

**Orthographic Deviation of  
Relative Markers *jhújho* and  
*jhíjho* in Chindali Relative Clauses**

JLLE  
Vol 18(2) 97–110  
© The Publisher  
DOI:10.56279/jlle.v18i2.6

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**Abstract**

*This paper analyses the orthographic deviation of relative markers **jhújho** 'who' and **jhíjho** 'which' in Chindali as spoken in Ileje District of Songwe Region in the southern highlands of Tanzania. The study employed a qualitative approach with a descriptive research design. Data were gathered through text collection. Twelve informants were sampled using purposive and snowball sampling techniques. The researchers also analysed three books written in Chindali from which sentences with relative clauses (RCs) were extracted, in which the relative markers **jhújho** 'who' and **jhíjho** 'which' were picked for analysis. The findings reveal that the orthographic deviation of relative markers **jhújho** 'who' and **jhíjho** 'which' in Chindali is necessitated by the deviant consonant /ʒ/ with grapheme <jh> in the Chindali orthography as suggested by Schroeder (2010). The analysis has exposed that the grapheme <j> was substituted with the grapheme <y> in all words with grapheme <j>. The findings reveal that the grapheme <j> is pronounced as /ʒ/ as evidenced in the spoken texts collected. Thus, it should be written as <jh> grapheme instead of the <y> grapheme as written in the literature. Thus, writers have to use the grapheme <jh> in writing, which is pronounced as /ʒ/, to mitigate troubles in reading. The article concludes that the consonant /j/ and the grapheme <y> are used in conventional orthography in nontraditional style, which deviates from the correct use, something that leads to the deviation of the Chindali orthography in general and the relative markers **jhújho** and **jhíjho** in particular.*

**Keywords:** *Chindali, deviation, orthography, relative clauses, relative marker*

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## Introduction

This study is largely based on the work of Eaton (2019) on Chindali Orthography Statement and that of Mtallo and Mwambula (2018) on the Phonological Influence of Ethnic Community Languages on the learning of Kiswahili. It is also motivated by the recommendation made by Mwang'eka et al.'s (2022) work on morphosyntactic analysis of the Chindali relative markers, in which the authors identified the gap in writing the relative markers *jhújho* 'who' and *jhijho* 'which' that has been analysed by this study. These works provide the point of reference for this paper.

Another motivation for this paper which has attracted attention is the orthographic deviation of relative markers *jhújho* and *jhijho* in Chindali relative clauses. Mwang'eka et al. (2022) revealed 16 relative markers found in Chindali relative clauses such as *jhújho* 'who', *bhábho* 'who', *ghúghwo* 'which', *jhijho* 'which', *lilyo* 'which/that', *ghágho* 'which/that', *chicho* 'which', *fifyo* 'which', *shisho* 'which', *lúlwo* 'which', *káko* 'who/whose/which', *tútwo* 'who/whose/which', *bhúbhwo* 'which', *kúkwo* 'where', *pápo* 'where', and *múmwo* 'where'. These relative markers are classified based on the noun class system of the language. Yalonde & Eaton (2016) identify 20 noun classes in Tanzanian Chindali, whereas Botne (2008: 19) identifies 18 classes in the Malawian variety. The noun classes and their formal features are summarised in Table 1.

**Table 1: Chindali Noun Classes Distribution**

Noun Class	Augment	Pre fix	Examples	Morphophonological Process	Semantic Features	Singular & Forms
1	u-	mu-	umwana 'child'	umw-/ _a,e,i,o,u	human beings	singular
2	a-	bha-	abhaana 'children'	abh-/ _a,e,i,o,u	human beings	plural
1a	u-				kinship terms	singular
2b	a-	bho-			kinship terms	plural
3	u-	mu-	umulomu 'mouth'	umw-/ _a,e,i,o,u	objects/things	singular
4	i-	mi-	imilomu 'mouths'	umy-/ _a,e,i,o,u	objects/things	plural
5	i-	li-	ikokwe 'tree'	ily-/ _a,e,i,o,u	objects/things	singular
6	a-	ma-	amakokwe 'trees'	am-/ _a,e,i,o,u	objects/things	plural
6a	a-	ma-	amiishi 'water'	am-/i	Liquids	plural
7	i-	chi-	ichitengu 'chair'	ich-/ _a,e,i,o,u	objects/things	singular
8	i-	fi-	ifitengu 'chairs'	ify-/ _a,e,i,o,u	objects/things	plural
9	i-	jhu-	ifula 'rain'	jh-/ _a,e,i,o,u	Animals&objects/things	singular
10	i-	shi-	inyumba 'houses'	sh-/ _a,e,i,o,u	Animals&objects/things	plural

