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A Content Analysis of Secondary History Textbooks in Somalia

In the Light of Fostering Historical Thinking Skills

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Abstract

This article aims to examine the extent of the secondary history textbooks in Somalia, which consist of four grades to foster historical thinking skills. Thus, to achieve the purpose of the study, the researcher followed a deductive method of qualitative content analysis by using the QDA MINER LITE and SPSS. The results revealed that there was a significant difference between the four grades of the secondary history textbooks associated with fostering the historical thinking skills as well as among proportions of the five benchmarks of the historical thinking skills to the four grades. The results of the study also showed that grade 10 has the highest rank of fostering the historical thinking skills while grade 9 represents the lowest rank.

Key Words: Content Analysis, Secondary, History, Thinking Skills, Fostering

1. Introduction

After the collapse of the Somali central government in 1991, the education system in Somalia faced complex and multidimensional challenges in the areas of curriculum, teacher training, school infrastructure, lack of public education, school finance, and untrained educational professionals. The number of imported curricula was used in the schools ranging from10-24 (Hussein, 2015). From 1991-2011 the role of the government was very limited in provision of educational services.The private education sector was administered by associations called Education Umbrellas in an attempt to fill this gap due to the circumstances surrounded the country. Many efforts were paid by the Ministry of Education, UNESCO, UNICEF, IDB Islamic Development Bank and Education Umbrellas to unify curriculum. In order to unify the curriculum, the Ministry of Education decided in 2009 to conduct secondary certificate examinations where the Education Umbrellas concerned with the possibility of implementation of this exam due to the curriculum differences not only among them but among the schools under the supervision of every Umbrella. In 2011, Educational umbrellas agreed with the memorandum of understanding of the development of education, especially the unification of educational subjects for all grades depending on their own resources which led successfully publishing in 2014 syllabus and textbooks from grade 1-12. This was one of the main events recorded in the history of education in Somalia after the collapse of the Somali central government in 1991 which pushed the MoE to develop the secondary syllabus and textbooks prepared by the Education Umbrellas and held the secondary certificate examination for all the schools in the south

and central regions in Somalia. (Said,2018) https://mu.edu.so/wp-ontent/uploads/2018/04/V2_Part2A.pdf

One of the main   educational problems faced   Somali education is a curriculum.The social study subject is the main educational issues which many educators paid a lot efforts to develop it. There was a constant demand from parents to reform this subject and focus on the nation's history and culture.This article aims to analyze the contents of the secondary textbooks in Somalia on the basis of historical thinking skills. The researcher considers, according his knowledge, this article is the first study was conducted in Somalia. Based on the above discussion, the researcher proposes the following hypotheses:

H_a1. There is a significant difference among the five historical thinking skills included in the content of the secondary history textbook in Somalia for the grade 9 at level 0.05.

H_a2. There is a significant difference among the five historical thinking skills included in the content of the secondary history textbook in Somalia for the grade 10 at level 0.05.

H_a3. There is a significant difference among the five historical thinking skills included in the content of the secondary history textbook in Somalia for the grade 11 at level 0.05.

H_a4. There is a significant difference among the five historical thinking skills included in the content of the secondary history textbook in Somalia for the grade 12 at level 0.05.

H_a5. There is a significant difference among the four grades of the secondary history textbooks in Somalia in light of historical thinking skills included in the contents at level 0.05.

There are empirical studies that have examined the content analysis for history textbooks in light of historical thinking skills include Content Analysis of Selected Secondary History Textbooks' Portrayals of Christopher Columbus, Hernan Cortes, and Francisco Pizarro(Lillejord, Ed, & Ellis, 2014),The Norwegian curriculum in history and historical thinking: a case study of three lower secondary schools(Johanson, 2017),A Review of Social Studies Textbook Content Analyses Since 2002(Roberts, 2014).

2. Content Analysis

Content analysis is a research technique for making reaplicable and valid inferences from texts (or other meaningful matter) to the contexts of their use(Kim, Nelson, & Williams, 1985).

Content analysis is an approach to quantify qualitative information by systematically sorting and comparing items of information in order to summarize them. (Manual, 2013).Qualitative content analysis has been defined as: "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (Shannon, Zhang, & Wildemuth, 2005).

2.1 Approachesto Content Analysis

Content analysis is a method that may be used with either qualitative or quantitative data; furthermore, it may be used in an inductive or deductive way. Which of these is used is determined by the purpose of the study. If there is not enough former knowledge about the phenomenon or if this knowledge is

fragmented, the inductive approach is recommended (Elo& Kyngäs, 2008)

2.2 The Process of Qualitative Content Analysis

The process of qualitative content analysis can be followed as these steps:preparing the data, defining the unit of analysis,developing categories ,coding scheme, testing the coding scheme on a sample of text,coding all the text, assessing coding consistency and finally drawing the conclusions from the coded data (Shannon et al., 2005)

2.3 The Aims of Content Analysis

The aim is to attain a condensed and broad description of the phenomenon, and the outcome of the analysis is concepts or categories describing the phenomenon. Usually,the purpose of those concepts or categories is to build up a model, conceptual system, conceptual map or categories(Elo & Kyngäs, 2008)

2.4 Function of Content Analysis

The main functions of content analysis may be classified as follows:

1. Confirmation and validation of hypotheses which already presumed.

2. To accurate "optical illusions" which may be shared by most specialists.

3. To resolve disagreements among specialists as the truth value of certain propositions.

4. To permit the formulation and the testing of hypotheses. (Luis et al., 2008)

2.5 Historical Thinking Skills

Historical thinking refers to exploring evidence and the ability to criticize them; understanding the changes of time; and admitting that history is about the development and destruction of a nation or government. It is also about being emphatic about the past and to dig the reasons for certain events based on cause and effects. (Awang, Ahmad, Yakub, & Seman, 2016)**.**

Historical thinking skills (HTS) is generally defined as a process of using historical information, including deciphering context, perspective, point of view, and perceived facts to understand the past. Thinking in history, or the use of phrases such as "thinking history" also may refer to a process of using critical thinking skills or higher level of thinking skills in the study of history.(Puteh, Maarof, & Tak, 2010).

Seixas, P., & Peck, C. (2004), the historical thinking skills are categorized in five Benchmarks they are historical significance, primary source evidence, continuity and change, cause and consequence, historical perspectives and moral dimension.

2.6 Secondary Education

Secondary education serves as a bridge between elementary and higher education and prepares young persons the age group of 14-18 for entry into higher education (Wells, 1958) likelythe secondary education system in Somalia currently is four years for the students aged 14-18. The general objectives and the contents of secondary history subject in Somalia, which consist of four grades and the student should encounter them are shown below.

The General Objectives of the Secondary History in Somalia 2017 (Waxbarashada & Sare, n.d.)

After studying history in a secondary school in Somalia, students are expected to be able to

1. Recognize and appreciate the importance of studying the history of their nation, both ancient and modern, and how the historical affects the lives of people locally and globally.
2. Understand the important aspects of the history of the wider world, the nature of ancient civilizations, the expansion of empires and their collapse, and the distinctive features of the achievements of previous societies.
3. Develop the historical-critical skills of the social, economic and political organizations of African societies.
4. Understand and appreciate the rights, privileges, and obligations of self and others in order to promote a just and peaceful society.
5. Understand historical concepts such as continuity, results, similarities, and differences, use them to conduct relationships, plot contradictions, analyze trends and develop historically correct questions.
6. Understand historical research methods, including how to use evidence strongly to make historical claims, and determine how to adapt past arguments and interpretations

According to the above six objectives of secondary schools in Somalia, there is a match among the historical thinking skills stated in the objectives and the required standards of historical thinking skills to the study. The below table indicates the matrix of the contents of the four secondary history textbooks in Somalia.

Table 1. Contents of the Four Grades for the Secondary History Textbooks   in Somalia

Units	Grade 9	Grade 10	Grade 11	Grade 12
1	Introduction to History and Government	**Trade**	The History of Africa	Ottoman Caliphate
2	Early Man	Development of Transport and Communication	European Invasion of Africa and The Process of Colonization	World Wars
3	Development of Agriculture	Development of Industry	The Rise of African Nationalism	International Relations
4	History of Islam	Urbanization	The Rise and Contribution of Somalia Freedom Fighters	Cooperation in Africa
5	Contacts between East Africa and the Outside World Up to the 19th Century	Origin, Migration, and Settlement of the People of Somalia	National Defense, Maintain, Law and Order	Women Rights
6	Citizenship and National Integration	Human Rights (Political & Economic Rights)	Human Rights (Social &Cultural Rights	Caring for the Earth
7	Resolve Conflict Non-Violently	Tolerance	Justice	Optimism
8	-	Respect of Others' Opinion	Public Interest	Contented Living
9	-	Discipline in Physical Behavior	Discipline in Speech	

3. Methodology

This study is a deductive which the researcher begins the analysis, using the pre-existing categories (analysis matrix) imposed by the theory or previous research findings(Armat, Assarroudi, Rad, Sharifi, & Heydari, 2018). It is   amethod of Qualitative Content Analysis which the author examined the contents of the four secondary history textbooks in Somalia in light of Benchmarks of Historical Thinking,aFramework for Assessment in Canada,Peter Seixas,Centre for the Study of Historical Consciousness,UBC,August 18th, 2006 (Qian & Western, 2007)they are categorized in five Benchmarks they are historical significance, primary source evidence, continuity and change, cause and consequence, historical perspectives and moral dimension.Seixas, P., & Peck, C. (2004) "The   historical significance is about a relationship not only among events and people of the past, but also about the relationship of those events and people to us, in the present as well as it involves organizing events in a narrative that will show us something important about our position in the world".The primary source evidence is the use of primary sources as evidence. This includes how to find, select, interpret, and contextualize primary sources. There are distinctions among forms of evidence, e.g., records, testimony, relics, demanding some different kinds of questions(Qian & Western, 2007).As for the continuity and change are interrelated: processes of change are usually,continuous, not isolated into a series of discrete events this include progress, decline and the chronology and periodization of events (Qian & Western, 2007),while the causes and consequences: central to cause and consequence are the active role, or agency, that people (as individuals and groups) play in promoting, shaping, and resisting change in history (Qian & Western, 2007)and the perspective, empathy, and making a moral judgment or dimension,for the perspective is the cognitive act of understanding the different social, cultural,

intellectual, and even emotional contexts that shaped people's lives and actions in the past while the moral judgments mean the actions of people in the past, through   the historical context in which they were operating.(Qian & Western, 2007)

The author used abbreviations for the coding the items of the Benchmarks of historical thinking skills for analyzing the contents of the four history textbooks of the study in which HS stands for historical significance, PS coded as primary source evidence, COC represents continuity and change while CAC coded as cause and consequence and HP stands for historical perspectives and moral dimension.The author analyzed sentences, paragraphs, pictures,tables and diagrams included in the contents of the textbooks by using QDA Miner Lite.

To determine the consistency of the instrument, the author selected equal units randomly from the contents of the textbooks and examined them, then after two weeks re-examined and checked inter-rater reliability according to Kappa in SPSS. The result was 0.75 with p< 00(Table 1) thus it is substantial.

Table 2: Inter-rater Reliability

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Measure of Agreement	Kappa	.750	.210	3.536	.000
N of Valid Cases		5			

4. Findings and Discussions

Built on the content analysis of the four secondary history textbooks in Somalia examined by the author, though testing the five Hypotheses of the study in light of Benchmarks of Historical Thinking,a   Framework   for   Assessment   in   Canada,Peter

Seixas,Centre for the Study of Historical Consciousness, UBC,August 18th, 2006 (Qian & Western, 2007),the feedback and discussions illustrated below through the various tables.

Table 3.Correspondance Table of the Historical Thinking Skills with the Four History Textbooks

Historical Thinking Skills	Frequency			
	Grade 9	Grade 10	Grade 11	Grade 12
Historical Significance	12	23	20	25
Primary Sources	15	20	38	62
Continuity & Change	21	77	32	53
Cause & Consequence	16	49	28	32
Historical Perspective & Moral Judgments	3	35	29	15
Total	67	204	147	187
Percentage %	11%	34%	24%	31%

The table above shows the total frequency points for each grade of the four secondary history textbooks with their weights in light of fostering historical thinking skills, and so, the grade 10 gained the most frequencies (204) 34%, the grade 12 gained a second rank(187) 31%, while the grade 11 reached the middle rank (147) 24%,however, the grade 9 represents the lowest rank (67) with 11%. The table 4 explores the frequency of each benchmark of historical thinking skills for the grades horizontally with their percentages.

Table 4. Comparing Proportions among Historical Thinking Skills for Each Grade of the History textbooks at Secondary Schools in Somalia.

Historical Thinking Skills	Averages			
	Grade9	Grade10	Grade 11	Grade 12
Historical Significance	18%	11%	13%	14%
Primary Sources	22%	10%	26%	33%
Continuity & Change	31%	38%	22%	28%
Cause & Consequence	24%	24%	19%	17%
Historical Perspective & Moral Judgments	4%	17%	20%	8%

The table above shows the comparison among the four grades in light of historical thinking skills benchmark. For the grade 9, the Continuity&Change, obtained the highest level with 31% and the Historical Perspective Gained lower level, 5%, while the grade 10, the high degree gained by the Continuity& Change 38% and the Primary Sources shows the low level 10%. For grade 11, the Primary Sources reached a high level with 26%, whereas the Historical Significance obtained the low level 13%. According to grade 12, the Primary Sources represent the high level of 33% compared with other historical thinking skills, while the Historical Perspective& the Moral Judgments contributed the low rank 8%. For all grades in general, the Continuity&Change,the Primary Sources and the Cause & Consequence gained a high rank in all grades. The Historical Significance and the Historical Perspective& Moral Judgmentsrevealed the lowest rank.Based on the above discussion, the following chart highlights how the extent of the relationships among the historical thinking skills,

and the four grades of textbooks for the study. The chart indicates the row and column points where the row represents historical thinking skills and the column stands for the grades.

Row and Column Points

Symmetrical Normalization
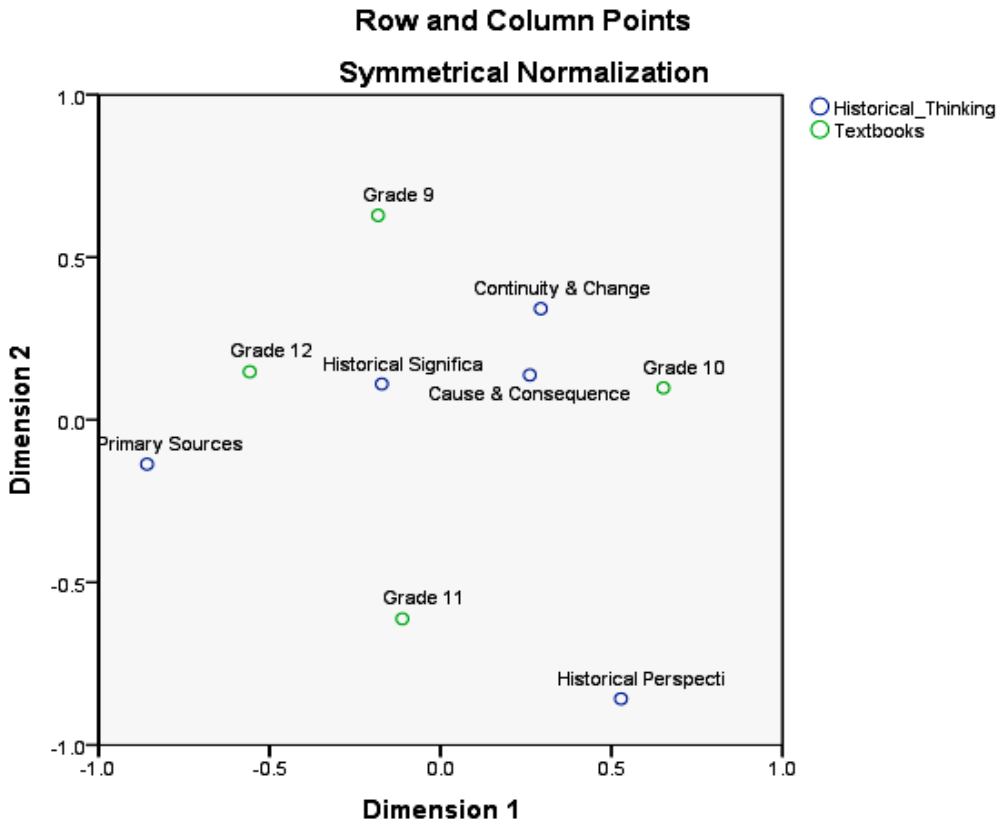
The above chart indicates that the continuity & change and cause & consequence are more   closed with the grade 10 while,historical significance has a better relationship with the grade 12 and fairly with primary sources, meanwhile, historical prospective and moral judgement somewhat closed with the grade 11 as well as the continuity and change slightly closed with the grade 9.

