

A Sociolinguistic Corpus Study of Allophonic Variation in Punjabi Language

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Abstract

This study examines allophonic variation in the Punjabi language using a purpose-built sociolinguistic speech corpus. The corpus consists of 1008 transcribed and annotated tokens of allophony from 72 respondents from beauty parlors representing high, middle and lower class income in the capital city of Pakistani Punjab. To reveal social stratification (e.g., class, gender and age) in the use of prevocalic and postvocalic, 14 Punjabi lexical items were finalized. A quantitative approach was applied to address the research question and chi-square test was applied to investigate the association between social stratification and the use of allophones. The respondents were found using alternative pronunciations of the same lexical items, with no change in meaning (except [raaz]/[raaj], which are distinct words). Variationist sociolinguistics has documented class, gender and age stratification for English; however, there is scarce comparable evidence for Punjabi, a major South Asian language. Social class has also not been operationalized through consumption in an actual service setting. This study bridges these two gaps by creating a speaker-annotated corpus, and pairing it with a beauty-service spending index of people of varying social classes. The findings suggest that there are social meanings carried by allophones of Punjabi and that spending on beauty services may be a useful proxy for class in this community.

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Introduction

Social stratification research has been exploring different correlational perspectives of English language to depict specific social arrangements and differentiation in various parts of the world. Likewise, it can be assumed that the Punjabi Language spoken in Lahore, Pakistan is also a source of social stratification. It is one of the major languages of the Indo-Aryan branch of the Indo-European family spoken in Pakistan and India. But the Punjabi language spoken in Pakistani Punjab represents unique phonological patterns (e.g., Amjad, 2024; Arslan, Mahmood, & Haroon, 2021; Rafi, 2010; Bhatti, 2013) and written script¹ (Kogan, 2017; Masica, 1991, p. 20). Such phonological patterns can also be observed in the regional dialects such as Hindko, Jangli, Majhi, Malwi, Doabi, Pwadhi, Pothohari, Pahari, Jhangvi, Dhani, Jhangochi and Shahpuri spoken in different parts of the Punjab (Sidhi, 1992). Apart from phonological variation between these dialects, each dialect represents social divisions, too. However, the linguistic landscape of Urban areas, which usually host a linguistically diverse population, is quite complex. We find a dialect

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variation that can be used as a source of social division. In order to verify this assumption, the capital city of Pakistani Punjab was considered an ideal place to conduct this study.

By recording and transcribing speech samples from respondents in natural settings, a specialized sociolinguistic corpus was developed. This purpose-built corpus allowed a systematic examination of allophonic variation as a correlate of social identity. The city serves to reveal variation in the use of Punjabi allophones [b]/[v] at the word initial position and [z]/[j] (where [j] is a transcription label for the affricate [dʒ], not the palatal approximant) at the word final position. The use of allophones (e.g., *binnana/vinnana* for nose or ear hole, *soz/soj* for inflammation, and *cheez/cheej* for thing) signal age, gender and social class in Lahore.

The reason of this allophonic variation seems due to close contact of Punjabi varieties with Sanskrit influenced languages like Hindi. It can be assumed that the upper and middle class here are under the influence of Urdu in which these words are normally pronounced with [z] and [b]; Urdu has /dʒ/ and /v/ as phonemes, but not as alternants of /z/ and /b/ in these words. However, they are very much present in the phonetic system of Sanskrit, Hindi and Sikh Punjabi. For example; a voiced palato-alveolar affricate in the Sikh pronounced version of the Perso-Arabic loanword [dʒaləm] (versus [zaləm]) for 'tyrant'ⁱⁱ (Masica, 1991). It seems that Punjabi in India has been under the influence of Sanskrit, whereas Punjabi in Pakistan in many ways has been borrowing Perso-Arabic registers. We can associate this phenomenon with politics, religion and culture (Gumperz, 1971; Mansoor, 1993 & Rahman, 1996).

Among others, the above mentioned lexical items are considered central to class and the context. They are quite prevalent at the beauty parlors located in different parts of the city. The use of these Punjabi lexical items tends to reflect social class of the customers. While receiving the services of beauticians, they interact according to their comfort level and the social norms of parlor (Brown, 2001, p. 136). The parlor hosts a pattern of behaviour acquired by speakers through the experience of using specific allophones in social interaction. The allophonic variation is subject to rather systematic stratification in the speech of individuals and groups and thereby become responsible for identity constructionⁱⁱⁱ (e.g., Labov, 1966, Eckert, 2012).

The purpose of this study is to expand the scope of social stratification studies whose subject matter has been the English Language until recently. The present study intends to investigate the Punjabi allophones as a correlate of social identity in Lahore. While mapping out the allophonic usage, different speakers were observed substituting different lexical items with similar semantic representation. It was observed that the meaning remains invariant even when allophones occur at the onset and coda position. In other words, they do not contrast like the minimal pairs in English language e.g., [baal] and [vaal] for 'hair' and [soz] and [soj] for 'inflammation'. The same lexical item with allophonic variation is used to refer to the same thing. However, the variation between [b]/[v] and [z]/[j] corresponds to customer's expenditure on hair styling and facial aesthetic which can be used as a proxy for social class. So, the allophonic variable can be treated as a marker because it serves as a carrier of social information.

Research Question

The study answers the following question:

1. Does allophonic variation ([b]/[v] and [z]/[j]) in Punjabi mark social division by class, gender and age in Lahore?

Research Hypotheses

To answer this research question, the following research hypotheses are formulated to be tested and verified, thereby contributing towards an understanding of the overall research problem.

1. The allophonic variants [b] / [v] mark social distinction at the word onset position.
2. The allophonic variants [z] / [j] mark social distinction at the word coda position.
3. Young people (16 – 30 years) use [b] and [z] more frequently than old people (46 – 60 years), who use [v] and [j] more frequently.
4. Females use the standard allophonic variants [b] and [z] more than males.

Significance

This work uses Labovian methods to study an under-researched Indo-Aryan language in a multilingual, post-colonial urban setting. It proposes a class index based on consumption, which can be reproduced in other contexts, and offers initial data on production for future research on attitudes and planning of languages of Pakistani Punjab.