11	u-	lu-	ululimi 'tongue'	ulw-/ _a,e,i,o,u	objects/things	singular <sup>2</sup>
12	a-	ka-	akalindu 'pretty (little) girl'	ak-/ _a,e,i,o,u	abstract nouns	singular
13	u-	tu-	utulindu 'pretty (little) girls'	utw-/ _a,e,i,o,u	abstract nouns	plural
14	u-	bhu-	ubhwalwa 'beer'	ubhw-/ _a,e,i,o,u	uncountable nouns	singular <sup>3</sup>
15	u-	ku-	ukwuma 'to dry'	ukw-/ _a,e,i,o,u	verb infinitives	
16	(a-)	pa (-)	pa bhwele 'open place (specific)'		locatives	
17	(u-)	ku(-)	ku bhwele 'open place (unspecific)'		locatives	
18	(u-)	mu(-)	mu bhwele 'open place (inside)'		locatives	
21	i-	li-	ilililo 'large fire'		augmentatives	Singular & plurals <sup>4</sup>

**Source:** Modified from Noun Class Distribution by Yalonde and Eaton (2016)

Chindali relative markers differentiate themselves based on the characteristics of the noun class to which they belong, however, this is not the topic of this work. The distribution of Chindali relative markers is indicated in Table 2.

**Table 2: Distribution of Chindali Relative Markers and their Characteristics**

Class	Relative Pronoun	Gloss	ScdP <sup>5</sup> /AGR <sup>6</sup>	Relative Marker	Duplicated Cons.	Use of Glide	Phonological Change of the Vowel	Final Vowel
1	<i>Jhújho</i>	Who	<i>jhuu</i>	<i>jho</i>	<i>jh</i>		<i>u-</i> <i>o</i>	<i>o</i>
2	<i>Bhábhho</i>	Who	<i>bhaa</i>	<i>bho</i>	<i>bh</i>		<i>a-</i> <i>o</i>	<i>o</i>
3	<i>ghúghwo</i>	Which	<i>ghuu</i>	<i>ghwo</i>	<i>gh</i>	<i>w</i>	<i>u-</i> <i>o</i>	<i>o</i>
4	<i>Jhíjho</i>	Which	<i>jhii</i>	<i>jho</i>	<i>jh</i>		<i>i-</i> <i>o</i>	<i>o</i>

<sup>2</sup> Class 11 (singular) pairs with class 10 (plural)

<sup>3</sup> Class 14 (singular) pairs with class 6 (plural)

<sup>4</sup> Class 21 (singular) pairs with classes 4 & 9 (plural)

