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ARTICLE

Phonological Variables in Buraidawi Arabic

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ABSTRACT

This sociolinguistic study investigates how social factors influence the alternation between two phonological variants of /k/ and /g/ in Buraidawi Arabic (BA), specifically their realization as non-affricate or affricate sounds (e.g., /k/ or /ts/ and /g/ or /dz/). The research examines the role of gender, age, education, and social class in shaping these variations. Data were gathered through experimental methods, where participants named pictures containing the targeted sounds and engaged in brief conversations. The findings reveal that gender, age, and education level significantly impact the use of the affricate variant, while social class appears to have no effect. The study also provides a social context for Buraydah, a city in Saudi Arabia, where BA is spoken, and reviews relevant previous research on linguistic variation in Arabic, particularly phonological variables and affrication. The methodology outlines how the data was collected and analyzed. The results contribute to understanding the role of social factors in phonological variation, offering new insights into how these variables influence language use in BA. This research enhances the sociolinguistic understanding of how social factors intersect with phonological variation in Arabic dialects.

Keywords: Sociolinguistic; Phonological variants; Buraidawi Arabic; Affricate; Social factors; Gender; Age Education

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1. Introduction

This sociolinguistic study investigates the role of different social factors influencing the alternation between different phonological variants. Those are two dependent phonological variables that occur in Buraidawi Arabic dialect, /k/ and /g/ in the Classical Arabic (CA) and Modern Standard Arabic (MSA) that are realized as (k) or (ts) and (g) or (dz) respectively in Buraidawi Arabic dialect. The study focuses on Buraydah people to determine the factors that cause the variation between an affricate and a non-affricate variant. It answers the question: What is the role of gender, age, level of education, and social class in the affrication of /k/ and /g/ in BA? The method used for eliciting the two variants and their distribution was experimental. Essentially, consultants were asked to name some pictures containing the targeted sounds and a spontaneous conversation that lasted for roughly five minutes, covering various topics that included the two sounds. The broad findings show that different social factors affect the selection of the affrication but not social class. Gender, age and level of education showed different rates representing the affrication.

The study starts by reviewing the social context of Buraydah City (e.g., its dialect, demography, etc.) to understand the social factors that affect variation change in the Buraidawi dialect. Then, section three investigates the previous work on linguistic variation in Arabic and the Buraydah variety that discusses linguistic variables in general, the types of variables in general, and the phonological variables in particular. Moreover, it discusses the linguistic variables in Arabic and the Arabic affrication. Section four describes the methodology employed in this study, including consultants, location, and data collection methods. Section five discusses and analyzes the results. This is followed by section six, which concludes the study.

2. The Social Context of Buraydah City and its Dialect

Buraydah is a city in the north-central region of Saudi Arabia, as shown below in **Figure 1**. It is the regional capital of Qassim province and the second largest city in the Najd region, i.e., the central part of Saudi Arabia [1]. It is located around 340 kilometers north of Saudi Arabia's capital city, Riyadh. According to the Saudi Arabia Central Department of Statistics and Information, the 2010 census showed that the population of Buraydah city is around 614,093 people. The dialect spoken in Buraydah is Buraidawi Arabic (BA), a sub-dialect of the Najdi Arabic dialect [1]. Buraidawi Arabic is distinct from Modern Standard Arabic (MSA), the language of the mass media, and Classical Arabic (CA), the language of the Quran and old Arabic poetry. Most Buraydah citizens think their dialect is the nearest dialect to Classical Arabic. They claim that because they hold some of the most distinctive phonological features of Classical Arabic, no other Arabic variety has. For instance, they eliminate the first-person singular pronoun suffix from the verb. This phonological process occurs in some present simple verbs ending with a vowel. Therefore, this vowel is presented in a phonological environment that requires the deletion of the /n/ segment. The prevention /N/ is then added to protect the verb from another ill-formed phonological environment. For instance:

(1)	CA	BA	MSA
	أهانن	أهانن	أهانني
	/ahanen/	/ahanen/	/ahanan-i/
	HE insult – ed – /N/	HE insult – ed – /N/	HE insult – ed – /N/ ME
	'He insulted me'		

In the previous example (1), the form that represents the meaning 'he insulted me' in MSA follows the grammatical rule in Arabic grammar. The rule is to add to the verb a bound-morpheme suffix that represents the first-person singular pronoun which in our example is (-i). This suffix is represented in the gloss as 'me.' On the other hand, we see that CA omits the suffix (-i) from the verb to prevent the verb from overlapping with other nouns [2].