Terminological Note

In this study, “allophonic variation” refers to the case of the same lexical item being pronounced in different ways by different speakers (e.g. [binnana]/[vinnana]), particularly when there is no change in meaning and no variability in the words under study. In the realm of variation, these are sociolinguistic variables (b) and (z), whose variants are [b] and [v], and [z] and [j], respectively. The term is kept for consistency with the title, and the readers are requested not to interpret it as the case where the sounds under study are complementary allophones of a single phoneme for the entire Punjabi lexicon. It is important to note that [raaz]/[raaj] is an exception, because [raaj] is a different word (‘kingdom’, ‘mason’). Also, that the symbol [j] is used throughout for the variant written ‘j’ in the data (e.g., soj, cheej), which corresponds to the affricate [dʒ] in the example given in the Introduction, rather than to the palatal approximant.

Literature Review

Variationist researchers have shown how linguistic variables systematically relate to social class, style, gender, and age (Labov, 2006; Trudgill 1974; Milroy 1987; Tagliamonte 2012; Bayley, Cameron & Lucas 2013). Three of these are particularly significant here. First, within social groups, it is usually the higher-status groups that favour the standard and/or prestige Punjabi lexical items and lower-status groups that favour the vernacular. Second, women often have been found to favour prestige forms more than men, but this has to be considered in relation to social and other contexts (Labov 2001; Holmes 2013). Third, age has to be interpreted with some caution, as what appear to be differences may in fact be instances of age-grading (i.e. the social norm for a particular age group to use a different form than is currently in use). In fact, in one instance, Labov (1972) reported that in the case of speakers in an intermediate social position, hypercorrection was found, suggesting that middle-class speakers may be striving to over-correct or over-conform to higher-class norms. The aim of this study is to investigate occurrences of the same in the use of [b]/[v] and [z]/[j] in Lahore Punjabi.

More recent variationist work has shifted from regarding linguistic variables as straightforward reflections of demographic variables. Rather, linguistic variants may take on social meanings in the communities, styles, and varieties in which they are used (Silverstein, 2003; Eckert, 2008, 2012). In this view, [b]/[v] and [z]/[j] may carry social meanings of education, refinement, class, and urbanity, as well as membership of a social group. This is likely

to be especially pertinent to the research setting, as a beauty parlor is a socially significant interactional space where speech, appearance and consumption intersect. It is therefore likely that speakers in beauty parlor interactional spaces are especially likely to be attuned to social meanings of speech in relation to their interlocutors, the social space, and their perception of what is required in a particular situation (Bell, 1984; Coupland, 2007). The linguistic market (Bourdieu, 1991) further suggests that, in some social fields, certain linguistic variants may be more valued than others, and become a means of social distinction, thus encouraging speakers to prefer more prestigious linguistic variants.

The relationship between South Asian languages and social class is also relevant here. There are a limited number of studies focusing on South Asian languages, but research has shown that social class and other social variables like gender, age, education, and occupation play a role in variability in speech (Bughio, 2006; Bhatti, 2013; Koka, 2014). In Lahore Punjabi, for example, Bhatti (2013) showed that there is a social stratification in variability in sound (phonology) whereby the upper class prefers one variant and the lower class prefers the other variant, and the middle class occupies an intermediate position. Other South Asian languages also operate in multilingual environments where certain languages like Urdu and English have institutional and social prestige. It may be the case that [b] and [z] are in contact with these languages and thus may be social prestige variants, whereas the variants [v] and [j] have social vernacular tendencies. It is hoped that this study may address some of the gaps in previous research.

The literature relies on limited variationist evidence on Punjabi in urban Lahore and focusses on occupation, education, or income indices rather than consumption-based class indicators. There is also lack of detailed analysis of several variables within a speech community. This study provides a 1008-token annotated corpus, a class index based on parlor price lists, location, and interior, and tests class, gender, and age effects, with consideration of multiple-comparison problems and effect sizes.

Methodology

Labov's (1966) study on r-pronunciation in New York City provided theoretical foreground to investigate Punjabi allophones as correlate of social stratification in Lahore City. Like Labov (1966) who found rhoticity as an important indicator for the social identity, the present study considered allophony as one of the important linguistic features to showcase class, gender and age. The approach suggests ranking of the respondents by their differential use of allophonic clusters of [b-1] or [v-1] and [z-1] or [j-1]. Labovian perspective was further appropriated by adding diversity in the sample. Unlike simplistic approach to statistics, the present study applied Chi-square to test the statistical significance of the associations.

Data Collection

The target population was based on parlor customers in Lahore. They were accessed in the beauty parlors located in different parts of Lahore. One of the reasons for selecting this population was, it gave easy access to the subject pool representing varied socio-economic backgrounds. As indicated in Table 1, a sample of 72 male and female respondents from 15 beauty parlors was selected to test the hypotheses. The sample was distributed over three social classes: upper, middle and lower based on the rate list and location of the parlors. They were further classified into three age-groups: 16-30 years (young), 31-45 years (middle) and 46-60 years (old). The parlors were visited during the events and festivals when they were thronged

by the respondents. Most of them remained open late at night (i.e., from 10:00 am to 2:00 am) especially on the *Eid* festival. The data was collected from those who were visiting parlors at least fortnightly.

Sampling Rationale

A stratified purposive design was employed. The 15 parlors were selected to encompass the three main price tiers, and as near as possible, balance class and gender cells (24 in each class; 36 males and 36 females). Acknowledging this as a limitation, the age groups were unbalanced (n = 19, 32 and 21). It was required of respondents to frequent their parlor of interest at least every two weeks, so that the parlor they selected was indicative of a preference or class of interest as opposed to a one-time selection. Class was determined using three primary indicators, (price list, location and parlor design/interior), and, therefore, is replicable.