<sup>5</sup> ScdP-Subject Concord Prefix

<sup>6</sup> AGR-Class Agreement Marker

5	<i>Lilyo</i>	which/that	<i>lii</i>	<i>lyo</i>	<i>l</i>	<i>y</i>	<i>i-</i>	<i>o</i>
6	<i>Ghággho</i>	which/that	<i>ghaa</i>	<i>gho</i>	<i>gh</i>		<i>a-</i>	<i>o</i>
7	<i>Chicho</i>	Which	<i>chii</i>	<i>cho</i>	<i>ch</i>		<i>i-</i>	<i>o</i>
8	<i>Fifyo</i>	Which	<i>fii</i>	<i>fyo</i>	<i>f</i>	<i>y</i>	<i>i-</i>	<i>o</i>
9	<i>Jhijho</i>	Which	<i>jhii</i>	<i>jho</i>	<i>jh</i>		<i>i-</i>	<i>o</i>
10	<i>Shisho</i>	Which	<i>shii</i>	<i>sho</i>	<i>sh</i>		<i>i-</i>	<i>o</i>
11	<i>Lúlwo</i>	Which	<i>luu</i>	<i>lwo</i>	<i>l</i>	<i>w</i>	<i>u-</i>	<i>o</i>
12	<i>Káko</i>	who/whose/which	<i>kaa</i>	<i>lo</i>	<i>k</i>		<i>a-</i>	<i>o</i>
13	<i>Tútwo</i>	who/whose/which	<i>tuu</i>	<i>two</i>	<i>t</i>	<i>w</i>	<i>u-</i>	<i>o</i>
14	<i>bhúbhwo</i>	Which	<i>bhuu</i>	<i>bhwo</i>	<i>bh</i>	<i>w</i>	<i>u-</i>	<i>o</i>
15	<i>Kúkwo</i>	Where	<i>kuu</i>	<i>kwo</i>	<i>k</i>	<i>w</i>	<i>u-</i>	<i>o</i>
16	<i>Pápo</i>	Where	<i>paa</i>	<i>po</i>	<i>p</i>		<i>a-</i>	<i>o</i>
17	<i>Kúkwo</i>	Where	<i>kuu</i>	<i>kwo</i>	<i>k</i>	<i>w</i>	<i>u-</i>	<i>o</i>
18	<i>Múmwo</i>	Where	<i>muu</i>	<i>mwo</i>	<i>m</i>	<i>w</i>	<i>u-</i>	<i>o</i>

**Source:** Mwang'eka et al. (2022)

Table 2 shows the distribution of relative markers in Chindali, the way they are morphologically and syntactically formed and their phonological characteristics. On this list, the relative markers *jhújho* 'who' and *jhijho* 'which' are orthographically deviated. The authors of this paper used the phrase 'orthographic deviation of relative markers' to refer to the relative markers that are written differently from the Chindali orthography in terms of the graphemes used. This deviation motivates authors to analyse the relative markers *jhújho* 'who' and *jhijho* 'which' to determine the motives of deviation.

The Chindali language is used in the majority of informal domains. Chindali speakers can also communicate in Kiswahili. Chindali is characterised by noun classes (Simons, 2017) that shape relative markers determination as explained earlier. A noun in Chindali consists of a stem, a prefix/noun head initial, and an augment that precedes the prefix. The augment is not found in classes 16 to 18 (Eaton & Yalonde, 2016), which demonstrate locatives. For example, in a word *umulumyana* 'a boy', *u-* is an augment, *-mu-* is a prefix in class 1, and *-lumyana* is a stem 'a boy'. Chindali has 20 noun classes, as indicated in Table 1.1 earlier. The language is

characterised by the presence of locatives such as *pa* in *pakajha* ‘at home’, *pa* in *pa chibhale* ‘at the door’, *pa* in *pa tembeli* ‘at the church’, *mu* in *mukati* ‘inside’ and prepositions such as *nu* in *nu mukolo* ‘with a woman’ *paase* ‘under’, and *ku* in *kubhweghi* ‘to the wedding’. Chindali is also characterised by affixation and derivation for subject, object, tense, aspect, and mood. For example, the word *egha* ‘marry’ (a verb) can be affixed and change the grammatical function and the word class (derivation affix). The verb *egha* ‘marry’ can be affixed to *eghite* ‘has married’, *eghana* ‘to marry each other’ *bheghanite* ‘they married each other’, *ubhweghi* ‘marriage/wedlock/wedding’, *umweghi/umweghighwa* ‘a married person’ (*umweghi* is the subject, always a man, while *umweghighwa* is an object, always a woman’).

Chindali has 19 consonant phonemes and 10 vowel phonemes. Based on this, the Chindali language consonants presented by Eaton (2019), as indicated in Table 1.2, the consonant /j/ is orthographically presented by <y>. The significance of orthography is to guide the researchers and other language writers on how to write words. The transcription will also help non-native speakers of language in this case Chindali in reading and understanding the research reports of different scholars. The orthography of Chindali is presented Tables 3 and 4 show consonant and vowel graphemes, respectively.

