehension or readability is also another factor. The readers' choice on whether to buy the print or not will be influenced by which format the readers believe they can understand better.

Belief in authenticity is also another variable. Some readers may trust one format over the other for example some readers may believe that the electronic version is not as authentic as the print, therefore they will only use the print.

Cost is another independent variable. Depending on whether the readers can afford the print book or not, their choice in buying will be greatly affected. The electronic version is very inexpensive as compared to the print. This is because one only needs to pay for internet connection charges or buy a CD-ROM in order for them to access the electronic format of EGW Writings for free when they already own a reading device.

### **Significance of the Study**

The research will be beneficial to the EGWEBO at AUA and the E. G. White Estate at large in informing them what readers in Kenya prefer so as to make appropriate decisions on what information format to use in reaching them. It will also be beneficial to the SDA publishing department and the publishing house in Kenya in informing them of that which readers prefer so that they will know which method is more appropriate to use in the future. The research will also add to knowledge and

form a basis for further research in this area since no such research has been conducted in the Seventh-day Adventist Church.

### **Scope and Limitations of the Study**

The study was conducted among Seventh-day Adventist Churches in Nairobi, Kenya. Seventh-day Adventist Church members were targeted because they are the ones aware of Ellen G. White resources and are encouraged by the church to read them in line with fundamental belief 18, which states that the Gift of Prophecy “was manifested in the ministry of Ellen G. White” (Ministerial Association of Seventh-day Adventists, 2006, p. 247).

Nairobi was selected because of convenience in reaching the respondents, and also because being the largest city, it has a representation of people from most parts of the country. English speaking churches only were included, they were the best target for this research since English is the language in which all Ellen G. White resources were first written in, and are also available online and offline in this language. The church members in Nairobi are also more likely to have access to both formats, because of proximity to the Adventist Book Center which sells the print books and also the presence of internet connectivity.

The study targeted a population of church members who are not less than 18 years of age. This is because they are the group that is more likely to access both formats and it would be interesting to note the difference in preference among the various age groups. People who do not read Ellen G. White Writings were automatically disqualified from the research.

## **Operational Definition of Terms**

**Accessibility:** The ability to be able to get the EGW Materials within reach, either through the presence of electronic devices and necessary connectivity to access them electronically, or bookstores and sellers to buy print copies from.

**Authenticity:** Conforming to an original written by Ellen White, not altered

**Comprehension:** The ability to read a text, process it, and understand its meaning.

**Electronic devices:** The systems used for storing, retrieving, and sending information, for example, computers, smartphones, tablets and iPads, kindles and other such devices.

**Electronic publishing:** The activity of issuing books and other written materials electronically rather than on paper. In this case, it refers to apps and websites that offer Ellen G. White Writings.

**Ellen G. White Resources:** These refer to any writings authored by Ellen G. White. They include books, pamphlets, periodicals, letters, manuscripts, and any other information materials authored by her.

**E-resources:** E-resources also known as Electronic resources refer to those information materials that can be accessed in electronic format using an electronic device like a computer, smartphone, kindle, iPad, tablet etc.

**Readability:** The ease with which a reader can understand a written text. In this research, this word is used interchangeably with comprehension.

## CHAPTER 2

### LITERATURE REVIEW

#### **Electronic Publishing**

The advent of printing made access to information easy, this has now developed to the computer and electronic systems (Igun, 2005). For this reason, e-books are becoming more common in this current age and their production seems to be increasing. “An e-book comprises a digital body primarily of text with a defined scope. The term “e-book” is used to describe a text analogous to a book that is digitally displayed on the screen of a computer, a personal digital assistant, or a specifically designed reader; it may comprise text, graphics, video, animation, and/or sound” (Jeong, 2012).

E-books have been around since 1971 when Project Gutenberg was started. Project Gutenberg offers 53,000 free e-books for download or for people to read online. They especially offer those whose copyright has expired (Project Gutenberg, 2017). Although e-books have been around for very long, they were not popular until recently when there were developments of reading devices such as the Amazon Kindle, iPhone, iPad, and Nook.

According to Ubogu (2000) publishing is presently between two ages (print and electronic) many publishers are striving to cross the divide by embarking on numerous electronic publication plans. This clearly explains why for most of the books being published now, there is a kindle version or another form of the electronic version available. E-books may not be just a fad after all.

## **Implications of Electronic Publishing**

The entry of electronic publishing to the limelight has not failed to have an impact. Some people believe that it has come to phase out print books while others believe that it has no impact at all on the status of the print book. Gilbert and Fister, (2015) point out that with the invention of the Amazon Kindle, e-books posed a threat to the print books because people were not sure if they will replace the print books since the e-book was cheaper than the print book. This was brought about by the fact that “Sales of e-books in the United States increased at triple-digit rates after Amazon introduced the Kindle e-reader, reaching 20.8 percent of revenues.” Despite these predictions and an increase in the percentage of Americans that own a reading device, research showed that 76% of adults read a book in any format in 2014. The findings of this research show that the print book has not been totally replaced by an electronic version.

Following research done at Louisiana State University, 2800 titles of books with e-book equivalents were identified from the catalog and their usage was monitored every month for a year. The research found that the books in print circulated at a higher rate—29.27 percent compared to 19.60 percent of the same title in an e-book format (Gray and Copeland, 2012). This brings out very interesting results, the print book was more preferred over the electronic book of the same title. The research doesn't suggest probable reasons as to why readers would prefer print books. However, Myrberg and Wiberg (2015), while writing about a study done earlier where different reading media was used and then participants were asked which one they preferred. The results showed that the participants preferred print media. The reason given by the researchers for this was that it had more to do with the people's attitude towards digital media and not the reading experience at all.

In terms of impact on health, Myrberg and Wiberg (2015), compare the advancement of technology and especially in terms of e-books with the early years of the use of the railway. During those early years, because it was a new technology, much was written about the dangers of its use to public health leading to many “railway spine” diagnoses. The same is happening with electronic reading devices now, although no one is diagnosed with ‘railway spine’ now, “we do get ‘iPad neck’, ‘computer vision syndrome’ and screen-related sleeplessness” (Myrberg & Wiberg, 2015, p. 49).

### **E-Books, Libraries and the Publishing Industry**

How have libraries and publishing houses been affected by technological advancement in the publishing industry? Anderson (2012) argues that “there may be an invisible hand, but there’s now a visible hand, and it’s throttling things back in the case of libraries and e-books.” He likens the visible hand to the publishers, whose goal is to slow the transition to e-books so that profit margins remain as robust as possible and the transition to e-reading remains manageable.

Libraries are also reported to be encountering a problem with stocking e-books on their virtual shelves because of budget constraints and lack of cooperation from some publishers. This, in turn, affects the borrowers wanting to check out an e-book because they cannot get what they want since the publishers are being insecure because of cases of piracy in a digital environment (Davenport, 2012).

In 2013, *the Guardian* reported that ninety-eight publishers were driven out of business in the UK because of e-books and discounts. This was 42% more than the year before. These statistics illustrate how publishers have suffered because they are

not making profits anymore, and maybe the justification for how they have acted in relation to e-books.

### **E-books and E-Learning in Africa**

We are living in a technological age that has enabled publishing to enter an era of rapid development and change. It is on this note that Igun (2005) mentions that there is a need for people in Africa to be educated so that they can function in an online environment.

Research done among postgraduate students of the University of Ibadan, Nigeria revealed that the students used e-books which they identified from searching the internet. The research also found out that most of the books that the students found for free were not the ones on their recommended reading list because those ones were not free at all (Nwagwu & Okafor, 2014).