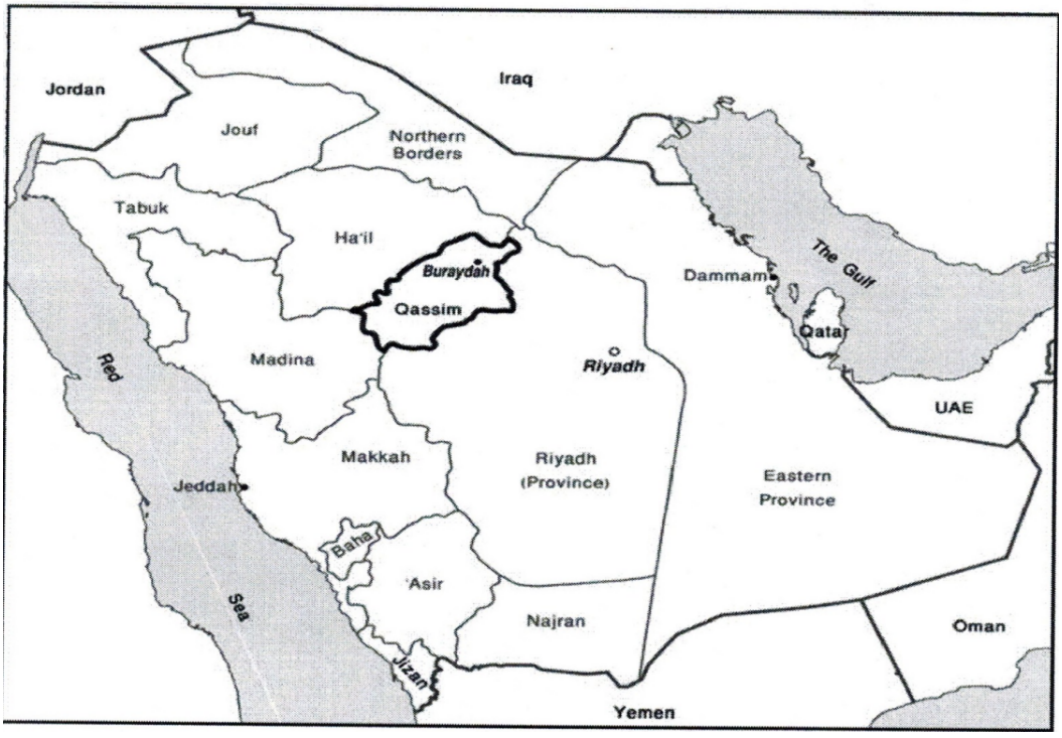

Figure 1. The location of Buraydah City, based on [1].

Alkhodhair [2] conducted a study of (N prevention) in CA, found in the Buraidawi dialect. This /N/ comes at the end of some verbs when the first-person singular pronoun is added as a suffix; see the previous example. Also, it indicates when it should be added or omitted, mentioning the reasons behind each judgment. In addition, it discusses the different positions of (N) in the word and its effect on it [2]. Ingham [3] conducted a descriptive study of the Najdi dialect and stated that the Najdi dialect shares most of its phonemic inventories with those occurring in Classical Arabic [3].

Buraydah (or 'Buraidah' as pronounced by locals) is the most controversial city in Saudi Arabia (KSA). Its location exposed the city to be affected by the cultural winds. In the 1800s, the city was a checkpoint for travelers from all directions. This made Buraydah encounter different cultural perspectives and dialects from neighboring areas. Buraydah is one of the cities in KSA where different dialects are within the city borders. Different dialects within one city make people show their identity by using the dialect. Some of them are still holding on to the dialect of the rural and local areas, aiming to protect their identity against the massive immigration of people from other villages within the middle region of KSA to Buraydah City. Others who joined government departments that use Modern Standard Arabic MSA as the language of communication have shifted from the local dialect to MSA because it has higher social status and is a gatekeeper for prestigious jobs. In rural areas of Buraydah City, males and females share the rural dialects, while city dwellers try to speak MSA to keep up with government institutions [4]. Gender differences in Buraydah city are not different from the rest of the country because most of the regions share the same cultural backgrounds regarding segregation and other gender matters. The people in Buraydah city are more conservative than other regions. The region's location in the country made the city the least affected by neighboring countries with different cultural perspectives [5]. Local language ideology in the middle region of Saudi Arabia shows that the people of Buraydah City consider their language (Arabic) to be the origin of all other languages. They claim that and refer to some of the prophet's narrations, which say that the language of people in Heaven is Arabic. Also, some of the verses in the Holy Quran show the conversation between God and Adam in Arabic as in Surah Al-A'raf (7:19) that describes God's command to Adam and his wife to dwell in Paradise and refrain from approaching a specific tree, highlighting their direct communication [6].

3. Review of Related Literature

3.1. Linguistic Variables

The notion of the linguistic variable was first introduced by the studies of William Labov[7]. A linguistic variable is "a linguistic item which has identifiable variants. For example, singing and fishing are sometimes pronounced as singin' and fishin'. The final sound in these words may be called the linguistic variable (ng) with its two variants [º] in singing and [n] in singin'."[8]. It can be used as a convenient construct to unite a class of fluctuating variants with some specified language sets[9]. Sociolinguistic variables have some linguistic conditioning, and they are "a set of alternative linguistic realizations (variants) with social significance"[10]. Sociolinguistic studies provide insights into social factors, such as age, gender, and level of education, that play a crucial role in linguistic variations. For example, the social attitudes of speakers of Qassimi and Northern Najdi dialects towards the Central Najdi dialect have been found to vary, influenced by social factors[11]. In other words, linguistic features correlate with social context. One of the factors that produce variation is language contact and change, which results from migration, social mobility, colonization, and trade but also human's desire for social differentiation. Therefore, and as a consequence of the foregoing factors, we may predict some alternations that appear in BA on the phonological level. Furthermore, recent studies have explored the sociolinguistic salience of certain linguistic variables across Najdi dialects, revealing patterns of convergence and social significance[12].

In short, sociolinguistic studies provide insights into social factors, such as age, gender, level of education, and their relationship to language, that play a crucial role in linguistic variations. Social factors are the primary factors that cause linguistic variations to surface. These studies show how social and linguistic factors are closely related. With sociolinguistic variables, we may understand the speaker's identity (i.e., age, gender, ethnicity, and social class).

3.2. Types of Variables and the Phonological Variables

Tagliamonte states that investigating phonological variables tends to be relatively straightforward[13]. The reason for referring to this type of variable as straightforward is because there is no referential change of semantics. For instance, although the word *first* can be pronounced either [fɜrs] 'deleting the final consonant segment' or [fɜrst], these elements' references do not change, and they have the same semantic denotation. The changes in such an example (between [fɜrs] and [fɜrst]) are the way how people represent themselves or the way they want to be categorized to a specific social class. Mather[12] states that the notion of race affects the pronunciation of /r/ between nonwhite ethnic minorities in the United States and white Americans. Recent studies of Najdi dialects have also investigated phonological variation with a focus on the impact of social attitudes and contact with neighboring dialects[14].