4.1. Testing Hypotheses

Table. 5. Calculation of Chi-square for Historical Thinking Skills, Grade9

The table illustrates that the calculated χ2 with 4 degrees of freedom at the 5% level of significance is 13.226(Table) and the table value is 9.488 hence the calculated value of χ 2 is higher than the table value. This means that there is a significant difference among the historical thinking skills included in the content of the secondary history textbook for grade 9.Thus, the hypothesis two which says '*there is a significant difference among the historical thinking skills included in the content of grade 9*' was supported.

Historical Thinking Skills	O_i	E_i	$(O_i - E_i)$	$(O_i - E_i)^2$	$(O_i - E_i)^2 / E_i$
Historical Significance	12	13.4	1.4	1.96	0.146
Primary Sources	15	13.4	-1.6	2.56	0.19
Continuity & Change	21	13.4	-7.6	57.76	4.31
Cause & Consequence	16	13.4	-2.6	6.76	0.50
Historical Perspective && Moral Judgment	3	13.4	10.4	108.6	8.08
Total	67				13.226

$$\chi^2 = 13.226$$

Table 6. Calculation of Chi-square for Historical Thinking Skills,Grade10

The table shows that the calculated χ2 with 4 degrees of freedom at **α=.05** level of significance is 52.02(Table) and the table value shows 9.488 hence the calculated value of χ2 is higher

than the table value. This indicates that there is a significant difference among   the historical thinking skills included in the content of the secondary history textbook for grade 10. Thus, the hypothesis two which says '*there is a significant difference among   the historical thinking skills included in the content of grade 10*' was supported.

Historical Thinking Skills	O_i	E_i	$(O_i - E_i)$	$(O_i - E_i)^2$	$(O_i - E_i)^2 / E_i$
Historical Significance	23	40.8	-17.8	289	7
Primary Sources	20	40.8	-20.8	432.6	10.6
Continuity& Change	77	40.8	836.22	1310.4	32
Cause & Consequence	49	40.8	8.2	67.4	1.6
Historical Perspective && Moral Judgments	35	40.8	-5.8	33.6	0.82
Total	204				52.02

$$\chi^2 = 52.02$$

Table7. Calculation of Chi-square for Historical Thinking Skills,Grade11

The table reveals that the calculated χ^2 with 4degrees of freedom at **α=.05** level of significance is 5.785(Table) and the table value indicates 9.488 hence the calculated value of $\chi2$ is less than the table value. We can determine that there is not a significant difference among   the historical thinking skills included in the content of the secondary history textbook for grade 11, thus, the hypothesis three which says '*there is a significant difference among   the historical thinking skills included in the content of grade 11*' was not supported.

Historical Thinking Skills	O_i	E_i	$(O_i - E_i)$	$(O_i - E_i)^2$	$(O_i - E_i)^2 / E_i$
Historical Significance	20	29.4	-9.4	88.36	3
Primary Sources	38	29.4	8.6	73.96	2.5
Continuity& Change	32	29.4	2.6	6.76	0.22
Cause & Consequence	28	29.4	-1.4	1.96	0.06
Historical Perspective && Moral Judgments	29	29.4	-0.4	0.16	0.005
Total	147				5.785

$$\chi^2 = 5.785$$

Table 8. Calculation of Chi-square for Historical Thinking Skills, Grade 12

Table explores that the calculated χ^2 with 4 degrees of freedom at the 5% level of significance is 41(Table) and the table value showed 9.488 hence the calculated value of χ^2 is higher than the table value. We can thus, conclude that there is a significant difference among the historical thinking skills included in the content of the secondary history textbook for grade 12.Thus, the hypothesis two which says '*there is a significant difference among the historical thinking skills included in the content of grade 12*' was supported.

Historical Thinking Skills	O_i	E_i	$(O_i - E_i)$	$(O_i - E_i)^2$	$(O_i - E_i)^2 / E_i$
Historical Significance	25	37.4	-12.4	153.7	4.1
Primary Sources	62	37.4	24.6	605.2	16.2
Continuity& Change	53	37.4	15.6	243.3	6.5
Cause & Consequence	32	37.4	-5.4	29.2	0.8
Historical Perspective&& Moral Judgments	15	37.4	-22.4	501.7	13.4
Total	187				41

$$\chi^2 = 41$$

Table 9.Calculation of Chi-square of Historical Thinking Skills among the Four Grades

This table shows the calculation of Chi-square results of historical thinking skills among the four grades the significance value in the table = 000 is less than 0.05.We can thus conclude that there is a significant difference among the five historical thinking skills included in the contents of the secondary history textbooks for all grades and therefore, the hypothesis that *'there is a significant difference among the four grades in light of fostering historical thinking skills'* was supported.

Dimension	Singular Value	Inertia	Chi Square	Sig.
1	.246	.061		.000[a]
2	.145	.021		
3	.058	.003		
Total		.085	51.394	

5. Conclusion

As the comparing among the four grades of the study, the findings showed that the grade 10 gained the most frequencies of historical thinking skills 34%while the grade 12 gained a second level, 31%,however, the grade 9 represents the lowest level with 11%.. For a comparison among the five benchmarks of historical thinking skills for each grades the results explored that the Continuity&Change, the Primary Sources and the Cause & Consequence gained a high rank for all grades, whilst the Historical Significance and the Historical Perspective&& Moral Judgments revealed the lowest rank.

6. Limitations &Suggestion for Future Research

The findings in this study concentrated on analyzing the content of secondary history textbooks in light of historical thinking skills, thus, the results could not be generalized to the other criteria of content analysis as well as other stages of education system especially, The primary education. Thus.future researches related to analyzing and evaluation of history textbooks for the primary stage are recommended as well as conducting studies on the extent of the achievement of history teachers regarding to fostering historical thinking skills for the primary and secondary education

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The Authentic Thinking and Interpretation of the
Attribute of Justice in Islam in the Light of Muslim Sources.

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Abstract

This short paper seeks to discuss the understanding of the Islamic thinking and interpretation of justice derived from Muslim sources written in the English language. The Islamic understanding of justice is examined and understood as represented by some of the Muslim scholars in the light of the guidance of revelation and therefore it is in the realm of interpretation of the sacred scripture. After a general introduction, the paper starts with and introduces a synopsis of Islamic intellectual and religious tradition. Then the paper attempts to deal with the issue of the definition of the term 'justice' from the perspective of the sources written in English but basing their definitions on Qur'anic Arabic words. This definitional treatment clarifies what the term symbolizes, embodies, and conveys in Islam. The research discourse proceeds to determine and delineate the Islamic understanding of justice from the Muslim sources written in English. The paper infers from the refined synthesis of the thoughts, notions, and insights manifested in the sources on how justice is understood, conceived and perceived: justice is interpreted in Islam as an attribute and a reality whose essence and knowledge is eternal but can be attained and manifested through the human agency. The research paper then concludes.

Introduction

Justice is universal. The seeking of justice defines one of the major preoccupations of the history of humankind. The understanding and the practice of seeking to establish justice has been present for eons among humankind since creation. As long as human beings have existed on earth, there were always attempts to create rules and laws in order to try to establish, safeguard, and dispense justice in one way or another. Justice transcends human races and languages. That is the reason in virtually all languages, there is a word for it, and one would even venture to assert that all the present estimated seven thousand languages of the world have a word for it. The notion of justice is ubiquitous. This implies that the essence and source of justice is outside human history and the human being's role is that of an agency to represent and manifest its transcending eternal and metaphysical reality. The inquiry at the centre of this research paper, therefore, is to delve into the meaning and understanding of justice as contemplated in Islam through the discourse of selected Muslim thinkers who have written in the English language.

The Islamic *Weltanschauung* regards the visible universe and humankind as a creation of the Almighty God and another creation is the reality of the invisible and unseen universe of angels and the Hereafter. Abdel Haleem (2011) discusses some of the prominent themes found in the Qur'an and notes that the principles and details of religion are meant to be seen within the framework of the interdependence of this life and the afterlife and this defines the Muslims' conception of life and the universe and have a bearing on their actions in this life. The belief and certitude of a Muslim is made manifest through thought, practice, and action that involves different types and forms of supplications and invocations defined by this worldview. This worldview also defines and manifests in the Islamic discourse on the subject of justice in Islam. The reality of Justice encompasses these two realities of creation.

In this paper, sometimes an initial capital letter in the word "justice" indicates that the term means and refers to this encompassing metaphysical reality of justice. This spelling convention is used to indicate and suggest that some terms may contain a higher category of thought from the usual understanding of words as they are, for example the word "Truth" and "truth", and this spelling aspect is also used in the discerning thinking and analysis of Sabet (2008) when he wants to differentiate between the inherent levels of meaning that the term represents in the mind, for instance, when he discusses the ideological and conceptual constraints underpinning the human rights discourse and points out the need for "the necessary step of *re-conceptualizing* human rights as only a facet of the more comprehensive Islamic understanding of *Justice.* Justice incorporates the multidimensional aspects of rights, duties, obligations, responsibilities, fairness, and dignity embedded in Islamic values" (Sabet 2008: 242; emphasis is in the original). And he also states elsewhere in the book: "Islamic thought after all, does incorporate a broad and well developed system of entitlements and Justice which include preservation of *religion, life, reason, progeny, property* and *honor"* (Sabet 2008: 222; emphasis in the original). Sabet is intellectually astute and discerning enough to understand the inherent and intrinsic implications and the versatile capacity of the term; a discernment that comes out throughout the book in his analysis of different topics on Islamic thought and social theory. Doi (1984: 3) also comments: "Justice is a comprehensive term, and may include all the virtues of good behaviour." Thus the latter author's thought emphasizing moral consciousness and judgement.

Although English as a language emerges from a different civilization milieu from that of Islam whose primary language of discourse is Arabic, a number of Muslim scholars and writers have written through the language about Islam and some have touched on the subject of justice in

their writings. This short paper attempts to integrate some of their insights into what may be considered as an endeavour towards a wholesome intellectual vision of understanding their thoughts on the concept and attribute of justice in Islam realised through the English language.

The Islamic Religious and Intellectual Tradition

Justice is one of the most distinguishing and quintessential attributes of Islam. Justice forms one of the foundations that define Islam and the seeking of its interpretation and understanding has always exercised the finest intellects of the experts of Islamic jurisprudence throughout the history of Islam. These illustrious predecessors have left their great knowledge for posterity and scholars and people of learning have expanded and explained further their great knowledge on religion. Their legacy is manifest all over the consciousness and identity of the Muslim Ummah. They wrote in the Arabic language and Islamic scholarship has thrived through the language for centuries since revelation of the Glorious Qur'an as observed by Abdel Haleem (2015) who states that the Quran, which was revealed in Arabic, has had a profound and lasting effect on the theology, language, and culture of the Arab and non-Arab Islamic peoples in their various countries. In the introduction to his English translation of the Qur'an, Abdel Haleem (2004: ix) aptly points out: "The Qur'an was the starting point for all the Islamic sciences ... is the basis of Islamic law and theology ..."

The reality and meaning of justice has defined the history and character of Islam in such a fundamental way that one way to understand Islam is through an understanding of how justice is a major part of its identity. The jurisprudential interpretation of justice in Islam is firmly within the understood meanings of the religious texts. Indeed, as Doi

observes: "There are a number of Qur'anic injunctions commanding Muslims to do justice (Doi 1984: 2).

The Qur'an is the centre of the Islamic universe and is profoundly the source of Islamic religious and intellectual tradition. In his thoroughly well-researched seminal work, Al-Azami (2008) gives an illuminating, well-reasoned and concise account of the history of the text of the Qur'an. He provides great insights throughout the book about the authenticity and integrity of the Qur'anic text as revelation. He discusses how the pious companions of the Prophet took great care to make sure that the Holy Qur'an remain pure and preserved in written form just like the original speech that was revealed to the Prophet through the Arch-Angel Gabriel. They memorized the verses of the Holy Qur'an and meticulously wrote them down. The Qur'an was written down in its entirety during the Prophet's lifetime but had not been compiled into a book. The present structure of the Qur'an in terms of its suras (chapters) and verses was established during the time of the Prophet; later it was eventually compiled into one book. The companions used a very careful method of establishing proofs before writing down the verses of the Qur'an and in this way they preserved both the purity of revelation and its Arabic form. The careful and painstaking method ranged from the minutest phonemic and morphemic details to the syntactic and semantic structures. A-Azami (2008) goes even further to illustrate with examples of folios and fragments of the surviving manuscripts found in different libraries of the world to prove the authenticity of the present text as the same originating from the formative period of Islam.

The significance of Al-Azami's work is on two levels. First, he demonstrates thoroughly that the Qur'an has never been altered in any way since its revelation over 1400 years ago; in other words there are no interpolations from human minds and hands into the sacred text. Two, the book is written in English which implies many people who cannot access

important sources of the history of the revelation and compilation that are in the Arabic language can gain this knowledge through English. The argument in Al-Azami's book buttresses the exposition of this paper because it provides an extremely excellent intellectual background to the Islamic religious and intellectual tradition of Islam through the English language and therefore is one of the most valuable sources of ideational support for this study which focuses on the authentic thinking, interpretation and understanding of justice in Islam.

Sabet (2008: 187) writes: "When one talks about Islam, one is referring to the universe and cosmology of revelation as uniquely represented by primary texts and scriptures." And Nasr (2015), in the introduction of another English translation of the Holy Qur'an, reflects this aspect with the following words:

To return to the central subjects and themes mentioned in the Quran, it is important to emphasize that the Quran is the fundamental source of Islamic Law (*al-Shari^{c}ah*) and that, although historically the Prophet has been called, like Moses, a legislator, the ultimate legislator is considered in Islam to be God Himself, who is often called *al-Shari^c*, "the Legislator." A few hundred Quranic verses deal in a concrete manner with law, while others deal with principles upon which revealed laws are based. In fact, for Muslims the Islamic *al-Shari^{c}ah*, or Divine Law, is the concrete embodiment of the Divine Will as elaborated in the Quran for the followers of Islam; and from the Islamic point of view the scriptures of all divinely revealed religions, each of which possesses its own *shari^{c}ah* (see 5:48), have the same function in those religions. For Muslims, who accept the Quran as the Word of God, therefore, following the Divine Law is basic and foundational for the practice of their religion (Nasr 2015: xxvi).

The above serves as a very brief introduction to the religious and intellectual tradition of Islam and gives an overarching context for this paper.

Definitions

According to the two modern authorities of the Arabic language Badawi & Abdel Haleem (2008:605) the term and word that symbolize and convey the concept of justice in Islam is the Arabic word عدالة which comes from the Arabic root ع / د / ل '-d-l having the meaning or defined as "one side of a camel litter; to be equal to, justice, to be straight, to be upright, to be temperate, the happy medium, to be of impeccable character; to change one's mind, value." And they add that "of this root, two forms occur in the Qur'an: *'adala* 14 times and *'adl* 14 times."

Part of their brief explanation includes the following:

'adala: **I** [v. intran.] 1 to act equitably, to judge justly (42: 15) *and I am commanded to decide justly between you* 2 to offer as an equivalent, to compensate (6: 70) *whatever compensation it might offer, will not be accepted from it* 3 to deviate, to turn away (27: 60) *is there another god beside God?, (no!) but they are people who deviate [from the obvious truth] (or, a people who deem [others] as equal [with God])*

II [v. trans.] 1 to make straight, to put upright, to cause to be well-proportioned (82: 7) *the One who created you, shaped you and well-proportioned you* 2 to consider, or set up, as equal to (6: 1) *yet those who disbelieve set up equals to their Lord!*

According to al-Attas (1999: 3), Muslim lexicologists have been extraordinarily aware of the scientific character of the Arabic language, and the Arabs, al-Attas considers, according to the best of his knowledge, were perhaps the first people we know in the history of mankind to

seriously compile lexicons pertaining to their language. For an uninterrupted period of over 1000 years, from the time of Ibn 'Abbas down to about 200 years to our present time ... learned Muslims have laboured and produced voluminous lexicons, some extending to more than 20 volumes, and some intended to extend to more than 60 volumes, in oreder to preserve purity and authoritative meaning in Arabic. Ibn 'Abbas himself was the first to effect the evaluation of the method of determining authentic and authoritative meaning, which he initiated in the process of interpretation of the Holy Qur'an.