Kenya has not been left behind in the technological move. The government of Kenya introduced e-learning in schools through the *digischool project* (Schools Net Kenya, 2014). This is a Digital Literacy Programme (DLP) “borne out of the Government of Kenya’s vision to make sure every pupil is prepared for today’s digital world, and to transform learning in Kenya into a 21st-century education system.” The government through this program provides tablets for pupils and laptops for teachers of elementary schools for purposes of learning. This is made possible by another government project called the *last mile project* or rural electrification. This project ensured that people living in rural areas and especially all schools in the country have electricity (African Development Bank Group, 2019).

Apart from E-learning in elementary schools, institutions of higher learning also adopt e-learning. There are several universities that offer degrees online or use a blended system of both e-learning and face-to-face learning. The incorporation of



technology in teaching is now the trend among Kenya's public and private universities.

Universities and other institutions of higher learning through their libraries also participate in e-learning through the electronic resources that these institutions subscribe to. In 2003, libraries in Kenya came together to form the Kenya Library and Information Services Consortium (KLISC).

KLISC came into place to enable libraries in Kenya to join together and share the cost of subscribing to electronic resources. "Some of the challenges that necessitated the partnership was the cost of e-resources and their marketing and training on how to use them. The members of KLISC through this partnership can have access to a number of e-book databases that would have been unaffordable to individual universities (Ndungu, 2016).

Other than this, the International Network for the Availability of Scientific Publications (INASP) (2009) reports that the consortium has enabled universities to subscribe to more than 20,000 journal titles. These e-books and journals are available on professional online sites where students, faculty, staff, and other readers can access professional, peer-reviewed information materials. These are usually more preferred because of their currency as compared to print books. That notwithstanding, most of these journals have print versions.

### **The Future of the Print Book**

According to Harris (2014), "digital is the future of information." However, various discussions and debates on this topic have been done and conferences as well. In one such conference, most attendees agreed that the future of information is not going to be either electronic or print but both depending on the content (Barack,

2011). There are also arguments that the print book will not disappear soon even though there is an increase in the sales of e-reader devices and e-books.

In the year 2010 for instance, Amazon sold more e-books than paperback books; for every 100 paperback books sold, Amazon sold 115 Kindle e-books (Kwan, 2013). Despite this, Campshure (2014) still argues that although millions of people are buying kindles, that doesn't necessarily imply the dichotomous future that those sales might suggest. People may just enjoy having multiple technologies.

In some other cases, reading has been equated to a continuous, accumulative and deeply pleasurable and informative process that cannot be supported by the e-book because it is strenuous to look at especially if looking at it over long periods of time (Clark and Thompson, 2005). These two authors, however, do not dismiss the e-book entirely stating that the e-book has an advantage over print books in terms of citations. Whereas the print book may provide footnotes and bibliographies, the e-book gives a direct link to these materials. Some authors have supported the e-book saying that it is much better than the print book in terms of retrieval (Liang and Huang, 2014). In support of the e-book, Harris (2014) points out that digital resources such as audiobooks, streaming videos, online resources, subscription databases, e-books and games are the future of information because they are easier, flexible, more connected and fast.

### **The Print Book versus the Electronic Book**

The print book has been seen to be facing extinction because of the e-book. However, there are some factors that give the print book an upper hand. Campshure (2014) mentions that books are here to stay, they are not only for aesthetic purposes but they define a person as well. According to Campshure (2014), some aspects of the

print book cannot be replicated digitally. These include, “the experience of holding a group of pages in your hand as you attempt to understand a long passage or character introduction that implores you to keep flipping back and forth; the satisfaction of closing a book as you finish the last page; using a page marker to guide you back to a specific passage and running your finger across the immutable text on the page; the exposure to clues about where you are on a page or in a chapter: you can see that only half of the next page is filled with text or you can quickly look ahead to see how many pages are left till the end of the section; The layout of a physical text is more revealing of contextual clues overall; It is easier to recall where something you read was on a page and where that page is located within the book; Being able to open several books at ones and compare as you read is easier as compared to navigating between tabs.”

Print books are said to have some more advantages over e-books. These include the fact that print books can be read in any light without the challenge of glaring in the sun. They are also great for note-taking, a person can highlight, underline and make notes on the book. Another advantage is the fact that they don't require batteries to operate, don't face the challenge of viruses and software crashing. Apart from these, the book is shareable, meaning more than one person can read one book at the same time and finally, the author mentions that having print books for example on a shelf makes a person look smarter (Mitchell, 2015).

As we look around the e-book appears to be gaining popularity, however, there are still some strengths of the print book which the e-book cannot beat. These strengths include easy navigation, the better experience of browsing a bookstore as compared to any online equipment, it's easier to review a print book because one can use sticky notes and highlight, print is easy on the eyes, one can buy a used a print

book for cheaper which is not possible with electronic versions, and it is also easier to borrow or lend a print book. All these strengths are despite the fact that print books can be really heavy (Hajduković, 2014; Krehbiel, 2015).

The sense of ownership is also important with a print book. When a person buys a print book, the book is theirs fully, on the other hand, this is not the same for the e-book. When one buys an e-book, it may not belong to the person entirely, Bohn (2011) mentions that some e-books give you a limited revocable license to access the content.

Libraries adapt to technological advancement that is why Harris (2014) is very certain that disruptive technologies such as audiobooks, streaming videos, online resources, subscription databases, e-books and games are the future of information because they are easier, flexible, more connected and fast. In the case of e-books however, this may not be so fast.

Harris (2014) gives two reasons as to why libraries may still not have e-books. First of all, not all books are available as e-books therefore print books are still needed and secondly, some of them come with a lot of terms and conditions. Free e-books that are easily found are very ancient ones like those from 1923 but not recent ones especially considering that many people prefer current material in this present dynamic society.

The print book seems to be very favorable up until now despite the fact that libraries can now hold electronic books. As Liang and Huang (2014) point out, although print books occupy a lot of space, they are still available in public libraries for historical purposes.

In Mexico, although the average Mexican reads 2.9 books a year, the e-book experienced a 59% increase in the year 2012 with predicted healthy growth. In spite

of this growth, print books are also produced and most especially the government buys them for their high school and university students (Setzer, 2015).

A research done in the United States that sought to identify factors that contribute to e-book adoption, incorporated 2,986 respondents. The following facts were uncovered from the research; “the more books a person reads, the more likely the person will adopt e-books.”

In terms of income, apart from student low-income earners, “the higher a person’s income, the more likely the person will adopt e-books.” When reading to research topics of interest, “the more frequently a person reads to research topics of interest, the more likely that the person will adopt e-books.” In terms of internet use, “being an Internet user was a significantly positive predictor of a person reading e-books as compared to non-Internet users.” Age also had an effect, “as age increased, it was less likely for a person to adopt e-books.”

Education also had a positive impact “The higher a person’s education level, the more likely the person is to adopt e-books.” This means that people with a postgraduate education are more likely to adopt e-books as compared to the rest (Zhang & Kudva, 2014, p. 1703).

### **Level of Comprehension**

Tanner (2014) sought to establish the level of comprehension when people read print books and when they read electronic books. It is reported that the e-book negatively affects the eyes of the reader more as compared to the printed document, because of the LCDs and E-Paper. In terms of cognition, however, Tanner (2014) concluded that people prefer reading from books than from screens to the extent that if they find interesting information on the internet, they will print it out so as to read and have an in-depth understanding. This is the same conclusion that a research team

from Chester University arrived at when they sought to find out whether digital devices and online reading materials help children to learn better. The study found that a small sample of students comprehended traditional books at "a much higher level" than they comprehended the same material when reading on an iPad (Herold, 2014).