Mather used a survey closely similar to the one used by Labov in 1969. Mather conducted a brief anonymous survey of 169 employees in four Manhattan department stores: Saks, Macy's Herald Square, Loehmann's, and Filene's Basement. All of these four stores have four floors. Mather used a question that asked about the location of the fourth floor and then wrote down the values for each of the four occurrences of /r/ as [r-1] for the rhotic variant and [r-0] for the vocalized variant, as well as the following social variables: store, occupation, floor within the store, sex, race, age, and foreign or regional accent[12]. Moreover, the linguistic variables in general (e.g., semantic, lexical, or syntactic) involve many overlapping conceptual changes and processes. A phonological variable does not intersect directly with other linguistic variables, as the semantics of the alternations are still the same. However, the phonological variable tends to remark on some social levels formulated by many factors such as urbanization and socioeconomics. On the other hand, Tagliamonte explains different levels of linguistic variables; she states that the level of phonology may differ by an extra phonological feature with little contention to semantic equivalence. However, studies show that the level of syntax and semantics is quite problematic in defining the context of meaning:

> "Two lexical items or structures can almost always have some usages or context with different meanings or functions. Moreover, some even claim that this difference, though it may be subtle, is always pertinent whenever one of the forms is used." ([15], p. 153)

3.3. Linguistic Variables in Arabic

As for the Arabic language, however, no study describes the phonological variables of Buraydawi Arabic, although there is a study conducted by Al-Rojaie [1], which was about the variation between affricate and non-affricate [k] in the Gassim region where Buraydah city is located. His study demonstrated only the affrication of /k/ as (ts) and how it is associated with gender, age, and level of education. The data in this study have been collected via sociolinguistic interviews with consultants. The author conducted these interviews with a female assistant over nine months. They recorded the interviews using a tape recorder. Each interview lasted an average of fifty minutes, with a total of 56 hours. The results indicate that speakers use the non-fricated variant [k] to show urban style or identity. Moreover, the deaffrication of /k/ is a linguistic change in progress that occurs and spreads via the rapid urbanization of Saudi Arabia. His Findings indicate that affrication is favored in the phonological context of front vowels significantly, particularly the high front ones. Whereas suffix-based affrication is categorically used as [-t͡s], stem affrication is correlated with the educational level, gender, and age of the speaker [1]. However, his study may require additional research because there may be a possibility of the effect of other factors, such as local identity and socioeconomic class [1]. More recently, studies have examined dialectical variation in the use of Old Arabic /ð/, which has undergone affrication in some Najdi dialects [14].

Another important contribution is the investigation of personal pronouns and their sociolinguistic variation in Najdi dialects. This study explored both independent and dependent pronouns, offering insights into how pronoun usage reflects regional and social differences [16].

The author may consider the accommodation, context of the interaction, and the personal attitudes of the speakers, which will surely lead to some interesting results. Including these factors in the study will help understand the process of such a linguistic change and the relation to those social variables [1]. El-essa investigated the affrication of two Arabic varieties: Najdi Arabic (spoken in central and north-central Saudi Arabia) and Hijazi Arabic (spoken in the West of Saudi Arabia) [17]. She investigated the affrications of /k/ and /g/ that are realized as (ts) and (dz), respectively. The study showed a correlation between contact with urban and local Hijazi and the de-affrication of (ts) and (dz). She collected data through sociolinguistic interviews with a sample of 61 Najdi male and female speakers who were born in Hijaz (the mountains series on the west coast of Saudi Arabia) or emigrated from their cities of origin in Najd (the middle region in Saudi Arabia) at an early age. Consultants were 61 male and female participants who were interviewed for around 45 minutes. The researcher examined affricated variants concerning three social variables: gender, age, and contact. She divided consultants into four age groups that represent three generations of the two genders, male and female Najdi speakers. At the level of contact, she grouped the consultants into two groups: the first one is low contact speakers, and the second one is mid to high-contact speakers; the following are the criteria used in the study to determine the level of contact [17].

- formal relationships at school and work.
- involvement in neighborhood affairs.
- close friendships with Urban Hijazi locals.
- kinship and intermarriage in the family.

Although Al Essa did well in the study, one main factor that may affect the study results, if investigated well, is the new immigrants. They greatly impacted the language and forced many original inhabitants to use the formal language for daily communication. Furthermore, Al-Azraqi [18] investigated the actual social distribution of *kashkasha* and *kaskasa* in five modern Saudi Arabian dialects, besides the alternative variables that educated speakers use as opposed to these phenomena [18]. The terms *kashkasha* and *kaskasa*, as stated earlier, mean replacing [-ki] with [ʃ] and [s], respectively, to refer to the second person, feminine, singular object/possessive pronoun. Her methodology relies entirely on twelve hours of tape recordings. She also used direct communication between the researcher and the consultants. These recordings were taken in schools, universities, libraries, offices, and formal social meetings. Her results reported that male speakers tend to use /k/, which is the standard form, more than female speakers do, and this shift has been driven by urbanization and education.

Even though the studies mentioned above investigate affrication and its relationship with certain social factors (gender, contact, age, and education), other studies demonstrate the affrication of Arabic dialects concerning the phonological environment. Johnstone [19] conducted a study that gave in-

formation on affrication /k/ and /q/ in all parts of the Arabian Peninsula[19]. He investigated the affrication environment of these velar stops, which are realized as (ts) and (dz), respectively, in the Central Najdi dialects. Additionally, he investigated the affrication of [tʃ] for /k/ under similar conditions (next to the front vowel) in the northeast of the Central Najd Region, i.e., Iraq and Kuwait. The author divided the study into sections investigating the distribution of different variants of "kaf" and "gif." The methodology seems to be unclear as there is no specific section that deals with data collection.

Mustafawi[11] has conducted a similar study that investigated the affrication environment of [tʃ] for /k/ and [dʒ] for /g/ in Qatari Arabic. She further stated that both [tʃ] and [dʒ] could occur next to front vowels, while (k) and (g) occur elsewhere[11]. Her study is constructed using a large amount of data collection. She used a dictionary as a source of the forms. Moreover, her framework is based on the optimality theoretic (OT) found in Optimality Theory Constraint Interaction in Generative Grammar[20], which states that the interaction among violable universal constraints creates linguistic forms[11]. She found that "affrication can be triggered only by adjacency to [i(:)], to the exclusion of any other segment, within the stem. Also, affrication interacts with pharyngealization, a process that retracts/lowers vowels in a certain domain and removes the required context for affrication to apply" ([11], p. 5). Other studies are conducted sociolinguistically, such as *Phonetic and Phonological Variation in the Speech of Rural Migrants in a Jordanian City*[21]. It discusses four linguistic variables: (Q), (D), (θ), and (dʒ) across four social variables: social class, gender, education, and age. Al-Tamimi used a pilot study that included 72 participants with the help of personnel in the Ministry of Social Development, the Department of Statistics, and the Municipality of Irbid to determine the geographical borders of the study. He found that "women are more innovative than men although their degree of outside contact is surrounded by cultural, social and sometimes religious restrictions."[21].