**Table 3: Chindali Consonant Graphemes**

	Bilabial	Labiodental	Alveolar	Postalveolar/ Palatal	Velar/ Labio- velar	Glottal
<b>voiceless plosives (aspirated)<sup>1</sup></b>	p <sup>h</sup>		t <sup>h</sup>		k <sup>h</sup>	
	<p>		<t>		<k>	
<b>voiced plosives</b>			(d)			
			<d> <sup>7</sup>			
<b>prenasalised voiced plosives</b>	<sup>m</sup> b		<sup>n</sup> d	<sup>ɲ</sup>	<sup>ŋ</sup> g	
	<mb>		<nd>	<ɲj>	<ng>	
<b>voiceless affricates (aspirated)</b>				tʃ <sup>h</sup>		
				<ch>		
<b>voiceless fricatives</b>		f	s	ʃ		h
		<f>	<s>	<sh>		<h>
<b>voiced fricatives</b>	b				ɣ	
	<bh>				<gh>	
<b>Nasals</b>	m		n	<sup>ɲ</sup>	<sup>ŋ</sup>	
	<m>		<n>	<ɲy>	<ng’>	
<b>Approximant s</b>			l	j / j	w	
			<l>	<y> <sup>8</sup>	<w> <sup>9</sup>	

<sup>7</sup> /d/- It is only found loan words

<sup>8</sup> /y/- Chindali does not have the grapheme /y/ it is there to show the palatalization of consonants

<sup>9</sup> /w/ Chindali does not have grapheme /w/ it is there to show the labialization of consonants

**Source:** Adopted from Eaton (2019)

Table 3 shows the consonant grapheme with angle bracket and the grapheme without bracket representing those sounds in which the sound /d/ is only found in loan words (Eaton, 2019).

Some Chindali phonemes are also common in other Bantu languages such as Kiswahili. The study of Eaton (ibid.) illustrates some of the graphemes as indicated in Table 3, such as <gh> for /ɣ/ in words such as *shughuli* ‘activity’ in Kiswahili and *ghaagho* ‘which’ in Chindali. The grapheme <sh> for /ʃ/ in word *shule* ‘school’ and *shangwe* ‘happiness’ in Kiswahili and *shiisho* ‘which’ and *shaabho* ‘is theirs’ in Chindali. Similarly, the graphemes <kh> with <k> and <bh> with <b> symbol represent the bilabial, respectively and <h> represents the fricatives. Table 1.4 illustrates the presentation of fricatives (a, d, & g), the labialised fricatives (b, e) and the prenasalised labialised stops (c, f), a palatised fricative (h) and a prenasalised palatised stop (i), as revealed by Eaton (ibid.) through examples in Table 4.

**Table 4: Consonant Graphemes Found in Kiswahili and Chindali**

A	<i>Ukubhuula</i>	[ukuβû:la]	to tell
B	<i>Ibhwe</i>	[i:β <sup>w</sup> e]	stone
C	<i>Imbwicha</i>	[i <sup>m</sup> b <sup>w</sup> i:ya]	ginger
D	<i>Ukuyugha</i>	[ukújuɣa]	to say
E	<i>Ukupulikighwa</i>	ukupulikíɣ <sup>w</sup> a]	to be heard
F	<i>Ingwina</i>	[i <sup>ŋ</sup> wî:na]	crocodile
G	<i>Ukubhaala</i>	[ukuβâ:la]	to increase
H	<i>Ukubhyala</i>	[ukuβî:la]	to plant
I	<i>Imbya</i>	[i <sup>m</sup> biya]	new

**Source:** Eaton (2019)

Table 5 clearly illustrates vowel graphemes. The table shows the vowel graphemes used in Chindali, along with their place of articulation and and the distinctive supra-segmental characteristics that distinguish them from vowels in other languages.

