

**TERMINOLOGICAL DEVELOPMENT IN TANZANIA: AN ANALYSIS OF THE
BANTU-SOURCED LOANWORDS IN STANDARD KISWAHILI TERMINOLOGY**

A Dissertation Submitted to the Faculty of Humanities at the University of Hamburg,

in Partial Fulfilment of the Requirements, for the Degree of

Doctor of Philosophy in African Languages and Linguistics

by

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From Tanzania

March, 2022

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Date of disputation: 25.11.2022

DECLARATION ON OATH

I do hereby declare on oath that this dissertation is my own original work and has not been submitted before for any degree award in any other University and that the sources which have been used in this thesis have been acknowledged accordingly.

ACKNOWLEDGEMENTS

Many people have been involved in the preparation of this thesis. Yet I would like to thank the following people:

I owe special thanks to Prof. Dr. Roland Kießling, whose supervision enabled me to come up with this thesis. I wish to extend my most heartfelt gratitude for his insightful comments, constructive criticism and for his patience for my never-ending queries from the beginning to the final stage of this thesis. All I can say is thank you so much for sharing your in-depth knowledge of linguistics with me. I also appreciate greatly Dr. Habil Uta Reuster-Jahn, my second supervisor, for substantial suggestions, helpful comments and timely feedback for the improvement of this thesis.

I am most grateful to my family— beloved wife Mageni Malongo, our children (their names) and my mother Mariam J. Katwale — for their love, support and persistent prayers that gave me special grace from God to accomplish this task. I wish also to extend my special thanks to Brother Andreas Ringen, the pastor of the Westertimke Message Believers Church, Brother Christoph Ringen and all the church brothers and sisters of the Westertimke Message Believers Church for their love and support. I am also indebted to my brother Philip Madiavalle and my home church, the Jiwe Kuu Message Believers Church of Mwanza, for their encouragement and prayers. May the blessings of God abound in their entire lives.

I am also grateful to Prof. Dr. Henning Schreiber for his expert guidance whenever I needed help. Equally, I am also indebted to Prof. Dr. Raija Kramer who took her precious time to read my proposal and give helpful comments. My special thanks also go to Prof. David P. B. Massamba, Prof. H. J. Mwansoko, Dr. Musa Hans, Dr. S. Sewangi, Ms. Consolata Mushi, Mr. Collins O. Ocham, Mr. Noel Karekezi, Mr. Filbert E. Kapela, BAKITA and TATAKI officials for their helpful comments on the language development in Tanzania. I would also like to extend my sincere thanks to Mr. James Mwita of Rongo University, Kenya for his diligent proofreading of this thesis. I would also like to thank the Asien-Afrika-Institut – Universität Hamburg, especially the participants of the doctoral students' colloquium of the department of African linguistics for their comments and valuable contributions. I would also like to express my gratitude to Ms Julia Chipalo for the drawings and tables used in this study. Lastly, I would like to pass my sincere gratitude to DAAD. For without DAAD scholarship, I would not have managed to stay in Germany to pursue doctoral studies at the University of Hamburg.

TABLE OF CONTENTS

DECLARATION ON OATH	i
ACKNOWLEDGEMENTS	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	vii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS, NUMBERS AND SYMBOLS	x
CHAPTER ONE: INTRODUCTION	1
1.0. Introduction	1
1.1. Background to the study: Tanzania’s language policy and language contacts	2
1.1.1. An overview of Tanzania’s language policy	2
1.1.2. A brief overview of language contacts and lexical borrowing in Kiswahili	9
1.2. The influence of Anglicisms and Arabic loans on Kiswahili grammar	13
1.3. Debate on language policy in Tanzania: Kiswahili vs English	15
1.4. Statement of the problem, scope and justification of the study	21
1.5. Objectives of the study	23
1.6. Background to Kiswahili	24
1.6.1. The Pre-standardization era (1800 – 1918)	24
1.6.2. The standardization of Kiswahili (1920 -1961)	27
1.7. Definition of key terms	37
1.8. Summary	38
CHAPTER TWO: LITERATURE REVIEW	40
2.0. Introduction	40
2.1. A brief overview of the theories of terminology	40
2.2.1. Tanzania’s terminological development in language planning theory	46
2.2.2. Establishment of state language agencies in language planning theory in Tanzania	50
2.3. Types of lexical borrowings	74
2.4. An overview of the description of Bantu-sourced loans in literature	77
2.5. Loanword adaptations in Bantu languages	81
2.6. Summary	83
CHAPTER THREE: METHODOLOGY	84
3.0. Introduction	84
3.1. Research design	84
3.2. Selection of the study population	85

3.3. Sources of data, sample size and sampling procedures	86
3.3.1. Sources of data and sampling	86
3.4. Methods of data collection	98
3.4.1. Documentation	98
3.4.2. Focus group discussion	105
3.4.3. Questionnaire.....	105
3.4.4. Semi- structured interview	106
3.5. Presentation and data analysis plan	107
3.6. Ethical considerations	108
3.7. Summary.....	109
CHAPTER FOUR: PRINCIPLES AND METHODS OF TERM FORMATION IN STANDARD KISWAHILI	110
4.0. Introduction	110
4.1. Term-formation principles in standard Kiswahili: Prioritization of term sources	111
4.2. The application of term-creation principles and Kiswahili purist tendencies	112
4.3. An overview of lexical purism.....	117
4.4. Africanization of Kiswahili terminology: Kiswahili purist tendencies	121
4.4.1. Kenyan experience in relation to Kiswahili purist tendencies	121
4.4.2. Tanzanian experience in relation to Kiswahili purist tendencies.....	126
4.5. Term-formation methods.....	145
4.5.1. Adaptations of non-African loanwords in Kiswahili	146
4.5.2. Loan translations and compounding	156
4.5.3. Semantic expansion	157
4.5.4. Derivation	159
4.5.5. Semantic specialization involving a zero morpheme	162
4.5.6. Use of native word stock	163
4.7. Summary.....	171
CHAPTER FIVE: AN ANALYSIS OF BANTU-SOURCED LOANWORDS IN STANDARD KISWAHILI TERMINOLOGY	174
5.0. Introduction	174
5.1. An overview of Bantu-sourced loans in standard Kiswahili terminology	174
5.2. The adequacy of Bantu-sourced loans as standard Kiswahili terminology	177
5.2.1. Derivability and compoundability	178
5.2.2. Preference for native linguistic stock.....	180
5.2.3. Linguistic economy	181
5.2.4. Linguistic appropriateness and linguistic correctness	183

5.2.5. Transparency and consistency	186
5.2.6. Preference for native words attested in more than one local language.....	188
5.3. Estimates of Bantu-sourced loans across Kiswahili technical domains	189
5.4. The Proportion of Bantu-sourced loans in the 16 technical domains	212
5.5. An overview of vowels, consonants and noun classes of Bantu languages of Tanzania	214
5.5.1. Vowels and consonants.....	214
5.5.2. Bantu noun classes	215
5.6. The Integration of Bantu-sourced loans in Kiswahili terminology	216
5.6.1. Phonological adaptations	217
5.6.2. Morphological adaptations	222
5.6.3. Retention of source noun classes in Kiswahili	229
5.7. The Semantic content of Bantu-sourced terms in Kiswahili noun classes	232
5.8. General observation on the use of native sources for Kiswahili lexical elaboration...	234
5.9. Summary.....	238
CHAPTER SIX: SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER STUDIES	240
6.0. Introduction	240
6.1. Summary of the main results.....	241
6.2. Conclusions	247
6.3. Recommendations	249
6.3.1. Recommendations to the government.....	249
6.3.2. Recommendations to BAKITA and TATAKI	253
6.4. Suggestions for further studies.....	254
REFERENCES	257
Appendices.....	277
Appendix 1: a. BAKITA’s standardization committee members (1987)	277
a. i. Standardization committee – diplomatic terms (2019)	277
a. ii. Standardization committee – COVID terms (2020)	278
Appendix 1: b. Managers of BAKITA and ILC/TUKI/TATAKI	278
b. ii. BAKITA’s Secretaries since 1967 – to date	280
c. i. <i>Wakuzaji wa lugha</i> ‘language developers’ 2019/2020	280
Appendix 2i: Examples of the certified books by title, author/publisher, certificate number and year	281
Appendix 2ii: Text, supplementary and reference books certified by BAKITA from November 2018 to December 2019	281

Appendix 3: Bantu-sourced loans found in 16 Kiswahili technical domains	283
Appendix 4: Words sourced from non-standard Kiswahili dialects	299
Appendix 5: Local non-Bantu-sourced words.....	300
Appendix 6: Words sourced from West African Languages.....	301
Appendix 7: Bantu-sourced loans by source language in four selected Kiswahili publications.....	302
Appendix 8: Questionnaire for native speakers of the assumed source languages of the Bantu-sourced loanwords	310
Appendix 9: Questionnaire for primary school teachers and teachers' college academic staff	314
Appendix 10: Summary of the results of the dissertation.....	315
Anhang 10: Zusammenfassung der Dissertationsergebnisse	316

LIST OF TABLES

Table 1: Contact situations	9
Table 2: Terms by BAKITA rendering single concepts in the same technical domain	62
Table 3: Identification of source and target terms in TUKI (1990).....	63
Table 4: Spelling variants in adopting English vowels into Kiswahili	70
Table 5: Spelling variants in adapting diphthongs into Kiswahili	71
Table 6: Kiswahili lexical variants resulting from different nativization strategies	72
Table 7: Loanblends in KIST	76
Table 8: Semantic changes of Arabic Loanwords in Kiswahili	82
Table 9: Sampled key participants	87
Table 10: Semantic shifts of established Arabic loanwords used in term expansion	89
Table 11: Source identification for Bantu-sourced loans in TS nos. 1 and 2	92
Table 12: Examples of TS in which sources of Bantu-sourced loans are skipped	93
Table 13: Number of Bantu-sourced loans identified from different sources.....	94
Table 14: Term sources in three technical domains.....	115
Table 15: Term suggestions by Nabhany (1995)	122
Table 16: Kiswahili consonant inventory	147
Table 17: Kiswahili vowel inventory.....	147
Table 18: Adoption of Arabic diphthongs in Kiswahili	148
Table 19: English diphthongs adaptations in Kiswahili	149
Table 20: Vowel length and stress in Kiswahili.....	149
Table 21: Examples of foreign sounds replaced by Kiswahili sounds	150
Table 22: Vowel epithesis in Kiswahili loanwords sourced from English	151
Table 23: Double membership of class 5 and 9 loan nouns	153
Table 24: Examples of allocation of loanwords to the Kiswahili noun class system	154
Table 25: Deriving Kiswahili nouns from Arabic loan verbs by the suffix -a.....	155
Table 26: -ish derivation in Kiswahili technical terms	156
Table 27: Loan translations in Kiswahili.....	156
Table 28: Compounding in Kiswahili.....	157
Table 29: Semantic expansion.....	158
Table 30: Noun-verb derivation by suffixes.....	159
Table 31: Verb-adjective derivation by the suffix -u.....	160
Table 32: Nouns of quality derived from the adjectival stems by the noun class prefix u- ...	161
Table 33: Verbs derived from adjectives by the suffix -sh	161
Table 34: Derivational use of noun class prefixes	162
Table 35: Noun terms derived without morphological manipulation	163
Table 36: Adaptation of Maasai-sourced loanwords in Kiswahili.....	170
Table 37: Kiswahili loanwords sourced from Yoruba and Malinke	171
Table 38: Semantic shift and derivation of Bantu-sourced loans in Kiswahili	176
Table 39: Derivability and compoundability of Bantu-sourced loan items	179
Table 40: Deletion of reduplicants of Bantu-sourced loans in Kiswahili.....	182
Table 41: Semantic shift in Bantu-sourced loanwords	183
Table 42: Bantu-sourced loans without semantic shift in transfer to Kiswahili terminology	184

Table 43: Bantu-sourced loans with new pronominal concords in transfer to Kiswahili terminology.....	185
Table 44: Inconsistency in the suffix of deverbatives referring to instruments/tools.....	187
Table 45: Meaning extension in some Bantu-sourced loans in Kiswahili	188
Table 46: Source languages and their number of terms in sixteen technical domains	191
Table 47: Integration of /l/ and /r/ into Kiswahili	218
Table 48: The adaptation of source consonants /y/ and /f/ in Kiswahili	219
Table 49: Deletion of n before /f/.....	220
Table 50: Vowel adaptation of Bantu-sourced loans in Kiswahili	221
Table 51: Loss of vowel length in the initial position	221
Table 52: Verb-noun derivation using the nominalizing suffix -i	222
Table 53: Verb-noun derivation using the nominalizing suffix -o.....	223
Table 54: Verb-noun derivation with the nominalizing suffix -aji	223
Table 55: Verb-noun derivation using deverbal nominalizing suffix -a.....	224
Table 56: Re-analysis of source noun prefixes in Kiswahili.....	225
Table 57: Deletion of source prefixes in some loan nouns	225
Table 58: Re-allocation of loan nouns with NCP lu-/ru- to three different classes.....	226
Table 59: Re-allocation of loan nouns with NCP ka- to two different classes	228
Table 60: Allocation of loans nouns to 9/10	229
Table 61: Allocation of loan nouns to 5/6	230
Table 62: Retention of gender of loan nouns with NCP li-/i-	230
Table 63: Allocation of loan nouns to 7/8	231
Table 64: Allocation of nouns to 3/4	231
Table 65: Allocation of single gender nouns to 1 1	231
Table 66: The semantic content of Bantu-sourced loanwords in Kiswahili noun classes.....	233
Table 67: Semantic precision of African loans	236
Table 68: Semantic specialization of African loans in standard Kiswahili	236

LIST OF FIGURES

Figure 1: An example of the problems regarding source identification in KKK.....	102
Figure 2: Loanwords in TS no. 1 found in 1 technical domain.....	129
Figure 3: Loanwords in TS no. 2 found in 4 selected subject domains.....	130
Figure 4: Loanwords in TS no. 4 found in 4 selected subject domains.....	131
Figure 5: Loanwords in TS no. 4 found in 5 selected technical domains.....	132
Figure 6: Loanwords in TS no.5 found in 4 selected technical subjects.....	133
Figure 7: Loanwords in TS no.5 found in 4 selected technical subjects.....	134
Figure 8: Loanwords found in KIST.....	137
Figure 9: Loanwords in TS no. 6 found in 3 selected technical domains.....	138
Figure 10: Loanwords by source languages in KIST and in 3 selected technical subjects in TS no.6.....	139
Figure 11: Loanwords by source languages found in Istilahi Mchanganyiko 2005.....	141
Figure 12: Loanwords by source languages found in meteorological terms.....	142
Figure 13: Loanwords by source languages found in 5 selected technical domains i.e., 4 from Istilahi mchanganyiko ‘mixed technical terms’ (2005) and meteorology (2019).....	143
Figure 14: Percentages of loanwords by source languages in 9 terminological publications.....	144
Figure 15: Native loans by source languages found in nine terminological publications.....	164
Figure 16: Kiswahili dialect loanwords by source dialects.....	166
Figure 17: Bantu-sourced loanwords by source languages.....	167
Figure 18: Domains of pure and applied sciences and technology.....	212
Figure 19: Social Sciences.....	213

LIST OF ABBREVIATIONS, NUMBERS AND SYMBOLS

1, 2 or 5/6	Numbers e.g., 1, 2, 4, 5,6 or 1/2, 3/4, 5/6 etc. indicate noun classes or genders
Admn.	Administration
Ag. E	Agricultural engineering
Agro/Husb	Agronomy and animal husbandry
AIDS	Acquired Immunodeficiency Syndrome
APLL	Academy of Persian Languages and Literature
APx	Adjectival Prefix
BAKIKE	Baraza la Kiswahili la Kenya ‘Kiswahili Council of Kenya’
BAKITA	Baraza la Kiswahili la Taifa ‘National Kiswahili Council’
BAKIZA	Baraza la Kiswahili la Zanzibar ‘Kiswahili Council of Zanzibar’
Bio	Biology
cl.	class
CMS	Church Mission Society
Comp.sc	Computer science
CV	Consonant Vowel
CVCV	Consonant Vowel Consonant Vowel
D/sc	Domestic science
EAC	East African Community
EALB	East Africa Literature Bureau
EASC	East Africa Swahili Committee
fg.	Figure
F/plan	Family planning
Geog	Geography
GTT	General Terminology Theory
HIV	Human immunodeficiency Virus
IK	Istilahi za Kiswahili ‘Kiswahili technical terms’
ILC	Interterritorial Language Committee

ILCAA	Institute for Languages and Cultures of Asia and Africa
ICT	Information and Communication Technology
KAKULU	Kamati ya Kusanifu Lugha ‘Language Standardization Committee’
KIST	Kamusi ya Istilahi za Sayansi na Teknolojia ‘A Dictionary of Scientific and Technological terms’
KKF	Kamusi la Kiswahili Fasaha ‘A Dictionary of Correct/Perfect Kiswahili’
KKK	Kamusi Kuu ya Kiswahili ‘A Great Dictionary of Kiswahili’
KKS	Kamusi ya Kiswahili Sanifu ‘Standard Kiswahili Dictionary’
KTK	Kamusi Teule ya Kiswahili ‘Selected Dictionary of Kiswahili’
Lang.	language
LoT	Languages of Tanzania
Metr.	Metrology
MoEVT	Ministry of Education and Vocational Training
NCP	Noun Class Prefix
NP	Noun Phrase
NP _x	Noun Prefix
Pt & ani.dis	Plant & animal diseases
Polit	Politics
PO-RALG	President’s Office – Regional Administration and Local Government
PP _x	Pronominal Prefix
Psych	Psychology
R1	Referent 1
R2	Referent 2
SADC	Southern African Development Community
STD	Sexually Transmitted Disease
TAKILUKI	Taasisi ya Kiswahili na Lugha za Kigeni ‘Institute of Kiswahili and Foreign Languages’
TANU	Tanganyika National Union

TATAKI	Taasisi ya Taaluma za Kiswahili ‘Institute of Kiswahili Studies’
Tech.draw.	Technical drawing
TIE	Tanzania Institute of Education
TS	Tafsiri Sanifu ‘Standard Translations’
TUKI	Taasisi ya Uchunguzi wa Kiswahili ‘Institute of Kiswahili Research’
UKUTA	Usanifu wa Kiswahili na Ushairi Tanzania ‘Kiswahili Standardization and Tanzanian National Association of Kiswahili Poets’
UMCA	Universities’ Mission to Central Africa
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children’s Fund
UWAVITA	Umoja wa Waandishi wa Vitabu Tanzania ‘Tanzania Writers Association’
V	Vowel
/	Item absent from dictionary
-	No source information given

CHAPTER ONE: INTRODUCTION

1.0. Introduction

This study focuses on the terminological development in Tanzania with particular reference to the Bantu-sourced loanword items in standard Kiswahili terminology. Focusing on the terminological work of BAKITA, the first focus of attention is on the approach of Africanization that was established through *Ujamaa* ideology. The study examines the extent to which this policy was implemented at the lexical level. Under the influence of *Ujamaa* political movement in the 1970s, coiners of Kiswahili terminology established principles of term formation that aimed at the Africanization of standard Kiswahili. Those term-creation principles are simply BAKITA's ranking of term sources which disfavour non-African loans in the elaboration of Kiswahili terminology. The second part of the study analyzes Bantu-sourced loans in standard Kiswahili by establishing the estimates of the Bantu-sourced loans across Kiswahili technical registers. In addition, this part of the study subjects the Bantu-sourced loan items to the principles of derivability and compoundability, linguistic appropriateness, consistency, economy, preference for native lexical items and transparency in order to determine their quality and adequacy as technical terminology in Kiswahili. Furthermore, this part also ascertains the proportionality of Bantu-sourced loans across Kiswahili technical domains. Finally, the study analyzes phonological and morphological adaptations of Bantu-sourced loans in standard Kiswahili.

This chapter is organized into the following sections: section 1.1 traces the Tanzania's language policy and language contacts which forms the background to the study. Section 1.2 presents the influence of anglicisms and Arabic loans on Kiswahili grammar, whereas section 1.3 introduces the debate on language policy in Tanzania: Kiswahili vs English. Section 1.4 gives the problem statement of the study, whereas section 1.5 presents the

research objectives. Section 1.6 presents background to Kiswahili, while section 1.7 lists the definitions of key terms employed in the study.

1.1. Background to the study: Tanzania's language policy and language contacts

1.1.1. An overview of Tanzania's language policy

Linguistically, Tanzania¹ is a diverse country, however, the exact number of languages spoken in the country is yet to be established. Massamba (1989) asserts that Tanzania has more than 120 languages. Yet, Maho and Sands (2003) mention 126 languages, Languages of Tanzania Project (2009) recognizes 164 languages and Ngonyani (1995) mentions 112. The main reason for diverging numbers of Tanzanian languages is based on the fact that many of those languages are part of a dialect continuum (Legère, 2007). Tanzania is a home to all the four African language phyla² ranging from Niger-Congo (i.e., Bantu languages e.g., Sukuma F21), Afroasiatic (e.g., Iraqw), Nilo-Saharan (e.g., Maasai) and Khoisan (e.g., Sandawe). The number of speakers of those languages differs considerably. Of all the languages of Tanzania, Bantu languages constitute the largest percentage. Some scholars (cf. Ngonyani, 1995) have argued that Bantu languages constitute about 90 % of the entire language population, while others (cf. Batibo, 2000) have suggested a higher percentage of up to 95%. Linguistically, Kiswahili is a Bantu language (G45) which belongs to the Niger-Congo family. Lexicostatistical and lexical studies (cf. Nurse and Hinnebusch, 1993; Hinnebusch, 1996) classify it as a member of Sabaki within the Northeastern Coastal Bantu languages. Unlike other Bantu languages, Kiswahili is not a tonal language and even does not have the augment on its nouns today.

Linguistically, Tanzania is uni-focal (cf. Whiteley, 1969; *Sera ya Utamaduni*, 1997), but the language policies in post-colonial eras have always been mainly bi-focal. The language policies have mainly focused on the role of Kiswahili and European languages, especially English, in the country. Consequently, indigenous minority languages have been forgotten in

¹ In 1964, Tanganyika and Zanzibar merged to form Tanzania.

² Following Greenberg's (1963) genetic classification of African languages, Heine and Nurse (2000) identify four African language families namely, Niger-Congo, Nilo-Saharan, Afroasiatic and Khoisan.

the mainstream domains of language use. After independence i.e., 1961, Tanzania adopted the endoglossic language policy that promoted Kiswahili to a national language. English³ continued to be the official language in the running of central government business. It was also the language of instruction from class five to higher education. Between 1961 and 1967, this policy was inherited by the Tanzanian government and the country adopted the capitalistic ideology. The use of Kiswahili in the *Bunge* ‘the National Assembly’, right from 1962 paved the way for Kiswahili to become the language of education at primary level in 1967. Such a policy was to be extended to secondary education after a decade (cf. Blommaert, 2013). Kiswahili was officially declared the national language in Tanzania in 1964, the year in which Tanganyika and Zanzibar united to form Tanzania (cf. Petzell, 2012). It is equally important to note that Zanzibar declared Kiswahili the official language in 1964. As regards the status of indigenous minority language, it can be said with some justification that there was a hostile attitude towards indigenous minority languages after independence. The arbitration councils were a major official domain in which the use of indigenous minority languages was allowed (cf. Masanjila, 2003). The arbitration councils operated under the chiefs’ leadership, but the amendment of the Local Government Ordinance in 1962 to, inter alia, repeal the Native Authority Ordinance and with it, native authorities and chiefs’ (cf. PO-RALG⁴), had a direct effect on the power of chiefs and the use of local languages in the country. Following the amendment of the Government Ordinance, the chiefs lost their power; as a result, local languages were denied the right of languages of governance at the village level. Consequently, the minority indigenous languages could not be used in the arbitration councils.

In 1967, Tanzania underwent major political reforms articulated in the Arusha Declaration⁵. It was a shift from a capitalist political ideology to *Ujamaa* ideology and political system.

³ European Christian Missionaries are the ones who introduced English as a language of education in some schools in Tanganyika (mainland Tanzania) in the late 1880s (cf. Ochieng, 2015), but the British occupation of Tanganyika marked a new era of the considerable growth of English in Tanganyika (cf. Swilla, 2009).

⁴ <https://www.tamisemi.go.tz/storage/app/media/uploadedfiles/President%20office.pdf>

⁵ The Arusha Declaration is the *Ujamaa* ‘socialism’ manifesto.

Ujamaa language policies (1967-1982)⁶ challenged heavily the position of English and indigenous minority languages. It was during this time that Kiswahili gained ‘supremacy over English in most of public domains’ (cf. Bwenge, 2012: 170). Kiswahili began to facilitate all the communicative domains and needs of the multilingual people of Tanzania. It became the language of primary education, low court, political authority and national administration. Throughout the course of *Ujamaa* political movement, English was associated with colonialism, oppression and imperialism (cf. Blommaert, 2013). Yet, English continued to function as the language of reference for Kiswahili technical terminology, the language of diplomacy, high court, and the language of education in post-primary education levels. The hostile attitude towards English resulted in a number of anti-English language policies. For example, the language policy contained in the five-year development plan (1969-1974) states that Kiswahili was to become the language of instruction up to the first two years of secondary education by 1973 (cf. Rwezaura, 1993).

State language organs were established to maintain standard Kiswahili. Consequently, *Baraza la Kiswahili la Taifa* (henceforth BAKITA) ‘National Kiswahili Council’ was created in 1967. It was created as a political bureau responsible for language policy and terminological development and promotion of standard Kiswahili (cf. Schadeber, 2009). *Taaasisi ya Uchunguzi wa Kiswahili* (henceforth TUKI) ‘Institute of Kiswahili Research’ – the successor of the Interterritorial Language Committee - ILC, renamed as *Taaasisi ya Taaluma za Kiswahili* (henceforth TATAKI) ‘Institute of Kiswahili Studies’ in 2009, played the role of an advisory tool of BAKITA regarding linguistic measures to be undertaken in the development of the language (cf. Blommaert, 2013). From the 1970s to mid-1980s, terminological development work in standard Kiswahili ‘became an ideologically important occupation, deemed of national importance’, hence the name *Ujamaa* linguistics (ibid: 52). Although ILC work on the development of Kiswahili is unparalleled, terminological development was not

⁶ Tumbo-Masabo and Mwansoko (1992) identify three phases of language policy in the post-colonial Tanzania: (i) the pre-Arusha Declaration language policy (1961-1967), (ii) language policy after the Arusha Declaration (*Ujamaa* Political movement - 1967-1982) where the political ideology became socialism and (iii) the post-*Ujamaa* language policy (1983 to date) in which the ideology is free market economy.

one of the functions of the ILC (cf. Marshall, 2015). Thus, it can be justified that organized and remarkable terminological development in standard Kiswahili⁷ with particular focus on Tanzania started after the introduction of *Ujamaa* politics. BAKITA have issued several *Tafsiri Sanifu* (henceforth TS) ‘Standard Translation’ i.e., a publication in the domain of terminological elaboration. Until 2004, six booklets and one technical dictionary containing terms in various technical domains were published by BAKITA.

To make Kiswahili fully functional as a national language was an important part of *Ujamaa* ideology in Tanzania (1967-1985). Kiswahili became a major component in the decolonization of the nation through the preaching of *elimu ya kujitegemea* ‘education of/for self-reliance’ (cf. Blommaert, 2013:52). Under *Ujamaa* politics in the 1970s, coiners of Kiswahili (cf. Chiraghdin and Mnyampala, 1977; BAKITA, 1982, 1990; KAKULU, 1982; Hans, 2017) established principles of term formation that aimed at Africanization of standard Kiswahili. Accordingly, in BAKITA’s ranking of source languages for loanwords, indigenous African languages range second, after Kiswahili and Kiswahili dialects, and are followed by African languages of other countries and foreign languages such as English and Arabic are the last resort. Although *Ujamaa* put much emphasis on africanization, terminological development work was mainly under the influence of contacts with English literature, scientific and technological terminology.

The shift of language of instruction in primary school in 1967 demanded the production of new text books. The Tanzania Institute of Education (henceforth TIE) is responsible for production of text books to be used in primary and secondary schools. Therefore, TIE had to translate some of the textbooks from English to Kiswahili and other textbooks were directly

⁷ This study uses Kiswahili in all cases to mean the language. The use of the prefix *ki-* (7/8) is important to show that reference is being made to the language itself (or the manner/way). It is for this reason that many present-day Bantu linguists have resorted into including the prefixes, as used by the native speakers themselves to call their languages. As a result, there are such names as ‘(i)Si-Zulu’, ‘(e)Ci-Jita’, ‘Gi-kuyu’, ‘(e)Ci-Ruuri’, (?)Ci-Makoonde. It might also be interesting to note that formerly there was ‘the Institute of Swahili Research’ *Chuo cha Uchunguzi wa Kiswahili*, but later changed to ‘Institute of Kiswahili Research’ *Taasisi ya Uchunguzi wa Kiswahili* and of date the institute is called ‘the Institute of Kiswahili Studies’ *Taasisi ya Taaluma za Kiswahili* and not ‘Swahili Studies’.

written in Kiswahili. In order to obtain standard translations of the technical terms contained in the textbooks, TIE collaborated with BAKITA in the standardization process of the technical terms. Since 1968, BAKITA, in collaboration with TIE⁸ and other institutions has been able to coin substantial standard Kiswahili technical terminology which were to be used in writing Kiswahili books for all levels of formal education (cf. Maina, 1989; Blommaert, 2013). Terminology activities were state funded projects. However, *Ujamaa* linguistics came to a standstill in the 1980s due to the political and social environment i.e., the time when *Ujamaa* politics lost its ground in Tanzania and the country opened for liberalization policies and English regained the pre-*Ujamaa* status in Tanzania (cf. Ocheng, 2015).

Generally, the development of Kiswahili in Tanzania attracted well-known sociolinguists' attention (cf. Blommaert, 2013)⁹. Yet, when it comes to the development of standard Kiswahili, language policy and planning in Tanzania leaves much to be desired. BAKITA is a national political bureau in charge of all issues pertaining to the promotion and development of standard Kiswahili, but its mandate is confined to Tanzania mainland (cf. Kipacha, 2012). *Baraza la Kiswahili la Zanzibar* (henceforth BAKIZA) 'Zanzibar Kiswahili Council' was created in 1986 with functions akin to those of BAKITA. Both language organs draw their authorities to carry out the promotion and development of Kiswahili from the parliaments of the United Republic of Tanzania and the Revolutionary Government of Zanzibar. BAKITA receives budgetary support from the United Republic of Tanzania, while BAKIZA gets such support from the Revolutionary Government of Zanzibar. Each council has the overall authority 'over matters of language policy, approving terminology lists and endorsing codification ethos' (ibid: 211). This suggests that there is no language organ which oversees uniformity of technical terms, non-technical vocabulary and grammar in the United Republic of Tanzania. Thus, standard Kiswahili cannot be coordinated at the overall Tanzanian national level. For example, in a detailed article, Kipacha (2012) presents a critical analysis of *Kamusi ya Kiswahili Sanifu* (henceforth KKS) by TUKI (2004) and *Kamusi la Kiswahili Fasaha*

⁸ See Ruo (1989).

⁹ Blommaert (2013) names sociolinguists such as Whiteley 1968, 1969, 1971; Harries, 1968, 1969; Abdulaziz, 1971; Myers-Scotton, 1978; Ansre, 1974; O'Barr, 1976).

(henceforth KKF) by BAKIZA (2010), both meant to be standard Kiswahili references, in which he reveals lexical variability, spelling and punctuation inconsistency, lexical idiosyncrasies and many others between the two standard references. Some scholars (cf. Mkude, 1985; Mukuthuria, 2009) refer to this situation as standardization crises. Therefore, BAKITA and BAKIZA do not seem to develop the same Kiswahili, since there are two varieties of Kiswahili – *Kisanifu* ‘standard’ and *Kifasaha* ‘correct, perfect’. The former is spear-headed by BAKITA, based in Tanzania mainland, while *Kifasaha* is promoted and developed by BAKIZA on the isles. This may also be considered for BAKITA-published and TUKI/TATAKI-published dictionaries. Although this study is not about the analysis of BAKITA’s and TUKI’s Kiswahili (monolingual) dictionaries, some of the differences, though mentioned in passing here, are based on *Kamusi Kuu ya Kiswahili* (henceforth KKK, 2015) ‘The Great Dictionary of Kiswahili’ and KKS (2014). First, in the preliminaries, KKK gives a brief account of the evolution of Kiswahili followed by the conventions of Kiswahili spelling and the phonetic symbols of the Kiswahili sounds, but KKS lacks these two aspects altogether. Second, there are numerous pronunciation inconsistencies in the two dictionaries. Although both dictionaries use the phonemic alphabets, transcriptions in KKS do not include a mark showing where the stress in the word is e.g., *alika* /a:’lika/ ‘invite’ (KKK) vs *alika* /alika/ ‘invite’ (KKS). As can be seen in the two examples, the transcription is italicized in KKK as opposed to KKS. Furthermore, as shown above, the first syllable i.e., *a:* in the word *alika* ‘invite’ in KKK is long, but in KKS is short.

The creation of two state language agencies with the same functions poses a number of questions such as (i) why should be there two autonomous language planning agencies (BAKITA and BAKIZA) in a single country? (ii) how is the cooperation of these two agencies safeguarded? (iii) is the cooperation comprehensively defined? (iv) which of the two language standardization agencies is the most mandated by the Law of the Republic of Tanzania to promote and develop Kiswahili? (v) what language organ and with what capacity can bring together BAKITA and BAKIZA to discuss problems related to language

development? One of the functions of BAKITA is to cooperate with institutions involved in the development of Kiswahili and coordinate their activities, but things are easier said than done. Msanjila et al (2009:96) assert that Tanzanian language organs came to lean more towards politics than the reasons for which they were created. The conflict of roles among state organs, unqualified terminologists in the language agencies and the unstraightforward cooperation and coordination between regulatory language bodies are some of the unresolved matters (cf. Massamba, 1989).

The indigenous minority languages are under political and social domination of Kiswahili. As a result, they are mainly spoken in the home, ‘and they are severely threatened by Swahili’ (cf. Petzell: 2012:139). Those languages are not used in education, political and religious gatherings. Speaking of the status of African indigenous languages, Koffi (2012:1) observes that ‘many indigenous languages are not better off now than they were fifty years ago, despite more than half a century of sustained scholarship on language planning.’ Unlike Kenya, no national or regional radio broadcasts are made in indigenous minority languages in Tanzania. Politically, their use in official domains is seen as a risk to the national unity and therefore the government does not encourage the promotion of indigenous minority languages. Although those languages are not openly banned in Tanzania, they are disapproved of. In 1997, the government issued a cultural policy and for the first time the government recognized minority indigenous languages of Tanzania as a major national heritage (cf. *Sera la Utamaduni*, 1997:17-18). The government through this document proposes that those languages should be studied, researched and documented as well as they should serve as a resource base for the national language (Kiswahili). As an attempt towards the exploration of the minority indigenous languages of Tanzania, this study examines the contribution of those languages in the elaboration of standard Kiswahili terminology. Specifically, very little is known about the suitability of African loans in expressing new concepts in standard Kiswahili. Cabre (2003 in Gumbo 2016, p.86) asserts that ‘terminology is a set of useful communicative units which must be evaluated from the point of view of economy, precision, and suitability of

expression.’ As part of the analysis of African loans, and Bantu sourced loans in particular the study subjects the loans to scientific investigations by applying the terminology principles which include the principles of economy and precision to determine the quality and adequacy of the loans in standard Kiswahili terminology.

1.1.2. A brief overview of language contacts and lexical borrowing in Kiswahili

Long contacts between the coastal native Kiswahili speakers and neighbouring languages and non-African-foreigners over centuries have reinforced the integration of loanwords into Kiswahili. According to Crystal (2010³:48), lexical borrowing is a natural and universal process, as words are adopted into languages to meet communicative needs, fill lexical gaps, add stylistic alternatives or provide foreign cachet. Borrowing has occurred throughout the history of Kiswahili, but most of loanwords entered Kiswahili between the 8th century A. D. and the 20th century due to trading networks, religion and colonialism (cf. Schadeberg, 2009). In a comprehensive and systematic analysis of Kiswahili loanwords, Schadeberg discussed at length the contact situations (see Table 1) which led to the adoption of loanwords into Kiswahili.

Table 1: Contact situations

<i>period</i>	<i>label</i>	<i>donor language</i>
1 before 800 CE	Pre-Kiswahili ¹⁰	South Cushitic
2 800 – 2000	Hinterland neighbourhood	NEC Bantu: Sambia, Zaramo, Zigua etc.
3 800 – 1920	Indian Ocean trading network (Indian Ocean)	Arabic, ‘Hindi’ (Indian), [Persian], [Chinese], Malagasy, Malay
4 1000 – 2000	Arabic-dominated Islamic culture	Arabic
5	Foreign political dominance:	

¹⁰ Nurse and Hinnebusch (1993: 23) remark that ‘an approximate date around or slightly later than 1 A. D. would seem reasonable for PNEC [proto-Northeast Coast], perhaps five hundred years later for PSA [proto-Sabaki], shortly after that for PSW [proto-Kiswahili].’

5a 1500 – 1700	• Portuguese	Portuguese
5b 1600 – 1920	• Omani	Arabic
5c 1800 – 1960	• Late colonialism	English, German, French, Italian
6 1800 – 1900	• Caravan trade	Nyamwezi
7 1960 – 2000	• Standardization and modernization	English, Arabic, Neo-Latin

Adapted from Schadeberg (2009:79)

As can be seen in Table 1, Kiswahili has borrowed from Arabic, Persian, English, Hindi, Portuguese, German, local languages and many other languages. Based on the contact situations in Table 1, the history of the Kiswahili loanwords can be divided into two main groups. First is a set of loanwords adopted into Kiswahili before independence (*Ujamaa* era). This period witnessed a huge number of loanwords of Arabic origin in Kiswahili, due to the Arabs' dominance of the East African-overseas trade networks. As a result, Arabic became the lingua franca of the Indian Ocean trade networks (ibid). Based on the history of Arabic loanwords in Kiswahili, Hinnebusch (1996:80) identifies two sets of Arabic loans 'one set, by far the majority, is relatively recent in origin having entered the language during the period of Omani suzerainty which started in the seventeenth century' and 'the other set is an older body of loan material also from Arabic (some ultimately from Persian)'. The precise percentage of Arabic loanwords in Kiswahili is not clear. Baldi (2012) shows that about 30% of the Kiswahili word stock is of Arabic origin, while Akidah's estimates is about 20% and Zawawi (1979) suggests a higher percentage of up to 80% (cf. Zawawi, 1979:73 cited in Akidah, 2013:2). Such a high rate of vocabulary of Arabic origin has led to the mistaken and biased idea of considering Kiswahili as a pidgin of Arabic. This has resulted in a debate of about the Africanness or Arabness of Kiswahili (cf. Mazrui and Shariff, 1994). Nonetheless, Kiswahili is closely related to Bantu languages of Kenya, Northeast Tanzania and Comoro Islands (cf. Nurse and Spear, 1985). Indeed, Kiswahili basic lexicon is of Bantu origin and the language

exhibits the phonological and morphological systems of Proto-Bantu¹¹ and hence Kiswahili grammar is typical Bantu¹².

The second set of loanwords results from modernization activities which took place after independence. This study focuses on this set of loanwords. English has a huge amount of influence over the development of the Kiswahili technical lexicon. Recent Kiswahili loanwords come from English loanwords, especially in scientific, technological and other technical domains such as modern education, entertainment and sports (cf. Mbaabu, 1985; Lodhi, 2000; Schadeberg, 2009; Dzahene-Quarshie, 2012). The influence of the British colonial education system on the Tanzanian education system seems to be a major reason for the English to continue enjoying its status in education, international trade and other scientific domains in the independent Tanzania.

Such foreign influence on Kiswahili has, in turn, contributed considerably to the introduction of the loanwords of foreign origin to other indigenous minority languages via Kiswahili (cf. Petzell, 2005). As a nationally dominant language, other Tanzania's languages now rely on Kiswahili to fetch new words that express new concepts. Lusekelo (2013), for instance, reports that Kiswahili accounts for 95 percent of the loanwords into Tanzania's Bantu languages. Kiswahili is not unique in borrowing from local languages. Coastal Kiswahili natives had for a long time been in contact with other East Africans. As a result, Kiswahili also borrowed from hinterland languages (cf. Schadeberg, 2009; Hinnebusch, 1996; Sacleux, 1939). Those Bantu-sourced loanwords in Kiswahili occurred naturally through 'social-interactive context' (cf. Wells and Bridges, 1981:158 cited in Petzell, 2012). However, those Bantu-sourced loanwords occurring in standard Kiswahili terminology have resulted from a linguistic activity i.e., standardization and modernization (see Table 8).

¹¹ Among other things, phonologically, Kiswahili shows the reduction of 7 Bantu vowels to 5 and its syllable structure is typical Bantu. Morphologically, 'Kiswahili aligns nicely with the other Sabaki languages and the characteristics of its noun class system match closely those of Sabaki and many NEC languages' (cf. Hinnebusch, 1996:84).

¹² Kiswahili exhibits the word order (subject-verb-object), agglutinativity, inflectional and derivational morphology which are found across Bantu languages.

Studies on lexical expansion in Kiswahili (cf. Mwansoko and Tumbo-Masabo, 1990; King'ei, 1999; Petzell, 2005; Dzahene-Quarshie, 2012; de Schryver, 2020) have kept a blind eye on the analysis and contribution of Tanzanian Bantu languages to various terminological registers of Kiswahili. This is because there has been little enthusiasm in the field of African language studies because the status and emphasis is on English in most Anglophone countries (Bodomo, 1997). However, a look at TS shows that Kiswahili has integrated into its technical domains a considerable amount of Bantu-sourced loans. For example, Kiswahili has integrated Bantu-sourced loans into its various technical registers such as linguistics – *ngeli* ‘noun class’ < Haya – E22; literature – *mviga* ‘ritual dance; initiation ceremony’ < Sambia - G23); *ikulu* ‘state house’ > Nyamwezi - F22 and *bwagala* ‘farrow’ < Jita – E25. However, current approaches to the study of Kiswahili loanwords put much emphasis on Arabic loans and anglicisms (Baldi 2020; Lodhi 2000; Schadeberg 2009). The non-African loans remain inferior to the foreign loans in scientific and technological registers. This is echoed in Temo (1984:118 cited in King'ei, 1999:152) who remarks that the ‘local languages are not as endowed with scientific and technological terms as they are with socio-cultural ones.’ The disparagement of the use of loans from indigenous minority languages, ‘typically involves a pattern of stigmatisation of the dominated languages, glorification of the dominant languages and rationalisation of the relationship between the languages and their speakers’ (cf. Skutnaab-Kangas, 1996:91). This is a form of defensive purism where the development of other indigenous minority languages is seen as a threat to the growth of Kiswahili simply because ‘purism is an aspect of the codification, cultivation and planning of standard languages’ (cf. Thomas, 1991:12 cited in Cser, 2009: 37). Status and corpus planning revolved around Kiswahili ignoring completely other local languages. Consequently, Kiswahili gained the upper hand as the standardized, official, national and written language over other local languages. This is also a form of linguistic purism simply because purism ‘involves preferential treatment of the standard language and suppression of minority languages (cf. Sus, 2004:10)’. However, the mono-focal language policy has been challenged

in Africa. This is because ‘the adoption of language purism for the development of African languages was unacceptable to many Africans, since it was a linguistic manifestation of a political policy aimed at enforcing separate development’ (cf. Madiba, 2001:57).

1.2. The influence of Anglicisms and Arabic loans on Kiswahili grammar

While it remains true that foreign loans enrich Kiswahili vocabulary; on the other hand, a large number of foreign terms may lead to the question of the effect of loanwords on the borrowing language. The retention of foreign syllable structures **kr** and **str** in Kiswahili in ‘creole’ /kri:əʊl/ > *krioli* and **str** in ‘obstruent’ /ɒbstrʊənt/> *obstruenti* violates the native phonotactic patterns. A canonical structure of a Kiswahili word is CVCV therefore a syllable may consist of CV or V. Nonetheless, the influence of Arabic¹³ on Kiswahili syllable structure made it possible to incorporate unnatural English consonant sequences (cf. Ohly, 1987; Dzahene-Quarshie, 2010). For example, Mwere-Waro (2000:183) names phonological (pronunciation and orthography) and morphological (affixes and compound terms) adaptations of English terms as major problems in integrating those terms into Kiswahili terminology. This is also echoed in Yousif (1994 cited in Sager and Nkwenti-Azeh, 1989:24), who observes that the transliteration of English loans causes deformation of morphological, phonetic and syllabic patterns in Kiswahili. Ohly (1987) sees the use of words sourced from local languages of Tanzania as a productive strategy of term formation in Kiswahili. In agreement of this, he recommends that coiners of Kiswahili terms should accommodate a foreign form only as a last resort.

English loanwords have rapidly increased in daily conversations, and, as a result, people have a tendency to use *bare* loanwords in a target language. This is due to the fact that English loanwords when translated, the resultant Kiswahili words are normally longer and become complicated (cf. Petzell, 2005). In considering word economy, English loanwords are often used when speaking to avoid wordiness. Some linguists (cf. Myers-Scotton, 1992; Heath,

¹³ The need to accommodate words of Arabic origin led to the incorporation of consonant clusters such as **stin**’ustād > **stadi** ‘expert, master, clever’, **lf** in **’alf** > *elfu* ‘thousand’, **sk** in *miskīn* > *maskini* ‘poor’.

1989; Romaine, 1989 quoted in Manfredi et al, 2015:284) hold that borrowing and code-switching form a continuum because code-switching may end up being a way of introducing new words into a recipient language. Apart from enriching the Kiswahili lexicon, loanwords have also significantly affected the grammatical patterns of Kiswahili. Phonologically, the fricatives [θ] (th), [ð] (dh), and [ɣ] (gh) appearing with loanwords of Arabic origin have been integrated into the Kiswahili phonemic system. In addition, Kiswahili does not allow consonant clusters except for homorganic consonants. Basically, Kiswahili has a simple syllable structure: CV (consonant + vowel) or V (vowel), but Arabic and English loanwords, which mostly contain consonant clusters and closed syllable have significantly affected the Kiswahili syllable structure. The increase of non-homorganic consonant clusters in the onset e.g., **str** in *stridenti* < strident or coda **sk** in *flaski* < flask is the major effect of English loanwords on Kiswahili syllable structure.

Morpho-syntactically, a huge number of foreign loanwords of non-Bantu origin has led to ‘inconsistency of patterns in the morphological forms of agreement which scholars have interpreted as erratic calling variants incorrect forms of Kiswahili’ and has also caused confusion in the classification of Kiswahili nominals (cf. Zawawi, 1979:37). For example, *makala* ‘article’ and *maiti* ‘corpse’ (Arabic loanwords) with the syllabic prefix *ma-* in Kiswahili which overlap in their agreement between cl.5/6 and 9/10¹⁴. In addition, researchers have also reported grammar borrowing in Kiswahili (cf. Lodhi, 2000; Schadeberg, 2009). Kiswahili has also integrated a number of functional words from Arabic such as *lakini* ‘but’ < *lakin*, *bila* ‘without’ < *bilā*), *kabla* ‘before’ < *qabla*) and *baada* ‘after’ < *baʿda*. Regarding English, its influence on Kiswahili is ‘felt through the borrowing of discourse strategies’ (cf. Mkude, 1995:17). For example, journalistic discourses in Kiswahili seem to be fashioned after ‘English lexicon and syntax, especially regarding the passive verb *-daiwa* ‘to be claimed’ (here not referring to any debt) and the negative relative neuter verb form *wasiofahamika* ‘(those) who are not known’, as shown in the following extract:

¹⁴ For a more detailed analysis of inconsistencies of the morphosyntactic patterns and classification of loan nouns in Kiswahili refer to Zawawi (1979).

'Inadaiwa kuwa, Aprili 6 watu wasiofahamika walifika nyumbani kwa mwinjilisti...'

'It is claimed that on April, 6th, people unknown entered the house of the evangelist...'

(cf. Schadeberg, 2009:92).

1.3. Debate on language policy in Tanzania: Kiswahili vs English

Prior sections discussed at length language development policy in Tanzania. This section presents an endless debate on the use of Kiswahili and English in education. In 2014, the government issued the education and training policy. However, one encounters conflicting and contradicting statements in this policy about the use of English and Kiswahili as languages of education in Tanzania. In one instance, the policy states that the government shall strengthen the use of English and Kiswahili as teaching and learning languages at different levels of education and training. The following extract points to the urge of strengthening the use of both Kiswahili and English languages in the Tanzanian education:

Therefore, there is a need to strengthen the use of Kiswahili and English languages by making them teaching and learning languages at different levels (cf. MoEVT, 2014:38).

However, in the following statement, the government aims at making Kiswahili the 'sole' language of education at all levels of education:

The national language, Kiswahili, shall be used for teaching and learning at all levels of education and training and the Government shall set up a procedure to enable the use of this language become sustainable and with efficiency in providing the target population with education and training that is productive nationally and internationally (cf. MoEVT, 2014:38).

This statement is simple to achieve on paper, but difficult to bring into actual practice. The statement above lacks the political will in the sense that it lacks an implementation statement i.e., the policy is silent on the matter of time frame. The statement above could be easily put into action if the decision makers and the educated elite in Tanzania change their attitude towards English as an academic language. With respect to other Tanzanian languages, the policy completely ignores the promotion and use of such in official domains including education.

While Msanjila's (2003) study is an example of the few studies which question the fate and status of indigenous languages, most studies focusing on Tanzania's language policies have revolved around whether Kiswahili or English should be the language of education or the language of law and other technical domains (cf. Rwezaura, 1993; Roy-Campbell and Qorro, 1997; Rugemalira, 2005; Swila, 2009; Bikongoro, 2014; Marwa, 2015). There has been a big, seemingly endless, debate in Tanzania about the use of English and Kiswahili in education. Such a debate does not seem to take notice of the fate and status of the indigenous languages in Tanzania. Whereas some people think that English should be used as the medium of instruction in schools, others believe that Kiswahili should be used instead.

Those who advocate for the use of English cite the global influence of English and the possible internationalization of Tanzanian education and scholars (cf. Rwezaura, 1993). By using English as a medium of instruction in Tanzania, the education system will seamlessly interact with the international community thereby making the Tanzanian education embrace globalization easily and at the same time make Tanzanians interact with the rest of the English-speaking world easily.

Those who advocate for Kiswahili seem to have two reasons in mind: one, nationalism and two, pedagogical reasons (cf. Roy-Campbell and Qorro, 1997; Rugemalira, 2005; Swila, 2009). Kiswahili being the national language in Tanzania is treated with the same sentiments shared by the fond memory of the person and ideas of the founding father of the nation the late Mwalimu Julius Nyerere. Thus, some of those who advocate for the use Kiswahili have the feeling that they are advancing the decolonization process started by the founding father who worked hard to use Kiswahili as a uniting factor and the greatest symbol of nationalism among Tanzanians. It was his effort to use Kiswahili as a medium of instruction in the 1960s starting with the use in primary schools with the intention to roll the program to secondary schools and higher education gradually, but this was hampered by many factors, in the view

of this study, including lack of finances, lack of the political will, uncertain future in relation to globalization and sentiments towards the position of English regionally and globally.

Those that argue from pedagogical perspective cite the fact that research show that one will understand concepts better when taught in their mother tongue (cf. Roy-Campbell and Qorro, 1997; Webb, 2000). Although Kiswahili is not the first language of most Tanzanians, it is the national language and most children acquire it alongside their mother tongues even before they join school and thus, they can easily understand it compared to English. Those who argue from this perspective cite the difficulty in the use of English that learners demonstrate in secondary schools, colleges and universities.

As a result of the above, the country has been at this language policy crossroads for decades; meanwhile learning has been going on in schools amid the confusion with mixed results. Some people find English prestigious, whereas others look at it as a result of colonial hangover and consider Kiswahili nationalistic (cf. Rubagumya, 1989; Webb, 2000). In the view of this study, these three divergent views of English and Kiswahili ('prestige'¹⁵, 'colonial hangover', and 'nationalism') are the factors that affect the linguistic choices and it has affected the teaching of English and Kiswahili in schools and colleges and the use of the same in Tanzania. As a result, some teachers and students seem to lack the confidence to speak English in public although they can actually write and speak it with minimal errors. Some students will always begin to answer a question, but then when they meet a certain grammatical difficulty, they would ask for permission to speak in Kiswahili. However, if one insists that they should proceed in English the student will speak with less confidence, but with minimal errors. Thus, one can only conclude that the following are some of the factors that affect English speaking in Tanzania¹⁶:

1. Lack of practice of English
2. Lack of confidence among teachers and students

¹⁵ It seems true that the free market decides the role and status of languages (cf. Blommaert, 2013).

¹⁶ This is Mr. Ocham's view, a lecturer in literature at the St. Augustine University of Tanzania. He is a Kenyan national whose English proficiency is admirable.

3. Poor foundation at primary school level, especially where it is taught as a subject.
 - a. In such schools, reading, speaking, listening and writing skills are not properly taught.
 - b. Such interactive teaching methods as debate, use of poetry, songs etc. are not used in the language classrooms thus most students get to secondary school without the necessary skills.
4. English is considered as an educational¹⁷ and examination language rather than a medium of communication. This has a diverse effect:
 - a. Students and teachers speak English only when in class, but they avoid it outside class in ordinary conversations or during discussions.
 - b. Learners are not exposed to holistic use of English
 - c. English is limited within schools
 - d. Only a few learners possess a good command of English

Although *Sera ya Utamaduni* (1997) states that a special program to enable the use of Kiswahili as a medium of instruction in education and training at all levels shall be designed and implemented, there is, at least from 1997 to 2020, very little to no evidence of any preparation for the use of Kiswahili in the higher levels of education. There are a number of practical factors affecting the implementation of this statement. The first ones are political and economic factors. The colonial government took it for granted that ‘only a European language was suitable for the higher levels of education’ (cf. Brumfit, 1980:259). The post-colonial Africa also inherited this policy in order to maintain political and economic relations. The anti-western attitude and anti-English during *Ujamaa* political movement in Tanzania, for instance, ‘may have been understood as an obstacle for a smooth relationship between the donor countries and the receiver, Tanzania’ (cf. Blommaert, 2013:52). Such line of argument is reflected in Mwansoko (1991:51) that ‘an ideological shift, which is heavily influenced by

¹⁷ Whiteley (1968, 1971) and Harries (1968) cited in Blommaert (2013) noted this phenomenon in the late sixties and early seventies and Harries ‘emphatically warned against the social repercussions of maintaining English as a medium of higher education, since it encourages ‘the development of class on the strict basis of the English-speaking intellectuals and the Kiswahili-speaking workers and peasants’ (cf. Harries, 1968: 420 in Blommaert, 2013:53).

the IMF and its international monopolistic tendencies, would favour English rather than Kiswahili as the medium of instruction at post-primary levels.’

The second factor is technical factor. Mulokozi (1991 in Blommaert, 2013:52) believes that political factors have hindered the Kiswahilization of the whole of Tanzanian education system. It is true that linguists, educators and curriculum developers did extensive preparatory work to make Kiswahili the intellectual language (Mulokozi, 1991: 9–11), however the government refused to approve the full Kiswahilization of post-primary education (cf. Mwansoko, 1990b; Massamba, 1987a). Indeed, it is not difficult to believe that experts did remarkable efforts in preparing standard Kiswahili as a suitable language in higher levels of education, but the language planning for pedagogical¹⁸ purposes (production of textbooks and other instructional materials for formal education in Kiswahili) was much slower than expected and would not meet the demand in the education sector. For example, there is so much acute shortage of publications in Kiswahili at the university level such that ‘lecturing in the Kiswahili medium entails being able to translate from English into Kiswahili because most of the material to be taught is sourced from English original publications’ (cf. King’ei, 1999:148; see also Whiteley, 1969:116).

The third problem relates to attitude of the people towards the study of Kiswahili and as a language of profession. In the schools, colleges, and universities, for instance, students and teachers especially specializing and teaching other subjects are said to deride their colleagues who teach or have majored in Kiswahili¹⁹ on the account that such study will not give them access to job opportunities (cf. Malimabe, 1990 in Webb et al, 2004:129-130). There has been a strong struggle to use Kiswahili in the scientific, technical domains and other official domains in Tanzania. However, the assumption that African languages are ‘unscientific’ or ‘undeveloped’ has greatly influenced their use or status in the higher levels of education and other technical domains. Consequently, there is an implicit degradation of African languages

¹⁸ See Massamba (1987a).

¹⁹ Two Kiswahili lecturers, Madam Getrude Chagaka of the St. Augustine University of Tanzania and Dr. Resan Mnata, a former lecturer of the University of Dodoma, also shared the same experience.

as a source for technical terms and in professions. In Tanzania, English controls high specialized domains while Kiswahili is preferred at the low levels. In the judiciary, for instance, Kiswahili is used in the low courts and English in the high courts, since ‘English is associated with a higher level of societal and cultural development’ (cf. Blommaert, 2013:56). This is also reflected in the Tanzanian education system where Kiswahili as medium of instruction is restricted to primary school education (*Sera ya Utamaduni*, 1997), with the belief that the language of post-primary education and scientific and technical subjects should be more ‘developed’ than Kiswahili. The changeover from Kiswahili to English after primary education is based on the belief that learners should acquire English for employment opportunities.

The last problem concerns the use of terms contained in TS no. 2, 3, 4 and 5 in education. Of the six²⁰ TS, TS numbers 2, 3, 4 and 5 mainly aimed at terms for subjects taught in secondary schools (cf. Legère, 2006). English continues to be the medium of instruction in secondary schools, whereas Kiswahili is restricted to primary education and Grade ‘A’ teachers’ colleges. Therefore, the terms contained in TS no. 2, 3, 4 and 5 do not serve the purpose for which they were created²¹. Yet, they constitute a large number of terms coined by BAKITA. The Ujamaa language policy influenced terminology development in Tanzania. *Ujamaa* language policy determined ‘the number of languages to be developed as functional languages’ (cf. Alberts, 2010:602). The fall of *Ujamaa* was a major setback of the linguistic enterprise with particular reference to the use of technical terms contained in TS numbers 2, 3, 4 and 5.

The language of education in Tanzania is an endless debate, since it surfaces almost every year. In a nutshell, in our view, both English and Kiswahili can coexist without one affecting

²⁰ TS Nos. 1, 2, 3, 4 and 5 were issued between 1972 and 1985, whereas TS no. 6 was published in 2004, nineteen years later.

²¹ The intension to replace English with Kiswahili at secondary level was discontinued, thus as a result, ‘formal terminology development was no longer supported by those who were responsible for funding and guiding this kind of BAKITA’s activities, as in their eyes there is no market for the results of the standardization work’ (cf. Legère, 2006:178).

the use of the other²². If English is taught properly in Kiswahili medium primary schools, pupils will certainly be competent in English as well as Kiswahili. The attitude should change from viewing English as an educational and examination language to the language of communication. Although the *Sera ya Utamaduni* (1997) clarifies the need for both languages (English for internationalization and Kiswahili for nationalism and for connecting with the larger local population and the regional countries), Kiswahili continues to serve low-official functions (language of primary court and medium of instruction in primary education) and is of low status at post-primary education, high court and other scientific and technical domains. In the view of this study, the language planning in Tanzania need to be accommodative. Indigenous minority languages should not be left out of the language debate and the mainstream institutional focus.

1.4. Statement of the problem, scope and justification of the study

Terminology development in standard Kiswahili is not age-old activity and therefore it is still an under-researched area and the use of Bantu-sourced loans to expand Kiswahili terminology is not an old activity as well (cf. Gromova, 2000). Therefore, it might be profitable to study the adequacy and adaptations of Bantu-sourced loans in the standard Kiswahili terminology. The need and emphasis to track and analyze the Bantu-sourced loans stems from the observation that standard Kiswahili has integrated into its technical domains considerable lexical items sourced from Bantu languages of Tanzania. Borrowing from Bantu languages of Tanzania is one of the borrowing strategies used to develop Kiswahili technical terms (cf. Temu, 1984; BAKITA, 1990; Tumbo-Masabo, 1992; Kiango, 1995; King'ei, 1999). However, current approaches to the study of the terminological development of Kiswahili almost completely ignore the contribution of Tanzanian Bantu languages to various terminological registers of Kiswahili. Anglicisms and other foreign loanwords continue to be integrated into Kiswahili technical registers where African loans are the last resort. Thus, this study notes the challenge that face native linguistic resources and their need to be preserved

²² As a lesson on how this could be implemented, the government could consider multilingualism in German schools.

and at the same time ensuring their use in the elaboration of Kiswahili terminology. The official recognition of local languages as a source of Kiswahili terminology in *Sera ya Utamaduni* ‘Cultural policy’ (1997) lends strong support for this study. In addition, going by BAKITA’s term-creation principles²³, one would expect a considerably lower degree of non-African loans in Kiswahili technical subjects, but the contrary is the case (cf. Schadeberg, 2009). As a result, African loans have received less emphasis in literature and hence few to almost no studies have been devoted to explore, for instance, Bantu languages of Tanzania as a possible open-source corpus for standard Kiswahili terminology. Hence, there is need to *decolonize* the minds of the coiners of Kiswahili terminology in such a way that any efforts to develop the language consider the cultural policy and the ranking of term sources as put forward by BAKITA.

Because Bantu-sourced loans entered various Kiswahili technical domains under controlled transfer, this study confines itself to Kiswahili technical terms approved or published by BAKITA. This is the sole language regulatory authority which has been entrusted with all formal developments of Kiswahili lexicon in Tanzania. The council (BAKITA) bears the seal of approval. Consequently, this study excluded all terminological works of TUKI/TATAKI or individual researchers for the analysis of Bantu-sourced loans. Only terminology documents issued by BAKITA between 1974 and 2019 have been used to track and analyze Bantu-sourced loans from Kiswahili technical domains. Accordingly, this study first critically discusses terminological development in Tanzania and also explores the most prevalent term formation techniques used in standard Kiswahili. Second, the study identifies the Bantu-sourced loanwords and source languages across Kiswahili technical domains. Third, the study examines the quality and adequacy of Bantu-sourced loans as technical terminology. To assess quality and adequacy, Bantu-sourced loans are subjected to terminology principles. This is to test whether Bantu-sourced terms meet the principles of derivation and compoundability, linguistic correctness, brevity, linguistic appropriateness, preference for

²³ BAKITA’s term-creation principles follow Chiraghdin and Mnyampala’s recommendations of 1977 (cf. Chiraghdin and Mnyampala, 1977; KAKULU, 1982; Hans, 2017).

native linguistic stock, consistency and transparency. Lastly, this study presents the analysis of phonological and morphological adaptations of Bantu-sourced loans in standard Kiswahili.

The study sought to explore terminological development in Tanzania simply because the pace of development and usage seems to be set now by Tanzanians for the rest of the Swahili speaking world when it comes to standard Kiswahili (cf. Abdulaziz, 1996). Bantu-sourced loans have been chosen for study since they are by far the majority. It is therefore assumed that Bantu language group in the country have a great impact on the amount of loans borrowed from them. Second, the official recognition of indigenous minority languages as a source for elaborating Kiswahili terminology lend strong support for the study of Bantu-sourced loans in standard Kiswahili technical terminology (cf. *Sera ya Utamaduni*, 1997). Third, BAKITA's term-creation principles favour lexical material sourced from local languages for the elaboration of Kiswahili technical terminology.

1.5. Objectives of the study

The purpose of this study is twofold. First, it explores the development of standard Kiswahili with particular reference to terminological development in Tanzania. In this part, achievements and problems of terminology development work are discussed in detail. Besides providing a detailed description of terminological development in Tanzania, another aim of this study is to analyze the adequacy of Bantu-sourced loans as technical terms in standard Kiswahili, and analyze phonological and morphological adaptations of Bantu-sourced loans in standard Kiswahili. To achieve this, this study was guided by the following specific objectives:

- i. To explore the principles and practice governing terminological development in Tanzania.
- ii. To determine the most prevalent term formation methods in standard Kiswahili.
- iii. To identify Bantu-sourced loans from standard Kiswahili technical domains.

- iv. To analyze the adequateness of Bantu-sourced loans in standard Kiswahili terminology.
- v. To establish phonological and morphological adaptations of Bantu-sourced loans in standard Kiswahili.

The first objective discusses language development by focusing mainly on terminological development work undertaken mostly by BAKITA and TUKI (now TATAKI). The second objective explores common methods of term formation which are used to render foreign concepts in standard Kiswahili. The third objective is intended to collect Bantu-sourced loans across standard Kiswahili technical subject since previous studies (cf. Gromova, 2000) did not provide estimates of Bantu-sourced loans in technical domains. The fourth objective seeks to determine whether Bantu-sourced loans qualify to form standard Kiswahili terminology and lastly the study provides phonological and morphological changes which Bantu-sourced loans undergo when they are integrated into standard Kiswahili technical terminology.

1.6. Background to Kiswahili

1.6.1. The Pre-standardization era (1800²⁴ – 1918)

Kiswahili was widely used across the present East African countries, even before colonial times, as the language of business. Socio-economic and religious factors were the key factors that contributed to the spread of Kiswahili at this time. The language was primarily used for commercial purposes. However, Kiswahili underwent fabulous growth in the 20th century. This is attributed to the language policies from both colonial and independent Tanzania's governments (cf. Nurse and Spear, 1985).

The Oman Prince's occupation of the East African coast brought about the flourishing of long-distance trade between the inland and the coastal regions of East Africa. Zanzibar became the prince's capital and also the center of the long-distance trade between the inland

²⁴ Kiswahili expanded rapidly to the interior in the early 1800s (Marshall, 2015:17)

and the coast. The Arabs took control over the caravan trade, while the *Waswahili*²⁵ became *wapagazi* ‘caravan porter.’ Although the Arabs had control over the trade, Kiswahili was the language of the caravan trade (cf. Heine, 1970). As a result, Kiswahili spread along the trade routes²⁶ ‘as far west as what is known today as the Democratic Republic of Congo and Uganda’ (cf. Msokile, 1992 cited in Marshall, 2015:17). The spread of Kiswahili and Islam took place at the same time, as the Imams preached and interpreted Islamic teachings in Kiswahili. Children and young people joined *Madrasas*²⁷ in order to learn Islam as well as learn to read, and write Kiswahili and Arabic. At this time, Kiswahili was written with Arabic characters and yet there is very little to no evidence of formal development of Kiswahili by the Arabs, since Kiswahili was much more commonly used in daily life, whereas Arabic was the language of religion and learning along the coast and in Zanzibar (cf. Marshall, 2015).

Due to the fact that Kiswahili was the lingua franca for business across Eastern Africa, the missionaries saw great potential in the language to spread Christianity. The Christian missionaries, especially from Europe, were the first outsiders to study and document Kiswahili (Wolff, 2000). Early descriptions of Kiswahili were carried out in *Kimvita* and *Kiunguja* dialects by missionaries such as Johan Krapf of the Church Missionary Society (CMS) based in Mombasa and the British missionary Bishop Edward Steere of the Universities’ Mission to Central Africa (UMCA), based in Zanzibar. This marked the beginning of systematic documentation of Kiswahili (cf. Marshall, 2015; Whiteley, 1969)²⁸. Krapf and Steere took the lead as missionaries began to produce Kiswahili dictionaries and grammar books. The missionaries used Latin orthography as opposed to Arabic characters. Each mission made its own choices about which Kiswahili dialect to use and, if not using Arabic characters, and how to spell Kiswahili words in Latin characters (cf. Marshall, 2015).

²⁵ In its restricted sense *waswahili*, singular *mwaswili*, refer to inhabitants of East African coast who are descendants of Kiswahili ethnic group which belong to Sabaki language sub-family.

²⁶ Arab and Waswahili traders formed Muslim and Kiswahili-speaking towns such as Tabora and Ujiji (Tanzania) and Bujumbura (Burundi) (cf. Whiteley, 1969; Mbaabu, 1991; Marshall, 2015).

²⁷ Madrasa is a Kiswahili loanword of an Arabic origin which means a place where Quran training is offered to Muslim children.

²⁸ Studies into Kimvita dialect began in 1844, while the study and documentation of the Kiunguja dialect is reported to have begun in 1864.

Despite their lack of uniform Kiswahili orthography and dialect, the Christian missionaries helped spread Kiswahili across East Africa through their publications, preaching, and schools.