A study was done in Seoul, South Korea among 56 sixth-year public school students who have had a higher level of exposure to technology than those from other countries showed that they didn't have a positive behavioral intention towards e-books. They didn't have a problem reading them but they got tired of reading from the screen and in turn this affected their level of comprehension and perception of e-books (Jeong, 2012). The findings of this research concluded that "there is a significant "book effect" on quiz scores; compared to e-books, p-books (print books) appear to enable better reading comprehension. Regarding eye fatigue, students had significantly greater eye fatigue after reading e-books than after reading p-books. Students were satisfied with the e-book, but they preferred p-books."

A study was done by Schneps et al. (2013) among people with dyslexia revealed that electronic reading (from an iPod) resulted in better reading comprehension as compared to reading a printed document in those areas that did not require high visual attention (VA) span "whereas paper reading was superior to iPod reading at high VA Span." These results were interesting because it appears that print and electronic can result in comprehension under different circumstances in the case of people with dyslexia.

Kwan (2013) however points out that there is no conclusive answer as to whether the level of comprehension is high with the use of print books as compared to e-readers and e-books. She argues that in a study done on a small sample of students

where Computer-Based Instruction was used, students' scores increased by .30 standard deviation. However on the other hand, it was discovered that students who used computers at least once a week in school did not perform better than those who used computers less than once a week. This makes it difficult to conclude that computer-aided learning resulted in high levels of comprehension.

Most of the literature available concerning the level of comprehension does not talk about when a person is reading for general reasons and not for academics. The level of comprehension is mostly measured in an academic setting. This aspect is yet to be uncovered in a non-academic setting.

### **Accessibility**

When it comes to accessibility all readers would want to find the information that they are looking for in the shortest time possible. A study by Ebrary Limited revealed that users preferred electronic books to print because they are easily accessible and available, easy to use and they have links to related content (Bunkell & Dyas-Correia, 2009).

Libraries even now have e-books in their collection which was not common in the early years (Gray & Copeland, 2012), report that Public libraries in the United States showed a double-digit increase in their e-book collections between the years 2005-2008. This shows that the e-book has started being popular and was now being acquired by public libraries even more. By having a collection of e-books it makes it even more accessible to those people who use the libraries.

### **Cost**

A study conducted by the University of Texas concerning the costs of print books and electronic books respectively revealed that "the cost per use for printed books is between \$3.24 and \$28.57 when ongoing costs including heating, cooling,

shelving, and maintenance are included” (Dillon, 2007 as cited in Bunkell & Dyas-Correia, 2009).

Another research, however, indicates that “the initial cost of online books per use is between \$0.25 and \$4.80, there are lower ongoing costs for online books than for print, and the total cost per use decreases with each passing year.” This same research further reveals that in the case of libraries, the cost of maintaining print books is more expensive therefore leaving the electronic books as an attractive alternative (Bunkell & Dyas-Correia, 2009, p. 216).

### **Summary**

A research conducted by Ebrary that involved 906 respondents who were all faculty members from 300 institutions of higher learning in 38 countries revealed interesting results. A question asking them whether they preferred to use print or online resources for their research, class preparation, and instruction revealed the various reasons as to why they would choose one or the other form or both. The following table is a summary of the reasons that they gave for their choices (Ebrary, 2007). While these are the results that the study found, this research endeavored to find out if these same results would be uncovered in this case at hand.

Reasons why respondents indicated their preferences included the following reasons shown in Table 1.



*Table 1. Reasons for Preferring Print or Electronic Format*

Online	No preference: Use both	Print
1. Accessibility	1. Use both, depending on the task	1. Easier to read and digest
2. Availability	2. Print for research, online for teaching	2. Easier to use
3. Ability to access remotely	3. Online for journals, print for books	3. Better portability
4. More current information	4. Online for current data, print for older works not available electronically	4. Ability to annotate and highlight
5. Online resources preferred by students	5. Depends on availability and accessibility	5. Easier to find
6. Searchability	6. It depends on the length. The print is better for longer materials.	6. Can have multiple resources open and visible at once
7. Convenient/fast and easy	7. It depends on the source. Some are easier to use electronically, others in print.	7. Do not know how to use e-resources
8. Scope and depth is more thorough	8. It depends on the subject taught. Some have more available electronic resources than others.	8. Unsure of the validity of e-resources
9. Reduces costs to students	9. Depends on the subject, available resources, and search interface	9. Easier to file, track and manage
10. Saves on printing/ photocopying charges	10. Electronic resources are convenient, but browsing through print materials often renders information not found online.	10. Ensures that materials are peer-reviewed
11. Better for distance learners	11. It's the information that matters, not the format.	11. E-resources too slow to use at home
12. Easier to use for instruction	12. Online is faster, but the best sources are in print.	12. Greater stability - unlikely to disappear
13. Easy storage of source information	13. The print is easier to read, but online is accessible to more students.	13. Index easier to search than keyword searching
14. Ability to integrate with the course management system	14. Some print resources are unavailable online, and vice versa.	14. Fewer plagiarism issues
15. Better functionality	15. Prefer to start with electronic, then use print	15. Many required materials only available in print
16. Can just print what you need, not the entire publication		16. More cost-effective than e-books
17. Can use electronic images		17. The research process is more personal
18. Easier collation and comparison		18. No fees or membership required
19. Durable links		19. Print out e-materials anyway
20. Ease of quotation		20. Students make a better sense of printed materials: They read them more closely and take more notes.
21. Gives students the ability to expand their inquiries		
22. Ability to download and print		
23. Saves trees		
24. Linking capabilities		

## **Theoretical Framework**

One of the theories that were considered in this research is the disruptive technology theory. Disruptive technology is a term that was coined by Professor Clayton Christensen of Harvard University (Christensen, 1997). It is described as a technology that initially serves only a niche market, but eventually displaces the current technology in the mainstream market. According to Gaigher et al. (2014), Disruptive technologies are not effective at first because they are competing with already established forms of doing business existing in the market. However, with technological advancement, following several attempts at research and development, these disruptive technologies become good enough to operate in mainstream markets and in turn displace the traditional market forms. This can be compared to the idea of media displacement or replacement.

Another theory that was considered is the diffusion of innovation theory (DOI). According to Kreps (2017), “Diffusion is a social (communication) process through which new ideas, technologies, products, or processes spread among the members of a particular social system via specific communication channels over time” (Kreps, 2017, p. 2). The first diffusion theory model was created by Everett M. Rodgers in 1962. The model explained that people’s exposure to information about new innovations or ideas through communication channels such as interpersonal communication or mass media has a profound influence at the rate at which they adopt the new ideas, products, or behaviors. “The model suggests that people are most likely to adopt new ideas, products, or behaviors based upon their favorable evaluations of the ideas as communicated to them by individuals whom they trust and respect” (Kreps, 2017, p. 2).

Zhang and Kudva (2014) reporting on the theory of diffusion give a summary that “users would choose one medium over another based on the attributes of the new medium —namely, five factors: relative advantage (the degree to which an innovation is perceived as better than the idea it supersedes), compatibility (the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters), complexity (the degree to which an innovation is perceived as being difficult to understand and use), trialability (the degree to which an innovation may be experimented with on a limited basis), and observability (the degree to which the results of an innovation are visible to others) (Rogers, 2003 as cited in Zhang & Kudva, 2014).

In this research, the impact of technology on publishing which resulted in e-books is considered a disruptive technology. The dependent variable which is purchase and use of print resources is influenced either positively or negatively by the choice of a preferred reading format. Information Technology and its advancement have led to the existence of electronic reading materials. Other factors have also contributed to the readers’ choice to purchase and use EGW print resources.