**Table 5: Chindali Vowel Graphemes**

	Front	Central	Back
<b>High</b>	/i/    /i:/ <i><ii>		/u/    /u:/ <u><uu>
<b>Mid</b>	/e/    /e:/ <e><ee>		/o/    /o:/ <o><oo>
<b>Low</b>		/a/    /a:/ <a><aa>	

**Source:** Adopted from Eaton (2019)

Table 5 depicts both short and long vowels found in the Chindali orthography. It depicts the Chindali vowel graphemes. The graphemes with angle brackets represent Chindali vowels, whereas the graphemes without angle brackets represent sounds that represent those vowels.

According to Mwang'eka et al. (2022), relative markers *jhújho* 'who' and *jhijho* 'which' fall under classes one and nine of the Chindali noun classification. These two deviant relative markers are among the 16 relative markers found in Chindali (cf. Table 1.2). They further explain that the relative markers *jhújho* 'who/whom/whose' are used for modification of nouns that name people while, *jhijho* 'which/that/' modifies nouns that name animals and things/objects noun phrases. Similarly, the current work on Chindali grammar by Eaton and Yalonde (2016) focusing on Chindali word classes, explains that the formation of Chindali noun phrases offers the relation of noun and relative clause in which a noun is in agreement with a relative marker. Scholars state that "relative clauses always follow the noun they refer to and the relative marker is in agreement with it," as exemplified in (1) and (2).

1. *Naanghula ichikombe **chiicho** chili pa mesa.*  
'I have bought the cup which is on the table.'
2. *Tukamubhona umulumiana **yuuyo** akiibha inguku.*  
'We saw the boy who stole the chicken.' (Eaton & Yalonde, 2016 pg 115).

In these two examples, the relative markers are *chicho* <*chiicho*> 'which' in (1) and *yúyo* <*yuuyo*> 'who' in (2) respectively, which deviate from the standard form proposed by this paper.

Schroeder (2010) states that the orthography of the language should be spelt the way people speak in slow speech rather than rapid conversation. In contrast, Eaton and Yalonde (2016) and Eaton (2019) in which the relative markers *jhújho* 'who' and *jhijho* 'which' have the consonants /j/ that can be spelt as <y> grapheme. The observation of this study is that the grapheme is spelt differently from the Chindali orthography, as Chindali a Bantu language, demonstrates phonemes that match with their corresponding graphemes (Schroeder, 2010). Thus, the study analyses the orthographic deviation of relative markers *jhújho* 'who' and *jhijho* 'which' in Chindali to determine the grapheme that should be used instead of the grapheme <y> when writing the relative markers *jhújho* 'who' and *jhijho* 'which' and other words with the consonant /j/. Some deviated words are shown hereunder.

**Table 6: Orthographic Deviant Words in Eaton's Work**

a.	yaako	[já:ko]	/ji-ako/	your (cl <sup>10</sup> . 9)
b.	Yiliku	9 2SG <sup>11</sup> POSS <sup>12</sup> [jíliku] 9-which	/ji-liku/	which (cl. 9)
c.	Yuuyo	[jú:jo] 1.REL <sup>13</sup>	/ju:jo/	who (cl. 1)

<sup>10</sup> cl-Class

<sup>11</sup> SG-Singular

<sup>12</sup> POSS-Possesive

<sup>13</sup> REL-Relative Marker

d.	Yula	[júla] 1-DIST <sup>14</sup> .DEM <sup>15</sup>	/ju-la/	that (cl. 1)
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**Source:** Eaton (2019)

Eaton concludes that the grapheme <y> with the consonant /j/ is used in the Chindali orthography. In contrast, Kinyakyusa, which is in the same family as Chindali, has an approximant palatal /j/ with the graphemes <j> (Mtallo & Mwambula, 2018). This shows there is variation in Bantu languages phonological features and therefore variation in orthography. Mtallo and Mwambula (Ibid) have exemplified the use of consonants /j/ as illustrated hereunder.