3.4. Arabic Affrication

Affrication is a phonological process in which a plosive acquires a fricative release, as in the realization of /t/ as in affricate (ts), in the speech of London[22]. Recent research has built on these findings by exploring the role of affrication in shaping social identity in Najdi and Hijazi dialects, particularly as depicted in popular media[23].

Discussing affrication in a sociolinguistic study will shed light on the phonological aspect of the alternation that it has a phonological aspect that may contribute to the sociolinguistic one. There are two variables; the first one is the voiceless velar stop /k/ that is realized as (ts) as in *mırtıtsı* 'leaning on,' which in Standard Arabic is */mırtıkı/.* The second one is the voiced velar stop /g/ that is realized as (dz) as in *wædzıf* 'standing,' which in Standard Arabic is */wægıf/.* These two sounds, (ts) and (dz), have been considered because they show auditory observable social variants and correlate to social class, gender, age, and educational background.

Sībawaih is one of the Arabic grammarians who presented the affrication in old Arabic dialects and described the distribution of the phenomena called *kashkasha* / *kaskasa*[18]. "It involved the second-person feminine singular object/possessive pronoun [–ki], which was realized with the addition or (more rarely) the replacement either by /ʃ/, yielding [-kʃ] (called kashkasha), or /s/, yielding [–ks] (called kaskasa)" ([1], p. 46). Johnstone[19] investigated the velar stop sounds /k/ and /g/ and found that they underwent several changes in many dialects of Arabic. In some dialects, for instance, Iraqi Arabic and Kuwaiti Arabic, these two velar stop sounds /k/ and /g/ became [tʃ] and [dʒ] respectively[19]. The environment of affrication in most Arabic dialects appears to be conditioned by adjoining high front vowels, as shown in (1) below:

(1) a) /tˁri:g/ /tˁri:dʒ/ 'road' as found in Iraqi and Kuwaiti Arabic
b) /tˁri:g/ /tˁri:dz/ 'road' as found in Buraidawi Arabic
c) /kıbi:r/ /tʃıbi:r / 'big' as found in Iraqi and Kuwaiti Arabic
d) /kıbi:r/ /tsıbi:r / 'big' as found in Buraidawi Arabic

As-Sammer[24] conducted another study entitled *Phonological Variation in Modern Standard Arabic: The Case of the Affricate / ʤ /: Oman as a Sample.* He investigated the phonological variation of the affricate sound

/ʤ/pronounced by Omani dialect speakers when approaching a formal style in MSA. As-Sammer aims to identify the adherence rate to the standard form when the subjects pronounce this phoneme in different word positions. 30 Omani participants were chosen randomly to represent speakers of two Omani regions, Al-Dakhiliyya and Al-Batina [24]. The author found that native speakers are not affected by the context, and they are greatly influenced by the deeply rooted habits of the dialect. Moreover, he found that both non-standard variants /g/ and /ʒ/ have registered free distribution in the two dialects with various rates. One of the shortcomings of this study is that it never discusses the data according to the age factor. As the findings show that native speakers are deeply rooted in the dialect, it can indicate that this sample, which was chosen randomly, included one age category. Taqi [25] conducted a study entitled *Two Ethnicities, Three Generations: Phonological Variation and Change in Kuwait.* She investigated accent variation in the speech of three generations of Kuwaiti ethnic groups: Najdis (originally from Saudi Arabia) and Ajamis (originally from Iran). These two groups have different statuses in Kuwait and represent different perspectives. For historical reasons, Najdis has held a prestigious position in Kuwaiti society over Ajamis, and that is because the royal family in Kuwait has steady relations with the royal family in Saudi Arabia. However, these two groups lived together and gradually interacted for years. Over the years, this contact between the two groups created some realizable phonological set of variations. She collected the data from 48 Kuwaiti participants. These participants represent two ethnicities and three age categories, including an equal number of males and females. The study collected data from map tasks, picture-naming, interviews, and questionnaires. She found that the Najdi accent is steadier across generations than the Ajamis'. The latter seems to be moving towards the Najdis' accents. However, the overall results show that social class plays a crucial role in the attempt to shift from the Ajamis accent to the Najdis one. The author did well in explaining the social context in Kuwait. She represented the two ethnic groups clearly and described the history of discrimination between them. The phonological variable /ʤ/ is typically realized by Najdi speakers as [j] and by Ajami speakers as [ʤ]). Moreover, /s/ is realized by Najdis as [s], but Ajamis use [sʕ] instead, especially in exclusive co-articulatory environments. Also, Najdis realized /ɣ/ as [q] while Ajamis realized it as [ɣ]. These variables were analyzed about the social variables (ethnicity, age, and gender). She also considered social networks and the correlation between identity and dialect leveling.

Phonological variables have been the subject of extensive research. Regarding the English language, Labov [23] conducted his famous sociolinguistic study on the social stratification of /r/ in New York City [23]. His study depended on the rapid, anonymous survey of the three major New York department stores, Macy's, Saks, and Klein, and he investigated language change concerning social factors (age, gender, social class). There were 70 participants in the study that was based on two general notions: the first one is that the linguistic variable (r) is a social differentiator in all levels of New York City speech, and the second is that the rapid and anonymous speech events could be used as the basis for a systematic study of the language [23]. Labov did the study; consultants were asked simply by the interviewer, who approached them as customers, asking for directions to some places. The interviewer asked the consultants about some information they would most likely answer with words, including the (r) sound. He asked them more than once, pretending that he could not hear them well, leading the consultants to pronounce it more. He used this simple methodology to collect the data. Mather replicated Labov's study and showed how the postvocalic /r/ had increased over the past five decades [12]. He did the study with over 169 participants. Although he used the same methodology of Labov, results show an increase in the overall percentages by 10 to 20 percent in some cases. It shows many differences related to the age class contrary to that of Labov's study.