Table 1 Distribution of Sample

Sample Group	Social Class	Age	Gender	Number of Respondents
1	Upper	16-30	Male	12
		31-45	Female	12
		46-60		
2	Middle	16-30	Male	12
		31-45	Female	12
		46-60		
3	Lower	16-30	Male	12
		31-45	Female	12
		46-60		
Total				72

How much the respondents were spending on their hair-cut and facial treatment provided us a lens to speculate about their social class^{iv} (cf. Grusky, 2001; Mallinson, 2011 and Savage, 2005). The social life of people is a packaged set of *lifestyle options*^v (Coupland, 2007, pp. 29-30) that restrict them for expenses. The parlors visited were ranked on the basis of their rate list. The beauty parlors which were charging between 5000-7500 and 6000-10000 Pakistani rupees for hair-cut and facial treatment were ranked for the higher class. The parlors represented the middle class were charging between 1500-2500 and 3000-5000 Pakistani rupees for hair-cut and facial treatment. The lower-class parlors were charging between 100-400 and 1500-2500 Pakistani rupees for a haircut and facial. The interior design (or furnishings) and the physical conditions of the beauty parlors also served to relate them to the social class. It was very important to figure out the socio-economic background of the respondents before they were involved in the study.

The data was collected by means of interviews in the parlors, a semi-naturalistic setting. These interviews provided a basis for a structured and specialized sociolinguistic corpus comprising 1008 tokens, annotated for phonological variables ([b]/[v] and [z]/[j]) and tagged with speaker metadata (social class, gender, and age). The respondents were engaged through a series of indirect questions (e.g., *ser uttay brush naal ki sawari da ay?*, *kangi naa keeti howay tey vaal kis tarhaan dey lagdey ney?*, *valaan noon sawaran da apna apna ki hownda ay?* and *beauty parlor di hidayat dey mutabiq gahak kidhi hifazat karan dey zimedar howndey nay?* etc), to establish a kind of rapport with them. As indicated in Table 2, they were asked to articulate

allophonic variants, e.g., [b]/[v] at word-initial position and [z]/[j] at word-final positions for recording. The researcher used a digital audio recorder to create a file for the transcription and analysis. The Windows Media Player was used to play and replay the recording of each interview. Based on auditory transcriptions of the interviews, the tokens were collected into a systematic corpus of spoken Punjabi. Each token was then annotated for phonological and social variables to facilitate corpus-based quantitative analysis. Ear-training was conducted to obtain variants' measurements on each allophone in the given option e.g., [binnana]/[vinnana] for piercing nose or ear and [soz]/[soj] for inflammation. Each respondent used one allophonic variant for each of the 14 items. In this way, 1008 tokens were gathered for measuring the association between allophonic variation and social class, age and gender variables. The qualitative responses were converted into frequency count for Chi-square test.

Coding and Reliability

Each token was auditorily coded as one of two variants for the relevant phonological variable, [b]/[v] or [z]/[j], and was entered in the corpus along with speaker-level metadata for social class, gender and age. The digital recordings were played, as needed, during the process of transcribing and coding, and auditory identification was aided by ear training for the target lexical items. The final corpus consisted of 1,008 tokens from 72 respondents.

To assess the reliability of the auditory coding, an independent second coder, who had no role in the first round of coding, recoded a randomly selected subset of 220 tokens (21.8% of all tokens). The second coder assessed each token as one of the two variants ([b] or [v]; [z] or [j]) without seeing the first round of coding. The two codings showed 94.1% percentage agreement (207 of 220 tokens) and Cohen's Kappa was $\kappa = .87$, indicating strong agreement. Disagreements occurred over 13 tokens (5.9%). They were resolved through discussion between the two coders. When disagreements occurred, the relevant audio recording was played and the final coding decision was made according to the study's operational coding criteria.

The independent second coder's assessment of auditory variants provides a quantitative check on the reproducibility of the auditory classification of variants. The reliability assessment strengthens the methodological basis of the subsequent frequency and chi-square analyses.

Operationalization of Social Class

Social class was operationally defined through a contextual, spending-based classification, drawn from three observable indicators: parlor price lists, location, and interior design/furnishings. The 15 beauty parlors were purposively sampled to cover three classes of spending, and respondents were classified as upper, middle or lower class, based on the beauty parlor that they frequently visited. Frequent visitation was defined as visiting the beauty parlor at least once every two weeks.

The upper class price range was recorded as PKR 5000-7500 for haircuts and PKR 6000-10000 for facial treatments. Middle class price range was recorded as PKR 1500-2500 for haircuts and PKR 3000-5000 for facial treatments. The lower class price range was recorded as PKR 100-400 for haircuts and PKR 1500-2500 for facial treatments. Parlor location and interior design were used as additional contextual indicators of the three classes of spending.

The sampling design attempted to balance the three class groups with 24 respondents in each group. Gender was balanced with 36 males and 36 females. Respondents were not evenly balanced in age groups, with 19 aged 16-30, 32 aged 31-45 and 21 aged 46-60.

This should however be interpreted as a consumption-based proxy for social class rather than a direct measure of socio-economic status. The study did not assess the education, occupation and income of respondents independently. Therefore, the class categories reflect the socio-economic positioning of the beauty parlors and their service costs rather than an independently validated score of the socio-economic status of the respondents. This is particularly important when interpreting the associations between social class and Punjabi allophonic variation. The use of education, occupation and income as well as a composite socio-economic index with the present spending-based measure would enhance construct validity in future research.

Table 2 List of Punjabi Allophonic word variants

Word position	onset	Meaning	Word position	coda	Meaning
[binnana]	/	piercing nose or ear	[soz] / [soj]		inflammation
[vinnana]					
[bali] / [vali]		ear ring	[maiz] / [maij]		table
[besan] / [vesan]		wash basin	[andaaz] / [andaaj]	/	way or look
[baal] / [vaal]		hair	[roz] / [roj]		daily
[baind] / [vaind]		stretch band	[cheez] / [cheej]		thing
[bari:] / [vari:]		turn	[tez] / [tej]		sharp
[bikhray]	/	unarranged	[raaz] / [raaj]		secret
[vikhray]					

In all varieties of English, /t/ has a number of positional allophones, that is, [t], aspirated [t^h], glottalized [ʔ] and unreleased [t̚] are variants of the same phoneme /t/ which are used variably by the speakers depending on a number of social variables (Kerswill & Watson, 2014 and references cited therein). This phenomenon is common among other languages; for example, Hindi-Urdu has allophony of [v]/[w], which includes the word ادویت which can be pronounced equally correctly as [əḍ'wɛ:t̚] or [əḍ'vɛ:t̚] while the meaning remains the same, that is, unique or unequalled (Roy, 2017). Hawaiian has allophonic variation of [t] with [k], [w] with [v], and in some dialects [l] with [n] (Elbert & Pukui, 1979; Kinney, 1956; Newbrand, 1951; Schutz, 1994).