**Table 7: Orthographic Deviant Words in Mtallo and Mwambula’s Work**

Yohana	/johana/	‘John’
Yule	/jula/	‘that’
Yote	/jote/	‘all’

**Source:** Mtallo & Mwambula (2018:712)

### Theoretical Framework

The study was guided by the Orthographic Depth Hypothesis advocated by Katz & Feldman (1983) and Katz & Frost, (1992). The orthographic depth hypothesis as explained by Katz and Feldman (1983), proposes that distinct reading paths are used depending on the grapheme/phoneme correspondence of the language being read. Katz and Fieldman (Ibid.) classified orthographies into shallow and deep orthographies. Shallow orthographies, the ones with consistent grapheme/phoneme correspondences, encourage non-lexical encoding in which each phoneme is progressively assigned to its matching grapheme, as in Serbo-Croatian. This feature is also found in Bantu languages in which Chindali is inclusive. On the other hand, deep orthographies are characterised by erratic and inconsistent grapheme/phoneme correspondences that encourage lexical pathways in which phonemes are recovered from memory structures, as in English. The theory has shown its rationality by demonstrating Chindali phonemes that match with their corresponding graphemes. Therefore, the orthographic deep hypothesis guided the researcher in analysing the data of this study.

### Materials and Methods

The study used a qualitative approach with a descriptive research design. The qualitative research approach was useful in analysing Chindali phonological aspects and orthography in which the appropriate graphemes were identified. The phonological features were analysed because the graphemes are written as they are pronounced. The researchers examined sentences with relative clauses in which relative markers *jhújho* ‘who’ and *jhíjho* ‘which’ were identified. They further looked at other words with the consonant /j/ as appeared in Table 1.2 of relative markers

<sup>14</sup> DIST-Distributive

<sup>15</sup> DEM-Demostrative



distribution and how they were written by different scholars. These tests assisted researchers in determining the appropriate sound and grapheme that could be used for relative markers *jhújho* ‘who’, *jhíjho* ‘which’, and other words containing the grapheme <j>. The researchers collected data through text collection (written and spoken texts). Data were obtained from 12 Chindali native speakers found in Ileje District, Kalembo village and from three Chindali written texts: *Tutunoshange Utwajha Twitu* ‘We are to keep our environment’ by Konga (2019); *Ukalata ughwa Tupango twa Chindali* ‘The book of Chindali stories’ by Chibona, George, Lwinda, and Songa (2015); and *Ukalata ghwa Luuti* ‘The book of Luth’ by Cooper, Mwaluanda, O’Donnel and Yalonde (2011). Text collection was essential for collecting authentic and natural Chindali sentences. These sources saturated the information and minimised individual variations. The researcher asked the informants to tell oral narrations and life stories about social and cultural issues that happen in their village. These oral narrations and life stories were recorded with the consent of the informants. Oral narrations helped researchers in determining the appropriate sound and grapheme that are used in Chindali and checking how they are spelt in text books.

The informants were obtained by purposive sampling technique. The researchers purposively consulted the known 11 informants believed to be insightful and conversant in Chindali. The technique was natural and convenient in collecting natural and authentic information from insightful native speakers.

The researchers analyzed the collected data using both inductive and deductive thematic analysis. Inductively, the appropriate sound for *jhújho* ‘who’ and *jhíjho* ‘which’ and words contained the grapheme <j> were developed from raw data, while deductively, the suggested consonants/sound were drawn from an existing Chindali consonants inventory that guided the researchers to come up with the appropriate consonant for the grapheme <j> that could be used for the relative markers *jhújho* ‘who’ and *jhíjho* ‘which’ and other words contained the grapheme <j>.

## **Results**

This section presents the findings based on the orthographic deviation of the relative markers *jhújho* ‘who’ and *jhíjho* ‘which’ in Chindali relative clauses. The findings reveal that there is a great orthographic deviation of relative marker *jhújho* ‘who’ and *jhíjho* ‘which’ in Chindali orthography. This nonconformity is necessitated by the grapheme <j> in Chindali orthography. The analysis has exposed that all words with the grapheme <j> were written differently from Chindali orthography; hence, confusing other readers. This conclusion is based on the Orthographic Depth Hypothesis by Katz and Feldman (1983) and the work of Schroeder (2010), who suggests the affricates /z/ with the grapheme <jh> to be used in Bantu languages. As exposed by Konga (2019) in his book of *Tunoshange Utwaya Twitu* ‘we are to keep our environment,’ the orthographic deviation of relative markers is clearly shown in sentences (3a-c) below.