The Diffusion of Innovation theory is about communication. Through various channels of communication, information about the alternative for the traditional book reaches various people and if the source of these ideas and programs is trustworthy, people tend to accept these ideas. This research also tested whether these two theories would prove true in the case at hand.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### **Research Design**

The research sought to establish the impact of the electronic format on the purchase and use of the print versions of Ellen G. White Resources. It was, therefore, a causal study because it seeks to establish the impact that the electronic versions of EGW writings have had on the print versions as exhibited in their purchase and use by the respondents. The study was also a cross-sectional study because data was collected once. This makes the study a cross-sectional causal study.

#### **Population and Sampling Procedure**

The research was conducted in a non-contrived setting among the Seventh-day Adventist Church members in Nairobi. Nairobi was chosen for this study because, being the biggest city in Kenya, it has people from all over the country who have moved to the city, and therefore it can be assumed to be the best representation of most parts of the country. Due to the vast population, the churches in the Central Business District (CBD) were targeted. There are about 15 churches around the CBD, 7 of which are English speaking. The English speaking churches were selected because, English is the main language used for Ellen G. White Materials, both print, and electronic formats, only a few are available in Swahili and these are not on the CD-ROM. Therefore, the English speaking churches were selected with an assumption that all the members therein speak and understand English.

Using random sampling, 5 out of the 7 churches were selected for the research. This is because the population was still too big (11,000). After the five had been identified, the final samples were selected using proportionate stratified random sampling. This was more appropriate because the churches which were selected have a different number of members. Some have twice or thrice the number of others, so a bigger sample was taken from those churches which have more members and a smaller one from those with fewer members. Convenience sampling was also incorporated during the day of data collection in that those present are the ones who participated in the research. In this way the data could be collected at once. The estimated number of members was received from the Nairobi station director.

The final sample size included only those who read EGW Writings. Those who do not read were exempted from the research. This final sample was arrived at by adding up the total population and then using Krejcie and Morgan (1970) table to find the sample size. The formula used by Krejcie and Morgan (1970) is as follows;

$$s = \frac{X^2 NP(1 - P)}{d^2 (N - 1) + X^2 P(1 - P)}$$

where

$s$  = required sample size.

$X^2$  = the table value of chi-square for 1 degree of freedom at the desired confidence level (0.05 = 3.841).

$N$  = the population size.

$P$  = the population proportion (assumed to be 0.50 since this would provide the maximum sample size).

$d$  = the degree of accuracy expressed as a proportion (0.05).

According to the Krejcie and Morgan (1970) table, a sample size of 375 is for a population of 15000 but 375 was selected for this case to cater for the questionnaires

that may not be returned and also because a population of 10000 would require a sample size of 370, the difference of 5 is not very big. Table 2 shows the churches that were being selected and their numbers.

*Table 2. Population and Sampling*

Church	Estimated Population	Percentage (%)	Sample
Church 1	6000	54.55	205
Church 2	3000	27.27	102
Church 3	600	5.45	20
Church 4	400	3.64	14
Church 5	1000	9.09	34
Total	11000	100.00	375

### **Data Collection Instrument**

The instrument that was used for data collection was a questionnaire. The questionnaire was administered to the readers so as to collect data from many people at the same time. The questionnaire was divided into 3 parts. The first part was the personal information section, which sought to collect demographic data of the respondents. The second section dealt with the variables under consideration for the study. It was composed of a Likert scale. The third part consisted of open-ended questions to further provide information regarding the subject matter.

A 5-point Likert scale was preferred for this research because it is easily understandable to the respondents. Using this scale, the respondents are not likely to select responses at random because the scale is not too wide. The scale had 1 for strongly disagree and 5 for strongly agree. This is simplified in Table 3.

*Table 3. Likert Scale Interpretation*

Value	1	2	3	4	5
Label	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Interpretation	Certainty (with no doubt) that they disagree	Not very certain that they disagree	Neither agreeing nor disagreeing	Not very certain that they agree	Certainty (with no doubt) that they agree

Strongly agree and strongly disagree is interpreted as certainty (with no doubt). Agree and disagree is interpreted as not being very certain, with more information, this could make the respondents change their view. The neutral point (3) is for those who neither agree nor disagree. This point is present so that the respondents would not be forced to choose between the other options even when they neither agree nor disagree on the question asked.

### **Instrument Validity and Reliability**

The instrument was tested for validity and reliability before it was administered to the respondents. The outcome of the testing is discussed below.

#### **Instrument Validity**

For validity, three experts in quantitative research from AUA (the researcher's two advisors and program director) and one person from the E. G. White Estate were consulted to give their opinion on whether the instrument would actually be measuring what it claims to be measuring. A pilot test was also done, where few questionnaires were administered to respondents who are not part of the population to find out whether they understood and were able to respond to the questions being asked. The pilot study involved 30 participants who had similar characteristics to the target respondents. These participants were also asked to give their views on whether

they understood the questions in the questionnaire and their feedback was then used to revise the questionnaire.

### **Instrument Reliability**

Cronbach’s alpha test was done to test reliability before the instrument was administered. Since the instrument would be measuring different items, “the consistency of the respondents’ answers to the scale items has to be tested for each measure” (Sekaran & Bougie, 2013, p. 293). These same authors report that reliabilities of less than 0.60 are considered poor, while those in the range of 0.70 are considered acceptable and over 0.80 good (Sekaran & Bougie, 2013). In this research, reliabilities of 0.60 and above were considered acceptable. The table below shows the results of the reliability tests.

*Table 4. Reliability Test Results*

Variables	Cronbach’s Alpha	No. of Items
Accessibility	.683	5
Level of Comprehension	.657	4
Belief in Authenticity	.818	2
Cost	.615	5
Convenience	.694	5

### **Data Collection Procedure**

In order to collect data, the questionnaires were administered through the church leaders of the various congregations to ensure that the questionnaires were filled and collected within a short time. They were distributed to the respondents on a Saturday (Sabbath) since that is when most of the respondents were available in one place. Convenience sampling was employed because those who were present when the data was being collected are the ones who participated. The people who were not



present were excluded from the study because it would be very difficult to know who was not present and how to reach them.

This was done in the 5 selected churches so as to get many people to fill the questionnaire at the same time. Due to the fact that some people did not fill in the questionnaires on the same day, the questionnaires were collected a week later and in some places two weeks later.

### **Method of Data Analysis**

Data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were conducted for summaries, a Chi-square test was done to test the relationship between some categorical variables, and regression analysis to test for impact.

### **Ethical Considerations**

Ethical consideration is very important in research, especially where human beings are involved as participants. Akaranga and Makau (2016) and Sekaran and Bougie (2013) outline some ethical issues that should be considered when using human participants. They include advocacy and safety of the participants, maintaining their anonymity, confidentiality, and privacy, explaining to them the beneficence of the research, refraining from deception, explaining clearly the risks involved in taking part in the research (non-maleficence), and ensuring the respondents' participation is voluntary with their informed consent.

In this research, the researcher sought approval from the National Commission for Science, Technology, and Innovation (NACOSTI) for a research permit before conducting the research (See Appendix B). To ensure informed consent of the respondents, a letter of consent was attached to the questionnaire so that they could read about the purpose of the research and what was expected of them. Once they

agreed to participate, they would sign the letter of consent and begin filling in the questionnaire. The respondents were free to choose whether to participate in the research or not. They were not forced to do so. It was made known to them that they were free to withdraw from the study at any time. They were also assured that the information collected would be treated confidentially for research purposes only and would not be shared to be used for other purposes without their authorization. To protect the privacy of the respondents and keep their identity anonymous, the questionnaires did not require them to include their names on it.