Germany was the first European nation to exercise colonial power over Tanganyika (now the Tanzanian mainland). In establishing their influence in 1884, the Germans introduced the use of German in all forms of communication, including administration and education (cf. Altehenger-Smith, 1978 quoted in Mwansoko and Tumbo-Masabo, 1992) because local ethnic languages were not considered the best option. Generally, the German rule in Tanganyika was against the use of Kiswahili in formal business because the language was seen as a tool for native unity, something which threatened the colonizers (cf. Rubagumya 1990:6 cited in Kiango, 2005:158). Moreover, the colonial government associated Kiswahili with Islam, which was considered to encourage resistance. This was a reflection of the status of Kiswahili and its exploitation of Tanganyika's social, political, and economic realities (cf. Marshall, 2015). Given the fact that people along the coast of Tanganyika were Muslims, while colonial masters were Christians, parents were reluctant to allow their children to go to school and learn German. The notion behind parents' reluctance was the fear that the masters would plant Christianity in the little ones, who were later to serve as junior officials (cf. Henderson, 1965). That being the case, the language policy was reassessed and Kiswahili was allowed in lower formal business. The promotion of Kiswahili went hand in hand with great efforts to document Kiswahili and teach it to administrators before they came to Tanganyika and 'scholars like Velten, Seidel, Büttner, and others provided the materials on which courses at the Oriental Seminar in Berlin were based' (cf. Whiteley, 1969:59). Therefore, it was at this time that the administration officially began to document²⁹ Kiswahili, as missionaries mainly concentrated their attention on other local languages (cf. Ansre, 1974:383; Whiteley, 1969:60). Yet there is no clear evidence as to whether the German rule in Tanganyika had the political will to standardize Kiswahili, however, for the first time in the history of Kiswahili,

²⁹ At the 1905 Colonial Congress in Berlin, German linguist Carl Meinhof proposed that Kiswahili could be de-Islamized by writing it in Latin characters, as opposed to the Arabic characters which had long been used. Some missionaries and government officials were already using the Latin script, and, following Meinhof's suggestion, the German government adopted Latin characters for all official business in 1906 (Pike, 1986 cited in Marshall, 2015:20).

the colonial government decided to officially document the language in Latin characters as opposed to Arabic orthography (cf. Ansre, 1974:383).

1.6.2. The standardization of Kiswahili (1920 -1961)

The British rulers were the proponents of the standardization of Kiswahili. The whole process was socio-economically and politically motivated³⁰. Standardization was characterized by the following: (i) the formation of a language committee to spearhead the standardization and promotion of Kiswahili, (ii) the selection of one variety as the standard, (iii) codification, elaboration and promotion of the chosen variety, (iv) the review of grammar books and dictionaries written before standardization, (v) minimal regard for East Africans. In order to discuss the standardization of Kiswahili, this section is divided in four sub-sections: standardization conferences (1.6.2.1), ILC with the agenda of promotion and standardization of Kiswahili (1.6.2.2), and the shift from a standardization agenda to research (1.6.2.3).

1.6.2.1. Standardization conferences and standardization process of Kiswahili

The aim of this section is to describe the steps which were taken in the development of the standard Kiswahili. The decision to standardize Kiswahili began in the 1920s. The Dar es Salaam Conference of 1925 convened by Governor of Tanganyika³¹ played a pivotal role in the standardization of Kiswahili. The conference's aim was to select the 'language which would serve as a lingua franca for use in as large a number of schools' in the four dependencies - Tanganyika, Kenya, Uganda and Zanzibar and 'Kiswahili was selected as the most suitable language by virtue of its predominance over large areas of eastern and

³⁰ The settlers supported standardization of Kiswahili as 'the non-European lingua franca as a means to control the indigenous population' (cf. Marshall, 2015:50)

³¹ The conference was only attended by representatives from Tanganyika and Zanzibar, although the Tanganyikan Chief Secretary John Scott formally invited Kenya and Zanzibar to each send three delegates. Remarkably, in 1925, the native had little say in decision-making in the conference. Most of the conference members were missionaries, namely Frederick Johnson, Fr. J.S. Lemble of the Society of the Holy Ghost, and High Court interpreter Samuel Chiponde represented Tanganyika, while senior commissioner P. Sheldon, Rev. G.W. Broomfield of the UMCA, and Abdulla Mohamed el Hathramy of the Education Department represented Zanzibar. Rev. Roome attended in an unofficial capacity to present the views of the Kenyan missions. In addition to Roome, four other Tanganyikan-based European missionaries and Rivers-Smith presented their views to the assembled "committee for standardization of Kiswahili. Kenya did not send a delegation because the conference dates conflicted with newly appointed governor (cf. Marshall, 2015:32-37).

equatorial Africa' (cf. Whiteley, 1969:79). The Dar es Salaam conference came up with nineteen resolutions necessary for developing the language. In 1928, in the course of the standardization of Kiswahili, the second conference was held in Mombasa, the home of *Kimvita*³². The Mombasa conference witnessed strong support for *Kimvita*, especially from the missionaries of the Church Missionary Society,³³ and yet the conference indorsed *Kiunguja*³⁴. It should be recalled that the presence of Professor Meinhof 'gave the conference a sense of academic respectability which the smaller Dar es Salaam conference had lacked' (cf. Marshall, 2015:45). The standardization of Kiswahili went through several phases as described by Wolff (2000:334).

- i. *Determination* of language status and the norm within a chosen language, which is to serve as standard frame of reference. In other words, this phase concerns the choice of a language or a particular dialect to acquire official status or become the national language. In the 1920s, the political environment favoured Kiswahili, however, 'the variation among the language's dialects limited its utility in supporting British rule' (Marshall, 2015:28). Therefore, there was a need to select a *dialect* from the various existing Kiswahili dialects as a basis for the standardization of Kiswahili as shown in the first resolution of the Dar es Salaam conference³⁵.

'It was held by the committee that, other dialects of Kiswahili, including that of Mombasa [,] could not occupy that position owing to their confined and local use, and to the improbability of its further extension, but that the Zanzibar dialect either in its pure or modified form was undoubtedly spreading practically over the whole of the three territories, Tanganyika Territory, Kenya Colony, and Zanzibar, and also over the Congo (as quoted in Marshall, 2015:36).'³⁶

³² The Mombasa conference had all the representatives from Kenya, Tanganyika, Uganda and Zanzibar.

³³ Edward W. Crawford and Ratcliffe were Church Missionary Society missionaries who pushed unsuccessfully for the selection of *Kimvita* as the standard dialect at the 1928 Mombasa conference (cf. Marshall, 2015:46 & 55). The Church Missionary Society missionaries became associated with *Kimvita* since the 1840s.

³⁴ Committee members from Tanganyika and Zanzibar, with Uganda's support defended the 1925 - the Dar es Salaam - resolutions and the standardization of *Kiunguja* (ibid. pg 46).

³⁵ For more details about language planning models see chapter 1 section 1.5.

³⁶ Committee for the standardization of Kiswahili, "Report of the Committee for the Standardization of Kiswahili. Appendix C: Resolutions" (Dar es Salaam: Tanganyika Education Department, October 16, 1925), 3, Early Secretariat Collection, AB 1269: Standardization of Kiswahili for Schoolbooks, Tanzania National Archives, Dar es Salaam, Tanzania (as quoted in Marshall, 2015:36).

As can be seen, the selection of the Zanzibar dialect (Kiunguja) was based on its predominance i.e., it was the most widely spoken dialect and its spread to the interior was far less challenging as far as its acceptability was concerned. Along the same line, Whitely (1969:81) says that ‘the adoption of a variety akin to varieties of the language spoken over large areas of mainland Tanganyika contributed powerfully to its rapid acceptance’. Moreover, the neutral status of Kiunguja contributed greatly to its selection, as observed in the following quote:

...Kavilondo delegates from Lake Nyanza required the proceedings interpreted ‘from the Mombasa to the Zanzibar dialect in order that they might understand,’ ...the Mombasa natives as well as those living up country in Kenya would find no difficulty in reading and understanding books printed in the Zanzibar dialect, or a modification of it’ (cf. Marshall, 2015:34).

ii. *Codification* of language includes the creation of a standard orthography. The creation of a standard orthography was crucial, as the British government ‘needed a common spelling system in Latin characters rather than the various orthographies then in use which differed from mission to mission and government to government’ (Marshall, 2015:32). Resolution No. 13 of the Dar es Salaam captures four principles which focus on issues related to orthography and differentiating meanings of synonymous words, as shown in the following extract:

(1) the Bantuisation of all Arabic and foreign words as far as possible, (2) fixing the spelling of all words with due regard to the commonest pronunciation, not necessarily the correctness from the foreign point of view, (3) the simplification of all words which through more or less common usage have become wrongly spelled, and (4) the establishing wherever possible of distinctions between words with two or more meanings (cf. Marshall, 2015:37).

Notably, standardization of orthography became the first function of the ILC (see section 1.6.2.2).

iii. *Elaboration* of vocabulary (modernization) and grammar (normalization) of the standard variety resulted in writing down the vocabulary and grammar and making them explicit. Modernization has to do with the expansion of technical terms, because elaboration is realized via ‘nomenclature being the result of addition of

new functions for the selected code' (cf. Fishman, 1974:80). Furthermore, elaboration is equated with Ferguson's (1996) language modernization, in which a language is made to cope with new situations and made to expand its functional roles by developing the vocabulary necessary in fields like administration, the judiciary, journalism, broadcasting, higher education, research, etc.' (cf. D'souza, 1986:456). However, language modernization was not among the functions of the ILC (see section 1.6.2.2 for the ILC's functions). As regards normalization, resolutions No. 5 and No.6 (Dar es Salaam conference) clarified that the language committee should set a normative rule of grammar³⁷ which was closely related to revising the existing text books, 'standard works' such as grammar books and Mandan's Kiswahili-English Dictionary (see section 1.6.2.2). The Dar es Salaam conference's resolution No. 2 'encouraged the use of Bantu words³⁸ over those of Arabic origins while endorsing the continued use of those 'established' Arabic words' (cf. Marshall, 2015:37). It is noteworthy that many Kiswahili loanwords of Arabic origin entered *Kiunguja* during the period prior to the standardization of Kiswahili.

iv. *Implementation of the Kiunguja (the standardized dialect) and norms of standardization, meant creating the acceptance of the chosen dialect by the community. Kiunguja was promoted over other rival dialects such as Kimvita³⁹ and other local languages⁴⁰. Interesting to note is that the 'colonial governments put the Kiswahili promotion and standardization agenda into effect through two main channels - language requirements for British colonial civil servants and educational language policies' (cf. Marshall, 2015:58).*

³⁷ The Inter-Territorial Language Committee was created to implement all the resolutions see section 2.2.3

³⁸ This was later adopted by BAKITA in what is known term-creation principles (see chapter 3). However, the analysis of Bantu-sourced words is limited to post-independence times (see chapter 4).

³⁹ The Kimvita was rich in historical and literary traditions, while the Kiunguja lacked any such traditions (cf. Whiteley, 1969:81).

⁴⁰ Apart from Zanzibar, the promotion of Kiswahili in Eastern Africa faced opposition from other indigenous languages. The Baganda in Uganda, the Kikuyu and Luo as well as the Sukuma, Chagga, Haya, and Nyamwezi in Tanganyika posed challenges to the promotion of Kiswahili in the present Eastern Africa (cf. Ohly, 1982:85 cited in Marshall, 2015:69).

v. *Cultivation of Kiunguja* went hand in hand with the creation of language regulatory organs to continue execution of the norms and control implementation of the *standardized dialect*. In order for the standardization and promotion agenda to become a reality, it was necessary to form a language board, where it was proposed in the standardization conferences that ‘a permanent committee be appointed for the purpose of giving advice and encouragement in the preparation of literature and for revising any work before its publication.’⁴¹ In 1930, the ILC was created to execute the agenda of promotion and standardization of Kiswahili, as shown in the following section i.e., section 1.6.2.2.

1.6.2.2. The ILC and the promotion and standardization agenda of Kiswahili

The Mombasa conference provided an important impetus in institutionalizing the standardization of Kiswahili. The 1st January, 1930 witnessed the birth of the ILC upon the approval of the Secretary of State for Colonies in London. The committee was tasked with coordinating the regional Kiswahili promotion regime, but its work would have been of limited effectiveness without the support of the four dependencies. In April 1930, the first ILC’s meeting⁴² was held in Nairobi and the meeting re-endorsed the Dar es Salaam resolutions,⁴³ subject to some modifications at the Mombasa’s conference. The ILC had 17 members. Each dependency had four representatives and the permanent secretary made a total of 17. Committee membership was limited to Europeans until 1939, when it was deemed

⁴¹ Committee for the standardization of Kiswahili, ‘Report of the Committee for the Standardization of Kiswahili. Appendix C: Resolutions’ (Dar es Salaam: Tanganyika Education Department, October 16, 1925), 3, Early Secretariat Collection, AB 1269: Standardization of Kiswahili for Schoolbooks, Tanzania National Archives, Dar es Salaam, Tanzania (as quoted in Marshall, 2015:36).

⁴² The key issues discussed at the meeting were the standardization of Kiswahili, book manuscripts and their revisions, compilation of dictionaries, the schedule of books that were to be published in that year and the scope of the committee (cf. Mbaabu, 1991:26).

⁴³ 18 resolutions were made and they basically focused on the choice of the Kiunguja, prioritization of Bantu words but special regard was given to established loanwords, appointing a permanent committee to prepare and revise literatures, nomination of the permanent committee representatives and inclusion of native representatives from the four dependencies, no vulgarity of rival dialects was permitted to influence the written or standardized Kiswahili, orthography, assignment of nouns appear in two classes, one of which is the *ma*-class, and revision of grammar books and dictionaries (cf. Mhina, 1976:22-25; Mbaabu, 1991:25-26).

necessary to include Africans⁴⁴ in the committee. Following the Second World War, all ILC meetings were suspended and Africans attended their first meeting in 1946. Until its dissolution⁴⁵, the ILC depended on financial contributions from Kenya, Tanganyika, Uganda, and Zanzibar.

In 1934, the four colonial governments under the East African Governors⁴⁶ approved the six-page language committee's constitution and the governors' endorsement 'signified that the Kiswahili promotion regime was fully embedded in the existing governance structures' (cf. Marshall, 2015:55). The ILC was charged with the following 13 tasks:

- (i) Standardizing orthography, obtaining complete inter-territorial agreement.
- (ii) Securing, as far as possible, uniformity in the use of existing and new words by the exercise of control over the publication of school and other dictionaries.
- (iii) Securing uniformity of grammar and syntax through the publication of standard books on the subject.
- (iv) Giving encouragement and assistance to authors whose native tongue is Kiswahili.
- (v) Giving advice to all prospective authors concerning books which they propose to write.
- (vi) Procuring the revision, where necessary, of the language of approved Kiswahili text-books and books of a general nature already published.
- (vii) Drawing up an annual program of Kiswahili books required, under the heading (a) text-books, and (b) general literature.
- (viii) Making arrangements for the translation into Kiswahili of the text-books and books of a general nature selected or for the direct authorship in Kiswahili of such books.
- (ix) Examining and, where necessary, correcting the Kiswahili of such text-books and general literature before publication.

⁴⁴ Each governor nominated one representative, making a total of 4 Africans i.e., 1 from Kenya, 1 Tanganyika, 1 Uganda and 1 from Zanzibar.

⁴⁵ Mbaabu (1991:24); Marshall (2015).

⁴⁶ From its existence, 1930, the ILC was under the surveillance of the Conference of East African Governors until 1948, when the East African High Commission was formed and the ILC was placed under its jurisdiction (cf. Mbaabu, 1991:57).

- (x) Revising and giving advice concerning the subject matter of all Kiswahili books that are dealt with by the Committee.
- (xi) Supplying authors with information as to methods of teaching in vogue in the various territories.
- (xii) Answering general enquiries regarding Kiswahili language and literature.
- (xiii) Undertaking such other activities as may be deemed incidental or conducive to the attainment of the foregoing objects.

As can be seen, the language committee was not only tasked with the standardization of Kiswahili publications, but also with the promotion of Kiswahili. As regards to standardization function, ‘the ILC’s power rested in its ‘control over dictionaries and its authority to publish, edit, revise, and order other books as needed’ (cf. Marshall, 2015). After its creation, the committee began to review all the Kiswahili textbooks and manuscripts in order to standardize them. Editors⁴⁷ were elected at the first ILC meeting, whose work is acknowledged because no textbooks could be used in public schools or those that received government support, without the committee’s approval. In the year 1930, for instance, many agricultural books, story books and the Kiswahili translation of ‘Gulliver’s Travels’ were published (cf. Mbaabu, 1991:26). The Committee rotated its annual meeting among the four territories—usually meeting in Dar es Salaam, Kampala, Nairobi, or Zanzibar.

Generally, the ILC’s success can be summarized in Mazrui and Mazrui’s (1995:45) statement that ‘this committee became a paramount mechanism in the process of standardizing Kiswahili throughout the region, as well as promoting regionally usable literature in the language.’ The Committee revised a Kiswahili dictionary by A. C. Madan. The Madan’s English-Kiswahili dictionary was published, in 1894, followed by a Swahili-English dictionary in 1903 and this dictionary has often been reprinted until recently. The dictionary was selected as the standard work at Dar es Salaam and Mombasa conferences. In 1939 the

⁴⁷ There was a chief editor and two assistant editors from each colony in the early days of the committee (cf. Mbaabu, 1991:97).

ILC published *A Standard Kiswahili-English Dictionary*⁴⁸. This dictionary which was published by the ILC in 1939 was a two-volume work: Kiswahili-English and English-Kiswahili. It was founded on Madan's Swahili-English and English-Swahili dictionary. The two dictionaries published in 1939 are commonly referred to as Frederick Johnson's dictionaries, because he was the director of the project. This two-volume dictionary was a resourceful reference to both British officials and East Africans who were not Kiswahili native speakers to learn and use Kiswahili, since the dictionary acted as a teach yourself reference. In addition, as a standard reference, it helped authors and publishers to comply with the ILC's standard orthography (cf. Marshall, 2015). In addition to the dictionary, the ILC also reviewed and granted text books a seal of approval. It turned out that the seal became a good selling point, because publishers refused to publish Kiswahili books without the ILC seal (cf. Mbaabu, 1991). Again, the ILC launched the *Bulletin*, a regular publication with articles about the Committee's work and Kiswahili-related topics.

On the other hand, standardization work came to backfire on the British regime sooner than was expected. Kiswahili became a threat to the British rule, simply because the language empowered the East Africans as they united against the British rule. The increased opposition across East Africa to the British regime resulted in reassessment of language policies in the four dependencies (cf. Marshall, 2015). On the other hand, exclusion of East Africans, especially the *Waswahili*, from the committee during the years of Kiswahili standardization is viewed as one of the criticisms of ILC's work (ibid). However, the ILC's promotional and standardization activities created necessary measures for the modernization of Kiswahili (cf. Whiteley, 1969).

⁴⁸ This was the first ILC's dictionary, however, founded on Madan's Kiswahili-English Dictionary (cf. Whiteley, 1969:84)

1.6.2.3. From ILC to EASC: A shift from standardization toward linguistic research (1952-1964)

Sometimes our most cleverly planned measures do benefit those they are not aimed at. This is what happened with ILC. Whereas it was intended to extend colonial power, it ended up being of advantage to East Africans. With it came intense nationalist sentiments and massive opposition to colonialism in the whole of East Africa. It was this consciousness that pushed the regime to have a second look at the language policies. It had been imagined that Kiswahili would create a subservient group of Africans whom it would be easy to rule over. This was not to be. Instead, national pride gathered momentum and made the whole region ungovernable. This made the colonial administration to switch its focus on the development of Kiswahili. It was for this reason that in 1952 the ILC was baptized East African Swahili Committee (EASC) and its membership was trimmed⁴⁹ to nine (two representatives from Kenya, two from Tanganyika, two from Uganda, two from Zanzibar and the secretary). The directors of education were no longer members of the committee, which meant ‘cutting off the Committee’s active engagement with high-level policy makers’ (cf. Marshall, 2015:75). In effect, Kenya and Uganda considerably reduced the presence and influence of Kiswahili in education institutions. This step was extended to define how the committee related with East Africa Literature Bureau (EALB)⁵⁰. The EASC’s functions were now limited to reviewing and granting imprimatur textbooks. As a consequence, other books were directly printed by EALB without obtaining ILC’s seal of approval (Mbaabu, 1991:61). Therefore, EASC adopted a new list of activities which reflected its changed status:

- (a) The presentation of adequate material for the study of Kiswahili.
- (b) The constant revision of dictionaries and textbooks in the light of the results of research.
- (c) Cooperation with language boards in the matter of examinations.

⁴⁹ The parent organization, ILC, had 17 members, section 2.2.3

⁵⁰ When the East African High Commission was formed in 1948, the ILC was placed under its jurisdiction. Although Massamba (1989:62) says that EALB was formed a few years later after 1948, Mbaabu (1991:57) points out that EALB was formed in 1948, printing matters were transferred to EALB, while ILC remained in charge of Kiswahili research and orthography.

- (d) Informing the East African public through the press about the status, value, progress and development of Kiswahili.
- (e) Research into Kiswahili history, language, dialects, conservation and interpretation of indigenous and traditional literature.
- (f) Maintaining contact between the Kiswahili speaking countries, Tanganyika, Zanzibar, Kenya, Uganda, Northern Rhodesia, Nyasaland, Somaliland, the Belgian Congo and the Comoro Islands.
- (g) Maintaining contact between learned societies, colleges, and universities of London, South Africa, Leiden, Louvain, Berlin and encouraging studies in others.
- (h) Encouraging the study of Kiswahili in European and Indian schools in East Africa for the purpose of maintaining good relations between the races, and for the purpose of discovering potential linguists who will contribute to this rich field of research.
- (i) Extracting from the journals of colleges and learned societies, from periodicals and the press, articles of interest and value to the study of Kiswahili.
- (j) Conducting or supervising classes for the proper teaching of Kiswahili at approved centres, so that the present haphazard methods of learning may be avoided.
- (k) Performing secretarial services for voluntary language committees.

It is clear from the functions above that more attention was now directed to linguistic research rather than standardizing the language. This was a slight deviation from the tasks which ILC was charged with by the governors (see section 1.6.2.2). The coordinated effort to promote Kiswahili was now halted and this marked an evolutionary shift toward policies i.e., from standardization to linguistic research. Nonetheless, the governments were less attracted to Kiswahili research, just as much as they were more unwilling to support its funding ‘than they had been to the standardization project’ (cf. Marshall, 2015:76).

When the nationalist associations started using Kiswahili to rally their people for political purposes, the EASC revolved to expand its membership to more East Africans. In other

words, the reorganization of ILC was thus a new dawn for more active participation of East Africans in the language committee. In August 1953, it is on record that, of the eight members that attended the meeting, three were East Africans⁵¹. This was a major and important event that set a firm foundation for East Africans and Tanzanians in particular to develop their own language.

1.7. Definition of key terms

Adoption and **nativization** are used interchangeably to mean integration of words from a certain language into another language by users of the recipient language.

The terms **loanword**, or simply **loan** and **lexical borrowing** are used synonymously to refer to a lexical item taken directly into one language from another language with little or no translation (cf. Danzaki, 2015). It goes without saying that the term **adoptive** has also been coined as a reaction to the already established terms such as ‘loanwords’ or ‘borrowings.’ Calteux (1996:20) employs the term adoptive to replace ‘loanwords’ or ‘borrowings’, simply because ‘loaned items are rarely returned to the donor language questioning the validity of referring to such items as ‘borrowings’ or ‘loanwords.’ However, the metaphor around the term **loanword** has been widely accepted and therefore this study has opted for the more widely used terms ‘**loanword**’ or **loan** or **lexical borrowings**, hence they are used interchangeably through this work.

In this study, **Kiswahili language** or simply **Kiswahili** are used to refer to the **standard Kiswahili** which is the modified *Kiunguja* dialect due to ‘language planning, has been officially developed and has become widely acceptable as linguistically appropriate to function as the proper medium of formal writing, in legal and governmental functions, in textbooks and generally as a vehicle of education’ (cf. Mensah, 1995:95).

⁵¹ Secretary, “Note on the 16th Meeting of the Inter-Territorial Language Committee at Makerere College, Kampala,” *Journal of the East African Kiswahili Committee* 24 (1954): 7 as cited in Marshall (2015:86). Because of increased African participation in the language committee, Shaaban Robert became the first African chairman until his death in 1962.

In this study, **Bantu-sourced loan** refers to any lexical material sourced from a Tanzanian Bantu language and which has been introduced in Kiswahili technical domain between 1967 and 2019. Moreover, the term **specialized/technical vocabulary** is used interchangeably with the word **term** to refer to a word which has specific meaning in a specific field such as linguistics, biology, geography, medicine and, agronomy and animal husbandry.

According to Austerlühl (2010:4-5), **terminology** can be defined from three different approaches. First, it is used to refer to a scientific field or a shortened form of terminology studies, secondly, it is a set of standardized terms from a specific domain and lastly, terminology is a set of standardized and non-standardized terms belonging to a specific domain. This study adopts the first and second definitions, because only standardized terms have been used as data for analysis and this study also explored whether terminology principles were adhered to in the formation of Bantu-sourced loans. According to UNESCO (2005:10), terminology principles focus on systematic nature of terminologies.

Term-creation principles refer to the ranking order of priority of term source recommended by BAKITA. **Terminology principles** or **principles of term formation** are the criteria/parameters for good technical term formation.

In this study, a **native word** refers to a lexical material sourced from indigenous African language. Therefore, a **foreign loan** refers to a non-indigenous African-sourced lexical item. According to this definition, this study considers all **indigenous African languages** as **native linguistic stock**, but in this order: 1. Kiswahili (standard and non-standard dialects) 2. Bantu languages of Tanzania 3. Tanzanian non-Bantu languages 4. Other African languages.

1.8. Summary

This chapter has presented and discussed the Tanzania's language policy and language contacts, the influence of foreign loans on Kiswahili grammar, statement of the problem,

debate on language policy in Tanzania, historical development of Kiswahili and definitions of key terms. It has been shown in this chapter that language policy in Tanzania is mono-focal when it comes to the development of indigenous languages. State language agencies (BAKITA and TUKI) were created to maintain Kiswahili, the only indigenous language, while other indigenous minority languages lack institutional support. This chapter has also shown that the continued use of foreign loans and the avoidance of the use of African loans in the scientific and technological domains is a form of stigmatization. This limits the contribution of indigenous minority languages in the elaboration of Kiswahili terminology contrary to *Sera ya Utamaduni* of 1997. Moreover, the chapter has shown that anglicisms have introduced new syllable structures in Kiswahili, while a good number of functional words and two phonemes have been borrowed from Arabic. As regards the development of Kiswahili, Arabs, Christian missionaries, German colonial administration, and British colonial government played a great role in the development of Kiswahili. The official standardization of Kiswahili took place in the 1930s, where Kiunguja dialect was chosen for the basis of standardization and ILC was created to spearhead the standardization agenda. However, the membership of native Kiswahili speakers in the ILC was not good enough, hence standardization activities took place with minimal regard of *Waswahili*. Lastly, this chapter provides definitions of key terms.

CHAPTER TWO: LITERATURE REVIEW

2.0. Introduction

This chapter presents a review of literature related to terminology theories, terminology in language planning theory, types of loanwords and adaptations of non-African loans in Bantu languages. Literature on terminology in language planning theory was important because it is the fundamental aspect to the understanding that lexical expansion/terminology planning is part of language planning. In order to deepen the understanding of adaptations of Bantu-sourced loans in standard Kiswahili terminology, it was important to review studies on adaptations of non-African loans in African languages and theories of terminology, respectively. Such literature laid the foundation for the subsequent analysis of Bantu-sourced loans in standard Kiswahili terminology, which is the major objective of this study. In line with theories of terminology, for instance, this study was designed to test the quality and adequateness of Bantu-sourced loans as standard Kiswahili terminology. To do this, in chapter five, Bantu-sourced loans are subjected to the principles of derivability and compoundability, preference for native linguistic word stock, linguistic economy/brevity, linguistic appropriateness and linguistic correctness, transparency and consistency. In addition to the aforementioned principles, preference for word(s) attested in more than one local language is a requirement also considered by BAKITA.

2.1. A brief overview of the theories of terminology

Terminology development is an area of study that has had a long debate from the 18th and 19th centuries when the biggest concern was the proliferation of terms especially in the field of science. According to Gani et al (2020), the term ‘terminology’ was coined by Christian Gottfried Schutz, a German scholar, at the beginning of the 19th century as an alternative to ‘nomenclature’. Sageder (2010) asserts that in 20th C, engineers and technicians, because of technological advancement and scientific discoveries, needed terms to name their discoveries and innovation, which led to the need to agree on terms in order to avoid duplication and be able to communicate effectively within the same and across different fields. As Faber (2009)

notes, understanding of terminology and specialized knowledge is important in scientific and technical translation. She further notes that it is important to develop terminology as a discipline in order to facilitate specialized communication, translation and knowledge transfer between text users belonging to different language communities and similar or different knowledge levels.

With time scholars interested in terminology have worked to develop the concept of terminology as a distinct field of study with theories that can make it possible for it to be considered a scientific field with guiding principles that can enable interested scholars have clear well-informed strategies to carry out inquiry into matters that concern terminology. According to Faber (2009) and Sageder (2010), the foundations of the field of terminology was developed by Eugen Wüster, a linguist from Austria, in his PhD thesis in which he ‘presented arguments for systematizing working methods in terminology, established a number of principles for working with terms and outlined the main points of a methodology for processing terminological data’ (Sageder, 2010:124). Wüster’s study also lays the foundation for the first theory in the field of Terminology (with capital ‘T’) to designate a field of study guided by theories. The discussion of some of the terminology theories below is based on Faber’s (2009) description on theories of terminology.

General terminology theory (GTT) is a prescriptive theory of terminology that was developed by Eugen Wüster and was later developed by his successors. This theory mainly considered terms as being separate from ordinary words and thus looked at them as abstract entities that are separate from their linguistic designations. It therefore distinguished terminological concerns as being specialized language which is different from ordinary everyday language. This theory detached terms from words and therefore terminological field from ordinary linguistics. The theory further viewed terms as behaving differently from ordinary words in that they have fixed form and content and are therefore subject to only synchronic way of study. The theory mainly aimed at standardizing terminology developed in technical

language; popularize the benefits of standardization and to establish terminology as a discipline. According to Sageder (2010), this theory advocates for monosymy (the precision of concepts) and unicovity of terms (absence of synonyms).

Most of the weaknesses of this theory were used to develop other theories. For example, the view that technical terms are fixed and thus can only be studied synchronically is not true, since technical terms/language is also subjected to other linguistic principles like syntax and semantic change according to time, place and users. Moreover, synonyms and polysems are facts in a language and terms are often vague and ambiguous' (cf. Sageder, 2010:125). With all its weaknesses, if the objectives of GTT were to be applied to the terminology chaos in standard Kiswahili terminology, many of them would qualify. Many Kiswahili scholars (cf. Mwansoko, 1998; Massamba, 1989, 2013; King'ei, 1999; Musau, 2001; Petzell, 2012) have shown concern about the proliferation of terms in standard Kiswahili technical terminology. Of course, synonyms are unavoidable; however, controlled synonyms are much better. GTT already addresses this point and therefore proliferation of terms in standard Kiswahili can be tackled by using GTT. Terminological development work is a continuous activity and should be subjected to proper procedures of term standardization so as to avoid uncontrolled competition of synonymous terms. Moreover, precision of concepts in Kiswahili is a problem as King'ei (1999:154) observes that some Kiswahili equivalencies for English terms 'are too general and do not satisfy the specialised meaning in the register'. It has also been pointed out earlier that Kiswahili in Tanzania is experiencing 'proliferation of orthographic variations, synonyms, translationisms on numerous formal texts and divergent between Tanzania Zanzibar and Tanzania mainland 'standard Kiswahili' varieties' (cf. Kipacha, 2012:209). In such situation, term evaluation followed by terminology standardization as suggested by GTT seems to be the only remedy.

The second set of theories developed in the 1990s is classified under social and communicative terminology theories (cf. Faber, 2009). They include socio-terminology

theory and communicative theory of terminology. These are theories that challenge the views advanced by GTT. One notable point of departure from GTT is that they are prescriptive. The first theory under this set of theories is socio-terminology theory which was proposed by Gaudin (1993). This theory applies sociolinguistic principles in describing terminology by considering the contexts of use, for ‘parameters of variation are based on the social and ethnic criteria in which communication among experts and specialists can produce different terms for the same concepts and more than one concept for the same term’ (cf. Faber, 2009:113). This theory mainly focuses on social and situational aspects of specialized language communication. The guiding principle here is that technical language cannot be detached from everyday language and it therefore behaves just like ordinary language because it is subject to being affected by context of use and will therefore develop synonyms and polysemy like ordinary language. The importance of this theory is that it opened door for descriptive study of technical language which takes into account social and communicative factors into account when describing terminology.

This second theory in this category is communicative theory of terminology (CTT). Just like socio-terminology theory, this theory brings the field of linguistics and terminology closer. However, it differs from socio-terminology theory in that it goes beyond one aspect of linguistics and posits that the complexity of specialized language units can be analyzed from social, linguistic and cognitive perspectives. Cabré’s (2003) theory of doors proposes three possible dimensions (cognitive, linguistic, and communicative dimensions) of accessing, analyzing, and understanding terminological units. Cabré’s views differ from other mentioned theories in that this theory gives more options for approaching terminology. This, however, has been viewed as a weakness because it does not focus on specific linguistic model and it also doesn’t exhaustively explain its application of semantics beyond conceptual representation of terminologies (cf. Faber, 2009).

Another category of theories is cognitive theories of terminology. These theories have been developed based on the development in the field of linguistics where there has been major concern and focus on the conceptual network underlying language. These theories differ from CTT in that they go beyond focusing on terms in texts and discourse and make an effort to integrate premises from cognitive linguistics and psychology in their analysis and description of terminological concepts. The first theory under this category is socio-cognitive terminology theory which was developed by Temmerman. This theory shares some principles with Gaudin's socio-cognitive terminology and Cabre's CTT in that it is also prescriptive and regards terms as the starting point for terminological analysis. It differs from other theories in the way that it borrows a lot from cognitive linguistics. Faber (2009:116) paraphrases Temmerman's view that this theory 'concentrates on the cognitive potential of terminology in domain-specific language and on terminological variation as related to verbal, situational and cognitive contexts in discourse and in wide range of communitive environments.' This theory argues that different parameters like type of categories being defined, the knowledge level of the text sender and the receiver, and the profile of the term-base user may cause variations in description of terminological concepts. Temmerman's (2000) criticism of GTT bear a lot of weight since it is evident that we cannot separate concepts from language since concepts are expressed through language, polysemy and synonyms occur frequently in technical language because specialized terms come from language and are subject to behave like language and by studying specialized language synchronically, we shall not be realistic because terminology, just like ordinary language, change over time.

Essentially, there seem to be two views of the field of terminology. There is the view that looks at the field of terminology as a science and has therefore developed, over the years, theories that provide a scientific manner of studying, analyzing and explaining concepts. The second view looks at the field of terminology as an art and thus a process of providing and describing technical terms (cf. Sageder, 2010). However, there seem to be lack of dialogue even among those developing theories so that a more unified approach to terminological study

can be developed to allow for an eclectic approach where several theories can be combined for a better study and understanding of the process of terminological development and terminological behavior of the existing terms in circulation.

While working on theories of terminology, a synthesis of wide-ranging literature on the specified linguistic rules for term formation, Felber (1984), Picht and Draskau (1985), Kiingi (1989), King'ei (1999), Mwaro-Were (2000, 2018), UNESCO (2005), Valeontis and Mantzari (2006), and ISO (2009) discuss terminology principles which basically apply to 'all' languages. Terms should be created in such a way that they 'reflect the concept characteristics they refer to as precisely as possible', as they are 'linguistic representation of concepts' (cf. Valeontis and Mantzari, 2006:4). Therefore, term-creation activity should be systematic and guided by linguistic principles in order to 'achieve transparency and consistency in linguistic representation of knowledge' (ibid). Generally, terms should meet the principles of:

- (i) derivability and compoundability
- (ii) linguistic economy
- (iii) linguistic appropriateness
- (iv) transparency
- (v) preference for native linguistic stock
- (vi) consistency
- (vii) linguistic correctness

Those terminology principles provided the insight on good practices in the formation of technical terms across languages and Kiswahili in particular. Such principles laid the foundation for the subsequent data analysis of Bantu-sourced loans. As part of the analysis of Bantu-sourced loans, the researcher subjects the loans to scientific investigations by applying the terminology principles to determine the quality and adequateness of the Bantu-sourced loans in Kiswahili terminology (section 5.2).

2.2.1. Tanzania's terminological development in language planning theory

This study discusses terminological development in Tanzania from the theory of language planning, simply because 'terminology has become an increasingly important aspect of language planning' (cf. Bhreathnach, 2012:95). In this study, special emphasis is placed on the position of terminological development within language planning models. Language planning models give both a description of the lexicon dimension of language and distinction of two levels — a general lexicon and specialized lexicon (cf. Antia, 2000). Language planning involves two major aspects, namely status planning and corpus planning. The former, also known as 'social' or 'external' planning, concerns the selection and promotion of a language and/or variety as 'an official language for educational or cultural purposes (media, religion)', whereas corpus planning, also referred to as 'linguistic' or 'internal' planning is geared towards establishment and development of spelling norms, setting norms of grammar and the expansion of vocabulary of a language (cf. Wolff, 2000:333).

The two aspects of language planning discussed above indicate that language planning entails coinage of words and terms and establishing spelling norms. Thus, vocabulary expansion takes place at two levels – a general lexicon used largely for everyday purposes and specialized lexicon used 'by expert communities with a greater or smaller share of terminology and domain-specific linguistic conventions' (cf. UNESCO, 2005:3). Two levels of vocabulary expansion are attested in all language models (see Haugen, 1966; Garvin, 1973; Ferguson, 1968; Kloss, 1967; Fishman, 1971; Gorman, 1973; Okwonko, 1977; Chumbow, 1987 in Antia, 2000). For example, Haugen's (1966) model of language planning presented in four stages give both a description of the lexicon dimension of language and distinction of two levels – a general lexicon and specialized lexicon.

- a. Norm selection: the choice of a language and/or dialect to be developed.
- b. Codification: standardization of linguistic features (which involves three stages: graphization – developing writing system, grammaticalization – deciding on rules/norms of grammar, lexicalization – identification of vocabulary).

- c. Implementation: promotion of the chosen language/variety to enhance its prestige in a given country or region.
- d. Elaboration: expansion of the functions of the chosen language/variety which involves creation and dissemination of technical terms.

A close look at the four stages reveals that codification and elaboration are parts of the corpus planning, whereas norm selection and implementation are aspects of status planning. In addition, of these four stages, a look at stages b (codification) and d (elaboration) reveals a distinction of general lexicon and specialized lexicon. Codification deals with general lexicon (lexicography), while elaboration deals with specialized vocabulary (terminography). Recently, there has been an interaction between elaboration and codification due 'to an increase in the use of technical terms outside their original fields, largely due to the western world's shift to a knowledge society' (cf. Bhreathnach, 2012: 94). Therefore, an increase of publicity and promotion of technical terms through education, media and translation and an increased absorption/use of technical terms through dictionaries for general-language purpose⁵² have made term planning as an important aspect of language planning. Term planning is 'the development and provision, by an organisation or organisations, of terms for a language' (ibid: 95).

Terminological development in language planning theory is also justified in UNESCO's definition of language planning. UNESCO (2005:35) defines language planning as an 'activity dealing with language development that covers a mixture of methods and approaches, including terminology and lexicography, terminology management, translation and translation management, and increasingly, corpus-based approaches (term extraction, corpus analysis for spotting neologisms coined in discourse communities, etc.).' The terms terminology, terminology management and corpus-based approaches present in the definition point to the fact that terminological development is an important aspect of language planning. Notably, terminology has been seen as a science and/or art, an interdisciplinary discipline

⁵² UNESCO (2005:3) refers to 'language used largely for everyday purposes by any language community.'

somewhere between linguistics, logic, ontology, informatics and special branches of science (cf. Packeiser, 2009; Sageder, 2010), while others see it as a subfield of applied linguistics (Sager, 1990; Pavel and Nolet, 2001). In linguistics, for instance, especially general linguistics, terminology was ‘re-theorised as a sign, and the link between terms and referents was being questioned’ and over time, terminology became a subfield of applied linguistics and ‘was not confined to scientific and technical standardization’ (cf. Bhreathnach, 2012:94).

Language planning became an important field of study in the 1960s, especially after the development of sociolinguistics (cf. Kaplan and Baldauf, 1999; Bhreathnach, 2012). This is the time when many African countries got their independence. On the emergence of the field of language planning, Lin remarks that ‘language policy and planning (LPP) as an interest for academics emerged in the 1950s, and 1960s and has largely been ‘problem solving’ that responded to the needs of the newly established states; these polities had just gained independence from their former colonial powers’ (cf. Lin, 2015:21). Taking Tanzania into consideration, the country opted for endoglossic language policies, as Kiswahili (an indigenous African language) was chosen the national and an official language in 1962 (cf. Massamba, 1989). Such politics of language influenced the activity dealing with language development in Tanzania in which terminological development became the core business of language planning of the day. Furthermore, the emergence of new concepts in the 1990s such as sociolinguistic enquiry, research into the implantation of official terms, and measurement of terminological implantation lend support to terminology as an important aspect of language planning (cf. Quirion, 2003a and 2003b in Bhreathnach, 2012). The sociolinguistic approach to terminological development is seen in the following:

- ... terminology as an aspect of language planning, and the importance of close links to other aspects of language planning (particularly in the organizational and decision-making structures, and in dissemination of term resources).
- Close connection with language users in planning and in research/standardization work, including research language usage, and close interaction with opinion-leaders in language choice, particularly subject specialists.

- The importance of social aspects of term use; emphasis on usage and likely usage (implantability) in term choice and standardization (Bhreathnach, 2012: 95).

In his discussion of the influence of politics on language development in Tanzania, Massamba (1987a: 183-184 in Blommaert, 2013), provides a cogent account of three aspects of language planning as summarized below:

1. Language planning for pedagogical purposes — production of textbooks and other instructional materials for formal education.
2. Language planning for normative purposes — production of descriptive and prescriptive grammars, dictionaries and orthography.
3. Language planning for modernization - creation of new terms to address and cope with modern technological advancement.

Such account is relevant as follows: 1. language planning considers terminological development as an important aspect. Therefore, the use of native linguistic stock in the elaboration of Kiswahili terminology is in line with language planning theory, as BAKITA's ranking order of term sources calls for restricted use of non-African indigenous lexical material in the creation of Kiswahili technical terms. 2. The Cultural Policy (*Sera ya Utamaduni*) of 1997 recognizes local languages of Tanzania as a source of Kiswahili technical terms. Based on these two reasons, this study sees the need to discuss terminological development in Tanzania and analyze Bantu-sourced loans within the theory of language planning.

The contextualization of terminological development in language planning in Tanzania stems from the fact that modernization of Standard Kiswahili and the need for terminological development became the main agenda after independence. The original intention was to replace English with Kiswahili in all levels of education, administration and other technical domains. Consequently, controlled terminological developments grew rapidly, especially between the late 1960s and early 1980s (cf. Blommaert, 2013; Gibbe, 2008). In this period, the development of Kiswahili in Tanzania was mainly influenced by the political movement

called *Ujamaa* whose intension was to develop an indigenous African language i.e., Kiswahili, hence terminological development became ‘an ideologically important profession, deemed of national importance’ (cf. Blommaert, 2013:47). Thus, term planning⁵³ became an important aspect of language planning.

2.2.2. Establishment of state language agencies in language planning theory in Tanzania

The establishment of the (state) language standardization agencies is a prerequisite condition for the development of a language. For Kiswahili to be able to fulfil the new functional roles in Tanzania, it needed an institutional support. Therefore, the government created BAKITA and TUKI/TATAKI as language regulatory institutions. Basically, language organs are created in order to fulfil the following functions:

- a. Create guidelines as to matters of style and acceptable variants mainly in literary production.
- b. Ensure that printed materials conform to the standard norms
- c. Ensure that lexical innovation is continuously subjected to standardization in order to avoid uncontrolled competition of terms with similar yet different meanings (Wolff, 2000:338).

As can be seen from the quote, language development is more than status planning. It includes the development of all the aspects of corpus planning in order to serve the desired functions. Corpus development should be carried out by people with linguistic expertise, but status planning is mostly undertaken by leaders or politicians who may not have linguistic background.

2.2.2.1. TUKI/TATAKI and the development of Kiswahili

The history of the development of the ILC shows that in 1963⁵⁴, the EASC was shifted to Dar es Salaam. In 1964 the committee was transformed into an academic institution based at the University College of Dar es Salaam, which by then was a constituent college of the

⁵³ In this study, the term ‘planning’ is confined to a ‘language planning context, and not, for example, to terminology resources within a corporate or purely academic context’ (cf. Bhreathnach, 2012: 95).

⁵⁴ The headquarters of the language committee kept changing until it was transformed into an academy (Mbaabu, 1991:94).

- (i) Dar es Saalam, Tanganyika - 1930 – 1942
- (ii) Nairobi Kenya – 1942 – 1952
- (iii) Makerere Uganda – 1952 – 62
- (iv) Mombasa Kenya – March 1962 – February 1963
- (v) Dar es Salaam, Tanganyika – February 1963 - 1964

University of East Africa. In the same year i.e., 1964, the EASC was officially renamed *Chuo cha Uchunguzi wa Kiswahili* ‘Institute of Swahili Research’ as per the government decree under section 5 of the University College of Dar es Salaam Act of 1963. As a result, in 1964 *Chuo cha Uchunguzi wa Kiswahili* ‘Institute of Swahili Research’ was integrated into the University College of Dar es Salaam. Later on, in 1970 the year which the University College of Dar es Salaam became a full-fledged university, the institute was integrated into the University of Dar es Salaam and its name was changed to *Taasisi ya Uchunguzi wa Kiswahili*– TUKI - ‘the Institute of Kiswahili Research’, as cited in the University of Dar es Salaam Act, 1970, Section 21 (3) (cf. Mhina, 1976; Mbaabu ,1991; Sengo 1992; Marshall, 2015). TUKI became more or less an academic institute operating at the national level, although its functions remained almost the same as of EASC. Although TUKI was integrated into the University of Dar es Salaam, it was not directly monitored by the government (cf. Massamba, 1989:67). Noticeably, J.A. Tejani, ‘a Zanzibarian educator of Indian ancestry’, was the first Tanzanian secretary of the TUKI and in 1969 George Mhina was the first director of TUKI from Tanzania mainland (cf. Mulokozi, 2005)⁵⁵. After Tejani, no Zanzibarian has ever been nominated the secretary or director of TUKI (see Appendix 1) which in 2009 was renamed *Taasisi ya Taaluma za Kiswahili* (TATAKI) ‘Institute of Kiswahili Studies’, after the merging of TUKI with the Kiswahili department of the University of Dar es Salaam. TUKI/TATAKI has fewer functions⁵⁶ as compared to the parent committee i.e., ILC, since it lacked the authority to coordinate language policies in all the four independencies⁵⁷, lost control over imprimatur for school textbooks and standardization as well as promotional functions were taken over by BAKITA. As a result, TUKI was turned into a mere advisory institute and all its proposals on language development have to be submitted to BAKITA for approval and no terms coined by TUKI researchers can be disseminated until they are reviewed and approved by BAKITA (cf. Blommaert, 2013).

⁵⁵ See Appendix 1.b

⁵⁶ For more details refer to Whiteley, 1969; Mhina 1976; Massamba 1989; Khamisi, 1991; Marshall, 2015.

⁵⁷ TUKI came to run its operations as a national institution as opposed to its parent organization - ILC (cf. Mbaabu, 1991:104).

The institute has carried out several terminology projects⁵⁸, compilation of dictionaries for both general and specialized languages, manuscripts of old written literature and oral literature, translation, and publication of the *Swahili Journal*, whose name was changed to *Kiswahili* in 1970. The institute also publishes another two Kiswahili journals known as *Mulika* and *Kioo cha Lugha*. The former was founded in 1970 in order to collect and communicate knowledge pertaining to Kiswahili, linguistics and literature founded on empirical studies. In order for the institute to carry out its functions, four sections were formed. The lexicography section was responsible for compilation of dictionaries and development of terms for school subjects. The second section was the linguistics section, which was responsible for researching Kiswahili linguistics i.e., phonology, morphology, syntax, and sociolinguistics. The literature section was established to carry out research in both written and oral Kiswahili literature, and finally, the administration section. While Kenya, Tanganyika, Uganda and Zanzibar used to fund ILC until it was dissolved, Uganda stopped contributing to the committee in 1964, the year in which the committee was transformed into an academy and was then integrated into the University of Dar es Salaam. Kenya continued its funding until 1974. TUKI lost its characteristics of being a regional institute; rather it became a national institute, where the main focus was on developing Kiswahili in Tanzania (cf. Mbaabu, 1991). As pointed out above, in 2009 the Department of Kiswahili and TUKI merged and TUKI was renamed TATAKI. It is worth noting that TUKI's research programmes promoted it to an international recognition. However, TUKI's status came 'out of its own initiative as an academic institution of a university and not on the basis of language planning policy in Tanzania' (cf. Massamba, 1989:67).

BAKITA lost control of terminology development work after the fall of *Ujamaa* political movement. TUKI took control over terminological development work in Tanzania in the late

⁵⁸ Research in scientific terms which resulted in A Standard Dictionary of Biology, Physics and Chemistry; research in linguistic terms, which produced A Standard Dictionary of Linguistics and Language; Research in terms related to aircraft; research in Primary Terms related to lexicography. Moreover, TUKI's researchers have published by TUKI a number of technical dictionaries in the fields of: law (cf. Mlacha 1999); linguistics and language (cf. Massamba, 2004); computer science (cf. Kiputiputi, 2011); economics and commerce (cf. Tumbo-Msabo and Chuwa, 1999); history (cf. Mwansoko, Tumbo-Masabo and Sewangi, 2004); medicine (cf. Mwita and Mwansoko 2003).

1980s and 1990s, (cf. Legère, 2006). It conducted terminology research on various technical domains such as science (biology, chemistry and physics), linguistics, aircraft, car and tractor. The research works resulted in various technical dictionaries. Terminology research works by TUKI were mainly funded by UNESCO and the Swedish International Development Cooperation Agency (SIDA)⁵⁹. The institute has published a good number of specialized dictionaries in the fields of law, linguistics and language, computer science, economics and commerce, history and medicine. The institute used to convene international conferences, in which members of these conferences came from Rwanda, Burundi, DRC (the then Zaire), Kenya, Uganda, Comoro and Tanzania, with the specific aim of standardizing terminology in Biology, Physics, Chemistry and Linguistics (sponsored by UNESCO among other things). When the then Director of TUKI left office,⁶⁰ this noble exercise was abandoned. Bringing together experts from different countries and fields of study would help to reduce competition among different Kiswahili-speaking countries.

The transformation of TUKI into TATAKI went hand in hand with reforms of the institute's sections, as TATAKI has four centres: (i) the centre for Kiswahili literature and African oral traditions, (ii) the centre for terminology, translation, interpretation and language technology, (iii) Kiswahili for foreigners and, (iv) the centre of Kiswahili grammar and dictionaries. Unlike TUKI, TATAKI is directly under the surveillance of the government (Massamba, 1989). Like its predecessor, TATAKI engages in teaching and disseminating the knowledge of Kiswahili linguistics and its literature based on research findings. The achievements of TUKI/TATAKI include the publication of the three journals *Kiswahili*, *Mulika* and *Kioo cha Lugha*. Moreover, the institute has issued substantial publications in terminology and lexicography⁶¹. The institute has been revising the *Kamusi ya Kiswahili Sanifu* 'Standard Kiswahili Dictionary' for almost two years. The revision of such a dictionary has involved

⁵⁹ The government provided subsidies to run the institute, but no money was allocated to terminological or other any language development related projects. The institute managed to carry out researches in Kiswahili through selling its publications (private conservation with Prof. Massamba, the former Director of TUKI).

⁶⁰ This exercise took place when Prof. Massamba was the director of TUKI – personal conversation with Prof. Massamba.

⁶¹ Interview with Dr. Musa Hans, the Associate Director of TATAKI, in 2019

extensive research and its publication will soon take place. As regards work on terminology, the institute is no longer conducting terminology research but has been able to work on two types of terminology over the last three years. First, the institute was tasked with the coining of terms of posts in the faculties, schools, departments and units of the University of Dar es Salaam. The University Council of Dar es Salaam decided that its meetings should be conducted in Kiswahili and eventually the records would be written in Kiswahili. In order to do that, TATAKI was assigned to develop terms of posts in the University of Dar es Salaam. Secondly, the institute has recently standardized terminology in the field of research, especially M.A. (Kiswahili) and PhD (Kiswahili) programs. However, research works⁶² have dropped considerably since the merging of TUKI and the Kiswahili department. The main reason is the lack of experts, since the lecturers who are researchers are mainly engaged in teaching rather than researching.

2.2.2.2. BAKITA and the development of Kiswahili

The establishment of BAKITA in 1967 was a pre-condition for active processes of Kiswahili corpus planning. BAKITA has the highest authority in the development of Kiswahili. It is the coordinating organ of all the language development bodies, since it is ‘a political bureau in charge of official language policy’ (cf. Blommaert, 2013:47). Being a politically directed organ, BAKITA does not have qualified experts to carry out scientific tasks to modernize Kiswahili (Massamba, 1989). However, it is mandatory for individuals and institutions to submit the proposed terms to BAKITA for review and approval before they are disseminated. Khamisi (1991:208) puts it clear that among many functions, BAKITA was charged with the promotion of the development and usage of Kiswahili, encouraging achievement of high standards of Kiswahili use in official and public business, establish standard Kiswahili translation of technical terms, maintaining a periodic publication of a journal on Kiswahili language and literature as well as providing services to government institutions and individual authors writing in Kiswahili.

⁶² Private conversation with Prof. Massamba, former TUKI director, in 2019

Since its creation, BAKITA has done substantial work when it comes to standardization of books. The council has been reviewing all school textbooks and approving them (see Appendix 2). The government has now made it mandatory for all reference books also to acquire BAKITA's seal of approval⁶³. The council also receives book manuscripts from publishers and authors for review and advice⁶⁴. Apart from term standardization, BAKITA's achievements include the following publications: *Kiswahili na Utandawazi* 'Kiswahili and Globalization', *Furahia Kiswahili: Kiswahili kwa Wageni* 'Enjoy Kiswahili: Kiswahili for Foreigners', *Kamusi Kuu ya Kiswahili* 'A Great Dictionary of Kiswahili' (2015), *Mwongozo wa Waandishi wa Kiswahili Sanifu* 'A Guide to Writers of Standard Kiswahili' and *Kamusi ya Istilahi za Sayansi na Teknolojia* 'A Dictionary of Scientific and Technological Terms'. However, the liberalization policy on written language has had an effect on the seal of approval (cf. Khamisi, 1991; Massamba, 1989). Many books by private authors and publishers go on print without the surveillance of BAKITA and this is one of the biggest challenges.

English is the reference language when it comes to the creation of new terms in various technical domains in Kiswahili. BAKITA and TATAKI employ mainly the alphabetical list approach, which encourages 'looking up equivalents without any additional contextual or encyclopedic information' and in 'such practice – be it in professional or academic training – no knowledge is gained' (cf. Austermühl, 2010:15). English terms are collected alphabetically after which a panel of linguists and subject specialists work on the corresponding Kiswahili terms. However, 'BAKITA's terminology committee members have no background in linguistics or terminology formation' (cf. Massamba, 1989:70). BAKITA relies mainly on the technical terms submitted to it by institutions and/or individuals who may not be terminologists or linguists either. Once the terms are received at BAKITA, the terminology

⁶³ Telephone conversation (on 24.01. 2020 at 15:19) with the BAKITA's Head of Department of Terminology

⁶⁴ BAKITA charges non-governmental entities to review and approve their publications.

committee⁶⁵ revises the list and where possible makes alternative suggestions. After that, BAKITA sets a date on which the clients and members of the terminology committee discuss and reach an agreement on the list of terms and then the terminology committee submits the list to BAKITA for final approval. Upon BAKITA's approval, the standardized terms are sent back to the clients and may be printed and circulated.

The development of Kiswahili terms has gone through different phases, as identified in the subsequent sections. Analysis of terminological development by BAKITA shows that between the 1970s and the early 1980s BAKITA produced five TS which is a considerable amount of technical vocabulary. Lists of standardized terms in various semantic fields resulted in publications known as TS. From the 1970s to 1985, BAKITA was able to produce five TS (1, 2, 3, 4 and 5). TS no. 1 contains terms for government institutions in Kiswahili. Formerly, government institutions, departments and posts in ministries bore English names and it was decided to change them to Kiswahili. TS no. 2, 3, 4 and 5 focus mainly on terms for subjects that are taught in secondary schools. Terminology work was in compliance with the 1969 decision to gradually phase in Kiswahili as the medium of instruction beyond primary education. Terminology work came to a standstill in the first half of the 1980s (Standstill phase: 1986 – 2003) because terminology work was no 'longer supported by those who were responsible for funding and guiding this kind of BAKITA's activities, as in their eyes there is no market for the results of the standardization work' (cf. Legère, 2006:1978). So far, this study has been able to find one technical dictionary — KIST. Terminology research and printing of KIST were funded by UNICEF for ministerial funds were not allocated for terminology activities.

After a long period without much activity on terminological development, it is fortunate that terminology activities came to life again in the early 2000s (a breakthrough phase i.e., 2003 –

⁶⁵ BAKITA had representatives from various institutions, such as TUKI at the time, *Taasisi ya Kiswahili na Lugha za Kigeni* (TAKILUKI) the 'Institute for Kiswahili and Foreign Language' (based in Zanzibar) and language collaborators from different regions in the country. These were the ones who met and discussed the technical items submitted to BAKITA.

2005). In 2003, BAKITA coined 1301 terms for AIDS and sexually transmitted diseases (STDs), 243 literary terms and other terms in various technical domains. Those terms were published in TS no. 6 in the year 2004. The printing of TS no.6 was supported by Finnish Embassy in Tanzania. In 2005, BAKITA issued a compilation of all the six TS divided into thirty-three chapters; each chapter covers a technical subject. The printing was funded by *Mfuko wa Utamaduni Tanzania* ‘Tanzania Cultural Fund’.

Again, the work on terminological development came to a stop in 2005 due to the decrease in government subsidies, as noted in the following interview extract:

‘Ruzuku ya serikali ilikuwa inakuja na ilisaidia kufanya usanifishaji wa 2005 kurudi nyuma. Na kimsingi mapato ya ndani ni hela za serikali kwa hiyo na mapato ya ndani yalitumika kufanya huo usanifishaji. Lakini baada ya 2005 mpaka sasa usanifishaji haukufanyika, kwa kuwa OC iliendelea kupungua na mapato ya ndani hayakuwa mazuri’ (Fieldwork: BAKITA 2018).

Government subsidies helped the standardization of terms up to 2005. Basically, any money generated by BAKITA is termed as public funds and such money was also used to finance terminology work. However, after 2005 government subsidies continued to decrease dramatically and BAKITA’s sources of income were not satisfactory.

From 2006 to 2014 (a standstill phase), almost 8 years, BAKITA did not issue any TS or receive terms from clients for approval. Although the researcher was unable to verify the claims, BAKITA is in the process of ensuring that standardization does not come to a standstill or slow down for a long period of time. Thus,

Nadhani ni hali ya uchumi tu ndio kitu ambacho kinafanya usanifishaji usifanyike, lakini baraza (BAKITA) liko katika harakati za kuhakikisha kwamba linafanya usanifishaji kwa kipindi ambacho si kirefu sana yaani muda kati ya usanifishaji mmoja na mwingine usiwe mrefu. Hii ni kwa sababu maneno kila siku katika jamii yanaibuka na kuna mahitaji kadhaa ambayo yanaibuka katika jamii ambayo ni lazima yaundiwe msamiati mbali na mambo yanayokuja kutokana na sayansi na teknolojia (Fieldwork: BAKITA 2019).

I think the economic situation is what keeps standardization from happening, but the council (BAKITA) is in the process of ensuring that it does the standardization over a very short intervals i.e., the time between one standardization and the other is not long and there are a number of terminological needs that arise in society because of the demand of science and technology.

Recently, two lists of technical terms have been submitted to BAKITA for standardization and approval. The first list was prepared by the department of meteorology and the terms were approved in 2019. The second covers the terms related to COVID 19 which were issued in 2020.

2.2.2.3. New direction?

2.2.2.3.1. A paradigm shift: from terminography to lexicography

Today BAKITA is focusing more on de-terminologization⁶⁶ than coordinating and standardizing Kiswahili terms. It seems terminological development is no longer among BAKITA's core business. The council is now concentrating on publishing general language dictionaries, rather than inventing new terms and/or publish Kiswahili specialized terms dictionaries. This holds for the production and publication of KKK, where no ministerial funds were provided for the compilation of such publication, a dictionary for general language. For example, KKK has incorporated 32 out of 96 Bantu-sourced loans to its lexical entries. The lack of ministerial funds for the task of terminological development has triggered BAKITA to seek partnership with renowned private publishing companies⁶⁷. As a result, corpus activities have turned into a new project, which is the dissemination of standardized terms through general dictionaries.

'Na kuangalia namna ya kuuza msamiati wake zaid katika jamii kwa sababu hizi istilahi zilizokuwa zinaingizwa kwenye tafsiri sanifu. Pia jamii ilikuwa haizipati sana nakuzitumia; zinakuwa kama ni istilahi tu za uga fulani lakini sasa kwa kuziingiza baadhi katika kamusi kama ya KKK itasaidia zaidi kuziuzua katika jamii. Ndilo lengo hasa la baraza (BAKITA) kuhakikisha kwamba istilahi hizo zinazuka na kutumika katika jamii' (Fieldwork: BAKITA 2019).

And look for ways BAKITA can sell its terminology much more to the community because these terms were published in standard translations. The community did not have enough access to technical terms and could not use them very much. They are just like the terms for specific fields but now by incorporating some of them into the KKK dictionary it will help to sell them to the community. It is the

⁶⁶An activity through which 'specialized terms are incorporated into general language as widely known words' (cf. UNESCO 2005:10).

⁶⁷ This is according to Dr. Sewangi, the former Secretary General of BAKITA. Personal conversation took place during fieldwork in Tanzania in 2019. The compilation and publication of KKK were facilitated by Longhorn.

council's (BAKITA) main objective to ensure that these terms are marketable and used in the community.

The above interview extract between the researcher and the head of the department of terminology and lexicography of BAKITA shows that corpus activities at BAKITA are now taking a new path, from the creation of domain-specific terms to compiling of dictionaries for general language. It suffices to note here that a good number of standardized terms have been incorporated into KKK. The inclusion of technical terms in general dictionaries is one way, among many others, to promote and disseminate technical terms. The 2019 fieldwork at BAKITA also informed the researcher about the forthcoming Kiswahili dictionary for primary education. This is a good strategy of popularizing specialized vocabulary in which the standard Kiswahili terminology is made to function within the general lexicon.

In contrast to BAKITA, TATAKI does not seem to popularize its technical terms through general language dictionaries. In 2019 TATAKI released the 4th edition of the *Kamusi Sanifu ya Kiswahili* 'Swahili Standard Dictionary'. Regarding terminology development work, TATAKI was instructed to coin terms of posts in the University of Dar es Salaam in 2017. These terms have not been submitted to BAKITA for approval, yet they have been circulated in most universities in Tanzania. Moreover, TATAKI has also harmonized and standardized terms related to the field of research, because PhD and M.A students in Swahili studies at the University of Dar es Salaam are now writing their theses in Kiswahili. A booklet of those terms will be published soon⁶⁸. Such terminological development works are too institutional, because they are not carried out based on the language-planning of the country and therefore such activities are not coordinated by BAKITA.

2.2.2.3.2. Promotion of Kiswahili

Another trend in the development of Kiswahili in Tanzania is related to the promotion of Kiswahili. The government is preparing a 10 year (2021 – 2031) national strategy to promote the language in the country and beyond. The goal is to promote the development of Kiswahili

⁶⁸ Personal conversation with Dr. Musa Hans, the Associate Director of TATAKI.

in order that the language becomes both a product and catalyst to foster socio-economic and political development in Tanzania. Moreover, the late president of Tanzania, His Excellency President Magufuli, seemed to revive the spirit of Africanization, however, in a different approach. Unlike his predecessors, the president at different occasions used Kiswahili while addressing the non-Kiswahili international audiences. A Kiswahili speech to an international event calls for qualified and trained interpreters. This has made the government to employ language technologies and tools in mixed audiences i.e., audiences with varied linguistic backgrounds. The tools and resources for interpretation have been installed at BAKITA. Therefore, BAKITA is in collaboration with qualified interpreters to reach out the Tanzanian community to provide a three-day training course in order to disseminate interpretation skills and identify people with interpretation talents. BAKITA has carried the training agenda in the following languages:

1. Kiswahili – English - Kiswahili
2. Kiswahili – French – Kiswahili
3. Kiswahili – Portuguese – Kiswahili
4. Kiswahili – Arabic – Kiswahili

Those who qualify are awarded certificates. Moreover, the council is offering training in the skills for teaching Kiswahili to foreigners. The training package goes hand in hand with the identification of teachers for Kiswahili as a foreign language.

2.2.2.4. Problems facing terminology work in Tanzania

Many of the problems facing terminology development in Tanzania are attributed to inadequacies in language planning (cf. Massamba, 1989; Kische, 2004). Language planning involves the creation of language planning agencies for specific purposes, operation of language agencies and the training necessary for the people working in the agencies. Additionally, language planning is concerned with predicting problems likely to occur and proposing ways to tackle them and importantly the financial implications of all this should also be taken into consideration (Massamba, 1989). Actual planning is based on clear goals,

strategies to be used, and the outcomes expected. Before actual planning can take off, a ‘fact-finding stage’,⁶⁹ i.e., the identification of problems,⁷⁰ is the first stage to give a picture of what is required of language planning. Tanzania became ‘an exemplary case of language planning and language policy development and Kiswahilization efforts attracted the attention of many well-known sociolinguists’ (cf. Blommaert, 2013:52). In spite of Tanzania’s success in the Kiswahilization project, neither the fact-finding stage nor actual language planning were realized (Massamba, *ibid*). The effects of inadequacies in language planning with respect to terminology work in Tanzania are discussed in the subsequent paragraphs.

Lack of budgetary allocations is a major reason for the low value placed on the work of terminology development in Tanzania. Lack of funding makes it hard for language experts to carry out field-work on Tanzanian indigenous languages and to document, for instance, livestock, fish and traditional medicine terminology. The demand for technical terms is too high for BAKITA or any other official language board to efficiently control (cf. Massamba, 2013; Schadeberg, 2009; Mkude, 2005). Because of the lack of funds, BAKITA’s terminology committee is unable to conduct terminology seminars and workshops as well as the standardization committee cannot meet regularly to discuss issues related to terminology work. It is mandatory that all terms should be approved by BAKITA; however, individuals and institutions coin terms and use them without BAKITA’s approval. Submitting terms to BAKITA for approval was meant to maintain uniformity⁷¹, but the users of technical terms cannot wait for BAKITA’s terminology lists. This has resulted in more than one term representing the same concept. For example, a study by Mwansoko (1998 quoted in Musau, 2001) carried out in Kenya and Tanzania shows that a good number of synonyms for the same concept were in use at different universities. Creation of synonyms is a good idea, however, ‘proliferation of synonyms could in the long run hampers communication among students and experts in linguistics and in the wider region where Kiswahili is taught’ (cf. Musau, 2001).

⁶⁹ Rubin (1972)

⁷⁰ See Massamba (1989:67)

⁷¹ It looks convincing that the co-ordination and dissemination of uniformity of grammar were highly assured under the Inter-territorial Language Committee (cf. Massamba, 1989).

This study does not reject the idea of synonyms of technical terms, but they should be harmonized and standardized. Multiple terms rendering single concepts should be identified, harmonized and standardized. If possible, establish terminology database and upload them on the database. The lack of a terminology database in Tanzania has led to the unnecessary proliferation of technical terms published in TS. Thus,

Table 2: Terms by BAKITA rendering single concepts in the same technical domain

English	Kiswahili	technical domain
1. bone marrow	<i>msukulo, uboho, uloto</i> ⁷²	biology
2. appendix	<i>kibole, kidole tumbo</i> ⁷³	biology

Table 2 shows that two or three terms designate a single concept. It is understandable that introduction of new concepts to a language may lead to competing terms, but the inspection of the items in Table 2 has shown that those terms were approved by BAKITA at different times. The examples in Table 2 are an indication of insufficient standardization procedures, as the standardization activities of Kiswahili terms do not necessarily refer back to the already published or approved terminology. A systematic reference to the terminology bank during term standardization sessions may help to solve the problem of proliferation of technical terms. Unharmonized and unstandardized terms may hamper communication even among experts in the same field. Terminological database is not only a reference for approved terms, but may also help terminologists to manage competing terms. Currently, BAKITA is supervising the development of the specialized Kiswahili corpus for the compilation of terms that have been coined and used by individual experts from different fields of knowledge. Computational methods will be applied to extract terms from the specialized corpus which is being compiled⁷⁴. Nonetheless, no time frame for such project is available.