In this study, I conducted an impressionistic analysis of two phonological variables (ts) and (dz), in Buraidawi Arabic. The study highlighted the importance of social factors such as age, gender, education, and social class in shaping linguistic variation. This aligns with recent findings that sociolinguistic salience and social attitudes are significant in understanding variation across Najdi dialects [1]. These findings also emphasize that language usage is deeply influenced by broader cultural attitudes, as illustrated by recent sociolinguistic studies [23]. Integrating contemporary research into the analysis further supports the claim that Buraidawi Arabic is undergoing linguistic changes shaped by complex social dynamics.

4. Methodology

The design of this study depends on a methodology represented by collecting data from a very simple sample of native speakers of BA. Firstly, I discussed the type of consultants and the location where the data is gathered. The information about the consultants is represented in a table for a quick understanding of their different levels of education, age, gender, and social class. Then an explanation of the methods follows with an example of an analysis of coding in a table.

4.1. Consultants & Location

The data were collected in Saudi Arabia, particularly in Buraydah City, by a colleague who is an assistant professor at Qassim University QU. The sample of this study is composed of ten speakers, five male speakers, and five female speakers. All of them are brought up in Buraydah and speak the Buraydawi dialect. The speakers are of different ages, social classes, and levels of education. **Table 1** below shows a list of the consultants' data:

Table 1. Gender, social class, age, and education data of consultants.

Consultant Code	Gender	Social Class	Approx. Age	Education
S1	M	High Class	40–50 Yrs.	High school.
S2	M	Low class	30–40 Yrs.	High school
S3	M	High class	20–30 Yrs.	College
S4	M	Middle class	20–30 Yrs.	Primary Edu.
S5	M	Middle class	50–60 Yrs.	Collage
S6	F	High class	40–50 Yrs.	College
S7	F	Low class	20–30 Yrs.	Primary Edu.
S8	F	Middle class	20–30 Yrs.	High school
S9	F	Low class	50–60 Yrs.	Primary Edu.
S10	F	High class	50–60 Yrs.	High school

4.2. Method of Data Collection

Two data collection methods used in the study are picture elicitation and the recording of oral spontaneous sociolinguistic interviews with the consultants. The justification for the two different methods is to check if there is a difference between spontaneous speech and directed picture naming. For the picture elicitation, the consultants were asked to identify or describe ten pictures that contain the target variable (ts) and ten pictures carrying the variable (dz). For the recorded oral interviews, the interview approached diverse matters, including personal information (i.e., marital status, level of education, and age), careers, education, and family life. Each speaker had only one session for both the interview and the picture naming, which lasted roughly five minutes for each consultant. The location of the interviews is in Buraydah City; some consultants who are at a university level were met at the university. The others were chosen randomly by the assistant professor at Qassim University. The analysis involved calculating the tokens of each speaker in the recorded oral interview and picture naming. I counted the words that have the variables (ts) and (dz) in each speaker's session and then calculated the percentage of her/his usage of them. **Table 2** below, presents an example of how I initiated the analysis for each speaker:

Table 2. Example of analysis coding.

Speaker's Code (S6)	
Picture Elicitation	For (ts) 1 out of 10 For (dz) 2 out of 10
Spontaneous Speech	For (ts) 2 out of 6 For (dz) 0 out of 2

5. Analysis

As mentioned earlier, the present study investigates the phonological variables of Buraidawi Arabic and how they relate to social factors such as age, gender, social class, and level of education. In this section, I discuss the distribution of two variables considered in this paper, (ts) and (dz). These

variables occur in Buraidawi Arabic and express their distributions among participants with respect to social factors. I have investigated the speech of ten speakers from Buraydah, Saudi Arabia. The speakers all live in Buraydah and were divided into four groups based on their age: (a) 20–30 years old, (b) 30–40 years old, (c) 40–50 years old, and (d) 50–60 years old. **Table 3** below is categorized by gender, social class, level of education, and age, with the variables (ts) and (dz) columns indicating speakers' percentage of using the variables.

Table 3. A detailed distribution of (ts) and (dz) by the speakers and their independent variables.

Speaker ID	Age	Gender	Education	Social Class	(ts)	(dz)
S1	40–50 Yrs.	M	High-school	High	83%	57%
S2	30–40 Yrs.	M	High-school	Low	83%	76%
S3	20–30 Yrs.	M	College	High	36%	8%
S4	20–30 Yrs.	M	Primary	Middle	29%	18%
S5	50–60 Yrs.	M	College	Middle	38%	39%
S6	40–50 Yrs.	F	College	High	38%	17%
S7	20–30 Yrs.	F	Primary	Low	10%	2%
S8	20–30 Yrs.	F	High-school	Middle	8%	0%
S9	50–60 Yrs.	F	Primary	Low	91%	69%
S10	50–60 Yrs.	F	High-school	High	83%	57%

5.1. Gender as a Social Variable

It is well documented in the literature review that gender and its relationship with linguistic differences can be seen in the speech of both men and women [14] as cited in [26]. Moreover, gender in Arabic speech communities shows a high co-variation with the linguistic changes, such as the deaffrication of [k] in Riyadh (the capital city of KSA), particularly with the dialects that have commonalities between local and regional features [1]. As for this study, we have equal numbers from both sexes: five women and five men. The gender variable presents a co-variation with the Buraidawi Arabic affrication (ts) and (dz).