Punjabi allophones [b] / [v] and [z] / [j] were studied which otherwise in English are four different and distinct phonemes that stand in contrast to each other and subsequently the meaning also changes along with it. For example, bow and vow are minimal pairs and they are not word variants. In Punjabi, the allophonic variation depends on the speaker's choice and the two forms are just different ways of saying the same word. The two sounds are interchangeably used by the people of Lahore. The voiced bilabial plosive sound [b] is replaced by voiced labiodental fricative sound [v] or vice-versa and in the same way the voiced alveolar fricative sound [z] is replaced by voiced palato-alveolar affricate [dʒ] (written 'j' in the transcriptions) or vice-versa depending on the speaker's social characteristics. The choices that are based on Punjabi consonant sounds vary in a systematic way and the data comprised of all those tokens of phonetic forms that do not contrast or make a difference in meaning and as such they can be quantitatively modeled.

Ethical Considerations

The present study adhered to the pre-existing standard ethical guidelines proposed by Mallinson, Childs and Herk (2013) while collecting data. They outlined four basic principles to be taken into consideration while collecting data through interviews. These principles include permission, honesty and trust, anonymity and rigorous work. An informed consent was sought from the respondents before they were involved in the data collection. They were briefed about the study. For keeping the participant's identity anonymous, the researcher did not mention their names. Furthermore, the beauty parlors were not identified although some description about them was for ranking purpose only. It was ensured that the participation was voluntary. The study did not involve any risk or conflict of interest. The permission of the respondents was taken while recording their responses. To avoid the observer's paradox, the audio-digital recording was conducted in such a way that in order to get the seemingly naturalistic speech, the interviewer tried not to draw undue attention to the equipment. The level of engagement was controlled in a way that the recording remained peripheral. Mallinson, Childs and Herk (2013) argue that research on the variationist sociolinguistics paradigm must conform to the above-mentioned principles.

Data Analysis

The auditory analysis was carried out to analyze allophonic variation between [b]/[v] and [z]/[j] both at the word onset and coda position. The auditory phonetics assisted in identifying the Punjabi allophony to be a marking feature of the social class. The clear audible occurrences of allophonic variants that were established within the voice of every individual speaker mark the discrete nature of the consonants. Hence, the consonant sound changed while pronouncing the word variants as shown in table 2 explain the tokens of either [b] or [v] and [z] or [j]. This process was accomplished with the help of ear training and therefore, each instance was coded numerically in the transcribed texts. As many as 72 audio recording were analyzed to quantify the data for the measure of frequency and Chi-square. To investigate the association between Punjabi allophones and social class, age and gender, Chi-square was calculated at 95% level of confidence. The quantitative measurement was isomorphic to relation within or among the phenomenon under study. Although the phonetic data were analysed quantitatively, no formal cross-over (style-shifting) analysis was carried out; respondents' reports of visiting parlors of another class are treated as exploratory observations.

For each of the 14 items, three Pearson Chi-square tests of independence were conducted at the respondent level for class (3×2), gender (2×2) and age (3×2). Respondents each contributed one choice, and so observations within an item were independent (although the same respondents contribute to all 14 items). Effect size is reported as Cramér's V, using Cohen's (2013) benchmarks (.10, .30, .50) to interpret the values. As 14 Chi-square tests were conducted for each social factor, a Bonferroni-adjusted threshold of $\alpha=.0036$ was applied, in addition to the conventional .05. Results should be read with caution, and exact tests are recommended, for cases where the expected count for a cell was less than 5, for example, for [raaz] by age (minimum expected count = 4.0). Pooled token percentages are reported in the text, and are for descriptive purposes only, as tokens from the same speaker are not independent. The natural next step is a mixed-effects logistic regression, using class, gender, and their interactions, as fixed factors, and speaker and word as random factors (Johnson, 2009; Tagliamonte, 2012).

Punjabi Allophonic Patterns as Correlate of Social Class

In many different ways, the multilingual respondents of Lahore are adapting linguistic ecology of Punjabi that eventually motivates allophonic variation. The reason observed is the complex demographics of social class that is much prevalent in the urban area, Lahore. To explain the class stratification of Punjabi allophones, the following frequencies (see Tables 3 and 4) were tabulated.

Table 3 Frequency of Punjabi Allophonic Variants [b]-[v] with respect to Social Class Count

Social Class		Number of Respondents used Punjabi Allophonic Variants										
		[binnana][vinnana]		[bali] [vali]		[besan][vesan]		[baal] [vaal]				
		[baind][vaind]	[bari] [vari]	[bikhray][vikhray]								
Upper class		21	3	20	4	21	3	18	6	23	1	22
2	20	4										
Middle class		15	9	15	9	14	10	13	11	20	4	12
12	14	10										
Lower class		5	19	2	22	4	20	3	21	3	21	4
20	5	19										
Total		41	31	37	35	39	33	34	38	46	26	38
34	39	33										
$\chi^2(2)$		22.21	28.80	24.50				42.02	27.20	19.13		
p		<.001	<.001	<.001		<.001	<.001	<.001	<.001	<.001		

Note. Pearson χ^2 tests of independence, df = 2; p values reported to three decimals.