In his book translated into English by Trans.Allam Thoraya Mahdi published in 1995, a Shafi'i jurist and administrator al-Mawardy (364-450 A.H) offers an insight into the relationship between words and ideas by stating that ideas reached are embodied in words that express them and that every part of speech that is used is a combination of sounds that are heard, and a meaning that is to be understood. That is to say a word is speech to be understood by hearing and the meaning underlying it is to be understood by the mind.

Al-Attas (1999) also refers to the fact that in accordance with Islamic tradition definition is of two kinds: one kind is that of a precise or concise specification of the distinctive characteristic of a thing; and another kind is that of a description of the nature of a thing. This distinction reveals that there are things that can be defined specifically to their precise, distinctive characteristic and for this category he gives the example of the definition of man; and there are things which cannot be so defined but can be defined only by describing its nature. He asserts that knowledge comes under this latter category. He continues to say that there are many definitions describing the nature of knowledge, but what is of relevance to his book is the epistemological definition, and adds it is important to understand what the Islamic epistemological context involves and implies. The illustrious Islamic scholar and philosopher

states: "Perhaps its greatest implication lies in its effect upon our vision of reality and truth and our methodology of research, our intellectual scope, practical application in planning for what is called "development", which all bear upon our understanding of education" (al-Attas 1999: 16). This study infers from this epistemological definition and context of Islam that it also implies that an important Islamic concept that is symbolized and conveyed by the term عدالة (justice) in Islam has the semantic capacity to illuminate the intellect for it to attain to that unifying vision of reality and truth. This inference is founded on the principle that authentic thinking and interpretation of knowledge invariably implies the right vision of reality and truth.

The transformation of Arabic by Islam and the transformation Arabic went through from the latter's encounter with Islam as explicated by al-Attas (1999) and Abdel Haleem (2015). The transformation of Arabic by Islam meant drastic change to the semantic capacities of the Arabic words which produced Islamic terms that carry and convey the Islamic sciences and gnosis. The meanings of the Islamic terms expressing the sciences and gnosis of Islam manifest their eternal and primordial essence.

And now to turn the definition of "justice" in the English language to determine from Anglosphere sources the meaning conception of justice from the Anglocentric perspective.

***The Concise Oxford Dictionary of Current English* defines the word 'justice':**

1. Just conduct

2. Fairness

3. The exercise of authority in the maintenance of right

4. Judicial proceedings

***The Concise Oxford Dictionary of Current English* defines the word 'just':**

1.   Acting or done in accordance with what is morally right or fair

The Oxford English Dictionary defines the word justice as having these senses: 1. the fair treatment of people 2. the quality of being fair or reasonable. Justice is the ideal, morally correct state of things and persons. The term comes originally from the Latin *jus* meaning "right" or "law."

Mellinkoff (1963: 15) mentions that "a vast section of the language of the law stems from French sources" and gives examples that include the word *justice* and in another place adds that "more than half had come into written English with a legal meaning by the Middle of the fourteenth century. But most of these with meanings that have remained fairly constant are some of the least technical of the law's vocabulary" (Mellinkoff 1963: 109) and provides among other the words *justice* as an example. So English borrowed from French but the etymon of the word is Latin.

While still on issue of definition, Hart (2012: 13-4) also makes expresses an interesting thought when writes that: "Definition is primarily a matter of drawing lines or distinguishing between one kind of thing and another, which language marks off by a separate word." And follows that thought by stating that the "need for such a drawing of lines is often felt by those who are perfectly at home with the day-to-day use of the word in question, but cannot state or explain the distinctions which, they sense, divide one kind of thing from another."

The paper thus deals with the issue of the definition of the term 'justice' from the perspective of the two languages that are at the centre of the two civilizations epistemologies: Arabic and English. This definitional treatment clarifies what the term symbolizes, embodies, and

conveys in both these languages that are the carriers of their respective civilization universes.

THE ISLAMIC UNDERSTANDING OF THE ATTRIBUTE OF JUSTICE

The first primary source of the interpretation and understanding of justice are the references in the Noble Qur'an. The Noble Qur'an guides to the nascence and foundation of the authentic interpretation of the attribute and reality of justice and indeed is the source for the whole science and sapience of jurisprudence of Islam. One of the Most Beautiful Names of the Almighty God revealed in the text of the Glorious Qur'an is: The Most Just- *Al-Adl* الْعَدْلُ The Embodiment of True Justice. That is perhaps the reason Majid Khadduri in the preface of his English translation of Imam Al-Shafi'i's *Al-Risala* states: "In Islamic legal theory the law preceded society and is considered eternal as God. Tradition has it that God revealed [H]imself through a divine law, communicated to men by His Prophets,...sent down to the nearest Heaven to be available for revelation by Angel Gabriel… For the law was not only founded on religion and sanctioned by God, but in it the whole spirit of faith may be said to be epitomized" (Khadduri, Preface 1987: v).

Doi (1984: 85) observes that: "The Shari'ah ... is derived from a high divine source, embodying the Creator's (*Khaliq*) will and Justice. The main task of the Prophet was to correctly interpret the Divine Will and spread justice (*'Adl*), and to establish peace between man and man, and man and his Creator."

Many erudite experts and scholars of the science of the exegesis of the Qur'an throughout the history of Islam have written volumes on the Divine Book throughout the fifteen centuries of its existence as revelation to humankind and have interpreted the verses that mention justice (عدالة). Doi (1984: 25-31) after discussing the birth of the science

of *Tafsir* during the Prophet's time, goes ahead to provide a list of the most famous and renown of the experts of Qur'anic exegesis and the titles of their books. Justice, Doi (1984) asserts, is one of the attributes of the Almighty God "and to stand firm for justice is to be a witness to" the Almighty God, the Creator of the Universes (Doi 1984: 5) and he quotes verse Al-Qur'an 4:135 in both the original Qur'anic Arabic and gives an English translated version corresponding to the derived rendering from the English translations of Ali (1989), Abdel Haleem, (2004) and Nasr (2015).

One of the main ways justice can be maintained is through witness testimony. Witnesses play an important role in maintaining justice when they testify to the truth of what they know and have seen and witnessed. This is where the qualities and attributes of a person bearing witness is extremely important in the process of ensuring justice is upheld. On the issue of the qualifications of a witness, in the introduction to his translation of Imam al-Shafi'i's treatise (al-Shafi'i 1987) Majid Khadduri explains that the term 'adl is used either in the general sense of justice, which implies conformity with the law, or as the necessary qualification for a witness. He continues to relate that although no precise definition is given by Shafi'i, the term 'adala, the quality of 'adl, is described by al-Mawardi, a Shafi'i jurist, as a state of moral and religious perfection. Thus the term 'adl, Khadduri states, signifies probity or justness of character and this is the sense in which it is frequently used in the *al-Risala*. The witness must be 'adl (just in character), and the minimum requirement is that he must display justness at the time when his testimony is given. It is possible, Shafi'i argues, that the witness may not be 'adl at another time. The testimony of one witness of just character must be supported by another witness of just character, and the justness of character of each witness must be confirmed by another person of just character. This explanation by Khadduri is very important and offers an

invaluable insight into the thought at the centre of this study. This paper explores the thesis that justice is an attributive reality whose locus within this life is the human being whose state has the capacity to establish justice . Another thing that is understood is that of accountability in this life and the Hereafter therefore justice is understood and realised on both the temporal and the eternal.

And indeed Khadduri's observations are born out in al-Mawardi's book translated by Assadullah Yate (p.99; the translated book does not contain the year of publication) al-Mawardi says of a witness that he must be of just character, a quality requisite in all kinds of authority. Justice consists in being true in speech, manifest in his fulfilment of a trust, free of all forbidden acts, careful to guard himself against wrong actions, free of all doubt, equitable both when content and when angry, chivalrous and vigorous both in his *Deen* and his worldly affairs. When such qualities are perfected in him, this quality of justice-by which his testimony is permitted and his judicial authority is acceptable- may be said to be present. If, however, he is lacking in any of these qualities, his testimony is not accepted, his words are not accepted and his decisions are not executed. Therefore, these qualities and attributes are emphasized in order for justice to be established, safeguarded, and dispensed. Doi (1984: 4-5) adds that "Justice must be done equally to all and sundry, even if it to be done against one's self, or one's parent or relatives ... Justice is [God's] attribute and to stand firm for justice is to be a witness to [God], even if it is detrimental to our own interests, as we conceive them, or the interests of those who are near and dear to us" (square brackets inserted).

One of the ways the attribute and reality of justice comes out clearly in Islam through the human agency is the worldview of Islam which sees the human being as the vicegerent of the Almighty God on earth. The human being is the locus of the attribute of justice in the visible universe.

Doi (1984: 8) writes: "A man as Khalifat-[of God] (vicegerent of God) on earth must be treated as an end in himself and never merely as a means since he is the cream of Creation and hence the central theme of the Qur'an." Sabet (2008: 194) expresses a closely similar thought in an elaborate way:

In the Islamic universe, vicegerency entitles mankind to *representation*, and is the underlying cause behind man being created, as an act of divinity ... The legal implications of this principle allow members of the covenant, if not to speak *for* God- the prerogative of Prophets- then to speak *in* [H]is name. Mankind's role and purpose on earth is derivative from this permanent *covenant* as conditioned by divine revelation. When a people rupture the necessary connection between Shari'ah and the purpose of their existence ... the covenant is broken and their right to representation/vicegerency is no more.

And in another section of his book (Sabet 2008: 222) he adds in Islam:

Man" is *relatively autonomous*, for only in this case can there be belief in afterlife reward and punishment based on freedom of choice, on the one hand, and predestination or belief in Divine will and command, on the other. While man is honored and dignified ... and the receiver of His divine revelation, he is by no means an end.

The above brief discussion on the authentic thinking, interpretation, and understanding of the attribute of justice from Muslim thinkers and scholars offers this study the crucial insights that support the thought that informs the thesis of this short research paper on an extremely important subject of justice.

Conclusion

From the sources consulted above and the contemplation of the attribute of justice as seen in Islam, this study has attempted to deal with the thinking and interpretation of justice in Islam by referring to the thoughts and insights manifested by Muslim authors who have touched on this subject in their works. The paper discussed this subject through first providing a very brief context of the Islamic religious and intellectual tradition in order to locate the paper within the larger framework of the universe of Islam. Then the study looked at the definition of the term "justice" both as understood in Arabic through English and also in the English language. The paper then discussed the Islamic understanding of justice using insights from Muslim sources which have either been translated into English or have been written in English. From these insights, the study concludes that justice cannot only be understood at the level of concept only, important as that level may be, but needs to be understood as an attribute also in order to have a full, complete, and wholesome understanding of the reality of Justice.

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An assessment of Drinking Water Quality in AfgoyeTown

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ABSTRACT

Background: Water as a universal solvent has the capability to dissolve many substances, including organic and inorganic compounds. Water quality usually relates to the water element at the optimum rate for plant and animal development. Temperature, turbidity, nutrients, hardness, alkalinity, dissolved oxygen, etc. are some of the important factors that determine the growth of living organisms in the water body. This paper aims to assess the Physical, Chemical, quality of drinking water in the Afgoye district

Methods: Drinking water was collected from the common water sources of the Afgoye town and sent for Physical, Chemical analysis laboratory

Results: The results showed that the water sources of a filtered of Hijra well free from harmful chemical and bacteriological factors based on their physical and biological characteristics. Water samples for physical and chemical assessment all the water samples show the physical parameters of the water, such as PH, electrical conductivity (EC), total dissolved solids (TDS) were within the normal limits. The water sources of Saajid, Towfiq and River water does not free from harmful chemicals. Therefore, not considered potable water for human consumption

Conclusions: from the results of this study, the groundwater in the study area can be regarded as being of good quality for drinking and agriculture purposes, except for Towfiq, Sajid wells and river do not free from harmful chemicals and bacteriological factors based on their physical and biological characteristics.

Keywords: Water Quality,Afgoye, Safe Drinking Water, Analysis

Introduction

Every living thing needs water. Man must always have an adequate supply of potable water for his various daily needs. Specifically, the man needs water for drinking, cooking, bathing, washing, agricultural purpose, manufacturing, and industrial purposes. Water is equally used for the disposal of sewage. In the developed nations of the world, the average domestic use of water, including that for all purposes per person is 180-230 liters per day. An average daily use per person of 450 liters is not uncommon, particularly in the highly industrialized countries. A source of clean and safe drinking water is through the government water supply or pipe-borne water. Since this source is erratic and cannot meet our daily needs, many of the inhabitants of most rural and urban communities in most developing countries of the world turn to the construction and digging of shallow wells to fetch water and collecting water from streams and rivers, which in most cases is not clean (Efe et al.2005)

Water is a vital resource for human survival. In 1981 the 34 the World Health Assembly in a resolution emphasized that safe drinking water is a basic element of "Primary health care" which is the key to the attainment of "Health for all" by the year 2000.Safe drinking water is a basic need for human development, health and wellbeing and hence drinking water accepted human right. Somalia is heading towards a freshwater crisis, mainly due to improper management of water resources and environmental degradation, which has led to a lack of access to the safe water supply to millions of people.Quality of groundwater may vary from place to place and from stratum to stratum. It also varies from season to season.

The chemical composition of natural water is variable. This could be due to the geologicalnature of the soil from which it originates and also

the reactive substances that it may have encountered during flow (Matiniet al.2009).The supply of drinking water of sufficient quality and quantity remains a crucial public health challenge in most African countries (Jessica et al.2014).Some noteworthy statistics from the WHO/UNICEF Joint Monitoring Program 2017 (JMP) for Water and Sanitation reveal that about 2.1 billion human beings lack good quality water, 4.5 billion do not have access to adequate sanitation and roughly 1.5 million deaths every year are attributed to diarrheal disease. Additionally, it is estimated that 58% of the latter figure (842,000 deaths per year), is due to unsafe water supply, insufficient hygiene, and sanitation, and includes 361,000 deaths of children below five years, especially in developing countries (WHO,2014). Water for human consumption must not contain organisms and chemical substances in concentrations sufficiently high to affect health (Brian, 2007).

This work explores certain physical and chemical characteristics of water from three sources, river, well and borehole. The current work is justified by the reality that the region concerned lacks science data on water quality Objectives of the study.

The study aimed assessment of the water quality for domestic water supply in Afgoye district. The specific objectives are:

1. Assess the water quality in Afgoye district
2. Comparative analysis with WHO water quality standards
3. Recommendation for future water supply

Study Area

The water samples were collected from three main sources in the city. Namely Hijra, Towfiq ,Sajin, and Shabbele river .Afgoye is a town in the south-western Somalia Lower Shebbele region of Somalia. It is located 2.14 latitude and 45.12 longitudes [decimal degrees] and it is situated at elevation 87 meters above sea level.

Literature Review

The quantity, as well as quality of clean water supply, is of vital significance for the welfare of mankind. Water supplied to the consumer should not have any impurities which cause taste, odor, color, toxicity, and injuries to human health. The different impurities in water, which cause undesirable effects may be classified into physical, chemical, bacteriological and radiological.

Water quality is impacted by a rise in anthropogenic activity and any physical or chemical pollution triggers changes in the quality of the recei ving water body (Aremu et al. 2011).

The World Health Organization estimated that up to 80 % of all sicknesses and diseases in the world are caused by inadequate sanitation, polluted water or unavailability of water (WHO, 1997).

A study of 28 research conducted by the World Bank shows that the i ncidence of certain water-borne diseases, water-
based washing and water-based and water-
based sanitation linked to the quality and amount of water and sanitation accessible to customers (Abebe ,1986).

Temperature

Temperature plays a significant role in regulating water's physicoche mical and biological parameters and is regarded one of the most significa nt factors for fresh water in the aquatic environment particularly for fresh water (Singh RP et al,2005).

Electrical conductivity

Water capability to transmit electric current is known as electrical conductivity and served as a tool to assess the purity of water.

Pure water is more of a solid insulator than a good conductor of electrical current.

Increasing of ions increases water's electrical conductivity. Generally, the amount of dissolved solids in water determines the electrical conductivity. Electrical conductivity (EC) actually measures the ionic process of a solution that enables it to transmit current. According to WHO standards, EC value should not exceed 400 µS/cm.

Total dissolved solids (TDS)

Water can dissolve a broad variety of inorganic and certain organic minerals or salts such as potassium, calcium, sodium, bicarbonates, chlorides, magnesium, sulfates, etc. These minerals produced the unwanted taste and diluted color in appearance of water. This is an important parameter for the use of water. The water with high TDS value indicates that water is highly mineralized. The desirable limit for TDS is 500 mg/l and maximum limit is 1000 mg/l which prescribed for drinking purpose (Soylak et al (2001).