As shown in **Figure 2**, male speakers used local variants (ts) and (dz) more frequently than female speakers. In the variable (ts), males used 63 percent, whereas females used 45 percent. Regarding the (dz) variant, the male speakers used 41 percent while female speakers used 32 percent. The difference between the two genders is not that significant. Generally speaking, female speakers seem more conservative and avoid using stigmatized variables. According to Labov, "women show a lower rate of stigmatized variants and a higher rate of prestige variants than men." ([14], p. 266). The reason is that females tend to use more stable prestige forms rather than males [27].

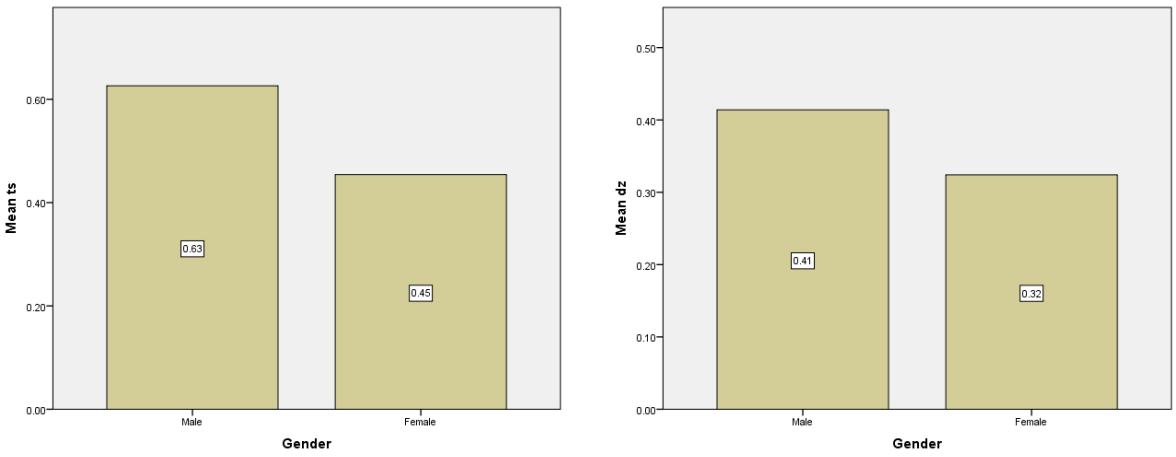

Figure 2. The appearance of the variables (ts) and (dz) concerning gender.

5.2. Prestige

The variants /k/ and /g/ belong to the Modern Standard Arabic and Najdi Arabic, respectively. Stadlbauer [28] states that Modern Standard Arabic is considered the high prestige language in the Arabic diglossia. On the other hand, Najdi Arabic is considered a supra-local variety and one of the closest dialects to Modern Standard Arabic. Labov [29], as cited in Abudalbuh [26], documented that women tend to favor prestigious norms [26]. That is because females are more aware of the social importance of different linguistic features and use socially prestigious speech forms more than males [30–32]. Thus, in Buraidawi Arabic, women conform to the tendency of prestige forms by adopting /k/ from the high-prestige language (Modern Standard Arabic) and /g/ from the supra-local dialect (Najdi Arabic). Taqi states, "Women, on average, use forms which more closely approach those of the standard variety or the prestige accent than those used by men." [25]. Consequently, as the results report, women tend to use the urban /k/ and /g/ as opposed to the stigmatized variants (ts) and (dz).

5.3. Level of Education Variable

Education is one of the factors that have an impact on linguistic change processing. In this section, we shed light on how education in Saudi Arabia plays a role in linguistic change at the phonological level. Over the past decades, many schools have been established in Saudi Arabia, and thus, education has developed and increased the literacy rate [1]. The medium of instruction in Saudi schools is Modern Standard Arabic, also considered the language of prestige, government, published works, and the media. Al-Rojaie states that the language of education, Modern Standard Arabic, "has influenced people's use and perception of their spoken dialects." ([1], p. 48). In this study, as shown in **Table 3**, the participants are classified into three groups: participants with primary education, high-school education, and college education.

Figure 3 shows the increased use of the variables (ts) and (dz) was observed among the least educated people. Those with a primary education used the variable (ts) 60 percent, those with a high school education 62 percent, and speakers with a college education used only 37 percent. As for the variable (dz), the people with primary, high school, and college levels used the variable with 30, 54, and 21 percent, respectively.

To conclude, the results show that the least educated people from both the male and female groups tend to use the variables (ts) and (dz) more frequently than educated people. That is, the affrication is favored by those with primary and high-school education while disfavored by those with a college education.

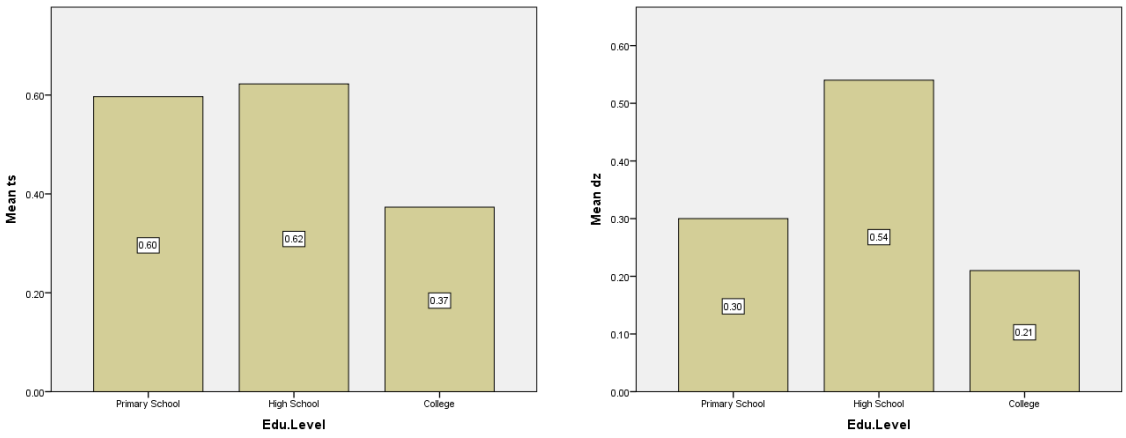

Figure 3. Variables (ts) and (dz) for males and females together grouped by education level.