⁷² See *Istilahi za Kiswahili* page 12, 14 and 15.

⁷³ See *Istilahi za Kiswahili* page 35.

⁷⁴ An interview with Dr. Sewangi, BAKITA's former Executive secretary, during 2019 fieldwork.

BAKITA's and TATAKI's terms have been subject to criticisms. Since 'a term is a linguistic representation of a concept', the process of designation should be systematic so that 'terms reflect the concept characteristics they refer to as precisely as possible' (cf. Valeontis and Mantzari, 2006:4)⁷⁵. Some Kiswahili terms seem to lack linguistic appropriateness because they are not semantically precise (cf. King'ei, 1999; Mwaro-Were, 2000; Sewangi, 2007). In terminology development works, it is advised that terminologists should establish 'a one-to-one correspondence between a concept and the term used to signify that concept' (cf. Gumbo 2016:85). However, it has been found out that this aspect in some cases has not been considered by the coiners when creating Kiswahili specialized terms. It has been also observed from one technical dictionary that one term may represent two different concepts in Kiswahili (see examples 1 and 2 in Table 3).

Table 3: Identification of source and target terms in TUKI (1990)

source term	Kiswahili term
1. affixation	<i>uambishaji</i>
2. inflection	<i>uambishaji</i>
3. infinitive verb	<i>kitenzi kisoukomo</i>
4. derivation	<i>unyambuaji</i>

An inspection of the examples in Table 3 shows that the two source terms, 1. Affixation, and 2. inflection, are designated by one Kiswahili form *uambishaji*. For better results, terminographers would have first established a concept system⁷⁶ of affixation, inflection and derivation in the source language followed by establishing a concept system of those terms in Kiswahili. The last step was to merge the two concept systems (English and Kiswahili) so as to 'identify equivalence between the terms representing the same concept in the two different languages' (cf. Austermühl, 2010:9).

⁷⁵ It is recommended that terminology need to satisfy the principles of derivability, linguistic appropriateness, economy, transparency, consistency and linguistic economy (cf. Valeontis and Mantzari, 2006; UNESCO, 2005; King'ei 1999, among many others). These principles should not be mistaken for principles of Kiswahili term formation, which basically prioritize sources of terms (see chapter 3).

⁷⁶ A concept system refers to 'a set of concepts structured according to the relations among them (ISO, 2004:4 quoted in Austermühl, 2010:11)

In addition, there is an inconsistency of the use of the terms *uambishaji* ‘inflection’ and *unyambuaji* ‘derivation’ in Kiswahili linguistic dictionaries and linguistic books written by the Tanzanian Kiswahili scholars. For example, Massamba (2004) uses the term *uambishaji* for ‘affixation’, while Rubanza (2003) uses the term *uambishaji* for ‘affixation’, *uambatizi* for ‘inflection’ and *unyambuzi* for ‘derivation’, respectively. This study has the view that there should be consistency in the use of the same term each time, as the shift, for instance, from *unyambuaji* to using *unyambuzi* in referring to the English term derivation or the shift from *uambishaji* ‘inflection’ to *uambatizi* ‘inflection’ may confuse the user.

Furthermore, a closer investigation of the definitions of the terms *uambishaji* ‘inflection’, and *unyambulishaji* ‘derivation’, reveals some terminographical problems in TUKI’s (1990) Dictionary of Linguistics and Language, as shown below:

Uambishaji ‘inflection’- *utaratibu wa kuweka viambishi kwenye mzizi wa neno ili kulipa maana mahsusi* ‘the process of attaching affixes to the root of a word in order to give it a specific meaning’, whereas, *unyambuaji* ‘derivation’ – *tendo la kupachika vipashio kwenye kiini ilikujenga (ma)neno* ‘the act of attaching affixes to the root to create word(s)’. Function is the main distinction between inflection and derivation, since derivation serves to create new words, but inflection serves to create different forms of the same lexeme (cf. Booij, 2006). However, TUKI’s definition of *uambishaji* ‘inflection’ does not offer a reader with accuracy of meaning and therefore the definition seems to suggest that *uambishaji* ‘inflection’ is similar to *unyambuaji* ‘derivation’. As a result, users may use the two terms without great accuracy in their meaning. This may lead users to wrong implication. TUKI’s terminologists should aim to provide unambiguous terms for well-defined concepts in order to enable users to comprehend and use the terms in a universally accepted manner (cf. King’ei, 1999). In Kiswahili, term extraction does not result in processing and organizing terminological data into terminology case files which help field specialists, terminologists and linguists to evaluate the correctness of information regarding the semantic features of the concept, to rate

the accuracy of the terms designating the concept and if possible, to formulate a definition (cf. Pavel and Nolet, 2001:47). It is the terminology case file from which terminologists select the definition that best describes the concept. Such practice of terminological activities is not undertaken by both BAKITA and TATAKI. In the course of this study, the researcher could not trace any terminology case files at BAKITA⁷⁷ and TATAKI in which the terminological data is compiled and presented to the official approval committee before publication.

Generally, terminology work involves different activities and abilities (cf. Pavel and Nolet, 2001; ISO 2000; Felber, 1983), i.e.:

1. Collecting and recording terms assigned to concepts in a specific subject field.
2. Ability to identify the terms that designate the concepts that belong to a subject field.
3. Finding, creating or standardizing a system of concepts for a subject field.
4. Establishing representations of concept systems through concept diagrams;
5. The ability to describe concepts concisely.
6. The recording of terminological data. Terminological data are: terms, definitions, explanations, contexts, conceptual relationships, equivalents in other languages, with the sources concerning the individual data and other data as associated information.

The examples given in the preceding paragraphs show that such terminology activities listed above were not adequately followed.

It has also been reported that the target users of Kiswahili terminology are not involved at every stage of terminology work (cf. Sewangi, 1996; Mwaro-Were 2000). In some cases, state language organs have undertaken terminology projects with minimal regard to target users, leading to rejection of terms by the target audience. An assessment study on the acceptance of technical terminology by the target audience by Sewangi (1996) reveals interesting results. The study concerns terms related to tractor/motor vehicle mechanics which were coined by TUKI in the year 1986. Those terms were coined as Kiswahili equivalents for 1150 English

⁷⁷ Only a few disorganized bundles of papers with Kiswahili terms and definitions were traced at BAKITA. Such bundles of papers do not qualify to be terminology case files.

terms. The results show that only 18 (36 percent) out of the 50 studied terms were accepted by the target users. In other words, the target users rejected the terms which were imposed on them. Consideration should have been given to the collection and standardization of the terms as they are used by the users. This is to say the target audience should be actively involved in at every stage of term creation. Terms, no matter how good, are irrelevant if they are rejected by the target users.

The lack of trained and qualified terminologists is also a serious problem in developing sound technical terms in Kiswahili. Although TATAKI turned into a teaching-focused institute, the centre for terminology, translation, interpretation and language technology cannot offer terminology training, simply because it does not have qualified terminologists.⁷⁸ This makes it difficult for the institute members to establish concept systems, both in source and target languages, prior to definitions of terms and designations of terms to concepts. The institute's current situation is shown in the following interview extract between the researcher and a retired professor who was TUKI's director for six years:

Hakuna kozi ya istilahi zaidi kulikuwa na kozi ya leksografia, lakini istilahi haijawahi kufundishwa. Kuna watu walisoma istilahi lakini si istilahi ya kiundani, kwa mfano, akina James Mdee, walienda Ujerumani kusoma na wakaja pale chuoni ndio wakaanza kufundishafundisha. Na pale walikuwa kama wanajifundisha wenyewe. Laikini kwa sasa hivi hakuna kitu kama hicho. Hasa baada ya TUKI kuungana na idara (Kiswahili) ilijikita katika kutilia mkazo ufundishaji tu, sio utafiti.

There has never been a course in terminology; however, at one time there was a lexicography course. In the past, there were some people who studied terminology, but not in detail. James Mdee is an example of such people who went to Germany to study. When they came back to the University (of Dar es Salaam), they started teaching terminology. It was like they were training themselves. However, there is no such thing now. Especially, when TUKI merged with the department (of Kiswahili) where the focus is on teaching rather than researching.

The importance of terminology training cannot be over emphasized, especially for the present and future generations who would like to work for language planning agencies. The extract shows that the current situation is worse than it was because the institute does not have trained

⁷⁸ The centre has very few retired professors.

terminologists. Experience shows that at the University of Dar es Salaam and other universities in Tanzania, as well as South African universities, terminology and lexicography courses are modules within linguistic courses (cf. Alberts, 2001:17) and no courses meant to produce professionals/specialists. It is time now for terminology training to be a course in itself, taught from undergraduate to PhD level, in which students are introduced to theories that form the basis of terminology work and terminography (ibid).⁷⁹

The conflict of roles is also a problem, especially between BAKITA and TATAKI. The latter was basically meant to be the operational arm of BAKITA. This means TATAKI is categorically an academic institution whose main aim is to research Kiswahili in different aspects, and any suggestions related to language development must be submitted to BAKITA for approval. This is not the case today, because BAKITA and TATAKI carry out their terminology development with minimal regard for each other.

Sina uhakika na miaka ya nyuma lakini toka kuwapo kwangu mimi sijawahi kuona msamiati unaotoka TATAKI na sasa unaomba kusanifishwa kama inavyokuwa kwenye taasisi nyingine labda mazingira, labda mambo ya masoko na taasisi nyingine mambo ya magonjwa kama wanavyosema jamani tuna msamiati na tunaomba sasa mtusaidie kusanifisha, kwa TATAKI sikuwahi kuona. Na hili pengine jambo ambalo ni dhahiri kumekuwa na kuingiliana katika kazi. Siwezi kusema muingiliano huo unaathiri au unajenga lakini nadhani ni vizuri zaidi tukakubali (fieldwork at BAKITA 2018).

I am not sure about the past years. However, from my experience at BAKITA, I have never seen TATAKI submitting its terms for standardization to BAKITA as it does with other institutions dealing with, let us say, environment, marketing, diseases etc. Perhaps something which is obvious is the mixed up of roles. I cannot say that the conflict of roles affects negatively or positively but I think it is better that we agree.

(Source: Field work at BAKITA, 2018)

The above extract expresses the mistrust and lack of good cooperation between BAKITA and TATAKI for many years. That statement was supported by the former director⁸⁰ of TUKI that the institute used to submit their terms to BAKITA for approval, but nowadays TUKI does it

⁷⁹ For more information to be included in terminology training refer to Alberts (2014:17-18).

⁸⁰ This was a private telephone conversation with Prof. Massamba, the former TUKI's director during my fieldwork in Tanzania February to June 2019.

on its own⁸¹. The functions of the two language bodies are clearly defined and each body should act within its limits. TUKI have published countless technical dictionaries without the approval of BAKITA⁸². Despite the language planning agents' relatively small budgetary allocation, BAKITA and TATAKI need to join forces in order to compile, standardize and publish the scientific and technical terms which have been coined by individuals and institutions by establishing a national term bank. For example, the three TATAKI academic journals⁸³ should periodically include the terms approved by BAKITA.

Dissemination and publicity of terminology products among the users of Kiswahili terminology is also one of the major challenges of language regulatory organs in Tanzania. A short survey to determine the dissemination of terminology products such as TS and Kiswahili technical dictionaries was conducted between April and May 2019 in 6 primary schools and 1 college in Mwanza region⁸⁴. Such institutions were selected for the survey simply because textbooks, supplementary and reference books used in primary schools and Grade 'A' Teachers' colleges have integrated into their technical subjects a good number of standardized terms. In schools and a teachers' college in which the survey was carried out, most of the teachers and students were unaware of the TS and other published Kiswahili technical dictionaries. This could suggest that BAKITA and TUKI/TATAKI have not given out enough information about their terminology products. Furthermore, BAKITA and TATAKI do not have a unit which carries out research on the consumption of technical terms in the general language dictionaries and other technical texts. In other words, the language regulatory organs do not know to what extent their technical terms are used yearly, for instance, by lexicographers, book writers, translators and media, to mention a few. In addition, the organs

⁸¹ The absence of trained and qualified terminologists at BAKITA makes it difficult for TATAKI to submit its publications for approval. BAKITA's language developers are bachelor's and master's degree holders who are basically students of TATAKI. Academic arrogance is the source of all this.

⁸² For example, in 2017 TATAKI standardized terms of university faculties, schools, departments and officers without submitting them to BAKITA for approval. The terms were circulated and used in the Universities of Dar es Salaam, Dodoma and others. Later, however, those terms were submitted to BAKITA for approval. Moreover, other terminographical publications by TUKI (TATAKI) or TUKI's researchers do not bear BAKITA's seal of approval as is required.

⁸³ *Kiswahili, Mulika and Kioo cha Lugha*.

⁸⁴ Three primary schools from Nyamagana district and three primary schools from Ilemela district and Murutunguru teachers training college in Ukerewe.

also do not have a mechanism of assessing the availability and use of newly standardized Kiswahili terms on the internet.

BAKITA used to be a many membered language agency⁸⁵. Standardization of Kiswahili terms was carried out by *Kamati ya Kusanifu Lugha* (KAKULU) ‘Language Standardization Committee’ which needed to be guided by the principles of term-formation. It is unfortunate that KAKULU is no more and terminological activities are almost absent as compared to the period between 1970 and 1985. Kipacha (2012) reports that in its early days, BAKITA had 21 representatives, 5 of them from Zanzibar. After some time, BAKITA's membership was between 50 and 60 in the ratio of 2 to 1 (Tanzania and Zanzibar). It is unfortunate that the researcher was unable to uncover the ethnic background of the representatives from Zanzibar and Tanzania mainland as files regarding term standardization from 1970s to 1990s are not accessible due to BAKITA's relocation⁸⁶. However, looking at the number of members from Zanzibar appearing on the lists of the standardization committees of 1987, 2019 and 2020 and in the lists of BAKITA's secretaries, TUKI/TATAKI directors and language developers at BAKITA (see Appendix 1), it is therefore plausible to argue that the development of the Kiswahili technical lexicon in Tanzania was mainly carried out by non-Kiunguja speakers (for linguistic backgrounds and number of mainlanders vs Zanzibarians in standardization committees and leadership of BAKITA and TUKI/TATAKI, see also Appendix 1). As a result, contention has been reported on the acceptability of standard Kiswahili forms by non-Kiunguja native speakers (cf. King'ei, 2000). The majority of members of the standardization committee came from Bantu-speaking communities. Moreover, the mainlanders, by far the majority, played a protective role⁸⁷ to ensure that Kiswahili loan forms come from their own Bantu languages, resulting in adopting a small amount of non-standard Kiswahili words into technical domains. In other words, members with a background in Bantu languages seemed to

⁸⁵ As a state organ, all terminological activities were funded by the state and its membership consisted of representatives from all over the country. The fall of *Ujamaa* politics went hand in hand with the collapse of KAKULU.

⁸⁶ Two visits were made in search of files which contain information of early standardization in Kiswahili. It looked convincing that the files were lost during the relocation process, because the search in the store was so intensive.

⁸⁷ See Gromova, (2000)

compete in introducing terms from their own L1 into Kiswahili terminology. In addition, the lack of any native Kiswahili speakers within the employed language developers symbolizes BAKITA's lack of consideration for native Kiswahili speakers from Zanzibar, especially the Kiunguja native Kiswahili speakers (consider appendix 1).

Because of the currently spontaneous growth of new words occasioned by the demand of scientific and technical communication, language planning agencies seem not to satisfy the needs of the users of Kiswahili terms. For example, Musau (2001) and King'ei (1999) observe that teaching linguistic and literary courses in Kiswahili has created a demand for rapid formation of technical vocabulary in such areas at individual and departmental levels. Notice that this has led to a lack of collective terminology data bases; hence there is no up-to-date statistics of Kiswahili technical terms (cf. Musau, 2001; Massamba 2013).

As mentioned in the previous sections, when Kiswahili was declared the national language in 1964, two main state language agents (BAKITA and TUKI) were created to maintain the language. However, there is no coordinated approach for dealing with Kiswahili books and journals across technical registers. As a result, there is a serious scarcity of books and technical articles whose contents are of high level written in standard Kiswahili (cf. Mukama, 1989; King'ei 1999).

Furthermore, there seems to be no common morphophonological framework for the adoption of non-African loans, especially originating from English (King'ei, 1999; Hamad, 2008). For example, the adopted English terms by BAKITA and BAKIZA contain some spelling variants as shown in Table 4.

Table 4: Spelling variants in adopting English vowels into Kiswahili

gloss	BAKIZA	BAKITA
1. principal /prɪnsɪpəl/	<i>prinsipal</i>	<i>prinsipo</i>
2. skirt /skɜːt/	<i>skati</i>	<i>sketi</i>

3. nurse /nəs/	<i>nasi</i>	<i>nesi</i>
4. matter /matə/	<i>meta</i>	<i>mata</i>
5. tank /tɒŋk/	<i>tangi</i>	<i>tenki</i>

Source: Hamad (2008)

The source of spelling variants in Table 4 are mainly due to phonemic differences, since Kiswahili phoneme inventory has simple vowels as opposed to English complex vowels. English has 21 vowels of which 8 are diphthongs, while Kiswahili operates with 5 vowels with no complex vowels in its phonological system. The shwa vowel /ə/⁸⁸ have multiple renderings in Kiswahili such as /ə/ → /a/ *mata* < matter /matə/; /ə/ → /e/ *sketi* < ‘skirt /skət/’; /ə/ → /u/ *kampuni* < ‘company /kʌmpəni/. Regarding the change of voiceless velar plosive /k/ into its voiced counterpart /g/ by BAKITA, it seems difficult to determine its change process. Suffice it to note here that /k/ and /g/ are almost phonetically identical in that the former is voiceless while the latter is voiced.

Moreover, the adoption of diphthongs has resulted in spelling variants observed from terms approved by BAKITA and BAKITA. Table 5 contain spelling variants in the adopted anglicisms.

Table 5: Spelling variants in adapting diphthongs into Kiswahili

gloss	BAKITA	TUKI
1. ileum /ɪliəm/	<i>ileumu</i>	<i>iliamu</i>
2. invertase /ɪnvətəɪz/	<i>invatesi</i>	<i>invatasi</i>
3. zymase /zɪmeɪz/	<i>zimesi</i>	<i>zimasi</i>

Source: BAKITA (2004) and TUKI³ (2012)

Irrespective of descriptive and theoretical problems posed by the adoption of diphthongs in Kiswahili (cf. Batibo 1994), Tables 4 and 5 seem to suggest that BAKITA and TUKI (now

⁸⁸ See Ohly (1987:239) for English vowel adaptations in Kiswahili.

TATAKI) work independently and consultation regarding the creation of Kiswahili terms between these language organs is dubious. One may also argue that the standardization process is not good enough, since conflicting spelling variants and competing terms are ‘studied by terminology standardization boards or terminology approval boards which issue official language notices that inform the user community of the preferred terms’ (Pavel and Nolet, 2001: xix). Looking at examples in Tables 3 and 4, one would observe that BAKITA’s, BAKIZA’s and TATAKI’s terminologists seem not to have identified conflicting terms or proliferation of terms and prepare a comprehensive list for standardization⁸⁹.

A survey of literature has also shown that competing terms result from different term-creation strategies undertaken by state language organs in expressing technical concepts/terms sourced from English. It seems that most, if not all, members of the different committees in TATAKI, BAKITA, and BAKIZA have had no studies in terminology development, let alone the fact that their English background leaves much to be desired⁹⁰.

Table 6: Kiswahili lexical variants resulting from different nativization strategies

gloss	BAKIZA	BAKITA	TUKI
1. foot/mouth disease	<i>ugonjwa wa miguu na midomo</i>	<i>shuna</i>	<i>shuna</i>
2. rabies	<i>kichaa cha mbwa</i>	<i>rabizi</i>	?
3. duodenum	?	<i>mbuti</i>	<i>duodeni</i>
4. albumen	<i>uteyai</i>	<i>ujinji</i>	<i>uteyai</i>

Source: Hamad (2008), BAKITA (2004) and TUKI³ (2012)

Examples in Table 6 indicate that BAKIZA gives priority to loan translations, while BAKITA seems to favour borrowing from indigenous minority languages (*shuna* ‘foot and mouth disease’ < Sumbwa (F23); *mbuti* ‘duodenum’ < Maasai; *ujinji* ‘albumen’ < Zigua G31) and TUKI seems to apply a mixture of secondary term-formation methods such as loan translation

⁸⁹ In this context, ‘standardization is here defined as the selection by a representative standardization committee of recommended terms to be used in a defined field, such as in education or administration’ (cf. Bhreathnach 2012: 99).

⁹⁰ A comment by the former TUKI’s director, Prof. Massamba.

as in *uteyai* (*utewayai* – egg liquid) ‘albumen’, borrowing from indigenous languages i.e. *shuna* ‘foot and mouth disease’ < Haya (E22) and adaptation of source terms *duodeni* < ‘duodenum’.

A look at the traditional top-down approach of terminological development seemed to work magnificently during *Ujamaa* linguistics. Kiango (2005) points out that BAKITA has committees at district and regional levels. Each committee was composed of native speakers of the local language(s) and sometime with a number of specialists in the field in question. The committee members suggested the equivalents for English term. The list of English terms along with suggestions were then sent back to BAKITA. A date was set by BAKITA to discuss the suitability of suggestions and each district/regional language committee was represented at the national level i.e., standardization meeting. In the meetings, each suggestion was examined and those who defended firmly their suggestion(s) won⁹¹. Now there are no districts or zonal or regional representative offices of BAKITA. This makes it difficult for Kiswahili teachers/lecturers and other professional language users to have immediate access to BAKITA services and terminological products. Regarding TATAKI, it is an academic institute charged with researching of Kiswahili, which in real sense is a department of Kiswahili, based at the University of Dar es Salaam. Both BAKITA and TATAKI are based in Dar es Salaam. It is high time they should seek to extend their activities, for instance, to other institutions of higher learning. Universities should be seen as agents in researching, creation, dissemination of Kiswahili terminology (cf. Pavel and Nolet, 2001; Alberts, 2010, 2014). Active involvement and support of the Kiswahili departments in the universities would help to address the question of terminological development work in Kiswahili and Tanzania in particular.

Creation of terminology development units within Kiswahili departments in higher institutions would not only speed up terminological development work, but also stir

⁹¹ An interview with Mzee Karekezi, a former head of the terminology and lexicography department at BAKITA.

terminological survey in indigenous minority languages. Moreover, the use of universities in term-creation would be fruitful because subject specialists, linguists and other language experts can be easily accessed. Such an exercise used to be the case at TATAKI, the then TUKI, in the early 80s when TUKI used to take on board professors from the Science Faculty, when they were trying to develop Kiswahili scientific technical terms. But this is no longer the case⁹². BAKITA and TATAKI should become coordinating bodies to enhance accountability and efficiency; hence the interaction between the agents and the national coordinating bodies should operate in either direction. Decentralized, interactive and consultative process of terminological development work should be encouraged and strengthened.

2.3. Types of lexical borrowings

Loanwords and loanshifts have been distinguished as types of linguistic borrowings (cf. Schadeberg, 2009; Zabawa, 2008; Witalisz, 2002 as cited in Kwiatek, 2013; Haugen, 1950). Loanwords refer to lexical borrowing where both the phonological shapes and meanings of the source terms are copied into the recipient language. There are loanwords whose phonological shapes and meanings are copied into the receptor languages without any modification. Kiswahili has, for instance, unmodified loanwords such as: *data*, *fistula* and *visa* transferred from English. Loanwords can also consist of lexical items whose forms are modified to suit the orthography and phonology of the receptor language e.g., film (English) > *filamu* (vowel epenthesis), technology (English) > *teknolojia* (adapting spelling), qanun (Arabic) > *kanuni* ‘rule’ (consonant substitution: q → k) and bacteria (English) > *bakteria* (adapting spelling), respectively. As can be seen, loanwords are easily identifiable, as they resemble or are exactly the same as source words.

Following Haugen’s (1950) classification, loanwords are further divided into two categories – pure loanwords and loanblends. The former sub-category is contrasted with loanblends as

⁹² An interview with Prof. Massamba, a former TUKI director, 2019.

pure loanwords are borrowed without or with little phonological and morphological adaptations, whereas loanblends or hybrid loanwords (Anastasiadi-Symeonidi 1994) are lexical borrowings which consist of element(s) of source words combined together with native morpheme(s) e.g., spark plug > *plagi cheche*. A Kiswahili loanblend *plagi cheche* ‘spark plug’ consists of the adapted English word *plagi* and the native word *cheche* ‘spark’. Another example of a Kiswahili loanblend is *upepo nyiri* ‘jet-stream’ which is a combination of a Kiswahili word *upepo* ‘wind’ and Bantu-sourced word *nyiri* (Pare G22) ‘a rapid stream of air’. Loanblends can be further divided into blended derivatives and blended compounds in which the former subtype i.e., blended compounds or hybrid compound ‘occur when derivational suffixes are substituted for the foreign e.g., bossy > bossig (Pennsylvanian German’ as quoted in Greavu, 2013:99). However, some scholars (cf. Winford, 2003:44 in Greavu, 2013:99) have the view that loanblends take place when ‘native (recipient language – RL) derivational processes are applied to previously imported words.’ Kiswahili has a good number of loanword morphological adaptations e.g., the Kiswahili loanword *barafu* ‘ice, snow’ < *barf* (Hindi-Urdu/Persian) becomes a Kiswahili verb *barafusha* ‘deep freeze’ by attaching a causative morpheme *-sh* and a final vowel *-a*, after the root and the Kiswahili suffix *-(a)ji* along with a class 11 noun prefix *u-* were used to create a noun *utapasaji* ‘reduction’ > *tapasa* ‘reduce’ (Ngoni N.12). Kiswahili blended compounds are those lexical items consisting of both source and target language stems e.g., auditory nerve > *neva sikizi* (nerve > *neva* - English + Kiswahili *sikia* ‘hear’ > *sikizi* ‘auditory’); supplies manager > *meneja ugavi* (manager > *meneja* - English + Kiswahili *ugavi* ‘supplies’ < *gawa* ‘divide’). Loanshifts differ from loanwords in that the receptor language borrows the meaning of a foreign lexical item and attaches this meaning to a native word⁹³. For example, *chanja* translating to ‘immunize, incise, chop’ when derived becomes *chanjo* ‘incision’ which is a Kiswahili calque for an English term ‘vaccine/vaccination’.

⁹³ Kwiatek, (2013)

Loanshifts in Kiswahili are also coined from words which have been considered as ‘Kiswahili words’ irrespective of their origin e.g., *maadili* (Arabic) ‘morals’. Loan translations and semantic loans are the subtypes of loanshifts. Loan translations or calques can be direct translations e.g., *chavusha* ‘pollinate’ or combinations e.g., *kiwavijeshi* ‘armyworm’. As can be seen, loanshifts are not easily recognizable, hence in some literature loanshifts are referred to as hidden borrowings (cf. Lüdeling et al, 2002 cited in Kwiatek, 2013:153). For the purpose of easy and consistency, scope and delimitations of the analysis of loanwords in the selected Kiswahili technical domains, attention is paid only to the analysis of (*pure*) *loanwords* simply because they ‘show morphemic importation without substitution’ (cf. Haugen, 1950:214 in Greavu, 2013:97), and they are easily recognized. For the analysis purposes, the terms ‘pure loanwords’ and ‘loanwords’ are used interchangeably in this study. Therefore, loanblends have been excluded from the analysis as they comprise both substitution and importation and may not be easily recognized. Moreover, loanshifts are also excluded from the analysis simply because they are hidden borrowings and they cannot be easily recognized.

Therefore, in this study, pure loanwords will be used to compare the number of loanwords per source languages or group of source languages. Blended derivatives (loanwords with native derivational morphemes) are treated as pure loanwords because they can still be easily recognized. This is because they mainly resemble the source words. Moreover, loanblends will not be used for illustrations in Chapter Four because compound loanblends (in this case native/African lexical material + foreign morphemes) are less frequent than pure loanwords. For example, in KIST, pure loanwords are recorded in 197 out of 496 while loanblends are recorded in 59 out of 496, as indicated in Table 7:

Table 7: Loanblends in KIST

1. Native + foreign morphemes: 46
2. Foreign + foreign morphemes: 8
3. Foreign + native + foreign morphemes: 5

Table 7 indicates that Kiswahili has compounds, in this case loanblends, which are complex. Formations of loanblends is another reason for their exclusion from the analysis. In their formations, loanblends may consist of a foreign morpheme, a native part and again a foreign element e.g., *plaubamba duara* ‘disc plough’ (*plau* < plough, *bamba* – a Kiswahili word and *duara* ‘circle’) or foreign morphemes e.g., *bomba volkeno* ‘vent’ (*bomba* a Portuguese loanword and *volkeno* transferred from English) or native and foreign morphemes e.g., *mawe asilia* ‘parent material’ (*mawe* a Kiswahili word and *asili* ‘source’ > Arabic, and Kiswahili suffix *-a*).

2.4. An overview of the description of Bantu-sourced loans in literature

While there have been substantial studies on the Kiswahili loanwords, most studies have focused on the loanword etymologies and adaptability of oriental loans in Kiswahili. Krumm (1940), Zawawi (1979) and Lodhi (2000) are comprehensive and systematic book-length studies on Kiswahili studies, yet they lack a description of Bantu-sourced loans. Zawawi’s (1979) study ‘has a strong bias towards postulating loanwords from Arabic which makes her claim some fanciful etymologies for Kiswahili words that have undisputed Bantu origins’ (Schadeberg, 2009:77). A linguistic history of Kiswahili by Nurse and Hinnebusch (1993) provides useful information on Kiswahili loanwords due to its inclusion of the history and adaptability of loanwords in Kiswahili, but does not discuss Bantu-sourced loans in Kiswahili. In a detailed chapter of *Loanwords in the World’s Languages*, Schadeberg (2009) provides a very cogent analysis of Kiswahili loanwords due to the inclusion of the identification of donor languages, contact situations, and associated periods. He accounts for the contact situations through which foreign words entered Kiswahili. He goes on to discuss and provide the percentages of Kiswahili loanwords by donor language distributed in twenty-four semantic fields. He also provides the phonological and morphological adaptations of non-African loans in Kiswahili and also briefly discusses grammar borrowing by citing examples that show the influence of Arabic and English on Kiswahili grammar. However, Schadeberg (ibid) does not provide a comprehensive description of African loanwords that entered Kiswahili as a result

of standardization and modernization. Yet, BAKITA's terminology documents show that Kiswahili has integrated into its various technical subjects a good number of words sourced from local languages. Yet, there is a lack of in-depth analysis of the adaptability of loanwords sourced from local languages in Kiswahili. Additionally, sources of data used in the studies mentioned above and that of this study differ significantly. The data for the previous studies is 'based on the perusal of dictionaries and loanword studies' (cf. Schadeberg, 2009:77), while terminology lists by BAKITA are the sources of data for this study.

Other previous studies of Kiswahili loanwords have concentrated on the phonological, morphological and semantic integration of non-African loans into Kiswahili including Eastman (1991), Shembilu (2010), Dzahene-Quarshie (2012) and Akidah (2013). For example, Shembilu (2010) analyzed the phonological and morphological changes that occur to loanwords of Arabic origin in Kiswahili, while Akida (2013) provides the phonological and semantic adaptations of Arabic loans in Kiswahili and Dzahene-Quarshie (2012) analyzed English-sourced football terms in Kiswahili. Moreover, other studies (cf. Hurskainen 2004) have looked into the use of non-African loanwords (Arabic, English, Persian, Indian and Portuguese) in various standard Kiswahili texts. In an overview article, Gromova (2000) provides useful information of Bantu-sourced loans in Kiswahili. However, she does not provide a detailed phonological and morphological adaptability of Bantu-sourced loans in Kiswahili. In analyzing phonological and morphological adaptations of Bantu-sourced loans in Kiswahili, even though as it turned out, much of the data is nearly identical to the one discussed by Gromova (2000), a 17-page-analysis. However, this study analyzes in detail areas which she did not address at all or at any length, if at all, so that the present study does not represent a reanalysis of Bantu-sourced loans in Kiswahili. An extensive library search has shown that Gromova's article was the only available analysis of the Bantu-sourced loans in Kiswahili, at least at the immediate disposal. This study significantly differs from Gromova's analysis in several ways:

- a. It discusses the historical developments of Kiswahili by identifying stages of developments of Kiswahili, proponents for each stage of development and distinguishing features that made Kiswahili develop in each stage.
- b. It also seeks to answer the question: do Bantu-sourced terms qualify to be technical terms? In other words, the present study explores whether Bantu-sourced terms satisfy the principles of term creation i.e., terminology principles. Specifically, this study was interested in investigating whether coiners adhered to the principles of derivability, brevity, consistency, transparency, linguistic appropriateness and preference for native linguistic material when integrating Bantu-sourced lexical items into Kiswahili.
- c. It provides an analysis of Kiswahili loans, Bantu-sourced loans in particular, from the perspective of terminology in a language planning model in which lexical modernization was considered in a special way by those in power between the late 1960s and early 1980s.
- d. It demonstrates the distribution, estimates and proportion of Bantu-sourced loans across Kiswahili technical subjects.
- e. It provides phonological and morphological analysis of the Bantu-sourced loans in Kiswahili in a more systematic and detailed way than Gromova's analysis. In her article, she does not discuss the adaptations of non-Kiswahili vowels and consonants available in Bantu-sourced loans, the re-assignment of loan nouns to Kiswahili noun classes and gender shift as a technique to express new technical concepts in Kiswahili, to name just a few.

In their books, some authors of the Kiswahili grammar have devoted a whole chapter on Kiswahili loanwords. For example, Mugane (2015) provides a historical discussion of loanwords and their adaptations in Kiswahili. The chapter presents a discussion of contact situations between Kiswahili speaking community and non-Bantu language speakers which resulted in the Kiswahili speakers adopting new words from the Cushitic speaking herds. He accounts for the Kiswahili loanwords *maziwa* 'milk' and *mtama* 'millet' as of South Cushitic

origin, but does not give a detailed linguistic history of the two words. The chapter also presents oriental loanwords (Arabic, Persian, and Hindi) and loanwords from European languages such as English, Portuguese and German. The author also discusses the influence of Kiswahili on other African languages, but does not provide phonological and morphological adaptations of loanwords in Kiswahili nor does the author present Bantu-sourced lexical borrowings in Kiswahili. Most importantly, Gromova (2000) notices that borrowing from Bantu languages is a new Kiswahili term-formation strategy. Polomé (1967), for instance, does not mention borrowing from local Bantu languages as one of the term-formation strategies in Kiswahili. Gradually, however, coiners of Kiswahili terminology have come to identify local languages as a source for new words of Kiswahili terms (cf. Chiraghdin and Mnyampala, 1977; KAKULU, 1982; BAKITA, 1990; Tumbo-Masabo and Mwansoko, 1992; Mdee, 1986; Kiango, 1995). Although both BAKITA's term-creation principles and *Sera ya Utamaduni* (1997) lend strong support for native linguistic stock in expanding Kiswahili technical terms, Bantu-sourced loans, for instance, have received less emphasis in literature. Borrowing from African languages and Bantu in particular is 'the most natural strategy since the speakers of various Bantu languages and dialects usually possess a high degree of mutual understanding, based on the affinity of these languages in grammar and lexicon' (cf. Gromova, 2000:44). In addition, other Bantu languages and Kiswahili share a great deal of structural, lexical and semantic similarities, it is relatively easy for Bantu speaking communities to learn Kiswahili (cf. Abdulaziz, 1985). Borrowing technical vocabulary from other African languages, Bantu in particular, to enrich Kiswahili vocabulary preserves and nourishes the symbolic power of indigenous minority languages. This may help to keep the African flavour of Kiswahili because of its many African-sourced loans. Sourcing terms from African languages involves terminology research which in turn may require money and expertise. Such terminology harvest fieldwork is nearly not carried out in Tanzania. The fieldwork may assist in documenting diverse terms, which in turn will be used to enrich Kiswahili specialized vocabulary.

2.5. Loanword adaptations in Bantu languages

According to Hamdi (2017), phonetic and phonological explanations are considered the major accounts of loanword adaptation. Those who hold the phonetic view maintain that borrowers have no access to the source language phonological system, thus as a result, loan adaptation is thus solely phonetic. The phonological approach to loan adaptation holds that ‘speakers perceive foreign sounds within the framework of their native phonological system and, consequently, transform these foreign elements into their nearest native correspondents’ (ibid: 18).

Considerable studies have investigated the integration of loanwords of foreign origin into Bantu languages. Karen (1996), Mahlangu (2007), Gumbo (2016), for instance, have studied the phonological, morphological, and semantic changes which take place when foreign words are adopted into Bantu languages. Calteux (1996) and Mahlangu (2007) have looked into phonological and morphological adaptation of loanwords of Afrikaans and English origin into South African languages, Xhosa, Zulu, Venda and Ndebele, while Gumbo (2016) investigated, among many other strategies, borrowing as one of the term creation strategies used to form medical and musical terms in Shona. She reports that coiners alter the spellings of the source words in order to suit the phonological and grammatical rules of Shona. Regarding South African languages, phonologically, Calteux (1996) observes that the integration of Afrikaans and English words into Bantu languages involves substitution of source sounds which do not occur in target languages, vowel elision, substitution of diphthongs, substitution of source consonants which occur in a recipient language and adjustment of consonant clusters of loanwords. The integration of foreign words into Bantu languages has also influenced their sound systems in various ways. It has also led to the incorporation of foreign sounds such as [θ] (th) and [ð] (dh) into Venda and Kiswahili respectively (cf. Madiba 1994; Lodhi 2000; Baldi 2102). The retainment of foreign consonant clusters which contradict the native (Bantu) phonotactic and syllable structure constraints could suggest a weakening of some of the phonological constraints of Bantu languages (cf.

Madiba, 1994:222 cited in Calteux, 1996:103). Morphologically, foreign words adapt to inflectional and derivational patterns of the target languages. For example, upon assignment to a noun class the initial syllable of a loan noun becomes the noun class prefix. The loan nouns can further undergo noun-noun derivations (gender shifts). Loan verbs and other lexical items may also undergo derivations and inflections depending on intended the syntactic construction and meaning. Syntactically, foreign words have significantly affected the language's agreement systems, especially the nouns in genders 5/6 and 9/10 (cf. Zawawi, 1979; Madiba, 1994; Lodhi, 2000⁹⁴).

In addition, non-African loanwords have also been reported to undergo semantic shifts in Bantu languages such as broadening, narrowing, pejoration and amelioration (cf. Calteux, 1996; Akidah, 2013). A few examples of semantic adaptations of Arabic loanwords in Kiswahili are used for illustration in Table 8.

Table 8: Semantic changes of Arabic Loanwords in Kiswahili

Arabic	Kiswahili	semantic change
1. /qa:ʔim/ ‘person in acting capacity’	/kaimu/ 1. person in acting capacity 2. person with power of sorcery	broadening
2. /ħa:kim/ ‘governor, ruler’	/hakimu/ ‘magistrate’	narrowing
3. /ħamm/ ‘interest, grief, distress’	/hamu/ ‘interest’	narrowing
4. /ʕiʃrat/ ‘intimacy’, social interaction’	/aʃerati/ ‘immoral’	pejoration
5. /faɖu:l/ ‘intrusive’, ‘inquisitive’	/fiḏuli/ ‘trouble maker’	pejoration
6. /ʔistaʕrab/ ‘seek to be Arab’	/ustaarabu/ ‘ethical behaviour’	Amelioration

Source: Akidah (2013:9-11)

⁹⁴ For Arabic structural loans in Kiswahili refer to Lodhi (2000:99).

2.6. Summary

This chapter has shown that the development of Kiswahili dates back to pre-colonial times. The contact situations between the coastal native Kiswahili speakers and the outsiders, especially Arabs and Europeans made Kiswahili to expand rapidly to the interior. It has been shown that socio-economic, political and religion factors were the key to the spread, growth standardization and modernization of Kiswahili. The Kiunguja dialect was chosen as a basis for standardization in order to bring uniformity of grammar in all the four dependencies. In 1930, the ILC was created to spearhead the standardization and promotion of Kiswahili. Until its dissolution in 1964, its work is unparalleled where it was renamed TUKI and later on TATAKI. A few years after Tanganyika's independence (1961), the country made remarkable political and linguistic reforms. As a result, BAKITA was created in 1967 to coordinate the promotion and modernization of Kiswahili. Modernization provided Kiswahili with specialized vocabulary so that the language could respond to new functions in the modern state. Kiswahili was being prepared to take over the use of English in all aspects of life, however, controlled terminological development activities came to a standstill in the 1980s. Again, the review of literature shows the influence of English and Arabic both on general lexicon and specialized lexicon is quite well-researched. However, current approaches to the study of Kiswahili loanwords and the terminological development of Kiswahili nearly ignore the contribution of Tanzanian Bantu languages to various terminological registers of Kiswahili. Moreover, the review shows that there is one observable challenge in the development of Kiswahili which seems to be common to ILC (and its successors, EASC and TUKI/TATAKI) and BAKITA. These language regulatory institutions carried out language standardization and modernization work with minimal regard for native Kiswahili speakers, especially the Kiunguja native Kiswahili speakers. Other problems facing terminological development in Tanzania include lack of trained and qualified terminologists, uncoordinated efforts of terminology work, lack of budgetary allocations for terminological development, minimal regard for target users of Kiswahili technical terms and conflict of roles between BAKITA and TATAKI.

CHAPTER THREE: METHODOLOGY

3.0. Introduction

This chapter presents the methodology for the data collection and analysis for this study. Gumbo (2016:100) indicates that ‘methodology fulfils the research design, and should include all the information about the nature of study, and the methods that are to be used to achieve aims and objectives of a research study.’ The methods include (a) the research design, (b) the sampling strategies, (c) the data collection procedures, and (d) the data analysis methods (Fink, 2005 cited in Gumbo, 2016:100). This chapter presents research design, target population and sampling procedures. As such, this chapter discusses research design (3.1), and selection of study population (Section 3.2). The chapter also outlines sources of data, sample size as well as sampling procedures (Section 3.3), methods of data collection (Section 3.4), presentation and data analysis plan, (Section 3.5) as well as ethical considerations (Section 3.6).

3.1. Research design

A research design is defined as ‘the procedures for collecting, analyzing, interpreting and reporting data in research studies’ (cf. Creswell and Plano, 2007:58). This study employed a mixed methods design. Most scholars (cf. Mondal and Mondal, 2017; Creswell, 2014; Burke-Johnson et al, 2007:123) assert that a mixed method study combines qualitative and quantitative research approaches with regard to data collection and data analysis. This study involved concurrently the collection and analysis of both qualitative data (interview and focus group discussion) and quantitative data (documentation and questionnaires). This design helps to answer questions that cannot not be answered by using only qualitative or quantitative techniques alone. In this study, the researcher intended to get a deeper understanding of the respondents’ experiences in order to build up a good description of their experiences. Moustakas (1994 cited in Gumbo, 2016:101) observes that ‘studies of human experiences are difficult to approach through quantitative methods; they should be approached through qualitative methods.’ Qualitative approach facilitated the study of participants’ experiences in

terminological development, whereas quantitative approach facilitated the quantification in the collection and analysis of loanwords (Bantu-sourced). Specifically, quantitative approach facilitated the statistical calculations to determine the Africanization of standard Kiswahili terminology, the proportionality of Bantu-sourced loans in 16 technical domains and the estimates of Bantu-sourced loans across Kiswahili technical domains. The mixed methods design offered a much more-clear picture and generalizations of the loanwords studied and also provided a deeper understanding of the participants' experiences and perspectives regarding terminological development and trends of language development in general.

3.2. Selection of the study population

Banerjee and Chaudhury (2010:60) define study population as 'an entire group about which some information is required to be ascertained.' According to Saunders et al. (2019), population refers to the full set of cases from which the sample is extracted. Based on those two definitions, study population does not always refer to people, but can also mean 'individuals, events, organizations, individuals, or items' (Kindy et al., 2016:895). The population of this study consisted of several elements. The first was BAKITA and TATAKI. Those institutions were convenient for the study simply because BAKITA monitors and promotes the development of standard Kiswahili, and TATAKI, as an academic institution, has a wide range of engagement including term coinage and publishing of Kiswahili technical dictionaries.

The second element of the population included teachers of primary school and teachers' college academic staff. Primary schools and Grade A teachers' colleges were specifically involved in this study in order to assess the dissemination and publicity of terminology products published by BAKITA. Primary schools and Grade 'A' teachers' colleges teach various subjects where scientific and technical concepts are communicated in Kiswahili, that is, Kiswahili is the medium of instruction in those institutions. One would expect Kiswahili terminology products such as approved lists/booklets of Kiswahili terms and technical dictionaries to feature in the archives or libraries of such institutions. Therefore, a short

survey to determine the awareness of terminological products, for instance, TS⁹⁵ and Kiswahili technical dictionaries in primary schools and Grade ‘A’ teachers’ colleges was conducted in six primary schools (3 primary schools from Ilemela district and 3 from Nyamagana district) and one Grade ‘A’ teachers’ college in Ukerewe district, Mwanza region⁹⁶. This survey was carried out between April and May 2019, and focused on primary schools and Grade ‘A’ teachers’ colleges, as these entities are the main consumers of the Kiswahili terms.

The third element involved a body of Kiswahili loanwords which entered the language during and after *Ujamaa* linguistics and Bantu-sourced loanwords in particular, which is subject of this study. In tracking and identifying those loanwords in Kiswahili technical domains, the researcher, first of all, worked out several procedures to check on how BAKITA presents source identification of the loans in the terminological publications. Details on loans and source identifications across Kiswahili technical subjects are discussed in the subsequent sections.

3.3. Sources of data, sample size and sampling procedures

3.3.1. Sources of data and sampling

This section describes the selection and specification of data categories which were included in this study. The first category consisted of data pertaining to terminological development and all issues related to language planning and policy in Tanzania. In order to decide on the sources of the first category of data, the researcher established contacts with BAKITA and TATAKI. Interviews and focus group discussions were used to collect the first category. The data were qualitative in nature and they are presented and discussed across the chapters. The researcher ensured that the selected sample was compatible and representative enough of the

⁹⁵ A list of the terms required in particular domains was published between 1972 and 2004 and are collectively known as *Tafsiri Sanifu* ‘Standard Translations’. A TS is a body of Kiswahili terms covering several semantic fields.

⁹⁶ Three primary schools from Nyamagana district - Mkolani, Nyakato, and Mkuyuni; three primary schools from Ilemela district - Buswelu, Gedeli and Bulola as well as Murutunguru teachers training college from Ukerewe district.

larger target group. Babbie (2004) defines sample as a selected group from which information is collected. The selected sample should reflect compatibility and representativeness of the population from which it was taken (cf. Wray et al 1998:168). To ensure compatibility and representativeness in this study, the researcher sought to obtain reliable background information of the prospective participants. To do that, the prospective participants who had the right information for terminological development in Tanzania were selected with the help of the heads of departments/institutions as well as their willingness to participate in the study. Expertise and experiences played a great role in the choice of the respondents, as they were expected to be critical for the research. Indeed, the selected respondents provided quality information and valuable insight on the topic through their expertise and experiences. The study used five BAKITA officials, five TATAKI officials and fourteen teachers of which twelve teachers were from the six primary schools (two respondents from each school) and two teachers from a Grade ‘A’ teachers’ college to collect data regarding terminological development in standard Kiswahili. Thus, the study involved twenty-four participants who were deemed compatible and representative for this study, as shown in Table 9.

Table 9: Sampled key participants

Institution	Participants
BAKITA	5
TATAKI	5
Primary school teachers	12
Tutors from a Grade A teachers’ college	2
Total	24

The second category of data is the Kiswahili loanwords that resulted from *Ujamaa* linguistics and those which has entered the language after *Ujamaa* linguistics. In this category, two sets are identified. The first set is the entire body of loanwords that occur in BAKITA’s terminological documents issued between 1974 and 2019. This set of loanwords is used to analyze the Africanization of standard Kiswahili terminology (see Section 4.4.2) that was

established through *Ujamaa* political movement, as great political revolutions result to lexical purism (Sus, 2004). Therefore, the study examined the extent to which this policy was implemented during the formation of Kiswahili technical terms.

The source and analysis of the data for the Africanization of standard Kiswahili terminology is based on the perusal of BAKITA's terminology publications. BAKITA's terminology publications from which the data was extracted are TS nos. 1, 2, 3, 4, 5 and 6, *Kamusi ya Istilahi za Sayansi na Teknolojia* 'A Dictionary of Scientific and Technological terms' (1992 - henceforth *KIST*), *Istilahi mchanganyiko*⁹⁷ (2005) 'mixed technical terms' and *Istilahi za hali ya hewa*⁹⁸ (2019) 'meteorological terms'. The loanwords were manually extracted from those terminology documents in order to obtain the target set. The terminology documents contain 13,309 terms of which the TS (no.1 to six) contain 12,233, while *KIST* contains 496 terms, *Istilahi mchanganyiko* 'mixed technical terms' hosts 435 and *hali ya hewa* 'meteorological terms' contain 145. In order to quantify the data, especially with regard to Africanization of Kiswahili terminology, it was important to identify the sources for the loanwords in the selected domains. The calculation of the percentage of loanwords in Kiswahili technical domains by source languages is based on the 1675 loanword items. All the 1675 loanwords were manually extracted from the terminological documents in order to establish source identification. The sample size of 12.6 % (1675 out of 13,309) is representative enough, since samples for linguistic studies tend to be much smaller than any other surveys (Milroy and Gordon, 2003).

The researcher consulted (bilingual) Kiswahili dictionaries published before *Ujamaa* political movement in order to obtain the candidate loanwords i.e., 1675 loanwords. A few selected Kiswahili (bilingual) dictionaries were used to determine the loanwords that entered the language before linguistic engineering phase i.e., from 1967 to early 1980s. A body of loanwords appearing in Sacleux (1939), Johnson (1939 - A Standard English-Kiswahili

⁹⁷ The terms were published in 2005. The list contains terms that are not categorized according to the technical domains they belong, hence the name *istilahi mchanganyiko* 'mixed technical terms'.

⁹⁸ The terms were approved in 2019 but they are not in a book form

Dictionary) and a classic reprint of Madan’s dictionary (1951 - Kiswahili-English Dictionary) are considered established loanwords and therefore they do not qualify to be neologisms (de Schryver, 2020). Such loanwords are not listed with their sources in BAKITA’s terminology publications. As a result, the pre-*Ujamaa* loanwords (those which were borrowed before 1967) are excluded from the analysis. The choice of Sacleux’s (1939) dictionary was influenced by the fact that it is the most Kiswahili reference that marks very well the sources for loanwords in Kiswahili. *Kamusi Kuu ya Kiswahili* (henceforth KKK - 2015) was also added to the dictionaries that were consulted in order to establish the sources for pre-*Ujamaa* loans. This dictionary may not seem suitable for identifying pre-*Ujamaa* loanwords, but it was a starting point since it lists loanwords with sources unlike many recent monolingual Kiswahili dictionaries. The information obtained from KKK was cross-checked with pre-*Ujamaa* dictionaries in terms of word etymology.

The loanwords that entered Kiswahili before 1967, have become established to the extent that they are not considered loan items any longer. This phenomenon is reflected through the use of the established Arabic loans in rendering Anglicisms in Kiswahili. Most of those loanwords have undergone semantic shifts and expansions which were attributed to the *Ujamaa* terminological engineering phase.

Table 10: Semantic shifts of established Arabic loanwords used in term expansion

Arabic	Kiswahili	technical domain
1. /xadʒal/ ‘shame’, ‘shyness’	/kejeli/ ‘sarcasm’	literature
2. /ʃuʃr/ ‘tenth, tithe’	/uʃuru/ ‘excise, levy’	commerce and economics
3. /ha:kim/ ‘governor, ruler’	/hakimu/ ‘magistrate’	law
4. /faʃih/ ‘eloquent’	/fasihi/ ‘literature’	literature
5. /burquʃ/ ‘long kind of veil’	/barakoa/ ‘mask’	medicine
6. /ʃarf/ ‘inflection, declension’	/sarufi/ ‘grammar’	linguistics
7. /ʃifa/ ‘quality; trait’	/sifa/ ‘feature’	linguistics

The established loans, such as those indicated in Table 10, appear in Kiswahili dictionaries and other grammar books before 1967 and they are not considered terminological neologisms any longer (de Schryver, 2020). Arabic and English are the two major source languages. Numerous loanwords of Arabic origin have entered Kiswahili in a non-controlled transfer, whereas many anglicisms have entered the language in a controlled transfer (cf. Mbaabu, 1985; Lodhi, 2000; Schadeberg, 2009).

The candidate loanwords were analyzed in order to determine the percentage of loanwords per donor language in the selected technical domains. The candidate loans were categorized and analyzed per donor languages as follows (see Section 4.4.2):

1. English
2. Arabic
3. Tanzanian Bantu languages
4. Other non-African languages (Persian, Hindi, German, Japanese, Turkish, Portuguese, Italian)
5. Kiswahili dialects
6. Non-Bantu languages (other African languages)

The second set of loanwords is the sub-set of the first category i.e., Bantu-sourced loans, which is the subject of this study. It is worthy of note that the search and identification of Bantu-sourced loans and sources was not limited to the sample of the technical domains (between sections 4.4.2.1 and 4.4.2.3) from which the sample of 1675 loanwords is used to determine Africanization of Kiswahili terminology. The search covered all the technical domains available in the terminological documents. One is puzzled by the exclusion of source identification for African loans across Kiswahili dictionaries. This is equally true for Bantu-sourced loans in Kiswahili. The first problem that faced the researcher is source identification for Bantu-sourced loans in the BAKITA terminology publications. The TS nos. 1 and 2 do not contain source identification for Bantu-sourced loans and other loanwords. The procedures

which were undertaken to establish source identification and Bantu-sourced loans in the TS nos. 1 and 2 are explained in the subsequent paragraphs. BAKITA consistently records sources for Bantu-sourced loanwords in seven out of the nine terminological publications used as sources for data. Source identification is recorded in the TS nos. 3, 4, 5 and 6, *KIST*, *Istilahi mchanganyiko*⁹⁹ ‘mixed technical terms’ and *Istilahi za hali ya hewa* ‘meteorological terms’. The researcher relied mainly on source identification given in those documents. Such information helped the researcher to precisely know that the Bantu-sourced loans were sourced from the languages indicated in the TS and other sources, and not from some other closely related Bantu languages instead. The researcher went through all the seven BAKITA’s terminology documents and then checked both the Bantu-sourced loans and their sources. Bantu-sourced loans were extracted manually from all the six TS¹⁰⁰ (nos.1 to 6), *KIST*, *Istilahi mchanganyiko*¹⁰¹ ‘mixed technical terms’ and *Istilahi za hali ya hewa*¹⁰² ‘meteorological terms’. After that, the researcher set up a number of candidate Bantu-sourced loans which resulted in a simplified list of Bantu-sourced loans along with source languages (see Appendix 3) occurring in the nine terminology documents, each source language with the absolute number of loanwords (Section 4.5.6.2 and section 5.3).

The second problem was to be able to state certainly that a certain Bantu-sourced loan item precisely originates from a particular Bantu language of Tanzania. This is because often than not Bantu languages come up with cognates with similar form and meaning. Therefore, the researcher entirely relied on the etymological information (source identification) given in the TS nos. 3, 4, 5, 6, *KIST*, *Istilahi mchanganyiko*¹⁰³ ‘mixed technical terms’ and *Istilahi za hali*

⁹⁹ The terms were published in 2005. The list contains terms that are not categorized according to the technical domains they belong, hence the name *istilahi mchanganyiko* ‘mixed technical terms’.

¹⁰⁰ The TS are on sale (visit <https://www.bakita.go.tz/>) and the general public have access to these lists of technical terms. One can get a copy at BAKITA’s office. The TS are used a way to disseminate standard Kiswahili technical terminology.

¹⁰¹ The terms were published in 2005. The list contains terms that are not categorized according to the technical domains they belong, hence the name *istilahi mchanganyiko* ‘mixed technical terms’.

¹⁰² The terms were approved in 2019 but they are not in a book form

¹⁰³ The terms were published in 2005. The list contains terms that are not categorized according to the technical domains they belong, hence the name *istilahi mchanganyiko* ‘mixed technical terms’.

*ya hewa*¹⁰⁴ ‘meteorological terms’. Source identification of African loans in TS nos. 1 and 2 was the most difficult issues the researcher encountered when deciding which loanwords should be considered as Bantu-sourced loans. Therefore, specific work on the identification of Bantu-sourced loans and their sources was conducted with the help of written sources and members of BAKITA’s terminology committee, especially retired officers who worked with BAKITA during *Ujamaa* linguistics. When the officers considered that the loanword was unfamiliar to them, it was excluded from the list. For the purpose of identifying established Bantu-sourced loanwords in Kiswahili, the researcher consulted Saclux (1939). It is the only major source, at least at researcher’s immediate disposal, which includes source identification for Bantu-sourced loans. It indicates, for instance, Zaramo (G33), Zigua (G31) and Bondei (G24) as possible sources for *mgono* ‘fish trap’. Bantu-sourced loans occurring in Saclux (ibid) were excluded from the candidate loans. Source identification for the candidate Bantu-sourced loanwords in TS nos. 1 and 2 was cross-checked with different sources, *inter alia*, written materials such as research reports, theses, papers, articles, dictionaries and grammar books. Eventually, the candidate loanwords in TS nos. 1 and 2 were established, as shown in Table 11.

Table 11: Source identification for Bantu-sourced loans in TS nos. 1 and 2

Loanword	Issue title	Publications identifying the sources
<i>ikulu</i>	TS no. 1 (source not given)	Nyamwezi (F 22) (Mwaro-Were, 2000; King’ei 1999)
<i>bunge</i>	TS no. 1 (source not given)	Nyamwezi (F 22) (Mwaro-Were, 2000)
<i>kitivo</i>	TS no. 1 (source not given)	Pare (G 22) (Open University of Tanzania, 2018; King’ei 1999)
<i>ngeli</i>	TS no. 2 (source not given)	Haya (E 22) (Mwaro-Were, 2000; Kapinga, 1983)

¹⁰⁴ The terms were approved in 2019 but they are not in a book form

<i>nembo</i>	TS no.2	Rugemalira (2009)
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The etymological information of the Bantu-sourced loans in Table 11 was complemented by BAKITA and TATAKI officials, in addition to cross-checks with language-specific collaborators who have worked with BAKITA for several years. In some cases, the source languages for Bantu-sourced loans identified in the former terminological document are skipped in the next publication, as shown in Table 12.

Table 12: Examples of TS in which sources of Bantu-sourced loans are skipped

Loanword	Publication in which sources are skipped	publication in which sources are included
<i>kilala</i> ‘fallow’ (Haya E 22)	TS no. 5	TS no. 3
<i>kiganga</i> < <i>kaganga</i> ‘hard pan’ (Hehe G 62)	TS no. 4 & 5	TS no. 3
<i>mse</i> ‘kernel’ (Ha D66)	TS no.5	TS no.4
<i>ulalo</i> < <i>ululalo</i> ‘diagonal’ (Nyakyusa M 31)	TS no. 4	TS no. 3
<i>kimvugu</i> ‘cocoon’ (Zaramo G 33)	TS no.5	TS no.4
<i>giligili</i> ‘fluid’ (Nyakyusa M 31)	TS no.4	TS no.4
<i>lukoka</i> ‘wave length’ (Jita E 25)	TS no.4	TS no.3
<i>myuko</i> < <i>muyuko</i> ‘convention’	TS no.4	TS no.3

The source and analysis of Bantu-sourced loans available across Kiswahili technical registers is based on the perusal of the nine publications of BAKITA named above, studies on

Kiswahili term formation¹⁰⁵, Kiswahili technical dictionaries and general dictionaries¹⁰⁶, available lexicon publications¹⁰⁷ in the source languages and other sources. A total of ninety-eight Bantu-sourced loans were collected as indicated in Table 13:

Table 13: Number of Bantu-sourced loans identified from different sources

Issue(s)	Number of loanwords
TS nos. 1 and 2	5
TS nos. 3, 4, 5 ¹⁰⁸ and 6	91
Kiputiputi (2009) ¹⁰⁹	1
Kamusi Kuu ya Kiswahili (2015) ¹¹⁰	1

The ninety-eight Bantu-sourced loans gave the basis for the analysis: first to determine, along with other loanwords, Africanization of standard Kiswahili terminology (Section 4.4.2), second to assess the quality and adequacy of Bantu-sourced loans as technical terminology, and to determine phonological and morphological adaptations of Bantu-sourced loans in standard Kiswahili terminology (see Section 5.2).

In the standardization meetings, members of the standardization committee of BAKITA suggest terms for anglicisms, English is the reference language. The suggestions are based on the specializations and ethnolinguistic backgrounds of the members of the standardization

¹⁰⁵ King'ei (1999), Mwaro-Were (2000), Kapinga (1983), Tumbo-Massabo and Mwansoko (1992).

¹⁰⁶ Mwita and Mwansoko, (2003); Massamba, (2004); BAKITA, (1982); TUKI, (1990); Ohly (1987); *Kamusi Kuu ya Kiswahili, Kamusi Teule ya Kiswahili, Kamusi ya Kiswahili Fasaha and Kamusi ya Kiswahili Sanifu*.

¹⁰⁷ Mapunda, 2016; Rugemalira, 2013; Muzale, 2011; Kahigi, 2008a; Kahigi, 2008; Mdee, 2008; Sewangi, 2008; Mreta, 2008; Rubanza, 2008, 2008b; Mochiwa, 2008; Mreta, 2008b; Mrikaria, 2008; Sewangi, 2008a; Kiango, 2008; Richardson, 1967; Velten, 2011a; Velten 2011; Muniko et al, 1996; Kagaya, 1989; Nakagawa, 1992; Harjula, 2004; Kagaya, 2005; Yonada, 2006; Yukawa, 1989; Felberg, 1999; Besha, 1993; Maganga and Schadeber, 1992.

¹⁰⁸ Bantu-sourced loans appearing in KIST (1992) were sourced from the TS and that is the reason KIST does not appear in the list.

¹⁰⁹ Kiputiputi (2009) is a technical dictionary whose terms cover various computer domains. For more details go to section 3.4.1.

¹¹⁰ *Ngenya* 'circumcized penis' (section 3.4.1) originates from Sukuma (F21) and were standardized by BAKITA. The loanword was later included in Kamusi Kuu ya Kiswahili, but does not appear in the approved lists of Kiswahili terms.

committee. Before African loans and Bantu-sourced lexical items¹¹¹ in particular are adopted into Kiswahili technical registers, each item is scrutinized as to its correctness in terms of communicating a technical meaning. The meaning of a lexical item can be altered or integrated into Kiswahili terminology without semantic shift, in this case, the Bantu-sourced loans become *innovations* in Kiswahili technical terminology. Once the suggestions (Bantu-sourced lexical items) are thoroughly discussed and accepted by the members, they are listed together with their immediate languages as source languages, although the lexical items can be attested in other many Bantu languages of Tanzania. As pointed out in the preceding paragraphs, the recording of new loanwords along with their sources in the TS was the major determinant of source identification and therefore justifies the evidence that Bantu-sourced loan X was sourced from Bantu language Y of Tanzania and not from Bantu language Z which is closely related to Bantu language Y. For example, the TS no.5 categorically indicates that *lushabo* ‘slit’ > *lushabo* (Haya E22) ‘mud made by natural causes such as rain’. Such categorization of the Bantu-sourced loans and the sources occur across BAKITA’s terminology publications, except in TS nos. 1 and 2. It is true that a Bantu-sourced loan with the same form and meaning can be found in several Bantu languages of Tanzania, hence all languages of Tanzania in which a Bantu-sourced occur are possible sources¹¹². A total of 11 out of 90 cases in the TS nos. 3, 4, 5 and 6 list several languages as possible sources. For example, *kukusa* ‘clean tillage’ is marked as a loan from *Kiyao*, *Kimakonde*, *Kimwera* and *ukusi* ‘weevil’ is marked as a loan from *Kingoni*, *Kijita*, *Kibondei*. For the matter of consistency, in connection with consultation between the researcher and BAKITA, where a terminology publication names several languages as possible sources for particular loans, the first languages in the list were identified as the most immediate source languages in this study. After establishing a list of Bantu-source loans and sources, all available lexicon publications in the source languages were consulted in order to identify the original forms and meanings of the loanwords under investigation. Such information was helpful in determining

¹¹¹ It is the members of the standardization committee that spontaneously suggest the Bantu-sourced lexical items to express foreign concepts in Kiswahili.

¹¹² The conflicting information regarding Bantu-sourced items of this study corpus along with the source ascriptions found in different publications is provided in Appendices 3 and 7.

the phonological, morphological and semantic adaptations of the Bantu-sourced loans in Kiswahili.

Where inconsistent listings (see Section 3.4.1) between Bantu-sourced loanwords and their immediate source languages were found in terminology lists and other sources, the researcher consulted BAKITA¹¹³ and individuals who have worked for many years for the state language agencies i.e., BAKITA and TUKI/TATAKI. Where there was a varying degree of precision in identifying the source language of a particular Bantu-sourced loan between non-BAKITA publications and TS, BAKITA recommended that the information contained in TS was the most accurate. In this case, the TS provided more useful information on Bantu-sourced loans and their source languages than any Kiswahili technical dictionary or general language dictionary.

3.3.1.1. Purposive sampling

The analysis of Kiswahili loanwords is limited to BAKITA's approved terms and the subsequent estimates of Bantu-sourced loans across Kiswahili technical domains, phonological and morphological changes that accompany the integration of Bantu-sourced loans into standard Kiswahili technical terminology (see Section 5.6).

As regards the participants (for interviews, focus group discussion and questionnaires) of this study, the researcher purposively sampled 5 language developers at BAKITA, 5 lecturers at TATAKI, 12 Kiswahili primary school teachers and 2 tutors in Kiswahili at Murutunguru teachers' training college. The participants' expertise and experience in the field of terminological development and language teaching were the key criteria for their selection. This helped to explore language development in Tanzania and the consumption and awareness of Kiswahili technical terms by the target users. Purposive sampling 'enables the researcher to select specific subjects who will provide the most extensive information about

¹¹³ The researcher also consulted TUKI's researchers. Most of those researchers are veterans who were involved in developing Kiswahili terminology under the coordination of BAKITA.

the phenomenon being studied' (cf. Burns and Grove, 2003:255). Because purposively selected participants were knowledgeable in the topic under investigation, they were *critical* for the research and therefore provided quality information and valuable insight on the topic through their expertise and experiences. Participants' willingness to participate in the study was also a criterion used to select the participant under this category. This increased the chances of obtaining authentic data which led to research credibility. In this study, purposive sampling method worked with focus group discussions, questionnaires and interviews with language developers, lecturers, and tutors/teachers of Kiswahili.

3.3.1.2. Random sampling

In this study, not all terms included in the BAKITA publications were analyzed to determine Africanization of Kiswahili lexicon in a few selected technical domains, but rather the study selected randomly a certain amount of loanword across technical domains contained in the TS and other terminology documents mentioned in section 3.3.1. Therefore, the statistical calculations to determine Africanization of Kiswahili terminology in section 4.4.2 are not based on the total number of terms found in all the publications identified in section 3.3.1, but only on a small fraction of about 12.6 % (1675 out of 13,309). The random selection of technical domains (from which the sample size was extracted) was carried out in such a way that each technical domain had an equal chance of selection. The sampled domains were randomly selected so as to serve as a representation of the entire population i.e., all the technical domains in the nine terminology documents. The researcher used simple random sampling where some of technical domains was randomly selected from all the technical domains available in the terminology document. The total population of Kiswahili technical domains in the terminological documents consulted is 50. From these, the researcher picked a sample size of 40 domains which constitute about 80%, which, in the view of the researcher, is representative enough. Domains in natural sciences, technology and social sciences were selected randomly in order to provide a representative sample of loanwords in 9 terminology documents (six TS, KIST, *Istilahi mchanganyiko* 'mixed technical terms' and *istilahi za hali*

ya hewa ‘meteorological terms’). The selected technical domains do not have equal number of terms, where the analysis was based on the percentage of loanwords by source languages in the selected subject domains. It is established in section 4.2 that a particular technical subject plays a significant role in choosing a source language from which the Kiswahili terms are drawn. Therefore, the difference in the number of loanwords (between those with many loanwords and those with few loanwords) in the selected technical subjects does not have substantial effects in quantifying the data.