PH of water

PH is an important parameter in evaluating the acid-base balance of water. It is also the indicator of the acidic or alkaline condition of water status. WHO has recommended maximum permissible limit of pH from 6.5 to 8.5. The current investigation ranges were 6.52–6.83 which are in the range of WHO standards.

Chloride (Cl)

Chloride is mainly obtained from the dissolution of salts of hydrochloric acid as table salt (NaCl), $NaCO_2$ and added through industrial waste, sewage, sea water, etc.

in AfgoyeTown

Compared to groundwater, surface water bodies often have low chloride concentrations. It is essential for the activity of metabolism in the human body and other major physiological procedures.

High concentrations of chloride damage metal tubes and structure, as well as damage to increasing crops. According to WHO standards, concentration of chloride should not exceed 250 mg/l

Nitrate (NO3)

Nitrate one of the most significant illnesses in babies causing water quality parameters, especially blue baby syndrome. Nitrate sources are the cycle of nitrogen, industrial waste, nitrogen fertilizers, etc. The WHO allows a maximum permissible limit of nitrate 5 mg/l in drinking water

Table: 1: WHO drinking water guideline

Parameter	Max. Acceptable concentration	Max. Allowable concentration
Total solids	500 mg/1	I500 mg/1
Turbidity	5 units	50 units
Taste	unobjectionable	-
Odor	unobjectionable	-
pH range	7.0-8.5	Less than 6.5 or greater than 9.2

Effect of water quality for residence healths

Drinking water contamination-related diseases are a significant burden on human health. Interventions to enhance drinking water quality provide substantial health advantages. Water is vital for sustaining life, and a satisfactory (sufficient, secure and accessible) supply must be available to everyone (Ayenew 2004).

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provide substantial health advantages. Water is vital for sustaining life, and a satisfactory (sufficient, secure and accessible) supply must be available to everyone (Ayenew 2004).

Table 2. Examples of information useful in assessing a drinking-water system

Component of drinking-water system	Information to consider in assessing component ofdrinking-water system
Catchments	✓ Geology and hydrology ✓ Meteorology and weather patterns ✓ General catchment and river health ✓ Wildlife ✓ Competing water uses ✓ Nature and intensity of development and land use Other activities in the catchment that potentially release contaminants into source water ✓ Planned future activities
Surface water	✓ Description of water body type (e.g., river, reservoir, dam) ✓ Physical characteristics (e.g., size, depth, thermal stratification, altitude) ✓ Flow and reliability of source water ✓ Retention times ✓ Water constituents (physical, chemical, microbial) Protection (e.g., enclosures, access) ✓ Recreational and other human activity ✓ Bulk water transport

Component of drinking-water system	Information to consider in assessing component ofdrinking-water system
Groundwater	✓ Confined or unconfined aquifer ✓ Aquifer Hydrogeology ✓ Flow rate and direction ✓ Dilution characteristics ✓ Recharge area ✓ Wellhead protection ✓ Depth of casing ✓ Bulk water transport

Source: (WHO, 2008)

Materials and Method

This study was conducted in the Afgoye district. The study was conducted during the month of $(6^{th}$July 2019 −1 August 2019). Drinking water was gathered from town ' prevalent water sources and sen t for physical, chemical and microbiological assessment, in collaboration with the Mumtaz Engineering Company, Mogadishu, Somalia.

The water samples were collected from the surface of the river. The water samples were collected early in the morning between 7 am − 10 am according the study of (Dunn et al, 2007) to reduce the effect of temperature on the collected samples. Water quality parameters such as pH, electrical conductivity, temperature, TDS, DO, Nitrate, COD, Alkalinity, Phosphate, HCO_3, chloride, sulfate, total coliform, sodium, calcium, and zinc were analyzed using Atomic Absorption Spectrophotometer. The results obtained were compared with WHO (2010) threshold for drinking water quality.

Tap water samples were collected from three activities across theJigjiga city in April 8, 2014.

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Tap water samples were gathered throughout the town of Afgooye from four different sources. All the gathered samples were colorless and without order.

Samples were taken into three kinds of Polyethylene bottles using a Plastic drawer . During the sampling, extra care was taken to avoid contamination and bottles were rinsed times the water being collected. Electriscal conductivity (EC) and PH were urgently determined when receiving the sample in the laboratory because of the unstable nature.

Analysis of water samples

Determination of pH

The Hanna microprocessor pH meter was used to determine the pH of the water samples. It has been standardized with a pH range buffer solution from 4 to 9.

Measurement of temperature

This was done using a portable thermometer at the sample collection site. This was performed by dipping into the sample the thermometer and recording the stable reading.

Determination of conductivity

This was performed with a conductivity meter from Jenway. The sample was immersed in the sample container until a stable reading is acquired and registered

Determination of total dissolved solids (TDS)

This was evaluated using Gravimetric Method: Filtering out a part of water and measuring 10 ml of the filtrate into a pre-weighed evaporating jar. At a temperature of 103 to 105 ° C for 212212 h, filtrate water samples were dried in an oven. The platform was transmitted to a desiccator and permitted to cool to room temperature.

TDS = [(A−B)×1000]/ml Sample

A stands for the weight of the evaporating plate + filtrate in this formula, and B stands for the weight of the evaporating plate on its own (Mahmud et al. (2014).

Results and Discussions

The drinking water sources and perception of water quality

All the water samples show the physical parameters of the water, such as pH, Electrical conductivity (EC), Total Dissolved Solids (TDS) were within the normal limits (Table 3).

Table 3: Water Sample for HIJRA WELL

Parameter	Unit	Symbol	Result	Guide High	Low	Optimum	High
pH	…….	pH	7.07	8.50			
Electrical Conductivity	mS cm –1	EC	1570	< 5000			
Temprature	°C	T	27.8	35			
Coliforms	CFU	CFU	upsent	0CFU/100ml			
Chlorine	mg/L	Cl	0.01	< 0.2			
Total Dissolved Solids	ppm	TDS	780	< 2500			
Turbidity	NTU	TUB	5	≤ 5			
Odour	……	….	Unobjectionable				
Colour	…….	…..	Unbjectionable				
Nitrates	ppm	NO3	0	< 50.0			
NB: Optimum= safe element. High= Risk element							

Turbidity

The turbidity of water depends on the quantity of solid matter present in the suspended state. It is a measure of light-emitting properties of water and the test is used to indicate the quality of waste discharge with respect to colloidal matter. The mean turbidity value obtained for Hijra Well (5 NTU) is same the WHO recommended value of 5.00 NTU.

Total dissolved solids (TDS)

Water has the ability to dissolve a wide range of inorganic and some organic minerals or salts such as potassium, calcium, sodium, bicarbonates, chlorides, magnesium, sulfates, etc. These minerals produced the unwanted taste and diluted color in appearance of water. This is an important parameter for the use of water. The water with high TDS value indicates that water is highly mineralized. The desirable limit for TDS is 500 mg/l and maximum limit is 1000 mg/l which prescribed for drinking purpose. The concentration of TDS in the present study was observed in   780 mg/l. it is within the limit of WHO standards.High

values of TDS in groundwater are generally not harmful to human beings, but high concentration of these may affect persons who are suffering from kidney and heart diseases. Water containing high solid may cause laxative or constipation effects

Electrical conductivity (EC)

Pure water is not a good conductor of electric current rather's a good insulator. Increase in ion concentration enhances the electrical conductivity of water. Generally, the amount of dissolved solids in water determines the electrical conductivity. Electrical conductivity (EC) actually measures the ionic process of a solution that enables it to transmit current. According to WHO standards, EC value should not exceed 5000 μS/cm.the study was observed in 1570 μS/cm. Can be consumed by humans, although most would prefer water in the lower half of this range if available.

PH of water

PH is an important parameter in evaluating the acid-base balance of water. It is also the indicator of acidic or alkaline condition of water status. WHO has recommended the maximum permissible limit of pH from 6.5 to 8.5.TheHijra well was observed 7.07. Which are in the range of WHO standards. The overall result indicates that the Hijra well water source is within a desirable and suitable range. Basically, the pH is determined by the amount of dissolved carbon dioxide (CO_2), which forms carbonic acid in water.

Nitrate (NO_3)

Nitrate one of the most important diseases causing parameters of water quality, particularly blue baby syndrome in infants. The sources of nitrate are nitrogen cycle, industrial waste, nitrogenous fertilizers, etc.

The WHO allows a maximum permissible limit of nitrate 5 mg/l in drinking water. In Hijra well with an average value of 0 mg/l.

The findings of this study showed that the water sources of a filtered of Hijra free from harmful chemical and bacteriological factors based on their physical and biological characteristics. All these indicators remained a normal range of quality water standards, therefore, considered potable water for human consumption.

Table 4: Water Sample for Towfiq well

Parameter	Unit	Symbol	Result	Guide High	Low	Optimum	High
pH	…….	pH	6.20	8.50			
Electrical Conductivity	mS cm –1	EC	1960	< 5000			
Temprature	°C	T	27.5	35			
Coliforms	CFU	CFU	upsent	0CFU/100ml			
Chlorine	mg/L	Cl	0.01	< 0.2			
Total Dissolved Solids	ppm	TDS	980	< 2500			
Turbidity	NTU	TUB	5	≤ 5			
Odour	……	….	objectionable				
Colour	…….	…..	Unbjectionable				
Nitrates	ppm	NO3	0	< 50.0			
NB: Optimum= safe element. High= Risk element							

Table 4, shows that Temperature was observed the Towfiqwell 27.5 C. However, high-temperature values would not be harmful to human health but pose a problem of acceptability because cool water is generally more palatable than warm water.

EC measures the capacity of a solution to conduct electric current. It also makes it possible to estimate the number of salts dissolved in water. The average value of the EC of Towfiq well water (1960 µs/cm). The value of EC Turbidity, Nitrate and PH area also well within permissible limits.

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The findings of this study showed that the water sources of filtered Towfiq do not free from harmful chemicalsand bacteriological factors based on their physical and biological characteristics. All these indicators remained up a normal range of quality water standards, therefore, considered not potable water for human consumption.

Table 5: Water Sample forSAJID

Parameter	Unit	Symbol	Result	Guide High	Low	Optimum	High
pH	…….	pH	6.32	8.50			
Electrical Conductivity	mS cm –1	EC	2120	< 5000			
Coliforms	CFU	CFU	upsent	0CFU/100ml			
Chlorine	mg/L	Cl	0.2	< 0.2			
Temprature	°C	T	27.5	35			
Total Dissolved Solids	ppm	TDS	1060	< 2500			
Turbidity	NTU	TUB	5	≤ 5			
Odour	……	….	objectionable				
Colour	…….	…..	Unbjectionable				
Nitrates	ppm	NO3	0	< 50.0			
NB: Optimum= safe element. High= Risk element							

Table 6: Shabbele River runs through the Afgoye Town

Parameter	Unit	Symbol	Result	Guide High	Low	Optimum	High
pH	…….	pH	7.6	8.50			
Electrical Conductivity	mS cm –1	EC	2300	< 5000			
Coliforms	CFU	CFU	10	0CFU/100ml			
Temprature	°C	T	28.4	53			
Chlorine	mg/L	Cl	0.1	< 0.2			
Total Dissolved Solids	ppm	TDS	1160	< 2500			
Turbidity	NTU	TUB	7	≤ 5			
Odour	……	….	Unobjectionable				
Colour	…….	…..	Unbjectionable				
Nitrates	ppm	NO3	0	< 50.0			
NB: Optimum= safe element. High= Risk element							

Table 5: indicates that pH values of water samples from SAJID well was obtained 6.32. The World Health Organization (WHO, 2010) recommends a pH value of 6.5 or higher for drinking water to prevent corrosion. Conductivity values of the groundwater samples are presented in Table 3. The value of EC Turbidity, Nitrate and PH area also well within permissible limits

The findings of this study showed that the water sources of Saajiddo not free from harmful chemicals and bacteriological factors based on their physical and biological characteristics. All these indicators remained up a normal range of quality water standards, therefore not considered potable water for human consumption

Table 6: shows that the pH value is in the Shabbele river in Afgoye Town. It complies with water quality standards for water sources WHO (6.5to 8.5). The minimum pH value of Shabbele river in Afgoye Town was recorded in July and August. The turbidity of the Shabbele river in Afgoye Town was obtained 7 NTU, The value of EC Turbidity, Nitrate and PH area also well within permissible limits

The findings of this study showed that the water sources of River do not free from harmful chemicals and bacteriological factors based on their physical and biological characteristics. All these indicators remained up normal range of quality water standards, therefore considered to be no potable water for human consumption.

Conclusion

On the basis of the findings, it was concluded that drinking water of the study areas was that all physicochemical parameters in all the College drinking water sampling sites and they were consistent with World Health Organization standard for drinking water (WHO). The samples

were analyzed for intended water quality parameters following internationally recognized and well established analytical techniques.

The results were discussed in three parameters such as pH, Turbidity and Electrical conductivity. The Ph ranges, Hijra,Towfiq,Saajid in Afgoye city were agreed with the WHO standard. The turbidity of the river was quite higher than the groundwater.

Therefore, from results of this study, the groundwater in the study area can be regarded as being of good quality for drinking and agriculture purposes except forTowfiq, Sajid wells and river does not free from harmful chemicals and bacteriological factors based on their physical and biological characteristics.

Further studies with reference to the chemical and microbial analyses will have to be done to have a broader picture of this water quality.

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Students' Readiness towards Mobile Learning for Higher Education "A Case of Mogadishu University, Somalia"

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ABSTRACT

This research work is focused on discovering opportunities for m-Learning with mobile phones especially in the area of Somalia. The research was conducted in Mogadishu University which is located in Mogadishu, the Capital city of Somalia. Data were collected from students of five faculties, namely the Faculties of Computer Science & Information Technology; Arts and Humanities; Education; Health Sciences; and Engineering, using survey. This research work aims to investigate university students' readiness to utilize mobile learning. About 150 undergraduate students from the above-mentioned faculties of Mogadishu University participated in answering the distributed questionnaire. They were asked about the availability of devices, about their willingness to use m-learning, their expectations of how M-learning would work and their thoughts about the obstacles that might hinder M-learning.

The results were presented using descriptive statistics. The analyses show that the students are mainly positive to the prospective of accessing mobile learning. The attitude differs, relying chiefly upon their previous experience and individual current habits. The study, therefore, concludes that students within the targeted faculties in Mogadishu University had positive perceptions towards mobile learning and are therefore prepared to embrace it.

Key-Words: E-learning, M-learning, Readiness for Mobile Learning, University students' attitude

Introduction

Technology has a fundamental impact on the educational system. Nowadays technology plays a significant role in teaching and learning processes, whether supportive or administrative. Educational technologies have become increasingly important in the higher education environment due to the rapid spread of the internet and personal computers. Computers and the internet are educational tools which offer efficient use of time and ease of access to educational materials for students and teaching staff alike.

E-learning is an approach to facilitate and enhance learning through and based on both computer and communication technology. E-learning is the acquisition and utilization of knowledge disseminated and facilitated primarily by electronic methods. It might incorporate the utilization of web-based teaching resources including websites with discussion boards, collaborative software, e-mail, computer-aided assessment, educational animation, learning management software, multimedia CD-ROMs for offline use and many more, with probably a mixture of different methods being used. In higher education, E-learning aids universities to deliver distance learning programs. It is a structured learning activity, which may happen once learners and instructors are isolated by geographical distance or by time (Haverila and Barkhi, 2009).

E-learning frameworks give students, lecturers and university managers with various services including exam management and student feedback and tracking (Caladine, 2008). Also, students can get services through the Learning Management System (LMS) to register for courses, drop, add and update their profiles (Caladine, 2008). In Somalia, the recent developments and awareness of the local universities on ICT and e-learning have opened an opportunity to adopt e-learning to deliver distance education and new opportunities for those who are willing to

engage in higher education. However, before going to introduce e-learning programs in Somalia, it is suggested to perform enough research on student's access, cost, availability, and speed of internet and other related parameters essential for it (Mohamed, 2017).

M-learning is probably going to become one in all the foremost effective methods for conveying higher education materials in the future (El-Hussein and Cronje, 2010). This is since mobile devices have turned out to be progressively cheaper, effective and straightforward to use that may broaden the advantages of E-learning frameworks by giving university students chances to get to course materials and ICT, learn in a very cooperative environment (Nassuora, 2012). In Somalia, however, m-learning has yet to advance to the point where it tends to be viewed as conventional teaching as well as a learning approach.