3. (a) *Ifula yikutima muumwo muli ni fitengele.*  
 ‘The rain falls where there are forests.’  
 (b) *Utukanu utwingi tukufwa kunongwa iya kushita kubhaapo amishi.*  
 ‘Many animals die because of the scarcity of water.’  
 (c) *Gwini yuuyo abhaghile ukwikala kishita miishi?*  
 ‘Who can stay without water?’

**Source:** Konga (2019:2)

The orthographic deviation of the relative marker *jhújho* ‘who’ has been evidenced in sentence 1 (c) where the writer writes *yuuyo* ‘who’ instead of *jhújho* ‘who’. This deviation has been motivated by the deviant consonant /ʒ/ with the grapheme <j>. The orthography has deviated from the consonant /ʒ/ substituted by /j/ and the grapheme <jh> substituted by <y>. Apart from relative markers, the analysis of data has revealed the deviation, in other words, contained the consonants /ʒ/ and grapheme <jh>. The aberration is exposed in the title of the book and throughout the book. The word *Utwaya* /utu:ay:a/ ‘environment’ has been spelt at the cover page, contrary to Chindali orthography *utwajha* /utu:aʒa/ ‘environment’. There is also evidence in (3a & b) in words such as *yikutima* ‘it rains’, in (3a) and *iya* ‘of’ in 3 (b). Cooper, Mwaluanda, Donnell and Yalonde (2001) in the book of *Ukarata Ugwa Luuti* there is a great deviation of the consonant sound /ʒ/ and grapheme <jh> instead, the writers use the grapheme <y> throughout the book. For example:

4. *Inyango yitaa yakuti umulongoshi alumbililaghe.*  
 ‘The goal is not for the leader to preach.’

**Source:** Cooper, Mwaluanda, Donnell & Yalonde (2001:1)

In (4), the word *yitaa* ‘is not’ /yi:t:a/ deviates from the word *jhita* ‘is not’ /ʒit:a/. Similarly, Chibona, Kajange, Lwinda and Songa (2009), in their book of *Ukalata ugwa tupango utwa Chindali* also find great deviation in the use of grapheme <jh>. The authors write the graphemes <y> in place of <jh>. Deviation has been exposed in the relative markers *jhújho* ‘who’ and *jhijho* ‘which’ and other words that contained the consonant /ʒ/ with the grapheme <jh> throughout their book.

5. (a) *Akabhapo Umundu yuumo yuuyo ingamu yaake akabha gwi Chiiya.*  
 ‘There was a person whose name was Chiiya.’  
 (b) *Imyiko imyingi yiyo abhandu abhingi bhakuyikonga.*  
 ‘Many ethical codes which many people comply.’

**Source:** Chibona, Kajange, Lwinda & Songa (2009:1 & 9)

In (3a & b), there is orthographic deviation of the relative markers *jhújho* ‘who’ and *jhijho* ‘which’, also in the words such as *yuumo* ‘one’, *yaake* ‘his/her’, and *bhakuyikonga* ‘they comply’.

Therefore, from the analysis, it is worth suggesting that there is orthographic deviation of relative markers *jhújho* and *jhíjho* in Chindali and other words that contain the consonant /ʒ/ and the grapheme <jh>. The deviation is necessitated by this deviant consonant /ʒ/ with the grapheme <jh>. The analysis has exposed that all words with grapheme <j> were substituted by the grapheme <y> differently from Chindali orthography.