Moreover, the researcher selected randomly BAKITA and TATAKI officials, primary school teachers and tutors from a teachers’ training college to answer questionnaires meant to solicit data for this study. The researcher used institutional rosters to randomly select participants for the purpose of eliminating all bias that may lead to their selection.

3.4. Methods of data collection

To ensure reliability of the data, this study employed more than one method for collecting data, simply because ‘a fuller picture of the data can be accessed if it is approached from different angles’ (Wray, 1998:167). The methods employed in this study were documentation, focus group discussion, interview, and questionnaire.

3.4.1. Documentation

3.4.1.1. Why does it matter?

The documentation method was the most frequently used method that was employed to collect data. According to Amin (2005:187), documentation method involves delivering information by carefully studying written documents or visual information from sources referred to as documents. Specifically, this method was used to track and extract Bantu-sourced loanwords and their sources from TS nos. 1, 2, 3, 4, 5 and 6, *Istilahi mchanganyiko* ‘mixed technical terms’ approved in 2005 and meteorological terms approved in 2019. After extracting candidate Bantu-sourced loans, a validation of the loans and sources was

undertaken. The list of validated Bantu-sourced loans and sources was sorted manually and duplicates were deleted, simply because some Bantu-sourced loans appear in more than one terminological publication and also appear in more than one technical domain, that is, transdisciplinary borrowing¹¹⁴. The number of validated Bantu-sourced loans was ninety-four (94) loan nouns and two (2) loan verbs, that is, ninety-six (96) Bantu-sourced loans, which constitute about 0.7% (96 out of 13,309) of all the Kiswahili technical terminology available, that is, all the six TS, *istilahi mchanganyiko* ‘mixed technical terms’ and *istilahi za hali ya hewa* ‘meteorological terms’. The search for the sources of Bantu-sourced loans missing in BAKITA’s terminology documents led to the addition of two (2) more loanwords to the list of ninety-five loanwords, making a total of ninety-eight (98) Bantu-sourced loanwords. *Nywila* ‘password’ (< Matumbi P13) and *ngenya*¹¹⁵ ‘circumcised penis’ (< Sukuma F21), are not found in the BAKITA’s terminology publications named above, but they are already in use and form part of lexical entries of some Kiswahili dictionaries. For example, *nywila* ‘password’ < (Matumbi P13) does not appear in BAKITA’s terminology lists, but is widely used across technical domains and can be attested in *Kamusi Sanifu ya Kompyuta* ‘A Standard Dictionary of Computer’ (Kiputiputi, 2011). An interview with Dr. Seleman Sewangi, the former Executive Secretary of BAKITA, revealed that the term *nywila* ‘password’ has been approved by BAKITA and that he was the one who suggested it in the standardization meeting. The Bantu-sourced loan, namely *ngenya* ‘circumcised penis’ is also missing in the terminology documents, but is found in KKK. Thus, all ninety-eight loans were considered valid for analysis. Documentation also helped to establish the original forms and meanings of the loanwords so as to determine their phonological, morphological and semantic adaptations in standard Kiswahili terminology. Moreover, the information gained from research reports, theses, and documents on language planning and policy helped to draw arguments and set the theoretical framework of this study.

¹¹⁴ This is also known as ‘internal borrowing, a term from one subject field is borrowed and attributed to a new concept in another subject field within the same language’ (ISO 2000:34).

¹¹⁵ It was confirmed by BAKITA that the two terms were borrowed from Sukuma (F21), an interview with Ms Wema Msigwa during fieldwork at BAKIATA 2019.

All the terminology documents were cross-checked for their precision in recording the sources for Bantu-sourced loans. *Istilahi za Kiswahili* (henceforth IK - a compilation of all the six TS) and TS were scrutinized and it was found BAKITA is not consistent as far as source identification is concerned. Of the twenty-eight (28) sources for ninety-one (91) Bantu-sourced loans in TS nos. 3, 4, 5 and 6, five sources are missing in the IK. The Bantu-sourced loans whose sources are missing in IK are *kimori* ‘apron’ (> Pare G 22), *fulisi* ‘peach’ (> Nyakyusa M31), *utapasaji* ‘reduction’ (> Ngoni N12), *fuwele* ‘crystal’ (> Zigua G 31) and *lukoka* ‘wave length’ (> Jita E25). This phenomenon could have a number of explanations. One possibility is that different individuals were responsible for different parts of the transferring and processing of the information from the TS to IK. Second, maybe there was no thorough and consistent editorial work carried out. It was therefore necessary to cross-check the source identification in those terminology documents. Where inconsistency occurred, the researcher relied on the information provided in the parent documents i.e., the TS.

3.4.1.2 Source identification of Bantu-sourced loans in Kiswahili dictionaries

A close look at Kiswahili dictionaries covering the Language for Special Purpose (LSP)¹¹⁶ and Language for General Purposes (LGP)¹¹⁷ reveals that a good number of Bantu-sourced loans have been incorporated in Kiswahili technical lexicon (see Appendix 4 and 7). As mentioned in section 3.3.1, Sacleux (1939), a classic Kiswahili dictionary, remains almost the only major reference which names donor languages for Bantu-sourced loans in Kiswahili. Word etymology is one of the qualities considered for a good dictionary (Crystal, 2010:3). Of the selected contemporary standard Kiswahili dictionaries (see Appendix 7), KKS (2013) has not included a great number of Bantu-sourced loans. TUKI/TATAKI’s response to such a situation is that they did not include most of the loans because they had not become popular or used by the general public from the time they were standardized by BAKITA. In addition, in a

¹¹⁶Mwita and Mwansoko, (2003); Massamba, (2004); BAKITA, (1982); TUKI, (1990); Ohly (1987)

¹¹⁷ *Kamusi Kuu ya Kiswahili, Kamusi Teule ya Kiswahili, Kamusi ya Kiswahili Fasaha and Kamusi ya Kiswahili Sanifu.*

telephone conversation, the TATAKI's Associate Director¹¹⁸ said that TUKI's dictionary (KKS) is a standard Kiswahili reference, whereas KKK has included some non-standard forms in its entries, since it is meant for 'all Kiswahili'. This statement was rejected by the then BAKITA's acting Executive Secretary¹¹⁹ maintaining that all forms which have been included in KKK have gone through all the procedures of term standardization, thus as a result, those forms are all standard. Consequently, KKK is a standard Kiswahili reference. She insisted that BAKITA is mandated to promote and develop standard Kiswahili but no other non-standard Kiswahili dialects. She recognizes non-standard dialects as an important source for the elaboration of standard Kiswahili technical terminology.

Therefore, Kiswahili dictionaries do not seem to be of much help for source identification for loanwords sourced from African languages. Kiswahili lexicographers are unwilling to include the sources for loanwords sourced from indigenous African languages for some reasons. First, they argue that they find it difficult to name the exact sources for Bantu-sourced loans, since several Bantu languages come up with similar cognates or even identical in form and meaning. On the other hand, BAKITA and TUKI seem unconcerned about including the sources for non-African loans in KKK (2015) and KKS (2013). They are not hesitant in some cases to name two languages as sources for a particular loanword e.g., KKS (2013:26) names Persian and Arabic as candidate sources for the entry *bahati* 'luck'. Such procedure can be applied to the sources for Bantu-sourced loans and other African loans that have been well established into the spoken language and technical texts. Moreover, for Bantu-sourced loans, Kiswahili lexicographers may also adapt the use of zones introduced by Guthrie (1967–71) to name the sources in their dictionaries. Bantu languages are often named along with letter and number. Guthrie (1967–71) introduced this system by dividing the Bantu-speaking area into sixteen zones (A, B, C, D, E, F, G, H, J, K, L, M, N, P, R, S). These zones were further divided into about eighty decades. For example, F20 refers to a group of languages, where

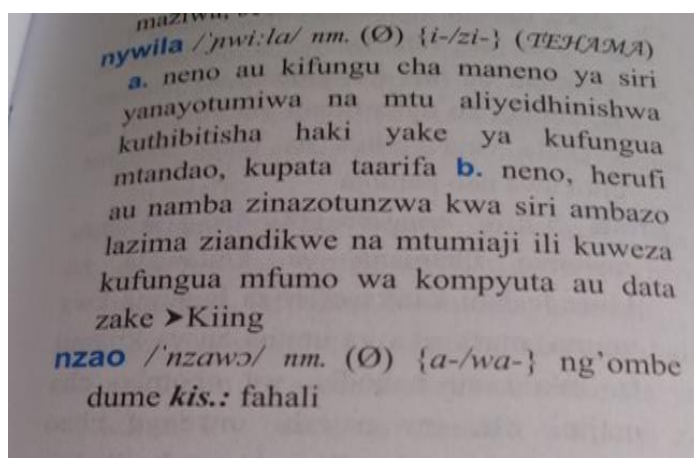
¹¹⁸ The telephone conversation took place on 16. 09. 2021 at 17:13 between the researcher and the associate director of TATAKI, Dr. Hans.

¹¹⁹ The telephone conversation took place on 17. 09. 2021 at 12:53 between the researcher and the acting Executive Secretary of BAKITA, Ms. Mushi.

F21, F22, and F23 refer to a specific language within F20 (Nurse and Philipson, 2003). Lexicographers may make use of zones to show the distribution of a Bantu-sourced loan across Bantu languages of Tanzania. The BLR3 (a database of Proto-Bantu lexical reconstructions) is a good example showing the distribution of reconstructed lexical items across zones.

Second, the exclusion of sources for loans borrowed from other indigenous African languages in Kiswahili dictionaries can be attributed to the element of disparagement towards those languages (Mafela, 2010). One would expect that Kiswahili dictionaries would reflect many loans from African languages and source identification would not be a problem as far as Africanization approach to Kiswahili lexicon is concerned. However, lexicographers have preferred to include sources for loans originating from non-African languages such as European languages, Hindi, Persian, Japanese, Hebrew, Arabic to name a few. In other words, lexicographers prefer to identify loans sourced from well-developed languages (ibid). This in one way or the other might have influenced Kiswahili lexicographers to mistakenly indicate in KKK that the two Bantu-sourced loans: *nywila* ‘password’ < *nywinywila* (Matumbi P13) and *unamu* ‘texture’ (< Gogo G11) originate from English and Arabic, respectively. Figure 1 below presents controversial information regarding the source for *nywila* ‘password’ (ICT – TEHAMA).

Figure 1: An example of the problems regarding source identification in KKK



Source: KKK (2015:847)

From the extract i.e., Figure 1, it is indicated that *nywila* has its etymology in English (see the arrow at the end of the entry *nywila* ‘password’, but KKK uses a look-up function > to indicate the source *Kiing* abbreviated from *Kiingereza* - English). Although the usual convention of indicating the source in dictionaries is an arrow pointed the other way round i.e., <, a perusal of KKK and consultation with BAKITA has shown that the look up function indicates sources in the entire dictionary. Such indication of the source language of the lexical loan *nywila* ‘password’ in KKK make the source of the loanword in question so ambiguous. Now the question is: what really is of the English origin — the *concept* or the *term nywila*? The researcher consulted an English dictionary to establish the source for the term in question. However, no such word was found on the lexical entries. Another controversy about the etymology of loans in this concerns the Bantu-sourced loan *unamu* ‘texture’. The dictionary indicates that *unamu* ‘texture’ has its origin in Arabic, while TS no. 3 (page 31) and IK ‘Kiswahili technical terms’ (page 85) show that the term *unamu* ‘texture’ was sourced from Gogo (G11). The etymological information given in BAKITA’s publications were not for granted. Therefore, the researcher checked BAKITA’s claims directly and independently with available dictionaries. Thus, the claim of an Arabic origin of the term *unamu* ‘texture’ were checked with Arabic dictionaries, and the claim of the Gogo etymology was checked with the Gogo dictionary of Rugemalira (2009). The researcher also consulted some Arabic dictionaries to establish the true etymology of loanword *unamu* ‘texture’ as ‘borrowing is closely connected with etymology’ (Mafela, 2010:697).

Gogo-Swahili-English, English-Gogo and Swahili-Gogo dictionary by Rugemalira (2009) is 183 pages long and includes 3,339 entries. It is a preliminary sketch of Gogo lexicon (G11). First of all, the researcher checked on how well it covers the Gogo-sourced loanwords. To check on inclusivity and coverage, the researcher put together a 12-word list of Gogo-sourced loan items and checked the dictionary for those loanwords. The results are as follows: 4 (33.3%) of the Gogo-sourced loan items are included in Rugemalira (2009), whereas 9 (66.7%) are not found in the dictionary. The term *unamu* ‘texture’ > stickiness; softness;

fineness' is one of the Gogo-sourced loans missing in the dictionary. For the purpose of establishment of the source meanings and confirm source identification of the missing loanwords in the dictionary, the researcher consulted BAKITA in order to help the researcher with language-specific collaborators who are native language speakers of Gogo. It was fortunate that the researcher found one collaborator who assisted the researcher with the discussion of the source meanings and source identification of the loanwords that are missing in Rugemalira (2009). The collaborator confirmed that he was part of the standardization meeting that discussed and accepted the term *unamu* 'texture' whose meaning in Gogo is 'stickiness as of clay soil.' It was also revealed that in Gogo, *unamu* and *unahi* are synonymous of each other as they both refer to 'stickiness as of clay soil' (for the meaning of *unahi* please consider Rugemalira 2009:107).

The claim of an Arabic origin of the term *unamu* 'texture' have been checked with some Arabic dictionaries. Oxford Essential Arabic dictionary (2010), an English-Arabic and Arabic-English dictionary and Mariam-Webster's Arabic-English dictionary (2010) were consulted. The term *unamu* 'texture' was checked for its inclusion both in Oxford dictionary and in Mariam-Webster dictionary. The outcome of the perusal of the two dictionaries is that the term is not included in both dictionaries. The researcher also consulted some Arabic variety speakers, Mr. Mahmoud – an Egyptian and a PhD student at the University of Hamburg - and Dr. Ahme H Ahmed from Mombasa, to confirm whether the term *unamu* originates from Arabic. The two speakers had no clue whether the word in question is an Arabic one. The researcher also checked with BAKITA¹²⁰ for source identification of the term *unamu*. They confirmed that it is an error, as the term *unamu* was sourced from Gogo (G11). There might be several reasons for the mistakenly etymological information of the term *nywila* in KKK, but one possibility is that different people were responsible for different parts of the publication. Second, maybe there was no thorough and consistent editorial work carried out

¹²⁰ Telephone interview with Ms. Consolata Mushi in 2019, the then head of terminology and lexicography department at BAKITA, and currently, the executive secretary of BAKITA.

before its production. Therefore, this study confidently states that the term *unamu* was borrowed from Gogo (G11).

3.4.2. Focus group discussion

A focus group discussion is a group that gathers people from similar background or setting or experiences to handle and discuss an issue or topic of interest to the researcher (Amin, 2005:177). This method was administered to BAKITA and TATAKI officials and each group consisted of 5 participants. One group discussion was held at TATAKI and the second at BAKITA. The focus group discussion was designed to discuss issues pertaining to terminological development in Tanzania, the position of indigenous minority languages of Tanzania in elaborating Kiswahili terminology, approaches and practices in the development of terminology in Kiswahili and many other Tanzanian language planning and policy related issues. This method yielded multiple views from the participants as they were given a room to agree and/or disagree with each other until they reached a conclusion. Tape recording was used to store information obtained during focus group discussions and interviews from the respondents who wanted to be recorded. Ethical problems associated with tape-recordings were addressed by asking respondents' permission prior to actual recording activity. After each recording session, if deemed important, the researcher let the participants hear what was recorded. Tape recording made it possible for language materials to be replayed several times at the transcription stage.

3.4.3. Questionnaire

This study also gathered data using questionnaires that were distributed to respondents. The study employed open ended and close ended questions. The questionnaires were mainly used to collect data from twelve primary school teachers and tutors from teachers' college as well as ten officials of the language organs (see Appendices 8 and 9). Email and researcher-administered questionnaires were the main means for the questionnaires to reach the respondents. A questionnaire is mainly used in descriptive studies to obtain a broad spectrum

of information (Burns and Grove, 1999). This method of data collection was suitable for gathering data for the analysis of phonological and morphological changes that accompany the integration of Bantu-sourced loans into standard Kiswahili technical terminology. The questionnaires were designed to complement focus group discussion and interview methods. In the questionnaires, there were questions covering demographic information including sex, age, occupation, specialization, experience, ethnicity and education. The demographic information was an important aspect in the sense that it helped to trace one's work experience, subject specialization and ethnic background. Ethnic background of the participants and native proficiency were necessary to capture the original forms and meanings of the Bantu-sourced loans. The respondents were provided with a word list of Bantu-sourced loans borrowed from their language and were requested to write down the original forms and/or meanings in their language. This was done to find out the phonological and morphological changes of Bantu-sourced loans when they were integrated into standard Kiswahili.

3.4.4. Semi- structured interview

Semi-structured interviews were used, mainly with individuals regarding terminological development and the use and adaptability of Bantu-sourced loans in Kiswahili technical domains. Jika (2017:62) remarks that 'the Semi-structured interview schedule is an oral administration of a questionnaire.' Semi-structured schedules were administered to respondents in order to verify the respondents' responses given in the questionnaire (Selinger, 1989). Semi-structured interview schedules were used to elicit responses from both the 5 BAKITA and 5 TATAKI officials as well as native speakers from which Bantu-sourced loans were borrowed. The major aim of interviews was to find out peoples' experience and practices around the whole process of terminological development in Kiswahili and also to capture phonological features of Bantu-sourced loans. For the matter of consistency and efficiency, the researcher prepared a list of topics that generated discussions at each stage of the interview schedule. Questions were organized around specific topics called modules in which the researcher asked a question and provided a room for responses which also provided a

space for researcher to record the information provided during the interview. In order to enhance conversational networks, the researcher selected modules from a large set-in order to construct a conversational network appropriate to a given speaker (Labov, 1984 quoted in Milroy and Gordon, 2003).

Long distance telephone interviewing was used as a means of collecting data. This method ‘offers the virtues of the face-to-face interview, e.g., its responsiveness and flexibility but without the cost (in time and money) of setting up individual meetings’ (Gillham 2000:77). Telephone conversations focused on clarifying issues related to terminological development. This method works best when a researcher knows the participants and therefore can arrange the time convenient for them. The researcher relied on acquaintance with most of the officials at BAKITA and TATAKI for the effective use of this method and it worked as it was desired. Above all telephone as a means of data collection helped to collect information on the phonological features of Bantu-sourced loans, especially vowel quality.

3.5. Presentation and data analysis plan

The inductive technique was used to analyze the qualitative data. The data obtained through interview, focus group discussions and questionnaire were presented in descriptive form. According to Thomas (2006:237), the purposes of using an inductive approach are (a) condense raw textual data into a brief, summary format; (b) establish clear links between the evaluation or research objectives and the summary findings derived from the raw data; and (c) develop a framework of the underlying structure of experiences or processes that are evident in the raw data. In analyzing the adequateness of Bantu-sourced loans as Kiswahili terminology, the principles and practices of terminological development in Tanzania and the phonological and morphological adaptations of Bantu-sourced loans in Kiswahili, the study employed qualitative data analysis method. The researcher made use of inductive reasoning to establish the connection between the research objectives and the summary findings derived

from the raw data. This helped the study to arrive at credible conclusions by involving literature and prior researcher's experience in terminological development in Tanzania.

As for quantitative data, the quantifiable data was presented in terms of graphs and tables for statistical analysis of the sampled loanwords. The Africanization of Kiswahili lexicon, in this case lexical purism in standard Kiswahili technical terminology, is discussed and presented quantitatively divided into three phases (see Section 4.4.2). Therefore, an attempt was made to track new (*Ujamaa* and post *Ujamaa*) loanwords from terminological lists by BAKITA, since it was practical to use new loanwords in the analysis in order to determine the implementation of Africanization policy. As regards the analysis of Bantu-sourced loans in standard Kiswahili terminology, the number of loanwords by source languages per technical domain is presented in a table (see Section 5.3) and the proportion of Bantu-sourced loans in sixteen (16) domains is presented in a graph form (see Section 5.4). The inferences drawn from the findings were synthesized in order to provide relevant conclusions. Both qualitative data and quantitative data were analyzed according to the study objectives.

3.6. Ethical considerations

This study considered strict confidentiality and privacy of the information provided by the respondents. Professional approach to research and limits of this study were highly observed during data collection. Prior to data collection, research permits were sought from relevant authorities in order to carry out field research in the identified areas. Active participation of the interviews was ensured by fully informing the participants about the purpose and context of the research study. As pointed out in previous sections, ethical problems associated with tape-recordings were addressed by asking respondents' permission prior to the actual recording activity.

3.7. Summary

This chapter has presented and discussed the methods which were employed to collect and to analyze data. This study employed a mixed-methods design in which qualitative and quantitative data were collected and analyzed. Interview and focus group discussion methods were mainly used to collect qualitative data, whereas documentation and questionnaire methods were used for quantitative data. The total number of respondents for this study was twenty-four and were sampled purposively and randomly. The interviews and focus group discussions were administered to BAKITA and TATAKI officials. The questionnaires were mainly used to collect data from primary school teachers and teachers' college academic staff as well as officials of the language organs. The documentation method was mainly used to track (Bantu-sourced) loans and gather information on practices of language development in Tanzania. A total of ninety-eight (98) Bantu-sourced loans were identified from nine BAKITA's publications i.e., the six TS, KIST, *istilahi mchanganyiko* (2005) 'mixed technical terms' and *istilahi za hali ya hewa* (20019) 'meteorological terms' issued between 1974 and 2019. Graphs and tables are used to analyze, interpret and present quantifiable data. Chapter four presents the analysis and discussions of the principles and practices and methods of terms-formation in Kiswahili.

CHAPTER FOUR: PRINCIPLES AND METHODS OF TERM FORMATION IN STANDARD KISWAHILI

4.0. Introduction

The focus of this chapter is two-fold: the first objective is to present an analysis of the principles and practice of terminological development in Tanzania (study objective number 1). It explores the basic principles (BAKITA's term-creation principles) which should ideally be guiding terminology creation in standard Kiswahili, as derived from general recommendations and as adapted by Kiswahili stakeholders, i.e., recommendations for the best practice (Section 4.1). This section takes up at the approach of Africanization that was established through *Ujamaa* ideology and examines to what extent this policy was executed through BAKITA's term-creation principles. To determine lexical purisms (Africanization) in Kiswahili terminology, this section compares Kiswahili purist tendencies in Kenya and Tanzania (Section 4.4). The second objective aims to determine the prevalent methods that are used to develop Kiswahili technical terminology by the coiners or language standardization agents i.e., BAKITA and TATAKI (Section 4.5).

A close look at Kiswahili technical terminology reveals that coiners (i) adopt loanwords (anglicisms and other loanwords) in a manner that their original shapes conform to the Kiswahili grammar and (ii) replace the loanwords with native words¹²¹ or non-African loanwords. In other words, the former involves the transferring of both English forms and concepts in the standard Kiswahili terminology, whereas the latter involves borrowing the meaning of the English lexical material and attach its meaning to indigenous (African) or other foreign lexical material. The process of integrating anglicisms into Kiswahili terminology or replacing them with other African words¹²² or with other foreign words employs the common word-formation processes such as direct borrowing, loan translation, compounding, derivation, semantic transfer, blending and semantic specialization with a zero morpheme (Section 4.5). The analysis of phonological adaptations of loanwords, and Bantu-

¹²¹ See section 1.8 for the definition of native linguistic stock

¹²² A native word refers to any lexical material sourced from indigenous African languages.

sourced loans in particular, in standard Kiswahili terminology involves only the segmental level as shown in chapter five. Therefore, it is of paramount importance to discuss briefly the Kiswahili phonological inventory before embarking on the phonological adaption of non-African loanwords (Section 4.5.1.1).

4.1. Term-formation principles in standard Kiswahili: Prioritization of term sources

Prioritization of term sources and term-creation principles are used synonymously (cf. Hans, 2017; Schadeberg, 2009; Kahigi, 2005). The principles simply rank the terminology sources from which Kiswahili terms are extracted. Intralingual and interlingual are the two major sources from which technical terms are selected Felber (1986 cited in Zarnikhi, 2014:170). Given the large number of source languages that coiners would need to exploit terms from, the need for the prioritization of term sources becomes a critical issue. More often than not, language planning agencies give first priorities to intralingual sources and to a great degree restrict the use of interlingual borrowing. For example, the Academy of Persian Language and Literature (APLL)¹²³ ranks four terminology sources as follows:

- i. Words which are considered Persian irrespective of their origins. The priority is given to words that can undergo further morphological processes.
- ii. Words from living Iranian languages and dialects.
- iii. Words and roots from Old and Middle Iranian languages.
- iv. Foreign loans (mostly from English and French).

As pointed out in section 2.2.2.2, term-creation principles are the general rule or the order of term sources that should be followed when coining Kiswahili terminology. BAKITA established term-creation principles which disfavour foreign loan items. The principles simply rank term sources, as indicated below:

- i. standard Kiswahili words stock (language-internal processes)
- ii. lexical items from non-standard Kiswahili dialects

¹²³ Zarnikhi (2014 :170)

- iii. words from Bantu languages of Tanzania
- iv. words from non-Bantu languages of Tanzania
- v. words from other African languages
- vi. words from non-African languages e.g., English, Arabic, Persian)

Those principles¹²⁴ were first recommended by Chiraghdin and Mnyampala (1977) and later adopted by BAKITA in 1982 (KAKULU, 1982:16). A look at the principles shows that the use of non-African lexical items should be the last resort, hence Africanization of Kiswahili technical terminology. In other words, the principles disfavour the use of non-African loans in the development of Kiswahili terminology. By those term-formation principles, one would expect restricted use of non-African loans in Kiswahili terminology. The principles hint lexical purism through which terminology work in Tanzania would therefore revolve around the replacement of foreign loanwords with lexical material based on indigenous African linguistic resources. Therefore, it is apparent to determine the Africanization of standard Kiswahili terminology (section 4.4).

4.2. The application of term-creation principles and Kiswahili purist tendencies

This sub-section discusses issues that emanate from the application of BAKITA's term-creation principles. While working on term-creation principles, a synthesis of wide-ranging literature on the practice of term-formation in Kiswahili (cf. Mwansoko, 1989; Abdulaziz, 1985; BAKITA, 1990; Mwansoko and Tumbo-Masabo, 1992; Kiango, 1995; Kinge'i, 1999; Mwaro-Were, 2000; Kahigi, 2005; Onyango, 2005; and Hans 2017) reveals that there is a gap between BAKITA's theory and the actual practice of term formation. This could be attributed to negligence on the side of BAKITA and other institutions to fully follow the ranking of the term sources. The ranking of the term sources is not hard to follow for reasons inherent to the order of priorities of term sources themselves, but rather because of negligence on the side of the institutions responsible for terminological development. The literature (cf. Mwansoko and Tumbo-Masabo, 1992; Kahigi, 2005; Mafela, 2010; Hans, 2017) shows that a lack of

¹²⁴ In this context, term-creation principles have to do with the ranking of term sources.

dictionaries and terminology glossaries in most of the Kiswahili dialects and Eastern Bantu languages, coiners' prejudice over African languages, competition among indigenous languages and a lack of research in terminology creation account for the difficulties to execute the term-creation principles. However, Languages of Tanzania Project (LoT) and the Research Institute for Languages and Cultures of Asia and Africa (ILCAA)¹²⁵ have produced substantial lexicon publications in Bantu languages of Tanzania. Those publications are not available in the archives of BAKITA. An interview with BAKITA's officials¹²⁶ also revealed that terminology and lexicon publications in Kiswahili dialects¹²⁷ are not archived at BAKITA. Consequently, those linguistic resources are not considered as an immediate source for the elaboration of Kiswahili terminology. Therefore, the borrowing of lexical items from Kiswahili dialects and local languages to Kiswahili terminology is done spontaneously.¹²⁸

The literature also shows that the ranking of term sources may vary, depending on a terminological sub-domain, timeline and coiners involved. For example, the coiners of Kiswahili terminology in the field of computer science (Office 2003 and Windows XP) were not ready to carry out extensive and lengthy research due to research timeline as well as most of the coiners¹²⁹ lacked a good background of Eastern Bantu languages and Kiswahili dialects (Kahigi, 2005). For that reason, Kiswahili dialects and other Tanzanian Bantu languages were marginalized and therefore the coiners gave priority to the following term sources:

1. Standard Kiswahili (use of language-internal term-creation strategies)
2. English
3. Arabic
4. Other languages

¹²⁵ Mapunda, 2016; Rugemalira, 2013; Muzale, 2011; Kulikoyela, 2008a; Kulikoyela, 2008; Mdee, 2008; Sewangi, 2008; Mreta, 2008; Rubanza, 2008, 2008b; Mochiwa, 2008; Mreta, 2008b; Mrikaria, 2008; Sewangi, 2008a; Kiango, 2008; Richardson, 1967; Velten, 2011a; Velten 2011; Muniko et al, 1996; Kagaya, 1989; Nakagawa, 1992; Harjula, 2004; Kagaya, 2005; Yonada, 2006; Yukawa, 1989; Felberg, 1999; Beshu, 1993; Maganga and Schadeber, 1992.

¹²⁶ The first fieldwork at BAKITA took place in 2018 and the second one was in 2019.

¹²⁷ See Nabahany (1978, 1982); Mdee, (1980, 1986); Mukwhana, (1988); Mutiso, (1992) cited in Mwaro-Were, (2000:181)

¹²⁸ Gromova (2000).

¹²⁹ Personal conversation with Prof. Kahigi Kulikoyela, the coordinator of the project.

It is true that the order of term sources may be influenced by the technical domain itself. UNESCO (2005:10) gives preference to the use of indigenous words ‘except in domains or languages where other traditions exist, for instance, the use of Latin or Greek forms in some disciplines.’ This is evident in the natural sciences where Latin or Greek terms sourced from English have been nativized in the Kiswahili technical terminology. In the field of motor-vehicle mechanics, for instance, car mechanics created their own terms so much that the source and target items had much in common (Mwansoko and Tumbo-Masabo, 1992). The coinages eventually gained ground and were accepted in society. Later on, BAKITA came up with new suggestions which were mainly based on language-internal word creation methods such as derivation, compounding, loan translation and to a lesser extent borrowing. BAKITA’s terms were rejected by the users, since car mechanics were not involved in the term-creation project (cf. Sewangi, 1996). Therefore, the involvement of future users of the terminology cannot be overemphasized. The car mechanics gave priority to anglicisms and used Arabic loanwords to a lesser degree, but did not make use of words from non-standard Kiswahili dialects and other local languages. The use of anglicisms by car mechanics in Kiswahili scientific and technical domains is historical. As mentioned in section 1.1, the ILC did not aim at language modernization and as a result, it provided a very limited number of terms in the domains of science and technology. No initiatives were taken to coin Kiswahili terms for the machines, devices and equipment which were introduced from overseas. That is the reason behind the use of anglicisms in the field of motor-vehicle mechanics and other technical domains (Legère, 2006). Moreover, numerous anglicisms are found in scientific and technical domains, since English is considered ‘the *de facto* standard language of international science and technology’ (Westbrook and Grattidge, 1993:161).

The need to consult and involve future target users of particular terms is also well discussed by Mwansoko (1989, 1990 in Were-Mwaro, 2000). He conducted a study on the assessment of target users’ attitude towards Kiswahili literature and linguistic terms in which, regarding term sources, the users recommended that priorities should be given to:

1. Standard Kiswahili and other Kiswahili dialects
2. Bantu languages
3. English
4. Arabic
5. Greco-Latin

The overall picture of term sources discussed above is summarized in Table 14

Table 14: Term sources in three technical domains

Technical domain(s)	Order of term sources
1. Computer	<ol style="list-style-type: none"> 1. language internal term-formation processes 2. English 3. Arabic 4. Other languages
2. Motor-vehicle mechanics	<ol style="list-style-type: none"> 1. English 2. Arabic
3. Literature and linguistics	<ol style="list-style-type: none"> 1. Language internal processes and lexical items from non-standard dialects 2. Bantu languages 3. English 4. Arabic 5. Greco-Latin

Therefore, in actual practice, the order of term sources depends on a particular terminological sub-domain, timeline, coiners involved and target users of the terms in question.

Last, there is a big, seemingly endless, debate between the use of loanwords and native linguistic stock in the formation of Kiswahili terms. The place of Kiswahili purists in terminological development is fairly clear. Those representing the liberal group, mainly Tanzanians, are not like their conservative counterparts i.e., Kenyans. Ruo (1989) notes a conservative approach shown by Kenyan scholars who want to utilize only Kiswahili

linguistic material, especially archaisms and non-standard dialect words, in elaborating Kiswahili terminology. The liberals have no problem with non-African loans, so long as they become naturalized; however, their priorities differ from one scholar to another. In elaborating Kiswahili terminology, for instance, Abdulaziz (1985:195 cited in Mwaro-Were, 2000:172) gives priorities to loans from (1) non-standard Kiswahili dialects, (2) Arabic, (3) Bantu languages, and (4) English and Greco-Latin, whereas Mwansoko's (1992) first choice is English.

BAKITA and TUKI focus heavily on adapting foreign words¹³⁰, but not all coiners in those language organs are in favour of this practice. This was revealed in a private talk in 2019 between the researcher and a retired BAKITA's official who was a head of department of terminology and lexicography¹³¹. The question of lexical purism has sparked debates when terminology developers come together to create new terms for a given language (Gumbo, 2016). This is also the case in Kiswahili as Mhina's¹³² (1976) reveals it in the following extract:

In the making of any language, borrowing is a sensitive operation. It is likely to bring about opposition from the purists. This is also the case in the development of Kiswahili. The advantage we have in Tanzania is that the institutions responsible for the work on standardization, namely Kiswahili National Council, the Institute of Kiswahili Research and others have scholars who believe in purism as well as scholars who believe in borrowing as a tendency of any living language and that when borrowing takes place, the end product could change the original shape of the word and sometimes its meaning (ibid:22).

Looking at the extract, two things are noticeable, that (i) 'lexical purism' and 'borrowing' compete in term-creation, and (ii) loanword adaptations. Therefore, Tanzanian language regulatory organs consist of both the scholars who believe in purism and those who believe in loanword adaptations. However, under *Ujamaa* linguistics, Tanzanian language organs were

¹³⁰ Were-Mwaro (2000)

¹³¹ This talk was held between the researcher and Mr. Karekezi in 2019 during fieldwork in Dar es Salaam.

¹³² Prof. Mhina, George was the first Tanzanian head of the Institute of Kiswahili Research who took over the leadership from his predecessor Prof. H. Whiteley in 1969 (Sengo, 1992). He chaired BAKITA for a long time (cf. TS. No. 3, TS.No.4 and TS. No.5)

not dedicated specifically to lexical purism in the same sense of Nabhany¹³³ i.e., to modernize the Kiswahili lexicon ‘from within rather than from without’ (Onyango, 2005:226). BAKITA, TUKI and individual terminology innovators in Tanzania heavily use loanword adaptations while Kenyan lexicographers¹³⁴ and individual word coiners rely mainly on Kiswahili word stock (archaisms, standard and non-standard Kiswahili dialect words) in rendering technical concepts originating mainly from English. Were-Mwaro (2000) further reports an attempt to replace loanwords with Kiswahili word stock by a Kenyan purist, Nabhany, across Kiswahili technical domains. He has coined terms in the fields of physics, computer science, electronics and many others.

4.3. An overview of lexical purism

Tapping terms from native sources and closure to external sources is linked to lexical purism. In a narrow sense, lexical purism can be defined as ‘the replacement of loanwords with lexical material based on native resources’ (Cser, 2009:36). This definition is consistent with Anammalai’s definition (1979:3) that ‘purism is the opening of the native sources and closure of the non-native sources for enrichment of language’. This definition fits this context, because native sources are officially recognized as one of the major sources of Kiswahili terms. Non-standard Kiswahili dialects, Bantu languages and other African languages had been used since *Ujamaa* linguistics to enrich Kiswahili technical terms. Brunstad (2003:54) points out that ‘the most common type of purism is directed at the lexicon, first of all against direct lexical loans, often combined with the development of loan translation’. As mentioned in section 4.2, coiners of Kiswahili terms have divided views on the use of foreign loanwords. The first group, *the conservative/purists*, make use of archaisms, non-standard Kiswahili words and language internal term creation techniques to counter the influence of foreign

¹³³ In Kenya, however, the expansion of the Kiswahili technical lexicon is due to more or less individual efforts¹³³ (Ryanga, 1990; King’ei, 1999; Mwaro, 2000; Onyango, 2005).

¹³⁴ It is not clear whether lexicographer is used synonymously with terminographers in Mwaro-Were’s (ibid) study. However, a lexicographer is one who ‘documents the words in the vocabulary of the general language whereas the terminographer documents the terminology of specific subjectfields and domains. The terminographer works with a more restricted register than the general lexicographer, but from a holistic point of view, general lexicography and terminography are on a continuum where only the nature of the defined words or terms differs’ (Alberts, 2001:71).

lexical items. The second group comprises the *liberals*, who consider the issue of wider usage of foreign words. This group argues that terminologists should consider it important to first nativize loanwords of wider usage. In line of this, the uncontrolled terminological development activities have contributed significantly in the development of Kiswahili terminology. Terms resulting from uncontrolled terminological works have been eventually integrated into Kiswahili technical domains (see Yambi, 2000; Legère, 2006). In such undertakings, however, anglicisms are noticeably more than other loanwords. Mwansoko¹³⁵ in the following interview argues that terminologists should record terms, which to a large extent are loanwords, heard from the users and incorporate the terms into Kiswahili terminology.

Nadhani tungefanya kazi kama wanavyofanya wanaleksografia. Wanarekodi kile watu wanachozungumza. Mtunzi wa kamusi anarekodi watu wanachozungumza.

I think we should emulate lexicographers. They record what people say. A person who compiles a dictionary records what people say. (Source: interview between Mwansoko and the researcher, 2019).

For Mwansoko, new creations should only be considered to fill in a lexical gap i.e., where there is a need. This means that native words should not be created where a loanword already exists (cf. Gumbo, 2016; Sus, 2004; King'ei, 1999). Once purists and liberals come together in term-creation sessions, the question arises about whether to consider loanwords of wider usage over the consideration of native linguistic stock. This study is of the view that borrowings are unavoidable; however, their introduction to the language should be treated with moderation as they may lead to language death or shift and may also lead to the formation of an elitist register, since ordinary people find borrowings difficult to master (Marshad, 1984:123 cited in Madiba, 2001:63). Therefore, the use of native linguistic stock in terminology development should be adopted as 'a strategy of finding the African language equivalents of the majority of the terms whose concepts are named in European languages' (Chabata, 2013:57).

¹³⁵ Prof. Mwansoko worked as a senior researcher at the Institute of Kiswahili Research (TUKI) in the department of terminology and translation. He has written extensively in the area of Kiswahili terminology.

Both puristic and liberal approaches have shown shortcomings in modernizing African languages. (Madiba, 2001:62)¹³⁶ suggests *a puristic or pragmatic approach* which is ‘mainly informed by prevailing realities in the context in which the language is used.’ This approach comprises two phases: the borrowing phase and the indigenization phase. The pragmatic approach results from combining both approaches successively. The borrowing phase endorses unrestricted use of foreign lexical material in the formation of technical terms. At this stage of terminology development, all existing unstandardized loanwords should be standardized and integrated immediately in the receptor language. The indigenization phase involves the nativization of the loans standardized in the borrowing phase. The replacement of foreign lexical items by native words may also be extended to loanwords which were formed through spontaneous borrowing, ‘especially where the foreign concepts expressed by such terms have become commonly known to the speech community’ (Madiba, 2001:69).

The Kiswahili technical domains have extensively nativized foreign loanwords based on quantitative studies (Hurskainen, 2004; Schadeberg, 2009). As a result, some terminology innovators distance themselves from modern Arabic loans because of numerous words of Arabic origin in the standard Kiswahili word stock (Kahigi, 2005). Things are easier said than done, since Kahigi confessed to have used many terms of English and Arabic origins in the formation of terms in the domain of computer. This challenges the BAKITA’s ranking order of term sources, although the order symbolizes lexical purism simply because purism (cf. Sus, 2004; Cser, 2009; Langer and Nesse, 2012) aims at preserving a standard language from the influence of foreign elements¹³⁷. Puristic practices may be applied to all linguistic levels, but primarily the lexicon (Thomas, 1991 in Cser, 2009:37). Notably, linguistic purism may basically operate at the lexical, orthographical, morphological, syntactic and phonological levels (Brunstad, 2003). *Lexical purism* is the most common linguistic purism which fights against direct lexical borrowings. The government of Bulgaria, for instance, after

¹³⁶ For detailed information on puristic, liberal and pragmatic approaches, refer to Madiba (2001).

¹³⁷ In order to preserve the standard language from foreign influences, some puristic tendencies are directed against influences originating from native dialects, sociolects and styles of the same language (Thomas 1991:12 cited in Cser, 2006: 37). In this study, native linguistic stock includes Kiswahili dialect words, words sourced from Bantu languages and other African languages except, Arabic.

independence, decided to remove Turkish and Greek words from its national language (Sus, 2004). Sometime foreign loanwords can even be used to replace other foreign elements. The Turkish rejected Arabic and Persian loanwords and turned mainly to French loanwords (ibid). *Phonological purism* is geared towards the rejection of foreign phonemes and phoneme combinations. In standard Kiswahili, this is evident through the replacement of the Arabic velar fricative by glottals or zero in Arabic-sourced loans integrated into Kiswahili e.g., /h/ < /x/ - /hatari/ ‘danger’ < /xatʰar/; /rahisi/ < /raxi:sʰ/ and /Ø/ < /ʔ/ - /imla/ < /ʔimla:ʔu/ ‘dictating’. In addition, the rejection of the ‘English r-pronunciation in words such as roll-on in Danish’ is an example of phonetic purism (Davidsen-Nielsen et al, 1997 in Brunstad, 2003:55-56). *Morphological purism* is manifested through the fight against foreign ‘inflection and declension e.g., the resistance to the English plural marker -s in noun endings in Scandinavian languages (Söderberg, 1983 in Brunstad, 2003:55). *Syntactic purism* is directed at foreign syntactic constructions. Sus (2004) observes that the Turkish government has succeeded to replace Arabic and Persian syntactic elements with native Turkish syntactical agreements/functions. *Orthographic purism* refers to adherence to a linguistic status quo to which the imported words are adapted orthographically. Orthographic purism may also be directed at foreign graphemes. For example, ‘in Faroese, the letters c, q, w, and z are not represented in the dictionary because they are regarded as non-Faroese’ (Brunstad, 2003:55).

Purism is an attitude which entails *activities*¹³⁸ when it comes to loanwords i.e., involves adaptation of loanwords and other techniques which make use of native linguistic stock as discussed by Sus (2004). In other words, purism extends to the removal of foreign items in a language by fully incorporating them in the phonological and morphological systems of a borrowing language. On the other hand, purism is a ‘*belief*¹³⁹ that words (and other linguistic features) of foreign origin are a kind of contamination sullyng the purity of a language’ (Trask, 1999: 254 quoted in Langer and Nesse, 2012:608) and those foreign elements should be replaced by native forms (Brunstad, 2001). Therefore, purism is mainly resistance to

¹³⁸ For detailed information, refer to Langer and Nesse (2012:608)

¹³⁹ The emphasis is mine

foreign words and normally puristic activities are directed towards replacement of foreign words with native words. However, such activities often lead to new loans which have not been fully integrated into a language, since ‘purism is as a rule not directed against all foreign influences. Certain foreign influences can even be used to replace unwanted foreigners from another language’ (Sus, 2004). In other words, one foreign item can be replaced by another one. In Kiswahili, for example, *dirisha* (Persian) ‘window’ has almost replaced *shubaka* (Arabic) in all contexts (Mbaabu, 1985).

4.4. Africanization of Kiswahili terminology: Kiswahili purist tendencies

The purpose of this sub-section is to present and discuss the purist tendencies in standard Kiswahili terminology by comparing Kenyan and Tanzanian experiences. As it will be shown in the subsequent sub-sections, purist tendencies in Kenya were by far noticeable, whereas in Tanzania the purist attitude towards foreign loanwords was liberal. This means there are no visible efforts among the Tanzanian coiners in the replacement of loanwords with African loans in the expansion of Kiswahili terminology. First, a number of Kiswahili coinages by Nabhany will be presented and discussed to show how the very notion of lexical purism became an important issue. Second, the Tanzanian experience will be addressed by presenting the statistical calculations based on sampled BAKITA’s coinages between 1974 and 2019.

4.4.1. Kenyan experience in relation to Kiswahili purist tendencies

It was Tanzania that started the formal development of Kiswahili terminology ‘so as to enable the language to accommodate scientific concepts. Later, Kenya joined the modernizing process’ (Ryanga, 1990:21). However, the practice of term expansion under BAKITA made some Kenyan Kiswahili scholars, including Nabhany, raise concerns over the coinages. Two issues were brought to the fore: (1) term sources and (2) the composition of the standardization committee left out Kenyans, hence ‘reflected basically the interests and activities of groups within Tanzania only’ (ibid:30). The consequence of this resulted in a negative attitude towards language engineering in Tanzania. Eventually, the Kenyan scholars

formed *Baraza la Kiswahili la Kenya* (henceforth BAKIKE) ‘Kiswahili Council of Kenya’ and Nabhany was elected the leader. As a believer in the use of Kiswahili linguistic stock, Nabhany¹⁴⁰ used that opportunity to carry out his agenda under the umbrella of BAKIKE (Mwaro-Were, 2002:248)¹⁴¹. A good number of new terms were coined in order to replace loans in Kiswahili. This was a deliberate attempt to fight foreign loanwords or avoid their use in the Kiswahili technical vocabulary in the history of Kiswahili development.

Table 15: Term suggestions by Nabhany (1995)

concept	Nabhany	derived from	BAKITA
1. microscope	<i>mangala</i>	<i>mangala</i> ‘a device that makes small fish appear larger’ (<i>Kiamu</i>)	<i>hadubini</i> (Persian)
2. gold	<i>ng’andu</i>	<i>nga’andu</i> ‘gold’ (<i>Kipate</i>)	<i>dhahabu</i> (Arabic)
3. reflection	<i>fumano</i>	<i>fuma</i> ‘target’ < <i>fumana</i> ‘target each other’ < <i>fumano</i> (<i>Kiamu</i>)	<i>uakisi</i> (Arabic)
4. television	<i>runinga</i>	<i>rununu</i> ‘information’ + <i>enga</i> ‘see’ + <i>maninga</i> ‘eyes’ (<i>Kiamu</i>)	<i>televisheni</i> (English)
5. radio	<i>mwengoya</i>	<i>mwengo</i> ‘echo’ + <i>-ya</i> (<i>-ja</i>) ‘come’ (<i>Kiamu</i>)	<i>radio</i> (English)
6. ray	<i>uka</i>	<i>uka</i> ‘ray’ (<i>Amu</i>) < <i>pambauka</i> ‘dawn’	<i>mwale</i> (Bantu)
7. echo	<i>mwengo</i>	<i>mwengo</i> ‘echo’ (<i>Kiamu</i>)	<i>mwangwi</i> (Southern dialects ¹⁴²)
8. state house	<i>gongwa</i>	<i>gongwa</i> ‘palace’ (<i>Kipate</i>)	<i>ikulu</i> (Bantu)
9. parliament	<i>yumbe</i>	<i>yumbe</i> ‘large house, government’ (<i>Kiamu</i>)	<i>bunge</i> (Bantu)
10. mirage	<i>mangati</i>	<i>mang’aanti</i> ‘mirage’ (<i>Kiamu</i>)	<i>mazigazi</i> (Southern dialects)

¹⁴⁰ Nabhany, a Kenyan native speaker of Kiswahili, is a renowned forerunner¹⁴⁰ of Kiswahili purism.

¹⁴¹ In the ‘fight’ for Kiswahili, and as an important attempt to promote Kiswahili, Nabhany invented Kiswahili technical terms using old Kiswahili words and dialect words in a variety of scientific and technological fields. The terms he invented are found in various publications and compositions, such as *Utenzi wa Sambo ya Kiwandeo* ‘The Ship of the Lamu-Island (1979)’, *Kandi ya Kiswahili* (1978), *Umbuji wa Kiwandeo* (1985), the poem of *Umbuji wa Mnazi* (1985), and articles: *Kiswahili Chajitosha* ‘Kiswahili is self-sufficient’ (TUKI, 1976), *Uundaji wa Istilahi katika Kiswahili* ‘Terminology formation in Kiswahili’ (1998) and other articles on language terminology (Mwaro-Were, 2000:250-251).

¹⁴² These are Kiswahili dialects mainly spoken in Tanzania, south of Kenya.

Note that in the data (Table 15) terminology invention was aimed at reducing loanwords by restricting term-creation priorities to the Kiswahili word stock, as Ryanga (1990:32) observes that ‘Nabhany acknowledges the potential of the dialects, particularly from the archaic literary tradition of Kiswahili and its associations’. However, the Kiswahili archaic literary tradition includes many Arabic loans, but Nabhany does not provide reliable linguistic proof regarding the etymology of the archaisms and the dialect from which he derives the new Kiswahili terms. To him, the modernization of the Kiswahili technical lexicon was to be limited to Kiswahili word stock, especially words from the northern dialects¹⁴³, and archaisms (Mwaro-Were, 2000). To him, purism went hand in hand with the substitution of words from southern dialects for northern dialect words (see examples 7 and 10 in Table 15). In addition, Nabhany suggested the Bantu-sourced loans with northern dialect word stock. This claim is supported by examples 5, 7 and 8 in Table 15. These words (examples 5, 7 and 8 of Table 15) are of Bantu origin¹⁴⁴. In summary, Nabhany’s puristic movement seems to suggest that:

1. All loanwords including Bantu-sourced loans should be replaced by new innovations. In actual practice, new innovations have not gained linguistic ground to challenge, for instance, anglicisms in elaborating Kiswahili terminology. It looks difficult in practice to replace established loanwords, since users may find it hard to abandon fully established Bantu-sourced loanwords e.g., *ikulu* ‘state house’, *bunge* ‘parliament’, *kitivo* ‘faculty’. On the one hand, Nabhany’s new suggestions are not easily accepted among Kiswahili scholars and terminology innovators (cf. Kresse, 2007; King’ei, 1999; Ryanga, 1990), but on the other hand, Nabhany’s innovations such as *runinga* for ‘television’, *rununu* ‘phone’ and *ndaki* for ‘university/college’ have gained popularity, hence have been included in standard Kiswahili references (see KKK and KKS).

2. Kiswahili dialect words and archaisms should be used for the development of Kiswahili technical terms. The use of archaisms relies on linguistic material from the past (Thomas,

¹⁴³ See Kresse (2007)

¹⁴⁴ See Bantu Lexical Reconstructions (2003)

1991:76–82 cited in Cser, 2009:37). This is a big challenge for standard Kiswahili, simply because Kiswahili archaisms contain numerous Arabic loans. Moreover, archaisms can only be found in classical poetry or in folktales and most Kiswahili speakers are not familiar with them as they are to Arabic loans (Mwaro-Were, 1998:5). However, not all Kenyan Kiswahili scholars take the view that lexical expansion should only be restricted to Kiswahili word stock. According to Mwaro-Were (2000) and Ryanga (1990) the innovators of Kiswahili technical terms in Kenya give priority to:

1. Standard Kiswahili itself
 2. Kiswahili dialect words
 3. Archaisms
 4. Bantu languages
 5. Language-internal word formation techniques such as compounding, derivation, and semantic transfer.
3. The formed terms may express (Nabhany's three criteria in the creation of technical terms):
1. the shape or form of the referent
 2. the function or usage of the referent, or
 3. the term may be formed based on the sound of the referent.

Such criteria are in agreement with Massamba (1989) who says that the shape or form of the referent and the function or usage of the referent were among the criteria which were used to create TUKI's terms of biology, physics, and chemistry in Kiswahili. This contradicts King'ei's (1999:158) observation that the coiners, including Nabhany, do not provide linguistic criteria according to which new Kiswahili terms to replace foreign loanwords are formed¹⁴⁵.

When the practice of Kiswahili modernization in Tanzania and Kenya are compared (Section 4.4.1 and 4.4.2), two things are noticed. One, Kenyan terminology innovators give priorities

¹⁴⁵ However, Nabhany does not address the question of international terms. A term becomes an international one when it is used in 'many national languages, [be] current internationally, [and be] comprehensible without translations' (Ulrich, 1975 cited in Madiba, 2001:60).

to native linguistic stock and closure to external sources, while Tanzanians have shown unrestricted use of borrowings. It was established in chapter one that terminology development in Tanzania is mainly carried out by Bantu speakers of Tanzania. This might in one way or the other trigger the sense of nativeness by virtue of birth or origin i.e., lineage among the coiners as far as lexical purism is concerned. Nabhany enjoyed this great prestige, but his impact on the development of Kiswahili technical vocabulary have been minimal. Only a few of Nabhany's innovations have been accepted by BAKITA. He wanted to keep Kiswahili lexicon pure by fighting against non-Kiswahili lexical items, hence cleanse the language from external influences. Kenyan stand to use Kiswahili linguistic stock in modernizing the Kiswahili technical lexicon goes back to the 1970s and is well articulated in Nabhany's article entitled *Kiswahili Chajitosha* 'Kiswahili is self-sufficient' (1976). In 1987 the Kiswahili Council of Kenya (BAKIKE)¹⁴⁶ was established to develop Kiswahili in the country and beyond. Nabhany¹⁴⁷ was given the role of developing the language on behalf of the council.

Two, Kenyan coiners have shown the need to reduce and substitute lexical borrowings for Kiswahili words, whereas no records of such movement have been traced in Tanzania. The time between November and December 1979, there sparked a heated debate in Kenyan newspapers that opposed Tanzania's approach of Kiswahili terminology engineering (Ruo, 1989:96). In 1981, a contention revolved around term sources for the formation of Kiswahili terms. The Kenyan coiners of Kiswahili terms who support the use of Kiswahili word stock rejected the Tanzanian suggestions, as Ruo (1989) writes:

...ndiyo hali inayoendelea mpaka sasa. Kundi hili limekataa mpango au taratibu zinazotumiwa na Tanzania katika uundaji wa maneno na baadhi yao wanadai kuwa wamekusanya zaidi ya maneno 5,000 ya Kiswahili cha kale ambayo yanaweza kutumiwa badala ya haya tuyapatayo kutoka Tanzania.

¹⁴⁶ BAKIKE's terminological activities did not take off due to lack of sufficient funding, lack of government support, and lack of qualified innovators of Kiswahili terminology (Mwaro-Were, 2000).

¹⁴⁷ Until his death, Nabhany was a strong believer in native words i.e., archaic literary traditions and Kiswahili dialect words.

...this is what is happening until now. This group has rejected the procedures used by Tanzania in word formation and some of them claim that they have collected more than 5,000 Kiswahili archaisms that can be used instead of those we get from Tanzania (ibid: 97).

If such a situation is not carefully taken care of, numerous competing terms would be formed and at the same time two variants of standard Kiswahili technical terminology will be developed – one in Tanzania and one based in Kenya. The birth of two variants of technical terminology of Kiswahili will be unavoidable, because each country goes a separate way in developing the language. Among all East African countries including the Democratic Republic of Congo, Tanzania and Kenya are known to be the most important Kiswahili speaking countries in the world. Therefore, attempts should be made to actively exchange expertise in the expansion of terminology in all countries where Kiswahili is a national or official language. In addition to that, a dedicated institutional spirit among language standardization agencies and individual word coiners should overcome unnecessary competitions. Language organs and enthusiasts should work as a team and such a spirit should grow into an effective endeavour to modernize Kiswahili. Up to this juncture, it is vitally important to discuss, though briefly, lexical purism in standard Kiswahili.

4.4.2. Tanzanian experience in relation to Kiswahili purist tendencies

It has come to be generally recognized that *Ujamaa* had a direct impact on the development of standard Kiswahili in Tanzania. Much emphasis was ‘put on Kiswahili as an authentic symbol of the Tanzanian nation’ (Legère, 2006:176). BAKITA was established as ‘part of political influence on linguistic work’ (Blommaert, 2013:72), hence ‘*Ujamaa*’ linguistics. *Ujamaa*’s focus rested on the ‘Africanisation of society and pan-Africanism’ (ibid pg.25) and ‘all decisions related to Kiswahili taken in the early post-Arusha years and implemented by institutions such as TUKI or BAKITA were presented as elements in the struggle for what Ngugi wa Thiong’o called the decolonization of the mind’ (Blommaert, 2013:52).

Since puristic tendencies at the lexicon level in Kiswahili lack previous descriptions, terminology lists published by BAKITA are used to determine African sources for Kiswahili

lexical elaboration and the influence of foreign loanwords on various Kiswahili technical subjects. The study uses the data from BAKITA's publications identified in 3.3.1. The selected terminological resources essentially provide the basis for (i) the sorting of loanwords from the technical domains available in a terminology list, (ii) identification of source languages and newly adopted loanwords in Kiswahili technical registers (iii) the actual practice of BAKITA's recommendations based on loanwords from the selected technical domains and (iv) the discussion of term-formation techniques in standard Kiswahili.

An analysis of loanwords by source languages from the selected technical domains is presented in three phases as reflected in the Tanzanian political reforms. The three phases are *Ujamaa* linguistics, liberalization 1 and liberalization 2. Liberalization may mean quite different things in different contexts. The Oxford English Dictionary defines liberalization as a removal or loosening of restrictions on something, typically an economic or political system¹⁴⁸. During *Ujamaa*, the country experienced centralized works of terminology and all terminological activities were fully funded by the government. After the fall of *Ujamaa*, the government was no longer interested in terminology development activities. Liberalization of terminology formation in Tanzania resulted in an uncoordinated effort by individuals and institutions (Legère, 199; Musau, 2001; Petzell, 2012; Massamba, 2013). In the context of terminology development, this study looks at the distinction between liberalization 1 and liberalization 2 in terms of the involvement of the government and non-governmental organizations in the funding of terminology works. In liberalization 1, there was the involvement of non-governmental organizations in the funding of terminological development works, whereas during liberalization 2 there was neither a non-governmental organization nor government interventions.

¹⁴⁸ <https://www.lexico.com/definition/liberalization>

4.4.2.1. Phase 1: *Ujamaa* linguistics - the engineering phase (1972 – 1985)¹⁴⁹

Ujamaa was a major political revolution whose language policy sought to renovate an African language in Tanzania. The renovation of Kiswahili was then one of the means to formulate and accentuate the changes in the country as Sus (2004) notices:

‘If one really wants to thoroughly work on or renovate a language, it appears that that can be done well during or directly after a great political revolution. Language renovation is then one of the means to formulate and accentuate the changes. In a revolutionary situation, an (often totalitarian) government is apparently powerful enough to impose changes, or there is (in the case of more democratic governments) sufficient support among the citizens for language changes’ (ibid: 10).

In addition to *Ujamaa*, Ngugi’s (1986) post-colonial theory of decolonizing the mind advocates for linguistic decolonization. The theory, among many issues, calls for the use of treasures carried by indigenous African languages.

This period covers the period from the 1970s¹⁵⁰ to the first half of 1980s. This is the terminological engineering phase in which massive numbers of terms were coined in accordance with the 1969 government’s decision to gradually phase out English as the language of education at all post primary levels (Tanzania, 1969:12). Five TS in various subjects were published by BAKITA between 1974 and 1985. Standard TS no.1 accommodates terms for government institutions, whereas TS nos. 1, 2, 3, 4 and 5 ‘focused mainly on terms for subjects that are taught in secondary schools’ (Legère, 2006:177). Loanwords from the selected technical domains from the nine terminology documents are used to determine the africanization of standard Kiswahili terminology. For the purpose of analysis, the loanwords have been placed into six source-specific categories listed below:

1. English
2. Arabic
3. Tanzanian Bantu languages excluding Kiswahili

¹⁴⁹ *Ujamaa* linguistics covers all the period from 1967 to 1985, the year Julius Kambarage Nyerere stepped down and Ali Hassan Mwinyi became his successor who reversed many of the policies of Nyerere.

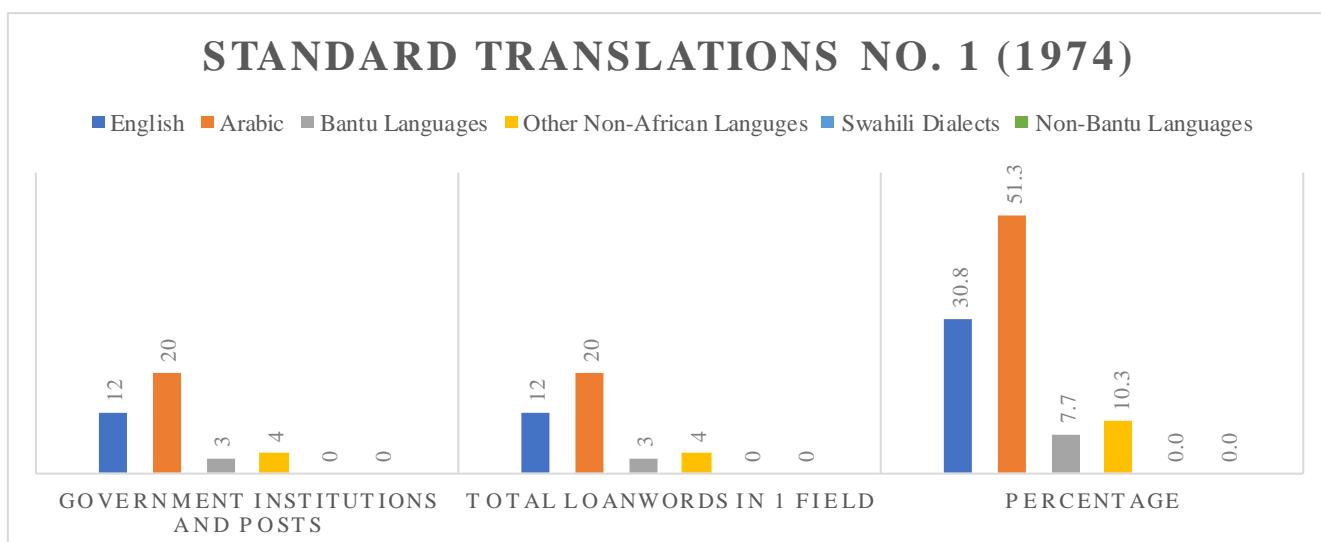
¹⁵⁰ Although BAKITA was formed in 1967, the publications of Standard Translations became available in the 1970s.

4. Other non-African languages (Persian, Hindi, German, Japanese, Turkish, Portuguese, Italian)
5. Kiswahili dialects
6. Non-Bantu languages in Africa

4.4.2.1.1. Loanwords in TS Nos. 1, 2, 3, 4 and 5

TS no. 1 was issued in 1974 and is the first booklet with 20 pages. It contains more than 900 terms for government institutions and posts. The booklet contains Kiswahili terms that were needed to change English names to Kiswahili.

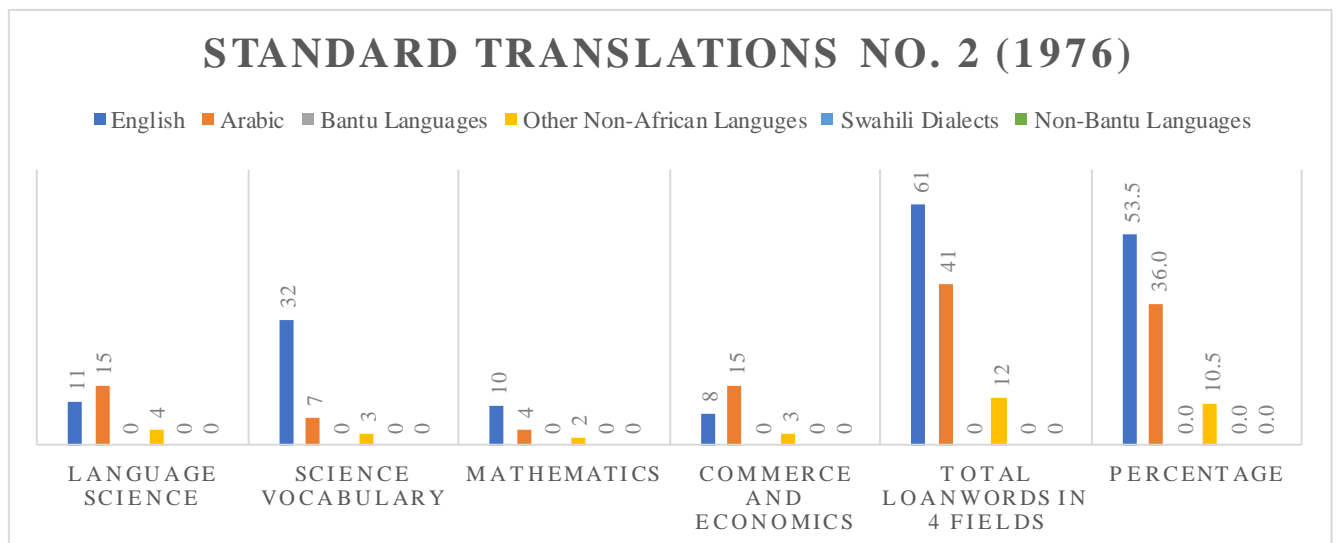
Figure 2: Loanwords in TS no. 1 found in 1 technical domain



In Figure 2, the Arabic loans are more numerous than lexical items borrowed from English. It is worth noting that Arabic loan words are numerous not only comparatively to English, but superlatively across all other source categories. The Arabic loans are 1.6 times higher than English loans. Figure 2 also shows that 3 (7.7%) lexical terms were borrowed from Bantu languages of Tanzania, whereas 4 (10.3%) terms were sourced from other non-African languages. No lexical item was borrowed from Kiswahili dialects and non-Bantu languages (African languages).

TS no. 2 is the second issue TS published in 1976. This edition contains 2580 terms in the field of commerce (438: pp 1-8), national assembly (274: pp 9-14), mathematics (132: pp 15-17), geography (184: pp 18-25), library and bindery (122: pp 22-24), post office (63: pp 25-26), science (145: pp 27-29), language (185: pp 30-33), educational research and evaluation (62: pp 34-35) and ministries, institutions and posts (975: pp 36-55). The booklet has 55 pages.

Figure 3: Loanwords in TS no. 2 found in 4 selected subject domains

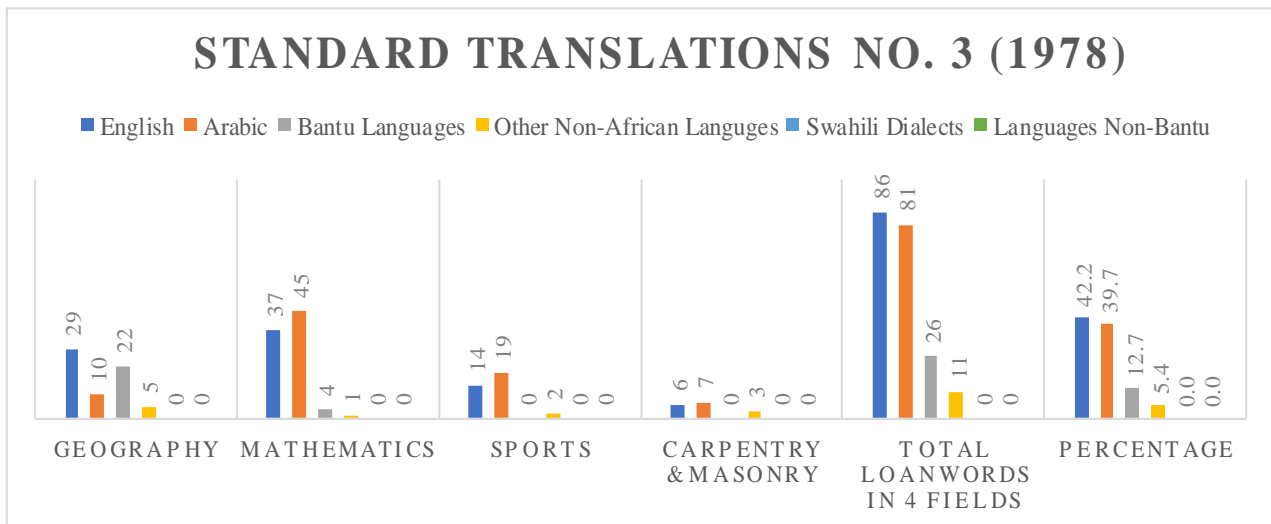


In figure 3 it is generally seen that there are more loan words from English in 2 domains i.e., science vocabulary (32), and mathematics (10), while Arabic loan words dominate vocabulary for language science, commerce and economics with identical percentage of 15. In the four selected technical domains, the English loanwords occupy 53.5% followed by 36 % of Arabic loanwords, if all the loans are put together in the four technical domains. Other non-African loanwords (10.5 %) are marginal, while Bantu-sourced loans, loanwords from non-Bantu languages and Kiswahili dialect loanwords are strikingly absent.