According to (Attewell, 2005; Laouris and Eteokleous, 2005; Traxler, 2007). Compared the E-learning and M-learning as follows; in E-learning (Wired, computer or laptop, Any time, Internet and intranet networks, collaborative, distance learning, formal, multimedia, time-delayed – Asynchronous, late communication, scheduled, face-to-face, limit by location and time, late communication, poor due to group consciousness) in M-learning(Wireless, Mobile phone, smartphone and Tablet PC, Anytime, Anywhere, Internet and Mobile networks, Networked-personal and private, situated learning, informal, objects, instant delivery-synchronous, immediate, unprompted, flexible, anytime, anywhere, immediate communication, rich due to one-to-one communication).

Utilizing mobile in learning can improve the educational systems and supply a lot of benefits for the educational environments by conveying the advantage of these innovations to the education environments. The inquiry emerges here; are the technology and also the folks able to move towards mobile learning? One of the key issues that govern the success

of implementing innovation with regards to education is the level of users' readiness towards the adoption of the new technology (Lam et al., 2011).

Conducting students' readiness assessment before implementing M-learning is important as highlighted by Ford and Batchelor (2007), that it is vital for Higher Education institutions to assess the readiness status of students for mobile learning before the implementation of this technology.

Therefore, there is a need to investigate the factors that influence the deployment and adoption of M-learning in the higher education perspective. By recognizing the vital factors that guarantee the successful deployment of M-learning, universities can line up their strategic planning with the requirements of lecturers as well as learners and enrich better policy decisions. Thus, the research questions are set out: *(1) What is the extent of students' readiness for Mobile learning system? (2) What are students' expectations towards mobile learning services and therefore the difficulties that may influence the adoption of this new technology? (3) What are the factors impacting students' acceptance of mobile learning in higher education?*

Method

Research Design

In this research, quantitative research was built as the research strategy. To gather data for the work done during this research, a questionnaire was designed for this research. There have been two forms of the questions: closed-ended questions (merely five-point Likert scale questions), and open-ended questions. A survey technique was utilized to acquire individual attitude, thoughts, facts, and perception. Such quantitative analysis aided the researchers to scientifically examine and discover the students' readiness towards M-learning.

Data Collection Method and Sample Size

A questionnaire was developed to assess the readiness status of the learners towards utilizing mobile learning. The instrument was reformed from Trifonova, Georieva, and Ronchetti (2006). Students were requested to complete a form which contains five sections. The sample size of the study is about150 undergraduate students from various faculties of Mogadishu University participated in answering the distributed questionnaire.

Data Analysis Procedure

For data analyzing, Descriptive statistics were employed in this research to provide a straightforward description of what is appeared by the data exhibited. Mean value and the standard deviations (SD) for all responses were computed. A portion of the outcomes was shown in diagrams to make them simpler to understand and translate. Besides, the outcomes from the open-ended questions were analyzed utilizing thematic analysis.

Results & Discussion

The data were coded and analyzed by using the Statistical Package for Social Science (SPSS) Version as well as Excel. Results are presented here according to the five sections of the questionnaire.

The first section: participants' demographics

The first section gathers data regarding users' demographics; it merely asked quarries about gender, age, and education level. On the gender distribution, 82% of the students are male whereas the remaining 18% are female. A substantial part of the students, of about 83%, were between ages of 18-24 years old, while the ages of 14.7% of students range between 25-29 years old. Regarding the education level of the students, 55.3% of them are 4th years students while the remaining

students are 3rd-year students. Table 4.1 and figure 4. 1 demonstrates a summary of the profile of respondents.

Table 4.1 Summary of a profile of respondents

n=150		
	Gender	
	Frequency	Percent (%)
Male	123	82
Female	27	18
	Age Group	
18-24	125	83.3
25-29	22	14.7
30-34	3	2
	Education Level	
3rd Year	67	44.7
4th Year	83	55.3
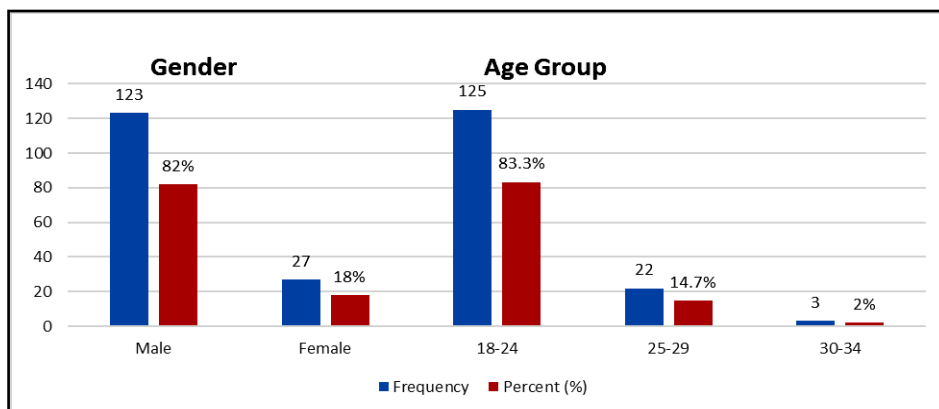
Figure 4.1 profile of respondents

The second section: (13) closed questions about the types of mobile devices, internet usability, cost of accessing the internet and user's expertise and knowledge of mobile technology media.

Figure 4.2 demonstrates that 70% of the respondents' smartphones with advanced computing ability and connectivity; 20% of the students owned a Tablet PC while the remaining 10% own classical mobile phone for calls and texts.
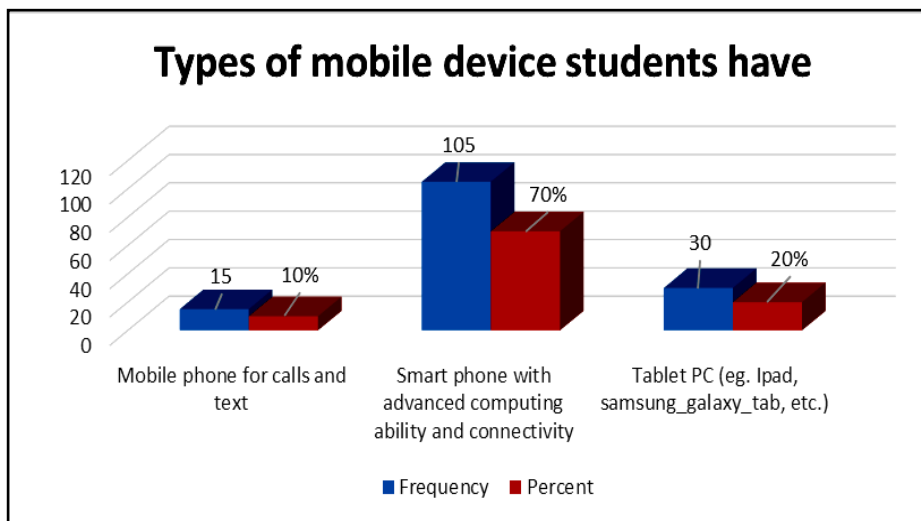
Figure 4.2 Types of mobile devices students have

The study additionally investigated how students access the internet and where to discover how this could influence the implementation of Mobile learning. About 86% of the students access daily the internet through their mobile devices, while 8% of the students accessed the internet from their mobile devices every week (Figure 4.3). It was likewise discovered that 88% of the students accessed the internet outside the University in various locations, for example, at home, in the public library, and at internet cafés. Around 78.7% of the students got to the web utilizing the campus wireless network.
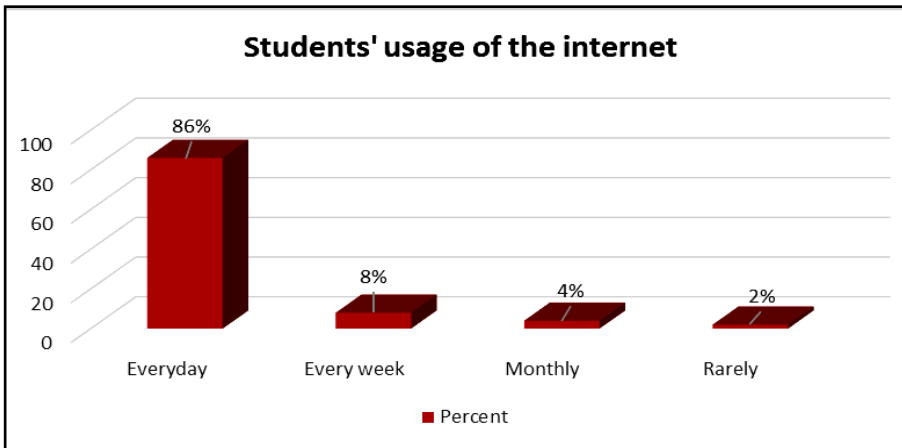
Figure 4.3 Students usage of the internet
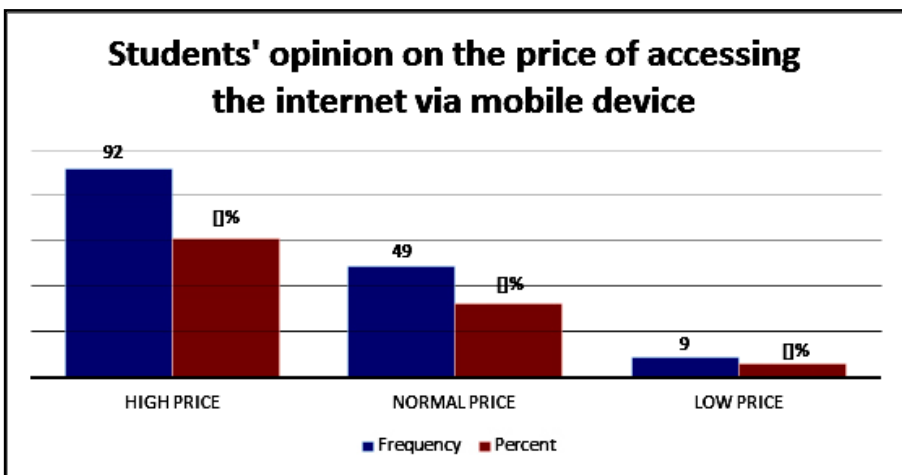
Figure 4.4 students' opinions about Internet price

The outcomes demonstrated that 92.7% of the students pay money to access the internet. Considering the students' opinions about price, 61.3% assume it is a high price, while 32.7% of the students considered it a normal price, whereas 6% trusted it is a low price to pay for internet access (Figure 4.4). The data additionally show that a 36.7% of the students used an E-Learning platform (Learning Management systems (LMS), Content management systems (CMS)) like Fedena, Moodle, etc. to learn courses. In contrast to this, using mobile devices in learning, a higher percentage of the participants 90.7% access education applications on their mobile devices.

A majority of the students (77.3%) showed that it was valuable to access course lectures on-line utilizing cell phones, as the lectures are available anytime, anywhere. Table 4.2 demonstrates the percentage of students who use PCs and cell phones for learning. It is also worth mentioning that more than half of the students (61.3%) participating in this study had heard about mobile learning, or knew what it was.

Table 4.2: Students' Usage of Computers and Mobile Devices for Learning

Students' usage of educational mobile applications, E-learning Platforms, and their usefulness		
	Yes	No
Used any educational application on a mobile device (e.g. dropbox for docs storage, YouTube for videos, virtual labs, etc.)	136 (90.7%)	14 (9.3%)
Think it is useful to access online courses lectures using a mobile device	116 (77.3%)	34 (22.7%)
Use E-Learning platform to learn courses (e.g. Fedena, Moodle, etc.)	55 (36.7%)	95 (63.3%)
Heard about Mobile Learning (M-Learning)	92 (61.3%)	58 (38.7%)

However, in spite of this, the bulk of the responses to the question "what is your opinion of M-learning?" were positive; 81.3% of the students said that M-learning is a good idea and they would like to use it, whereas 9.3% think it is a good idea but they would not like to use it. 6% of the students do not think it is a good idea, and the rest of the students 3.4% have no real opinion on this. Figure 4.5 shows the students' opinion about M-learning.
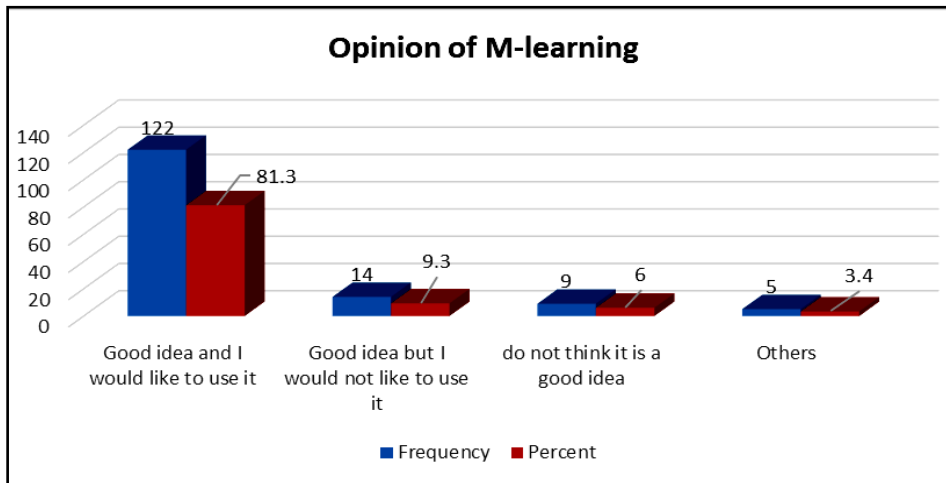
Figure 4.5: Students' Opinion about M-learning

The third section: (11) statements to evaluate students' attitudes towards M-learning

Table 4.3 shows the mean responses of each of the 11 subjects and their associated standard deviation (SD). Students responded to a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree) for the positive statements and from 5 (strongly disagree) to 1 (strongly agree) for the negative statements.

Table 4.3 students' attitudes towards M-learning

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	SD
1. I feel I am not capable of using mobile technology applications	1	5	34	45	65	4.12	0.919
2. I need the training to understand how to use a new mobile application	4	5	21	46	74	4.21	0.985
3. I believe that using a mobile device to learn courses will increase the flexibility to learn inside and outside the classroom	78	47	12	8	5	4.23	1.032
4. I believe implementing and using M-Learning as part of teaching and Learning courses will make the educational process easier and more enjoyable	66	55	22	6	1	4.19	0.880
5. I think that using M-learning will help me to get good grades	48	67	26	7	2	4.01	0.897
6. I believe that implementing M-Learning In the educational process will increase communication between teachers and students	92	44	10	4	0	4.49	0.740
7. Implementing M-Learning will enable me to have independent learning	46	76	16	12	0	4.04	0.858

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	SD
8. I think that M-Learning will improve the quality of the curriculum	38	85	18	8	1	4.01	0.807
9. It is not easy to find a hot spot (wireless) to connect to the internet on your mobile phone or laptop	5	32	24	54	35	3.55	1.162
10. I do not think there is enough technical support to implement M-learning	8	46	25	61	10	3.13	1.089
11. I believe that implementing M- learning is a complicated process	1	5	15	65	64	4.24	0.817

The first two questions examine the students' abilities **for using M-learning**. The primary question inquired students as to whether they are not capable of using mobile technology application. The mean of the responses was 4.12, which is situated inside the region "Disagree" and "Strongly Disagree". The second question posed to the students if they require training to understand how to use the new mobile application. The mean score of the responses was 4.21 that is found within the area "Disagree" and "Strongly Disagree". The outcomes from these two questions show that students can use mobile applications in their learning.

The next set of questions (3-8) were intended to measure students' attitude towards the advantages of using M-learning for learning

undergraduate courses. Question 3 asked if M-learning will increase flexibility in the learning progression. The mean was 4.23, which is located within the area "Agree" and "Strongly Agree". Then for the 4th question, the participants were asked if M-learning would make the educational process easier and enjoyable. The mean of the result was 4.19, which is again located between "Agree" and "Strongly Agree". The fifth question asked if M-learning would help students to get a good score. The mean score was 4.01, which is also located in the same area.

Question six examined if M-learning would increase communication among lecturers and students. The mean score was 4.49, which is a strong positive response demonstrating that students can realize the benefits of M-learning in this respect. The seventh question asked if M-learning would improve independent learning. The mean score response to this question was 4.04, which is approximately equal to "Agree". The eighth question was designed to find out if students thought to if M-learning would improve the quality of the curriculum. The mean score of the responses for this question was 4.01, which is likewise situated in a similar area of "Agree".