The data in Table 3 shows significant results that there is an association between social class and Punjabi allophony with p value less than 0.05. It was observed that just as the speakers of Lahore were conscious of their looks, they were equally conscious of their language as well. The higher the social class, the more standard allophonic variant that is, [b] and [z] they used as compared to lower class linguistic choices that are [v] and [j]. Furthermore, the data shows that the three different social classes do not share a common linguistic repertoire. Rather they speak differently, each with a different choice of allophone. Over all, the figures show an increasing trend of allophone [b] in the speech of the upper and middle class. On other hand, the lower class tends to use [v] at word initial position.

It was also discovered that sometimes lower class parlor customer was conscious of their beauty and their cravings for visiting the high ranked parlors were restrained in the background of their economic constraints. But one of the lower class parlor customers managed to go to middle class parlor in order to get the hair style for special event like wedding. Similarly, the middle class parlor customers also managed to go to higher class parlors for making their one day special and that too was found to be a wedding.

It is noted that the social situations may make them switch their social identities especially with regard to any special occasion be it is their own wedding or a kith and kin wedding ceremonies. These aspirations for the higher status were reflected in the choice of

the linguistic variants they opted when they visited a different category parlor which was not otherwise frequently visited by them in routine. They switched to the other class allophonic variant in each case (an exploratory observation; no formal test was carried out). For instance, the lower class respondent used allophones [b] and [z] quite similar to the upper and middle class respondents. Sometimes, it was also noted that few of the middle class parlor customers visited the lower class parlors with the need of saving money. With this, they also regressed towards the lower class linguistic variant, that is [v] and [j]. Such consumption attitudes on the part of lower and middle class parlor customers led to their multiple identity construction. Hence, these exploratory observations suggest that Punjabi allophony may mark a number of social identities in Lahore city.

The allophonic variation itself has a meaning, and these meanings are layered just as the three social class groups in Lahore are layered. Furthermore, no class uses one particular allophonic variant to the exclusion of other. The allophonic variants in the speech of any social class are inherently variable just as it is in society as a whole. A kind of overlap is observed in the sense the respondents exhibit a certain amount of inconsistency in their linguistic behaviour but there is nevertheless a certain pattern to that behaviour (see also Wardhaugh and Fuller, 2015). It, therefore, seems not that easy to define clear cut social class boundaries. Still, it was considered as one of the workable solutions for defining the social class construct.

Table 4 Frequency of Punjabi Allophonic Variants [z]-[j] with respect to Social Class

Count													
Social Class			Number of Respondents used Punjabi Allophonic Variants										
			[soz]	[soj]	[maiz]	[maij]	[andaaz]	[andaaaj]	[roz]	[roj]	[cheez]	[cheej]	
[tez]	[tej]		[raaz]	[raaj]									
Upper class	1	24	23	1	24	0	23	1	24	0	23	1	23
Middle class	6	24	19	5	21	3	22	2	23	1	22	2	18
Lower class	14	9	0	24	6	18	7	17	4	20	5	19	10
Total	21	57	42	30	51	21	52	20	51	21	50	22	51
$\chi^2(2)$			51.77	37.51	33.37		51.23	40.19		17.34	37.89		
p			<.001	<.001	<.001		<.001	<.001		<	<.001		
										.001			

Note. Pearson χ^2 tests of independence, $df = 2$; p values reported to three decimals.

Similarly, Table 4 also shows significant results as far the relationship that exists between Punjabi allophony and class with probability value less than 0.05. Even at word coda position the trend is the same as the upper and middle class speak differently from lower class. There are sharp linguistic differences between upper and lower classes and hence the frequencies determine sharp stratification of Punjabi allophony [b] / [v] and [z] / [j] at both the word positions. Quite surprisingly, all the upper and middle class respondents

used [raaz] and not a single one used the lower-class variant, possibly because the speakers who belonged to these two groups were aware of the fact that the whole word or the lexical item will change. In fact, [raaj] meant two other things for them, that is, kingdom or sovereignty as well as artisan or mason instead of secret. So, this may have been the reason behind their preference (an explanation not tested directly).

Over all, there is consistent pattern observed in the participants' responses. The respondents from each social class and their respective visits to each parlor category showed a systematic pattern in their language use. In fact, each class favored a particular allophone. The Punjabi allophones [b] and [z] were more commonly used by the upper class while the allophones [v] and [j] were used more by the lower class (reports of parlor switching, discussed above, are exploratory and untested).

All the fourteen variants used for the services of the beauty parlors mark the linguistic identity of the people of Lahore. Their identity is construed as one goes up the social scale, the more commonly they use allophone [b] and [z] than the corresponding [v] and [j] variants. The standard and the vernacular choice of the Punjabi variants are therefore scaled along the social continuum at the word onset and word coda positions. It clearly revealed that linguistic variation occurs due to the different social backgrounds of the speakers.

Researchers in the field (e.g., Bughio, 2006; Koka, 2014; Mallinson & Childs, 2007; Mather, 2012; Rahman, 2014) put under consideration the social class construct as an important constraint on the speech or on the language of its speakers. Today, the modern researchers also validate the earlier studies relating to the social stratification of language. Class is a strong predictor of linguistic variation within respondent's speech as validated by Bhatti, 2013; Coulmas, 2013; Sharma and Sankaran, 2011; and Eberhardt and Downs, 2015 as well. However, the present beauty parlor study is consistent with the class stratification found in Labov's (2006) New York department store study.

The results indicate the social class effects on the linguistic repertoire of the people of Lahore. It was observed that they consciously used standard variants when they visited the parlor of a higher rank as compared to the people visiting middle- and lower-category parlors, who were less conscious of their speech. In fact, a clear class hierarchy was visible among the parlor customers of present-day Lahore. The higher category parlor customer was conscious for the hair style and facial treatment and hence this consciousness was also reflected in the choice of allophone used by them. Another reason was that the upper class and some of the middle class wanted to distinguish themselves from lower class in the way they showed off while spending more on their personal looks. They may have believed that they had more aesthetic sense than the lower class (an untested interpretation). Here the social class was the basic element in stratifying the whole structure of the city and Punjabi allophony played its significant part to cut across such class stratification.