TS no. 3 is the third terminology booklet with 49 pages published by BAKITA in 1978. It contains 2,329 terms in 6 fields - carpentry and masonry (52: page 1), commerce and economics (505: pp 2-11), domestic science (692: 12-25), geography (412: pp 26-34), mathematics (506: 36-45), and sports (162: 46-49). The terms in four technical subjects -

geography, carpentry and masonry, mathematics and sports - were selected as the representative sample of technical terminology in TS no. 3. The technical subjects selected make up 1132 terms, where 204 out of 1132 (approximately 18.2%) have been identified as loanwords in the four subject fields. The figure below shows the number of loanwords by source language per subject field selected:

Figure 4: Loanwords in TS no. 4 found in 4 selected subject domains



In Figure 4 it is generally seen that the use of Anglicisms is not higher than those loanwords of Arabic origin in the TS no.3. The English loanwords occupy 42.2% followed by 39.7% of Arabic loanwords, if all loans are put together in the four fields. Bantu-sourced loans occupy 12.7% with 22 words in geography and 4 words in mathematics. Moreover, Arabic dominates more loanwords in mathematics than any other source languages i.e., 45 out of 87. Other non-African loanwords (Persian, Hindi, Portuguese etc.) are marginal, while Kiswahili dialect loanwords are strikingly absent.

TS no. 4 published in 1980¹⁵¹ represents the publications prior to the enactment of term-creation principles in Kiswahili. The edition contains 2,496 terms in the fields of administration (98: pp 1-3), biology (349: pp 4-11), chemistry (195: pp 12-16), domestic science (1286: pp17-46), geography (124: page 47), history (198: pp 48-52), physics (203: pp

¹⁵¹ For the purpose of this analysis, this study used the 1998 4th edition.

53-57), politics (243: pp 58-63), technical drawing (106: 64-66) and technology (276: pp 67-73). It also consists of 14 terms used in punctuation. Terms in five subject fields – physics, biology, politics, technical drawing, geography, chemistry and technology - were selected as a representative sample of technical terminology used in the analysis of loanwords. The technical subjects selected make up 1496 terms, where 541 out 1098 terms (36%) have been identified as loanwords in these five technical subjects. The extracted loanwords were grouped according to their source languages based on the etymological information given in the selected TS and with the help of the selected dictionaries the researcher was able to establish and identify the established loans and their source languages from new (*Ujamaa*) loanwords (see Section 3.3.1 for the selected dictionaries). Such procedure was followed in all the subsequent sections. Figure 5 below shows the number of loanwords by source language for each technical domain selected:

Figure 5: Loanwords in TS no. 4 found in 5 selected technical domains



In Figure 5, English loans are 9.1 times higher than Arabic loans in physics, 7.6 times in biology, two times of those in the field of technology and 6.2 times those in the field of chemistry. Based on the data given in Figure 5, it can be concluded that Kiswahili borrowed scientific and technological terms (physics, biology, technology and chemistry) mainly from English, whereas political terms came mainly from Arabic. Figure 5 also shows that Bantu languages, non-Bantu languages (African languages) were used marginally in the development of the terms in the 7 selected technical subjects. Based on the data in Figure 5, Kiswahili borrowed mainly from English, followed by Arabic, other non-African languages, Bantu languages of Tanzania and lastly from Kiswahili dialects.

TS no. 5 is the fifth edition of Standard Translations published in 1983. It is the first publication after the enactment of term-creation principles in Kiswahili. This edition contains 1645 terms in the fields of administration (68: pp 1-2), agricultural engineering (324: pp 2-10), agronomy and animal husbandry (549: pp 11-23), mathematics (72: pp 24-25), motor mechanics (124: pp 26-28), photography (72: pp 29-30), physics (37: page 31), plant and animal diseases and pests (134: pp 32-35) and psychology (251: pp 36-41). The booklet has 42 pages and also consists of 14 terms used in punctuation (see page 42 of TS no. 5). The fields of agricultural engineering, agronomy and animal husbandry, motor mechanics and plant/animal diseases and pests have altogether 1311 terms, which make up 79.6 % of the total entries. 212 out of 1311 (16%) have been identified as loanwords in the four subject fields. Figure 6 below shows the number of loanwords by source language for each technical subject selected.

Figure 6: Loanwords in TS no.5 found in 4 selected technical subjects



Generally, the English loans (70.8%) are almost 19 times of all Arabic loans when all loans are counted. On the one hand, the trend of the use of new loanwords from Arabic (3.8%) and other non-African languages (1.4%) was very minimal, but on the other hand scientific and technological fields have shown a considerable number of Bantu-sourced loanwords (17.9%). The non-standard Kiswahili dialects contributed 1.4% of the total loanwords in the four selected technical domains. On another note, the data in Figure 6 shows that not even a single loanword of Arabic origin was traced in the fields of agricultural engineering and agronomy and animal husbandry. While coiners have significantly limited the Arabic loans, the Bantu languages of Tanzania have significantly contributed in the fields of geography, agricultural engineering and agronomy and animal husbandry (see Figures 5 and 6, respectively). Based on the data in Figure 6, Kiswahili borrowed mainly terms in pure and applied sciences and

technology from English, followed by Bantu languages, the other non-African languages and non-standard Kiswahili dialects, while Arabic and other non-African languages are marginal.

4.4.2.1.2. Percentage of loanwords by source languages in phase 1

When the loanwords from the selected technical subjects extracted from TS nos. 1, 2, 3, 4 and 5 are compared, English is the number one donor language of the Kiswahili terms, as the percentage of English loans is the highest (see Figure 7). As shown in Figures 3, 5 and 6, a trend of the use of English loans over Arabic loans is seen in the domains of sciences and technology; the difference is fairly bigger in Figure 6. Moreover, the findings of phase 1 show that the overall percentage of English loans is considerably higher in the domains of science and technology (see Figures 3, 5 and 6) than any other loanwords sourced from Arabic or other non-African languages, African languages or non-standard Kiswahili dialects. For example, in agronomy and husbandry English loans constitute nearly 72%, while Arabic loans are non-existent in the fields of agricultural engineering and agronomy and animal husbandry (see Figure 6). While scientific and technological fields have extensively borrowed anglicisms, a substantial number of loanwords in the field of politics are of Arabic origin, namely 3.6 times of that of English (see Figure 5). Bantu languages have contributed considerable loanwords in the fields of agricultural engineering (7%) and agronomy animal husbandry (25.2 %) with Arabic (0%) in the fields of agricultural engineering, agronomy and animal husbandry (0 %) as well as in the field of plant/animal diseases and pests (see Figure 6). Figure 7 gives a summary of the findings of the first phase of *Ujamaa* linguistics.

Figure 7: Loanwords in TS no.5 found in 4 selected technical subjects

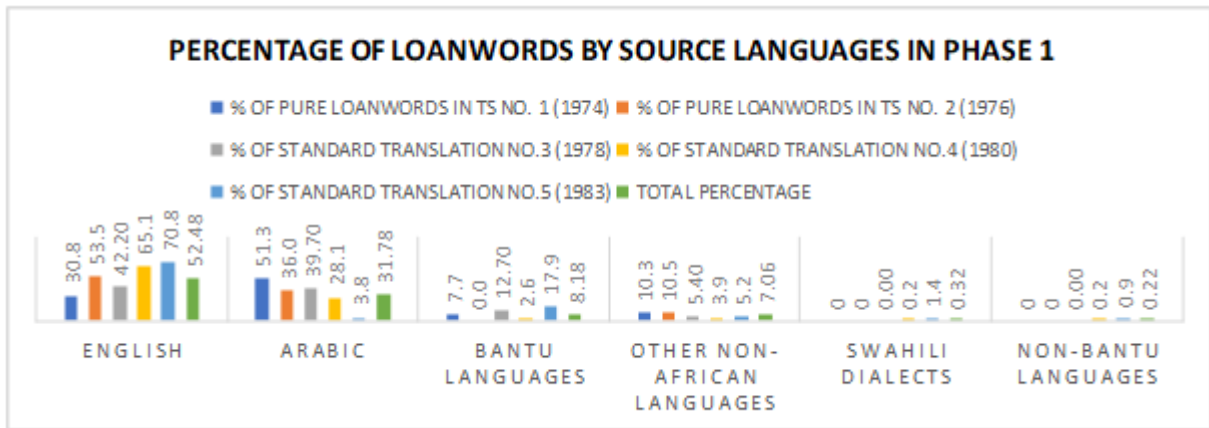


Figure 7 shows that English loans make 52.48 %, followed by Arabic with 31.78 % in all the technical subjects selected. Figure 7 also indicates that the Bantu languages of Tanzania are the third donor languages (8.18 %). The loanwords sourced from non-African loans constitute 4.9%, while non-standard Kiswahili dialects make up only 0.32 % and non-Bantu languages constitute 0.22 % of all the loanwords. On the one hand these findings indicate that *Ujamaa* linguistics did not aim at the Africanization of standard Kiswahili terminology (lexical purism), but on the other hand the findings indicate that the coiners also utilized native linguistic word stock from Tanzanian Bantu languages. In this period, however, by the political situation one would have expected a considerably lower degree of anglicisms and Arabic loans, but the contrary is the case. There was a contradiction between ideology and practice, as English continued to be the reference for Kiswahili terminological development. According the findings in Figure 7, it can be said that *Ujamaa* linguistics (the engineering phase) was not accompanied by lexical purism, as technical domains continued to extensively borrow loanwords of foreign origin, as summarized in Figure 7.

4.4.2.2. Phase 2: Liberalization 1 (1986 -2005)

This is the period where terminological activities were ‘no longer supported by those who were responsible for funding and guiding this kind of BAKITA’s activities, as in their eyes there was no market for the results of the standardization work’ (Legère, 2006:178). This is the period in which terminological activities were almost non-existent, as the government abandoned its ministerial responsibility for terminological development at BAKITA. From

1986 Tanzania was in a transition to a multi-party system due to social, political and economic pressure and in 1992, the government adopted the multi-party system. This marked a new beginning of Tanzanian politics, thus as a result, the country opened up to liberalization. Foreign organs became the main financier of terminological activities. For example, all the terminological activities involved in the production of KIST¹⁵² were fully funded by UNICEF, whereas the printing of TS no. 6 was funded by the Finnish Embassy. In addition, the printing of *Istilahi za Kiswahili* ‘Kiswahili technical terms’ (the collection of the six TS) was funded by *Mfuko wa Utamaduni Tanzania* ‘Tanzania Culture Trust Fund’. This fund was formed in 1998 by the governments of Tanzania and Sweden (through SIDA - Swedish International Development Cooperation Agency), but SIDA has been the main actor of the fund. Because the IK is compilation of all the six TS, it was excluded from the analysis. KIST and TS no. 6 are the only two terminological works which were considered for the analysis.

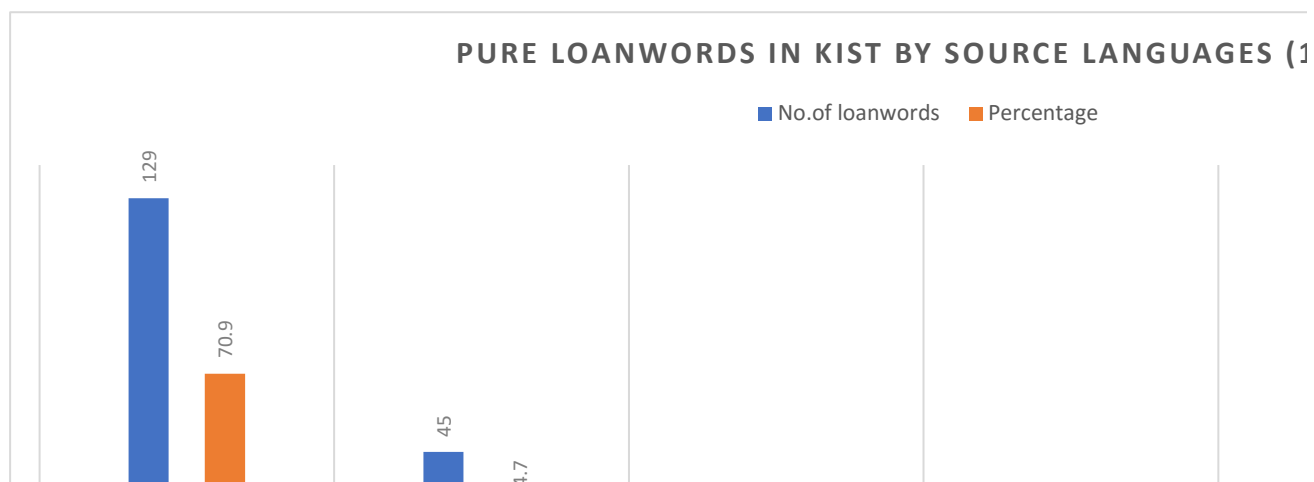
4.4.2.2.1. Loanwords in KIST and TS no.6

KIST was published in 1992 by BAKITA and has 34 pages with 496 lexical entries in seven domains, i.e., science (75), domestic science (119), decorative pottery, sisal fibres, bamboo and ornamental gourds (37), craftsmanship (128), and shoe fitting (10). It also contains terms in the fields of oil and fruit processing, as well as manufacturing of soaps (66), fabrication of bricks, and tiles (61). Since KIST is a technical dictionary, it is not organized as TS in which some technical subjects appear in different TS, thus as a result, there is no need to give the exact reference i.e., page(s) of the technical subjects named above. It is also important to note that KIST does not give etymological information of the two sets of loanwords (established and newly adopted loans) as it is with TS. The selected dictionaries (see section 3.3.1) which existed before *Ujamaa* period helped the researcher to exclude the old loans from the list so as to establish the newly formed loanwords and their sources. It should be again stressed that

¹⁵² KIST – *Kamusi ya Istilahi za Sayansi na Teknolojia* ‘A Dictionary of Scientific and Technological Terms’.

established loanwords were not treated as loanwords in this section. Newly formed loanwords were recorded in 197 out of 496 lexical entries, as shown in Figure 8 below:

Figure 8: Loanwords found in KIST

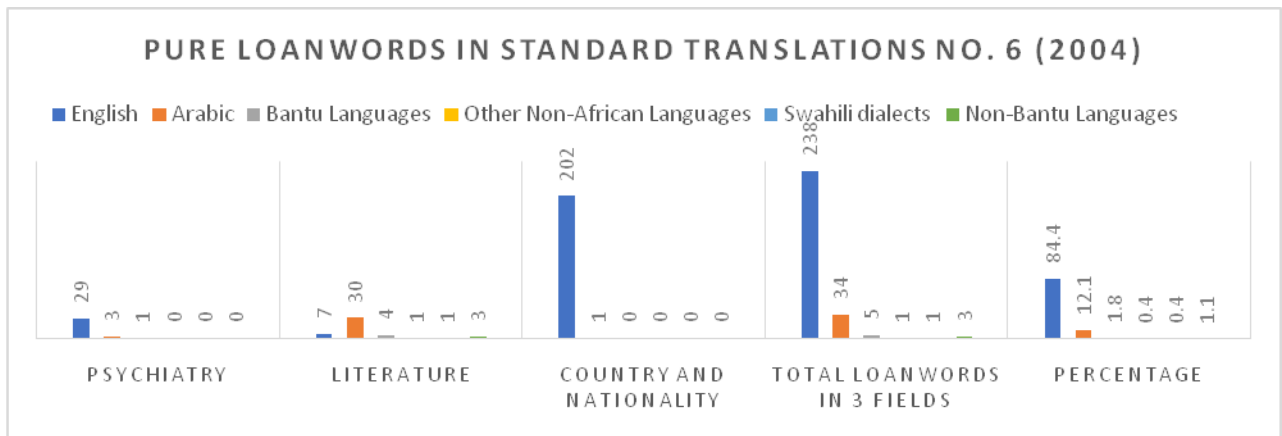


KIST contains numerous terms in various scientific and technological domains. It contains a higher percentage of English loanwords, i.e., 70.9 % than Arabic loans, which are as low as 24.7 %, less than half of the English loans. Such findings would also suggest that English is the first-choice source language of scientific and technical terms in Kiswahili, while other sources (Bantu-languages of Tanzania 2.2 %, other non-African languages 1.6%, Kiswahili dialects 0.5% and non-Bantu languages 0%) seem to be the last resort in expanding Kiswahili technical terminology.

TS no.6 is a 67-page edition accommodating 1,946 terms in the fields of HIV/AIDS (1301: pp 1-40), literature (243: pp 41-50), and psychiatry (172: pp 51-55). It also has 27 mixed technical terms (see page 56 of TS no.6), and 203 names of countries and nationalities (pp 61-67). Loanwords from the fields of literature, psychiatry and names of countries and nationalities have been selected to determine the lexical purism as reflected in BAKITA's priority sequencing of term sources in Kiswahili. The selected technical domains make up 618 terms which is 31.7% of the total terms, where 282 out of 618 (45.6%) have been identified as newly formed loanwords in the selected three semantic fields. As mentioned in section 3.3, the pre-*Ujamaa* period dictionaries helped to establish the newly formed loanwords from the

selected domains. Figure 9 shows the number of loanwords by source languages for each technical domain selected.

Figure 9: Loanwords in TS no. 6 found in 3 selected technical domains



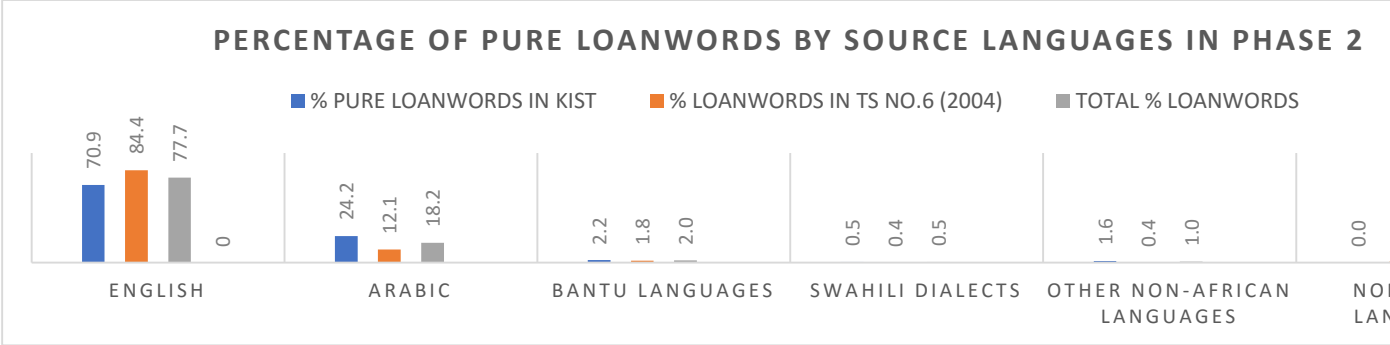
Names of countries and nationalities are all adapted from English except for the country name of Egypt which is Misri in Kiswahili; an Arabic adoptive which is an older loanword which does not originate from this phase of term engineering. The names are re-spelt into the Kiswahili alphabet and Kiswahili sound system. The analysis of loanwords in the selected technical domains from TS. No. 6 shows that Kiswahili has borrowed much of its literary terms from Arabic. The loanwords of Arabic origin hold 65.2% of all the loanwords in literature, while English has 15.2% and other sources are marginal. Kiswahili has borrowed much of its psychiatric terms from English (87.8%), whereas Arabic loanwords record 9%, Bantu languages of Tanzania have contributed 3% and the other sources have contributed nothing as indicated in Figure 9.

4.4.2.2.2. Percentage of loanwords by source languages in phase 2

A closer look at newly created loanwords found in KIST and in the selected technical domains reveals the same trend of Kiswahili borrowings as in phase 1 in which the findings show that the overall percentage of English loans is considerably higher in scientific and technological fields, whereas social sciences (politics in particular) have extensively incorporated established loans of Arabic origin. In Figure 10, it is shown that the distribution of loanwords originating from English across technical domains selected in KIST and TS no.6

are much higher than any loanwords sourced from the other sources, even when they are put together. In KIST English loans occupy 70.9%, followed by 24.2% of Arabic loans, then Bantu languages of Tanzania with 2%, while non-standard Kiswahili dialects and other sources are marginal. The same trend is repeated in the selected technical domains in TS no.6, as shown in Figure 10.

Figure 10: Loanwords by source languages in KIST and in 3 selected technical subjects in TS no.6



The trend of the use of anglicisms in the scientific and technological domains has been noted in phase 2, while Kiswahili has borrowed much of its literary terms from Arabic (see Figure 9). This tendency of using Anglicisms in the domains of pure and applied sciences and technology can be attributed to the fact that English is more developed in this respect (Mafela 2010), while in sources such as non-standard Kiswahili dialects, Bantu languages of Tanzania and other African languages the contrary is the case, hence have not significantly contributed in the selected technical domains. As pointed out in the previous sections, the data presented in phase 2 reveals a similar trend as in phase 1, since the selected technical domains continued to use extensively loanwords of foreign origin as shown in Figure 10, and therefore liberal policies did not also give much priority to native sources for the developments of Kiswahili technical lexicon.

4.4.2.3. Phase 3: Liberalization 2 (2005 to 2019)

This phase is characterized by the absence of TS in printed form. Unlike phases 1 and 2, there is no trace of aid from neither the government nor the non-governmental organizations to support terminological development works at BAKITA. In addition, standardization activities

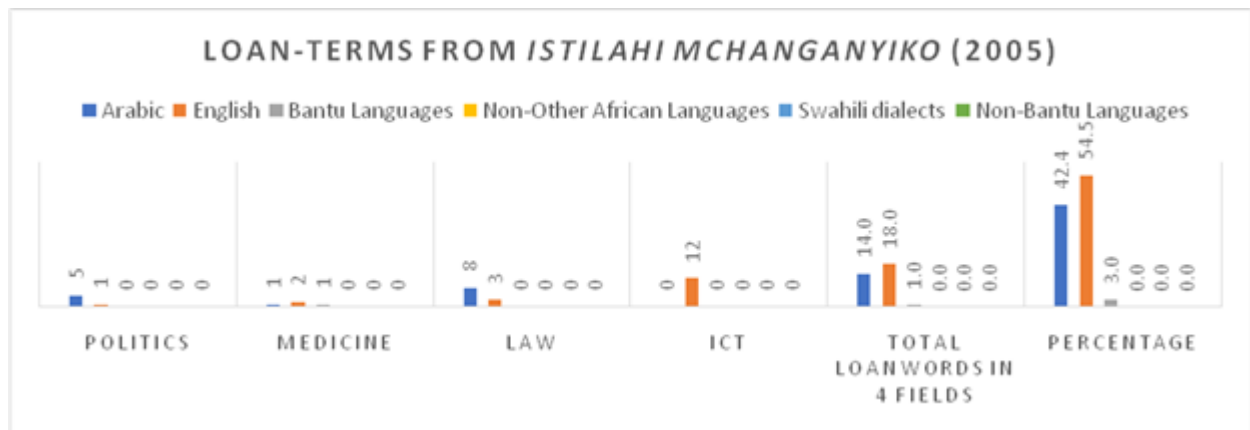
were almost non-existent in this period, except for two terminology lists, *Istilahi mchanganyiko* ‘mixed technical terms’ (2005) and meteorological terms (2019), which are not in print form.

4.4.2.3.1. Loanwords found in four selected fields from *Istilahi mchanganyiko* (2005)

A total of 435 terms were approved by BAKITA in the year 2005. They are called *Istilahi mchanganyiko* ‘mixed technical terms’ because the list of the technical terms does not specify the domains¹⁵³ to which the terms belong, hence the name. This list contains terms in various technical domains such as medicine, economics and trade, politics, technology, law, Information Communication Technology (ICT), education, research, national assembly, computer science. Loanwords from the fields of politics, law, ICT, and medicine have been selected to determine the lexical purism as reflected in BAKITA’s priority sequencing of term sources in Kiswahili. In these four selected domains, 50 loanwords have been identified. The percentage of Arabic loans in those terms is higher than in any other source language (see Figure 11). Arabic loans make up more than half (31 loanwords - 62%) of the total, followed by English (18 loanwords - 36%). With regards to loanwords from native sources, Bantu languages contribute one loanword (2%), but no Kiswahili dialect words or loanwords from other African languages have been traced in the four selected technical domains, as shown in Figure 11.

¹⁵³ BAKITA named the term list *Istilahi mchanganyiko* ‘mixed terms’ because they collected the English terms from various technical domains and coined their Kiswahili counterparts without grouping them according to their domains. *Istilahi mchanganyiko* is simply an English-Kiswahili terminology glossary without the semantic fields. All BAKITA’s terminology works, except *Istilahi mchanganyiko*, specify the technical domains of a particular terminology.

Figure 11: Loanwords by source languages found in *Istilahi Mchanganyiko* 2005

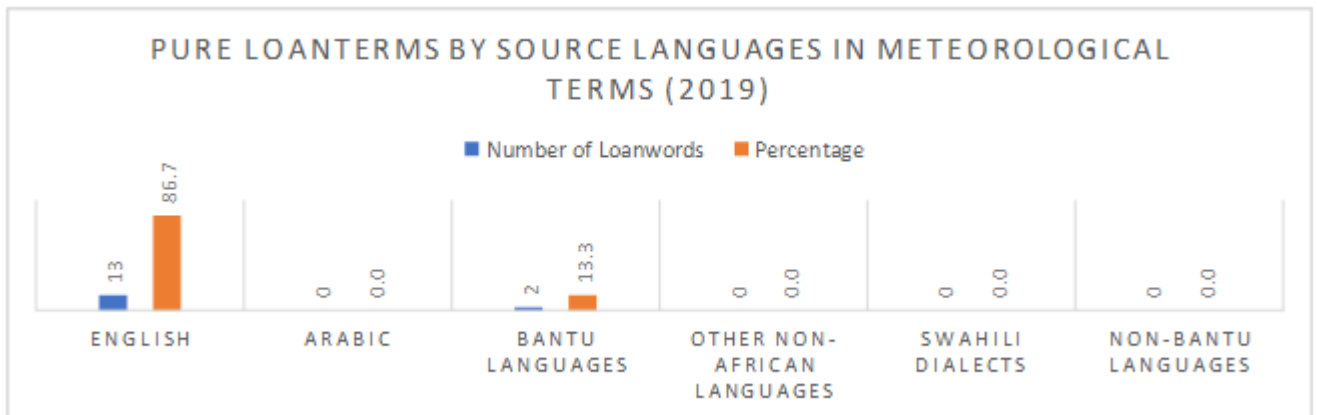


As can be seen in Figure 11, Kiswahili has borrowed its medical and ICT terms from English, where loanwords of Arabic origin significantly surpass anglicisms in the legal and political fields. Native sources have remained marginal since only one medical term (3%) was sourced from Bantu languages. All loanwords i.e., 12 (100%) in the field of ICT were adopted into Kiswahili from English and 50% of the loanwords (4) in medicine are anglicisms, respectively. Arabic loanwords occupy 83.3% (5 loanwords) of all the loanwords in the political field, while anglicisms hold 16% (1 loanwords). In addition, Kiswahili integrated a good number of newly created loanwords (8 loanwords – 72.2%) of Arabic origin in the field of law, while Kiswahili directly borrowed 3 lexical items (27.8%) from English.

4.4.2.3.2. Loanwords found in meteorological terms (2019)

A total of 145 meteorological terms were approved by BAKITA in the year 2019. The terms were submitted by the department of meteorology to BAKITA for standardization. The department of terminology and translation worked on these suggestions. This was followed by a meeting of experts from both sides where consensus was reached on all the items submitted to BAKITA. The experts from both sides formed a standardization committee, hence the approval of meteorological terms. A total of 15 newly formed loanwords out of 145 have been identified from the meteorological terms. A summary of loanwords by source language is shown in Figure 12.

Figure 12: Loanwords by source languages found in meteorological terms



As indicated in Figure 12, the percentage of English loans in those terms is higher than from any other source language. English loans make up more than half (86.7%) of the pure loanwords found in meteorological terms, followed by Bantu languages of Tanzania (13.3%). In regard to newly formed loanwords from other sources, there was no loanword from Arabic, and non-Bantu in meteorological terms.

4.4.2.3.3. Percentage of loanwords by source languages in phase 3

As shown in Figure 12, the percentage of English loans (70.6%) in phase 3 is greater than that of Arabic loans (21.1%), but the percentage of Arabic loans is higher in *Istilahi mchanganyiko* (2005) ‘mixed technical terms’ (see figures 10 and 12), especially in the political and legal fields, than in the field of meteorology (see figures 11 and 12). The difference in the percentage between English and Arabic loans is not great in *Istilahi mchanganyiko* (2005) ‘mixed technical terms’, but far greater in meteorology (see figure 12). As for Kiswahili loans sourced from African languages, a few Bantu-sourced loanwords are found in *Istilahi mchanganyiko* ‘mixed technical terms’ (3%) and meteorological terms (13.3%), but none from other sources, as indicated in Figure 13 below:

Figure 13: Loanwords by source languages found in 5 selected technical domains i.e., 4 from *Istilahi mchanganyiko 'mixed technical terms' (2005)* and *meteorology (2019)*

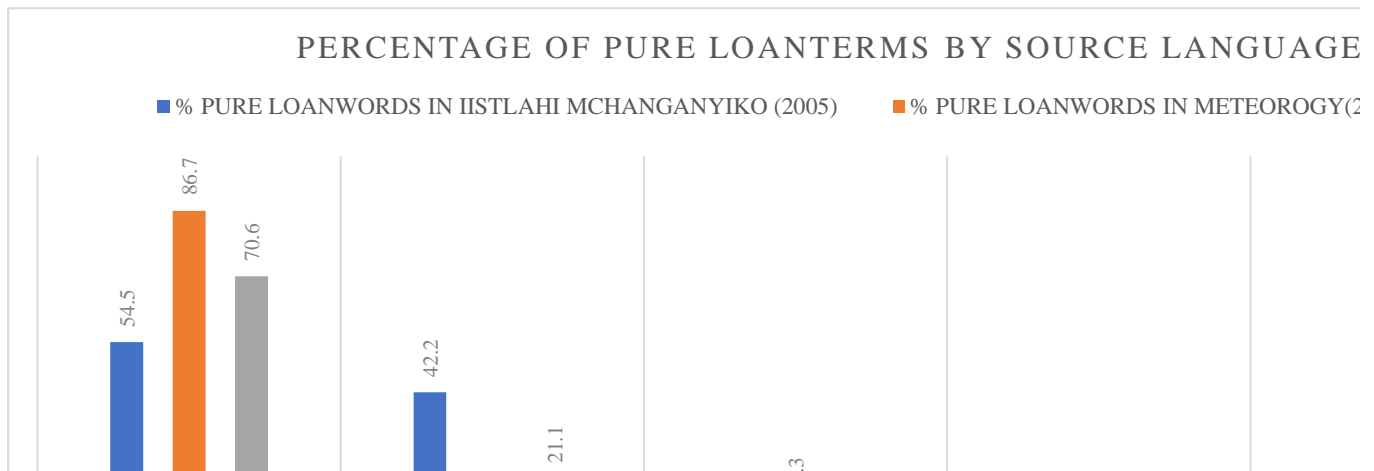
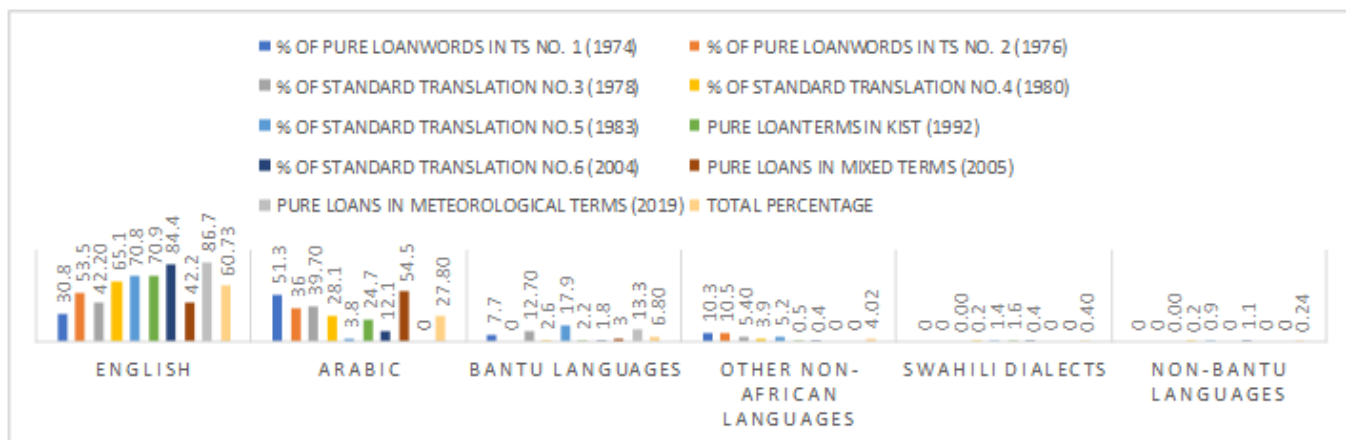


Figure 13 indicates that the percentage of English loans in the two issues is higher than from any other source language. English loans make up more than half (70.6%) of the loanwords found in *Istilahi mchanganyiko (2005)* and *meteorology (2019)*, followed by Arabic (21.1%), while Bantu languages of Tanzania rank third (8.15). There are no loanwords from Kiswahili dialects, other non-African languages and non-Bantu languages.

4.4.2.4. Summary of results of findings in the three phases of term engineering in Tanzania

Figures 7, 10 and 13 provide a summary description of corpora used in each phase of terminological engineering. They give us an opportunity to compare the dominance of source languages in all the selected technical domains in the three phases. The summary of all corpora used in the three phases is given in Figure 14 in which the highest percentage is occupied by English loans (60.73%), followed far behind by Arabic loans (27.8%). The Figure also shows that in all the three phrases other sources such as Bantu languages (6.8%), other non-African languages (4.02%), non-standard Kiswahili dialects (0.4%) and non-Bantu languages (0.24%) occupy the lowest percentages of loanwords in the selected technical subjects, as indicated in Figure 14. Nonetheless, Bantu languages of Tanzania is the third donor of Kiswahili technical terms.

Figure 14: Percentages of loanwords by source languages in 9 terminological publications



The findings in Figure 14 contradict BAKITA’s term-creation principles i.e., the order of term source priorities discussed in section 4.1. The findings give a clear picture of the use of African linguistic stock in the Kiswahili technical domains. The findings further indicate that some progress has been done regarding the implementation of the Cultural Policy document of 1997 (amended in 2014) which recognizes local languages as a major national heritage and proposes that they should be studied, researched and documented, as well as serving as a *resource base for enriching the national language* (Sera ya Utamaduni, 1997:17-18).

Furthermore, the analysis of loanwords in the three phases shows that the percentage of scientific and technological English terms increased significantly in the last two terminological publications of phase 1 (see figures 5 and 6). Phase 1 was characterized by loanwords mainly from English (52.48%), followed by Arabic with 31.78%, while the Bantu languages of Tanzania are the third donor languages (8.18 %). The other sources are marginal as loanwords sourced from non-African loans constitute 4.9%, while non-standard Kiswahili dialects make up only 0.32 % and non-Bantu languages constitute 0.22 % of all the loanwords. Additionally, in phase 2, Figure 8 reflects the higher number of anglicisms in the domains of science and technology as well as in names of countries and nationalities (see Figure 9). In phase 3, the percentage of anglicisms in ICT was 100% in all 12 identified

loanwords. The three phases have shown two interesting tendencies. One, the percentages of anglicisms are numerous in the domains of (pure and applied) sciences and technology, while the percentage of new loans of Arabic origin are marginal in those domains. Two, the percentage of loans of Arabic origin in the fields of social sciences has been maintained in all the three phases. Remarkably, the findings in Figure 14 indicate that Tanzanian terminologists put much emphasis on the adaptation of non-African loans in the creation of Kiswahili terms.

4.5. Term-formation methods

This section describes the methods of term-creation in standard Kiswahili. Before looking at the methods of term-creation, it is important to mention that it takes only a short time to realize that ways of purism are more or less the methods used to render terms and/or concepts into a borrowing language (cf. Valeontis and Mantzari 2006; Sus, 2004; Kiango, 1995; Mwansoko, 1992; BAKITA, 1990; Temu, 1984). Depending on the nature of the terminological work, two types of term-formation are distinguished: (i) primary term-formation and, (ii) secondary term-formation (Valeontis and Mantzari 2006:3). The former goes hand in hand with the ‘formation of a concept and is monolingual’, while secondary formation takes place when ‘a new term is created for an existing concept’. Secondary term-formation occurs first, ‘as a result of the revision of a term in the framework of a single monolingual community’ and ‘as a result of transferring knowledge to another linguistic community in which a corresponding term needs to be created’ (ibid). Primary term-formation differs considerably from secondary term creation in the following environments:

- (i) ‘There is no pre-existing linguistic entity in primary term-creation, while there is always an already existing term, which is the term of the source language, and which can serve as the basis for secondary formation
- (ii) Primary formation is quite often spontaneous, whereas secondary formation is more frequently subject to rules and can be planned’ (Valeontis and Mantzari, 2006:3).

Those explanations apply to the formation of technical terms in Kiswahili. First, coiners draw up a list of the English terms required in a particular field accompanied by suggestions in Kiswahili. Second, terminological development in Kiswahili is guided by principles and is a

planned activity undertaken by language organs. The choice of Kiswahili terms for English terms is guided by BAKITA's word-creation principles (see section 4.1). Therefore, terminological development in Kiswahili is mainly secondary term-creations, since Kiswahili terms are created for already existing concepts and terms in English. Methods of term formation for primary or secondary term-creations include direct borrowing, loan translation, compounding, derivation, semantic transfer, blending, conversion and abbreviation. Interesting to note here is that the term-creation methods utilized in Kiswahili are in line with Sus's (2004) methods of purism which include adaptation of loanwords (Section 4.5.1), loan translation and compounding (Section 4.5.2), semantic expansion (Section 4.5.3), derivation (Section 4.5.4), semantic specialization involving a zero morpheme (Section 4.5.5) and using native linguistic word stock for foreign words (Section 4.5.6).

4.5.1. Adaptations of non-African loanwords in Kiswahili

Once foreign lexical material is imported to a recipient language, it must adapt to the phonological and morphological systems of that language. Nearly all speakers import words into their word stock deliberately, as an act of language planning resulting from scientific and technical contacts, or unconsciously. Most non-African loanwords undergo adaptations when they enter Kiswahili. The adaptation of a loanword seems to be a balancing act between preserving certain aspects of the source word while still satisfying the constraints that make the lexical item sound like a word from the recipient language (Kager, 1999).

4.5.1.1 An overview of phonological adaptation of non-African loanwords in Kiswahili

Before phonological adaptations of non-African loans are discussed, it is important to briefly present Kiswahili phonemic inventory. With regard to Bantu languages, Nurse (1979:315) asserts that today such languages have acquired additional sounds through foreign loans and the sounds have become part of the phonological inventory. Phonological analysis shows that standard Kiswahili has 25 consonants, namely, /p, b, t, d, k, g, f, v, θ, ð, s, z, m, n, ɲ, ɳ, x, r, l, h, ʃ, ʧ, ʤ, ʥ, h/ (p, b, t, k, g, f, v, th, dh, s, z, m, n, ny, ng', kh, r, l, h,sh, ch, j, gh, h) and two

semi-vowels /w, j/ (w, y) (Massamba et al., 2004; Myachina, 1981; Polomé, 1967). It is acknowledged that the three fricatives¹⁵⁴ in brackets below, [θ, ð] and [ɣ] written as th, dh, gh, were borrowed from Arabic and occur in loanwords such as *theluji* ‘snow’, *dhuru* ‘damage’ ‘*lugha* ‘language’. While this is true, it is perhaps also important to note that such sounds also do occur in some Bantu languages of Tanzania e.g., *thithi* ‘we’ (Pare – G22); *omughaighoro* ‘old woman’ (Kuria – E43); *mdhungu* ‘European’ (Gogo - G11).

Table 16: Kiswahili consonant inventory

	Labials	Dentals	Alveolar	Palatal	Velar	Glottal
Plosives	p b		t d		k g	
Affricates				č ʝ		
Fricatives	f v	(θ ð)	s z	ʃ	(x* ɣ)	h
Nasals	m		n		ŋ ɲ	
Liquids			l r			
Glides	w			y		

Kiswahili is a Bantu language with a five-vowel system, transcribed as /i, ε, a, ɔ, u/ (i, e, a, o and u) and most scholars generally agree about this number of Kiswahili vowels (Polomé, 1967; Nurse and Spear, 1985; Nurse and Hinnebusch, 1993; Hyman, 2003; Maddieson, 2003; Jerro, 2018).

Table 17: Kiswahili vowel inventory

i	u
ε	ɔ
a	

Studies on Kiswahili vowels have raised issues related to the number of phonemes, monophthongs, diphthongs and vowel length distinction in Kiswahili (Choge, 2009). Most

¹⁵⁴ Some scholars (see Choge, 2009) add /x/ to the Kiswahili consonant inventory as a loan consonant, but the fact is that /h/ replaces [x], though [x] may surface in spoken Kiswahili especially among speakers whose L1 e.g., Nyaturu (F32), contain the sound and those who have some knowledge of Arabic.

scholars (Ashton, 1944; Polomé, 1967; Nurse and Hinnebusch, 1993; Massamba et al., 2004) do not consider Kiswahili as having diphthongs. While this may be true, Akidah (2013) records the five attested Kiswahili vowels and two diphthongs /ai/ and /au/, originating from Arabic, e.g., *lawayin* > *laini* ‘soft’ and *qawl* > *kauli*. However, there seems to be no crucial difference in pronunciation between the Arabic original of the so-called diphthongs as in *qawl* and their adaptation to Swahili as in *kauli*. The only difference actually resides in phonological interpretation. Where the Arabic source words indicate /ai/ and /aw/ are diphthongs, but in Kiswahili the vowels establish two different syllables with the second one undergoing automatic lengthening due to penultimate position i.e., [la.'i:.ni] and [ka.'u:.li]. In addition to the five vowels shown above, Choge (2009) has identified 5 long vowels /i: ε: a: o: u:/and 2 diphthongs /au/ and /ɔa/. It is not clear whether she discusses the 10 pure Kiswahili vowels on the level of both underlying representation and surface representation. Regarding diphthongs in Kiswahili, Polomé (1967) and Myachina (1981) observe that, in pronouncing the Arabic loanwords such as *lawayin* > *laini* ‘soft’ and *shauri* ‘advice’, the adjacent vowels i.e., **ai** and **au** may be articulated as diphthongs. However, these scholars do not consider **ai** and **au** as Kiswahili diphthongs. Moreover, Mwaliwa (2014:187) observes that ‘diphthongs /aw/ and /aj/ from modern standard Arabic are changed to simple vowels when loanwords adapt to Kiswahili structure’.

Table 18: Adoption of Arabic diphthongs in Kiswahili

Arabic	Kiswahili loan-form	Gloss
1. /ʃajx/	<i>shehe</i> /ʃɛhɛ/	‘sheikh’
2. /dʒajʃ/	<i>jeshi</i> /ʒɛʃi /	‘army’
3. /xawf/	<i>hofu</i> /hɔfu/	‘fear’
4. /mawla/	<i>mola</i> /mɔla/	‘God’

Source: Mwaliwa (2014:188)

From the examples in Table 18, the Arabic diphthong /aw/ becomes /ɔ/ and /aj/ adapts to /ɛ/ in Kiswahili. However, when the English words with falling diphthongs /ai, ei, ou/ are borrowed into Kiswahili, such sounds are simplified and adapted as /i/ or /ai/, /ɛ/ and /o/, as shown in Table 19.

Table 19: English diphthongs adaptations in Kiswahili

-
1. /haɪpənɪm/ > /hipənimi/ aɪ → ɪ ‘hyponym’
 2. /maɪl/ > /maili/ aɪ → ai ‘mile’
 3. /leɪbə/ > /leba/ eɪ → ε ‘labour’
 4. /nəʊvembə/ > /nɔvɛmba/ oʊ → ɔ ‘November’
-

Conclusively, Kiswahili allows vowel hiatus and therefore diphthongs can either be adapted as heterosyllabic vowel sequences or undergo monophthongization¹⁵⁵ in Kiswahili. Based on that statement diphthongs are not included in the vowel inventory of standard Kiswahili.

Regarding vowel length in Kiswahili, all vowels in penultimate position are automatically long, i.e., vowel length in Kiswahili is not phonemic but phonetic. Therefore, only the Kiswahili phonemic inventory will be considered in this section.

Table 20: Vowel length and stress in Kiswahili

-
1. *pinda* [pi:nda] ‘bend, fold, turn’
 2. *tarumbeta* [tarumbɛ:ta] ‘trumpet’ (English)
 3. *gwaride* [gwari:dɛ] ‘parade’ (Portuguese)
 4. *foronya* [fɔrɔ:nya] ‘pillow case’ (Portuguese)
 5. *punda* [pu:nda] ‘donkey’
 6. *ripoti* [ripɔ:ti] ‘report’ (English)
 7. *dhaiifu* [ðai:fu] ‘weak’ (Arabic)
 8. *daftari* [dafta:ri] ‘ledger’ (Arabic)
 9. *funua* [funu:a] ‘uncover’
-

¹⁵⁵ Monophthongization refers to phonological process involving the change of a diphthong to a simple vowel (Lyle, 1998:40 cited in Mwaliwa, 2014:187)

Table 20 gives a more detailed overview of vowel-length and stress in Kiswahili. Irrespective of the rhythmic pattern of a source word (see loanwords no. 2, 3, 4, 6, 7 and 8 in table 21), Kiswahili dictates vowel-length and stress on the penultimate syllable.

Foreign words undergo restructuring in order to fit into the sound system of the borrowing language. This is to make foreign words ‘conform to the surface phonological structure of the native language’ (Peperkamp and Vendelin, 2004: 129 quoted in As-Sammer, 2015:3). Thus,

Table 21: Examples of foreign sounds replaced by Kiswahili sounds

Foreign segment	Kiswahili equivalent	loanword	Source language	Kiswahili loan-form	English gloss
1. /æ/	/a/	atom	English	/atɔmu/	
2. /ə/	/a/	collar	English	/kɔla/	
3. /q/	/k/	nafaqa(t)	Arabic	/nafaka/	‘grain’
4. /ʔā/	/a/	ʔāla(t)	Arabic	/ala/	‘tool’
5. /ʒ/	/š/	television	English	/tɛlevisheni/	
6. /x/	/h/	xawf	Arabic	/hɔfu/	‘fear’
7. /dʒ/	/ʒ/	ğaiš	Arabic	/ʒɛʃi/	‘army’

As seen in Table 21, non-Kiswahili sounds often assimilate to their nearest equivalents through replacement. Usually, foreign sounds which correspond to the same Kiswahili sounds are simply absorbed without changes.

Vowel epithesis¹⁵⁶, e.g., *film* (English) > *filamu* is used in Kiswahili to break up consonant clusters in foreign loans. All Kiswahili vowels can appear at word-final position¹⁵⁷.

¹⁵⁶ Addition of a vowel at the end of the loanwords

¹⁵⁷ However, /a/, /i/ and /u/ are preferred to occur as final vowels in foreign loans. The vowel /a/ can appear with all sounds except bilabials /p, b, m/ and labiodentals /f, v/. The vowel /u/ occurs after consonants /p, b, f, v, m/, whereas /a/ replaces English –er, –re, and –or, as an equivalent pronunciation of /ə/ appearing at word-final position, e.g., labour /leɪbə/. The vowel /a/ also occurs as a structural final sound as in post > *posta*, vein > *vena*. The final vowel /o/ is rarely used and it occurs in loanwords such as towel > *taulo*, constable > *konstebo* (Ohly, 1987).

Table 22: Vowel epithesis in Kiswahili loanwords sourced from English

English	Kiswahili
1. metal /mɛtl/	<i>Metali</i>
2. bolt /bɔʊlt/	<i>Bolti</i>

Source: BAKITA (2005)

Examples in Table 22 show that closed syllables at word final position of the English source words are changed to be distributed across two open syllables by epithesis.

Vowel epenthesis, an addition of a vowel to the interior of a word, specifically before the last consonant e.g., *bahr* (Arabic) > *bahari* ‘sea, ocean’, *barf* (Persian) > *barafu* ‘ice, snow’, is another phonological process involved in breaking up consonant clusters in Kiswahili. It seems as if there is no clear phonological criterion to predict vowel insertion in the word-medial position. For instance, in the English loanword ‘driver’/draɪvə/ > *dereva* /dereva/, the initial consonant cluster *dr* is broken by /e/, where /aɪ/ changes to /e/ based on a principle of simplification of the diphthong to a monophthong. Yet, the initial consonant cluster in some loanwords is retained in Kiswahili loan-forms e.g., ‘draft’ > *drafti*, ‘shaft’ > *shafti*. In standard Kiswahili, ‘epenthetic vowel insertion is a common mechanism in the nativization of clusters which precede the stressed position of a word (which is usually on the penultimate syllable in Kiswahili) and full vowel insertion is usually found on the stressed penultimate syllable’ (Batibo, 2002:5).

4.5.1.2. An overview of morphological adaptation of non-African loanwords in Kiswahili

Morphological adaptation of loanwords is concerned with the placement of loanwords in morphological patterns. The allocation of loanwords to noun classes and the participation of loanwords in further morphological processes such as inflection and derivation are the core morphological adaptations of loanwords in Kiswahili. The noun class system of Kiswahili is

that of the Bantu languages. All Kiswahili nouns are assigned to 12¹⁵⁸ noun classes and are distinguished by their prefixes, known as noun class prefixes (NPx) and on their concords in syntactically dependent agreement targets. Loanwords are assigned to noun classes based on phonological and semantic criteria. Sometimes the allocation of loanwords to noun classes is influenced by the similarity between the initial syllable of a loanword and a Kiswahili noun class prefix, compare ‘muscle’ > *mu-suli* (cl.4/5, *mu-/mi-*), (Arabic) *kitāb* ‘book’ > *ki-tabu* (cl. 7/8, *ki-/vi-*).

Finding common semantic principles that preside over the assignment of Bantu nouns to noun classes has sparked a debate among Bantu scholars. Contini-Morava (2007) points out that some scholars take the view that noun class systems are purely formal, with little or no semantic coherence (Richardson 1967) while others have defined each class on the basis of a single abstract meaning (Zawawi 1979) and yet others have identified semantic patterns within each class but also state that there is a great deal of arbitrariness (Ashton, 1944; Myachina, 1961 (1981); Polome 1967, among many others). Kiswahili noun classes are somewhat predictable semantically. For example, gender 1/2 holds nouns referring to human beings; plants and trees are in cl. 3/4, while artefacts, diminutives and tools tend to belong to cl. 7/8 and collectives and liquids are found in cl. 5/6. However, an influx of foreign loanwords into Kiswahili has resulted into compromising the semantic content associated with Kiswahili noun classes (Nurse and Hinnebusch, 1993). Consequently, scholars (see, for instance, Contini-Morava, 2007) have shown interest in looking at the continuity and change in the noun class system of Kiswahili.

In most cases all nouns that occur in a particular class bear the prefix of that class, except for nouns in classes 5 and 9. These classes accommodate a large number of foreign loanwords, especially class 9. Regardless of semantic content, the phonological factor determines the

¹⁵⁸ The locative classes 16-18 are excluded in ‘the traditional Bantu numbering system, because no nouns belong to these classes in Kiswahili’.

(Morava: <http://www2.iath.virginia.edu/Kiswahili/oldversion/Kiswahili.html#3> retrieved on 02.08.2019 at 11.59 am).

allocation of most borrowed nouns to genders 5/6 or 9/10, since these noun classes have a zero-prefix allomorph. Consequently, nouns in those classes find themselves fluctuating between the two classes. Such fluctuation is not motivated by the *autonomous use of noun classes* and is therefore not a derivational process. In a discourse, it is not unusual to hear the following constructions indicated in Table 23:

Table 23: Double membership of class 5 and 9 loan nouns

-
1. cl. 9 *shati hii ni nzuri* ‘this shirt is nice’
 cl. 10 *shati hizi ni nzuri* ‘these shirts are nice’
 2. cl. 5 *shati hili ni zuri* ‘this shirt is nice’
 cl. 6 *mashati haya ni mazuri* ‘these shirts are nice’
 3. cl. 9 *gari hii ni nzuri* ‘this car is beautiful’
 cl. 10 *gari hizi ni nzuri* ‘these cars are beautiful’
 4. cl. 5 *gari hili ni zuri* ‘this car is beautiful’
 cl. 6 *magari haya ni mazuri* ‘these cars are beautiful’
-

In Table 23, the English borrowed noun *shati* ‘shirt’ may alternate between the two genders. The movement of nouns between these two classes involves even established borrowed nouns as with other nouns, such as *kamusi* (Arabic) ‘dictionary’, *gari* (Hindi) ‘car’, *jenereta* ‘generator’¹⁵⁹.

Almost all classes form genders on the basis of singular/plural pairs, e.g., 1/2, 3/4, 5/6, 7/8, 9/10, 11/6, and 11/10. The assignment of nouns to noun classes places nouns in the concordial system of Kiswahili. Basically, there are three types of concords - nominal, verbal, pronominal.¹⁶⁰

¹⁵⁹ BAKIZA²⁰¹⁰ assigns *kamusi*, *jenereta*, *shati* and *gari* to class 9/10 while BAKITA²⁰¹⁵ place them in class 5/6.

¹⁶⁰ See Polomé (1967:94)

Table 24: Examples of allocation of loanwords to the Kiswahili noun class system

NP	NPx	Example	APx	PPx	Semantic content
1	<i>m(u-)</i>	<i>mhandisi</i> (Arabic) 'engineer'	<i>m-</i>	<i>yu, a</i>	Animates
2	<i>w(a-)</i>	<i>Wahandisi</i> 'engineers'	<i>wa-</i>	<i>wa-</i>	
3	<i>m-</i>	<i>muoki</i> 'oak'	<i>m-</i>	<i>u-</i>	trees, plants
4	<i>mi-</i>	<i>mioki</i> 'oaks'	<i>mi-</i>	<i>i-</i>	
5	<i>ji-/Ø</i>	<i>daktari</i> 'doctor'	<i>ji-</i>	<i>li-</i>	collectives, liquids,
6	<i>ma-</i>	<i>madaktari</i> 'doctors'	<i>ma-</i>	<i>ya-</i>	augmentatives, natural phenomena
7	<i>ki-/ch-</i>	<i>kiberiti</i> (Hindi, Arabic) 'match'	<i>ki-</i>	<i>ki-</i>	artefacts, diminutives,
8	<i>vi-/vy-</i>	<i>viberiti</i> 'matches'	<i>vi-</i>	<i>vi-</i>	manner, instruments, languages
9	<i>n-/Ø</i>	<i>nati</i> 'nut' <i>samaki</i> (Arabic) 'fish'	<i>n-</i>	<i>i-</i>	animals, loanwords
10	<i>n-/Ø</i>	<i>nati</i> 'nuts' <i>samaki</i> 'fish'	<i>n-</i>	<i>zi</i>	
11	<i>u-</i>	<i>ubao</i> (Portuguese) 'board'	<i>m-</i>	<i>u-</i>	abstracts, long objects
10	<i>n-</i>	<i>mbao</i> (Portuguese) 'board'	<i>n-</i>	<i>zi-</i>	
15	<i>ku-</i>	<i>kulehemu</i> (Arabic) 'soldering'	<i>ku-</i>	<i>ku-</i>	Infinitives

16	<i>-ni</i>		<i>pa-</i>	<i>pa-</i> (near)	locatives ¹⁶¹
17	<i>-ni</i>		<i>ku-</i>	<i>ku-</i> (far)	
18	<i>-ni</i>		<i>mu-</i>	<i>mu-</i> (within)	

Kiswahili derivational patterns are used to incorporate loanwords, compare *bunge*¹⁶² (5/6) ‘national assembly’ > *mbunge* (1/2) ‘member of parliament’, *ubunge* (11) ‘membership of national assembly’. Kiswahili itself is an Arabic loanword *sāḥil* ‘coast’ where derivations such as *mswahili* (1/2) ‘a Swahili person’, *Kiswahili* (7/8) ‘the Swahili language’, *uswahili* (11) ‘swahiliness’ are formed from the loanword.

When verbs of Arabic origin assimilate to Kiswahili grammatical patterns, **-a** derives a noun from a loan verb which has another vowel in the end such as i, e, u, due to its non-Bantu origin. However, the end vowels of Arabic loans may be carried over into the nouns they form in Kiswahili and **-a** is added to the end vowel of the loan word, as in *abiria* ‘passenger’ as shown in Table 25 below:

Table 25: Deriving Kiswahili nouns from Arabic loan verbs by the suffix *-a*

verbal form	nominal form
1. <i>tubu</i> ‘repent’	<i>toba</i> ‘repentance’ u > a
2. <i>samehe</i> ‘forgive’	<i>msamaha</i> ‘forgiveness’ e > a
3. <i>safiri</i> ‘travel’	<i>msafara</i> ‘procession’ i > a
4. <i>abiri</i> ‘travel’	<i>abiria</i> ‘passenger’ i + a

Source: Choge (2009:70).

¹⁶¹ No other nouns belong to this class except for the noun *mahali* ‘place’ and for this reason locative classes are called *ngeli za mahali*. However, nearly all nouns can become place nouns by adding a suffix **-ni** to a nominal stem with the exception of proper nouns.

¹⁶² Bantu loanword sourced from Ha (D66).

Moreover, the Kiswahili causative morpheme **-ish** and the final vowel **a** can be added to loanwords, mainly nouns (and adjectives) and the loanwords can further participate in Kiswahili morphological processes as shown in Table 26.

Table 26: *-ish* derivation in Kiswahili technical terms

Gloss	Kiswahili	Derivation	loan form	source word
1. standardize	<i>Sanifisha</i>	<i>usanifishaji</i>	<i>sanifu</i>	ṣannafa (Arabic)
2. nationalize	<i>Taifisha</i>	<i>Utaifishaji</i>	<i>taifa</i>	ṭā'ifa (Arabic)
3. mineralize	<i>Madinisha</i>	<i>umadinishaji</i>	<i>madini</i>	ma'din (Arabic)
4. gasify	<i>Gesisha</i>	<i>Ugesishaji</i>	<i>gesi</i>	gas (English)

Source: BAKITA (2005).

4.5.2. Loan translations and compounding

Loan translation is a word creation technique used to replace loanwords where the 'native language uses an item-for-item native version of the original' and 'loanword' itself is a loan-translation or a calque of the German *Lehnwort* (Hoffer, 2005:54). Quite often the coiners of Kiswahili technical terms borrow the concepts and attach them to the existing Kiswahili word stock¹⁶³, as shown in Table 27.

Table 27: *Loan translations in Kiswahili*

gloss	Kiswahili	components
2. language barrier	<i>kikwazo lugha</i>	<i>kikwazo</i> 'barrier' + <i>lugha</i> 'language'
2. concrete sound	<i>sauti halisi</i>	<i>sauti</i> 'sound' + <i>halisi</i> 'concrete'
3. clinical linguistics	<i>isimu tiba</i>	<i>isimu</i> 'linguistics' + <i>tiba</i> 'clinical'
4. terminal stress	<i>mkazo mwisho</i>	<i>mkazo</i> 'stress' + <i>mwisho</i> 'end'
5. pharyngeal cavity	<i>chemba koromeo</i>	<i>chemba</i> 'cavity' + <i>koromeo</i> 'pharynx'
6. finite verb	<i>kitenzi ukomo</i>	<i>kitenzi</i> 'verb' + <i>ukomo</i> 'limit'

¹⁶³ Comprises all established loanwords.

A look at the examples in Table 26, the items 1, 2, 3, 4, 5 and 6 reveals that Kiswahili loan translations have preserved the English structural pattern¹⁶⁴ i.e., they have been formed from English compounds. Semantically, loan translations in most cases seem to be easier to understand¹⁶⁵ than compounds when the components (compare examples in Tables 27 and 28). New terms which are created by means of compounds often acquire new meanings in such a way that the meanings are not predictable based on the components, as indicated in Table 28.

Table 28: *Compounding in Kiswahili*

English	Kiswahili	components of Kiswahili terms
1. shareholder	<i>mwana hisa</i>	<i>mwana</i> ‘member’ + <i>hisa</i> ‘share(s)’
2. train	<i>gari moshi</i>	<i>gari</i> ‘car’ + <i>moshi</i> ‘smoke’
3. proper noun	<i>nomino pekee</i>	<i>nomino</i> ‘noun’ + <i>pekee</i> ‘alone’

From what is presented in Table 28, the Kiswahili compounds have acquired entirely new meanings. For example, *mwana* literally ‘child’, as first part in compounds has developed another meaning such as ‘member’, as attested widely in coinages such as *mwana simba* ‘member of Simba sports club’ *mwana siasa* ‘politician’, and *mwana isimu* ‘linguist’. The words *mwana* ‘member’ and *hisa* ‘share(s)’, when combined together, they form a new word with a new meaning, *mwana hisa* ‘shareholder’ loosely translated as childshare(s). Semantically, loan translations in most cases seem to be easier to understand¹⁶⁶ than compounds based on the components in Tables 27 and 28.

4.5.3. Semantic expansion

Semantic expansion is a process whereby the meaning of a lexical item extends to accommodate other related or unrelated meanings. Nearly all languages use semantic expansion as a term-creation technique. Developers of Kiswahili terms attach new concepts to

¹⁶⁴ Note that modification in Kiswahili occurs after the head while modification is predominantly pre-nominal in English.

¹⁶⁵ For more details on loan translations and compounds refer to Bader (1994:94).

¹⁶⁶ For more details on loan translations and compounds refer to Bader (1994:94).

native words by extending their meanings. The new meaning created through extension becomes the specialized meaning, hence referent 2 (R 2), while the already existing meaning is conveyed through referent 1 (R1), as shown in Table 29 adopted from BAKITA (2005).

Table 29: Semantic expansion

R1	Kiswahili	R2	semantic field
1. rhinoceros	<i>kifaru</i>	tank	army
2. bird	<i>ndege</i>	aeroplane	aircraft
3. tick	<i>kupe</i>	exploiter	politics
4. blunt	<i>butu</i>	<i>obtuse</i> angle	mathematics
5. peak	<i>kilele</i>	climax	literature
6. hole	<i>tobo</i>	tunnel	railway
7. navel	<i>kitovu</i>	centre	mathematics
8. potsherd	<i>kigae</i>	tile	masonry

Source: BAKITA (2005)

Table 28 shows semantic adaptation from a foreign concept (English) to a native concept. In those examples, the semantic connection is felt between R1 (non-technological meaning) and R2 (terminological meaning). Mhina (1976) gives a historical development of the term *ndege Ulaya* ‘aeroplane’ where an aeroplane was associated with a flying creature, *ndege* ‘bird’ in Kiswahili. Because the first aeroplane in East Africa came from Europe the qualifier *Ulaya* ‘Europe’ was added to the term *ndege* hence the term *ndege Ulaya*, literally ‘bird of Europe’. It seems here that the metaphor was originally distinguished explicitly from the source concept by the addition of the modifier *Ulaya* ‘Europe’. As can be seen, the original coinage was a compound, i.e., *ndege Ulaya*, in which – probably due to frequency of usage - the qualifier *Ulaya* ‘Europe’ has been dropped today. It is seen that the Kiswahili term for aeroplane was coined on account of the similarity of the shape and soaring characteristic nature between aeroplane and *ndege* ‘bird’ and source-location *Ulaya* ‘Europe’.

4.5.4. Derivation

Derivation is a word formation process which involves affixation. Derivational affixes mark a change in the meaning of a word and they can occur as suffixes (Section 4.5.4.1) or prefixes (Section 4.5.4.2).

4.5.4.1. Derivational suffixes

4.5.4.1.1. Nominal suffixes: Deverbal Derivation

Nominal suffixes i.e., *-i*, *-e*, *-u*, *-o*, *-a* and *-aji* are used to derive nouns from verbs by attaching suffixes after the verbal roots. Verb-to-noun derivation involves both suffixation and prefixation. The prefix assigns the derived noun to a noun class. For example, the suffix *-i* derives agent nouns from verbs, e.g., *fukuza* ‘chase’ > *ki-fukuz-i* (7/8) ‘repellant’, *-e* used to form patient nouns, e.g. *tuma* ‘send’ > *m-tum-e* (1/2) ‘apostle’, *-o* forms nouns referring to results of actions, instruments and also refers to the implement which performs actions e.g. *vuta* ‘pull’ > *m-vutan-o* (3/4) ‘gravity; tension’, *-u* state e.g. *nyumbua* ‘stretch; lengthen’ > *-u-nyumbuf-u* (11) ‘elasticity’, *fika* ‘arrive’ > *ku-fik-a* ‘arrival’ and *-aji* is used to create an agent denoting habituality, e.g., *m-chez-aji* (1/2) ‘player’ (*cheza* ‘play’), however, when *-aji* occurs with the class-prefix *u-*, it expresses the abstraction of the habitual action e.g., *u-meng’eny-aji* (11) ‘digestion’ (*meng’enya* ‘digest’). All the suffixes replace the verb-end morpheme *-a*, except the suffix *-aji*, as shown in (e) and (g) in Table 30.

Table 30: Noun-verb derivation by suffixes

gloss	Kiswahili	
1. abrasive	<i>kichubuzi</i> (7/8)	< <i>chubua</i> ‘abrade, bruise’
2. antibody	<i>zindiko</i> (5/6)	< <i>zindika</i> ‘protect with magic’
3. vaccine	<i>chanjo</i> (9/10)	< <i>chanja</i> ‘chop, incise’
4. retardation (growth)	<i>udumavu</i> (11)	< <i>dumaa</i> ‘retard, stunt’
5. distillation	<i>ukenekaji</i> (11)	< <i>keneka</i> ‘distil’
6. evaporator	<i>kivukizi</i> (7/8)	< <i>vukiza</i> ‘evaporate’

 Source: BAKITA (2005)

4.5.4.1.2. Adjectival suffix

The adjectival suffix – **u** is used to form adjectives from verbs of quality (Schadeberg, 2003, 1992). The suffix -u changes the preceding k to f or v and the preceding l to v or f e.g., *dumaa* ‘stunt’ → *dumavu* ‘stunted’ (< **dumala*¹⁶⁷ → *dumavu* ‘stunted’) and *okoka* ‘to be served’ → *wokovu* ‘salvation; deliverance’.

Table 31: Verb-adjective derivation by the suffix -u

Gloss	Kiswahili	Kiswahili parent form
1. <i>elastic</i>	<i>nyumbufu</i>	<i>nyumbua</i> ‘lengthen’
2. <i>extensive farming</i>	<i>kilimo tandavu</i>	<i>tanda</i> ‘extend, spread’
3. <i>radiant heat</i>	<i>joto angavu</i>	<i>ng’aa</i> ‘shine’
4. <i>estuarine delta</i>	<i>delta nyoofu</i>	<i>nyooka</i> ‘straight’
5. <i>stunted</i>	<i>dumavu</i>	<i>dumaa</i> ‘stunt’

 Source: BAKITA (2005)

Bolded words *tandavu* ‘extensive’ *angavu* ‘radiant’ and *nyoofu* ‘straight’ in Table 31 examples 2, 3 and 4 function as adjectives which have been combined with three different head nouns i.e., *kilimo* ‘farming’, *joto* ‘heat’ and *delta*, respectively. Generally, adjectives take a noun prefix in agreement with the head noun¹⁶⁸, but none of the adjectives seem to show any agreement here which is most obvious, for instance, example 2. In a syntactic construction, *kilimo* ‘farming’ would demand a noun prefix (NPx) *ki-* on the adjective *tandavu* ‘extensive’, which is obviously not *kilimo *ki-tandavu* in example 2. Therefore, the items in 2, 3 and 4 are analyzed as special compounds of noun + adjective in which the adjective lacks a concord with the head noun.

¹⁶⁷ The form **dumala* represents and/or reflects the forms prior to the loss of intervocalic /l/ in Kiswahili which re-surfaces in verbal extensions, hence **dumal* + **u** → *dumavu* ‘stunted’.

¹⁶⁸ Schadeberg (2003:81).

Further derivation of those adjectives may result to nouns of quality, which are assigned to class 11 and sometimes assigned to animate gender i.e., 1/2 as shown in Table 32.