**Discussion**

The study has revealed that the grapheme <j> should be pronounced as /ʒ/ which was based on native speakers’ pronunciation and written <jh> instead of <y> as written in literature based on the Orthographic Depth Hypothesis by Katz and Feldman (1983). The assertion is also supported by Schroeder (2010:8), who suggests the affricates /ʒ/ with the grapheme <jh> to represent the Bantu orthography in which this study has found the Chindali orthography is among. Therefore, the study is of the view that the sound /ʒ/ and thegrapheme <jh> are more appropriate in Chindali orthography than the consonant /j/ and grapheme <y> which are found in the literature; for example, *ukujhugha* ‘to say’ instead of *ukujuga* ‘to say’. This word can be transcribed as /ukúʒuʒa/ instead of /ukújuʒa/, which means ‘to say’. According to this study, Chindali orthography does not have the consonant /j/, and instead uses the sound /ʒ/. Words like *jhumo* ‘one’ should be transcribed as /ʒúmo/, not *yumo* ‘one’ which represented as /júmo/ in literature and the relative marker *jhújho* ‘who’ should be represented as /ʒúʒo/, not *yuyyo* ‘who’ which represented as /jújo/ in literature. Although, phonology is not the focus of this study, the orthography development of the language reflects both phonology and morphology of the language; thus, the clarification of the grapheme <jh> will help the reader in having proper pronunciation of words with the sound /ʒ/ i.e., the correct use of <jh> represented as /ʒ/ instead of <y> represented as /j/ in literature. This conclusion was reached based on the Bantu orthography as advocated by Schroeder (2010:8) and the pronunciation of the native speakers of Chindali as revealed in the field during data collection. From this discussion, it is worth to suggest the Chindali graphemes as illustrated in Table 8 below.

**Table 8: Chindali Consonant Graphemes**

	Bilabial	Labiodental	Alveolar	Postalveolar/ Palatal	Velar/ Labio- velar	Glottal
voiceless plosives (aspirated) <sup>1</sup>	p <sup>h</sup>		t <sup>h</sup>		k <sup>h</sup>	
	<p>		<t>		<k>	
voiced plosives			(d)			
			<d> <sup>16</sup>			
prenasalised voiced plosives	<sup>m</sup> b		<sup>n</sup> d	<sup>ɲ</sup>	<sup>ŋ</sup> g	
	<mb>		<nd>	<ɲj>	<ng>	

<sup>16</sup> /d/- It is only found loan words

	Bilabial	Labiodental	Alveolar	Postalveolar/ Palatal	Velar/ Labio- velar	Glottal
voiceless affricates (aspirated)	ʒ <jh>			tʃ <sup>h</sup> <ch>		
voiceless fricatives		f <f>	s <s>	ʃ <sh>		h <h>
voiced fricatives	b <bh>				ɣ <gh>	
Nasals	m <m>		n <n>	ɲ <ny>	ŋ <ng'>	
Approximant s			l <l>	j / j <y> <sup>17</sup>	w <w> <sup>18</sup>	

**Source:** Adapted from Eaton (2019) and Schroeder (2010)

### Conclusion

This paper analysed the orthographic deviation of relative markers *jhújho* ‘who’ and *jhíjho* ‘which’ in Chindali. It has been discovered that the orthographic deviation of relative markers *jhújho* and *jhíjho* in Chindali is necessitated by deviant consonant / ʒ / in Chindali orthography. The analysis has exposed that all words with the grapheme <j> were written differently from the Bantu orthography as advocated by Schroeder (2010); hence, confusing Chindali book readers. The study revealed that the grapheme <j> should be pronounced as /ʒ/ which was based on native speakers’ pronunciation and written <jh> instead of <y> as supported by Schroeder (2010:8). Therefore, the study is of the view that the sound /ʒ/ and grapheme <jh> are more appropriate to use than the consonant /j/ and grapheme <y> which are found in literature. It is worth concluding that the consonant /j/ and grapheme <y> are used in conventional orthography in nontraditional style, which deviates from the correct use, resulting to deviation of the Chindali orthography in general and relative markers *jhújho* and *jhíjho* in particular.

The study adds to the scant literature on Chindali graphemes and consonant inventories. The study recommends conducting further research on Bantu orthography, with the aim of putting Bantu languages into written form and addressing the existing gap in knowledge.

### Declaration of conflicting interests

The authors declare no conflict of interest regarding the study, authorship, or publication of this paper.

<sup>17</sup> /y/- Chindali does not have the grapheme /y/ it is there to show the palatalization of consonants

<sup>18</sup> /w/ Chindali does not have grapheme /w/ it is there to show the labialization of consonants

## Funding

The authors declare that they have not received any financial support from any organization for conducting the study and writing the report of this article.

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