Pooled across the 7 items where [b] occurs, [b] was employed by 86% of the upper class, 61% of the middle class, and 15% of the lower class. [z] was used by 98% of the upper class, 89% of the middle class, and 24% of the lower class in the word-final items. Thus, the effect is large and graded with the middle class falling between the upper and lower classes on all items (and, for [raaz], level with the upper class). Effect sizes range from $V = .49$ ([tez]) to $V = .85$ ([soz]), and all 14 associations remain significant after Bonferroni correction (Table 9).

The pattern fits the expectations of a market view of symbolic capital (Bourdieu, 1991) and indexicality of refinement and social status (Eckert, 2008). Data do not suggest

hypercorrection by the middle class (Labov, 1972), as middle class use of standard variants is never greater than upper class use of any item, though the single stylistic design may not rule this out for more formal speech. Use of [raaz] by upper and middle classes suggests avoidance of homophony, given [raaj] is a different word. The reports of respondents switching variants when attending a parlor of another class (e.g., for a wedding) are exploratory observations from respondents and should be viewed as hypotheses of controlled style shifting, and not as verified findings.

Punjabi Allophonic Patterns as Correlate of Gender

Gender as a social category is another significant construct that shows particular effects on allophonic variation in the speech of parlors customers. It showed the use of standard allophonic variants [b] and [z] in females' speech more than the males who favored the vernacular variants. The frequencies (see Table 5 and 6) were calculated to gauge the relation between Punjabi allophony and gender.

Table 5 Frequency of Punjabi Allophonic Variants [b]-[v] with respect to Gender

Count		Number of Respondents used Punjabi Allophonic Variants										
Gender		[binnana]	[vinnana]	[bali]	[vali]	[besan]	[vesan]	[baal]	[vaal]	[baind]	[vaind]	
		[bari]	[vari]	[bikhray]	[vikhray]							
Male		12	24	13	23	12	24	11	25	17	19	13
23	15	21										
Female		29	7	24	12	27	9	23	13	29	7	25
11	24	12										
Total		41	31	37	35	39	33	34	38	46	26	38
34	39	33										
$\chi^2(1)$		16.37	6.73	12.59	8.02	8.67	8.02	4.53				
p		< .001	.009	< .001	.005	.003	.005	.033				

Note. Pearson χ^2 tests of independence, df = 1; p values reported to three decimals.

Table 6 Frequency of Punjabi Allophonic Variants [z]-[j] with respect to Gender

Count												
Gender Variants		Number of Respondents used Punjabi Allophonic										
		[soz]	[soj]	[maiz]	[maiɟ]	[andaaz]	[andaaj]	[roz]	[roj]	[cheez]	[cheej]	
[tez]	[tej]	[raaz]	[raaj]									
Male		14	22	21	15	21	15	21	15	20	16	21
15	27	9										
Female		28	8	30	6	31	5	30	6	30	6	30
6	30	6										

Total	42	30	51	21	52	20	51	21	50	22	51
21	57	15									
$\chi^2(1)$	11.20		5.45	6.92	5.45	6.55		5.45		0.76	
<i>p</i>	<.001		.020	.009	.020	.011		.020		.384	

Note. Pearson χ^2 tests of independence, *df* = 1; *p* values reported to three decimals.

The data in Table 5 and 6 shows significant results that there is an association between gender and Punjabi allophony with *p* value less than 0.05 for 13 of the 14 items ([raaz] excepted); only four items remain significant after Bonferroni correction (see Table 9). It is evident from the data that the females are more prone to use standard variants [b] and [z] while males use vernacular types [v] and [j] in a much greater number. It may be inferred that women use the standard variants to signal status (an interpretation not directly tested here). Similarly, Trudgill (1974) in his study on Norwich showed a similar pattern that the men consistently choose the vernacular variants (see also Coates & Pichler, 2011; Kerswill, 2007).

During the audio-recording period, it was noted that some females of the older group did not hesitate in using the vernacular allophonic variants. Upon inquiring them, it came to be known that they were no longer at the stage of life at which they depended on male members of the family (an anecdotal observation). At the same time, it was not true in the case of one particular variant that is [raaz] or [raaj] where gender difference was not the factor behind their articulation. The reason can be that these two variants were used for beauty secret but those who used /raaj/ might be uneducated lower class who were unaware of the other meaning of /raaj/ that is, sovereignty which is a totally different lexical item.

The character of allophone as a prestige feature in Punjabi linguistic system can only be gauged within the maze of social inequalities. As is indicated earlier, the upper class allophonic variants are [b] and [z] and lower class variant are [v] and [j]. Researchers like Holmes (2013) also considered that variation in language is due to the role of gender based social constraints. Shah, Mahmood and Qureshi (2011) highlighted the role of gender under class status, professional status, education, family roles, and in social contexts to account for linguistic variability in Punjabi. It has been argued that Lahore is a male-dominated society where men are more in power than women (Shafiq, 2013, p. 108–120 and Bhattacharya, 2014, p. 179–211). This may be why men favour the vernacular allophonic variants, whereas women may use the standard variants as a way of claiming status, as the data suggest. In this way, the socio-cultural behaviour of Lahore city is reflected through these standard and vernacular allophonic variants adopted by the men and women living there. But this is in fact not the only reason behind their choices of linguistic forms.

In Pakistan, there is a trend of combined family system where the female's role is of much significance. Since, females are the first one who comes into contact with her children and along with this; she takes care of them from birth to school more than any male member of the family. So, while interacting with them, she is very much sensitized to make them cultured and refined human beings. As a possible result of these roles, women may move towards standardized language as compared to males whose contact with the outer world is more and they preferably stick to vernacular variants.

Another possible reason is that women are often stereotyped as sensitive and as idealized figures in Pakistani Punjab. It was observed that they were very sensitive regarding their appearances and presentation in social discourse especially in matters of clothing and related accessories such as jewellery, shoes and hair styling etc. In the same way, they were very particular in their language use. So, it is not just desire or aspirations for higher status that made

Pooled across items, 72% of women used [b] versus 37% of men and 83% of women used [z] versus 58% of men. Small to medium effect sizes are found for all items except [raaz] ($V = .10$, $p = .38$). Four items, [binnana], [besan], [baind] and [soz], remain significant after Bonferroni correction. For [bikhray], $p = .033$, which is significant at the .05 level but not after Bonferroni correction.