Table 32: Nouns of quality derived from the adjectival stems by the noun class prefix *u-*

Gloss	Kiswahili	quality noun/ abstracts	human beings
1. elastic	<i>nyumbufu</i>	<i>unyumbufu</i> ‘elasticity’	
2. extensive	<i>tandavu</i>	<i>utandavu</i> ‘extensiveness’	
3. radiant	<i>angavu</i>	<i>uangavu</i> ‘radiance’	
4. estuarine (delta)	<i>nyoofu</i>	<i>unyooofu</i> ‘integrity’	<i>mnyooofu</i> ‘integer person’
5. retard	<i>dumavu</i>	<i>udumavu</i> ‘retardation’	<i>mdumavu</i> ‘retarded person’

Source: BAKITA (2005)

4.5.4.1.3. Verbal suffixes: Accusative formation

Terminology developers also use verbal suffixes to derive verbs from adjectives (see Table 33) as a strategy to replace loanwords in Kiswahili. The most productive and frequently used verbal suffix in term formation is the causative *-ish*. In standard Kiswahili there are many allomorphs of the causative morpheme. According to Ngonyani (2017), there are two types of causative suffixes in Kiswahili. The first type is the short causative includes *-z*, *-y*, *-sh*, while the second type is the long causative comprising *-ish*, *-esh*, *-ez*, *-iz* depending on the rule of vowel harmony.

Table 33: Verbs derived from adjectives by the suffix *-sh*

gloss	Verb	adjective
1. ferment	<i>chachusha</i>	<i>chachu</i> ‘bitter, sour’
2. humidify	<i>nyevusha</i>	<i>nyevu</i> ‘humid’
3. minify	<i>katitisha</i>	<i>katiti</i> ‘small, little’
4. sensitize	<i>nyetisha</i>	<i>nyeti</i> ‘sensitive’

Source: BAKITA (2005).

Table 33 indicate that the short causative suffix *-sh* is used to derive verbs from adjectives. The other short causative morphemes bring changes in the stem-final consonants as in *lala* ‘lie down, sleep’ > *laza* ‘cause someone or something to lie down, sleep’ and as in *ona* ‘fear’

> *onya* ‘warn; cause someone to see’. One or more suffixes can be attached to the root and the meaning of each suffix is expressed in a derived form, as with *pandikiza* ‘cause a seedling to be grafted’. In *pandikiza*, the meaning of each suffix **-ik**, expressing potentiality, and **-iz**, expressing causation, should be taken into account when translating the term into English or any other language.

4.5.4.2. Derivational use of noun class prefixes

This sub-section is about noun-to-noun derivation in which nouns are formed from other nominal stems by shifting them from one class to another. A noun class shift is more or less motivated by meaning change ‘which most clearly shows (some of) the semantic content of Bantu nominal class’ (Schadeberg, 2003). Noun shifts can also be referred to as ‘derivational’ or ‘autonomous’ use of noun class assignment (ibid) as shown in Table 34.

Table 34: Derivational use of noun class prefixes

English	Kiswahili	derived form
1. knitter	<i>mfumaji</i> (1/2)	<i>kifumaji</i> (7/8) ‘knitter – non human’
2. lubricator	<i>mlainishaji</i> (1/2)	<i>kilainishaji</i> (7/8) ‘lubricator – non human’
3. manipulator	<i>mfanyizi</i> (1/2)	<i>kifanyizi</i> (7/8) ‘manipulator -non human’

Source: Ohly (1987).

Agentive nouns referring to human beings are formed by assigning nominal stems to cl.1/2, *m-/wa*. Therefore, the nouns *mfumaji*, *mlainishaji* and *mfanyizi* have the feature of human beings, while the derived agentive nouns *kifumaji*, *kilainishaji* and *kifanyizi* denoting tools or equipment are formed by placing them in 7/8. Abstracts, for instance, are formed by assigning nominal stems to cl. 11, as in *ulainishaji* ‘lubrication’, *ufumaji* ‘knitting’ and *ufanyizi* ‘manipulation’. Those examples show that the choice of the prefix to be attached to a nominal stem describes the noun class and the meaning of the derived noun.

4.5.5. Semantic specialization involving a zero morpheme

This is a method of term-formation in which a term is derived without any additional morphological manipulation. However, semantic manipulations are usually involved, mostly

semantic specialization, e.g., in the cases of *kata* ‘cut’ and *ondoa* ‘delete’, as shown in of Table 35.

Table 35: Noun terms derived without morphological manipulation

gloss	Kiswahili
1. cut	<p>Kata</p> <p>General language</p> <p><i>gawanya kitu katika sehemu kwa kupitisha kitu chenye makali</i> ‘divide something into parts using a sharp thing’.</p> <p>Computer</p> <p><i>Kuondoa matini, grafikia au kitu chochote kilichochaguliwa kutoka kwenye andiko</i> ‘remove a selection of text or graphic or anything from a document.’</p>
2. delete	<p>Ondoa</p> <p>General language</p> <p><i>toa kitu kutoka sehemu moja hadi nyingine</i> ‘remove something from one place to another’</p> <p>Computer</p> <p><i>kuhamisha au kufuta matini, faili au sehemu ya andiko kwa malengo ya kuifanya matini au faili hilo lisionekane hapo</i> ‘erase a text, file or some part of a document from a computer’.</p>

Source: BAKITA (2015) and Kiputiputi (2011)

The examples in Table 35 show that the general language words *kata* and *ondoa* acquired specialized meanings when they were adopted into computer science terminology. This method of transforming ordinary language words into special-language terms is widely used in the formation of the Kiswahili technical terms (Kahigi, 2005; Kiputiputi, 2011).

4.5.6. Use of native word stock

Apart from language-internal processes in rendering anglicisms in Kiswahili technical subjects, Kiswahili has also integrated into its technical lexicon a substantial amount of

African loans. The English terms were replaced by forms from African languages compliant with the linguistic structures of Kiswahili. The findings show that the African loans mainly came from Niger-Congo languages i.e., Eastern Bantu languages of Tanzania (Bantu languages of Tanzania with 98 loanwords, of which 13 loanwords are from non-standard Kiswahili), Yoruba (1), Malinke (1) and Susu (1). Furthermore, the findings have shown that other Kiswahili loanwords came from non-Bantu languages of Tanzania such as Maasai (5) and Iraqw (1).

The source languages are ordered in the sequence according to BAKITA’s priorities (see section 4.2). In order to make the number of African loans by source languages comparable for this section, all the nine terminological publications of BAKITA (section 3.3) were consulted for such a purpose. A total of 116 out of 13,309 (0.87%) African loans were identified from the nine terminological documents, as shown in Figure 15 below. All African loans are ‘newer loanwords’ of which many have not yet become established in Kiswahili.

Figure 15: Native loans by source languages found in nine terminological publications

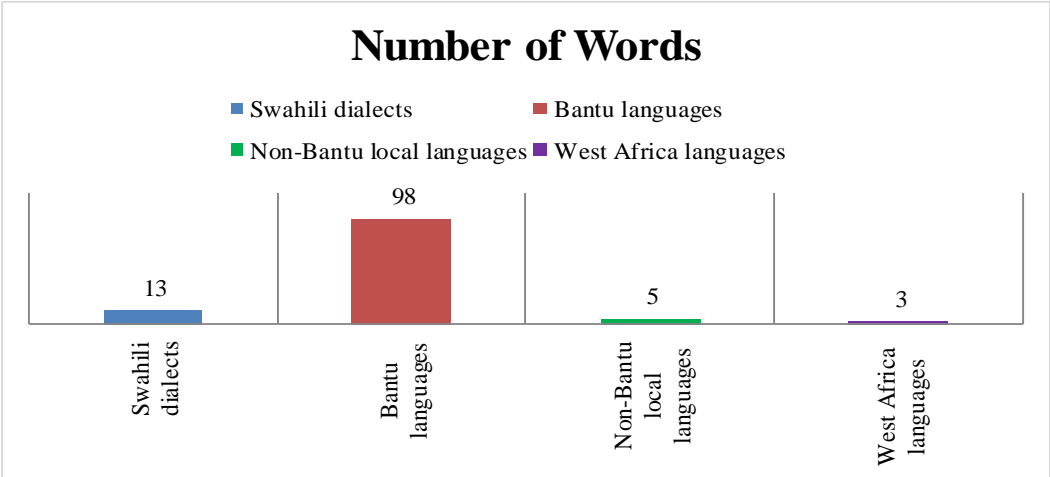


Figure 15 shows priorities in borrowing of African loans. Kiswahili dialect loanwords occur seven times less than Bantu-sourced loanwords. Yet nearly all local Bantu languages, apart from standard Kiswahili, have not been satisfactorily described. It should also be stressed that

‘there are over 100 Bantu languages constituting about 95% of the Tanzanian population’¹⁶⁹ (Batibo, 2000:7). Linguistically speaking, as mentioned in Chapter One, all the four African language phyla are represented in Tanzania, namely Niger-Congo (represented by Eastern Bantu), Khoisan (Sandawe and Hadza), Afro-Asiatic (represented by Southern Cushitic – Iraqw) and Nilo-Saharan (represented by Maa or Maasai, Datooga and Luo). As seen in section 4.1, it is clear that term-creation principles give priority to local languages in modernizing the Kiswahili lexicon. However, taking into consideration the immediate source language¹⁷⁰, non-Bantu sourced loanwords are remarkably very few in the IK. They originate only from Maasai and Iraqw (see section 4.5.6.3). Apart from Bantu languages, Maasai and Iraqw, other local languages have not been considered as donor languages. However, it seems a surprise that some Kiswahili loanwords originate from West African languages (section 4.5.6.3). This is according to etymological explanations available in TS. It is not surprising that coiners of Kiswahili terms always favour loans from Tanzanian Bantu languages, because the post-independence language developments in the Kiswahili lexicon have been mainly carried out by Tanzanians, especially the mainlanders (see appendices 1 and 3).

4.5.6.1. Terms borrowed from Kiswahili dialects

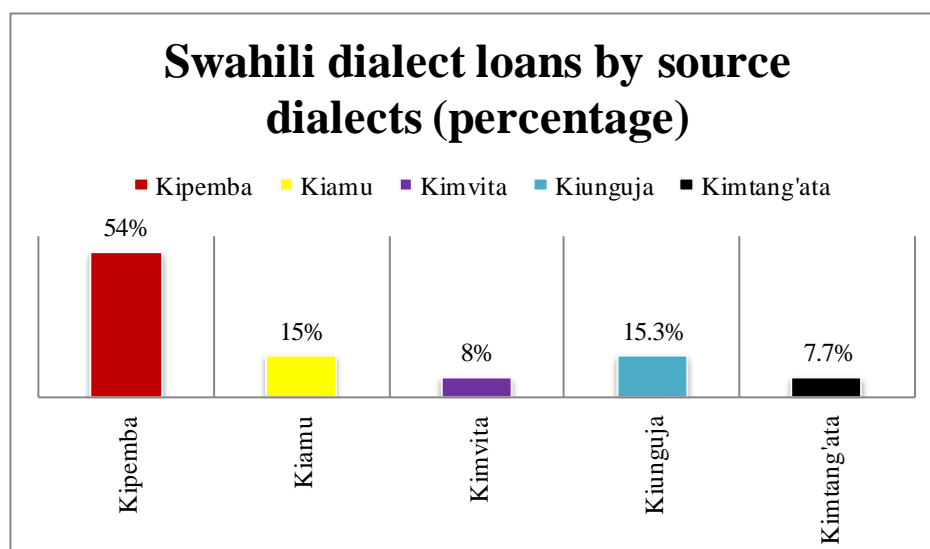
According to term-creation principles, the number of African loans by source languages shown above contradicts the term-creation priorities. Kiswahili dialects are expected to rank second; however, loans from Kiswahili dialects in TS are few (see Appendix 4). Kiswahili dialect loanwords are 13.11% of all African loans (see Figure 15). Over the years, language developers have tended to considerably restrict the amount of Kiswahili loanwords sourced from Bantu languages. This could have a number of explanations. Kiswahili dialects belong to the less well-described varieties and therefore they are not well documented and the fact that

¹⁶⁹ 95 percent is calculated out of 120 languages, however, ‘the number 120 is still often quoted despite the fact that it bears no real credence’ (Petzell, 2012:136).

¹⁷⁰ Tanzanian Bantu languages have borrowed a considerable number of terms in the field of livestock from Southern Cushitic and Nilotic languages (see for example Lusekelo 2018). This study does not establish a historical trace of Kiswahili loanwords but seeks to sort out Bantu-sourced loanwords from Kiswahili technical terminology by considering the immediate source languages. Because a deliberate strategy of enriching the Kiswahili technical lexicon by borrowing from local indigenous languages is a recent practice, a historical aspect of loanword is not looked into.

the older more prestigious Northern Kiswahili dialects are not spoken in Tanzania, but in Kenya. Third, a lack of lexicographical and terminographical resources and limited resources to study African languages are the major challenges in utilizing linguistic resources from those languages (Hans, 2017; Mwaro-Were, 2000; King'ei, 1999; Kiango, 1995; Mwansoko, 1992, among others). Because Kiswahili dialects are not well documented and taught in schools, they are in danger of disappearing altogether (Karanja, 2012). Remarkably, studies of Kiswahili dialects by the Institute of Kiswahili and Foreign Languages (TAKILUKI) in Zanzibar have been reported (Khamis, 1991). However, very little is known about their contribution in the modernization of Kiswahili technical lexicon¹⁷¹.

Figure 16: Kiswahili dialect loanwords by source dialects



Kiswahili has fifteen dialects¹⁷². Some of those which have been said to be Kiswahili dialects either do not exist or are mere name places where one may find minor varieties of Kiswahili which do not qualify to be regarded as dialects. According to a study carried out by TUKI¹⁷³, for example, they discovered that there is no such a thing as Kimrima dialect nor is there

¹⁷¹ There are about 15 recorded dialects of Kiswahili in East Africa. These are Kiunguja (spoken in Zanzibar); Kimakunduchi (or Kihadimu) and Kitumbatu (rural parts of Zanzibar); Kipemba (Pemba island); Kimtang'ata (Tanga Town and environs); Kimrima (Coast of Tanzania, opposite Zanzibar); Kingao (Kilwa and environs); Kimvita, Kingare, and Kijomvu (Mombasa island and environs); Kiamu, Kisiu, Kipate, Kibarawa (or Kimiini), and Kitikuu (along the coast of northern Kenya into southern Somalia); Kivumba and Kichifundi (Wasini and Vanga); Kingwana (DRC and Congo) and Kingozi (extinct original form of Kiswahili, only available in classical Kiswahili poetry) (Chiraghadin and Mnyampala 1977, Bakari 1985 cited in Karanja, 2012:95).

¹⁷² Polomé (1967).

¹⁷³ A comment by Prof. Massamba, one of TUKI's former directors.

anything like Kimgao as dialect. Based on the data given in figure 13, standard Kiswahili has only borrowed 13 words from five dialects. This shows that the use of non-standard Kiswahili words in standard Kiswahili technical subjects has not been given the deserved weight. Figure 14 also reflects a small percentage of loanwords sourced from the Kiunguja. As seen in previous sections, *Kiunguja* was taken as the basis on which standardization was done under the Inter Territorial Committee, but after independence, Tanganyika and Zanzibar united to form Tanzania. Later on, each side of union took a separate way in developing the language, where Tanzania mainland (the then Tanganyika) remained under BAKITA's sphere of influence, while the isles i.e., Zanzibar formed the *Baraza la Kiswahili la Zanzibar* (BAKIZA) 'Kiswahili Council of Zanzibar' to promote and develop the *Kiswahili Fasaha* 'correct/perfect Kiswahili' on the isles¹⁷⁴. With due respect to what Kipacha says and according to *Kamusi Fasaha*, it is not correct to assume that *Kiswahili Fasaha* is that of Zanzibar only. Indeed, *fasaha* means 'correct/perfect', but correct to whom? And perfect to who? In reality, *Kimtang'ata dialect* is also *fasaha* 'correct/perfect', *Kipemba* is also *fasaha* 'correct/perfect' and even Standard Kiswahili is also *fasaha* 'correct;/perfect' if spoken and written correctly. Some scholars treat Kiunguja as the standard Kiswahili (Mkude, 2005). Mkude (ibid) goes on saying 'whereas Kiunguja has retained its distinctiveness as a dialect, standard Kiswahili has continued to expand and market itself as a radically modernized version of Kiunguja' (page 2). That why words in TS sourced from Kiunguja have source identification. For this reason, Kiunguja in study is treated as a dialect of Kiswahili like other Kiswahili dialects, identified in footnote number 162.

4.5.6.2. Terms borrowed from local Bantu languages of Tanzania

As seen in section 3.3, a total of 98 Bantu-sourced loanwords were identified from the TS and other sources. The number of Bantu-sourced loanwords by source languages is given in Figure 17.

Figure 17: Bantu-sourced loanwords by source languages

¹⁷⁴ For a detailed discussion on *Kisanifu* and *Kifasaha* consider Kipacha (2012).

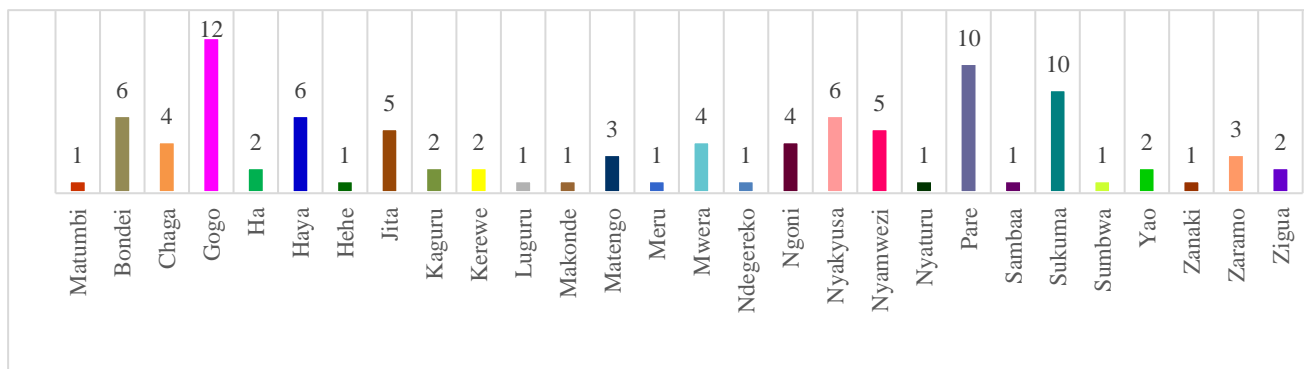


Figure 17 indicates that Gogo (G11) is the major donor of the Bantu-sourced loans (12) followed by Pare (G22) and Sukuma (F21) which has produced 10 loans each. Gogo (G11), Pare and Sukuma sourced loans outnumber Haya (E22), Chagga (E64), Nyakyusa (M31) and Nyamwezi (F22) sourced items, simply because Bantu-sourced loans can be personalized to a great degree by correlation of their first appearance in BAKITA publications and the presence of individual members in the committee, as retrievable from the BAKITA member lists. With regard to the dating of the Bantu-sourced terms with the ethnolinguistic affiliations of the BAKITA board member lists, the first problem, of course, is to be able to find the lists of members of standardization committee(s) between the 1970s and mid-1980s. The lists cannot be located or traced any longer at BAKITA due to the re-allocation of the council. Two trips to BAKITA were fruitless since the officers were not sure of the whereabouts of the files. Therefore, the researcher was guided by the lists of BAKITA board members and their ethnolinguistic affiliations of 1987, 2019 and 2020, in addition to cross-checks in the language-specific collaborators and BAKITA officials. The three lists reveal that Pare (G22) and Sukuma (F21) had many members in the three committee (see Appendix 1a). Such representation in the committees speaks louder. The adoption local or African loans into Kiswahili technical subjects depends on the representation of the speakers of the languages in the standardization committee (Gromova, 2000). The term *nsoke* (Sukuma F21) > *msoke* ‘water spout’, in the field of meteorology, is a good example of such instances. The

committee that standardized the meteorological terms was composed of experts¹⁷⁵ of different linguistic background. It was during that meeting when the term *msoke* ‘water spouts’ was suggested by a Sukuma speaker, a meteorologist. This was his first appearance in BAKITA’s standardization meetings¹⁷⁶. In addition, Prof. Massamba (a retired TUKI’s director) also confirms in an interview that African loans can be personalized to a great degree by correlation of their first appearance in BAKITA publications and the presence of individual members in the committee. Here is what he says:

‘I remember during this exercise I happened to be present in that committee of terminology and these terms (rara ‘ballad’ > Yoruba, yeli ‘griot’ > Malinke and sukui ‘black verse’ > Susu) were suggested by students from Ghana who had been invited to attend.’

Source: fieldwork 2020

Those three and other literary terms were published in the TS no. (2004). It is unfortunate that the TS and other BAKITA’s terminological publications do not list members of the standardization board. Until now, it can be justified that the speakers of the source languages shown in figure 14 were at one time represented in the standardization committee. It should, however, be pointed out that the selection of members of the standardization committee is not based on minority or majority speakers. Given the fact that Bantu languages constitute about 95%¹⁷⁷ of the Tanzanian population, it seems most members of the standardization committee have had a Bantu linguistic background. This may suggest that the development of the Kiswahili technical lexicon in Tanzania has been mainly carried out by Bantu speakers.¹⁷⁸ As a result, contention has been reported on the acceptability of non-Kiswahili lexical items by Kiswahili native speakers, who want to replace the loanwords with Kiswahili linguistic stock, using language-internal processes and words from non-standard Kiswahili dialects (cf. Ruo 1989; Mwaro-Were 2000; Onyango 2000).

¹⁷⁵ The committee contained experts from BAKITA, BAKIZA and TATAKI, language collaborators and practitioners from the field of meteorology.

¹⁷⁶ Conversation between the researcher and Ms. Consolata Mushi, the current executive secretary and former head of the department of terminology and lexicography, during field work 2019 at BAKITA.

¹⁷⁷ Batibo (2000:7).

¹⁷⁸ In chapter two, it was shown that the non-Kiswahili native speakers surmount the native speakers in a standardization committee.

4.5.6.3. Terms borrowed from non-Bantu Languages

Kiswahili has also integrated into its technical terminology words from non-Bantu languages of Tanzania. The non-Bantu loanwords comprise two different categories. The first category comprises terms sourced from Tanzanian non-Bantu languages in which two source languages were identified: the Eastern Nilotic language, Maasai, and South Cushitic Iraqw. Maasai has contributed four terms: one in the field of biology (*mbuti* ‘duodenum’), one term in domestic science (*ngalemu* ‘carving knife’) and two terms in the field of agronomy and animal husbandry (*ushilaji* ‘mass selection’ and *majilili* ‘strip’), as shown in Table 36.

Table 36: Adaptation of Maasai-sourced loanwords in Kiswahili

source form/meaning	Kiswahili	meaning	technical domain
1. <i>mbut</i> ‘colon’	<i>mbuti</i>	duodenum	biology
2. <i>engalem</i> ‘knife’	<i>ngalemu</i>	carving knife	domestic science
3. <i>aashil</i> ‘mass selection’	<i>ushilaji</i>	mass selection	agro/husbandry
4. <i>jilili</i> ‘strip’	<i>majili</i>	strip	agro/husbandry

Examples in Table 36 show that Kiswahili deleted the initial *e* which belongs to the gender prefix *en-* in Maasai. There seems to be no scientific ground as to why the source initial vowel *e* was deleted in Kiswahili, since there is a large number of Kiswahili nouns with initial vowels e.g., *alama* ‘mark’, *enzi* ‘dominion’, *ikweta* ‘equator’, *ondoleo* ‘remission’ and *uzani* ‘weight’. In addition, the vowel epithesis in *engalem* ‘knife’ and *mbut* ‘duodenum’ was done by adding the vowels *i* and *u*, since Kiswahili does not permit a closed final syllable. In addition, Kiswahili has also incorporated /asmoo/ [ʘasmo:] ‘low flat-roofed house’¹⁷⁹ from Iraqw, as /asmoo/ > /asamo/ ‘basement’ into the field of carpentry and masonry in which the voiced pharyngeal fricative of the Iraqw original term has been replaced by a glottal stop in Kiswahili.

¹⁷⁹ Mous, Qorro and Kießling (2002).

The second category accommodates three (3) literary terms sourced from Western African languages¹⁸⁰. One term has been borrowed from Yoruba, term from Malinke and one loanword from Susu. However, it was not possible to establish the source meaning of the term *sukui* ‘blank verse’ sourced from Susu. Thus,

Table 37: Kiswahili loanwords sourced from Yoruba and Malinke

Term	Source language	Kiswahili
<i>rara</i> ‘traditional song’	Yoruba	<i>rara</i> ‘ballad’
<i>jali</i> ‘griot’	Malinke	<i>yeli</i> ‘griot’

Historically, West Africa is known for its inherited oral traditions. Various forms of poetry are found across West Africa and therefore this region possesses a rich stock of literary terms. This reason or the other might have influenced the coiners to borrow such terms for integration into Kiswahili literary terminology.

4.7. Summary

This chapter has analyzed principles and methods of term formation in Kiswahili by looking at the principles governing term sources. The findings show that there is a gap between BAKITA’s theory and the actual practice of term formation. Under *Ujamaa* politics, BAKITA established principles of term formation that aim at Africanization of standard Swahili. Accordingly, in BAKITA’s ranking of source languages for loan words, indigenous African languages range second, after Kiswahili and Kiswahili dialects, and are followed by African languages of other countries and foreign languages such as English and Arabic. It has been shown in this chapter that negligence of standardization agencies, terminological sub-domain, timeline and coiners involved affect the execution of the ranking of term sources.

The analysis of the Kiswahili loanwords has shown that Kiswahili modernization is mainly characterized by both *anglicization* and *africanization*. Despite the fact that the *Ujamaa* language policy disfavoured the use of the English in Tanzania, the coiners of Kiswahili terms

¹⁸⁰ Prof. Massamba comments that ‘I remember during this exercise I happened to be present in that committee of terminology and these terms were suggested by students from Ghana who had been invited to attend.’

did not break away from anglicisms, as numerous scientific and technological terms originating from English were and are being adopted into various semantic domains in Kiswahili. The findings show that coiners give first priority to anglicisms followed by Arabic (though there are areas where Arabic terms featured more than English), Bantu-sourced loans and other non-African languages, while loanwords from non-standard Kiswahili and non-Bantu languages are marginal. The findings also show that the modernization of standard Kiswahili is also featured by linguistic purism which meant to *Africanize* and precisely to ‘*Swahilize*’ technical terms. This is evidenced by the use of Kiswahili word stock to replace foreign loans in the Kiswahili technical domains. As a result, lexical purism became a strong movement in Kenya from the 1970s to the 2000s, whereas Tanzania took the liberal approach in term creation. However, these two approaches have shown weaknesses for the modernization of African languages and in Kiswahili particular. The puristic and liberal approaches seem contradictory, but are supportive of each other when they are successfully combined in term creation projects. A successful combination of the two approaches leads to a *pragmatic approach*, which is neither puristic nor anti-puristic¹⁸¹. Indispensably, however, foreign loanwords should be in check.

This chapter has also discussed methods of term formation in Kiswahili. The methods of term formation discussed in this chapter were derivation, compounding, semantic expansion, loan translation, semantic specialization involving a zero morpheme and direct borrowing. Two types of direct borrowing have been identified in standard Kiswahili technical terminology: non-African loanwords and native linguistic word stock. The native linguistic word stock is discussed in three source-specific categories, namely, non-standard dialect words, Bantu-sourced loanwords (sourced from Bantu languages of Tanzania) and non-Bantu-sourced loanwords (sourced from non-Bantu languages of Tanzania and West Africa). The phonological and morphological adaptations of Bantu-sourced loanwords in standard

¹⁸¹ Madiba (2001)

Kiswahili and adherence of Bantu-sourced loans to terminology principles are discussed in Chapter Five.

CHAPTER FIVE: AN ANALYSIS OF BANTU-SOURCED LOANWORDS IN STANDARD KISWAHILI TERMINOLOGY

5.0. Introduction

This chapter presents the analysis of Bantu-sourced loans in standard Kiswahili. The first section gives a brief overview of Bantu-sourced loans as neologisms in standard Kiswahili (Section 5.1). The second section examines the quality and adequacy of Bantu-sourced loans as they form part of Kiswahili terminology. It also discusses whether Bantu-sourced loans qualify to be technical terms (Section 5.2). The third section presents the estimates of the Bantu-sourced loans from BAKITA's terminology lists i.e., TS issued between 1974 and 2019 (Section 5.3). Moreover, the chapter seeks to determine the proportion of Bantu-sourced loans across Kiswahili technical registers (Section 5.4). Further, the chapter also gives a brief overview of vowel and consonant inventories, and noun classes of Bantu languages of Tanzania. This was intended to help to predict and determine the changes of Bantu-sourced loans in standard Kiswahili (Section 5.5). Furthermore, this chapter analyzes phonological and morphological adaptations of the Bantu-sourced lexical items in Kiswahili (section 5.6). It also presents the semantic content of the Bantu-sourced loans in standard Kiswahili noun classes (Section 5.7). Finally, the chapter gives a general observation on the use of native sources for Kiswahili lexical elaboration (Section 5.8).

5.1. An overview of Bantu-sourced loans in standard Kiswahili terminology

This section is intended to discuss Bantu-sourced loans whether they qualify to be terminological neologisms¹⁸². As seen in chapter four, various Kiswahili technical domains are enriched by lexical borrowings. Some scholars (Blommaert, 2013) hold the view that modernization, in its word-coining reality, should have a clear implication of deficit, because nothing is really invented in Kiswahili, inventions from elsewhere are simply translated. This section presents linguistic evidence to justify that lexical borrowings are inventions (neologisms), so are Bantu-sourced loans in standard Kiswahili. As seen in Section 4.5, the

¹⁸² For detailed explanation on terminological consider de Schryver (2020).

necessity to transfer knowledge from one language to another language in which a corresponding term needs to be created resulting in secondary term-formation (Valeontis and Mantzari, 2006:3). Indeed, lexical modernization in standard Kiswahili mainly takes place by translating (along with other language-internal processes) already existing terminology from developed languages, especially English. Thus, lexical modernization is done through secondary term-formation in standard Kiswahili. Various secondary term-formation methods that are used in Kiswahili ranging from direct borrowings, derivation, compounding, phonological adaptations of non-African loans and semantic specialization involving a zero morpheme are discussed in Section 4.5. It is true that standard Kiswahili borrows or translates new invented anglicisms. However, more often than not, coiners borrow foreign concepts and attach them to existing Kiswahili words (use of language-internal processes) or words sourced from indigenous African languages or other languages. Nonetheless, the integration of lexical items from Bantu languages of Tanzania to express new concepts of English background in standard Kiswahili is one of several strategies which are employed by the coiners.

Many language experts call new terms neologisms (Awadh and Shafiull, 2020). In this context, new terms refer to new inventions. The question is, do Bantu-sourced loans qualify to be new inventions (neologisms) in standard Kiswahili terminology? Sager (1990 in Nsubemuki, 1999) plainly explains that neologisms can essentially be total new innovations or borrowings from other languages. In fact, Bantu-sourced loans are coined when there is need to express new concepts (expressing foreign concepts in new ways) in Kiswahili. *Lukoka* ‘wavelength’ (< *olukoka* ‘a space between two ridges’ – Jita E25), for instance, was coined when there was a need to express this concept in the domain of physics in Kiswahili. According to Newmark (1988:140) neologisms refer to ‘newly coined lexical units or existing lexical units that acquire a new sense.’ He proposes twelve types of neologisms which include new coinages, transferred words and derived words. Bantu-sourced loans are new lexical items that acquire specialized meaning when they are transferred to Kiswahili terminology. They may undergo semantic shift and/or derivation in Kiswahili in order to convey a certain

concept, as indicated in table 38, since it is the recipient language which filters the relevant meaning (Mkude, 1995).

Table 38: Semantic shift and derivation of Bantu-sourced loans in Kiswahili

source word	source language	Kiswahili
1. <i>dubinga</i> ‘spread things haphazardly’	Gogo (G11)	<i>kidubingo</i> ‘drill’
2. <i>voromoka</i> ‘descend rapidly’	Bondei (G24)	<i>kivoromoko</i> ‘stillbirth’
3. <i>weesya</i> ‘stop bearing fruits; stop giving milk’	Jita (E25)	<i>wesya</i> ‘dry cow’
4. <i>ikolo</i> (5/6) ‘chief’s homestead’	Nyamwezi (F22)	<i>ikulu</i> (9/10) ‘state house’

The examples in Table 38 indicate that borrowing from Bantu language of Tanzania is a matter of linguistic invention which includes derivation (examples 1 and 2 in Table 38) and semantic specialization in which Bantu-sourced loans acquire technical meaning. Phonologically, source word consonants, vowels and consonant clusters should conform to the phonological patterns of the target language. For example, the source mid vowel /o/ was replaced by the high vowel /u/ in the recipient language. Morphologically, loan items have to comply with inflectional and derivational patterns of the target language (see examples 1, 2 and 4).

Moreover, the idea of lexical borrowings as neologism is limited to loanwords that have entered a language recently (de Schryver, 2020: 97). The loanwords of Arabic origin, for instance, which entered Kiswahili many centuries or decades ago are not considered terminological neologisms any longer. As regards Bantu-sourced loans, borrowing from Bantu languages is not age-old activity in standard Kiswahili. There is a lack of evidence to suggest that direct borrowing from local languages as a controlled linguistic activity took place prior to *Ujamaa* linguistics. Bantu sourced loans become semantic calques when the coiners of Kiswahili technical terms borrow the meaning of an English term and attach this meaning to a Bantu lexical material sourced from Tanzanian Bantu languages. Therefore, all the evidence discussed above points out that Bantu-sourced loans are undeniably new inventions in Kiswahili.

5.2. The adequacy of Bantu-sourced loans as standard Kiswahili terminology

As seen in Chapter Four, many Bantu-sourced loanwords entered most Kiswahili technical domains during the period of *Ujamaa* linguistics. Lexical items sourced from local languages, especially Bantu languages of Tanzania such as Gogo (G11), Nyamwezi (F22), Kerewe (E24) and Matumbi (P13), are scrutinized for their adequateness as technical terms during term-standardization sessions. When they are accepted, BAKITA approves them for use.

Since Bantu-sourced loans have received too little attention in previous descriptions of Kiswahili loanwords, it would be important to briefly discuss their main features before they were integrated into the Kiswahili technical domains. Once Bantu-sourced lexical items are proposed in the standardization committee, they are scrutinized to see whether they meet certain criteria before they are adopted into Kiswahili technical terminology. Both BAKITA's (1990) terminology standardization guide and TUKI's (1992) guide to the formation of Kiswahili terminology describe principles and approaches which coiners have to follow when creating standard Kiswahili technical terms. Generally, both guides describe the process of loanword adaptations in Kiswahili with reference to the ranking of term sources and principles of term creation. Whereas Chapter Four discussed the term-creation principles i.e., ranking of term sources in standard Kiswahili, section 5.2 discusses the principles of term formation by testing the quality and adequateness of Bantu-sourced loans. The loans are subjected to the principles of derivability and compoundability, linguistic economy, linguistic appropriateness, transparency, preference for native linguistic stock, consistency and linguistic correctness. In addition to the aforementioned principles, preference for the word(s) attested in more than one local language is a requirement also considered by BAKITA (section 5.2.6) i.e., a word sourced from local languages should be integrated into standard Kiswahili technical subjects, if it occurs in more than one local language. This is a Kiswahili

language-specific principle¹⁸³ of term formation applicable in the formation of standard Kiswahili terminology, as described by BAKITA (1990).

5.2.1. Derivability and compoundability

Standardized terms should meet the principle of derivability and compoundability, as coiners should keep in mind that the terms should allow possible derivations or compounds in the future. Concerning derivability, Valeontis and Mantzari (2006:4) assert that ‘term formations allowing for potential *derivatives*, should be chosen according to what is possible in a given language’. In this regard, a Bantu-sourced loan¹⁸⁴ should allow further concept developments through potential derivations and inflections. Quite often coiners use inflections and derivatives of the loans as term formation strategies in standard Kiswahili, since derivation is a productive strategy used to name ‘a variety of related concepts’ Gilreath (1993:91 in Gumbo, 2016: 84). Although the data (Bantu-sourced loans) contain ten (10) verbal nouns/infinitives, the more interesting issue concerns the aspect of loanword derivation, since that is the lexically relevant aspect of morphology. In this case, the infinitive prefix *ku-* of class 15 cannot qualify as an instance of term formation, since it is rather an inflectional marker that simply produces a nominal form from any verb. As for derivations, noun class shifts¹⁸⁵ are a strategy in which coiners derive or inflect a Bantu-sourced loan in order to express new concepts in Kiswahili. For example, the stem *bunge* ‘elders meeting in a village’ (5/6 – Ha D66) > *bunge* ‘national assembly’ (5/6 -Kiswahili G42) has been used to form an agentive noun *m-bunge* ‘member of parliament’ by attaching the cl.1/2 *m-* prefix to the root.

¹⁸³ As regards principles of terms formation, ‘language-specific principles of term formation shall be described in national and regional standards dealing with a particular language rather than in International Standards’ (ISO, 2000:25).

¹⁸⁴ Given the fact that Kiswahili and other Bantu languages share most linguistic features, quite often Bantu-sourced lexical items appear more prominent than non-Bantu sourced items in term-creation. This is according to an interview between the researcher and the head of terminology and lexicography department at BAKITA during fieldwork in 2019.

¹⁸⁵ Given the fact that Kiswahili and other Bantu languages share most linguistic features, quite often Bantu-sourced lexical items overshadow non-Bantu sourced items. Bantu-sourced nouns loans, for instance, adhere easily to the Kiswahili derivational operations, such as the derivational use of noun class prefixes. This process is associated with the certain semantic concepts, specifically, augmentation (cl.5/6), diminution (c.7/8) and abstraction (cl.11).

And again, an abstract noun *u-bunge* ‘membership of parliament’ (cl.11) is derived from the stem *bunge* (5/6) by prefixing the noun stem with the cl.11 noun class marker *u-*.

Derivability of Bantu-sourced loanwords is not only limited to noun-noun derivation (gender shifts), but Kiswahili derivational suffixes have been used to derive nouns from borrowed verbal stems. For example, the verbal stem *tapasa* ‘reduce’ (Ngoni N12) has been used as a base for forming new Kiswahili noun terms that express related concepts in the field of chemistry: *tapasa* ‘reduce’ > *ki-tapasa-ji* ‘reducer’ (cl.7/8), *u-tapasa-ji/u-tapas-o* ‘reduction’ (cl.11) and *ku-tapasa*¹⁸⁶ ‘reducing’ (cl.15). The following terms were created in Kiswahili from the noun stems sourced from Zigua (G31), Ngoni (N21) and Gogo (G11).

Table 39: Derivability and compoundability of Bantu-sourced loan items

source word	Kiswahili (G42)	semantic field
1. <i>fuwele</i> (5/6) ‘dead rocks’ (Zigua G31)	<i>fuwel-ik-a/m-fuwel-ik-o</i> ‘crystallization’ <i>fuwel-ish-a</i> ‘crystallize’ <i>kitambuzi fuwele</i> ‘crystal detector’ <i>fuweligrafia</i> ‘crystallography’	Geography
2. <i>guba</i> ‘recite’ (Ngoni N21)	<i>gub-o</i> (.5/6) ‘recitation’ <i>ku-guba</i> (cl.15) ‘reciting’	Literature
3. <i>dubinga</i> (Gogo G11) ‘spread or do something haphazardly’	<i>ki-dubing-o</i> ‘drill’	Agriculture
4. <i>domola</i> ‘peck’ (Zigua G31)	<i>ki-domoz¹⁸⁷-i</i> ‘leaf miner’ (domol +I = -domozi)	Agriculture

¹⁸⁶ The verbal stem *tapasa* ‘reduce’ can also carry all Kiswahili verbal inflectional and derivational suffixes.

¹⁸⁷ In Kiswahili, the final consonant **l** in *domola* ‘peck’ is realized as **z** before the nominalizing suffix **-i**.

The four examples in Table 39 show that Bantu-sourced loans allow derivability and compoundability in standard Kiswahili. In the case of derivability, the Kiswahili nominalizing suffix *-o* has been used to derive the nouns *gubo* ‘recitation’ and *kidubingo* ‘drill’ from the verbs *guba* (Ngoni) ‘recite’ and *dubinga* (Gogo G11) ‘spread or do something haphazardly’, whereas the agentive suffix *-i* has been used to form the noun *kidomozi* ‘leaf miner’ from the Zigua (G31) verbal stem *domola* ‘peck’. Moreover, the loan noun *fuwele* (Zigua – G31) ‘crystal’ underwent derivation to form terms such as *fuwelisha* ‘crystallize’ and *fuwelika* ‘crystal’. Moreover, Table 39 indicates that Bantu-sourced loans have allowed compoundability in Kiswahili technical language e.g., *fuwele* ‘crystal’ > *kitambuzi fuwele* ‘crystal detector’, (*tambua* ‘detect’ > *tambuzi* ‘detector’ - Kiswahili + *fuwele* ‘crystal’ Zigua G31) *fuweligrafia* ‘crystallography’ (*fuwele* ‘crystal’ Zigua G31 + *allography* - English). These are a few examples show that Bantu-sourced loanwords meet the principle of derivability and compoundability.

5.2.2. Preference for native linguistic stock

This principle requires that native linguistic stock should be given preference over non-African loanwords ‘except in domains or languages where other traditions exist, for instance the use of Latin or Greek forms in some disciplines’ UNESCO (2005:10). In section 1.6, a native word is defined as any linguistic material sourced from indigenous African languages, as opposed to foreign loanwords (non-African loans). With regard to the prioritization of Kiswahili term sources, BAKITA’s term-formation principles reflect two term sources - internal (indigenous African languages) and external (non-African languages). The former, also known as native sources, consists of three categories, – Kiswahili (standard and non-standard dialects), local languages (Bantu and non- Bantu) and other African languages. In this context, Bantu-sourced loans are native-language designations which have replaced English terms in various Kiswahili technical domains. Therefore, Bantu languages are considered part of the native sources, hence they meet the criterion/principle of preference for native language. It should be again pointed out that the external sources (non-African)

comprise the group of non-African languages, such as English, German, French, Latin, Greek and also Arabic. Notably, the development of Kiswahili technical terms does not directly make use of the classical Latin or Greek forms, but these forms have diffused into Kiswahili through modern languages such as English, German and other European languages. Therefore, the use of ‘classical languages’ pertains only to terminology development in Europe and not in Tanzania. In order to bring in the idea of the use of ‘classical language(s)’ for developing standard Kiswahili technical terminology, coiners should recourse to Guthrie’s (1967-71) Proto-Bantu lexicon, Bantu Lexical Reconstructions (2003) and other Bantu lexical reconstructions. As for the archaic literary tradition of Kiswahili, it contains numerous Arabic and other oriental loans. With such numerous loans, that source (the archaic literary tradition of Kiswahili) may not seem a reliable source for tapping words of Bantu origin in order to develop standard Kiswahili technical terms.

5.2.3. Linguistic economy

Besides preference for native linguistic stock, standardized terms should meet the principle of linguistic economy, i.e., they should be short and concise. In this sense, Bantu-sourced lexical items should adhere to the principle of brevity before they are considered as Kiswahili technical terms. Priority in integrating the Bantu-sourced lexical items into Kiswahili terminology is given to those which are not too long, easy to remember and articulate. As a rule, a lexical item with a few syllables sourced from Tanzanian Bantu languages has a greater chance to be integrated into Kiswahili technical domains.

The findings in Chapter Five show that Kiswahili technical subjects have not borrowed as much from non-Bantu languages of Tanzania as it has from their Bantu counterparts (compare Appendices 3 and 5). The selection of Bantu-sourced loanwords, typically with open syllables, over non-Bantu-sourced lexical items is also attributed to the syllable structure (linguistic affiliation), which seems easy to articulate by the majority Tanzanians who are Bantu speakers. Most of the loans integrated into Kiswahili technical domains from non-

Bantu languages of Tanzania have undergone the vowel epithesis e.g., *engalem* ‘curving knife’ > *ngalemu* ‘knife’ and *mbut* > *mbuti* ‘duodenum’, sourced from Maasai. As can be seen, the vowels i and u have been added to the final position of the loans, since Kiswahili does not permit a closed final syllable. Modern Bantu languages, including Tanzanian Bantu languages and Kiswahili, inherited the CV, CVV, and V, N syllable structures which were allowed in Proto Bantu; however, some Bantu languages have developed additional syllable structure through borrowings and loss of vowels or consonants (Hyman, 2003). Bantu languages are tolerant to closed syllable structures of various kinds just like many agglutinating languages all over the world. For example, some anglicisms, for instance, have consonant clusters in the word-initial and mid-positions, which have been adapted in standard Kiswahili resulting in CCCV and CCV syllable structures: **str**identi ‘strident’, **elek**troni ‘electron’ and **sek**retarieti ‘secretariat’ (see also section 1.2).

Preference is given to shorter terms, as they allow users to avoid arbitrary abbreviations. The data indicate that Bantu-sourced loanwords have an average of three syllables, where the shortest loanword has two syllables and the longest *ulutiliaji* ‘neologism’ has six, but is still easy to articulate. In some cases, coiners delete the reduplicants (the repeated elements) of the Bantu-sourced reduplicative words, probably to make them easy to articulate and remember, as illustrated in Table 40.

Table 40: Deletion of reduplicants of Bantu-sourced loans in Kiswahili

source word	source language	Kiswahili form
1. <i>nywinywila</i> ‘codeword used to authenticate or recognize fellow fighters’	Matumbi (P13)	<i>nywila</i> ‘password’
2. <i>lulutika</i> ‘talk deliriously’	Gogo (G11)	<i>ulutiliaji</i> ‘neologism’

The examples in Table 40 indicate that the repeated elements *nywi* and *lu* in the source words are deleted in Kiswahili. Such deletion could symbolize the brevity of the standardized terms

‘in order to facilitate communication in situations which are not purely scientific’ as opposed to lengthier ones (Valeontis and Mantzari, 2006:4). In this respect, Bantu-sourced loans should be concise so as to make them easy to articulate, especially to users who are not experts in the technical domain in which the terms are found. However, the rule of deletion of reduplicants in Kiswahili does not apply to all Bantu-sourced reduplicative words as in *kulele* ‘sleep’ (Chaga E64) > *kuleleza* ‘freshen’, but all the identified Bantu-sourced reduplicative words still satisfy the principle of conciseness.

5.2.4. Linguistic appropriateness and linguistic correctness

The principle of linguistic appropriateness requires terminologists to adhere to established patterns of meaning and phonology in the target language (Gumbo, 2016; Valeontis and Mantzari, 2006:4). At the meaning level, standardized terms should ‘avoid connotations, especially negative ones’ (ISO, 2000:26). A loanword may have several meanings, but coiners apply semantic filters to capture the most relevant meaning to be adopted into the target language. More often than not, a loanword sourced from local languages may either undergo a meaning shift i.e., concept → local language → shift → Kiswahili¹⁸⁸ or may not undergo semantic shift in transfer to Kiswahili terminology. In this study, semantic shift is seen as a strategy to eliminate semantic confusion by selecting the most relevant and precise meaning needed in a particular Kiswahili technical domain. Once the Bantu-sourced loanwords narrow their semantic usage in Kiswahili, they become *new words or innovations*, since only one meaning is adopted. The data show that a Bantu-sourced loanword may undergo a total shift or lose certain aspect of its original meaning or acquire a partially new meaning, as shown in Table 41.

Table 41: Semantic shift in Bantu-sourced loanwords

source word	Kiswahili (G42)	semantic field
<i>I. rweeya</i> ‘uncultivated land;’ plains; public grassland used for grazing’ (Haya E21)	<i>lweya</i> ‘virgin land’	Geography

¹⁸⁸ Ohly (1987:242).

2. <i>weesya</i> ‘stop bearing fruits; stop giving milk’ (Jita E25)	<i>wesya</i> ‘dry cow’	Agriculture
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The first loan noun in Table 41 has several meanings in Haya (E22), but it has acquired a more restricted/specialized meaning in Kiswahili. Likewise, the second loanword has acquired a narrower meaning in Kiswahili. These examples show that the coiners carefully filtered the meanings of the loanwords and the most relevant meaning was adopted into Kiswahili technical domains. In addition, a shift in meaning of a particular Bantu loanword was due to some morphological modification in Kiswahili. For example, the word *domola* ‘peck’ (Zigua G31) > *kidomoz-i* ‘leaf miner’ seems to have acquired a new meaning, but the new meaning is related to the original meaning in the sense that the leaf miner uses its ‘mouth’ to feed on leaves. Such an act of feeding is equated with *kudomola* ‘pecking’, where the agentive morpheme *-i* has been used to derive a noun from a verbal stem *domola* ‘peck’ and the *ki-* prefix places the nominalized verb into cl.7/8, a gender for diminutives. Therefore, *ki-domoz-i* ‘leaf miner’ can roughly translate as a small entity (expressed by the prefix *ki-*) which *pecks* the leaf tissues of plants. The concept embedded in *ki-domoz-i* is the *damage* or *destruction* of leaf tissues caused by *pecking*.

Furthermore, the data in Table 42 indicate that a good number of Bantu-sourced loanwords did not undergo semantic shift when they were integrated into the Kiswahili technical domains.

Table 42: Bantu-sourced loans without semantic shift in transfer to Kiswahili terminology

source word	Kiswahili (G42)	semantic field
1. <i>machunda</i> ‘churned milk’ (Haya E21)	<i>machunda</i> ‘skimmed milk’	Domestic science
2. <i>βwagara</i> ‘farrow’ (Jita E25)	<i>bwagala</i> ‘farrow’	Agronomy and animal husbandry’

3. <i>ndaagano</i> ‘confluence of rivers’ (Mwera N201)	<i>ndagano</i> ‘confluence of rivers’	Geography
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Table 42 shows a null-semantic shift of the Bantu-sourced loanwords in the Kiswahili technical domains. This could suggest the linguistic appropriateness of Bantu-sourced loans in rendering ‘new concepts’ in Kiswahili technical domains.

Linguistic appropriateness is also realized in the form of re-phonologization of loanwords (Gumbo, 2016). In other words, loan items should adhere to familiar and established sound patterns of the target language. This also affects the morphology of the loanword. For example, the data show (section 5.6.2.2) that Bantu-sourced loan nouns are integrated into standard Kiswahili terminology through reanalysis of noun prefixes and re-assignment to new noun classes. A loan noun *ikolu* (5/6) ‘chief’s homestead’ (Nyamwezi F22) when adopted into standard Kiswahili the mid-high back vowel /ɔ/ was substituted with a high back vowel /u/ and was re-allocated to gender 9/10 (for more details on phonological and morphological adaptations consider section 5.5).

In the case of the principle of linguistic correctness, a new term should follow the grammar of the target language by conforming to phonological morphological and morphosyntactic patterns (ISO, 2000). For detailed analysis of phonological and morphological adaptations in Kiswahili, refer also to section 5.6. As regards morphosyntactic patterns, once the phonological and morphological re-analysis are applied to Bantu-sourced lexical items they take the pronominal agreements of Kiswahili as shown in Table 43.

Table 43: Bantu-sourced loans with new pronominal concords in transfer to Kiswahili terminology

source word	pronominal concord	Kiswahili (G42)	pronominal concord
<i>1. kasooko</i> (12/13) ‘small dale, valley’	<i>ka-/tu-</i>	<i>kasoko</i> (9/10) ‘crater’	<i>i-/zi-</i>

(Nyakyusa M31)

2. *ikolo* (5/6)

i-/ma-

ikulu (9/10)

i-/zi

‘chief’s homestead’

(Nyamwezi F22)

5.2.5. Transparency and consistency

A term is transparent when users are able to understand the concept it designates, not always looking at a definition to understand it. Therefore, coiners need to create terms in such a way that the meanings of terms are visible in their morphology (ISO, 2000). In this regard, a good number of Kiswahili noun terms have been formed by adding suffixes to Bantu-sourced word stems (see section 5.6.2.1) and no gender shift has been noted on the data as strategy of term form. Terms formed in this way seem to be semantically transparent, because the specific suffixes of nouns derived from verbs ‘designate concepts which mean procedures and methods’ (Valeontis and Mantzari, 2006:4). For example, the Kiswahili deverbative *ki-voromok-o* (7/8) ‘stillbirth’ was derived from *voromoka* ‘descend, fall rapidly’ (Bondei G24) by using the suffix *-o*, which refers to the result of the action. In Kiswahili, nominalized verbs may take one of the following suffixes (see also section 4.5.6): *-e* (*mkate* ‘bread’ < *kata* ‘cut’); *-i* (*mpishi* ‘a cook’ < *pika* ‘cook’); *-o* (*mkopo* ‘loan’ < *kopa* ‘borrow’); *-u* (*wokovu* ‘salvation’ < *okoka* ‘be saved’) *-aji* (*kinywaji* ‘a drink’ < *kunywa* ‘drink’) and *-a* (*ndoa* ‘marriage’ < *oa* ‘marry’). These suffixes form nouns of passivity, agency, process/result/, state and habituality, and various meanings as the suffix *-a* occurs with all classes.

On the principle of consistency, this principle states that ‘the *terminology* of any *subject field* should not be an arbitrary and random collection of *terms*, but rather a coherent terminological system corresponding to the *concept system*’ (ISO, 2000:26). Consistency allows for the systematic formation of terms; for instance, the use of specific suffixes or prefixes which designate concepts in deverbatives or nominal loans. Coiners to some degree adhered to this principle, as they formed several noun terms from borrowed Bantu-sourced verbal stems, but there was a remarkable lack of consistency in the suffixes in conjunction

with the *ki-* prefix of the deverbatives that refer to instruments or tools/equipment. For example, the deverbatives *kidubingo* (7/8) ‘drill’, *kitapasaji* ‘reducer’ *kitemela* (7/8) ‘planter’ end in *-o*, *-aji* and *-a*, as also indicated in Table 44.

Table 44: Inconsistency in the suffix of deverbatives referring to instruments/tools

verbal stem	source language	Kiswahili (G42)	suffix
1. <i>dubinga</i> ‘spread/ do haphazardly’	Gogo (G11)	<i>ki-dubing-o</i> (7/8) ‘drill’	<i>-o</i>
2. <i>tem-el-a</i> ‘dig/cut for’	Sukuma (F21)	<i>ki-tem-el-a</i> (7/8) ‘planter’	<i>-a</i>
3. <i>tapasa</i> ‘reduce’	Ngoni (N12)	<i>ki-tapas-aji</i> ‘reducer’ ¹⁸⁹	<i>-aji</i>

Based on the belief that nouns which belong to the same noun class have some degree of semantic relationship (Katamba, 2003), in the case of examples in Table 44, one would expect that the derivation of the two designations for instruments/equipment (7/8, the gender also for instruments, tools) should be consistent in the use of suffixes. In other words, the combination of the nominalizing suffix *-o* with the noun class prefixes *ki-/vi-* produces the instrumental meaning. Therefore, the use of the suffix *-o* with the *ki-* prefix in *kitemela* ‘planter’ would justify the principle of consistency because the deverbatives with the suffix *-o* ‘refer to the action itself, the result of the action, the place or the instrument (often with applicative **-Il-*)’ (Schadeberg, 2003:80). The deverbative *kitemela* ‘planter’ should have the suffix *-o* in Kiswahili, since it bears the prefix *ki-* and the applicative *-el-* in the verbal stem *temela* ‘dig/cut for’ < Sukuma (F21). One would also expect that the suffix *-o* with the 7/8 prefixes (*ki-/vi-*) would have been used to derive the noun *kitapaso* ‘reducer’ from *tapasa* ‘reduce’. By doing so, the principle of consistency would have been adhered to. Examples in Table 44, therefore, suggest that in some cases coiners’ adherence to the principle of consistency was not largely considered in deriving nouns from verbs which refer to the same concept.

¹⁸⁹ Refer to Ohly (1987). Although Ohly (1987) is not a BAKITA publication, but this technical dictionary has all blessings from BAKITA.

5.2.6. Preference for native words attested in more than one local language

In evaluating the quality and adequacy, the researcher also checked on how well Bantu-sourced loans satisfy the principle of preference for native words attested in more than one local language. It is a rule that words sourced from local languages should satisfy the principle of appearing in more than one language of Tanzania before they are integrated into standard Kiswahili technical terminology. BAKITA (1990) requires that a native word has a greater chance of being integrated into Kiswahili technical subjects if it occurs in more than one local language. The belief behind this principle is that words with wider coverage are easily promoted and gain popularity more quickly than those found in only one language. To check on distribution of Bantu-sourced loans across Tanzanian languages, a word list of Bantu-sourced loan items was prepared and checked for their distribution. The data indicate (see Appendix 3) that 74.5% (73 out of 98) of the Bantu-sourced loans occur in more than one language of Tanzania. Therefore, Bantu-sourced loans have the qualities to form part of Kiswahili terminology, as majority of them satisfy the principle of preference for native words attested in more than one local language.

In the case of attitude toward the use of native linguistic word stock in the elaboration of Kiswahili technical terminology, this study did not include speakers' attitudes towards Bantu-sourced loanwords. Some Bantu-sourced terms have gained popularity and have become fully integrated into standard Kiswahili. *Kitivo* '(university) faculty' (Pare G22), *bunge* 'national assembly' (Ha D66), *ikulu* 'state house (Nyamwezi F22)' *nembo* 'court of arms' (Gogo G11) and *ulalo* 'diagonal' (Nyakyusa M31) are examples of Bantu-sourced terms which have become well established in Kiswahili, so that it is not even possible for non-Kiswahili experts and younger Kiswahili speakers to identify the etymology of such terms. Moreover, some Bantu-sourced loans, apart from their technical meanings, have undergone meaning extension in Kiswahili.

Table 45: Meaning extension in some Bantu-sourced loans in Kiswahili

loanword	original meaning	specialized	additional meaning(s)
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	meaning		
1. <i>ikulu</i>	‘chief’s household,	‘state house’	‘a massive building; mansion’
Nyamwezi (F22)	house of elders in charge’		
2. <i>nembo</i>	‘tattoo; mark,	‘coat of arms’	‘trade mark; logo’
(Gogo G11)	emblem’		
3. <i>bunge</i>	‘elders’ meeting in a	‘parliament’	‘secret plan to do something’
(Ha D 66)	village’		

Table 45 shows that *ikulu* ‘state house’, *nembo* ‘coat of arms’ and *bunge* ‘national assembly’ have extended their technical meanings beyond the original meanings. Such instance could suggest that the principles of linguistic appropriateness and correctness were followed in integrating those Bantu-sourced loanwords into Kiswahili, since the speakers have perceived these loanwords as being appropriate for the purpose for which they were created and finally attached extra meanings to them.

5.3. Estimates of Bantu-sourced loans across Kiswahili technical domains

The first objective of this thesis was to identify Bantu-sourced loans along with the sources that occur in standard Kiswahili terminology approved/published by BAKITA. This aim primarily seeks to establish estimates of Bantu-sourced loans and their distribution across standard Kiswahili technical domains. Although there is an increase of interest and knowledge of estimates of foreign items in standard Kiswahili, previous studies¹⁹⁰ on Kiswahili loanwords do not provide estimates of Bantu-sourced loans in standard Kiswahili technical terminology. Such studies also do not identify the Bantu-sourced loans and the donor languages from the terminology lists and ethnographic studies available. Thus, this section

¹⁹⁰ Bertoncini, 1973; Zawawi, 1979, Tumbo-Masabo, 1992; Polomé, 1983; Besha, 1995; Mwansoko, 1995; Lodhi, 2000; Gromova, 2000; Mwita, 2009; Schadeberg, 2009; Shembilu, 2010; Akidah, 2013 Bertoncini, 1973; Zawawi, 1979, Tumbo-Masabo, 1992; Polomé, 1983; Besha, 1995; Mwansoko, 1995; Lodhi, 2000; Gromova, 2000; Mwita, 2009; Schadeberg, 2009; Shembilu, 2010; Akidah, 2013, Hurskainen, 2004

presents Bantu-sourced loanwords in standard Kiswahili by technical domains and principal donor languages, as indicated in Table 46.

Table 46: Source languages and their number of terms in sixteen technical domains

Technical domains	Source languages and their number of terms in sixteen technical domains																												
	Haya	Ndegereko	Zaramo	Meru	Ngoni	Pare	Gogo	Zigua	Yao	Sukuma	Nvakyusa	Hehe	Jita	Kaguru	Mwera	Matengo	Bondei	Nyamwezi	Sumbwa	Sambaa	Nyaturu	Kerewe	Makonde	Chaga	Matumbi	Ha	Luguru	Zanaki	
Bio.	1	1							1																				
D/sc	1		2	1	1	2	1	1	1	1																			
Geog.	1				1	1	2	1		2	3	1	1	1	2	2	1	1											
Maths						1			1	2																			
Ag.En							1		1			1																	
F/plan																	1												
Pt & ani. dis.	1		1		2								1				2	2	1										
Comp.sc																									1				
Lang.	1								1					1						1	1								
Agro/Husb.	1					4	4		3			2		2	1		1					2	1	4		1			
Psych							1																						
Admn						1	1											1								1			
HIV/AIDS & other diseases						1	1		1								2										1		
Tech.draw.							1																						
Metr.									1																				
Polit																													1

Table 46 shows that the Bantu-sourced loanwords are unevenly distributed in 16 Kiswahili technical domains. Furthermore, the table shows that the coiners utilized linguistic stock from Bantu languages of Tanzania in the domains of agronomy and animal husbandry (25 terms), geography (20), plant and animal diseases (10) and domestic science (11). Among the 16 technical domains, agronomy and animal husbandry and geography occupy almost 50% of all the Bantu-sourced loanwords. Gogo (G11), Pare (G22) and Chaga (EE64) have produced almost 50% (each 4 loans totaling 12 out of 26) of all technical in the field of agronomy and animal husbandry. It is important that ‘the selection of a particular vernacular language as a source for borrowing seems to be spontaneous, since it is highly dependent on the ethnic background of the group of specialists engaged in the formation of terminology’ (Gromova, 2000:45).

The data in Table 46 indicate that the percentage of loan nouns is much greater than that of loan verbs, i.e., 96 out of 98 (about 98%) in the data are identified as nouns and only 2 (2 %) are verbs. All ninety-eight Bantu-sourced loans were considered valid for analysis. A close examination of the loan nouns reveals that 21 out of 96 (about 22%) loan nouns were derived from borrowed verbal stems. This still indicates that the borrowability of nouns (78%) is much higher than that of verbs (22%). Moreover, the majority of the borrowed verbal stems (21 out of 23)¹⁹¹ were not borrowed as verbs, but underwent nominalization in standard Kiswahili terminology. This suggests that loans nouns are more easily integrated into Kiswahili technical domains than loan verbs. Tadmor, (2009) and Schadeberg, (2009) show that many languages tend to borrow more nouns than verbs. Tadmor (2009:61) gives two reasons for such a phenomenon: ‘Verbs constitute complex and rigid systems that inhibit borrowing’ and ‘that things and concepts are easily adopted across cultures (along with the words for them)’.

¹⁹¹ 10 out of 23 verbal stems are infinitives/verbal nouns.

A further analysis of the unverbilized loan nouns indicates that 64 out of 75 (about 85%) were integrated into the Kiswahili technical domains without morphosyntactic adjustment, whereas 12 out of 75 (about 16%) underwent some morphosyntactic modification. The latter group went through morphosyntactic modification by either reducing a noun prefix syllable or by the loss of a noun class prefix, so that the loan nouns may fit into the system of Kiswahili noun prefixes (section 5.6.2).

5.4. The Proportion of Bantu-sourced loans in the 16 technical domains

The sixteen technical domains in Table 46 can be categorized into scientific and technological fields, and those fields belonging to social sciences. In this study, biology, mathematics, domestic science, agricultural engineering, plant/animal diseases and pesticides, birth control (family planning), psychology, agronomy and animal husbandry, HIV/ AIDS and other human diseases, technical drawing, meteorology and computer science have been placed in the category scientific and technological fields (Figure 18), while geography, language (linguistics and literature), administration and politics have been considered social sciences (Figure 18).

Figure 18: Domains of pure and applied sciences and technology

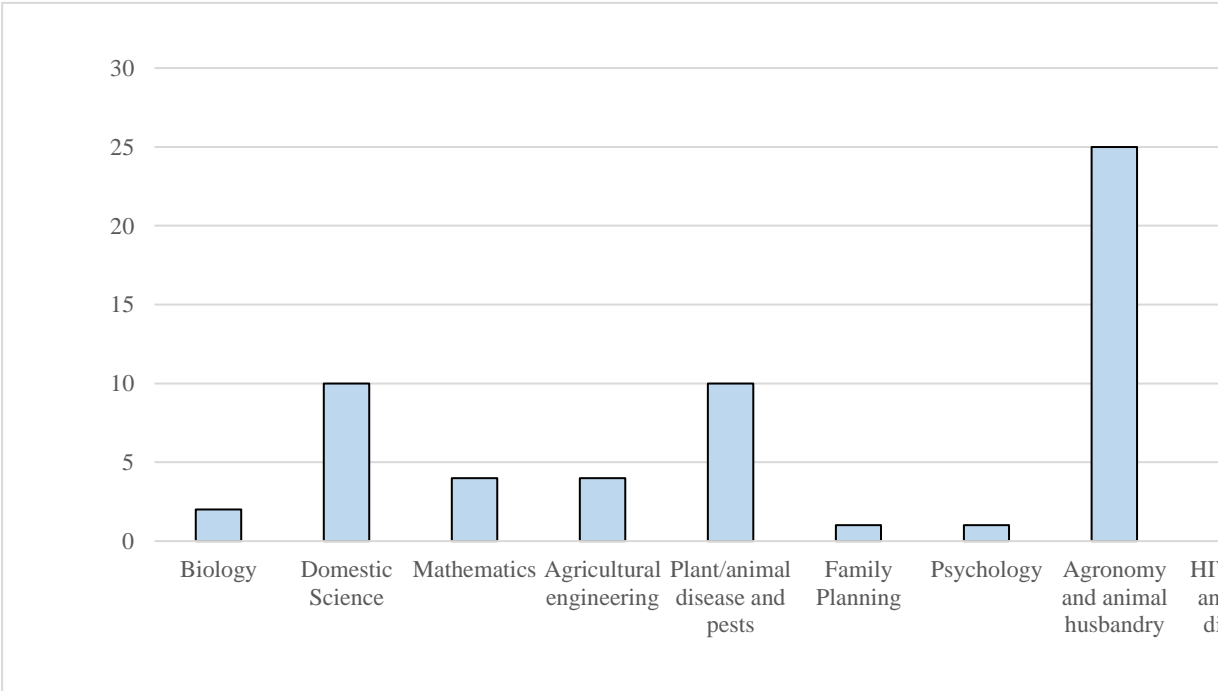


Figure 18 presents domains of pure and applied sciences and technology which have incorporated 68 Bantu-sourced items. The figure shows that the use of Bantu-sourced loans in the fields of agronomy and animal husbandry is greater (38%, i.e., 26 out of 68) than in any other Kiswahili technical domain in all the 12 domains. It is followed by domestic science (14.7%, i.e., 10 out of 68) and plant/animal diseases and pests (14.7%, i.e., 10 out of 68), respectively. HIV/AIDS and other human diseases has 7.3%, i.e., 5 out of 68, while the fields of technical drawing, family planning, meteorology, computer science and psychology have borrowed the least (1.47%, i.e., 1 out of 68).

The domains of social sciences have also incorporated a considerable amount of Bantu-sourced. The data show that Kiswahili has integrated 30 Bantu-sourced items into these technical subjects, as is shown in Figure 19.

Figure 19: Social Sciences

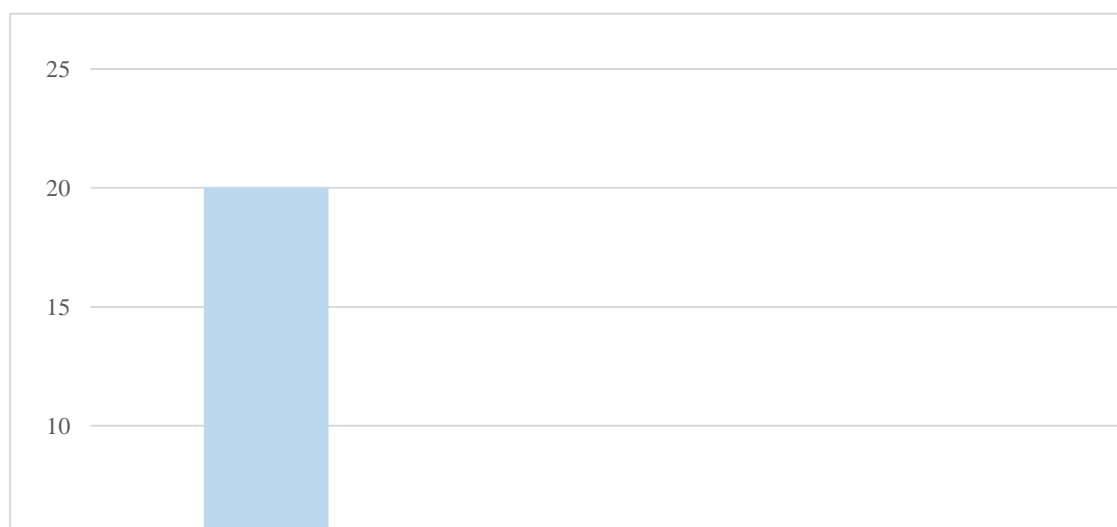


Figure 19 shows that Bantu-sourced loans in geography are 66.6% (20 out of 30) of the overall Bantu-sourced loans in the fields of social sciences were absorbed into geography. Bantu-sourced loans are as low as 16.6% in language, 13% in administration and 3.3% in politics.