## CHAPTER 4

### RESULTS AND DISCUSSION

This chapter presents the findings, analysis, and interpretation from the data that was collected using the questionnaire in an endeavor to answer the research questions for this study.

#### **Response Rate**

Table 5 shows the response rate for the survey.

*Table 5. Response Rate*

Questionnaires Administered	Questionnaires Received	Response Rate (%)
375	196	52

For this research, 375 questionnaires were administered to the respondents. The questionnaires that were received back were 196. A total of 184 of these indicated that they read E. G. White Materials, 7 indicated that they didn't and 5 were incomplete so they were discarded.

#### **Demographic Characteristics of Respondents**

Table 6 shows the distribution of age among the respondents who participated in the research.

*Table 6. Age Distribution of Respondents*

Age Category	Frequency (n)	Percent (%)
Under 30	93	50.8
30-40	54	29.5
41-50	26	14.2
51-60	9	4.9
Over 60	1	0.5
Total	183	100.0

Most of the respondents were below the age of 30 (50.8%). The next highest category was of those who are between the ages of 30 – 40 (29.5%). We can say that most of the participants were aged 40 and below.

Table 7 shows the distribution of gender for the respondents who participated in the research.

*Table 7. Gender of Respondents*

Category	Frequency (n)	Percent (%)
Male	93	50.5
Female	91	49.5
Total	184	100.0

There was almost a balance in the number of respondents in terms of gender. This is because 50.5% were males while 49.5% were female. Table 8 shows the education level of respondents.

*Table 8. Level of Education of Respondents*

Category	Frequency (n)	Percent (%)
Masters degree and above	45	24.5
Bachelors degree	102	55.4
Diploma	28	15.2
High School	8	4.3
Below Primary School	1	.5
Total	184	100.0

In regards to the level of education, many respondents indicated that they had a Bachelor’s degree, 55.4%. And the smallest category being below primary school, 0.5%. This suggests that most of the respondents were literate and therefore can read and understand the questionnaire and the EGW Writings. Table 9 shows the level of income of the respondents.

*Table 9. Level on Income*

Category	Frequency (n)	Percent (%)
Below 10000	39	23.1
10000 – 20000	15	8.9
20001 – 30000	15	8.9
30001 – 40000	17	10.1
40001 – 50000	9	5.3
Above 50000	74	43.8
Total	169	100.0

Looking at the level of income, of the respondents, per month, 43.8% of the respondents indicated that they earn more than Ksh. 50000 per month. Although this shows that a big percentage earns more money, it is important to note that the second-highest percentage is of those who earn below Ksh. 10000. The table below shows the various categories comprehensively. This was important so as to see whether respondents can be able to afford the EGW Writings in case they wanted to buy.

## **Results and Discussions Based on the Research Questions**

### **RQ1: Preferred Reading Format for Ellen G. White Books among Readers in Nairobi, Kenya**

Respondents were asked to indicate which format they preferred for reading EGW materials. Table 10 shows a summary of their responses.

*Table 10. Preferred Reading Format*

Category	Frequency (n)	Percent (%)
Print Format	41	22.3
Electronic Format	35	19.0
Both Print and Electronic	108	58.7
Total	184	100.0

The results received from the respondents showed that most of them preferred reading EGW materials in both print and electronic format, 58.7%. However, if we consider only the print and electronic formats separately, the print format has a slightly higher percentage, 22.3%, as compared to the electronic format, 19.0%. This shows that although both formats are preferred, the print is more preferred as compared to the electronic one.

The reason for the higher percentage of both formats could be the fact that the electronic format is widely and highly accessible, therefore even the people who prefer print at some point end up using the electronic format. This is in line with what Barack (2011) writes when he reports that the future of information is not going to be either electronic or print but both depending on the content.

Martin and Quan-Haase (2013), also conclude in their research that both print and electronic formats are being used concurrently with each other without one replacing the other. This is however contrary to Harris (2014) who writes that digital is the future because we cannot substantiate that people will stop using the print books.

**RQ2: The Extent that the Reading Format of the Readers Impacted their Purchasing and Use of EGW Print Materials**

Before the impact was tested, descriptive statistics were done to establish the purchasing behavior of the readers before they had access to EGW electronic resources, and after they had access. Table 11 shows the results.

*Table 11. Money Spent before Access to Electronic Format*

Category	Frequency (n)	Percent (%)
I did not spend any money	61	33.7
500 – 1000	41	22.7
1001 – 2000	17	9.4
2001 – 3000	17	9.4
3001 – 4000	5	2.8
4001 – 5000	7	3.9
More than 5000	33	18.2
Total	181	100.0

Table 12 shows the amount spent after access to electronic format.

*Table 12. Money Spent after Access to Electronic Format*

Category	Frequency (n)	Percent (%)
I have not spent any money	101	55.8
500 – 1000	33	18.2
1001 – 2000	14	7.7
2001 – 3000	9	5.0
3001 – 4000	5	2.8
4001 – 5000	6	3.3
More than 5000	13	7.2
Total	181	100.0

Responses received in regards to the amount of money spent before and after the respondents had access to electronic format of EGW materials reveal that a third of the respondents, 33.7%, never spent money before they had access to electronic

format. It is not clear how the 33.7% accessed EGW materials because they indicated that they read them. The researcher did not ask them this question.

The number increases to more than half, 55.8%, after access to electronic format. It is also interesting to note from the tables below that the amount spent after access to electronic format reduces across the board. From this result, it is clear that people spent less money on buying EGW resources after the introduction of the electronic versions. This could be attributed to the fact that EGW print Writings are available for free on the apps and online websites. The only cost incurred is that of internet connection which may be needed once when downloading the app. It is also important to note that Wi-Fi connection is widely used, so sometimes the readers may not incur direct cost of internet connection except in few cases.

To test the impact of the electronic format on the print, a chi-square was conducted on the Purchasing behavior before the respondents had access to electronic format and after. Table 13 shows the results of the chi-square.

*Table 13. Chi-Square Test on the Impact of Electronic format of EGW Resources on Readers' Purchasing Behavior*

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	63.302 <sup>a</sup>	4	.000
Likelihood Ratio	56.281	4	.000
Linear-by-Linear Association	36.334	1	.000
N of Valid Cases	182		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.32.

According to the results above,  $p < 0.05$  acceptable level of significance. We can confidently say that access to the electronic format of EGW materials has impacted the readers' purchasing behavior of the print in a significant manner. The descriptive statistics in Tables 11 and 12 above showed reduction in money spent to



buy these materials among all categories, the chi-square test now suggests that the reduction is indeed significant.

This statistical significance could be attributed to how readily accessible the electronic format is as compared to the print format. It could also be attributed to the cost. The print books are really costly as compared to the electronic format which is mostly free.

The results of the study are in line with a study in an academic setting by Martin and Quan-Haase (2013) where they found that students would readily buy and prefer electronic copies of a book if it was cheaper than its printed counterpart. Depending on how much it costs, the users would choose one option over the other.

The null hypothesis  $H_0$  which states that **the electronic format has no impact on the purchasing behavior of readers** is therefore rejected.

### **RQ3: Impact of Individual Characteristics on the Purchasing and Use of EGW Print Materials**

To test for whether there is an impact between demographic characteristics and the purchase of EGW print resources, a regression test was conducted. Table 14 shows the regression model summary.