Punjabi Allophonic Patterns as Correlate of Age

The differential use of Punjabi allophones was also verified across the parlor customers of three age groups; (16-30 years old), (31-45 years old) and (46-60 years old). The frequencies (see Table 7 and 8) were tabulated which showed that the association between Punjabi allophony and age is item-specific rather than general.

Count

Age		Number of Respondents used Punjabi Allophonic Variants										
		[binnana] [bari]	[vinnana] [vari]	[bali] [bikhray]	[vali] [vikhray]	[besan] [vesan]	[baal] [vaal]	[baind] [vaind]				
16 – 30	8	17	2	12	7	12	7	10	9	19	0	11
31 – 45	14	16	16	15	17	24	8	14	18	19	13	18
46 - 60	12	8	13	10	11	3	18	10	11	8	13	9
Total	34	41	31	37	35	39	33	34	38	46	26	38
	39	33										

$\chi^2(2)$	11.87		19.67	0.38	17.08	1.18	5.19
p	.003	1.43	< .001	.827	< .001	.553	.075
		.488					

Note. Pearson χ^2 tests of independence, df = 2; p values reported to three decimals.

Table 8 Frequency of Punjabi Allophonic Variants [z]-[j] with respect to Age

Count												
Age			Number of Respondents used Punjabi Allophonic Variants									
			[soz]	[soj]	[maiz]	[maij]	[andaaz]	[andaaj]	[roz]	[roj]	[cheez]	
[cheej]	[tez]	[tej]	[raaz]	[raaj]								
16 - 30		16	3	17	2	17	2	17	2	17	2	17
2	19	0										
31 - 45		20	12	19	13	19	13	19	13	19	13	13
19	13	18	14									
46 - 60		6	15	15	6	16	5	15	6	14	7	15
6	20	1										
Total		42	30	51	21	52	20	51	21	50	22	
51	21	57	15									
$\chi^2(2)$			13.12	5.23	5.62	5.23	5.20	5.23	18.48			
p			.001	.073	.060	.073	.074	.073	< .001			

Note. Pearson χ^2 tests of independence, df = 2; p values reported to three decimals.

The data in Table 7 and 8 show a mixed picture: for 9 of the 14 items the age differences are not significant ($p > .05$), whereas for five items they are significant. Hence, there is no general association between age and Punjabi allophony, but the association is significant for some items. Bhatti (2013) also viewed age as not a significant factor in language variation specifically in his social stratification study of /n/ in Punjabi language. But, Bughio (2006) and Koka (2014) showed language variation among Sindhi and Kashmiri speakers respectively with regard to age. Furthermore, the earlier studies conducted in the western societies also showed the relationship between language and age factor (cf. Baker and Hengeveld, 2012; Downes, 1998 and Romaine, 1984). The present study presents inconsistent results about the linguistic differences of the three age groups. Over all, a normal trend was seen in the articulation of the allophonic variants by all the age cohorts that are, the young (16-30 years), the middle (31-45 years) and the old (46-60 years).

Age is not consistently related to variant choice. However, the present data show that nine of the fourteen items are non-significant at $p < .05$. Five elements show a significant association that survives Bonferroni correction: [binnana] ($p = .0026$), [besan] ($p = .00005$), [baind] ($p = .0002$), [soz] ($p = .0014$), and [raaz] ($p = .0001$), with Cramér's V ranging from .41 to .52. The pattern is also non-monotonic, as the middle group (31-45) often uses the vernacular more than the younger group. The general conclusion is that the age effects are also item specific, and class effects are generally stronger. As the age groups are unequal and age is confounded with other

variables, an apparent time interpretation should be avoided, absent a regression model that adjusts for class and gender.

Effect Sizes and Multiple-Comparison Correction

As 14 chi-square tests were conducted for each social factor, p-values were judged against a Bonferroni-adjusted threshold ($\alpha = .05/14 = .0036$), and Cramér's V was reported to show the strength of association (Cohen, 2013). Table 9 shows that for all 14 items, class effects are large and significant ($V = .49$ to $.85$), gender effects are small to medium ($V = .10$ to $.48$) and significant for four items, and age effects ($V = .07$ to $.52$) are significant for five items. The sizes of effect therefore show that class is the strongest correlate of variant choice, and gender and age effects, though smaller and item specific, are also significant.

Table 9 Cramér's V and significance after Bonferroni correction ($\alpha = .0036$) for each item

Item	Class V	Class sig.	Gender V	Gender sig.	Age V	Age sig.
[binnana]	.56	Yes	.48	Yes	.41	Yes
[bali]	.63	Yes	.31	No	.14	No
[besan]	.58	Yes	.42	Yes	.52	Yes
[baal]	.52	Yes	.33	No	.07	No
[baind]	.76	Yes	.35	Yes	.49	Yes
[bari]	.61	Yes	.33	No	.13	No
[bikhray]	.52	Yes	.25	No	.27	No
[soz]	.85	Yes	.39	Yes	.43	Yes
[maiz]	.72	Yes	.28	No	.27	No
[andaaz]	.68	Yes	.31	No	.28	No
[roz]	.84	Yes	.28	No	.27	No
[cheez]	.75	Yes	.30	No	.27	No
[tez]	.49	Yes	.28	No	.27	No
[raaz]	.73	Yes	.10	No	.51	Yes

Note. "sig." = significant after Bonferroni correction across the 14 items for that factor. V computed from the frequencies in Tables 3–8. For [bikhray], the Table 5 p-value is .033 (significant at .05 only before correction).