5.4. Age Variable

Age plays a major role in language variation. According to Bell, "age is the most fundamental social factor structuring any study of language variation." ([33], p. 195) Based on age, my study comprises participants of different ages, who were divided into four groups: four speakers (two men and two women between 20–30 years old), one male speaker

(30–40 years old), two speakers (one man and one woman between 40–50 years old), and three speakers (one man and two women between 50–60 years old). The study's results indeed yield variation among speakers concerning age. The following charts (**Figure 3**) exhibit the percentage use of (ts) and (dz) as we found it via both the recorded oral spontaneous interviews and the picture elicitation (**Appendix A**).

As seen in **Figure 4**, we notice how differences in terms of the age distribution are associated with the variables (ts) and (dz). The chart on the left represents the (ts) variable. It demonstrates that the speakers within the 20–30 age range showed 33 percent, which means that younger speakers tended to use the variable (ts) less than older speakers, whereas the 30–40, 40–50, and 50–60 age groups showed 76 percent, 61 percent, and 71 percent, respectively. We also notice that the increased use of (ts) among the 30–40 age group is higher than the older groups. In this case, we have a reverse result to our prediction. There are two possible explanations for that: that group has only one speaker, and the data sample in this study is very small, which caused unequal distribution of some factors. In other words, the 30–40 age group comprises one male speaker with a low social class and education. Consequently, this situation has been affected by hidden variables, i.e., gender and level of education, which play a great role in the percentage. On the other hand, the variable (dz) has the same result as we have in the variable (ts) but with different percentages. The younger speakers, or the 20–30 age group, used 7 percent of the (dz) variant, whereas the 30–40, 40–50, and 50–60 age groups showed 83 percent, 37 percent, and 61 percent, respectively, and the same reason occurs again with (dz) variable and the 30–40 age group which is higher than the older groups.

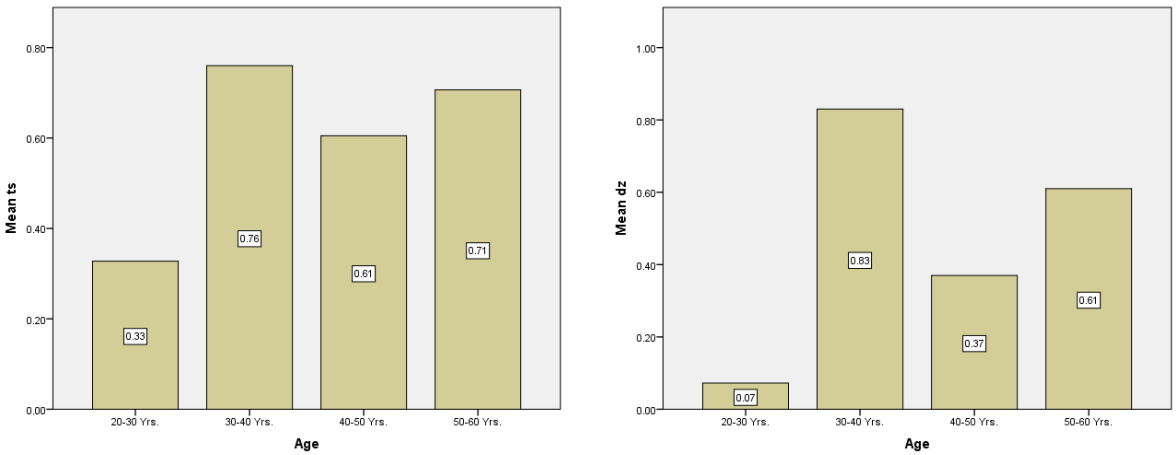

Figure 4. The variables (ts) and (dz) for men and women grouped concerning age.

To conclude this section, there appears to be a relationship between age and the variables (ts) and (dz). Younger speakers tended to use (k) and (g) variants of Modern Standard Arabic (i.e., the more prestigious variety). The findings show similar results to those reported in the Al-Rojaie study in which younger speakers are least likely to use affrication. In comparison, the older speakers favor (ts) and (dz) more frequently (i.e., the rural and local variants).

5.5. Social Class Variable

In most sociolinguistic studies, social class impacts the linguistic variables. Thus, in most cases, the variables are associated with the social classes (i.e. low, middle, high class)[16]. In this study, we have designated the participants as 'low class' if they do not have a job and live in a rented house or belong to a low-income family; as 'middle class' if they have a modest job with a monthly allowance of at least $2000 and live in a rented house; and as 'high class' if they have a professional job such as a manager or have a large business enterprise, and own a house. **Figure 5** below shows the percentage use of the affrication (ts) and (dz) among the class groups.

Figure 5 shows that the groups' variables (ts) and (dz) are inconsistent. The low-class speakers, as predicted, used both variables more frequently than the middle- and high-class speakers, and the low-class speakers are the most likely

speakers to use the affrication with a total of 58 percent for (ts) and 51 percent for (dz). In terms of the other groups, comparing the middle with high class, the middle-class speakers use the variables considerably less than the high-class speakers, 42 percent for (ts) and 12 percent for (dz). In contrast, the high-class speakers are most likely to use the affrication and use 55 percent for (ts) and 40 percent for (dz). In this case, the social class variable is inactive in Buraidawi Arabic. It is supposed that the disfavor of the variables rises as the class rises and not vice versa.