*Table 14. Regression Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.304 <sup>a</sup>	.092	.070	.48090

a. Predictors: (Constant), Level of Income Per month, Gender, Level of Education, Age

Table 15 shows the ANOVA of the Regression Analysis.

*Table 15.* ANOVA of the Regression

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.778	4	.945	4.085	.004 <sup>b</sup>
	Residual	37.234	161	.231		
	Total	41.012	165			

a. Dependent Variable: Purchase of EGW Print

b. Predictors: (Constant), Level of Income Per month, Gender, Level of Education, Age

Table 16 shows the Regression Table with both standardized and unstandardized coefficients.

*Table 16.* Regression Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.848	.187		4.536	.000
	Age	.091	.045	.171	2.039	.043
	Gender	.120	.075	.120	1.590	.114
	Level of Education	.045	.050	.073	.910	.364
	Level of Income Per month	.042	.021	.176	1.977	.050

a. Dependent Variable: Purchase of EGW Print

According to the results, age and level of income exhibit a significant p-value i.e.  $p \leq 0.05$ . This suggests that Age and Level of income have an impact on the purchase and use of EGW reading materials. Gender and level of education have a p-value  $>0.05$ . These two figures are above the level of significance suggesting that these two characteristics of readers, in this case, have not impact on the purchase and use of EGW print materials.

From this result, we can conclude that some characteristics have an impact while others do not. A research done by Zhang and Kudva (2014), revealed that some factors that play a big role in e-book adoption include, “the individual’s income, the occurrence and frequency of reading for research topics of interest, and the individual’s internet use, followed by other significant variables, such as race/ethnicity, reading for work/school, age, and education.” The findings are partly in line with this research’s findings in terms of age and income. The other variables that are not significant in the findings of this research were significant in the research of Zhang and Kudva (2014).

The study also exhibits similar results as those of a study done among academic librarians in South Africa, where the demographic characteristics, for example, age had a significant impact on their decision to choose the usage of e-books (Zinn & Langdown, 2011).

Following these findings, the results of hypothesis testing are as follows:

1. The null hypothesis which states that the individual characteristic of age has no impact in the purchasing of EGW print materials is therefore rejected.
2. Similarly, the null hypothesis which states that the individual characteristic of the level of income has no impact on the purchasing of EGW print materials is also rejected.
3. On the other hand, the null hypothesis which states that the individual characteristic of gender has no impact on the purchasing of EGW print materials is accepted.
4. Similarly, the null hypothesis which states that the individual characteristic of the level of education has no impact on the purchasing of EGW print materials is also accepted.

#### **RQ4: Impact of Other Factors on the Purchasing Behavior and Use of EGW Print Materials**

To find out the extent to which other factors have impacted the purchasing behavior of the readers of EGW in Nairobi, a multinomial regression test was

conducted. This type of regression was chosen because the analysis involved a nominal dependent variable and the independent variables were ratio scales. The tables below show the results of the test. There were four variables that were tested namely, Accessibility, Readability, Belief in Authenticity and Cost. Table 17 shows the model fitting information.

*Table 17. Model Fitting Information*

Model	Model Fitting Criteria			
	Likelihood Ratio Tests			
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	248.717			
Final	71.398	177.319	96	.000

The table above shows the model fitting information which reveals a significant  $p < 0.01$ . The model fitting information is a “likelihood ratio test of your model (Final) against one in which all the parameter coefficients are 0 (Null)” (IBM knowledge center, n.d.). Significant p-value scores,  $< 0.05$ , suggest that there is a fit between the data and the model. Table 18 shows the Goodness of Fit model.

*Table 18. Goodness-of-Fit*

	Chi-Square	Df	Sig.
Pearson	99.078	84	.125
Deviance	91.075	84	.280

The goodness-of-fit table presents two tests of the null hypothesis that the model adequately fits the data. According to IBM Knowledge center (2017), “if the significance value is small (less than 0.05), then the model does not adequately fit the data” In this case, its value is greater than 0.10, suggesting that the data are consistent with the model assumptions. This argument is also supported by Data Science and

Analytics (2018) which records that “we interpret lack of significance as indicating a good fit. To be clear, you want the *p*-value to be *greater than* your established cutoff (generally 0.05) to indicate good fit.”

Table 19 shows the Regression Table.

*Table 19. Regression Table*

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	71.398 <sup>a</sup>	.000	0	.
Readability	105.008	33.610	17	.009
Accessibility	115.407	44.008	23	.005
Cost	89.753	18.355	16	.304
Belief in Authenticity	93.840	22.441	8	.004

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

The test revealed that 3 out of the four variables tested have an acceptable level of significance. Readability ( $p = .009$ ), Accessibility ( $p = .005$ ) and Belief in Authenticity ( $p = .004$ ) have a  $p < 0.05$ . These three factors seem to have an impact on the purchase and use of EGW materials. Surprisingly, from the findings, Cost has a  $p > 0.05$  suggesting that cost does not have an impact on the purchase and use of EGW print materials.

Apart from the factors tested, the readers were asked to give other factors that they believe affect their choice of a reading format. The following table groups the various factors into classes and summarizes them as shown in the table.

*Table 20. Summary of other Factors that Influence the Choice of Reading Format*

Factor	Print	Electronic
Ease of Use	<ul style="list-style-type: none"> <li>- Can easily lend/share with others</li> <li>- Easy to make reference</li> <li>- It is good for group discussions e.g. on Ellen G. white books</li> <li>- Easy to read</li> <li>- No distractions (Electronic copy allows for distraction especially if using a phone and a call comes in, it will divert your attention)</li> <li>- Storage is easy and long-lasting</li> </ul>	<ul style="list-style-type: none"> <li>- Easy to do a study topically</li> <li>- Easily Accessible</li> <li>- Easy to download whole books</li> <li>- Easy to refer to a quote at any time</li> <li>- Easy to copy and paste</li> <li>- Easily refer to subjects unlike print that you need to have access to a real book</li> <li>- Easy to share (copy and paste) through social networks</li> <li>- Zoom in, zoom out on the device.</li> <li>- Light – whether there is light at night or not, one can read at night</li> <li>- Easy to highlight and later continue</li> <li>- Easily search word meanings online</li> <li>- Easy to go to a certain chapter or page</li> <li>- Easy to search and read widely about an issue</li> </ul>
Accessibility	<ul style="list-style-type: none"> <li>- Ease of access in book centers</li> </ul>	<ul style="list-style-type: none"> <li>- Easily available</li> <li>- Saves time – No need to go to the book store to get a copy</li> <li>- Can be accessed anywhere anytime</li> <li>- Not all materials are available in print media</li> </ul>
Portability	<ul style="list-style-type: none"> <li>- Portable (can be carried in one’s purse)</li> </ul>	<ul style="list-style-type: none"> <li>- Portable (all books are contained in one device)</li> <li>- It is not bulky</li> </ul>
Reliability	<ul style="list-style-type: none"> <li>- Can be used when electronic fails e.g. due to power failure</li> <li>- It is permanent</li> <li>- Can be preserved for use by future generations</li> <li>- The print format is durable</li> </ul>	
Authenticity	<ul style="list-style-type: none"> <li>- Print books are authentic</li> <li>- Cannot be changed</li> </ul>	
Cost		<ul style="list-style-type: none"> <li>- Free access to books</li> </ul>
Creating interest	<ul style="list-style-type: none"> <li>- It makes colleagues want to know more about the book that one is reading</li> </ul>	
Convenience		<ul style="list-style-type: none"> <li>- It is convenient to use</li> </ul>

Rao et al. (2016) report that 510 million e-books were sold in 2014 as compared to 568 million print books sold in the same year. The global e-book report also shows growing trends in e-book use in the U.S.A., U.K., Germany, Australia, France, Belgium, Spain, Italy, Netherlands, Brazil, China, India, and Russia (Wischenbart, 2015 as cited in Rao et al., 2016). This reveals that the cost of e-books is not so much of a problem. The findings of this study seem to agree with this report even though Africa is not mentioned in the study.