The last part of the section was designed to gather information on students' perception of the challenges of implementing M-learning. Question nine asked how easy it was to find hot spots to connect to the internet. The mean responses were 3.55, between "Neutral" and "Disagree". This suggests that students found it easy to connect a mobile device to the internet. The mean score for the next question 10 ("I do not think there is enough technical support to implement M-learning") was 3.13, which is close to "Neutral". The last question was designed to find out students' opinion of implementing M-learning. The mean score for this question was 4.24, which suggests that students disagree with the idea that M-learning is a complicated process.

Finally, the standard deviations of the questions in Table 4.3 range between 0.740 and 1.162, indicating that students' answers are similar.

The fourth section: classifying a list of services of M-learning in terms of their helpfulness for learning.

To determine the preference for mobile services, students got a listing of expected services and they had to decide how they sensed regarding the usefulness of each one for learning courses. Table 4.4 demonstrates that a high percentage of students expected M-learning to be useful for accessing educational content online (88%) and offline (78%). It can also be seen that a reasonable positive weight (73.3%) was given to accessing supporting educational information via the World Wide Web. In contrast, receiving supporting educational information via SMS/MMS had a neutral response that is slightly greater than half (54%) of the students. The percentages for the latter two services of collaborating with instructors as well as with other students indicate nearly similar percentages of 68% and 68.7% for their users which is also positive.

Table 4.4 Students' Preference for M-learning Services

#	Types of Mobile learning services	Useful	Neutral	Not useful
1	To access educational content online	132(88%)	12 (8%)	6 (4%)
2	To access educational content offline	117(78%)	22(14.7%)	11(7.3%)
3	To access supporting educational information via WWW	110(73.3%)	38(25.3%)	2(1.3%)
4	To receive supporting educational information via SMS/MMS	81(54%)	57(38%)	12(8%)
5	To collaborate with other students	102(68%)	45(30%)	3(2%)
6	To collaborate with instructors	103(68.7%)	42(28%)	5(3.3%)

The fifth section: (2) open-ended questions about challenges of Mobile learning

Students were asked the following question: "in your opinion, what are the challenges that might face implementing M-learning in your department?" In response to this question, students highlighted the following challenges of implementing M-learning:

- The higher cost of mobile internet charges

- The higher cost of smartphone repairing

- Security issues due to targeting high-quality smartphones, reducing anywhere use the feature

- Educational institutions need to have instructional units developed to assist learners in preparing for M-learning

- M-learning might affect lecture attendance of lazy or busy students

- Small screens of mobile phones
- Limited storage capacities of mobile phones

Finally, at the end of the questionnaire students were asked to describe how they imagined M-learning system would work. Following are there answers:

- Students expected that mobile learning will play an important role in learning and will add value to learning in the future.
- Students expected to have online access to more digital learning materials that are simple, useful, diverse and attractive.
- Students expected to have increased interaction with instructors

In summary, the outcomes got from this investigation show that most of the students own smartphones with advanced computing and connectivity to the internet and would like to use this technology within the near future, a few students have normal mobile phones. Students do

access the internet utilizing their smart cell phones inside and outside the campus regularly and their thoughts concerning the cost of accessing the internet tell that they think that the price was costly for accessing m-learning educational services. Challenges they highlighted also include the security issues due to the higher cost of smartphones, as well as higher cost of repairing them.

Besides, students expected M-learning to offer them extra lecture resource to empower them to study while they are voyaging or far from the university campus, and it will not replace the conventional leaning process. Be that as it may, it will improve the communication between the students and their lecturers. Students likewise expect educational institutions to give additional consideration in terms of technical support and infrastructure preparation guarantee an effective implementation of M-learning. They also suggest the establishment of effective instructional units to assist students in making ready for M-learning

Conclusion and Recommendations

The purpose of this research work was to investigate university students' readiness to utilize mobile learning in their undergraduate studies. It additionally endeavored to recognize the factors that affect the implementation of this mobile technology in learning and educating at the undergraduate level.

The results uncovered that the majority of students would like to use this technology within the future and they do access the internet via their smartphones inside and outside the campus often. Their attitude differs, relying mainly on their previous expertise and current habits. Consequently, students and lecturers would possibly benefit of M-learning sooner rather than later if the universities deploy effective procedures that increase students' awareness of M-learning and overcome the challenges recognized. It is recommended that enough

technical support and infrastructure be established in university campuses to help students' learning via their smartphones. Moreover, a sequence of training courses ought to be organized for the instructors to integrate them in M-learning administration.

Besides these, the tests of readiness of using mobile in learning are viewed from the readiness of teachers and students in using mobile in learning as well as the availability and the capability of the technologies in implementing educational processing (readiness of the hardware and the software). Mobile operational readiness refers to students' awareness of, attitude towards, support and training that is needed for mobile learning which was the focus of this research. Therefore the researcher recommends researches to be carried out for the remaining areas of teachers'' m-learning readiness and the availability and the capability of the technologies.

Contributions to theory

The paper began with the following questions: (1) What is the extent of students' readiness for Mobile learning system? (2) What are students' expectations towards mobile learning services and therefore the difficulties that may influence the adoption of this new technology? (3) What are the factors impacting students' acceptance of mobile learning in higher education?

The findings of this research will be of interest of educators and university managers concerned with the adoption and deployment of Mobile learning in higher education. The outcomes of this research might also be useful to educational planners who are in charge of designing university courses. This study will assist the Higher Education Institution's prepare mobile learning programs that consider their students' level of technology and operational readiness into account.

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A framework for Information Security Management Adoption in Higher Education Institutions in Somalia: Perspectives PMT and TOE

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Abstract

This research paper examines the level of information security in higher education institutions in Somalia by identifying the factors influencing information security management. This research was applied by using protection motivation theory and technology organization environment framework, so the paper examines the interrelationship of perceived severity threat, perceived response efficacy, response cost, relative advantage, top management support and size of the organization and information security management. Using explanatory (causal) research design and cluster sampling technique, four – hundred forty-five questionnaires were disseminated to information security managers, ICT managers, IT expertise and IT lecturing at private and public universities in Mogadishu – Somalia; three hundred and eight two involved in the study. The data gathered was analyzed using structural equation model, the results propose that of perceived severity threat and size of the organization were significant to the information security management;

relative advantage, response cost, response efficacy, top management support were not significant to the information security. Suggestions for the results and research limitations identified.

Keywords: Information security management, Protection Motivation Theory, Technology Organization Environment, Higher Education Institutions,

1 Introduction

According to the widely use of technology, this brings individuals, organizations, and nations highly vulnerable to attack information systems, such as cybercrime, information theft, hacking, and others. It's important to ensure information security by expanding the information – communication infrastructure and establish a system to safeguard against information security threats. Information security starts with computer security or system privacy. The need for information security is the need to secure physical locations, hardware, and software from threats(Tietoturvallisuuden, 2010).

In addition, security refers to as the quality or state being secure to be free from threats, also the word security can describe the prevention against enemies from those who would do harm intentionally or accidentally. Reaching the suitable level of information security for an institution also requires having multiple various parts (multifaceted) system(Tietoturvallisuuden, 2010). Security can be classified as follows: physical security to prevent physical items, objects or areas from unauthorized access. Personnel security to protect the individual or group of individuals who are authorized to access the organization and its operations. Operation security to prevent the details of a particular operation or series of activities. Communication security to protect communication media, technology and content. Network security to protect networking components, connections and contents. Information

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security to protect the confidentiality, integrity, and availability of information assets, whether the location to store, processing or transmission. It's achieved via the application of policy, education, training, awareness, and technology. There are four types of information security such as hacking, denial of service, malicious code and social engineering.

Information is the result of processing, manipulating and organizing data, which is simply a collection of facts. Regarding ISO/IEC 27001 defined Information as an 'asset', it is something that has value and should, therefore, be protected. Protecting information – related crimes or to minimize the damage such crimes can cause this is called information security. According to the Committee on National Security refers to information security as the protection of information and its critical elements, including the systems and hardware that use, store and transmit that information. Information security includes broad areas of information security management, computer, and data security and network security. The primary threats to information security are data interception, interruption, modification and fabrication and physical theft of equipment. To identify the three levels (low, moderate or high) depends upon the impact an organization or individuals to information security breach such as loss of confidentiality, integrity or availability.

In addition there are prior studies the investigated incremental adoption of information security in health-care organizations: implications for document management (Lorence & Churchill, 2005), understanding information security stress: focusing on the type of information security compliance activity (C. Lee, Lee, & Kim, 2016), introduction to information security broadcast encryption (Tietoturvallisuuden, 2010), information security evaluation: a holistic approach (Aghroum, 2017), persona – centred information security awareness (Ki-Aries & Faily, 2017),exploring the effects of information

security management awareness and perceived service quality (Kuo, 2018), the impact of information security threat awareness on privacy-protective behaviors (Mamonov & Benbunan-fich, 2018), the influence of good relationship between the internal audit and information security functions on information security outcomes (Steinbart, Raschke, Gal, & Dilla, 2018), understanding key skills for information security managers (Haqaf & Koyuncu, 2018). This research struggled to identify the research gap which is the degree of information security management in higher education institution in Somalia.

2 Theoretical Framework and Hypotheses

2.1 Protection Motivation Theory

PMT can be used to understand the protection themselves after receiving fear such as perceived threat severity, response efficacy, response cost (cost-effectiveness), relative advantage. PMT in the context of information security, if the institution is affected by a threat, all employees and students within the higher education institution are likely to feel some effects(Herath & Rao, 2009). PMT is used to persuade people to follow the communicator's recommendations and predict users' intention to protect themselves after receiving fear-arousing recommendations. Protection motivation theory describes any danger for which there is an active recommended response that can be accepted by the individual(Floyd, Prentice-Dunn, & Rogers, 2000).

2.1.1 Perceived Threat Severity

According to (Chen et al., 2015) the perceived severity attack is defined as to an individuals' understood the awareness of the potential and practical harm of the behavior to themselves or others. Other research proposes that perceived threat severity as the decisions of home wireless network users to implement security policy and mechanism(Crossler, 2010).

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2.1.2 Response Efficacy

Response efficacy refers to a person's perception to take and recommended action step will actually protect the threat(Herath & Rao, 2009). The backing up data on personal computer system is another key prevention of data(Crossler, 2010). Response efficacy concerns perceptions that adopting a particular behavioral response will be effective in reducing the threat of information privacy(Teitel et al., 1991)

2.1.3 Response Cost

Response cost is the term used for removing reinforcement for undesirable or disruptive behavior.

2.1.4 Relative Advantage

According to (Rogers, 1995) describes the relative advantage as the degree to which an invention is perceived as being better than the idea it overtakes. Relative advantage refers the degree to which an innovation is seen as better than the idea, program or product it replaces(Kim & Ammeter, 2014).

2.2 Technology – Organization – Environment

TOE is used as the process by which a firm adopts and implements technological innovations influenced by the technological context, the organizational context and the environmental context(DePietro, Wiarda, & Fleischer, 1990). The technological context includes internal and external technologies that are related to the organization technologies may contain both types of equipment as well as processes(DePietro et al., 1990). Prior technological innovation researchers have identified different groups of variables that are possible determinants or organizational adoption of innovation particularly for information system (IS). They identified that these contexts have positive influences directly on the adoption of IS. In the organizational factors include top management support and size of the higher education institution.

2.2.1 Top Management Support

Top management support has been mentioned as a key predictor in the adoption and implementation of information security management. The senior technology officer is normally the chief information officer (CIO) also titles as vice president of information, VP of information technology and VP of systems may be used. The primary task or responsibility of CIO is advising the owner of the company or chief executive officer, president on the strategic planning that affects the management of information in the organization. The CIO work with subordinate managers to develop tactical and operational plans for the division and to enable planning and management of the systems that support the organization. The chief information security officer (CISO) may also be referred to as the manager for IT security, the security administrator subordinate to the chief information officer (CIO) has primary responsibility for evaluating, managing and implementation of information security(Tietoturvallisuuden, 2010). Top management support for information security and its significance as a primary organizational objective is likely to increase the insights of the internal audit and information security functions that they share a common goal, which, in turn, should improve relationships between these organizational units (Kane, 2010). The information security manager (ISM) is an administrative title or role related to information security and is unlike from the information security expert with regard to function. "The ISM is mainly responsible for: Ensuring that security processes, systems, policies, standards, and guidelines are established, communicated and improved across the entire organization to protect information assets; Making security-related decisions; Collaborating with internal and external stakeholders for all operations; and Supervising the security experts' teams"(Haqaf & Koyuncu, 2018).

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2.2.2 Size of the Higher Education Institution

According to (The Complete University Guide, 2016) the type of the university we will look at the following various areas such as the age, size, and reputation amongst other things.

The from 2004 to 2012 most of the higher education sector are established around 34 universities(Studies, 2013). There are other universities that are established before that period such as Indian Ocean University (1993), Mogadishu University (1997), Hamar University (1999) and SIMAD University (1999).According the size of the university it's considered the number of students are in the university, over 50,000 students are currently enrolled at the higher education institution across Somalia country as the study drawn by Heritage (2013).

Based on the above discussion, the researcher proposes the following hypotheses:

H1. There is a negative relationship between severity attack and low Information security management in HEI.

H2. Response efficacy is positively and significantly related to need information security management in HEI

H3. Cost-effectiveness is positively and significantly related to the need information security management in HEI.

H4. Relative advantage is negatively and significantly related to the need for information security management in HEI.

H5. Top management support is negatively and significantly related to the need for information security management in HEI.

H6. There is a significant relationship between the Size of organization and the need information security management in HEI.

Fg1. The framework of the study
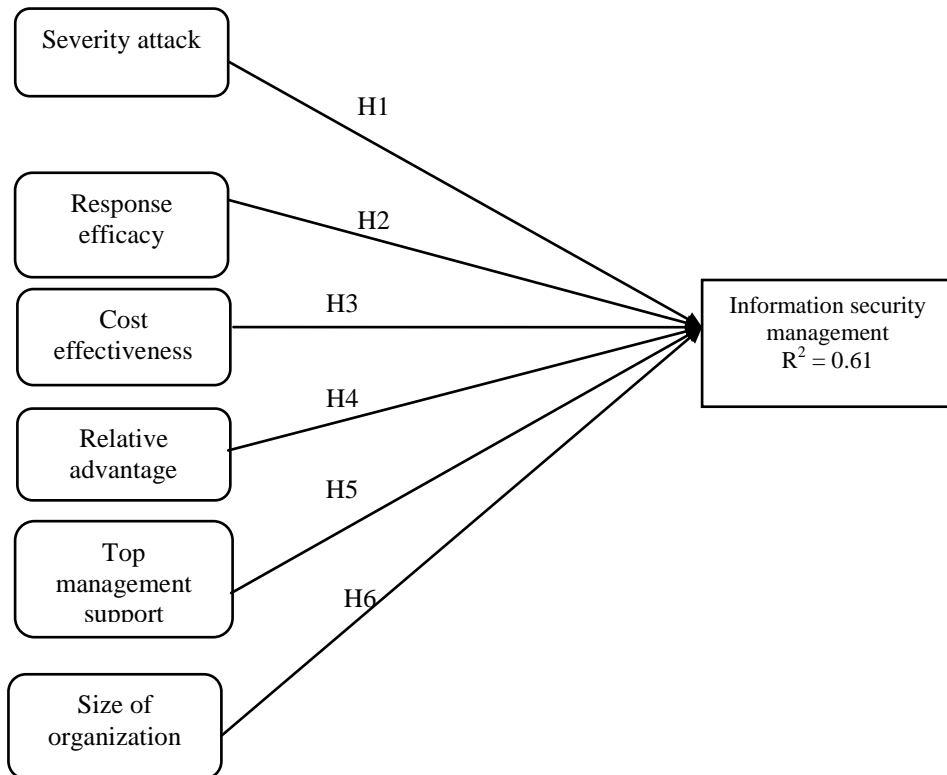
3 Research Method

3.1 Sample and Procedure

A large number of public or private universities in Somalia special Mogadishu city was used as the framework for the study. In this study, the population refers to the ICT managers, IT lecturers, IT expertise and knowledge were select for filling up the questionnaire. This study was adopted by the clustering technique in which a group refers by area of work, residence, organizational and other members with the same characteristics(Omair, 2014).

An online survey using *kobocollect* was used to collect the data in this study around 445. Before that data analysis, the data were screened and removed the outliers. Final 382 data were usable for the goal of this study.

3.2 Instrument

Using questionnaire is one of the simplest methods for data collection (Eccles et al., 2011), in this study a questionnaire was used and Likert five-point scale operated such as 1 represented strongly disagree and 5 represented strongly agree. The following factors were studied such as perceived severity threat, response efficacy, response cost, perceived of benefits, top management support, size of the higher education institution and information security management. Reliability and validity were employed in order to ensure the data.