When Figures 18 and 19 are compared, it can be seen that the percentage of Bantu-sourced loans is markedly higher in the scientific and technological fields than in the social sciences. The percentage is double (69.3%, i.e., 68 out of 98) in scientific and technological fields, while the percentage of Bantu-sourced loans in social sciences is 30.6% (30 out of 98). New a

5.5. An overview of vowels, consonants and noun classes of Bantu languages of Tanzania

5.5.1. Vowels and consonants

It is important to briefly discuss the basics of vowel and consonant systems, as well as noun classes of Tanzanian Bantu languages i.e., source languages. The basics will provide a general understanding of the source language vowels, consonants and noun classes before analysis of linguistic adaptations of Bantu-sourced loanwords in Kiswahili. However, this section was limited to the discussion of 7-vowel vs. 5-vowel systems i.e., some Tanzanian Bantu languages have seven or five vowel systems with two additional vowel qualities that will have to undergo specific adaptations in case Kiswahili technical terms are borrowed from them.

Hyman (2003), Maddieson (2003) and Nurse (1979), among many others, discuss Bantu phonology in great detail. Bantu languages show noteworthy features regarding syllable structure, consonant/vowel inventories, and phonological processes, despite the large number of languages and their huge geographical area (Hyman, 2003). The majority of Bantu languages are five or seven vowel languages and therefore all Eastern Bantu languages have either the seven or five vowel system¹⁹² (Dimmendaal, 2011; Massamba et al, 2004; Maddieson 2003; Batibo, 2000; Nurse, 1979; and Guthrie, 1967-71). The first category of the source language, by far the majority, comprises the languages with 5-vowel systems (/i, e, a, o, u/) namely, Chaga (E64), Pare (G22), Bondei (G24), Gogo (G11), Sambia (G23) Kagulu (G12), Zaramo (G33), Zigua (G31), Kerewe (E24), Haya (E22), Ha (D66), Jita (E25), Makonde (P23). Other languages with a five-vowel system include Makonde (P23), Mwera

¹⁹² For detailed descriptions of Eastern Bantu languages and Bantu historical linguistics refer to Schadeberg, (2003), Ehret, (1999), Nurse (1979), Guthrie (1967-71).

(N201), Yao (P22), Matengo (N13), Sumbwa (F23)¹⁹³, Zanaki (E44), and Hehe (G62). Calteux (1996), Batibo (2000) and Thornell (2004), among many others, observe that in the five vowel systems, two of the phonemes (mid-low back and mid-low front) have variants which are realized as mid-high back and mid-high front, respectively, i.e., the phoneme /ɛ/ is realized as [ɛ] and [e], and /ɔ/ as [ɔ] and [o]. The other category is a body of languages with seven vowels (/i, ɪ, e, a, o, ʊ, u/) which include Sukuma (F21), Nyamwezi (F22), Nyaturu (F32), Nyakyusa (M31), Matumbi (P13) and Ndengereko (P31).

The analysis of the source languages show that long/short vowel contrast is present in Sukuma, Nyamwezi (F22), Nyaturu (F32), Haya (E22) and Kerewe (E24). Vowel length is also preserved in Nyakyusa (M31), Hehe (G62), Jita (E25), Mwera (N201), Yao (P21), Matumbi (P13) and Ha (D66). All source languages belonging to North East Coast Bantu languages show absence of a length distinction in vowels (Nurse, 1979). Languages such as Kagulu (G12), Gogo (G11), Zaramo (G33), Zigua (G31), Kiswahili (G42), Bondei (G24), Sambia (G23), and Pare (G22) do not have a length distinction in vowels. Other languages include Makonde (P23), and Ndengereko (P11).

5.5.2. Bantu noun classes

Nouns in Bantu languages are inflected for gender and number. Prefixes mark the noun's membership in a noun class system. The prefixes also establish singular-plural pairings (gender) of noun classes. Bantu languages have an average of 23 noun classes; however, the number of noun classes varies considerably across Bantu languages (Nurse and Hinnebusch, 1993; Maho, 1999; Katamba, 2003). As for Eastern Bantu languages, the average is 17 or 18 noun classes, 'but the range is from 12 or 13 to 20' (Nurse and Hinnebusch, 1993:337). For example, Sukuma (F21) and Nyamwezi (F22) have 18 noun classes, while standard Kiswahili has 15¹⁹⁴.

¹⁹³ The status of Sumbwa (F23) is not clear, as Guthrie records (1967-71) seven vowels whereas (Nurse, 1979) and Kahigi (2000) record five vowels.

¹⁹⁴ When the locative classes are excluded (cl. 16-18), only 12 classes remain active in the secondary re-categorization (Nurse and Hinnebusch, 1993:337).

As in other Bantu languages, nouns in Kiswahili can be paired into seven genders (singular-plural pairings), namely 1/2, 3/4, 5/6, 7/8, 9/10, 11/10 and 11/6. However, singular-plural pairings ‘are more or less vaguely connected with specific areas of meaning’ (Schadeberg, 1992:15). The characteristics of Eastern Bantu noun class system are summarized by Nurse and Hinnebusch (1993:337) as follows:

Eastern Bantu class systems as a whole are characterized by (a) an overt, obligatory, prefix marking gender (and number), an extra (pre)prefix which typically may be present or not, but whose presence represents a range of functions from those of demonstrative to non-generic article (and in a very few cases, to being a fixed feature, thus forming part of the marker of the gender system) (b) characteristic pairings of singular and plural genders and (c) a form of agreement between the head noun and all the constituents of the noun phrase and also with certain constituents, such as unbound anaphoric pronouns and subject agreement on the verb is its overt gender.

This study focuses on the noun class prefixes, as they play a derivational role when attached to noun stems. When a noun undergoes a gender shift, the prefix often bears a predictable semantic content. This process involves changing the prefixes of noun stems. Therefore, any noun prefixal change may result in a change in the meaning and class of the target noun(s). This is the reason why gender shift is a derivational process. Quite often, in Bantu languages, shift in gender may form augmentatives. Consider the following examples from Kiswahili: *mtu* cl.1/2 ‘person’ > *jitu* (and 5/6¹⁹⁵) ‘giant’; diminutives *mtu* > *kijitu* (cl.7/8) ‘small person’; or abstract qualities *mtu* > *utu* (cl.11) ‘personality’.

5.6. The Integration of Bantu-sourced loans in Kiswahili terminology

Quite often, lexical borrowings undergo changes to fit into the morphological and phonological systems of the target languages. This section responds to the research question - what phonological and morphological changes do Bantu-sourced loans undergo in standard Kiswahili? Therefore, this section presents an analysis of phonological and morphological processes involved in integrating Bantu-sourced words into Kiswahili.

¹⁹⁵ Coastal Kiswahili native speakers have cl.3/4 and 5/6 for augmentatives which are substituted for the standard Kiswahili cl.5/6 (King’ei, 2000:84-5).

5.6.1. Phonological adaptations

5.6.1.1. Adaptation of source language consonants to Kiswahili consonants

When consonants of Bantu-sourced lexical items are transferred to standard Kiswahili terminology, in many cases no replacement is needed. For example, source language fricatives which are identical to those of Kiswahili are integrated into the language fricatives in the same place and manner of articulation, as shown in the following examples: *fuwele* ‘dead rocks’ (Zigua- G31) → *fuwele* (Kiswahili - G42) and ʃ (sh) → ʃ (sh) in *shiganga* ‘boulder’ (Sukuma - F21) → *shiganga* (Kiswahili - G42), to name just a few. Moreover, the source language labio-dental, alveolar, alveo-palatal, velar and glottal fricatives are expected to be adopted into Kiswahili without any modification. However, one Bantu word has a consonant which Kiswahili cannot absorb into its phonemic system, as shown in the subsection 5.6.1.1.1.

5.6.1.1.1. Adaptation of /β/, /l/ and /r/ in standard Kiswahili terminology

The voiced bilabial fricative /β/ has been identified from the data as the only missing source word fricative in Kiswahili. As a result, the fricative /β/ is replaced by /b/ in Kiswahili, for example *βwagara*¹⁹⁶ (Jita E. 25) > *bwagala*¹⁹⁷ (Kiswahili G42) ‘farrow’. Such a change is motivated by phonetic approximation (Calteux, 1996; Kim, 2019). This appears to be true, since the most similar standard Kiswahili sound to the fricative /β/ is the standard Kiswahili sound /b/.

In the term *βwagara*, one also notices the replacement of /r/ by /l/. In fact, Jita (E25) has the phoneme /l/, however, the phoneme ‘/l/ has the apical tap /r/ as its allophone. Morpheme-initially only the /l/ (a coronal lateral) is found. Elsewhere, one finds the apical tap, /r/’ (Downing, 2001:2). The tap is transcribed /r/ (ibid; Mdee, 2008; Kagaya, 2005). Both Jita (E25) and standard Kiswahili (G45) phonological systems suggest the source tap /r/ would be

¹⁹⁶ One may also consider Kagaya (2005) and Mdee (2008) for the form and meaning. TS no. 5 (1985:2) shows that the term *βwagara* ‘farrow’ was borrowed from Jita (E25).

¹⁹⁷ The standard form of *βwagara* ‘farrow’ is *bwagala* (cf. KKK, 2015:104; Tafsiri Sanifu No. 5, 1985:2)

adopted as /r/ in standard Kiswahili terminology. Similar cases are noted in the examples 1 and 2 in Table 47 where the replacement inconsistently goes in both directions, i.e., original /l/ replaced by /r/ and the vice versa is true.

Table 47: Integration of /l/ and /r/ into Kiswahili

source word	source language	Kiswahili (G42)	changes
1. <i>ngeelo</i> ‘epithalamion’	Sukuma (F21)	<i>ngero</i> ‘epithalamion’	/l/ → /r/
2. <i>rweeya</i> ‘virgin land; grassy land’	Haya (E22)	<i>lweya</i> ‘virgin land’	/r/ → /l/
3. <i>uloto</i> ‘synovial fluid, bone marrow’	Zaramo (G33)	<i>uloto</i> ‘bone marrow’	/l/ → /l/
4. <i>kipera</i> ‘tributary; stream’	Ngoni (N12)	<i>kipera</i> ‘tributary’	/r/ → /r/

According to Batibo (1980), /r/ does not form part of the Sukuma phoneme sounds, whereas standard Kiswahili has both /l/ and /r/ phonemes. Both Sukuma (F21) and standard Kiswahili (G45) phonological systems point out that the source lateral /l/ should have been adopted as /l/ in standard Kiswahili terminology. Concerning the term *lweya* ‘virgin land’, Muzale (2018) gives the source form as *rweeya* ‘virgin land; grassy land’ (Haya E22). This shows that the original /r/ has been replaced by /l/ in standard Kiswahili terminology. Likewise, Haya (E22) and standard Kiswahili (G45) phonological suggest that the original /r/ should have been adopted as /r/ in standard Kiswahili terminology.

In addition, the examples in Table 47 suggest that the distribution of /r/ versus /l/ in the loans is completely random. One possible reason for this is that most Tanzanian Bantu languages do not phonemically distinguish /r/ from /l/ (Nurse and Hinnebusch, 1993). As a result, the non-coastal Kiswahili L2 speakers replace /r/ with /l/ and vice versa, according to the preference of their respective L1. This might have a direct influence on the transcription of those two sounds in the course borrowing process.

5.6.1.1.2. Adaptation of /y/ and /f/ in standard Kiswahili terminology

Standard Kiswahili has the voiced velar fricative /y/ (gh), which is an Arabic loan. Therefore, this sound is expected to be adopted into Kiswahili without any alternation, but two cases

were noted in the data where the voiced velar fricative /ɣ/ (gh) is replaced either by a voiced velar plosive /g/ or a voiceless glottal fricative /h/. Moreover, Kiswahili also has the voiceless fricative /f/, but it is replaced by voiceless plosive /k/ in Kiswahili, as shown in Table 48.

Table 48: The adaptation of source consonants /ɣ/ and /f/ in Kiswahili

source word	source language	Kiswahili form	Changes
1. <i>mvigha</i> ‘ritual, ceremony’	Sambaa (G23)	<i>mviga</i> ‘ritual’	/ɣ/ → /g/
2. <i>ngagha</i> ‘a scrip with many pockets used to hold many things’	Nyaturu(F32)	<i>ngaha</i> ‘accessories’	/ɣ/ → /h/
3. <i>nfufuzi</i> ‘insects which destroy stored organic material such as hides, meat etc.’	Nyamwezi (F22)	<i>fukuzi</i> ‘dermestids’	/f/ → /k/

The sound /ɣ/ does occur in Kiswahili, but is restricted to loanwords of Arabic origin and most Kiswahili speakers, especially non-coastal native speakers who lack that sound in their L1, have a habit of replacing /ɣ/ (gh) with /g/, for instance, *lughā* (Arabic) > *luga* ‘language’; *ghala* (Arabic) > *gala* ‘store’. As regards the adaptation of /f/, source language fricatives, which are identical to those of Kiswahili, are integrated into the language fricatives of the same place and manner of articulation. So far there is a lack of phonological explanation as to why the source fricative /f/ changed to /k/ in standard Kiswahili. Although the two sounds in terms of the feature of manners have many features in common i.e., +Cons, -Appro, -Cont, -Nas, except for the feature of Cons, where /f/ is +Cons and /p/ is -Cons (Spencer, 1996: 112), this does not seem to justify such a change.

5.6.1.2. Adoption of source word Plosives, glides and the prefix /N/ in Kiswahili

The data show that all source word plosives, glides and nasals were adopted without changes into Kiswahili. This is because all these segments are identical in source and target languages. While many words of Bantu origin permit n before voiceless stops and voiceless fricatives,

Kiswahili¹⁹⁸ differs from other Bantu languages in not allowing this. However, it is worth noting that this only applies to the noun class prefix of classes 9 and 10 and not to other nasals such as *m-*, which combines easily with voiceless stops and fricatives in Kiswahili, as in *m-papai* ‘pawpaw tree’ *m-fungwa* ‘prisoner’, *m-ti* ‘tree’ etc.

The data indicate that the cl. 9/10 source noun prefix *n* is deleted before the voiceless labiodental fricative /f/ in Kiswahili, as shown in table 49.

Table 49: Deletion of *n* before /f/

source word	source language	Kiswahili (G42)
1. <i>nfufuzi</i> (cl.9/10) ‘insect which destroys organic material such as skins, meat.’	Nyamwezi (F22) ¹⁹⁹	Ø- <i>fukuzi</i> (cl.9/10) ‘dermestids’

The example in Table 49 indicates that the *n* deletion before voiceless fricatives is still active in Kiswahili, even in loans of Bantu origin.

5.6.1.3. Adaptation of source language vowels in standard Kiswahili

Basically, there are two types of vowel changes which occur in Bantu-sourced loanwords when they are integrated into the Kiswahili phonemic system. These changes are (i) substitution of vowels which do not occur in standard Kiswahili, and (ii) loss of distinctive vowel length.

5.6.1.3.1. Vowel replacement

The data show the replacement of high-mid vowels /ɪ, ʊ/ by the Kiswahili high vowels /i, u/. Madiba (1994:176 quoted in Calteux, 1996) refers to this type of substitution as the native

¹⁹⁸ Nurse and Hinnebusch (1993:199-200) assert that the deletion of N- before fricatives occurred a little earlier than the loss of N- before voiceless stops.

¹⁹⁹ Other Eastern Bantu languages which delete the class prefix N- before voiceless fricative include Nyankore (E13) and Zaramo (G37).

segment inventory constraint, as it prevents the occurrence of any vowel which does not belong to the adopting language's sound inventory.

Table 50: Vowel adaptation of Bantu-sourced loans in Kiswahili

source word	source language	Kiswahili (G42)	change
1. <i>ikolo</i> 'chief's homestead'	Nyamwezi (F22)	<i>ikulu</i> 'state house'	/o/ → /u/
2. <i>kitemela</i> 'cultivator'	Sukuma (F21)	<i>kitemela</i> 'planter'	/ɪ/ → /i/
3. <i>lsooko</i> 'dale, valley'	Nyakyusa (M31)	<i>lusoko</i> 'crater'	/o/ → /u/

Table 50 shows that source word's mid-high vowels are replaced by high vowels in Kiswahili, thus /o/ → /u/ and /ɪ/ → /i/. The replacement of mid-high vowels by high vowels seems to be influenced by phonetic approximation, because the mid-high vowels are perceived by Kiswahili speakers as more similar to the high vowels than to the mid vowels, so they are rather replaced by the high vowels and not by the mid vowels.

5.6.1.3.2. Loss of distinctive vowel length

Vowel length in standard Kiswahili is not at the phonemic, but at the phonetic level, i.e., all vowels in penultimate position are automatically long. It was noted in the data that only one case shows the reduction of vowel length in Kiswahili, due to the placement of the long vowel in antepenultimate position in the source word, as shown in Table 51.

Table 51: Loss of vowel length in the initial position

source word	source language	Kiswahili (G42)
1. <i>ndaagano</i> 'confluence'	Mwera (N201)	<i>ndagano</i> 'confluence'

The data presented in Table 51 show clearly that a long vowel in the source word which is not in the penultimate position has been reduced to a short vowel in standard Kiswahili.

5.6.2. Morphological adaptations

The analysis of the data shows that integration of Bantu-sourced loans into the Kiswahili morphological system involves derivation, reanalysis of loan noun class prefixes and re-assignment of loan nouns to new noun classes.

5.6.2.1. Derivation

5.6.2.1.1. Verb-noun derivation: use of nominalizing suffixes

The data show that verb-to-noun derivation involved two processes. The first involved attaching a final suffix to a verbal root and the second process was the assignment of noun class prefixes to derived noun terms. There are several Kiswahili nominalizing suffixes that were used to form noun terms from verbal stems sourced from Bantu languages of Tanzania. As seen in sections 4.5.4.1.1 and 5.2.5, each suffix has a defined meaning i.e., the suffix *-e* forms nouns designating passivity, *-i* expresses agency, *-o* is used to form nouns designating instrument, result or process, *-u* denotes state, *-aji* expresses habituality and *-a* has various meanings as it occurs in all classes (c.f Contini-Morava, 2007; Massamba et al., 2003; Schadeberg, 1992).

Kiswahili terminologists find it easy to derive terminological nouns from verbal stems sourced from Bantu languages using the suffix *-i*. Generally, this method is productive in Bantu languages, but the data in Table 52 show that only one terminological noun has been formed from a borrowed verbal stem by using the agentive morpheme *-i*.

Table 52: Verb-noun derivation using the nominalizing suffix *-i*

source word	source language	Kiswahili (G42)
1. <i>domola</i> ‘peck’	Zigua (G31)	<i>ki-domoz-i</i> (7/8) ‘leaf miner’

The example presented in Table 52 shows that the final consonant /l/ changes to a voiced alveolar fricative /z/. The nominalizing suffix *-i* triggers the morphophonological change experienced at the final position of the verbal root *domol-* ‘peck’. In Bantu and Kiswahili in

particular, many agentive nouns are formed by using the suffix *-i*, for example, *pika* ‘cook’ > *m-pish-i* (cl.1/2) ‘cook’; *iba* ‘steal’ > *m-wiz-i* (cl.1/2) ‘thief’; *penda* ‘love’ > *m-penz-i* (cl.1/2) ‘lover’. In all those examples, as with *domol-a* ‘peck’, the nominalizing suffix *-i* changes the preceding consonants, in which plosives /b/ and /d/ change into a fricative /z/.

The data show that some Kiswahili nouns were derived from verbal stems sourced from local Bantu languages. The loan nouns with the suffix *-o* refer to results of actions and instruments, as shown in Table 53. A look at the data shows that the suffix *-o* is the most productive.

Table 53: Verb-noun derivation using the nominalizing suffix *-o*

source word	source language	Kiswahili (G42)
1. <i>voromoka</i> ‘fall rapidly’	Bondei (G24)	<i>ki-voromok-o</i> ‘stillbirth’
2. <i>sangila</i> ‘clear a farm’	Ngoni (N12)	(msimu wa) <i>sang-o</i> ‘close season’
3. <i>kakata</i> ‘get the better of by curving’	Gogo (G11)	<i>m-kakat-o</i> ‘freehand sketches’

The suffix *-aji* is used with 1/2 prefixes to derive agentive nouns from verbs, for example, *-nywa* ‘drink’ > *m-nyw-aji* ‘drinker’. This suffix i.e., *-aji* expresses habituality. It also occurs with other classes such as 7/8 *ki-nyw-aji* ‘a drink’, where the meaning of *-aji* is not clear. Thus, using examples of Bantu-sourced loans in Table 54:

Table 54: Verb-noun derivation with the nominalizing suffix *-aji*

source word	source language	Kiswahili (G42)
1. <i>bigia</i> ‘reseed’	Zigua (G31)	<i>ubigi-aji</i> (cl.11) ‘re-afforestation’
2. <i>topesha</i> ‘season’	Yao (P21)	<i>utopeh-aji</i> (cl.11) ‘soup thickening’
3. <i>tapasa</i> ‘reduce’	Ngoni (N12)	<i>kitapas-aji</i> (cl.7) ‘reducer’

All the examples in Table 54 fall under cl.11. When the suffix *-aji* appears with the cl.11 prefix *u-*, ‘the action is viewed in the abstract as a whole’ (Ashton, 1944:284). The agentive noun *kitapasaji* ‘reducer’ (cl.7) < *tapasa* ‘reduce’ (Ngoni N12) denotes an action and the entity which performs the action. The prefix *ki-*, which has been attached to the verbal stem

tapasa ‘reduce’, places the nominalized verb into 7/8 (*ki-/vi-*), the gender also for instruments/tools.

The data in Table 55 indicate that there are loan nouns which have been formed from verbal bases by adding the suffix *-a*. The deverbal nominalizing suffix *-a* occurs with all classes. As such, it has a wide range of semantic content (Schadeberg, 1992).

Table 55: Verb-noun derivation using deverbal nominalizing suffix *-a*

source word	source language	Kiswahili (G42)
<i>shiika</i> ‘stake’	Chaga (E64)	<i>m-shika</i> (3/4) ‘staking’
<i>laala</i> ‘leftover, sleep’	Nyamwezi (F22)	<i>ki-lala</i> (7/8) ‘fallow’
<i>laha</i> ‘arbitrate, negotiate’	Zigua (G24)	<i>ku-laha</i> (15) ‘negotiate’
<i>tmela</i> ‘plant without plowing’	Sukuma (F21)	<i>ki-temela</i> (7/8) ‘planter’
<i>machunda</i> ‘churned milk’	Haya (E22)	<i>ma-chunda</i> (5/6) ‘skimmed milk’

Examples in Table 55 show that some Kiswahili nominal terms were formed by simply adding the nominal suffix *-a* to a verbal base. The suffix *-a* occurs with all noun classes and in table 15 it occurs with the noun prefixes *m-* (3/4), *ki-* (7/8), *ku-* (15) and *ma-* (5/6).

5.6.2.2. Re-assignment of noun classes

Re-assignment of Bantu-sourced loan nouns to new Kiswahili classes has been shown to affect the morphological structures of some of the loanwords. This happens with Bantu-sourced noun prefixes, which do not correspond to any of the class prefixes in Kiswahili. The initial syllable prefixes *ka-*, and *i-*, or *li-*²⁰⁰ have been affected in Kiswahili, since they have been either integrated into the lexical root or deleted. In some cases, loan nouns with the prefix *lu-* are allocated to the corresponding *u-* noun class in Kiswahili. Moreover, as will be

²⁰⁰ The *i- Cl.5/6 has undergone many changes. In Sukuma (F21) it is realized as i-; in Kiswahili it is realized as ji- or Ø while in Mwera (N201) the noun class prefix for cl.5/6 is li-.

shown in the subsequent sections, prefix ‘interference’ has also been shown to disturb the semantic content of the noun class prefix of one loanword.

Prior to assignment to new classes, the loan nouns underwent re-analysis of the prefix. Four major morphological processes, reanalysis of CV- prefix to V-, deletion or replacement of a source noun class prefix with a standard Kiswahili noun class prefix, integration of a source prefix into the lexical root and re-assignment of loan nouns to new classes, have been involved in the integration of Bantu-sourced loan nouns into standard Kiswahili terminology. Some source prefixes with the structure CV- undergo deletion of the initial consonant and are thus reduced to V- in Kiswahili. Table 56 illustrates the reduction of the source prefix *lu-* to *u-* – and integration of the source prefix *ka-* into the lexical root.

Table 56: Re-analysis of source noun prefixes in Kiswahili

source word	source language	Kiswahili (G42)
1. <i>lu-lalo</i> ‘bridge’ (cl.11)	Nyakyusa (M31)	<i>u-lalo</i> ‘diagonal’ (cl.11)
2. <i>ka-sooko</i> (12/13) ‘small dale, valley’	Nyakyusa (M31)	\emptyset - <i>kasoko</i> (9/10) ‘caldera’

The first example in Table 56 shows that the first consonant /l/ of the CV- prefix *lu-* is deleted in Kiswahili. The second example shows that the source prefix *ka-* loses its morphological status as it becomes part of the lexical root in standard Kiswahili.

The data in Table 57 also show that the integration of the loan nouns in standard Kiswahili is accompanied by deletion of some of the source prefixes. Loss of source noun prefixes in some of the loans occurs in order for the loan nouns to fit into Kiswahili noun class system. Table 57 indicates loan nouns which deleted noun prefixes in Kiswahili.

Table 57: Deletion of source prefixes in some loan nouns

source word	source language	Kiswahili (G42)
1. <i>li-tepo</i> ‘stem’ (5)	Mwera (N201)	\emptyset - <i>tepo</i> ‘cone’ (5)
2. <i>nfufuzi</i> ‘a small insect destructive to stored hides, meat and other	Ha (D66)	\emptyset - <i>fukuzi</i> ‘dermestid’ (9)

animal substances' (9)

3. *lu-giligili* 'fluid' (11)

Nyakyusa (M31)

\emptyset -*giligili* 'fluid'

The data in Table 57 show that the deletion of noun class prefixes is influenced by the gender to which the loan nouns have been assigned. Generally, Bantu morphology reveals that most class 5 nouns have a zero prefix, as do class 9 nouns. The source prefixes in table 58 are deleted when they are assigned to classes 5 and 9. In most cases, nouns with a zero prefix in those classes fluctuate between those classes. As a result, those classes have accommodated many loan nouns. However, pluralization and agreement patterns seem to be the distinguishing factors of class 5 and class 9 nouns, as nouns in class 5 take their plurals in class 6 (the *ma*-class), while class 9 nouns have a zero prefix in their plural form i.e., class 10. As regards agreement patterns, the pronominal concords for 5/6 is *li-/ya-*, but *i-/zi-* is for 9/10.

5.6.2.2.1. Re-assignment of nouns with NCP *lu-/ru-* (cl.11) to cl.5/6 or cl.9/10 or cl.11

The data in Table 58 show that source words containing the prefix *lu-* have been assigned to different noun classes in Kiswahili. The examples in Table 58 show that two processes have been applied to the source prefix *lu-*: (i) reduction of *lu-* to *u-* and, (ii) retention of the segments of the prefix with reanalysis as part of the lexical root. The type of adaption chosen is determined by the gender to which the loan nouns are re-assigned. The assignment of loan nouns to class 11 requires the deletion of initial consonants of the original noun class prefixes, while the re-assignment of loan nouns to genders 5/6 and 9/10 is accompanied by the deletion or integration of source prefixes into the lexical roots in Kiswahili.

Table 58: Re-allocation of loan nouns with NCP *lu-/ru-* to three different classes

source word	source language	Kiswahili (G.42)
1. <i>lu-sooko</i> 'dale, valley' (11)	Nyakyusa (M31)	\emptyset - <i>lusoko</i> 'crater' (9/10)
2. <i>r(l)u-eya</i> 'uncultivated land' (11)	Haya (E22)	\emptyset - <i>lweya</i> 'virgin land' (5/6)
3. <i>lu-lalo</i> 'bridge' (11)	Nyakyusa (M31)	<i>u-lalo</i> 'diagonal' (11)

Assuming the semantic content of the examples in Table 58 is *concrete substances* and the noun prefixes have the CV structure, there seems to be no concrete phonological and semantic reason as to why the reanalysis of *lu-*, which surfaces as *u-* in Kiswahili, ends in three different classes in Kiswahili. Historically, the cl.11 and cl.14 merged into Kiswahili and produced cl.11²⁰¹. Moreover, since Kiswahili deleted **l** before **u** in the course of its development, one would expect that all Bantu-sourced loan nouns with the prefix *lu-* were assigned to the *u-* class for the sake of consistency. This would also help to avoid semantic and prefixal confusion.

5.6.2.2.2. Re-assignment of nouns with NCPs *i-* (cl.5) to cl.9/10

In this sub-section, only one instance of re-allocation of loan nouns has been noted from the data. The loan noun *ikulu* (5/6 < Nyamwezi F22) > ‘state house’ was assigned to 9/10 in standard Kiswahili. It is important to highlight that *itale* (5/6) (< Sukuma F21) > ‘granite’ have been assigned to different genders in Kiswahili²⁰². TS (1978³:28) shows that the derived form *itale* ‘granite’ retained its gender (5/6) in Kiswahili, while KKK (2015¹:326) has assigned *ikulu* ‘state house’ (< *ikulo*) to gender 9/10²⁰³. Generally, there is always an overlap between the nouns of 5/6 and 9/10 in Kiswahili. The overlap is due to the fact that 5/6 and 9/10 have no overt singular prefix since the noun class prefixes of those classes were lost²⁰⁴. As a result, genders 5/6 and 9/10 are known as ‘dumping grounds for loanwords’ in Kiswahili (cf. Eastman, 1991:74; Nurse and Hinnebusch 1993).

5.6.2.2.3. Re-assignment of loan nouns with NCPs *bu-* (cl.14) to cl.11

As seen in the preceding sections, Proto-Bantu noun classes 11 and 14 have been merged in Kiswahili by loss of initial consonants of the original noun class prefixes **lu-* and **bu-* and

²⁰¹ In the merging of cl. 11 and 14, Nurse and Hinnebusch (1993:350) assert that ‘the small number of nouns in Class 11, the semantic need to get them out of the same gender as old Class 14 abstracts, the singular-plural connection of class 11/10, and the established phonological leveling of class 10 consonants into class 11, all led to a reassignment of old class 11 nouns, and especially into Class (9-)10.’

²⁰² Sukuma and Nyamwezi are closely related languages and some of the features shared by these languages include seven vowel system, noun class system and use of tone.

²⁰³ Both TS and KKK (2015²:326) are works of BAKITA.

²⁰⁴ See Nurse (1979); Nurse and Hinnebusch (1993); Schadeberg (2003).

their convergence in one form, i.e., *u-*. Thus, cl.14 nouns sourced from Bantu languages are assigned to cl.11 in Kiswahili. Only one example of a noun of quality has been identified from the data: *βo-sonji* ‘autism’ (Sukuma F21, cl.14) > *u-sonji* ‘autism’ (cl.11). Nouns of quality can be formed from adjectives and cl.1/2 nouns, which denote a certain type of people, and place them in cl.14. Basically, the term *βosonji* ‘autism’ (cl.14) is derived from cl.1/2 noun *sonji* ‘autist’ (Sukuma F21), while its derived form *usonji* ‘autism’ (11) was incorporated into Kiswahili terminology. Generally, derived nouns belonging to this class have the obvious semantic feature of ‘quality’ or ‘abstractness’ (Schadeberg, 2003).

5.6.2.2.4. Re-assignment of loan nouns with NCP *ka-* (12/13) to 7/8 and 9/10

In the data presented in Table 59 below, the source nouns with the prefix *ka-* have membership in separate genders i.e., 7/8 and 9/10. Notice that both nouns have phonetically identical prefix and with the same semantic content (diminution), but have been assigned to different noun classes in Kiswahili. The data in table 60 show two processes that have been applied to the source prefix *ka-*: (i) replacement of the non-standard Kiswahili noun prefix with a standard Kiswahili one and, (ii) retention of the prefix with reanalysis as part of the lexical root. The type of adaption chosen is determined by the gender to which the loan nouns are re-assigned. The assignment of the loan noun to gender 7/8 requires the replacement of the original noun class prefix *ka-* with a standard Kiswahili noun prefix *ki-*, while the re-assignment of the loan noun to gender 9/10 is accompanied by the integration of source prefix into the lexical root in standard Kiswahili.

Table 59: Re-allocation of loan nouns with NCP *ka-* to two different classes

source word	source language	Kiswahili (G 42)
1. <i>ka-ganga</i> (12/13) ‘small stone’	Hehe (G62)	<i>ki-ganga</i> (7/8) ‘hardpan’
2. <i>ka-sooko</i> (12/13) ‘small dale, valley’	Nyakyusa (M31)	<i>Ø-kasoko</i> (9/10) ‘caldera’

Given that the semantic content of the prefix *ka-* (12/13) is to mark nouns for entities perceived as smaller than normal, reassigning *kaganga* (12/13) ‘a small stone’ to gender 7/8

(a gender of diminutives) of standard Kiswahili has a definable semantic ground. Historically, Kiswahili used to have gender 12/13 (diminutive), but does not currently have reflexes in standard Kiswahili. Therefore, *ki-* came also to mark nouns for entities perceived as smaller than normal. On semantic and phonological grounds, *kasoko* (12/13) ‘a small dale or valley’ should have also been re-assigned to gender 7/8 of standard Kiswahili. However, loan nouns with phonetically identical prefix and with the same semantic content have been assigned to two different classes in standard Kiswahili.

5.6.3. Retention of source noun classes in Kiswahili

The majority of the loans have maintained their former noun classes in standard Kiswahili with or without prefixal change. In this regard, the Bantu-sourced loans have been assigned to 1/2, 3/4, 5/6, 7/8, 9/10, 11 and 15.

5.6.3.1. Assignment to Cl. 9/10 (N/Ø)

The nouns assigned to this class have either a zero-noun prefix, or a N which assimilates to the initial segment of the noun root, or a N which is deleted before a voiceless fricative /f/, or a nasal segment which is part of the root. The homorganic nasal N is morphologically not active; the nouns with the N have been treated as roots. This gender holds more members than any noun class.

Table 60: Allocation of loans nouns to 9/10

source word	source language	Kiswahili (G42)
1. <i>ngeli</i> ‘type, class’	Haya (E22)	<i>ngeli</i> ‘noun class’
2. <i>nywinywila</i> ‘code word(s) used to authenticate or recognize fellow fighters’	Matumbi (P13)	<i>nywila</i> ‘password’
3. <i>Øshuna</i> ‘foot and mouth disease’	Haya (E22)	<i>Øshuna</i> ‘foot and mouth disease’
4. <i>nfufuzi</i> ‘insects that destroy stored meat, skins etc.’	Nyamwezi (F22)	<i>Øfukuzi</i> ‘dermestids’

5.6.3.2. Assignment to Cl. 5/6 (\emptyset -/ji-/ma-)

Noun terms found in 5/6 have either zero/ji- prefix or appear with the collective marker *ma-* (see Table 61). In forming plurals, the standard Kiswahili prefix *ji-* is omitted before a consonant-initial stem, except when the stem is monosyllabic e.g., *ji-cho/ma-cho* ‘eye(s)’ and when it appears as *j-* before disyllabic vowel initial stems *j-iwe/mawe* ‘stone(s)’. No 5/6 noun terms with the prefix *ji-* have been found in the data.

Table 61: Allocation of loan nouns to 5/6

source word	source language	Kiswahili (G42)
1. \emptyset - <i>bunge</i> ‘elder’s assembly’ (5)	Ha (D66)	\emptyset - <i>bunge</i> ‘national assembly’ (5)
2. \emptyset - <i>fyulisi</i> ‘peach’ (5)	Nyakyusa (M31)	\emptyset - <i>fyulisi</i> ‘peach’ (5)
3. <i>masana</i> ‘colostrum’ (6)	Sukuma (F21)	<i>masana</i> ‘colostrum’ (6)
4. <i>machunda</i> ‘churned milk’ (6)	Haya (E22)	<i>machunda</i> ‘skimmed milk’ (6)

In addition, Bantu-sourced loan nouns with 5/6 prefix (*i-* or *li-*) have retained their gender in standard Kiswahili. However, the source prefixes of the loan nouns have been either deleted (see example 1 in Table 62) or integrated into the lexical root (see example 2 in Table 62).

Table 62: Retention of gender of loan nouns with NCP *li-/i-*

source word	source language	Kiswahili (G42)
1. <i>li-tepo</i> ‘stem of tree’ (5/6)	Mwera (N201)	\emptyset - <i>tepo</i> ‘cone’ (5/6)
2. <i>i-tale</i> ‘flat rock’ (5/6)	Sukuma (F21)	\emptyset - <i>itale</i> ‘granite’ (5/6)

5.6.3.3. Assignment to Cl. 7/8 (*ki-/vi-*)

In standard Kiswahili, cl.7 contains nouns with the prefix *ki-* or *ch-* and the corresponding cl.8 prefix *vi-* or *vy-* is used to form plurals of cl.7. The prefixes *ki-/vi-* appear before consonant-initial stems (see Table 63) while *ch-/vy-*²⁰⁵ occurs before vowel-initial stems, for example,

²⁰⁵ The data do not have such morphemes

ch-*umba*/vy-*umba* ‘room(s)’, except before a mid-vowel - *ki-oo*/*vi-oo* ‘mirror(s)’; but there are exceptions to this rule, e.g., *ki-uno*/*vi-uno* ‘waist(s)’; *ki-umbe*/*vi-umbe* ‘creation(s)’.

Table 63: Allocation of loan nouns to 7/8

source word	source language	Kiswahili (G42)
1. <i>ki-pera</i> ‘stream; tributary’	Ngoni (N12)	<i>ki-pera</i> ‘tributary’
2. <i>ki-tivo</i> ‘fertile soil’	Pare (G22)	<i>ki-tivo</i> ‘faculty’

5.6.3.4. Assignment to Cl.3/4 (*mu-/mi-*)

Loan nouns in this class take the prefix *mu-* in singular form and *mi-* in plural form. The prefix *mu-* becomes syllabic *m-* before consonant-initial stems and occurs as *mw-* before vowel-initial stems.

Table 64: Allocation of nouns to 3/4

source word	source language	Kiswahili (G42)
1. <i>m-kota</i> ‘hide’	Pare (G22)	<i>m-kota</i> ‘hide’
2. <i>mu-tozo</i> ‘incision brand on the ears of an animal’	Gogo (G11)	<i>m-tozo</i> ‘ear notch’
3. <i>mw-alilo</i> ‘cover’	Kerewe (E24)	<i>mw-alilo</i> ‘cover crop’

5.6.3.5. Assignment to 11 (*u-*) and 11/10 (*u-/N*)

The NCP for 11 is *u-* and occurs as *w-* before a stem initial vowel, while nouns normally take their plural form N of class 10. According to the analysis of the data, class 11 contains two sets of loan nouns, those which take plurals in cl.10 and the ones which do not. Table 65 contains single gender nouns, which are by far the majority.

Table 65: Allocation of single gender nouns to 11

source word	source language	Kiswahili (G.42)
1. <i>u-jinji</i> ‘yellow mango juice’	Zigua (G31)	<i>u-jinji</i> ‘albumen’
2. <i>βu-sonji</i> ‘autism’	Sukuma (F21)	<i>u-sonji</i> ‘autism’
3. <i>u-loto</i> ‘bone marrow’	Zaramo (G33)	<i>u-loto</i> ‘bone marrow’

The other set of loan nouns in cl. 11 are those which take their plurals in cl.10. The analysis of the data has shown that only one loan noun, *ulalo* ‘diagonal’, takes its plural in cl.10 i.e., *ndalo* ‘diagonals’: *lu-lalo* (11/10) ‘bridge’ (Nyakyusa M31) > *u-lalo* (11/10) ‘diagonal’.

5.6.3.6. Assignment to 1/2

Nouns in this class take the prefix *mu-* in singular form and *wa-/w-* in plural form. The prefix *mu-* becomes syllabic *m-* before consonant-initial stems e.g., *m-toto/wa-toto* ‘child(ren)’ and occurs as *mw-* before vowel-initial stems e.g., *mw-ana/w-ana* ‘baby boy(s)’, except before back high vowel *u-*, where it appears as *mu-* e.g., *mu-uguzi/wa-uguzi* ‘nurse(s)’. The data indicate that only one noun *mlawangi* ‘predator’ (Nyamwezi F22) > *mlawangi* ‘predator’ (Kiswahili G42), has been assigned to 1/2.

5.7. The Semantic content of Bantu-sourced terms in Kiswahili noun classes

This sub-section presents a brief lexico-semantic analysis of the Bantu-sourced terms and their distribution in the Kiswahili noun class system. The semantic content of the noun terms is based on the general properties of the loan nouns appearing in every single noun class. More often than not, Bantu nouns which belong to ‘the same gender have some degree of semantic coherence. However, the extent to which this holds varies, with noun classes, and with languages’ (Katamba, 2003:80). Shift of gender can be viewed as ‘a strategy by which the system of noun classification can be used for derivational purposes’ (Maho, 1999). The use of augmentative and diminutive morphemes is a good example of such a strategy. As seen in the preceding sections, some loan nouns have been shifted to a different gender in the course of borrowing, but such a shift has a derivational value only in one loan noun *usonji* ‘autism’. In Sukuma (F21), the class14 prefix $\beta\upsilon-$ (F21) is used to form nouns of quality from adjectival and noun stems. In this regard, the loanword *usonji* ‘autism’ (cl.11) < $\beta\upsilon$ -*sonji* ‘autism’ (cl.14 - Sukuma F21) was derived from cl.1/2 noun *sonji* ‘autist’ (cl.1/2).

Apart from gender shift, nominalized verbs, as shown in the preceding sections, are assigned to their classes on the basis of their semantic content, expressed by derivational prefixes and suffixes. Generally, assignment of Bantu-sourced loanwords to Kiswahili noun classes has revealed semantic incoherence. For example, gender 5/6 contains loanwords referring to liquids, nouns referring to fruits and collective nouns, whereas nouns which refer to animals and diseases are assigned to gender 9/10. The latter also contains other nouns referring to things and natural phenomena. Gender 3/4 contains nouns referring to tree products, names of trees, names of diseases and tools, to name a few. Semantic coherence occurs only with nouns in 1/2 (gender for humans and other animates) and cl.15 (class for verbal nouns/infinitives).

Table 66 summarizes the semantic content based on the semantic structure of the Bantu noun class system based on Katamba, (2003) and Maho (1999).

Table 66: The semantic content of Bantu-sourced loanwords in Kiswahili noun classes

Cl.	semantic content	prefix	example
1	animate	m-	<i>mlawangi</i>
2	plural of 1	w-	
3		mi-	
	a. tree, plants, fruits		a. <i>mlulu</i> 'peat', <i>mse</i> 'kernel'
	b. products of animal parts		b. <i>mkota</i> 'hide'
	c. tool		c. <i>mtozo</i> 'ear notch'
	d. disease		d. <i>mshana</i> 'ostemalaria'
4	Plural of 3		
5		Ø/ji-	
	a. natural phenomena		a. <i>shiganga</i> 'rock', <i>rweya</i> 'virgin land'
	b. trees and plants		b. <i>ikungu</i> 'passion fruit', <i>fyulisi</i> 'peat'
	c. names of institutions		c. <i>bunge</i> 'national assembly'
6	Plural of 5	ma-	

	a. liquids		a. <i>masana</i> ‘colostrum’
	b. collectives		b. <i>mayauyau</i> ‘stover’
7		ki-	
	a. things		a. <i>kimori</i> ‘apron’
	b. instrument/equipment		b. <i>kidubingo</i> ‘drill’, <i>kitemela</i> ‘planter’
	c. animates		c. <i>kidomozi</i> ‘leaf miner’
8	Plural of 7	vi-	
9		Ø/N-	
	a. animates		a. <i>ng’ondi</i> ‘ram’, <i>mori</i> ‘heifer’
	b. natural phenomena		b. <i>nangulu</i> ‘paralyse; landslide’
	c. disease		c. <i>shuna</i> ‘foot and mouth disease’
	d. thing		d. <i>ndiani</i> ‘thing’
	e. names of institutions		e. <i>ikulu</i> ‘state house’
10	Plural of 9	Ø/N-	
11		u-	
	a. abstract qualities		a. <i>usonji</i> ‘neologism’
	b. concrete objects		b. <i>uloto</i> ‘bone marrow’
15	infinitives	ku-	<i>kuigila</i> ‘pegging’

5.8. General observation on the use of native sources for Kiswahili lexical elaboration

There seems to be two main blocs regarding the position of African languages as intellectual languages. The first group looks at the African languages as undeveloped languages, hence the general stereotype that African languages are incapable of naming abstract concepts (Alberts 2010:615). This group believes that African languages lack scientific and technical

vocabulary and therefore they should not be considered as languages of education or any serious public or official business. African languages should not be a source for technical terminology, especially science terminology. However, the element of disparagement towards the use of African loans in technical domains does not have a scientific backup (see section 5.4). Mafela (2010) has identified factors contributing to the non-borrowing by one indigenous African language from another. These factors include lexical purism and the element of disparagement towards those languages. The negative attitude towards the use of African languages in technical domains is attributed to colonial hangover as Webb (2000: 180) observes that ‘the promotion of African languages in [high-function formal contexts] does not have the support of their speakers, who still seem to believe that their languages are unable to be used in such domains, that is their minds are still colonised.’ As a result, colonial languages become glorified in all aspects of life. However, in the countries where African languages have acquired official status, such as South Africa, ‘young people have become more interested in learning English than indigenous languages’ (Batibo, 2004:56). Speaking of the use of indigenous languages in education in Africa, the decision makers and educated elite do not consider indigenous languages as intellectual languages. For example, the decision makers and educated elite in Tanzania hold that ‘one cannot argue academically in Kiswahili’ (Massamba, 1989:73). Therefore, the notion of ‘developed’ versus ‘undeveloped’, ‘scientific’ versus ‘non-scientific languages’ ‘studied’ versus ‘less or unstudied’ languages²⁰⁶ may affect negatively the use of African linguistic stock in elaborating the technical terminology of an indigenous African language.

The second group advocates the growth of African languages from a linguistic view point, since all languages are equally complex. For this group, African languages have a chance to grow (Kihore, 1976; Alberts, 2010, 2014; Gumbo, 2016). The linguistic fact is that any language can incorporate technical terms in its terminological spheres through borrowing and the use of language-internal term creation techniques. This study is out to push further the

²⁰⁶ For detailed information on the notion ‘developed’ vs. ‘undeveloped’, ‘scientific’ vs. ‘non-scientific languages’ ‘studied’ vs. ‘less or unstudied’ languages, please consider Keet and Barbour (2014).

view that African indigenous languages can be developed to express new things and emerging concepts like many other languages by using mainly native linguistic material along with language-internal term creation techniques. The advocacy on an increased inclusivity of African loans in standard Kiswahili terminology is influenced by a strong semantic connection that exists between the adopted African loans and source terms (English). Table 67 indicates that African loans can communicate technical meanings in standard Kiswahili without semantic shift.

Table 67: Semantic precision of African loans

Source word	Source language	Kiswahili	technical domain
<i>βwagara</i> ‘farrow’	Jita (E25)	<i>bwagala</i> ‘farrow’	agro/husbandry
<i>jali</i> ‘griot’	Malinke	<i>yeli</i> ‘griot’	literature
<i>jilili</i> ‘strip’	Maasai	<i>majilili</i> ‘strip’	agro/husbandry
<i>masana</i> ‘colostrum’	Sukuma (F21)	<i>masana</i> ‘colostrum’	agro/husbandry

African lexical items that are originally of wide reference acquire a more restricted/specialized meaning i.e., semantic specialization. Therefore, semantic specialization is seen as a strategy to eliminate semantic confusion by selecting the most relevant and precise meaning needed in a particular Kiswahili technical domain, as shown in Table 68.

Table 68: Semantic specialization of African loans in standard Kiswahili

Source word	Source language	Kiswahili	technical domain
1. <i>rweya</i> ‘uncultivated land;’ plains; public grassland used for grazing’	Haya (E22)	<i>lweya</i> ‘virgin land’	geography
2. <i>engalem</i> ‘knife’	Maasai	<i>ngalemu</i> carving knife	domestic science
3. <i>rara</i> ‘traditional song’	Yoruba	<i>rara</i> ‘ballad’	literature

Examples in Table 68 show that the coiners of Kiswahili terms carefully filtered the meanings of the first loanword and the most relevant meaning was adopted into geography. The last two

examples in Table 68 indicate that the African loans have become less general than their source meanings.

One big challenge with African languages is that there are very few dictionary publications available in those languages and those available are not consulted by the coiners. Lexicon publications in minority indigenous languages may create a large-scale and possibly open source of terms across Kiswahili technical domains. While it remains true that non-African loans enrich Kiswahili technical lexicon, a huge foreign influence on technical registers may affect image of *African-ness* and *Bantuity* in particular of Kiswahili (see Section 1.2).

In support of English as the reference language for the development of Kiswahili technical, Tumbo-Masabo and Mwansoko (1992) give two reasons. First, most Kiswahili speakers got their education in English and it would not be a problem for them to understand the adopted English terms in Kiswahili. Second, many publications (technical texts and reference books) used at intermediate and high learning levels are written in English. Its implication is the influx of English terms in Kiswahili technical domains. These reasons seem to hold some weight. However, this line of thinking defines indigenous minority languages as lower in status, not modern, not developed, for instance, as English, German or French. The reasons given by Tumbo-Masabo and Mwansoko (ibid) seem to favour the direct borrowing of English terms. Coiners should follow the principle of preference for native linguistic material which requires the coiners to exhaust native linguistic stock before they adopt a foreign word.

As regards the use of Bantu-sourced loans, Bantu languages of Tanzania as it is with Kiswahili dialects, have not supplied enough new words in Kiswahili technical subjects compared with English and Arabic (see chapter four). There are several factors for this (see Tumbo-Masabo and Mwansoko, 1992). First, there are no extensive lexicographic studies in Bantu languages of Tanzania. There is a lack of dictionaries in most Bantu languages which would be used as reference volumes for forming Kiswahili terminology. Second, sometimes

proposed Bantu-sourced lexical items are discarded because of their semantic obscurity to Kiswahili speakers, especially those who are not speakers of the Bantu languages from which the words were taken. However, the coiners should filter the relevant meaning which reflects the new concept to be rendered in a Kiswahili technical domain. The use of terminology case files in standardizing Kiswahili terms is of recommended. Terminology case files help field specialists, terminologists and linguists to evaluate the correctness of information regarding the semantic features of the concept, to rate the accuracy of the terms designating the concept and if possible, to formulate a definition (Pavel and Nolet, 2001:47). Lastly, competitiveness of Bantu languages such that coiners fail to choose a donor language from which they may import a new word to Kiswahili terminology. To avoid competitions and contradictions, coiners in most cases discard Bantu-sourced words and opt to use Kiswahili words (it is not clear whether the author refer to Kiswahili dialects and/or the standard Kiswahili) and words sourced from international languages. Nonetheless, what holds most is the linguistic appropriateness (semantic and scientific precision of terms) of terms irrespective of their origin.

5.9. Summary

This chapter has analyzed Bantu-sourced loanwords in Kiswahili. The chapter started by examining to which extent they adhere to the terminology principles. The findings show that Bantu-sourced loanwords meet the principles of transparency and consistency, derivability and compoundability, appropriateness, brevity and preference for native linguistic stock and distributional coverage. The discussion on the quality and adequacy of Bantu-sourced loans shows that Bantu-sourced loans qualify to form part of Kiswahili terminology. Furthermore, the analysis shows that Bantu-sourced loan nouns were borrowed more than verbs. Finally, this chapter presented the phonological and morphological adaptations of Bantu-sourced loanwords in Kiswahili. Despite the fact that the identified source languages and Kiswahili share a common source, there are some phonological and morphological aspects in the source

items which need to be adapted in a transfer to standard Kiswahili. The most noticeable phonological adaptations of Bantu-sourced loanwords in Kiswahili are (a) the replacement of a non-standard Kiswahili consonant with a standard Kiswahili consonant, (b) the replacement of a consonant available in standard Kiswahili, (c) the deletion of the nasal N before voiceless labio-dental fricative /f/, (d) the substitution of vowels which do not occur in standard Kiswahili and (e) the loss of distinctive vowel length. The morphological adaptations include verb-noun derivation and noun-noun derivation. Other major morphological processes include reanalysis of CV- prefix to V-, deletion or replacement of a source noun class prefix with a standard Kiswahili noun class prefix and re-assignment of loan nouns to new classes. Lastly, this chapter has shown that the element of disparagement towards indigenous African minority languages and the lack of terminology glossaries and dictionaries in indigenous minority languages are a setback towards the integration of African loans into Kiswahili terminology.

CHAPTER SIX: SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER STUDIES

6.0. Introduction

The thesis is organized in six broad chapters. The first chapter introduces the general aim of the study i.e., investigation of terminological development in Tanzania and analysis of Bantu-sourced loanwords in standard Kiswahili terminology. The chapter also outlines language policy and contact situations, the statement of the problem, study objectives, also sketches the language policy in Tanzania. Moreover, this chapter discusses the development of Kiswahili from pre-colonial, colonial and post-colonial times and the language planning scene with a special focus on terminology development by considering the establishment of language standardization agencies such as ILC, EASC, TUKI and BAKITA. Chapter Two gives an overview of the theories of terminology and also discusses the language planning scene with a special focus on terminology development i.e., terminology in the language planning theory. It also gives a brief survey of Bantu-sourced loans in the existing literature and the adaptations of non-African loans in Bantu languages. Chapter Three presents the research methodology. Chapter Four presents the principles and methods of term formation in Standard Kiswahili. It discusses the practice of terminological development in Tanzania from the approach of Africanization that was established through *Ujamaa* ideology and examines the extent to which this policy was implemented in Tanzania. Chapter Five provides an analysis of the Bantu-sourced loanwords in standard Kiswahili technical terminology. It establishes the estimates of Bantu-sourced loans across Kiswahili technical subjects. It also examines the quality and adequacy of Bantu-sourced loans by subjecting them to terminology principles of derivability and compoundability, linguistic economy, linguistic appropriateness, transparency, preference for native linguistic stock, consistency, linguistic correctness and preference for word(s) that occur in more than one local language. Finally, it presents the analysis of the phonological and morphological adaptations of Bantu-sourced loans in standard Kiswahili terminology. Finally, Chapter Six summarizes the main results, integrates

them into the wider context of terminology criticism and closes with recommendations for further research.

6.1. Summary of the main results

This study focused on the terminological development in Tanzania with particular reference to the use of African loans in Kiswahili technical subjects. Specifically, it tracked and analyzed Bantu-sourced loanword items (98) occurring in nine BAKITA terminology publications issued between 1974 and 2019. Borrowing from Bantu languages of Tanzania is one of the methods used to develop standard Kiswahili terminology as reflected in BAKITA's term-creation principles. This borrowing strategy in standard Kiswahili is not an age-old activity and therefore it is still an under-researched area. Moreover, African languages belong to a group of less described languages. Tanzania's language policy is mono-focal when it comes to the development of indigenous languages. BAKITA and TUKI were created to maintain Kiswahili, the only indigenous language, while other indigenous minority languages lack institutional support. Nonetheless, the recognition of Bantu languages of Tanzania as a source for standard Kiswahili terminology lends strong support for the analysis of Bantu-sourced loans in standard Kiswahili technical registers.

The African loans occurring in Kiswahili technical registers have entered the language through convenience borrowing. This means that when a lexical item for a new 'phenomenon in the language is needed, a word (or a concept) is imported, with or without adaptation' (2012:140). It is through this practice that African loans and Bantu-sourced loans in particular have entered standard Kiswahili terminology. The establishment of BAKITA in 1967 was a pre-condition for active processes of Kiswahili corpus planning. This language agency became fully operational in early 1970s. Since its creation, it has done remarkable work in the development and promotion of Kiswahili. Its commitment to supply adequate technical vocabulary to different technical domains resulted in various substantial publications, known as *Tafsiri Sanifu* 'Standard Translations'. Terminological development has gone through

different phases. In the early years (1970s to mid-1980s) of language modernization, a considerable amount of technical vocabulary in various subject-fields was produced. The fall of the *Ujamaa* political movement in Tanzania came with a decline of term in creation. This was subsequent to BAKITA's unfruitful terminological work insomuch that in the late 1980s TUKI assumed the control of terminology development. BAKITA's terminology work came to life in the early 2000s, a period in which some terminological works were documented. Moreover, the year 2015 was a turning point in which the focus of BAKITA changed from coining terms for specialized languages to the creation and publication of dictionaries for general language.

A review of the literature shows that the development of Kiswahili dates back to pre-colonial times. The contact situations between the coastal native Kiswahili speakers and the outsiders, especially Arabs and Europeans made Kiswahili expand rapidly to the interior. It has been shown that socio-economic, political and religious factors were the key to the spread, growth, standardization and modernization of standard Kiswahili. The language has borrowed from Arabic, Persian, English, Hindi, Portuguese, German, local languages and many other languages. In this study, it is argued that the use of foreign loans, mainly Arabic and English, in the domains of standard Kiswahili is a form of stigmatization/disparagement of African loans. The study also shows that anglicisms and Arabic loans have influenced the grammar of Kiswahili. Phonologically, the fricatives [θ] (th), [ð] (dh), and [ɣ] (gh) which occur with Arabic loans are now part of the Kiswahili phonemic system. Standard Kiswahili has incorporated unnaturally foreign consonant sequences into its syllable structures. In addition, the adoption of diphthongs has posed descriptive and theoretical problems resulting in spelling variants, while some scholars (cf. Akidah, 2013) record two diphthongs /ai/ and /au/, originating from Arabic. It has been concluded in this study that, since Kiswahili allows vowel hiatus diphthongs can either be adapted as heterosyllabic vowel sequences or undergo monophthongization in standard Kiswahili. Morpho-syntactically, foreign loans have influenced the morphological forms of agreement and have also caused confusion in the

classification of Kiswahili nominals. *Makala* ‘article’ and *maiti* ‘corpse’ (Arabic loanwords), for instance, with the syllabic prefix *ma-* in Kiswahili overlap in their agreement between cl.5/6 and 9/10. Syntactically, standard Kiswahili has borrowed a considerable number of functional words of Arabic origin. Some of the functional words include *lakini* ‘but’ < *lakin*, *bila* ‘without’ < *bilā*), *kabla* ‘before’ < *qabla*) and *baada* ‘after’ < *baʿda*. It has also been shown in this study that journalistic discourses in Kiswahili are fashioned after English lexicon and syntax.

It has also been established in this study that there is one observable challenge in the development of standard Kiswahili which seems to be common to ILC (and its successors, EASC and TUKI/TATAKI) and BAKITA. The involvement of Kiunguja speakers in the development of standard Kiswahili leaves much to be desired. BAKITA and even TATAKI carry out language standardization and modernization work with minimal regard for native Kiswahili speakers. The number of members from Zanzibar appearing in the lists of the standardization committees and BAKITA’s secretaries and TUKI/TATAKI directors (see Appendix 1) show the key actors of the terminology development in Tanzania. In other words, language standardization at BAKITA and TUKI/TATAKI is mainly carried out by non-Kiunguja speakers. Other problems already pointed out that face terminological development in Tanzania include lack of trained and qualified terminologists, uncoordinated efforts of terminology work, lack of budgetary allocations for terminological development, minimal regard for the involvement of target users in the terminology project and a conflict of roles between BAKITA and TATAKI which has led to academic arrogance on the part of TUKI/TATAKI.

One of the specific objectives was to present an analysis of the principles and practice of terminological development in Tanzania. It aimed at exploring the basic principles which should ideally be guiding terminology creation in standard Kiswahili. This section started with the approach to Africanization established through *Ujamaa* ideology and examined to

what extent this policy was executed through BAKITA's term-creation principles. The findings of this study show that, despite its primary role of *Africanization*, *Ujamaa* linguistics did not focus on Africanizing the standard Kiswahili lexicon by purging the language from non-African loanwords. In the political situation of that time, it was generally expected that there would be a lower degree of anglicisms and new loanwords of Arabic origin, but the contrary is the case. The summary of all corpora used in the establishment of Africanization of standard Kiswahili technical lexicon shows that the highest percentage is occupied by English loans (60.73%), followed far behind by Arabic loans (27.8%). The findings also show that other sources such as Bantu languages (6.8%), other non-African languages (4.02%), non-standard Kiswahili dialects (0.4%) and non-Bantu languages (0.24%) occupy the lowest percentages of loanwords in the selected technical subjects. Therefore, there was a contradiction between ideology and practice, as English continued to be the reference for Kiswahili's terminological development. Interestingly, some Kenyan coiners have promoted the need to substitute foreign loans for Kiswahili words (lexical purism), while Tanzanians have shown unrestricted use of borrowings (liberal approach). The puristic and liberal approaches may seem contradictory, but are supportive of each other when they are successfully combined in terms of terminology projects. A successful combination of the two approaches leads to a *pragmatic approach*, which works better in the development of indigenous African languages.

Although Kiswahili technical subjects have not borrowed as much from the Bantu languages of Tanzania as they have English and Arabic, they, nonetheless, have contributed significantly to the scientific and technological fields. Findings also show that coiners significantly limited the Arabic loans in scientific and technological domains, but Bantu languages of Tanzania have significantly contributed in the fields of geography, agricultural engineering, agronomy and animal husbandry. In this study, it is argued that the predominance of the non-Kiswahili native Bantu speakers' membership in the language standardization committee is the main reason for the status acquired by Bantu-sourced loans in standard Kiswahili terminology. The

findings also show that the percentage of Bantu-sourced loans (68.9%) in the domains of science and technology challenges Temu's (1984 in King'ei 1999) position that African languages 'are not as endowed with scientific and technological terms as they are with socio-cultural ones.'

According to BAKITA's ranking of source languages for loan words in standard Kiswahili, indigenous Tanzania languages range second (first Bantu followed by non-Bantu), after Kiswahili and Kiswahili dialects, and are followed by African languages of other countries and foreign languages such as English and Arabic. However, the examination of nine BAKITA publications shows that the practice is different. English and Arabic are by far the dominant source languages in term formation in Tanzania. The ranking of the term sources is not hard to follow, for reasons inherent to the order of priorities of term sources themselves, but rather because of negligence on the side of the institutions responsible for terminological development. In some cases, the ranking of term sources varies, depending on a terminological sub-domain, the timeline and the coiners involved.

Another objective of this study was to determine the prevalent methods used to develop Kiswahili technical terminology by the coiners or BAKITA and TUKI/TATAKI. The findings show that methods mainly used to render anglicisms in standard Kiswahili terminology are loan-translation and compounding, semantic expansion, derivation, semantic specialization involving a zero morpheme and the use of native linguistic word stock for foreign words. However, lexical borrowing accounts for one-third of the total coinages.

This study aimed to track and analyze Bantu-sourced loans occurring in standard Kiswahili technical registers. The study tracked a relatively large corpus of BAKITA terminology publications. In regard to analysis of Bantu-sourced loans in standard Kiswahili, a number of findings emerged. First, the findings show that none of the major post-*Ujamaa* Kiswahili

dictionaries²⁰⁷ has considered the aspect of source identification of the Bantu-sourced loans. Sacleux (1939), remains to be the single major reference which names donor languages for Bantu-sourced loans in Kiswahili. Sacleux names several Bantu languages as a possible source for a particular Bantu loan in Kiswahili. Second, this study explored whether Bantu-sourced loans qualify to be new inventions in standard Kiswahili terminology. The discussion of the findings show that Bantu-sourced loans are neologisms as they are coined when there is need to express new concepts (expressing foreign concepts in new ways) in Kiswahili. *Lukoka* ‘wavelength’ (< *olukoka* ‘a space between two ridges’ – Jita E25), for instance, was coined when there was a need to express this concept in the domain of physics in Kiswahili. Newmark (1988:140) on neologisms observes that ‘newly coined lexical units or existing lexical units that acquire a new sense.’ In this line of argument, a Bantu-sourced loan acquires a new sense (specialized meaning) in the course of its transfer to Kiswahili terminology. In addition, Bantu-sourced loans have recently entered standard Kiswahili terminology, hence they qualify to be terminological neologisms (de Schryver, 2020: 97).

Further analysis of Bantu-sourced loans in standard Kiswahili reveals that the percentage of loan nouns is much greater than that of loan verbs. It has been established in this study that 96 out of 98 (about 98%) are nouns, while 2 (2 %) are verbs. A close look at the loan nouns reveals that 21 out of 96 (about 22%) loan nouns are deverbatives. This still indicates that the borrowability of nouns (78%) is much higher than that of verbs (22%). This conforms to Tadmor (2009) and Schadeberg (2009) observations that many languages tend to borrow more nouns than verbs.

In evaluating the quality and adequacy of Bantu-sourced loans as terminological units, the findings show that Bantu-sourced loans satisfy the principles of transparency and consistency, derivability and compoundability, appropriateness, brevity and preference for native linguistic stock and distributional coverage. The discussion on the quality and adequacy of Bantu-

²⁰⁷Kamusi Kuu ya Kiswahili (2015); Kamusi la Kiswahili Fasaha (2010); Kamusi Teule ya Kiswahili Kilele cha Lughha (2013); Kamusi ya Kiswahili Sanifu (2004); Kamusi ya Maana na Matumizi (1992); Kamusi ya Kiswahili Sanifu (1981; 2014).

sourced loans shows that those loans qualify to form part of Kiswahili terminology. Regarding the adaptability of Bantu-source loans in standard Kiswahili, there are some phonological and morphological aspects in the source items which changed in the course of their transfer to standard Kiswahili. The findings show that the non-Kiswahili Bantu consonants and vowels assimilated to their nearest Kiswahili equivalents through replacement e.g., /β/→/b/, /ɪ/ →/i/ and /ʊ/ →/u/. Another noticeable phonological adaptation of Bantu-sourced loanwords in Kiswahili is the loss of distinctive vowel length. The morphological adaptations include verb-noun derivation and noun-noun derivation. The major morphological processes include the re-analysis of CV- prefix to V-, the deletion or replacement of a source noun class prefix with a standard Kiswahili noun class prefix and the re-assignment of loan nouns to new classes.

6.2. Conclusions

The findings and the inferences drawn from the findings have been synthesized in order to provide conclusions of this study. The conclusions given below cover only post-independence terminological activities. Thus:

1. The statement that indigenous African languages are unscientific lacks a scientific ground. The findings show that the use of Bantu-sourced loans in scientific and technological domains is higher than in the social sciences. Furthermore, African lexical items can precisely communicate scientific and technical concepts. The adequacy of Bantu-sourced loans in terms of derivability, compoundability, transparency, consistency, linguistic economy and linguistic appropriateness makes a unique scientific contribution towards the acceptance of African loans in the scientific and technological domains.
2. The practice of terminology development work in Tanzania does not provide the coiners with deeper professional or academic knowledge in the field of terminology. This is because terminological activities in Tanzania take place through secondary term-formation where new concepts and terms are formed first in English and then transferred to Kiswahili. The junior staff who were never given terminology training cannot gain actual professional knowledge in

terminology. Moreover, the modernization of standard Kiswahili did not take into consideration the aspect of terminology training and the sustainability of the technical skills acquired during that exercise. *Ujamaa* linguistics did not take a serious look at the training of the professionals involved in the terminological development works. Currently, little to no emphasis is placed on workshops or seminars on terminological works. Therefore, there seems to be no a succession plan for the technical skills acquired in terminology by the older generation to the young generation. Should the older generation die, the acquired experiences will die with them.

3. It has been shown in this study that Bantu languages are the third donor after English and Arabic for newer Kiswahili technical terms. The Bantu-sourced loans reached this status only by chance, since Bantu languages of Tanzania are not BAKITA's highest priority of term sources. The predominance of the Bantu speakers' membership in the language standardization committee remains the major reason for the status acquired by Bantu-sourced loans.