In comparing various aspects of the print and the e-books Sachin (2019) concludes that both formats have pros and cons. Some people prefer the e-book because of the cost which is believed to be less than that of the print book, while others prefer the print book because they find the e-readers too expensive for them. The same article also mentions the readability of the format for example in terms of the print book, the feel of paper while reading, flexibility in annotation, and ease in skimming through the book are listed as some of its strengths as compared to its e-book counterpart. Surprisingly, the e-book also has its own readability strengths including ease of use, access to several books, inbuilt dictionaries, and in terms of accessibility, there are free samples, and instant availability of books. The article seems to agree with the findings of the study since readers choose one format or the other because of these factors.

A video released in 2011, (Garyzw, 2011, pt. 9:20) reveals counterfeit EGW books that have been published in China. The findings of this research reveal that belief in authenticity is one of the factors that show the impact on the purchase and use of EGW print. This could be one of the reasons why readers would trust print or e-books of EGW.

Following the result received in regard to this question, some factors showed a possible impact while others did not. In this regard the hypothesis H<sub>04</sub> is tested and reported as follows;

1. The null hypothesis which states that Accessibility has no impact on the purchase and use of EGW print materials is therefore rejected.
2. Similarly, the null hypothesis which states that Readability has no impact on the purchase and use of EGW print materials is also rejected.
3. In the same way, the null hypothesis which states that Belief in Authenticity has no impact on the purchase and use of EGW print materials is also rejected.
4. On the other hand, the null hypothesis which states that Cost has no impact on the purchase and use of EGW print materials is accepted.



## CHAPTER 5

### SUMMARY, CONCLUSION, AND RECOMMENDATIONS

#### **Summary**

The aim of this study was to find out whether Ellen G. White's resources in electronic format have come to phase out their print counterpart. The impact of the electronic format on the print was, therefore, being tested. The research was conducted in Nairobi County and in an attempt to address this subject, four research questions were employed, namely;

1. What is the preferred reading format for Ellen G. White books among readers in Nairobi, Kenya?
2. To what extent has the reading format of the readers impacted their purchasing and use of EGW print materials?
3. Do the individual characteristics of Age, Gender, Level of Education, and Level of Income have an impact on the purchasing of EGW print materials?
4. To what extent have other factors impacted the purchasing behavior and use of EGW print materials?

A cross-sectional causal research design was used to address the research questions. A data collection instrument (questionnaire) developed by the researcher was used after it had undergone validity and reliability tests. 196 respondents from 5 Seventh-day Adventist English Churches in Nairobi County participated in the research, accounting for 52.2% of the total population. Of this number, 49.5% were female and 50.5% were male.

## **Findings**

The findings revealed that a higher percentage, 58.7%, preferred to read EGW materials in both print and electronic format. The findings also revealed a possible change in the purchasing behavior of the respondents after they had access to the electronic format of EGW materials. Findings reveal a drop in money spent to buy the print books suggesting that their reading format choice impacts their purchasing and use of the print.

In terms of the demographics of the respondents, age ( $p < 0.05$ ) and level of income ( $p = .050$ ) show a possible impact on the purchase and use of EGW print materials. Level of education ( $p > 0.05$ ) and gender ( $p > 0.05$ ) seem to have no impact in this case.

Accessibility, readability, and belief in authenticity are the factors that were tested and showed a possible impact on the purchase and use of EGW print materials. The cost did not show impact, with its p-value being .304.

The respondents were asked to list some other factors that would influence their choice of a reading format for EGW writings and they are summarized in Table 20.

## **Conclusion**

Most readers of EGW writings in Nairobi County prefer to read in both print and electronic formats. Since the introduction of the electronic format of EGW writings, the amount of money that readers use to purchase print materials has reduced. The research also revealed that age and level of income may have a part to play in the purchase and use of EGW print, while gender and level of education may not have any effect. Similarly, accessibility, readability and belief in authenticity are

some of the factors that impact purchase and use of EGW print materials.

Surprisingly, the aspect of cost does not have an effect in this case.

Readers choose to use print or electronic format of EGW materials because of various reasons. The reasons also vary from person to person. There are different features of either format that influence the decision of a reader to choose one over the other. In conclusion, the electronic format has had an impact on the print format. However, the impact is not huge enough to conclude that the print is phasing out. It is true that it has been affected by the electronic format, but it is still needed by readers for various reasons. This, therefore, implies that the electronic format of EGW writings is not phasing out the print as of the moment.

### **Recommendations**

Based on the findings of the study, the following recommendations are made;

1. The EGWEBO should continue to promote the use of EGW materials in all formats. This will help to cater to the needs of those who prefer one format over another as well as those who use both formats.
2. The Publishing house should continue to print books of EGW because there is a market for this. The Adventist book centers, which sell these books, should make these available in their stores. Accessibility of the print book was a major affective factor in the findings of this research. There is also a need for the EGWEBO together with the publishing department of the church to make known to readers where they can purchase copies of EGW print materials.
3. The EGWEBO should come up with ways of customizing EGW writings for different age groups. Keeping in mind that “EGW in today’s language” books exist, the use of electronic media can be explored more in order to reach the younger generation and other groups that enjoy exploring new technology. Also, new ways of reaching the older generation can be explored.
4. There is a need to educate readers on how to identify which books, Apps, or websites contain genuine EGW materials. This education will help to counteract the counterfeit books and information sources that exist to deceive and mislead readers of EGW.

### **Suggestions for Future Research**

It is suggested that similar research be conducted on a wider population to get a clear picture of the true situation when it comes to e-books and print books of EGW. This study was conducted in Nairobi among English speaking churches. The findings may not reflect what would be in a rural setting, a Swahili speaking church, or a vernacular church. A different country may also reveal something different.

## APPENDICES

APPENDIX A  
QUESTIONNAIRE

**Letter of Introduction and Informed Consent Form**

Dear Participant,

My name is Chebichiy RoseMercy. I am a student at the Adventist University of Africa pursuing my MBA degree. As part of the requirements of the program, am conducting a study on the **Impact of Electronic Format on the Purchase and Use of Ellen G. White Print Resources**. As a reader of Ellen White literature, your views and contributions are very important to this study and therefore I am inviting you to participate in this research study.

Before agreeing to participate in this research, I strongly encourage you to read the purpose and procedures of the study. Also described is your right to withdraw from the study at any time.

Purpose of the Study: This study is designed to examine the extent to which the purchase and use of Ellen G. White books in print form have been affected by the presence of free electronic copies in various forms such as mobile devices' applications, online databases, and software. I am conducting this study in order to explore whether the electronic versions are phasing out the print versions. Participation in the study involves completion of a questionnaire that asks you basic questions about yourself and other questions regarding the issue at hand.

Risks and Discomforts: There are no recognizable risks or discomforts that are anticipated from your participation in the study.

Benefits: The anticipated benefit of your participation is the opportunity to get your input on this matter which will result in substantive recommendations to the relevant departments. The knowledge obtained from this study will be of great value to the Seventh-day Adventist Church in particular.

Confidentiality: The information gathered during this study will remain confidential, your identity will not be revealed and all the responses received will be coded and summed to protect your personal identity. Only the research team will have access to the study data and information.