4 Results and Discussions

4.1 Profile of Respondents

The below table1 indicates the respondents' profile. Male respondents made up 90.1% of the sample while few of females made up 9.9%. The majority of respondents hold master degrees (70.2%), 28.8% hold bachelor degree while 1.8% hold doctorate (Ph.D.) degree. The majority of respondents have experienced between 2 − 4 years (67.8%), 16.0% have experienced between 5 − 7 years, 13.9% have experienced less than 2 years, 2.1% between 8 − 9 years while 0.6% have experienced more than 10 years. More than half percentage (50.5%) were member of ICT department, 33.2% of respondents were member of faculty administration staff 10.2% were member of the institution administration final 6.0% of the respondent were IT lecturing staff. The majority of higher education institution indicated their students between 10001 − 3000 (45.5%), 41.1% in between 1 − 1000 students, 11.8% in between 4001 − 7000 while 0.3% above 10001.

Table1: Respondents' profile (n= 382)

Characteristics	Frequency(n)	Percentage (%)
Gender		
Male	344	90.1
Female	38	9.9
Academic qualification		
Bachelor degree	110	28.0
Master degree	268	70.2
Ph.D. degree	7	1.8
Years of experience		
Less than 2 years	53	13.9
Between 2- 4 years	256	67.8
Between 5 – 7 years	61	16.0
Between 8 – 9 years	8	2.1
More than 10 years	1	0.6
Current position		
Head/Member of the institution administration	39	10.2
Dean/ Member of faculty of administration staff	127	33.2
Head/Member of ICT department	193	50.5
IT lecturing staff	23	6.0
Number of students		
1 – 1000	157	41.1
1001 – 3000	174	45.5
٤٠٠١– 7000	45	11.8
7001 - 10000	5	1.3
Above 10001	1	0.3

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4.2 Level of Information Security Management

The above table 2 shows the majority of the higher education institution 91.4% that they haven't chief information security officer, 2.1% in – placed and while 6.5% planned to have CISO. Regarding (Tietoturvallisuuden, 2010) chief information security officer play an important role for assessment, management, and implementation of information security in the organization. The majority of the respondent identify that they haven't any team-based security (76.4%), 9.9% have a team and while 13.6% planned to have. Internal audit plays an important role in controlling and balancing the information security and access 88.7% identified they haven't any internal audit, 1.8% in – placed and 9.4% planned. The majority of the respondents didn't encrypt their data (91.9%), 5.5 in –placed while 2.6% planned. Authentication and authorization are two main ways to ensure the authorized user and unauthorized according the above study indicate 99.2% in – placed authentication and 99.7% in – placed authorization which is the user should ask username and password when entering the system. Audit data use to trace which clients accessed what and which way it does not really offer any protection against security threats, so the study indicates 89.8% have no any audit, 7.6% have and while 2.6% planned to have an audit to their data. One – time password another way to ensure the data safety 81.2% identified none the main reason the respondent identified difficult to memorize the password, 9.7% in – placed and final 9.2% planned. The above discussion identifies that there is low of information security.

Table2: level of information security management to the higher education institutions ($n = 382$)

Items	Frequency(n)	Percentage (%)
Chief information security officer(CISO)		
None	349	91.4
In – placed	8	2.1
Planned	25	6.5
Team-based security		
None	292	76.4
In – placed	38	9.9
Planned	52	13.6
Internal audit		
None	339	88.7
In – placed	7	1.8
Planned	36	9.4
Encryption data		
None	351	91.9
In – placed	21	5.5
Planned	10	2.6
Authentication data		
None	3	0.8
In – placed	379	99.2
Planned		
Authorization data		
None		
In – placed	381	99.7

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Items	Frequency(n)	Percentage (%)
Planned	1	0.3
Auditing data		
None	343	89.8
In – placed	29	7.6
Planned	10	2.6
One- time password		
None	310	81.2
In – placed	37	9.7
Planned	35	9.2

4.3 Reliability and Validity

The below table 3 Structural equation modeling was applied to identify the correlation between construct variables. In the convergent validity must to be tested factor loading and average variance extracted in the above table all factor loadings between $0.662\ and\ 0.928$ and loadings should be greater or equal 0.5(B. M. Byrne & van de Vijver, 2010) and all AVE must be greater than 0.5 (Fornell and David F. Larcker, 1981). Further construct reliability (CR) is comparable to Cronbach alpha and should be greater than 0.70 and consider as reliable(Joe F. Hair, Sarstedt, Ringle, & Mena, 2012). All squared multiple correlations $(R - square)$ must be at least 0.40 (Bollen, 1989). Above table 3 all SMC between $0.438\ and\ 0.870$.

Table 3: Reliability and validity

Construct	Item	Factor loading	SMC	CR	AVE	Alpha
Information security management(ISM)	ISM1	0.662	0.438	0.858	0.604	0.856
	ISM2	0.871	0.758			
	ISM3	0.789	0.622			
	ISM4	0.772	0.599			
Severity attack (SA)	SA1	0.887	0.786	0.901	0.698	0.760
	SA2	0.919	0.844			
	SA3	0.698	0.487			
	SA4	0.823	0.677			
Response efficacy (RE)	RE1	0.809	0.654	0.841	0.639	0.774
	RE2	0.828	0.685			
	RE3	0.761	0.579			
Cost effectiveness(CE)	CE1	0.810	0.656	0.905	0.761	0.885
	CE2	0.870	0.756			
	CE3	0.933	0.870			
Relative Advantage(RA)	RA2	0.896	0.802	0.915	0.587	0.718
	RA3	0.899	0.808			
	RA4	0.859	0.738			
Top management support(TMS)	TM1	0.904	0.817	0.941	0.799	0.928
	TM2	0.921	0.848			
	TM3	0.901	0.811			
	TM4	0.850	0.722			
	TM5	0.758	0.574			
Size of Higher Education Institution(SHEI)	SHEI1	0.786	0.618	0.861	0.581	0.913
	SHEI2	0.928	0.861			
	SHEI3	0.921	0.848			
	SHEI4	0.884	0.781			

The below table shows the relationship between variables in the lower diagonal and the bold numbers are square-root average variance extracted. According to (Campbell & Fiske, 1959) discriminant validity should also be higher than the correlations among different traits measured by the same method.

Table 4 discriminant validity

	MaxR (H)	ISM	SHEI	TMS	RA	CE	RE	SA
Information security management(ISM)	0.876	**0.777**						
Size of higher education institution(SHEI)	0.921	0.552	**0.766**					
Top management support(TMS)	0.951	0.385	0.529	**0.893**				
Relative advantage(RA)	0.909	0.411	0.532	0.137	**0.766**			
Cost effectiveness(CE)	0.894	0.172	0.170	0.246	0.243	**0.849**		
Response efficacy(RE)	0.767	0.406	0.278	0.276	0.290	0.116	**0.799**	
Severity Attack(SA)	0.908	0.881	0.496	0.353	0.357	0.134	0.393	**0.835**

4.4 Hypotheses Testing Results

Hypothesis 1: suggests there is positive relationship between severity attack and low information security management in higher education institutions ($\beta = 0.668, t = 15.734$) are significant ($p < 0.001$) this proposes that higher education institutions who are low protecting of

their system will increase their prevention for information theft this supports with previous studies(Mohamed & Ahmad, 2012a) and (Son & Kim, 2015).

Hypothesis 2: proposes response efficacy and the need information security are negatively not support was found $(\beta = -0.043, t = -1.107)$ and significant$(p > 0.05)$.

Hypothesis 3: suggests a positive relationship between cost-effectiveness and the need for information security $(\beta = 0.054, t = 1.032)$ and significant$(p > 0.05)$, so the hypothesis not supported.

Hypothesis 4: proposes relative advantage and the need information security management are positively related$(\beta = 0.012, t = 0.188)$, the hypothesis was not supported at significant level$(p > 0.05)$.

Hypothesis 5: suggests there is positive relationship between top management support and the need for information security management$(\beta = 0.005, t = 0.099)$ and the hypothesis not supported where p-value$(p > 0.05)$.

Hypothesis 6: there is a significant relationship between the size of organization and the need for information security management$(\beta = 0.181, t = 4.498)$, the hypothesis supported since$(p < 0.001)$.

Table 4 summary of hypotheses test

| Hypothesis	Findings
H1: There is a significant relationship between severity attack and low Information security management in HEI	Supported
H2: Response efficacy is negatively and significantly related to need information security management in HEI	Not supported
H3: Cost-effectiveness is positively and significantly related to the need information security management in HEI	Not supported
H4: Relative advantage is positively and significantly related to the need for information security management in HEI	Not supported
H5: Top management support is positively and significantly related to the need for information security management in HEI	Not supported
H6: There is a significant relationship between the Size of organization and the need information security management	Supported
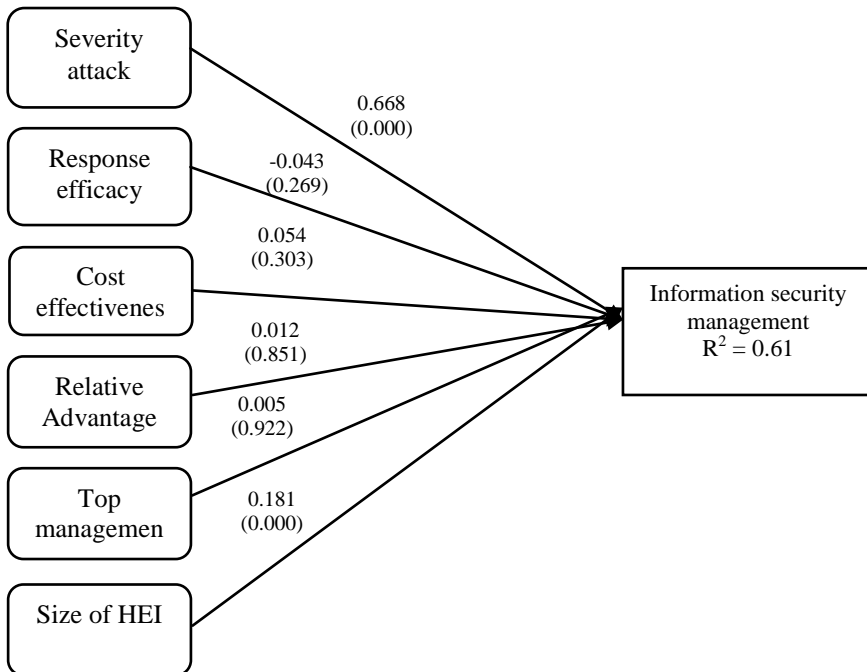
Fig2. Research Model

4.5 Model Fit

To evaluate the measurement of the model, this study used the absolute values of skewness and kurtosis to ensure the normal distribution where skewness 0.1770 to -1.054 and kurtosis -0.545 to 1.350, this shows that there was no indication none $-$ normality. According to (In'nami & Koizumi, 2011) identified the skewness should be less than 3 and kurtosis should be less than 8.

Assessing confirmatory factor analysis is the measurement of the model fit with maximum likelihood. In the confirmatory factors analysis suggested to remove one item from a relative advantage (RA1), it was 27 items and 26 items were validated and fit the data sufficiently. All standardized factor loadings must be more than 0.5(Joseph F; Hair, Black, Babin, & Anderson, 2010). The following was the model fit statistics: the chi-square $= 531.08$ and degree of freedom$= 297$; CMIN/DF (the Relative χ^2) $= 1.788$ this should be less 5 (Bentler, 1990; Marsh, Barnes, & Hocevar, 1985) Goodness of fit index (GFI)$= 0.907$ (Cheung & Liu, 1997) comparative fit index (CFI) $= 0.969$ (Bentler, 1990; Faulon & Hatcher, 1994) (IFI) $= 0.970$; Tucker-Lewis index (TLI) $= 0964$; Normed fit index (NFI) $= 0.934$; Relative fit index(RFI) $= 0.923$; Root mean square Residual (RMR) $= 0.072$ and Root mean square error adjusted (RMSEA) $= 0.045$ (M. M. Byrne & Thompson, 2001)as show in the above table, all loadings were significant.

Table 6: Summary of model fit

Model	Required	Calculated
Chi-Square		531.086
DF		297
Relative Chi-Square		1.788
P	P<0.001	0.000
GFI	>=0.9	0.907
AGFI	>=0.9	0.882
CFI	>=0.9	0.969
IFI	>=0.9	0.970
NFI	>=0.9	0.934
TLI	>=0.9	0.964
RFI	>=0.9	0.923
RMR	<=0.08	0.072
RMSEA	<=0.08	0.045

5 Conclusion and Suggestions

5.1 Information Security Management

The main goal of this study was too drawn the level of information security management in the higher education institution in Mogadishu – Somalia. The researcher was tested the hypotheses of the following factors which are a part of protection motivation theory and technological organizational environmental models.

In the Protection Motivation Theory (perceived severity threat, response efficacy, cost-effectiveness, relative advantage). In the

Technological organizational environmental (top management support and size of the organization)

5.1.1 Perceived Severity Threat

Higher education institution those are perceived the severity attack of losing students' information and academic staff such student's results, identities to theft have apprehensions with information security management(Mohamed & Ahmad, 2012b). The study proposes that severity attack has significance to the information security management. The previous study emphasizes to adopt anti-virus program (Y. Lee & Kozar, 2008). Another study using ant-virus program anti-spyware software(Chenoweth, Minch, & Gattiker, 2009).

5.1.2 Response Efficacy

Perceived response efficacy refers to the perception that a suggested duplicating response is an effective way for the organization or individuals to protect from any other threats(Woon & Tan, 2005). According to this study there is no significant relationship between response efficacy and information security which indicates that most of higher education institution has low awareness or protection for information privacy.

5.1.3 Cost Effectiveness

Information security is continuously altering that needs continuous adaption to new changing of information security threats, the decision-makers require to implement information security strategy with cost-effectiveness (Wang, 2011). In the study there is no relationship between cost-effectiveness and information security, the reason is that most of the higher education institution in Somalia not met any loss of financial and information there is no budget for information security.

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5.1.4 Relative Advantage

Hundreds of thousands of organizations are applied the standards of information security management by BS77779 and ISO/IEC these standards are n't only focusing IT security but also people, process, information and IT security, most of organizations require to deal with how these international standards are suitable in solving the insider threat(Humphreys, 2008). In this study the researcher identified that there is no relationship between relative advantage and information security.

5.1.5 Top Management Support

Regarding the study top management support has no significance to the information security management, the reason is that most of the higher education institution has no chief information security officer (CISO). According to (Reddick, 2009) management support on information security depends upon five of six factors.

5.1.6 Size of the Higher Education Institution

Overall, The large organization has a tendency to adopt technology innovation more than small and medium-sized institution(Gutierrez, Boukrami, & Lumsden, 2015). In this study the researcher identifies that size of higher education institutions in Somalia has positive related to information security management adoption, the universities those are large in size, early opening and reputation more than small size, or late open universities.

5.2 Contributions to the Theory

Nations, Organizations, and individuals are more dependent on the information communication technology these widely use brings highly vulnerable to attack information systems, such as stealing data, hacking, cyber terrorism, cybercrime, and others. Since information is something has a value and should be protected, so information security management

refers controls that organization needs to ensure their sensitive data is protected from attackers.

Based on the two theories Protection Motivation Theory and Technology Organization Environment, the research extends and confirms a research model in acquisition into information security management adaption in higher education institutions. The results propose a level of information security management.

Understanding the importance of information security in higher education institution this brings to minimize the risks and pro-actively limiting the impact of security breach.

5.3 Limitations and Direction for Future Research

This research study has some limitations, first, the sample size was 382 only higher education institutions thus the findings could not be generalized to the entire institution as too broad. The future research may consider by including longitudinal approach using various samples. Second, the content of the study limited the level of information security management in HEI, it also needs to identify the degree of information security in financial institutions.

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Challenges Facing People with Disability in Mogadishu – Somalia.

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Abstract

According to the World Health Organization (WHO) (2011) World Disability Report, there are about 650 million people with disability in the worldwide. And more than 80 percent of persons with disabilities live in developing countries including Somalia. Persons with disabilities in developing countries are often marginalized and face challenges because of their disability. This study aimed to find out the challenges faced by people with disability in their daily lives. The qualitative study was conducted in Mogadishu city, the capital of Somalia. The data were collected through face to face interviews with 25 people for physical disabilities. To analyze the data, content analysis was used. The study found out that majority of people with physical disabilities have limited or no access to health services, education and often experience social and economic stigma and discrimination, which consequently prevents them from obtaining a better quality of life.