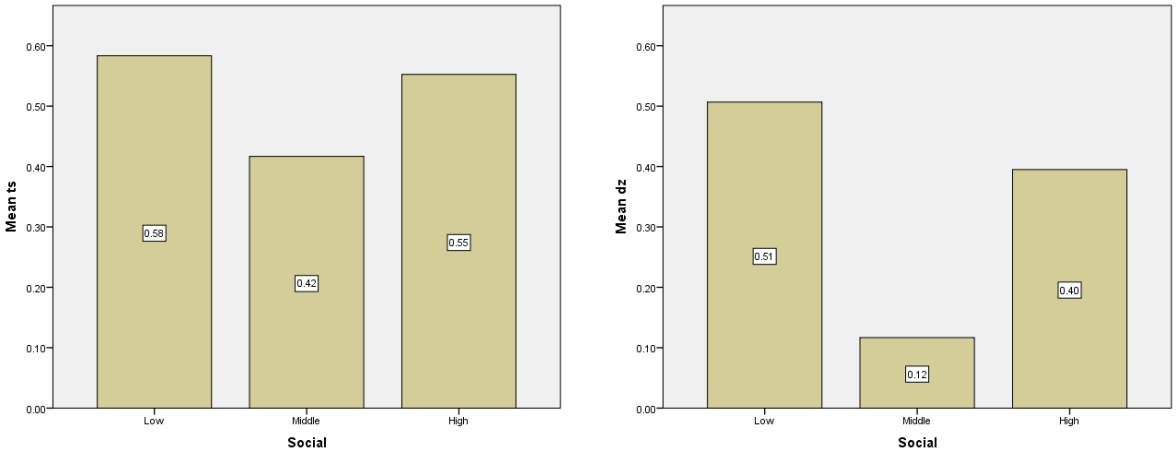

Figure 5. The variables (ts) and (dz) for males and females together grouped by social class.

In this part, we shed light on the hidden variables that play a role in the inconsistency occurring in the social class variable. The reason why the middle-class groups are the least users of the variables, rather than the high class, lies in the age variable; the middle-class group consists of three speakers, and two of them are younger speakers (20–30). As mentioned earlier, younger speakers use fewer variables than older speakers. In contrast, in the high-class group, there are four speakers, two of whom have a college education and two have a high-school education. Three of them are older speakers, which influenced the increased use of the variables.

5.6. Frequency of (ts) and (dz)

In comparison with the usage of the variable (dz), we notice the overall percentage of (ts) is higher than the percentage use of (dz). This difference is because the variable (ts) carries a syntactic function and indicates gender[1]. It occurs commonly in the second-person feminine pronoun, whereas [-ɪk] in the second-person masculine pronoun. On the other hand, the variable (dz) occurs only in some lexical items and does not have any syntactic function. **Table 4** below illustrates examples of the syntactic function of (ts).

Table 4. Examples of syntactic function for (ts).

/-ɪts/ (For feminine)	/-ɪk / (For masculine)	Gloss
[weɪn-ɪts]/ [weɪn-ɪk]	[weɪn-ɪk]	'Where are you'
[ʔ-ħɪb-ɪts] / [ʔ-ħɪb-ɪk]	[ʔ-ħɪb-ɪk]	'I love you'
[l-ɪts] / [l-ɪk]	[l-ɪk]	'For you'

6. Conclusions

In this study, I have conducted an impressionistic analysis of two phonological variables (ts) and (dz) in Buraidawi Arabic, which stem from the Standard Arabic /k/ and supra-local variety /g/. The study investigates the variables (ts) and (dz) about some social factors such as age, gender, level of education and social class. It presents insights into how education levels, gender, and age play a role in the variable's usage among the speakers, while social class does not. The overall tendency observed from the results is that the increased use of the variables (ts) and (dz) can be seen

among both men and women in the older speakers' groups. In contrast, the younger speakers from both genders are the least likely users of the variables. In terms of gender, males speakers tend to use the affrication more than females. As for the level of education, regardless of age, educated people both males and females, disfavor the affrication. Finally, social class, as mentioned earlier, is an inactive variable in the dialect of Buraydah, in which we found that the low-class speakers meet the prediction and are most likely to favor the affrication. However, inconsistency occurs among the middle and high-class groups in which we notice that middle-class speakers are less likely to use the affrication than the high class-speakers.

Author Contributions

The author was responsible for the conceptualization, methodology, data collection, data analysis, writing, and final approval of the manuscript.

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Institutional Review Board Statement

The study was conducted following the ethics of Qassim University and was approved by the Institutional Review Board (IRB) of Qassim University.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data supporting the reported results of this study are available upon reasonable request from the Department of English at Majmaah University. Due to privacy and institutional restrictions, the data are not publicly available. For access, please contact the English Department at Majmaah University.

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Conflicts of Interest

The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

Appendix A. For Picture Elicitation

Pictures containing the target variable (ts) were shown, and the consultants were asked to describe or identify each picture by asking the following questions: What is this? Or describe this picture?

A set of pictures containing the target variable (dz):

Appendix B

Data collected in this study contain the affrication **(ts)** from both picture elicitation and interview.

Words	Gloss
tsibi:r	'Big'
sɪtsi:n	'Knife'
tsælb	'Dog'
tsæbdəh	'Liver'
tsɪlwɪh	'Kidney'
tsɪbri:t	'Match'
di:ts	'Rooster'
matswa	'Iron'
tsætf	'Shoulder'
bærtsɪh	'Pond'
mɪrtɪtsɪ	'Leaning on'
tsɪðb	'Lying'
wɪnɪts	'Where are you' (for 2nd, Singular, female)
ʔhɪbɪts	'I love you' (for 2nd, singular, female)
ħætsɪ	'Speech'
lɪts	'For you' (for 2nd,singular, female)
mɪnts	'From you' (for 2nd,singular, female)
ʔmtsɪn	'Be in time to get'

Appendix C

Data collected in this study contain the affrication (dz) from both picture elicitation and interview.

Words	Gloss
dzɪdɪr	'Pot'
ħɪmɪdz	'Got Angry'
dzæt	'Trefoil'
wædzɪf	'Standing'
sædzɪ	'Watercourse'
dɪgɪdzh	'Minute'
wɪdz	'Looking at'
dzɪblh	'Qib'lah i.e. direction to which Muslims turn in prayer'
ri:dz	'Slavia'
ʕælɪdz	'Burning'
ældzæblɪh	'After tomorrow'
tæwfi:dz	'Luck'
ɛndzɪlɪʕ	'Go away'
ɛnfɪhɪdz	'Move a bit'
tˁri:dz	'Road'
ʕædzɪl	'Wise'
ɣærɪdz	'Sinking'

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