Withdrawal without Prejudice: Please note that your participation in this study is voluntary and you may withdraw at any time without any penalty. You are free to withdraw consent and discontinue participation in this study at any time without prejudice or penalty.

If you have any questions or concerns about participating in the study or completing the attached questionnaire, please contact the MBA Program Director at Adventist University of Africa via e-mail <[ganuj@aua.ac.ke](mailto:ganuj@aua.ac.ke)>

Consent: Please sign below if you agree to participate. Your signature below indicates that you have decided to participate in this study and that you have read and understood the information provided above.

Thank you so much for your time!

**I. SECTION ONE: PERSONAL DETAILS**

Please tick on the appropriate box

1. Your Age

a. Under 30

d. 51-60

Subject's Signature:

Date:

Researcher's  
Signature:

Date:

b. 30-40

e. Over 60

c. 41-50

2. Your Gender

a. Male

b. Female

3. Your level of Education

a. University – Masters Degree and above

b. University – Bachelors Degree

c. Diploma

d. High School

e. Primary School

f. Below Primary School

4. Level of income per month (Ksh.)

a. Below 10,000

d. 30,001 – 40,000

b. 10,001 – 20,000

e. 40,001 – 50,000

c. 20,001 – 30,000

f. Above 50,000

5. I own the following devices (Tick as many as apply)

a. Smartphone

b. Laptop

c. Tablet/iPad

d. Desktop Computer

e. Kindle

f. None of the above

6. Do you read Ellen G. White books?  
 a. Yes   
 b. No

*If your answer to this question is (b.) do not proceed with the rest of the questions*

7. I prefer to read Ellen G. White Materials in the following format (Please select one).

- a. Print Format   
 b. Electronic Format   
 c. Both Print and Electronic

8. What approximate amount of money (in Ksh) did you spend to buy Ellen G. White Materials BEFORE you had access to an electronic copy through the mobile app, online database, or using the Ellen G. White Writings software? (Please select one)

- a. I did not spend any money   
 b. 500 – 1000   
 c. 1001 – 2000   
 d. 2001 – 3000   
 e. 3001 – 4000   
 f. 4001 – 5000   
 g. More than 5000

9. How much money (in Ksh) have you spent to buy Ellen G. White Materials AFTER you have had access to an electronic copy through the mobile app, online database or using the Ellen G. White Writings software? (Please select one)

- a. I have not spent any money   
 b. 500 – 1000   
 c. 1001 – 2000   
 d. 2001 – 3000   
 e. 3001 – 4000   
 f. 4001 – 5000   
 g. More than 5000

## II. SECTION TWO

Considering your experience with Ellen G. White's resources, to what extent do you agree or disagree with the statements listed below? The scale is as follows. Please respond by placing a tick on the box that corresponds to your answer.

- Strongly Disagree* 1  
*Disagree* 2  
*Neither Agree nor Disagree* 3  
*Agree* 4  
*Strongly Agree* 5

		1	2	3	4	5
1.	I can't access most of the print books of Ellen G. White in my area					
2.	I do not see a need for the print book since I have access to an electronic copy					
3.	Electronic books are easily accessible as compared to print books					



4.	I read from my phone, tablet or computer because I don't have access to a hard copy					
5.	I like the electronic format because I can access all E. G. White books from one device					
6.	I understand better when I read from a print book					
7.	I can easily remember what I read from an electronic book as compared to a print book					
8.	It is easier for me to remember what I read on a print book than on a screen					
9.	I understand better when I read from an electronic book					
10.	The content of Ellen G. White electronic books is authentic					
11.	The content of Ellen G. White print books is authentic					
12.	Internet bundles are too expensive for me therefore I use print versions					
13.	Print books are too expensive for me					
14.	I prefer print books because they don't require additional costs					
15.	I prefer electronic books because they are free					
16.	The costs of connection are too high for electronic copies					
17.	I prefer electronic copies because of portability					
18.	I use electronic versions more because I always have internet connectivity					
19.	I like the electronic format because it is convenient for me to have all E. G. White books from one device					
20.	I like print books because I can carry them around					
21.	I prefer print books because I can highlight and make notes on them					

**III. SECTION THREE**

Are there any other factors that influence your choice of the reading format? Please write them on the space provided.

*Thank you very much for your time and honest response.*

APPENDIX B  
CORRESPONDENCE



*AUA*  
*Adventist University of Africa*

Private Bag Mbagathi  
00503 Nairobi, Kenya  
Tel (254) 206603073/660330  
Fax: (254) 20 660 3150  
Email: [info@aua.ac.ke](mailto:info@aua.ac.ke)  
WEB: [www.aua.ac.ke](http://www.aua.ac.ke)

Location:  
Advent Hill, Magadi Road, Ongata Rongai

February 28, 2019

The Director General  
National Commission for Science, Technology and Innovation  
off Waiyaki Way, Upper Kabete,  
P. O. Box 30623, 00100  
Nairobi, KENYA

Dear Officer-in-Charge:

**RE: Introductory Letter – RoseMercy Chebichiy**

Greetings from Adventist University of Africa (AUA), Ongata Rongai! This letter is to introduce Ms. RoseMercy, Chebichiy; a student in the School of Postgraduate Studies offering Master of Business Administration (MBA) at AUA.

As part of the requirements of the MBA program, RoseMercy is currently undertaking a study on the **Impact of Electronic Format on Purchase and Use of Ellen G. White Print Resources in Nairobi County**. Her research proposal has been approved and she needs to apply for a research permit from your outfit in order to collect the needed data.

May I therefore request your kind assistance in granting RoseMercy authorization to distribute her questionnaires to the study participants.

Thanking you in advance for your assistance and support in furthering this research endeavor.

Yours faithfully,

A handwritten signature in blue ink, appearing to read "J. Ganu", is enclosed within a rectangular box.

Josephine Ganu, PhD  
Director, MBA Program  
Associate Professor of Management  
Email: [ganuj@aua.ac.ke](mailto:ganuj@aua.ac.ke)



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TECHNOLOGY AND INNOVATION**

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When replying please quote

NACOSTI, Upper Kabete  
Off Waiyaki Way  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No. **NACOSTI/P/19/33722/28925**

Date: **15<sup>th</sup> March, 2019**

Rosemercy Chebichiy  
Adventist University of Africa  
Private Bag -00503  
**NAIROBI.**

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *“Impact of electronic format on purchase and use of Ellen G. White Print Resources in Nairobi County”* I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **15<sup>th</sup> March, 2020.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

**GODFREY P. KALERWA MSc., MBA, MKIM  
FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner  
Nairobi County.

The County Director of Education  
Nairobi County.

**THIS IS TO CERTIFY THAT:  
MISS. ROSEMERCY CHEBICHIY  
of ADVENTIST UNIVERSITY OF AFRICA,  
0-503 Mbagathi, has been permitted to  
conduct research in Nairobi County**

**Permit No : NACOSTI/P/19/33722/28925  
Date Of Issue : 15th March, 2019  
Fee Received :Ksh 1000**

**on the topic: IMPACT OF ELECTRONIC  
FORMAT ON PURCHASE AND USE OF  
ELLEN G. WHITE PRINT RESOURCES IN  
NAIROBI COUNTY**

**for the period ending:  
15th March, 2020**



*Rosemercy*  
.....  
**Applicant's  
Signature**

*Rosemercy*  
.....  
**Director General  
National Commission for Science,  
Technology & Innovation**

**THE SCIENCE, TECHNOLOGY AND  
INNOVATION ACT, 2013**

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Technology and Innovation (Research Licensing) Regulations, 2014.

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**Serial No.A 23675**

**CONDITIONS: see back page**

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### **Relevant Work Experience**

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