Keywords: Disability, Health Service Challenges, Educational Challenges, Social Challenges, People with Physical Disabilities.

Introduction

To understand the people with physical disabilities, we need to understand meanings and definitions of disability, disability models and types of disability. Disability is a condition that affects and impacts all human being (World Health Organization [WHO], 2011). The term disability according to Oxford Dictionary is a physical or mental phenomenon, in which one cannot utilize part of the body, like limited movement or difficult learning (Sultan, 2010).

United Nations Convention on the Rights of Persons with Disabilities (United Nations, 2006) defines People with Disabilities as persons who have long term physical, mental, intellectual or sensory impairments, who face different challenges that may prevent or limit their full and successful contribution or participation in society on an equal opportunity with people without disability (Nokrek, Alam, & Ahmed, 2013).

Two models have been established to define disability namely: medical and social model (Schalock, Lucksson, & Shogren, 2007). In the last twenty years the idea of disability has progressed from medical model of disability which is giving more regard to the individual's impairments to social model of working and contribution that focuses on person's inability to perform his or her daily life activities and limit participation in social activities (Ingstad & Grut, 2007). In the medical model disability is observable deviations from biomedical norms of body structure and function that directly comes from an trauma, infectious diseases, or another health problems, by which persons with certain physical and mental conditions are referred to as abnormal and that status cause all restriction of daily activities (Bickenbach et al., 1999). The UN's Convention of Rights of Person with Disabilities (2006) reflects a shift from medical to the social model of disability, Burchardt (2004) defined social model "as in contrast to the individual model in which

limitations in functioning or participation in society are seen as the direct result.

Most of the studies have categorized disability into seven types, namely mental retardation, mental illness, blindness, low vision, hearing, speech, and locomotors while the census has categorized it into five groups, namely mental, visual, hearing, speech and physical disability (Mishra & Gupta 2006). Kitching (2014) has categorized disability into five major groups namely: physical, sensory, mental illness or disorder, cognitive and intellectual or developmental. Another study said that disability can be classified as mentally defected, blind, hearing impaired, inarticulate people and physical (orthopedic) disabled people (Mülayim, 2009). This study focuses on people with a physical disability only. Physical disabilities "can involve difficulties with sitting and standing, use of hands and arms, sight, hearing, speech, breathing, bladder control, muscle control, sleeping, fits, and seizures" (Pacer Center, 2004, p.1). The most common causes of physical disability can be congenital /heredity (Monk & Wee 2008; Nepal Government, 2006).

This research will add to above mentioned and similar research conducted for knowledge creation, and more importantly, it will fill the gap that exists about challenges faced by people with disabilities in countries with conflicts like Somalia. Thus the study will look at the challenges faced by people with physical disabilities in their daily lives in Mogadishu city, the capital of Somalia. By focuses on the following challenges: Health services, Education, and Social challenges.

In Mogadishu, decades of conflict have left many persons with disabilities, although it's difficult to quantify the number of people suffering from disabilities since there is no civilian casualty tracking system (Amnesty International, 2015).

Methods

Research design

This study used a qualitative research method to investigate the social, educational and health service challenges people with disabilities experience living in Mogadishu. This method has been chosen because it gives the richness of data not possible with quantitative data since it helps the researcher to find more information on the topic being researched (Babbie, 2011).

Sample size

The study took place at Mogadishu city capital of Somalia. Mogadishu was the right place to conduct this study because of the availability of the participants. The total sample size of the study was 45 (25 people with physical disabilities), the number of participants was only known during the data collection period. The data collection technique that was used in this study was face to face interview.

Data analysis procedure

The data were analyzed using content analysis. Content analysis is the systematic reduction of written data through the identification of the unique features of the message (Bruce, 2001).

Research reliability

The researcher recorded the data and the expert researcher rechecked and they reached at least 80% of the intercoder reliability (ranging between 80% and 100%) in agreement which is the acceptable percentage according to Miles and Huberman.

Results

Overview of the Demographic features of people with physical disabilities

The information related to the participants is shown in below.

Table 1 Majority of people with physical disabilities which were interviewed in this study are male, which made up of 16 (64%) of the population of people with physical disabilities, 25-34 was the most interviewed age group at 8 (32%), Furthermore, 10 (40%) of people with physical disabilities interviewed in this study have never attended school. According to their occupation, the study revealed that most of the people with physical disabilities 12 (48%) were unemployed. In terms of marital status, the majority of the people with physical disabilities 11 (44%) were married.

Table 1: Overview of the Demographic features of people with physical disabilities.

Items	Frequency	Percentage (%)
Gender		
Male	16	64
Female	9	36
Age group		
18-24	5	20
25-34	8	32
35-44	6	24
45-54	5	20
55-64	0	0
65+	1	4

Items	Frequency	Percentage (%)
Educational level		
Primary	-	-
Intermediate	2	8
Secondary school	5	20
University	4	16
Informal education	4	16
Occupation		
Employed	9	36
Unemployed	12	48
Student	4	16
Marital status		
Single	10	40
Married	11	44
Divorced	4	16
Breadwinner		
Father	8	32
Person with disability	8	32
Husband	4	16
Brother	1	4
Son	1	4
Relatives	3	12

Findings related to the types of disability, time occurred and their causes

The major types of disability that people with disabilities have, time of occurrence and the causes were presented below:

Majority of persons with physical disabilities interviewed in this study have a deformity of both legs (f=12) while five participants have a deformity on one leg only. The remaining participants have one leg amputated (f=4), paralysis of the lower part of the body (f=2) and cerebral palsy (f=2). The highest number of people with physical disabilities developed their disability when they were 9-11 years old (f=8) while the least number of participants (f=6) started to live with a disability when they were 6-8 years old. The study shows that 8 participants' cause of disability was polio; the second-highest causative factor was unknown 7. A gunshot was the third-largest identified cause followed by fire, accident, and cancer.

Table 12. Types of disability

Category	Codes	Frequency	Percent
Deformity of lower limbs	Deformity Both legs	12	48
	Deformity of one leg	5	20
Cerebral palsy	Deformity of upper and lower limbs	2	8
Spinal cord injury	Paralysis of the lower part of the body	2	8
Amputation legs	Amputated one leg	4	16
Total		25	100
Time the disability occurred		**Frequency**	**Percent**
0-2 years old		6	24

Category	Codes	Frequency	Percent
3-5 years old		7	28
6-8 years old		4	16
9-11 years old		8	32
I don't know		-	-
Total		25	100
Causes of disability			
Category	**Codes**	**Frequency**	**Percent**
Non-Human related causes	Polio	8	32
	Cancer	1	4
Human related causes	Gunshot	4	16
	Fire	3	12
	Accident	2	8
Unknown causes	Unknown	7	28
Total		25	100

Findings related to the challenges faced by people with physical disabilities

The main objective of the study was to find out the challenges faced by people with disability on their daily lives, especially focusing on health service, educational and social challenges. The researcher will discuss the challenges separately below:

Findings related to the health service challenges faced by people with physical disabilities

Table 3. Health service needs Table 3. Health service needs

Category	Codes	Frequency	Percent
Surgery	Orthopedic surgery	11	40.8
	Neurosurgery	2	7.4
Assistive Technology	Motorcycle	1	3.7
	Wheelchair	2	7.4
	Artificial leg	3	11.1
Physiotherapy	Physiotherapy	6	22.2
Nothing	Nothing	2	7.4
Total		27	100
Note. Two persons with physical disabilities have stated more than one need			

Table 3 above shows that majority of the people with physical disabilities' disability need is orthopedic surgery (f=11), they mentioned that their only health service need is to get a well-trained and professional orthopedic doctor who can successfully do the operation they need. One participant narrated that;

"The only thing that my disability need is to get the well knowledgeable orthopedic doctor, who can do an operation for my legs" (PPD 10).

The second highest health service needs that the participants' disability need is physiotherapy (f=6) The third most needed health service that was mentioned is an artificial leg for participants who

amputated their legs, they expressed that they need only artificial legs to walk as mentioned by one participant;

"This time I do not need surgery or physiotherapy but I need an artificial leg to walk without any help from others" (PPD 12)

As displayed in the above table other participants need neurosurgery, assistive technology like wheelchair and motorcycle, as well as those who mentioned that their disabilities do not need any health services at all. Some of the participants are stated below;

"*My health problem is polio and polio has only prevention which is vaccination, so now I do not need any health service related to my disability neither treatment nor surgery" (PPD 7).*

Table 4. Common challenges that prevent or discourage the seeking of health services

Category	Codes	Frequency	Percent
Economic problem	Expensive health services	7	35
	Travel expenses	9	45
Environmental	Transportation problem	2	10
	Hospital building problem	2	10
Total		20	100
two persons with physical disabilities stated that they have both economic and environmental problems			

Majority of the people with physical disabilities stated that the only challenges that prevent them from getting the health services they need are economic problem, and nine participants expressed that they need to go to other countries due to lack of availability of health service in

Somalia but due to financial issues it is difficult for them to travel. Some of the responses are as follows;

"I need neurosurgery, but there is no neurosurgery doctor in Mogadishu, so, I need to go outside of the country to get operation on my spinal cord, but it needs too much money" (PPD 3).

Seven participants stated that they cannot use the available services due to expensiveness and they don't have enough money;

"The services that I need is available in the country, and cannot afford it because it is expensive" (PPD 4).

Four participants stated that they were faced with certain barriers while they were using the health services, the barriers include; transportation problem and inappropriate hospital buildings;

"To access some hospitals is difficult for me because their buildings are not suitable to enter by someone like me" (PPD 15).

Findings related to the educational challenges that faced by people with physical disabilities

Table 5. Availability of educational institutions for persons with disabilities

Educational Institution	Frequency	Percent
Yes	2	8
No	23	92
I don't know	-	-
Total	25	100

Majority of the people with physical disabilities (f=23) stated that there are no educational institutions for people with physical disabilities

while two participants said that previously, there were two schools for people with special needs, but now they are closed.

Those who said that there were educational institutions for people with physical disabilities stated that there was an institute for training of people with special needs.

One participant indicated that Siyad Barre's government built two schools for people with disabilities; *"No government before or after Siyad Barre's government give importance to the people with disabilities because that government built us schools for the training of people with special needs, " (PPD 7).*

Majority of the people with physical disabilities said that they did not attend normal school.

Table 6. Reasons for not attending schools

Category	Codes	Frequency	Percent
Environmental problem	School buildings	8	53.3
	Transportation	3	20
Economic problem	School fee	4	26.7
Family problem	Misconception	-	-
Total		15	100
Note. Two family members stated that their family member with disabilities did not attend schools because of economic and school buildings.			

Most of the people with physical disabilities (f=8) stated that they did not attend normal schools because of their building, as mentioned by one participant;

"I could not go to school because it's not designed to be accessed by a person with a physical disability" (PPD 21).

Another participant said that most schools do not have any ramp and elevator:

"I need to go school, but there is no school which has ramp or elevator for a person with a disability" (PPD 22)

Four participants said that they did not benefit from schools for economic reason, as one participant narrated below:

"Majority of the schools are private, and they need more money for school fees, and my parents do not have enough money to pay the fees" (PPD 24)

Three participants stated that they did not attend school for the transportation problem:

"There is no school near our home, therefore we have to take a bus every day, and it is not easy for me to use public transportations" (PPD 8).

For those who benefited from normal schools most of them said that the schools do not cater to the people with disability's need and as mentioned by some participants:

"Our school's buildings contain three floors and there is no elevator! I had to go up through the stairs and it was difficult as well as uncomfortable for me" (PPD 6).

Another participant narrated that:

"The school I graduated from and the university that I am studying now, both of them they do not have any ramp or elevator, even chairs and tables are not suitable for a student with a disability" (PPD 2).

Three participants mentioned that their schools have met some needs of people with disabilities like giving priority and respect as one participant said:

"My school was a normal school but they give me more priority and respect" (PPD 13).

While two participants stated that their schools met the needs of people with special needs, one of them explained that:

"Our school was suitable for people with special needs because it's designed only for them and aimed at including the people with special needs" (PPD 7).

Findings related to the social challenges faced by people with physical disabilities

Majority of the participants (f=24) indicated that their family members behave well and they supported them, as one participant narrated below:

"Every one of my family members helps me and they make effort to support me 100%" (PPD 2).

Yet one participant said that some of his/her family member's hate them because of their disabilities, as one participant mentioned below:

"Some of my family members hate me, and they are uncomfortable to help me" (PPD 10).

Majority of people with physical disabilities (f=24) said that their friends behave well, and they respect them more while six participants stated that some of their friends behave badly, as mentioned by one participant:

*"Some of my friends at the workplace, sometimes they abuse me because of my disability" (*PPD 7).

Table 7. Opinions about family behaviors

Family Behaviors	Frequency	Percent
Positive behavior	24	96
Negative behavior	1	4
Total	**25**	**100**
Friends Behaviors	**Frequency**	**Percent**
Positive behavior	24	80
Negative behavior	6	20
Total	**30**	**100**
Community Behaviors	**Frequency**	**Percent**
Positive behavior	23	92
Negative behavior	2	8
Total	**25**	**100**

Note. Five people with physical disabilities and one family member said that friends have both positive and negative behaviors

Majority of participants (f=23) said that the communities they live in are treating them well, and they respect them while two participants said that they are faced with problems from some people in the community and one participant mentioned that:

"Some of the community members do not respect me, especially neighbors, who insult me sometimes for my disabilities" (PPD 10).

Majority of the people with physical disabilities participated in competitions such as Qur'an competition, class competition, and school competition while the minority of the participants participated in different activities like empowering people with disabilities, disability day, and political party activities and so on. Similarly, the majority of the

family members stated that their family members with disabilities participate in activities such as Qur'an competition, empowering disabled people, disability day, political party activities and so on.

Majority of the people with physical disabilities (f=14) said that they are not currently participating in social activities, due to lack of information, five participants said they are not participating because there are no ongoing activities, two participants stated that they are not participating in the activities because they are illiterate while two participants said that they do not need to participate in social activities.

Table 8. Effects of disability on marriage decision

Marriage decision	Frequency	Percent
Yes	7	28
No	18	72
Total	25	100

Majority of the people with physical disabilities (f=18) indicated that their disabilities do not affect their marriage decision while seven participants said that their disabilities affected their marriage decision. One participant mentioned that he lost some marriage attempts for reasons related to his disability and he said;

"I had a relationship with a girl, when we decided to marry each other, her family rejected me because of my condition"(PPD 5).

Another participant said that he will not get married because of his disability:

"... It has more effect because I cannot marry; the lower part of my body has mobility problems..." (PPD 3).

Table 9. Effects of disability after marriage

After marriage	Frequency	Percent
Yes	4	26.7
No	11`	73.3
Total	15	100

Majority of the participants (f=11) stated that their disability has no effect on their lives after marriage while four participants said that their disabilities have an effect on their lives after marriage, and some of them mentioned that they are divorced because of issues related to their disabilities as one participant narrated below:

"After one year of our marriage, my husband decided to divorce me for the reasons related to my disability" (PPD 9).

Another participant expressed that his/her disability has affected her badly after marriage and he/she mentioned that;

"I was divorced because the doctor told us that I will not become pregnant, after a few days my husband divorced me…" (PPD 10).

Conclusion & Recommendations

In conclusion, it can be argued that there are many challenges faced by people with physical disabilities in their daily lives, and most of the people with physical disabilities cannot obtain basic services including sufficient health services, education, job opportunities, accessibility, and social participation. These have negative impacts on people with physical disabilities and lead to exclusion from society.

Based on the findings of the study the following recommendations are made:

- The government should make sure that the public buildings, transportations, and roads are disability-friendly.

- Raise awareness about disability

- Come up with suitable hospitals and schools that cater to people with physical disabilities.

- Come up with more social activities for a person with physical disabilities

- The organizations that deals with people with disabilities should make sure that all people with disabilities are invited to social activities.

- The government should raise awareness about Polio vaccine.

- The Somali government should come up with disability policy

- The constitution of Somalia should review its constitution regarding people with disabilities,

- Future studies should be conducted in other parts of Somalia on this topic

- In the future, researchers should focus on specific challenges and possible solutions.

Limitations of the study

The main methodologies used in this study were qualitative, which usually take several months to conduct and interpret. However, one of the limitations of this study is lack of transferability of the result, because this study used the qualitative research method which its results cannot be generalized to the larger population because of the small sample size

and the results can also be biased since the participants can take different ways when answering the questions as compared to quantitative research (Babbie, 2007). The second limitation of this study related to the lack of time because the main methodology used in this study was qualitative, which normally takes more time to collect and interpret the data (Atieno, 2009).

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