4. Standardization with particular focus on term standardization is not handled properly in standard Kiswahili. Since language standardization is a continuous process, synonymous terms need to be identified and standardized. However, the issue of term proliferation has not been well addressed in standard Kiswahili. Moreover, the findings show that two or more related concepts are represented by a single technical term in standard Kiswahili and some technical terms are not precisely defined.

5. The promotion of terminology products and the increased use of the standardized terms across technical registers need to be addressed vigorously. The findings show that only a few users of Kiswahili technical terminology are aware of the availability of BAKITA's terminological products. This hints that terminology products and their dissemination channels are known by the few.

6. Weak linkages between policy and planning turn into policies ineffective (Romaine, 2002). The Tanzanian cultural policy of 1997 categorically states, though in general terms, that minority languages shall be used as a resource for the development of Kiswahili. However,

the aspect of terminology planning in the policy is not addressed at all i.e., the documentation, preservation and exploitation of terminological resources available in minority indigenous languages of Tanzania.

6.3. Recommendations

6.3.1. Recommendations to the government

1. Language development in Tanzania ignores the growth of indigenous minority languages. They have completely no legal status. Because of the lack of legally binding statement, the government does not encourage the promotion and development of indigenous minority languages. this has affected the level of availability of publication and in particular dictionaries. The availability of dictionaries or terminology lists in those languages could serve as resources for the elaboration of standard Kiswahili terminology. *Sera ya Utamaduni* (1997) recognizes local languages as cultural heritages and an important resource for the elaboration of Kiswahili technical terminology. There is a need to promote participation in dictionary or terminology projects in indigenous minority languages if these languages are truly a resource for standard Kiswahili terminological development work. Therefore, there is a need to articulate how to preserve the linguistic heritage found in local languages and how such linguistic resources should be exploited.

2. The use of words sourced from indigenous minority languages in creating the Kiswahili terminology should be regarded as a strategy for promoting and developing the least developed languages. This is in line with the adherence to the principle of preference for native linguistic material. A strong desire to observe this principle would truly make the indigenous languages a source of technical terms in various scientific, technological and educational domains in Kiswahili. The fact that the ministry of culture, art, sports and journalism is responsible for language policy, the language development unit within this ministry should actively engage itself in all terminological projects to ensure that terminological development observes the principle of preference for native linguistic stock at every stage of a terminological project.

3. Promote greater inclusion of native Kiswahili speakers in the language bodies. BAKITA's membership from Zanzibar, especially the native Kiunguja-Kiswahili speakers, should be consciously increased. It has been established in this study that BAKITA's membership is dominated by the mainlanders, the majority of whom are Bantu speakers. Most of the members of BAKITA from mainland speak Kiswahili as their second or third language. Therefore, there is a need to look at the composition of BAKITA so that it includes more native Kiswahili speakers in the standardization committee and even absorb many native speakers in BAKITA's departments. It has been reported that in 'books and other printed materials, incorrect usage is more evident in those written by non-native speakers than in those written by native speakers' (Massamba 1989:69). Therefore, greater inclusion of native Kiswahili speakers in the language bodies would help to ensure the quality of books and other documents written in Kiswahili submitted to BAKITA for review, standardization and approval.

4. This study recommends that the government of Tanzania should form a national terminology unit. The membership of this unit will be determined by academic qualifications. The unit will be charged with the standardization of Kiswahili technical terminology. Through its members, the unit will be able to research, outsource and document terms from the indigenous minority languages. For example, the unit could document terms for plant and animal diseases, names of traditional medicines, cultural material, fish and birds etc. in local languages. These terms then would be harmonized and standardized. Once the older generation dies, such linguistic treasures also die with them. These terms sourced from indigenous minority languages would serve as first-response terminology when the need arises. In addition, the unit would establish contacts with teaching and learning institutions (universities and tertiary colleges²⁰⁸), publishing and media houses to collect new terms. In fact, novelists, playwrights, poets, journalists, authors, politicians, translators and Kiswahili lecturers innovate many Kiswahili terms in their daily work. It is therefore important to

²⁰⁸ Newly coined Kiswahili terms could also be collected from translated documents, textbooks, curricula, master's dissertations and doctoral theses.

collect those new terms for standardization and dissemination purposes. This would also help to address the issue of proliferation of synonymous terms.

5. The language development policy in Tanzania should be inclusive. Language development policy has turned a blind eye to the development of indigenous minority languages. It delimits the research foci of language bodies in the sense that the core function of TATAKI is to research all aspects of Kiswahili linguistics, literature and culture, while BAKITA is concerned with the promotion and development of standard Kiswahili. In such a situation, indigenous minority languages will continuously suffer from being left out of the mainstream institutional focus and end up in the list of endangered languages. The reason behind this is that there is no a national framework to research, preserve, promote, and develop local languages. Therefore, the government should expand institutional functions of the state language bodies and effective support from the government to promote officially local languages should be a national agenda. The fact that Kiswahili and English dominate formal and public domains makes indigenous minority languages inferior in terms of status, lexical modernization, description and usage (media, education, political forums). This automatically limits the potential of the indigenous minority languages to compete with developed languages such as English in supplying scientific and technical terminology in standard Kiswahili. From the perspective of the future survival of the indigenous minority languages, this study recommends that language planning in Tanzania should include the promotion, preservation, and development of the indigenous minority languages.

6. This study mainly addresses terminological development in Tanzania, thus as a result, one may argue that this study seems to have ignored one aspect, namely that it has excluded all other Kiswahili speaking countries like Kenya, Uganda, DRC, Rwanda, Burundi, Mozambique, Malawi, Zambia etc. However, this study recommends that it would be a good idea also to involve the East Africa Community (EAC) and Southern African Development Community (SADC) in the development of Kiswahili in order to avoid problems of the sort discussed at the beginning of this work. In fact, there is need for the EAC to re-examine the question of Kiswahili development as a community. Tanzania as a key player in the

development of standard Kiswahili may have a huge amount of influence over the EAC and SADC in developing the language.

7. More importantly, departments of languages and linguistics in Tanzanian universities should be encouraged to offer a course in *terminology*. The course should not be a mere area of study, but an activity that language students should be encouraged to participate in fully. Students at different levels in the departments of Kiswahili and linguistics should be exposed to terminological activities, i.e., recording of terminological data (collection of terms, definition of terms as used in source languages, synonyms of terms collected, establishing concept systems in reference to the definitions of terms and the relations between them so as to identify source and target terms in a concept plan) and local languages should be the case study. This would enlarge the catchment area through networking and those students would in turn become language collaborators. For example, students might be assigned to record livestock terminology, agricultural terms, terms of traditional medicines. As part of students' work, such a terminology harvest might be economically efficient. The collected terms would be further analyzed by experts and properly documented. The terms would serve as a bank of native linguistic stock to be further used in standardization activities.

8. Moreover, introduction to *Structures of Tanzanian Languages* as a compulsory course in the departments of Kiswahili and languages and linguistics would be one way to survey terminological resources in these languages and at the same time work as a strategy to elevate the status of indigenous minority languages among the students. This could in turn stir studies into indigenous minority languages. Furthermore, primary and secondary school language syllabi should also reflect the importance of cultural heritage of the indigenous minority languages in the process of elaborating Kiswahili technical terminology. In addition to becoming the national language in Tanzania and Kenya, Kiswahili is assuming an official status in major African organizations like the East African Community and recently the African Union. Undeniably, the pace of expansion of new terms in various technical domains should respond to the current function the language is assigned to.

6.3.2. Recommendations to BAKITA and TATAKI

1. BAKITA and TATAKI should promote institutional cooperation. The conflict of roles between these language organs in one way or the other weakens the development of Kiswahili terminology. Each language organ should work within its limits. TATAKI, as a research institute, and BAKITA, as an organ charged with the promotion and development of standard Kiswahili, should come together and have a practical strategy for terminological development in Tanzania.

2. BAKITA should be transformed into a functional language body which could be involved in terminology formation²⁰⁹, terminology problem-solving research, conduct seminars and workshops on terminology, as well as in the evaluation of technical terminology and other standardization work such as publication and dissemination of technical terms. BAKITA was created as a political bureau responsible for language policy and its membership is not obtained on the basis of one's academic qualifications, but determined by the minister responsible for BAKITA. Once it is transformed into a functional language body, BAKITA can qualify to coordinate terminology work in standard Kiswahili, because it will have the capacity in terms of personnel.

3. Terms should not be imposed on a target audience, but the target audience should actively participate in every stage of the terminology discussions. The acceptability or rejection of terms by the users depends much on their involvement at every stage of the terminological project. The more the target audience is involved in a term-creation project, the more the terms are accepted. The target audience should not be passive and therefore it is important to consider the suggestions of the target audience in the course of standardization. Such suggestion can be examined and standardized or replaced by other forms, but in consultation with the users.

4. BAKITA and TATAKI should establish term evaluation units/teams for effective terminological works. Evaluation is important in terminological development works as it allows for the assessment of target users' attitude towards new coinages. In other words,

²⁰⁹ Terminology research serves three functions, namely pre-terminology work research identifying problems, intra-terminology work solving problems and post-terminology work research evaluating the process (Zarnikhi, 2014: 276-77).

evaluation is to test whether the target group's expectations were met. Evaluation also helps to review terminological standards, encyclopaedic information given in technical dictionaries and methodology carried out in the term project work.

5. Sponsoring postgraduate studies such as master's degree, doctoral or postdoctoral studies in terminology studies should be one of the key approaches of obtaining qualified terminologists and other professionals closely involved in terminology.

6. In order to avoid biasness of term sources and disagreement on new coinages, coiners should recourse to Guthrie's (1967–71) Proto-Bantu lexicon, Bantu Lexical Reconstructions (2003) and other Bantu reconstructions. The use of Bantu lexical reconstructions in the development of standard Kiswahili technical terminology should be fashioned after the use of classical Greek and Latin in developing technical and scientific terms of modern European languages. Such an undertaking would give standard Kiswahili technical lexicon the real feature of Bantuity.

6.4. Suggestions for further studies

This section gives recommendations for future studies in the area of Kiswahili terminological development in Tanzania. This is specifically intended to be beneficial to researchers, language organs and the government for future terminology development in Kiswahili, as well as for the preservation and development of the indigenous minority languages. The study suggests that:

1. Lexical borrowing between Kiswahili and the indigenous minority languages has been reciprocal from time immemorial. However, the contact situations (mainly trade, religion and political dominance - colonialism) between Kiswahili and foreign languages affected the rate of lexical borrowing between Kiswahili and other local languages. Nowadays, the lexical borrowing between Kiswahili and indigenous minority languages is mainly unidirectional, in the sense that speakers of other Tanzanian languages rely heavily on Kiswahili words to express new concepts in their languages. The research findings in this study show that Kiswahili has extensively integrated non-African loans into its technical terminology. It has

also been mentioned in this study that borrowing may result in language death or shift. In addition, it has been mentioned in the review of literature that Kiswahili accounts for 95% of lexical borrowings in Bantu languages of Tanzania. Therefore, there is a need for increased quantitative studies to determine loanwords across semantic fields in indigenous minority languages of Tanzania. A study to determine the influence of Kiswahili loanwords of non-African origin on indigenous minority languages.

2. Tanzania has two language regulatory bodies, BAKITA and BAKIZA, and two (language) academic institutions - TATAKI and TAKILUKI. BAKIZA and TAKILUKI are based in Zanzibar. However, these institutions on the mainland and in Zanzibar do not cooperate as may be desired. BAKITA and BAKIZA work independently and consultation regarding the development of Kiswahili is not coordinated. Likewise, the institutional cooperation between TATAKI and TAKILUKI is dubious. For effective and efficient work on the development of Kiswahili, there is need to merge these state language organs and form a strong organ or institute that will cooperate with other Kiswahili planning agencies in Eastern and Central Africa, as well as universities and research institutes, to further Kiswahili beyond its boundaries. A study on how to address this issue is recommended.

3. This study has shown that there are instances of an inability to identify terms that designate related concepts and an inability to define concepts concisely in some Kiswahili technical dictionaries. Therefore, there is need for a study to determine the semantic precision of the term definitions given in the Kiswahili technical dictionaries.

4. There is need to identify endangered indigenous minority languages and establish an intervention team or institute of African languages in the universities. The team's/institute's role should be to research the endangered languages and advise the government on the formulation of language policies regarding the preservation and development of the languages of Tanzania. Moreover, the teams/institutes should come up with revitalization strategies of the endangered and extinct languages whose written records are available. Thus, a study on how to deal with the issue is needed.

5. There is need to extend the function of Kiswahili in Tanzania. As it is now, Kiswahili is the medium of instruction in primary schools and Grade 'A' teachers' colleges, but it is taught as a subject at other post-primary levels. This study suggests that it is more convenient to use Kiswahili as the language of education in the tertiary colleges and vocational centres. The promotion of Kiswahili to the language of education in those institutions would positively influence the use of technical terms which do not seem at the moment to have any functional value at all. The use of Kiswahili as a language of education in tertiary colleges and vocational centres may popularize Kiswahili technical terminology. Most of the acquired English technical terms in tertiary and vocational centres are not used in daily life, as Kiswahili is predominant in the social, political and economic domains, while English is mostly spoken in classrooms and international forums. This has led the graduates of those colleges and centres, except the very few employed by foreign companies, to use Kiswahili in their daily work. In such a situation, there is need to press for a more convenient and practical bilingual education than the current one. Therefore, it is convenient to upgrade Kiswahili's functional value, where the two languages, English and Kiswahili, should co-exist in technical schools/colleges or centres. A study on a convenient and practical bilingual education in technical schools/ colleges is needed.

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Appendices

Appendix 1: a. BAKITA's standardization committee members (1987²¹⁰)

Member's name	Linguistic background	Member's place of origin
H. Akida	Digo	Tanzania
C. Z. Kimambo	Chaga	Tanzania
S. D. Irima	Pare	Tanzania
A. Magoti	Jita	Tanzania
Kh. A. Mbaraka	Bondei	Zanzibar
J. S. Mdee	Pare	Tanzania
O. M. Kiputiputi	Ngindo	Tanzania
N. A. Karekezi	Hangaza	Tanzania
A. MacWilliam	European	Non-Tanzanian
S. J. Kimaro	Chaga	Tanzania

a. i. Standardization committee – diplomatic terms (2019)

Member's name	Linguistic background	Member's place of origin
S. Hega	Zaramo	Tanzania
S. Sengerema	Sukuma	Tanzania
R. Mtambi	Kaguru	Tanzania
Amb. L. Chilambo	Ngoni	Tanzania
C. Mushi	Chaga	Tanzania
J. Nzala	Sukuma	Tanzania
M. Hasan	Zigua	Tanzania
R. Mbaruku	Bondei	Tanzania
H. Mshindo	Kiswahili	Zanzibar
I. Zidy	Kiswahili	Zanzibar

²¹⁰ BAKITA standardized the terms which were compiled into Ohly's (1987) Dictionary of Primary Terms.

a. ii. Standardization committee – COVID terms (2020)

Member's name	Linguistic background	Member's place of origin
Dr. Seleman S. Sewangi	Pare	Tanzania
Dr. Mwanahija Juma	Kiswahili	Zanzibar
Mzee Mshindo Hamad	Kiswahili	Zanzibar
Mzee Mohamed Mwinyi	-	Tanzania
Ms. C. Mushi	Chaga	Tanzania
Mr. J. Nzala	Sukuma	Tanzania
Dr. Ivan Kagaruki	Haya	Tanzania
Dr. Hans Mussa		Tanzania
Dr. Masoud Nassor Mohammed	Kiswahili	Zanzibar
Ms. Vida Mutasa	Haya	Tanzania
Ms. Wema Msigwa	Hehe	Mailand Tanzania
Dr. Fatuma Mlaki	Pare	Tanzania
Mr. Ambrose Mghanga	Nyaturu	Tanzania

Appendix 1: b. Managers of BAKITA and ILC/TUKI/TATAKI

b. i. ILC's Secretaries (1930-1952)

Name	Place of origin
Frederick Johnson	Europe
B. J. Ratcliffe	Europe
R. A. Snoxall	Europe

EASC's Secretaries (1953 – 1964)

Name	Linguistic background	Place of origin
W. H. Whiteley		Europe
J. W. T Allen		Europe
J. Knappert		Europe

TUKI's Secretaries (1965 – 1969)

Name	Linguistic background	Place of origin
W. H. Whiteley		Europe
J. A. Tejan		Zanzibar (Indian)

TUKI's Directors (1969 – 2008)

Name	Linguistic background	Place of origin
G. A. Mhina	-	Tanzania
A. M. Khamisi	Haya	Tanzania
C. W. Temu	Chaga	Tanzania
D. P. B. Massamba	Ruri	Tanzania
T. S. Y. Sengo	-	Tanzania
S. A. K. Mlacha	Pare	Tanzania
M. M. Mulokozi	Haya	Tanzania
J. Kiango	Bondei	Tanzania

TATAKI's Directors (2008- to date)

Name	Linguistic background	Place of origin
J. Kiango	Bondei	Tanzania
A. K. Mutembe	Haya	Tanzania
D. P. B. Massamba (ag.)	Ruri	Tanzania

Y. Msanjila (ag.)	Gogo	Tanzania
E. S. Mosha	Chaga	Tanzania

b. ii. BAKITA's Secretaries since 1967 – to date

Name	Linguistic affiliation	Place of origin
Salim Kombo	Zigua	Tanzania mainland
Clement M. N. Nkungu	Nyaturu	Tanzania mainland
S. J. Maina	Chaga	Tanzania mainland
Festo Mpoyola	-	Tanzania mainland
Ana Kishe	Zigua	Tanzania mainland
Seleman Sewangi	Pare	Tanzania mainland
Consolata Peter Mushi	Chaga	Tanzania mainland

c. i. Wakuzaji wa lugha 'language developers' 2019/2020

Language developer's name	Linguistic background	Place of origin
Consolata Peter Mushi	Chaga	Tanzania mainland
Kulwa Abel Kindija	Sukuma	Tanzania mainland
Mayolwa John Nzala	Sukuma	Tanzania mainland
Fatuma Abdallah Mlaki	Pare	Tanzania mainland
Isack Jactany Sigalla	Kinga	Tanzania mainland
Vida Emili Mutasa	Haya	Tanzania mainland
Wema Lwidiko Msigwa	Hehe	Tanzania mainland
Shawwaal Sulayman Marinda	Tumbi	Tanzania mainland
Rajabu Athuman Kiswagala	Nyamwezi	Tanzania mainland
Mussa Ramadhani Kaoneka	Pare	Tanzania mainland
Ambrose Felix Mghanga	Nyaturu	Tanzania mainland
Arnold Mayange Msofe	Pare	Tanzania mainland

Appendix 2i: Examples of the certified books by title, author/publisher, certificate number and year

No.	Manuscripts	Author/publisher	Certificate No.	Year
1.	Jiandae Ufaulu	OUP	11/282	2013
2.	Kivuli cha Mvumo	R. R. Mfaume	11/283	2013
3.	Elimu ya Miamba na Madini	KIUTA	11/298	2014
4.	Chozi la Sitti	Matukio A. Chuwa	11/293	2015
5.	Kazi Yangu	Fortunatus F. Kawegere	15/010	2015
6.	Kisa cha Mzee Uledi na Punda Mvivu	Helena Mwenda	17/004	2017
7.	Kiswahili katika Vyombo vya Habari ndani na nje ya Tanzania	Victor Elia (TATAKI)	19/001	2019
8.	Mbwamwity kwenye Ngozi ya Kondoo	Severine Malendeja	19/006	2019
9.	Nyota Yako	Nancy Sumari	19/009	2019
10.	Jogoo Mbabe	Revocatus Kundy	18/029	2018
11.	Najifunza Kusoma: Darasa la I	J. Masebo na D. Mwandete (Mwanzo Educational Publishers Limited)	18/059	2018
12.	Najifunza Kusoma: Darasa la II	J. Masebo na D. Mwandete (Mwanzo Educational Publishers Limited)	18/060	2018
13.	Najifunza Kuandika: Darasa la I	J. Masebo na D. Mwandete (Mwanzo Educational Publishers Limited)	18/057	2018
14.	Najifunza Kuandika: Darasa la II	J. Masebo na D. Mwandete (Mwanzo Educational Publishers Limited)	18/058	2018
15.	Ni Chakula Gani Leo?	Elieshi Lema (E&D Vision Publishing Limited)	20/001	2020
16.	Mkumbavana- Mwamba wa Mauti	Nyota Publishing Ltd	18/017	2017

Appendix 2ii: Text, supplementary and reference books certified by BAKITA from November 2018 to December 2019

November 2018 to February 2019

No.	Manuscripts	Total
1.	Text and supplementary books	50

2.	Reference books	12
3.	Others	10
4.	Patriotism and Nationalhood (WHUSM)	1
	Total	73

March to June 2019

No.	Manuscripts	Total
5.	Text and supplementary books	16
6.	Reference books	5
7.	Others	7
8.	Patriotism and Nationalhood (WHUSM)	1
	TOTAL	45

July to Desember 2019

Month	Text books	Reference books	Others	Total
August	17	-	3	20
Oktober	3		3	6
November	1	1	1	3
December	2	-	-	2
Total	23	1	7	31

Source: BAKITA (2020)

Appendix 3: Bantu-sourced loans found in 16 Kiswahili technical domains

Loan form	source language	source form and meaning	distribution of Bantu-sourced loans across Tanzanian Bantu languages	Sound changes and morphology added, changed or removed
1. Biology				
1. mshana (3/4) 'osteomalaria'	Haya (E22)	mushana (3/4) 'fever; malaria'	E: Haya; Nyambo	<i>Sound change</i> deletion of the vowel /u/ occurring between consonants <i>Morphology</i> no morphological manipulation involved
2. mgoro (3/4) 'rectum'	Ndengereko (P11)	mgoro (3/4) 'rectum'	G: Ndengereko; Zaramo	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
3. ngenya (9/10) 'circumcized penis'	Sukuma (F21)	3. ngenya (9/10) 'circumcized penis'	F: Sukuma, Nyamwezi	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
2. Domestic science				
4. ikari 'berbecue'	Meru (E621)	ikari 'a place where people (elders) come together and roast meat'	E: Meru/Rwa	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
5. kutindia (15) 'creaming'	Gogo (G11)	kutindia (15) 'remove cream from milk'	G: Gogo	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological

				manipulation involved
6. kutapasa (15) 'reducing'	Ngoni (N12)	kutapasa 'reduce' (15)	N: Ngoni, Manda	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
7. machunda (5/6) 'skimmed milk'	Haya (E22)	machunda (5/6) < chunda 'churn' 'churned milk'	E: Haya, Zinza, Nyambo, Jita, Ruuri, Regi	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
8. mlulu (3/4) 'peat'	Pare (G22)	mlulu (3/4) 'non-toxic waste; garbage collected to be burned'	G: Pare, Gweno	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
9. ndiani (9/10) 'cruet'	Gogo (G11)	ndiani (9/10) 'a small container for snuff/chewing tobacco'	G: Gogo, Kaguru	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
10. ujinji (11) 'albumen'	Zigua (G31)	ujinji 'jelly- fluid from a ripe mango'	G: Zigua, Digo, Bondei	<i>Sound change</i> No sound change involved <i>Morphology</i> No morphological manipulation involved
11. uloto (11) 'bone marrow'	Zaramo (G33)	uloto 'synovial fluid; bone marrow'	G: Zaramo, Kwere	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological manipulation involved

12. utopeshaji (11) 'thickening soup'	Yao (P21)	kutopesha (15) 'seasoning'	P: Yao	<i>Sound change</i> no sound change involved <i>Morphology</i> verb-noun derivation
13. fulisi (5/6) 'peach'	Nyakyusa	ilifyulisi (5/6) 'peach'	M: Nyakyusa, Nyaha	<i>Sound change</i> deletion of a glide /y/ <i>Morphology</i> deletion of an augment and noun <i>i</i> - class prefix <i>li</i> -
14. ikungu (9/10) 'passion fruit'	Pare (G22)	ikunguu (5/6) 'a fruit like passion whose seeds are eaten'	E G: Pare, Gweno	<i>Sound change</i> deletion of reduplicative final vowel /u/ <i>Morphology</i> 9/10 < 5/6
15. kimori (7/8) 'apron'	Pare (G22)	kimori (7/8) 'apron'	E G: Pare, Chaga	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
3. Geography				
16. fuwele (9/10) 'crystal'	Zigua (G31)	fuwele (5/6) 'dead rocks'	G: Zigua, Bondei	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
17. hala (5/6) 'peneplain'	Gogo (G11)	ihala (5/6) 'a flat area covered with compacted and cemented soil such that nothing cannot grow on it'	G: Gogo	<i>Sound change</i> no sound change involved <i>Morphology</i> deletion of the source prefix <i>i</i> -
18. itale (5/6) 'granite'	Sukuma (F21)	itale (5/6) 'a big flat rock'	E, F: Sukuma, Jita, Ruuri Bende,	<i>Sound change</i> no sound change

			Kara	involved <i>Morphology</i> no morphological manipulation involved
19. kasoko (9/10) ‘crater’	Nyakyusa (M31)	ka-sooko (12/13) ‘a small dale; small valley’	M: Nyakyusa, Nyiha	<i>Sound change</i> no sound change involved <i>Morphology</i> Integration of the source prefix <i>ka-</i> into the lexical root 9/10 < 12/13
20. kiganga (7/8) ‘hardpan’	Hehe (G62)	kaganga (12/13) ‘small stone’	F P: Hehe, Bena, Bende	<i>Sound change</i> no sound change involved <i>Morphology</i> Substitution of the source prefix <i>ka-</i> with <i>ki-</i> 7/8 < 12/13
21. kilala (7/8) ‘fallow’	Haya (E22)	kilala (7/8) ‘leftovers; fallow field’	E F G M: Haya, Nyamwezi, Sukuma, Sumbwa, Nyakyusa; Kiswahili	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
22. kiperu (7/8) ‘tributary, affluent’	Ngoni (N12)	Kiperu (7/8) ‘a stream; brook’	N: Ngoni	<i>Sound change</i> No sound change involved <i>Morphology</i> no morphological manipulation involved
23. lukoka (5/6) ‘wavelength’	Jita (E25)	olukoka (11) ‘a space between two ridges’	E N: Jita, Ngoni	<i>Sound change</i> No sound change involved <i>Morphology</i> deletion of the augment <i>o-</i> and integration of the source prefix <i>lu-</i> into lexical root

24. lusoko (5/6) 'caldera'	Nyakyusa (M31)	lusooko (11) 'dale, valley'	M: Nyakyusa, Nyiha	<i>Sound change</i> u < ʊ <i>Morphology</i> integration of the source prefix <i>lu-</i> into lexical root 5/6 < 11
25. lweya (9/10) 'virgin land'	Haya (E22)	orweeya (11) 'virgin land; grassy land'	E: Haya, Nyambo, Kerewe	<i>Sound change</i> l < r <i>Morphology</i> 9/10 < 11 deletion of the augment <i>o-</i>
26. myuko 'convection'	Kaguru (G12)	myuko 'convection'	G: Kaguru	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological change involved
27. nangulu (9/10) 'landslide'	Mwera (N201)	nangulu (9/10) 'paralyze; landslide'	P: Mwera	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological change involved
28. ndagano (9/10) 'confluence of river'	Mwera (N201)	ndaagano (9/10) 'confluence of rivers; agreement, covenant'	E F N P: Mwera, Yao, Makonde, Pare, Sambia, Haya, Kerewe, Sukuma	<i>Sound change</i> placement of the long vowel in antepenultimate position in the source word <i>Morphology</i> no morphological change involved
29. ngoro (9/10) 'terrace'	Matengo (N13)	ngoro (9/10) 'a type of farming; intercropping'	N: Matengo	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological change involved
30. nguka (9/10) 'earth flow, slumping'	Nyakyusa (M31)	nguka (9/10) 'part of land demolished by water'	M: Nyakyusa,	<i>Sound change</i> no sound change involved <i>Morphology</i>

				no morphological change involved
31. shiganga (5/6) 'boulder'	Sukuma (F21)	shiganga (7/8) 'boulder'	F: Sukuma, Nyamwezi	<i>Sound change</i> no sound change involved <i>Morphology</i> 5/6 < 7/8
32. ubigiaji (11) 'reafforestation'	Bondei (G24)	bigia (V) 'reseed'	G: Bondei, Sambia	<i>Sound change</i> no sound change involved <i>Morphology</i> verb-noun derivation
33. unamu (11) 'texture'	Gogo (G11)	unamu (14) 'stickiness; fineness; texture'	G: Gogo	<i>Sound change</i> no sound change involved <i>Morphology</i> 11 < 14
34. nyiri (upepo) 'jet-stream' (9/10)	Pare (G22)	nyiri (9/10) 'strong, fast and meandering air currents'	E G: Haya, Pare, Kerewe, Zinza	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological change involved
35. mbuji (9/10) 'pluton'	Matengo (N13)	mbuji (9/10) 'a mountain; a big thing; a big rock'	N: Matengo	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological change involved
4. Technical drawing				
36. mkakato (3/4) 'freehand sketches'	Gogo (G11)	kakata (V) 'get the better of by carving'	G: Gogo	<i>Sound change</i> no sound change involved <i>Morphology</i> verb-noun derivation
5. HIV/AIDS and other human diseases				

37. zure (9/10) 'anorexia'	Pare (G22)	nzure (9/10) 'selective eating habits'	G: Pare, Zaramo	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological change involved
38. kidachore (7/8) 'ascites'	Bondei (G24)	kidachore (7/8) 'belly swelling, especially the peritoneal cavity'	G: Bondei, Sambia	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological change inv
39. chwati (9/10) 'erythematous papules'	Luguru(G35)	chwati (7/8) 'papules'	G: Luguru	<i>Sound change</i> no sound change involved <i>Morphology</i> 9/10 < 7/8
40. kulaha (15) 'negotiate'	Bondei (G24)	kulaha (15) 'argue, arbitrate, negotiate'	G: Bondei, Zigua	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological change involved
41. usonji (11) 'autism'	Sukuma (F21)	soonji (adj.) 'autist; a kind of fish with small head'	E F: Sukuma, Nyamwezi, Kerewe, Jita	<i>Sound change</i> no sound change involved <i>Morphology</i> noun derivation
42. ulutiliaji (11) 'neologism'	Gogo (G11)	lulutika (V) 'talk in one's sleep; speak deliriously'	G: Gogo	<i>Sound change</i> no sound change involved <i>Morphology</i> verb-noun derivation
6. Mathematics				
43. giligili (9/10) 'fluid'	Nyakyusa (M31)	olugiligili (11) 'fluid'	M: Nyakyusa, Nyiha	<i>Sound change</i> no sound change involved <i>Morphology</i> deletion of the source prefix <i>lu-</i> and the augment <i>o-</i> 9/10 < 11
44. msigano	Yao (P21)	musigano (3/4)	E P: Yao, Haya,	<i>Sound change</i>

(3/4) 'inequality'		'inequality'	Kerewe	no sound change involved <i>Morphology</i> no morphological manipulation involved
45. (namba) kivunge (7/8) 'composite (number)'	Pare (G22)	kivunge (7/8) 'composite; food wrapped in a banana leaf'	E G: Pare, Zaramo, Gweno	<i>Sound change</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
46. ulalo (11) 'diagonal'	Nyakyusa (M31)	ululalo (11) 'bridge; a log for crossing a brook'	E G M: Nyakyusa, Sambaa, Kerewe, Jita, Ruuri	<i>Sound change</i> no sound change involved <i>Morphology</i> -deletion of the augment <i>u-</i> -reduction of CV prefix to V prefix i.e., <i>u- < lu-</i>
7. Agricultural engineering				
47. kidubingo 'drill'	Gogo (G11)	dubinga (V) 'spread things haphazardly'	G: Gogo	<i>Sound changes</i> no sound change involved <i>Morphology</i> noun-verb derivation
48. kitemela 'planter'	Sukuma (F21)	kitemela < temela 'to plant without plowing; kitemela 'cultivator'	F: Sukuma, Nyamwezi	<i>Sound changes</i> <i>i < I</i> <i>Morphology</i> no morphological change involved
49. msanilo 'non-tillage system'	Jita (E25)	sanila 'thresh for'	E F H: Jita, Ruuri, Regi, Kara, Kerewe, Haya, Ha, Nyambo, Bende	<i>Sound changes</i> no sound change involved <i>Morphology</i> noun-verb derivation

8. Family planning				
50. kivoromoko (7/8) ‘stillbirth’	Bondei (G24)	voromoka (V) ‘descend rapidly; go down; fall’	G: Bondei, Digo; in Kiswahili poromoka ‘fall rapidly’	<i>Sound changes</i> s > k <i>Morphology</i> noun-verb derivation
9. Plants/animal diseases and pests				
51. kimvugu (7/8) ‘cocoon’	Zaramo (G33)	kimvugu (7/8) ‘a small insect which makes a silky covering for protection and digs a hole on the ground to shelter in’	G: Zaramo; Ndengereko	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
52. fuguzi (9/10) ‘dermestids’	Nyamwezi (F22)	nfufuzi (9/10) ‘a small insect destructive to stored hides, meat and other animal substances’	D E F: Ha, Nyamwezi, Sukuma, Sumbwa, Kerewe	<i>Sound changes</i> g > f <i>Morphology</i> the nasal /n/ is deleted before voiceless fricative /f/
53. fugwe (9/10) ‘smuts’	Sumbwa (F23)	fulwe (9/10) ‘tortoise’ (fugwe < Ha D66)	D F: Sumbwa, Ha	<i>Sound changes</i> g > l <i>Morphology</i> No morphological change involved
54. kidomozi (7/8) ‘leaf miner’	Bondei (G24)	domola (V) ‘peck’	G: Bondei, Zigua, Digo	<i>Sound changes</i> s > k <i>Morphology</i> noun-verb derivation
55. sango (9/10) (msimu wa) ‘close season’	Ngoni (N12)	sangila (V) ‘clear a farm’	N: Ngoni	<i>Sound changes</i> No sound change involved <i>Morphology</i>

				noun-verb derivation -deletion of the applicative <i>il-</i>
56. shuna (9/10) 'animal's foot & mouth diseases'	Haya (E22)	shuna (9/10) 'foot and mouth disease of non- humation animates'	E F: Haya, Sumbwa, Nyambo	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological change involved
57. siizo (9/10) 'seed dressing'	Bondei (G24)	siizo 'clean'	G: Bondei	<i>Sound changes</i> No sound change involved <i>Morphology</i> no morphological manipulation involved
58. sota (9/10) 'cutworm'	Jita (E25)	sota (9/10) 'cutworm'	E: Jita	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological change involved
59. fukusi (9/10) 'weevil'	Ngoni (N12)	fukusi (9/10) 'weevil'	E G N - Jita, Bondei, Ngoni	<i>Sound changes</i> no sound change involved <i>morphology</i> no morphological change involved
10. Psychology				
60. kuguba (15) 'recite'	Ngoni (N12)	kuguba (15) 'recite'	N: Ngoni	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
11. Language (Literature & Linguistic)				

61. mviga (3/4) 'initiation ceremony'	Sambaa (G23)	mvigha (3/4) 'ritual dance; initiation ceremony'	G: Sambaa	<i>Sound changes</i> ʏ > g <i>morphology</i> no morphological manipulation involved
62. ngaha (9/10) 'accessories'	Nyaturu (F32)	ngagha (9/10) 'strip with many pockets used to keep many lots of things'	F: Nyaturu	<i>Sound changes</i> ʏ > g <i>Morphology</i> no morphological manipulation involved
63. ngero (9/10) 'epithalamion'	Sukuma (F21)	ngeelo (9/10) 'epithalamion'	F: Sukuma, Nyamwezi	<i>Sound changes</i> l > r <i>Morphology</i> no morphological manipulation involved
64. ngowela (9/10) 'antiphon'	Kaguru (G12)	ngowela (9/10) 'antiphon'	G: Kaguru	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
65. ngeli (9/10) 'noun class'	Haya (E22)	engeli (9/10) 'class; type'	E: Haya, Nyambo	<i>Sound changes</i> no sound change involved <i>Morphology</i> deletion of the augment -e
12. Agronomy and animal husbandry				
66. mkota (3/4) 'hide'	Pare (G22)	mkota (3/4) 'hide'	E G: Pare, Haya, Nyambo	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
67. mse (3/4)	Ha (D66)	muse (3/4)	D: Ha, Hangaza	<i>Sound changes</i>

'kernel'		'kernel'		deletion of the vowel /u/ between two consonants <i>Morphology</i> no morphological manipulation involved
68. mtozo (3/4) 'ear notch'	Gogo (G11)	mutozo (3/4) 'incision brand on the ears of an animal'	G: Gogo; Kaguru	<i>Sound changes</i> vowel deletion i.e., /u/ <i>Morphology</i> no morphological manipulation involved
69. kikoyoyo (7/8) 'stipules'	Pare (G22)	kikoyoyo (7/8) 'stipules'	G: Pare	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
70. kuigila (15) 'pegging'	Kerewe (E24)	kuigila (15) 'pegging'	E : Jita, Ruri, Regi, Haya, Zinza, Nyambo	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological change involved
71. kukusa (15) 'clean tillage'	Makonde (P23)	kukusa (15) 'weeding'	P N: Yao, Makonde, Mwera	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological change involved
72. kulele (15) 'flushing'	Chaga (E64)	kulele (15) 'sleep'	E: Chaga; Gweno	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
73. kushika (15) 'staking'	Chaga (E64)	kushiika (15) 'staking'	E: Chaga, Gweno	<i>Sound changes</i> no sound change involved <i>Morphology</i>

				no morphological manipulation involved
74. leleza (V) 'freshen'	Chaga (E64)	kulele (15) 'sleep'	E: Chaga; Gweno	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
75. masana (5/6) 'colostrum'	Sukuma (F21)	masana (5/6) 'yellow or white milk secreted by mother after giving birth'	F: Sukuma, Nyamwezi	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
76. mayauyau (5/6) 'stover'	Gogo (G11)	mayauyau (5/6) 'stover; valueless things'	G: Gogo, Kaguru	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
77. bwagala (V) 'farrow'	Jita (E25)	βwagara (V) 'bear for polyembryonic animals'	E F: Jita, Ruuri, Regi, Kara, Kerewe, Haya, Ha, Nyambo, Bende	<i>Sound changes</i> β > b r > l <i>Morphology</i> no morphology manipulation
78. milembwe (3/4) 'tattoo'	Gogo (G11)	milembwe (3/4) 'cheek tattoo as a decoration of a woman'	G: Gogo	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation involved
79. mshika (3/4) 'stake'	Chaga (E64)	mshiika (3/4) 'a post driven into the ground to support a plant e.g., banana'	E: Chaga, Gweno	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation

				involved
80. mwalilo (3/4) 'cover crop'	Kerewe (E24)	omwalilo (3/4) 'cover'	E: Kerewe, Haya, Nyambo	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological change involved
81. ndogosa (9/10) 'heifer'	Nyamwezi (F22)	ndogoosa (9/10) 'young female cattle, goat, sheep'	E F D G: Nyamwezi, Sukuma, Sumbwa, Nyaturu, Gogo, Ha, Jita	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation
82. ndube (9/10) 'podzol'	Gogo (G11)	ndube (9/10) 'the soil which retains water for long time'	G: Gogo	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation
83. ng'ondi (9/10) 'ram'	Sukuma (F21)	ng'oondi (9/10) 'ram'	F, G: Sukuma, Sumbwa, Pare, Digo	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation
84. ngetwa 'laterite'	Pare (G22)	ngetwa (9/10) 'erosion'	E G: Pare; Gweno	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation
85. ngunja (9/10) 'brown soil'	Mwera (N210)	ngunja (9/10) 'dust of red soil or 'red soil'	P N: Makua, Mwera, Yao, Makonde	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation
86. lushabo (5/6) 'silt'	Haya (E22)	Olushaabo (11) 'mud made by natural causes such as rain'	E: Haya	<i>Sound changes</i> no sound change involved <i>Morphology</i> deletion of the augment o-

				5/6 < 11
87. tepo (9/10) 'clone'	Mwera (N201)	litepo (5/6) 'stem (plant)'	N P: Mwera, Makonde	<i>Sound changes</i> no sound change involved <i>Morphology</i> deletion of source prefix <i>li-</i> 9/10 < 5/6
88. usala (ushaji) 'deffered grazing' 11	Gogo (G11)	usaala (14) 'cultivate farm that has been prepared by burning'	G: Gogo; Kaguru	<i>Sound changes</i> no sound change involved <i>Morphology</i> 11 < 14
89. wesya (9/10) 'cry cow'	Jita (E25)	weesya (9/10) 'stop bearing fruit; stop giving milk for an animal'	E: Jita, Ruuri, Kerewe	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation
90. mori (9/10) 'heifer'	Pare (G22)	mori (5/6) 'young female cow'	G: Pare, Digo, but in Sambaa (moi 'cow')	<i>Sound changes</i> no sound change involved <i>Morphology</i> 9/10 < 5/6
91. mbuguma (9/10) 'cow'	Sukuma (F21)	mbogoma (9/10) 'cow'	E F G: Sukuma, Kerewe, Jita	<i>Sound changes</i> u < ɔ <i>Morphology</i> no morphological manipulation
13. Administration - institutions, departments, management				
92. ikulu (9/10) 'state house'	Nyamwezi (F22)	ikolo (5/6) 'chief's homestead'	F, G: Nyamwezi, Sukuma, Gogo	<i>Sound changes</i> u < ɔ <i>Morphology</i> 9/10 < 5/6
93. bunge (5/6) 'national assembly'	Ha (D66)	bunge (5/6) 'village elders' meeting'	D F: Ha, Nyamwezi	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation

94. kitivo (7/8) 'faculty'	Pare (G22)	kitivo (7/8) 'fertile soil'	E G: Pare; Gweno	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation
95. nembo (9/10) 'coat of arms'	Gogo (G11)	nembo (9/10) 'tattoo; mark'	G: Gogo	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation
14. Meteorology				
96. msoke (3/4) 'water spout'	Sukuma (F21)	nsooke > musooke (3/4) 'water spout'	E F: Sukuma, Jita, Kerewe, Kara	<i>Sound changes</i> deletion of the vowel /u/ between two consonants <i>Morphology</i> no morphological manipulation
15. Politics				
97. ng'atuka (V) 'stepdown due to age'	Zanaki (E44)	ng'atuka (V) 'stepdown due to age'	E: Zanaki, Ikizu	<i>Sound changes</i> no sound change involved <i>Morphology</i> no morphological manipulation
16. Computer science				
98. nywila (9/10) 'password'	Matumbi (P13)	nywinywila (9/10) 'codeword used to authenticate or recognize fellow fighters'	P: Matumbi	<i>Sound changes</i> no sound change involved <i>Morphology</i> deletion of reduplicative syllable <i>nywi</i>

Appendix 4: Words sourced from non-standard Kiswahili dialects

No.	Term	source form and meaning	source
1	chovyoo 'oedema'	chovyoo 'body swelling disease due to internal effects'	Kipemba
2	kiangata 'hob'	kiangata 'the upper part of the stove'	Kisiu, Kiamu
3	kidau/kidao 'grill deflector'	kidau 'a small clay device used to keep ink'	Kiamu
4	kisabehe 'breakfast'	kisabehe 'first meal eaten by a person, usually in the morning'	Kipemba
5	kiwe 'flat plate mill'	kiwe 'a smooth round-shaped stone used for grinding grain'	Kiunguja
6	koya 'scum'	koya 'a layer that occur on teeth and gums due to dirt'	Kipemba
7	mbolezi 'elegiac poetry'	mbolezi 'a song sung at a funeral, especially to comfort the bereaved'	Kimvita
8	mutia 'crest'	mutia 'crest'	Kipemba
9	ng'onzi 'leaf curl'	ng'onzi 'leaf curl'	Kimtang'ata
10	rovu 'goiter'	rovu 'goiter'	Kiunguja
11	tungu 'churn'	tungu 'churn'	Kipemba
12	vibakora 'rolls'	vibakora 'rolls'	Kipemba
13	zongomesha 'wrap'	zongomesha 'wrap'	Kipemba

Appendix 5: Local non-Bantu-sourced words

No	Term	source form and meaning	source language
1.	asamo 'basement'	dóoƷasmoo 'low flat-roofed house'	Iraqw
2.	majilili 'strip'	jilili 'strip'	Maasai
3.	mbuti 'duodenum'	mbut 'duodenum'	Maasai
4.	ngalemu 'carving knife'	engalem 'carving knife'	Maasai
5.	ushilaji 'mass selection'	aashil 'mass selection'	Maasai

Appendix 6: Words sourced from West African Languages

No	Term	source form and meaning	source language
1.	rara 'ballad'	rara 'traditional song'	Yoruba
2.	sukui 'blank verse'	-	Susu
3.	yeli 'griot'	jeli/jali 'griot'	Malinke

Appendix 7: Bantu-sourced loans by source language in four selected Kiswahili publications

The mark “-” refers to the presence of an item in the dictionary but no source information and “/” represents item absent from the dictionary

No.	term	source form and meaning	KKK	KTK	KKF	KKS	TS
1.	bunge 'parliament'	bunge 'village elders' meeting'	-	-	-	-	-
2.	bwagala 'farrow'	βwagara 'bear for polyembryonic animals'	-	/	/	/	Jita (E25)
3.	chwati 'erythematous papules'	/chwati 'papules'	/	/	/	/	Luguru (G35)
4.	fuguzi 'dermestids'	nfufuzi 'a small insect destructive to stored hides, meat and other animal substances'	/	/	/	/	Nyamwezi (F22)
5.	fugwe 'smuts'	fulwe 'tortoise' (fugwe < Ha D66)	-	/	/	/	Sumbwa (F23)
6.	fukusi 'weevil'	fukusi 'weevil'	-	/	/	/	Ngoni (N12)
7.	fuwele 'crystal'	fuwele 'dead rocks'	-	-	-	-	Zigua (G31)
8.	ikari 'barbecue'	ikari 'a place where (elderly) people come together and roast meat'	-	/	/	/	Meru/Rwa (E621)
9.	ikulu 'state house'	ikolu 'chief's homestead'	-	-	-	-	-
10.	itale 'granite'	itale 'a big flat rock'	/	/	/	/	Sukuma (F21)
11.	kasoko 'caldera'	kasooko 'a	-	/	/	-	Nyakyusa

		small dale; small valley'					(M31)
12.	kidachore 'ascites'	kidachore 'belly swelling'	/	/	/	/	Bondei (G24)
13.	kidubingo 'drill'	dubinga 'spread things haphazardly'	/	/	/	/	Gogo (G11)
14.	kikoyoyo 'stipules'	kikoyoyo 'stipules'	/	/	/	/	Pare (G)
15.	kilala 'fallow'	laala 'leftovers; fallow field'	-	/	/	/	Haya (E22)
16.	kimori 'apron'	kimori 'apron'	-	-	-	-	Pare (G22)
17.	kimvugu 'cocoon'	kimvugu 'a small insect which makes a silky covering for protection and digs a hole on the ground to shelter in'	/	/	/	/	Zaramo (G33)
18.	kitemela 'planter'	temela 'to plant without plowing; kitemela 'cultivator'	-	/	/	/	Sukuma (F21)
19.	kitivo 'faculty'	kitivo 'fertile soil'	-	-	-	-	-
20.	kivoromoko 'stillbirth'	voromoka 'descend rapidly; go down; fall'	-	/	/	/	Bondei (G24)
21.	kuguba 'recite'	kuguba 'recite'	/	/	/	/	Ngoni (N12)
22.	kuigila 'pegging'	kuigila 'pegging'	/	/	/	/	Kerewe (E24)
23.	kukusa 'clean tillage'	kukusa 'weeding'	-	/	/	/	Makonde (P23)
24.	kulaha 'negotiate'	kulaha 'argue, arbitrate, negotiate'	/	/	/	/	Bondei (G24); Zigua (G31)

25.	kulele 'flushing'	lele 'sleep'	/	/	/	/	Chaga (E64)
26.	kushika 'staking'	shiika 'a post driven into the ground to support a plant e.g., banana'	/	/	/	/	Chaga (E64)
27.	leleza 'freshen'	lele 'sleep'	/	/	/	/	Chaga (E64)
28.	lukoka 'wavelength'	lukoka 'a space between two ridges'	-	/	/	/	Jita (E25)
29.	lusoko 'crater'	losooko 'dale, valley'	-	/	/	/	Nyakyusa (M31)
30.	lweya 'virgin land'	orweeya 'virgin land; grassy land; plains'	-	/	/	/	Haya (E22)
31.	machunda 'skimmed milk'	machunda 'churned milk' < chunda 'churn'	/	/	/	-	Haya (E22)
32.	masana 'colostrum'	masana 'colostrum'	/	/	/	/	Sukuma (F21)
33.	mayauyau 'stover'	mayauyau 'stover; valueless things'	/	/	/	/	Gogo (G11)
34.	mbuji 'pluton'	mbuji 'a mountain; big thing; a big rock'	/	/	/	/	Mwera (N201)
35.	milembwe 'tattoo'	milembwe 'cheek tattoo as decoration of a woman'	/	/	/	/	Gogo (G11)
36.	mkakato 'freehand sketches'	kakata > mkakato 'get the better of by carving'	/	/	/	/	Gogo (G11)
37.	mkota 'hide'	mkota 'hide'	/	/	/	/	Pare (G22)
38.	mlawangi 'predator'	mlawangi 'predator'	/	/	/	/	Nyamwezi (F22)
39.	mori 'heifer'	mori 'young female cow'	Arabic	/	/	Arabic	Pare (G22)

40.	msanilo 'non-tillage system'	sanila 'thrash for'	/	/	/	/	Jita (E25)
41.	mse 'kernel'	mse 'kernel'	/	/	/	/	Ha (D66)
42.	mshika 'stake'	shiika 'a post driven into the ground to support a plant e.g., banana'	/	/	/	/	Chaga (E64)
43.	msigano 'inequality'	musigano 'inequality'	-	/	/	-	Yao (P22)
44.	msoke 'water spout'	nsoke 'water spout'	/	/	/	/	Sukuma (F21)
45.	mtozo 'ear notch'	mutozo 'incision brand on the ears of an animal'	/	/	/	/	Gogo (G11)
46.	mviga 'ceremony'	mvigha 'ritual dance; initiation ceremony'	-	/	/	-	Sambaa (G23)
47.	mwalilo 'cover crop'	omwaliilo 'cover'	/	/	/	/	Kerewe (E24)
48.	myuko 'convection'	yuka 'convect'	/	/	/	/	Kaguru (G12)
49.	nangulu 'paralyze; landslide'	nangulu 'paralyze; landslide'	-	/	/	/	Mwera (N201)
50.	ndagano 'confluence of rivers'	ndaagano 'confluence of rivers'	-	-	/	/	Mwera (N201)
51.	ndiani 'cruet'	ndiani 'a small container for snuff; chewing tobacco'	/	/	/	/	Gogo (G11)
52.	ndogosa 'heifer'	ndogoosa 'young female cattle, goat, sheep'	/	/	/	/	Nyamwezi (F22)
53.	ndube 'podzol'	ndube 'the soil which retains water for long time'	/	/	/	/	Gogo (G11)

54.	nembo ‘coat of arms	nembo ‘tattoo; mark’	-	-	-	-	-
55.	ng’atuka ‘stepdown due to age’	ng’atuka ‘stepdown due to age’	-	/	/	/	Zanaki (E44)
56.	ng’ondi ‘ram’	Ng’oondi ‘ram’	-	/	/	/	Sukuma (F21)
57.	ngaha ‘accessories’	ngagha ‘a scrip with many pockets used to hold many things’	-	/	/	/	Nyaturu (F32)
58.	ngeli ‘noun class’	engeli ‘class; type’	-	-	-	-	-
59.	ngero ‘epithalamion’	ngeelo ‘epithalamion’	/	/	/	/	Sukuma (F21)
60.	ngetwa ‘laterite’	ungetwa ‘erosion’	-	/	/	/	Pare (G22)
61.	ngoro ‘terrace’	ngoro ‘terrace; a type of farming; intercropping’	/	/	/	/	Matengo (N31)
62.	ngowela ‘antiphon’	ngowela ‘behind something’	/	/	/	/	Kaguru (G)
63.	nguka ‘earth flow, slumping’	nguka ‘slumping’	-	/	/	/	Nyakyusa (M31)
64.	ngunja ‘brown soil’	ngunja ‘dust of red soil or ‘red soil’	-	/	/	/	Mwera (N201)
65.	nyiri (upepo) ‘jet-stream’	nyiri ‘strong fast and meandering air currents’	/	/	/	/	Pare (G); Haya (E22)
66.	nywila ‘password’	nywilanywila ‘codeword’	English	/	/	/	/
67.	sango (msimuwa) ‘close season’	sangila ‘clear a farm’	/	/	/	/	Ngoni (N12)
68.	lushabo ‘silt’	olushaabo ‘mud made by natural causes e.g., rain’	-	/	/	/	Haya (E22)

69.	shiganga 'boulder'	shiganga 'boulder'	-	/	/	/	Sukuma (F21)
70.	shuna 'foot & mouth diseases (animals)	shuna 'foot and mouth disease of non- humation animates'	-	/	/	-	Haya (E22)
71.	siizo 'seed dressing'	siiza 'wash; clean'	/	/	/	/	Bondei (G24)
72.	sonji 'autist'	soonji 'autist; a kind of fish with small head'	-	/	/	/	Sukuma (F21)
73.	sota 'cutworm'	sota 'cutworm'	/	/	/	/	Jita (E25)
74.	tepo 'clone'	litepo 'stem (plant)'	/	/	/	/	Mwera (N201)
75.	ubigiaji 'reafforestation'	bigia 'reseed'	/	/	/	/	Bondei (G24)
76.	giligili 'fluid'	olugiligili 'fluid'	-	-	/	-	Nyakyusa (M31)
77.	ulalo 'diagonal'	ululalo 'bridge'	-	/	/	-	Nyakyusa (M31)
78.	(ulishaji) usala 'deffered grazing'	usaala 'cultivate farm that has been prepared by burning'	/	/	/	/	Gogo (G11)
79.	uloto 'bone marrow'	uloto 'bone marrow; synovial fluid'	-	/	/	/	Zaramo (G33)
80.	ulutiliaji 'neologism'	lulutika 'speak deliriously'	/	/	/	/	Gogo (11)
81.	unamu 'texture'	unamu 'soft/fine thing; texture'	Arabic	-	/	/	Gogo (G11)
82.	wesya 'dry cow'	weesya 'stop bearing fruit; stop giving milk for an animal'	/	/	/	/	Jita (E25)

83.	fyulisi ‘peach’	ilifyulisi/ unfyulisi ‘peach’	/	/	/	/	Nyakyusa (M31)
84.	ikungi ‘passion fruit’	ikunguu ‘a fruit like passion whose seeds are eaten’	/	/	/	/	Pare (G22)
85.	(namba) kivunge ‘composite (number)’	(namba) kivunge ‘composite’	-	/	/	/	Pare (G22); Zaramo (G33)
86.	kidomozi ‘leaf miner’	domola ‘peck’	/	/	/	/	Bondei (G24)
87.	kiganga ‘hardpan’	kaganga ‘small stone’	/	/	/	/	Hehe (G62)
88.	kipera ‘tributary, affluent’	kipera ‘a stream; brook; tributary’	/	/	/	/	Ngoni (N12)
89.	zure ‘anorexia’	nzure ‘selective eating habit’	/	/	/	/	Pare (G22)
90.	ujinji ‘albumen’	ujinji ‘jelly- fluid from a ripe mango’	/	/	/	/	Bondei (G24)
91.	kutapasa ‘reducing’	tapasa ‘reduce’	/	/	/	/	Ngoni (N12)
92.	kutindia ‘creaming’	tindia ‘remove cream from milk’	/	/	/	/	Gogo (G11)
93.	kuleleza ‘flushing’	lele ‘sleep’	/	/	/	/	Chaga (E64)
94.	leleza ‘freshen’	lele ‘sleep’	/	/	/	/	Chaga (E64)
95.	hala ‘peneplain’	ihala ‘a flat area covered with compacted and cemented soil such that nothing cannot grow on it’	/	/	/	/	Gogo (G11)

96.	mlulu 'peat'	mlulu 'non-toxic waste; garbage collected to be burned'	/	/	/	/	Pare (G22)
97.	ngenya 'circumcized penis'	ngenya 'big circumcized penis'	-	/	-	-	/
98.	mbuguma 'cow'	mbogoma 'cow'	-	/	/	/	-

Appendix 8: Questionnaire for native speakers of the assumed source languages of the Bantu-sourced loanwords

A: Demographical questions

Please fill in the most appropriate details on the spaces provided

Age:

Sex: Male Female.....

Educational level

Specialization.....

Occupation..... Experience.....

B: Loan adaptability questions

Please pronounce/write the word equivalent and its meaning to the following words in your language.

Form and meaning in Kiswahili

Form and meaning in your language

1. mshana ‘osteomalaria’
2. mgoro ‘rectum’
3. ikari ‘barbecue’
4. kutindia ‘creaming’
5. kutapasa ‘reducing’
6. machunda ‘skimmed milk’
7. mlulu ‘peat’
8. ndiani ‘cruet’
9. ujinji ‘albumen’
10. uloto ‘bone marrow’
11. utopeshaji ‘thickening soup’
12. fulisi ‘peach’
13. ikungu ‘passion fruit’
14. fuwele ‘crystal’
15. hala ‘peneplain’

16. itale ‘granite’
17. kasoko ‘crater’
18. kiganga ‘hardpan’
19. kilala ‘fallow’
20. kipera ‘tributary, affluent’
21. lukoka ‘wavelength’
22. lusoko ‘caldera’
23. lweya ‘virgin land’
24. myuko ‘convection’
25. nangulu ‘landslide’
26. ndagano ‘confluence of river’
27. ngoro ‘terrace’
28. nguka ‘earth flow, slumping’
29. shiganga ‘boulder’
30. ubigiaji ‘reafforestation’
31. unamu ‘texture’
32. nyiri (upepo) ‘jet-stream’
33. mbuji ‘pluton’
34. mkakato ‘freehand sketches’
35. zure ‘anorexia’
36. kidachore ‘ascites’
37. chwati ‘erythematous papules’
38. kulaha ‘negotiate’
39. usonji ‘autism’
40. ululutiliaji ‘neologism’
41. giligili ‘fluid’
42. msigano ‘inequality’
43. kivunge ‘composite’
44. ulalo ‘diagonal’
45. kidubingo ‘drill’
46. kitemela ‘planter’

47. msanilo 'non-tillage system'
48. kivoromoko 'stillbirth'
49. kimvugu 'cocoon'
50. fuguzi 'dermestids'
52. fugwe 'smuts'
53. kidomozi 'leaf miner'
54. sango (msimuwa) 'close season'
55. shuna 'animal's foot & mouth diseases'
56. siizo 'seed dressing'
57. sota 'cutworm'
58. fukusi 'weevil'
59. kuguba 'recite'
60. mviga 'ritual; ceremony'
61. ngaha 'accessories'
62. ngero 'epithalamion'
63. ngowela 'antiphon'
64. ngeli 'noun class'
65. mkota 'hide'
66. mse 'kernel'
67. mtozo 'ear notch'
68. kikoyoyo 'stipules'
69. kuigila 'pegging'
70. kukusa 'clean tillage'
71. kulele 'flushing'
72. kushika 'staking'
73. leleza 'freshen'
74. masana 'colostrum'
75. mayauyau 'stover'
76. bwagala 'farrow'
77. milembwe 'tattoo'
78. mshika 'stake'

79. mwalilo 'cover crop'
 80. ndogosa 'heifer'
 81. ndube 'podzol'
 82. ng'ondi 'ram'
 83. ngetwa 'laterite'
 84. ngunja 'brown soil'
 85. lushabo 'silt'
 86. tepo 'clone'
 87. usala 'deffered grazing'
 88. wesya 'cry cow'
 89. mori 'heifer'
 90. ikulu 'state house'
 91. bunge 'national assembly'
 92. kitivo 'faculty'
 93. nembo (ya taifa) 'court of arms'
 94. msoke 'water spout'
 95. ng'atuka 'stepdown due to age'
 96. nywila 'password'
-

Appendix 9: Questionnaire for primary school teachers and teachers' college academic staff

A. Demographical questions

Please fill in the most appropriate details on the spaces provided.

Age:

Sex: Male Female.....

Educational level

Specialization.....

Occupation.....Experience.....

B: Open ended questions on dissemination and popularity of BAKITA's terminology products.

1. Are you aware of the existence of *Tafsiri Sanifu* 'Standard Translations' published by BAKITA, which contain Kiswahili terms across technical subjects?

.....
.....
.....
.....

2. Do you have *Tafsiri Sanifu* 'Standard Translations' in your school/college/department?

.....
.....
.....
.....

3. As a consumer of Kiswahili technical terms, how do you get them?

.....
.....
.....
.....

4. As a consumer of BAKITA's products, do you think that BAKITA have made their products accessible and understandable by the general public?

.....
.....
.....

5. What do you say about the dissemination and popularity of BAKITA's terminological products?

.....
.....
.....
.....

Appendix 10: Summary of the results of the dissertation

This study explores terminological development in Tanzania. It discusses the practice of term formation carried out by state language organs. It also tracks and analyzes Bantu-sourced loanwords occurring in standard Kiswahili technical terminology lists by Baraza la Kiswahili la Taifa ‘National Kiswahili Council’ - BAKITA. The study specifically analyzes how Bantu-sourced loanwords adhere to the principles of term formation and their phonological and morphological adaptations in standard Kiswahili. The study takes into account the use of native linguistic stock in the creation of standard Kiswahili terms, since BAKITA’s ranking of term sources disfavors non-African loanwords in the creation of Kiswahili terms.

The introduction of *Ujamaa* politics in 1967, whose emphasis was on africanization, made a remarkable impact on terminology development in standard Kiswahili, hence the name *Ujamaa* linguistics. This political revolution also affected Tanzanian language policies. Consequently, BAKITA was established in 1967 in order to coordinate the development of standard Kiswahili to the level of becoming an intellectual language. BAKITA issued substantial lists of technical terms published as *Tafsiri Sanifu* ‘Standard Translations’ between 1972 and 1985. The fall of the *Ujamaa* political movement in the 1980s came with a standstill in terminological development works. Although *Ujamaa* politics emphasized on africanization, the findings of this study show that *Ujamaa* linguistics did not aim at africanizing the standard Kiswahili lexicon by purging the language from non-African loanwords. By the political situation of that time, one would have expected a considerably lower degree of anglicisms and new loanwords of Arabic origin, but the contrary is the case. Therefore, there was a contradiction between ideology and practice, as English continued to be the reference for Kiswahili’s terminological development.

Although Kiswahili technical subjects have not borrowed as much from the Bantu languages of Tanzania as it has English and Arabic, they nonetheless have contributed significantly in the scientific and technological fields. The findings of this study show that the group of Bantu languages of Tanzania is the third source for new Kiswahili technical terms, whereas non-standard Kiswahili dialects are marginal. The predominance of the non-Kiswahili native Bantu speakers’ membership in the language standardization committee remains the big reason for such status acquired by Bantu-sourced loans in standard Kiswahili terminology. Thus, the modernization of the standard Kiswahili technical lexicon is carried out by the mainlanders of which the majority are non-Kiswahili Bantu speakers.

The study has also shown that BAKITA and TATAKI suffer from a serious lack of qualified terminologists. Training in terminology in many countries has been instrumental in obtaining qualified terminologists. Due to the high demand for technical terminology across Kiswahili specialized domains and due to a serious lack of qualified terminologists in the language standardization committee, this study emphasizes the need for an integrated approach to terminological development in Tanzania.

Regarding Bantu-sourced loans adaptability in standard Kiswahili, the findings show that the non-Kiswahili Bantu consonants and vowels assimilated to their nearest Kiswahili equivalents through replacement. The morphological adaptation of Bantu-sourced loanwords in standard Kiswahili addresses mostly derivation and noun class re-assignment.

Anhang 10: Zusammenfassung der Dissertationsergebnisse

Diese Studie untersucht die Entwicklung von Fachbegriffen in Tansania. Sie beschreibt, wie diese durch die staatlichen Sprachorgane gebildet werden. Sie verfolgt und analysiert fernerhin die Listen des Baraza la Kiswahili la Taifa 'Nationaler Kiswahili Rat' - BAKITA zu Lehnwörtern, die Bantu-Sprachen entstammen. Insbesondere analysiert die Studie, inwiefern Lehnwörter aus Bantu-Sprachen den Prinzipien der Begriffsbildung, sowie ihrer phonologischen und morphologischen Adaptionen im Standard-Swahili folgen. Dabei berücksichtigt die Studie den Gebrauch einheimischer linguistischer Begriffe bei der Bildung von Fachbegriffen im Standard Swahili, da BAKITAs Auflistung der Ursprünge der Fachbegriffe nicht-afrikanische Lehnwörter bei der Schöpfung von Swahili Begriffen vernachlässigt.

Die Einführung der *Ujamaa* Politik in 1967, deren Schwerpunkt auf Afrikanisierung lag, hatte einen bemerkenswerten Einfluss auf die Entwicklung von Fachbegriffen im Standard Swahili, daher der Name *Ujamaa* Linguistik. Diese politische Revolution betraf auch die tansanische Sprachpolitik. Infolgedessen wurde BAKITA 1967 gegründet, um die Entwicklung des Standard Swahili zu einer intellektuelle Sprache zu koordinieren. BAKITA erstellte zwischen 1972 und 1985 beträchtliche Listen von Fachbegriffen, die als *Tafsiri Sanifu* 'Standard Übersetzungen' veröffentlicht wurden. Das Ende der politischen *Ujamaa* Bewegung in den 1980ern brachte einen Stillstand in der Arbeit der Begriffsentwicklung mit sich. Obwohl die *Ujamaa* Politik Afrikanisierung betont hatte, zeigen die Ergebnisse dieser Studie auf, dass die *Ujamaa* Linguistik es nicht zum Ziel hatte, das Standard Swahili durch eine Säuberung der Sprache von nicht-afrikanischen Lehnwörtern zu afrikanisieren. Gemessen an der politischen Lage zu der Zeit, würde man einen deutlich geringeren Anteil an Anglizismen und neuer Lehnwörter arabischen Ursprungs erwarten, doch das Gegenteil ist der Fall. Folglich gab es einen Widerspruch zwischen der Ideologie und deren praktische Ausführung, da Englisch weiterhin die Bezugssprache für die Begriffsbildung und -Entwicklung des Swahili blieb.

Wenn auch technische Themen im Swahili nicht so stark von den Bantu-Sprachen Tansanias entlehnt wurden, wie von Englisch und Arabisch, haben sie nichtsdestoweniger signifikant zu den wissenschaftlichen und technologischen Feldern beigetragen. Die Ergebnisse dieser Studie zeigen, dass die Gruppe nicht-Swahili Bantu Sprachen Tansanias die dritte Quelle für neue Fachtermini im Swahili ist, während Dialekte des Swahili, die nicht der Standard sind, nur marginal sind. Die Überzahl der Mitglieder im Sprach-Standardisierungs- Komitee, welche nicht-Swahili Bantu-Muttersprachler sind, bilden den Hauptgrund, dass Lehnwörter aus Bantu-Sprachen in den Begrifflichkeiten des Standard Swahili solch einen Status erlangen konnten. Dementsprechend wird die Modernisierung des fachsprachlichen Lexikons des Standard Swahili von den Festlandbewohnern ausgeführt, von denen die meisten nicht-Swahili Bantu Sprecher sind.

Die Studie hat auch gezeigt, dass BAKITA und TATAKI an einem gravierenden Mangel qualifizierter Terminolog:innen leiden. Eine Terminologie-Ausbildung war in vielen Ländern entscheidend, um an qualifizierte Terminolog:innen zu kommen. Dank der hohen Nachfrage für fachliche Terminologie in Swahili Spezial-Gebieten, und aufgrund des gravierenden Mangels qualifizierter Terminolog:innen im Sprach-Standardisierungs-Komitee, betont diese Studie die Notwendigkeit eines ganzheitlichen Ansatzes fachsprachlicher Entwicklung in Tansania.

Bezüglich der Anpassbarkeit der Lehnwörter aus anderen Bantu-Sprachen ins Standard Swahili, zeigen die Ergebnisse, dass nicht-Swahili Bantu Konsonanten sowie Vokale sich den nächstgelegenen Swahili Äquivalenten (durch Ersetzung) angleichen. Die morphologischen Anpassungen an Lehnwörter aus anderen Bantu-Sprachen ins Standard Swahili betreffen vordergründig Derivation und eine Neuordnung ihrer Nominalklasse. Die Befunde zeigen auch, dass einige der ursprünglichen Nominal-Präfixe etwas Einfluss auf Swahili Morphologie hatten.