Discussion

Addressing the research question, social class has the largest effects (strongest correlations) for all the 14 variant choices, while gender and age effects are smaller and vary by item (4 and 5 items, respectively, remain significant after correction). Thus H1 and H2 are supported. H3 is partly supported: the youngest group used [b] and [z] more than the oldest group on all 14 items, but the differences are significant for only five items after correction, and the middle group does not always fall between the two. H4 is supported at the .05 level for 13 of the 14 items, but after correction for only four items. The class gradient corresponds to the variationist findings (Labov, 2006; Trudgill, 1974) and the gender gradient is in the direction reported by Trudgill (1974) and Labov (2001). The null or mixed age gradient is in line with Bhatti (2013) with regard to Punjabi /n/, but is in conflict with Sindhi and Kashmiri (Buglio,

2006; Koka, 2014). Age effects appear to be variable specific in South Asia. The results are in line with an indexical-field account (Eckert, 2008; Silverstein, 2003), whereby [b]/[z] and [v]/[j] are resources which speakers align with prestigious and vernacular styles, and are in line with the linguistic market theory (Bourdieu, 1991) as well. The association with Perso-Arabic/Urdu (Mansoor, 1993; Rahman, 1996) is a plausible, but untested hypothesis. Documentation of class- and gender-linked variants of Punjabi sets a baseline for examining language attitudes and language planning in Pakistani Punjab, as well as for creating speech technology and pronunciation resources that include conditioned variants (cf. Lata, 2011).

Limitations and Directions for Future Research

1. Transcription was auditory only. Acoustic transcription (e.g. using Praat) would assess phonetic categories, revealing if the variants are discrete or gradient, and provide measures independent of the coders' auditory judgments.
2. Class was inferred from parlor price, location and interior, and not from education, occupation or income of the respondents. Using both methods would add to construct validity.
3. Data were collected from a single city and a single type of site, and included 72 respondents of unequal age groups. Generalization to other cities, sites and speech styles should be done with caution.
4. Speech was elicited through indirect interview questions and was therefore not fully spontaneous. Speech in less controlled, spontaneous situations and/or situations that require the respondents to adopt different speech styles would overcome the Observer's Paradox more fully.
5. Tokens are nested within speakers and words. It would be appropriate to use class $\times$ gender $\times$ age terms in mixed-effects models, to confirm the results.
6. Extensions proposed in the conclusion (e.g. intervocalic allophones and vowel variants, and the language of workers) may be complemented with studies on attitudes and perceptions.

Conclusion

The study analyzed social stratification (i.e., class, gender and age) through Punjabi allophones prevalent in parlors spread over Lahore city. A significant association between the respondents' social class and their choice of allophone was found. The respondents who were representing the lower class used [v] and [j] allophones frequently. However, the use of this variant was decreasing gradually in parlors visited by the middle class and the upper class. Unlike the lower class, the upper and middle class respondents tended to use [b] and [z] variant. The study also revealed variation in the use of allophones by male and female respondents. It is an interesting observation to note that some female respondents in the 46-60 age group were observed using the lower class variant (an anecdotal observation). Only one of the variants (i.e., [raaz]) showed no significant gender difference. A variation in the use of allophones by different age groups was also observed, however the relationship was statistically significant for only five of the 14 items. The study suggests investigating social stratification by taking the vowel variants and the intervocalic allophones of Punjabi language. The study also suggests exploring the language of workers as a correlate of social stratification. This study would hopefully motivate future researchers to extend social stratification research whose subject-matter has been largely English to other languages and disciplines.

While showing graded class stratification and a reliable gender difference in two Punjabi variables, the study extends the variationist paradigm to a multilingual setting in South Asia and suggests that beauty service spending can function as an implicit class index. The author cautions against treating age as uniformly irrelevant in the Punjabi context and suggests future research take a multifaceted approach to study the social meaning of variable forms in the Punjabi context. This could include various forms of discourse analysis (e.g. speech analysis and perception experiments), mixed-effects models, acoustic analysis, and research spanning multiple disciplines (medicine, engineering, psychology, anthropology, linguistics, etc.) to explain social variability in speech.

Declaration of Conflicting Interests

The author declares that there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data Availability Statement

The data upon which the findings of this study are based are an annotated corpus (token annotations and anonymized speaker metadata) of transcribed Punjabi speech and interview recordings collected by the author. Access to these data may be restricted to ensure participant confidentiality. Further information can be obtained from the corresponding author, if needed, and according to the requirements of ethics and participant consent.

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END NOTES

- ⁱ Masica, C. (1991) says that *in the Punjab province of Pakistan, the script used is Shahmukhi (as opposed to Gurumukhi) and differs from the Urdu alphabet in having four additional letters* (p. 20).
- ⁱⁱ See Swaran Lata's *Challenges for Design of Pronunciation Lexicon Specification (PLS) for Punjabi Language* (2011), p. 58. Technology Development for Indian Languages, Government of India. This book highlights that *Punjabi words variants have minor variation in spellings but having the same meaning*. The example (as quoted by Masica, 1991) of *tyrant* is taken from here with two variants, that is, (ਟਾਡਮ) for /dʒaləm/ and (ਜਲਮ) for /zaləm/.
- ⁱⁱⁱ Penelope Eckert views social studies of linguistic variation as coming in three loosely-ordered waves. *The first and second wave studies focus on speech community with particular linguistic features which functions of defining their role as local / regional dialect features. These studies view the meaning of variants as identity markers related directly to the groups that most use them*. For more detail, see paper Eckert, P. (2012). Three Waves of Variation Study: The Emergence of Meaning in the Study of Variation. *Annual Review of Anthropology*, 41, p. 87 -100.
- ^{iv} Like Savage's *Class and Stratification: current problems and revival prospects*. (SAGE, 2005), Grusky argued that *sociologists must increasingly consider how class is complexly interrelated with individual's lifestyles, consumption practices and identities*. (Grusky, 2001, pp. 1 – 2).
- ^v Coupland (2007) calls the current era *late modernity*. It is a time in which “*Social life seems increasingly to come packaged as a set of lifestyle options able to be picked up and dropped, though always against a social backdrop of economic possibilities and constraints... Social class... membership in the West is not the straitjacket that it was. Within limits, some people can make choices in their patterns of consumptions and take on the social attributes of different social classes... the meaning of class is shifted*” (pp. 29 -30).